

## HYDRAULIC BRAKE SYSTEM BLEEDING (J56)

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### Special Tools

- CH-29532-A - Pressure Brake Bleeder
- CH-35589-A - Brake Bleeder Adapter
- CH-44894-A - Brake Bleeder Adapter

For equivalent regional tools. Special Tools

**Warning:** Brake Dust Warning

**Warning:** Brake Fluid Irritant Warning.

**Caution:** Brake Fluid Effects on Paint and Electrical Components Caution.

**Caution:** Only use products that comply with GM specifications and check manufacturer information respectively. We recommend the use of GM genuine products. Instructions must be followed at all times. The use of any type of fluid other than the recommended type of brake fluid, may cause contamination which could result in damage to the internal rubber seals and/or rubber linings of hydraulic brake system components.

**Note:** If the system is opened at the brake master cylinder, a full hydraulic brake system bleed is necessary.

## Bleeding a Single Front Hydraulic Brake Circuit

1. Disconnect brake fluid level sensor
2. Use Global Diagnostic System (GDS) to deactivate brake boost system.
3. Place a clean shop cloth beneath the brake master cylinder to prevent brake fluid spills.
4. Clean the outside of the reservoir on and around the reservoir cap prior to removing the cap and diaphragm.  
**Note:** The pressure bleeding equipment must be the diaphragm type. The rubber diaphragm between the air supply and the brake fluid prevents air, moisture, oil, and other contaminants from entering the hydraulic system.
5. Fill the brake master cylinder reservoir with GM approved brake fluid from a clean, sealed brake fluid container. Ensure that the brake master cylinder reservoir remains at least half-full during this bleeding procedure. Add fluid as needed to maintain the proper level. Brake Master Cylinder Reservoir Filling
6. Check the brake fluid level in the CH-29532-A - Pressure Brake Bleeder . Add GM approved brake fluid from a clean, sealed brake fluid container as necessary to bring the level to approximately the half-full point. Adhesives, Fluids, Lubricants, and Sealers
7. Install the CH-44894-A - Brake Bleeder Adapter or CH-35589-A - Brake Bleeder Adapter to the brake master cylinder reservoir.
8. Connect the CH-29532-A - Pressure Brake Bleeder , to the CH-44894-A - Brake Bleeder Adapter or CH-35589-A - Brake Bleeder Adapter .
9. Charge the CH-29532-A - Pressure Brake Bleeder , air tank to **207 - 310 kPa (30 - 45 psi)**.
10. Open the CH-29532-A - Pressure Brake Bleeder , fluid tank valve to allow pressurized brake fluid to enter the brake system.
11. Wait approximately 30 seconds, then inspect the entire hydraulic brake system in order to ensure that there are no existing external brake fluid leaks. Any brake fluid leaks identified require repair prior to completing this procedure. Brake System External Leak Inspection
12. Remove the tire and wheel assembly.
13. Install a proper box-end wrench onto the wheel hydraulic circuit UPPER bleeder valve which has been serviced.
14. Install a transparent hose over the end of the UPPER bleeder valve.
15. Submerge the open end of the transparent hose into a transparent container partially filled with GM approved brake fluid from a clean, sealed brake fluid container. Adhesives, Fluids, Lubricants, and Sealers

16. Open the UPPER bleeder, allow fluid to flow for 10 seconds, close bleeder and repeat the step two more times before moving on.

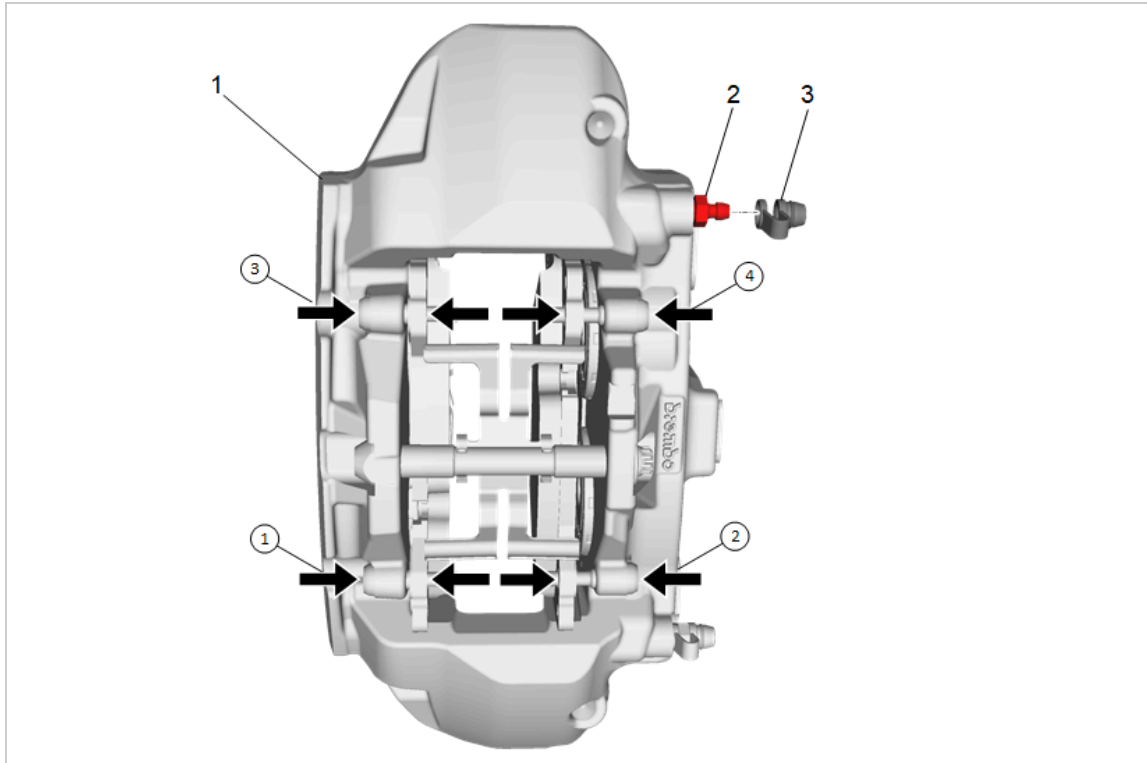
**Note:**

- Ensure to protect the caliper painted surface.
- Squeeze rapidly, as faster pad/piston retraction guarantees high fluid flow to release air.

17. Reopen UPPER bleeder, use channel locks to quickly squeeze pad to caliper in locations by each piston beginning with **Sequence A**, then repeating with **Sequence B**:

**Note:** Left side shown, right side similar.

1. **Sequence A:** Beginning with the pad section furthest from the UPPER bleeder (2) and ending with the pad section nearest to the UPPER bleeder (2):



1. Outboard leading piston

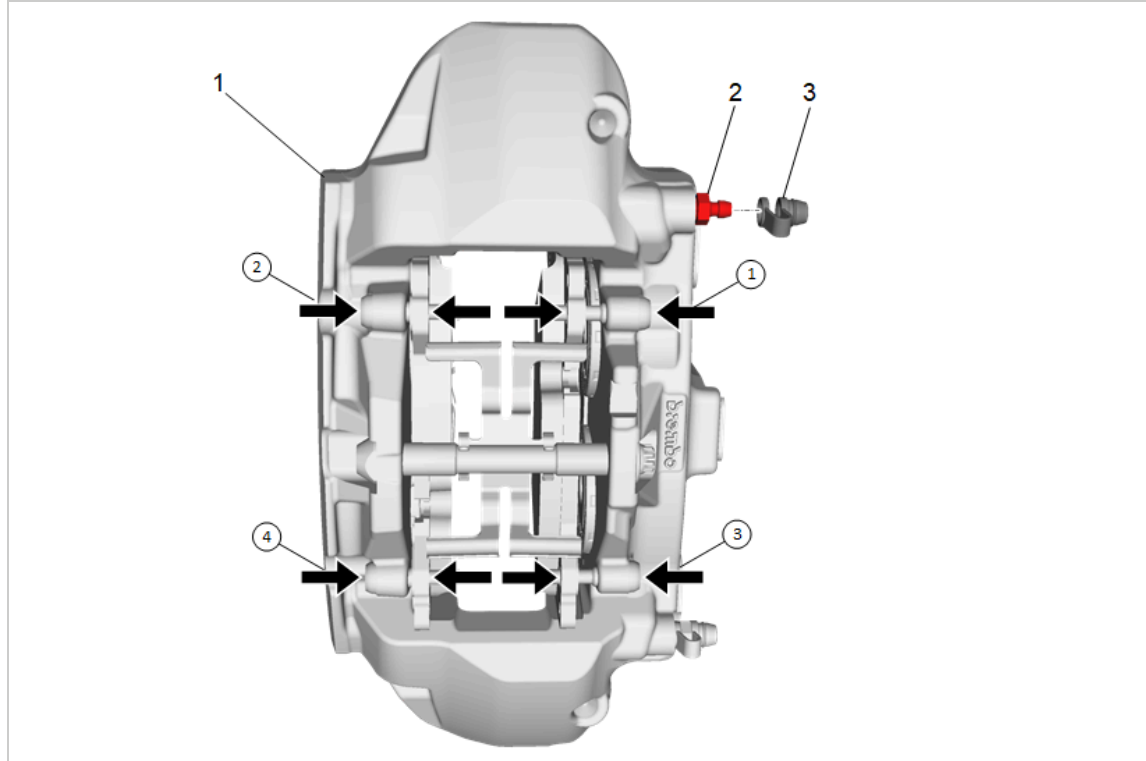
2. Inboard leading piston

3. Outboard trailing piston

4. Inboard trailing piston

**Note:** Left side shown, right side similar.

2. **Sequence B:** Beginning with the pad section nearest to the UPPER bleeder (2) and ending with the pad section furthest from the UPPER bleeder (2):



1. Inboard trailing piston
2. Outboard trailing piston
3. Inboard leading piston
4. Outboard leading piston

18. Use a rubber mallet to tap 3 times behind each piston and 3 times gently on the top and bottom of caliper.
19. Close bleeder and wait 5 seconds to allow pressure to rebuild and pistons/pads to spread back out to rotor.
20. Repeat step 18 four more times.

**Caution:** Refer to Fastener Caution.

21. After all air has been purged from the hydraulic circuit, tighten the bleeder valve to the necessary torque specification and install the dust cap. Front Brake Caliper Bleeder Valve Replacement
22. Install the tire and wheel assembly.

**Note:** The brake reservoir may have residual pressure after the bleeding operation is complete. Wrap a clean shop towel around the bleeder adapter and all hose connections before disconnecting the pressure bleeding equipment to prevent brake fluid from contacting and damaging vehicle components and painted surfaces

23. Close the CH-29532-A - Pressure Brake Bleeder , fluid tank valve, then disconnect the CH-29532-A - Pressure Brake Bleeder , from the CH-44894-A - Brake Bleeder Adapter or CH-35589-A - Brake Bleeder Adapter .
24. Remove the CH-44894-A - Brake Bleeder Adapter or CH-35589-A - Brake Bleeder Adapter from the brake master cylinder reservoir.
25. Fill the brake master cylinder reservoir to the maximum-fill level with GM approved brake fluid from a clean, sealed brake fluid container. Adhesives, Fluids, Lubricants, and Sealers
26. Inspect the brake system for external leaks. Brake System External Leak Inspection
27. Run the GDS - Brake Hydraulic Test, if it fails, perform the Bleeding the Complete Brake Hydraulic System procedure.
28. Connect the brake fluid level sensor
29. Turn the ignition ON, with the engine OFF. Check to see if the brake system warning lamp remains illuminated.
30. Inspect the brake system for external leaks. Brake System External Leak Inspection

**Note:** DO NOT allow the vehicle to be driven until it is diagnosed and repaired.

31. If the brake system warning lamp remains illuminated, go to Diagnostic Starting Point - Vehicle.

## Bleeding a Single Rear Hydraulic Brake Circuit

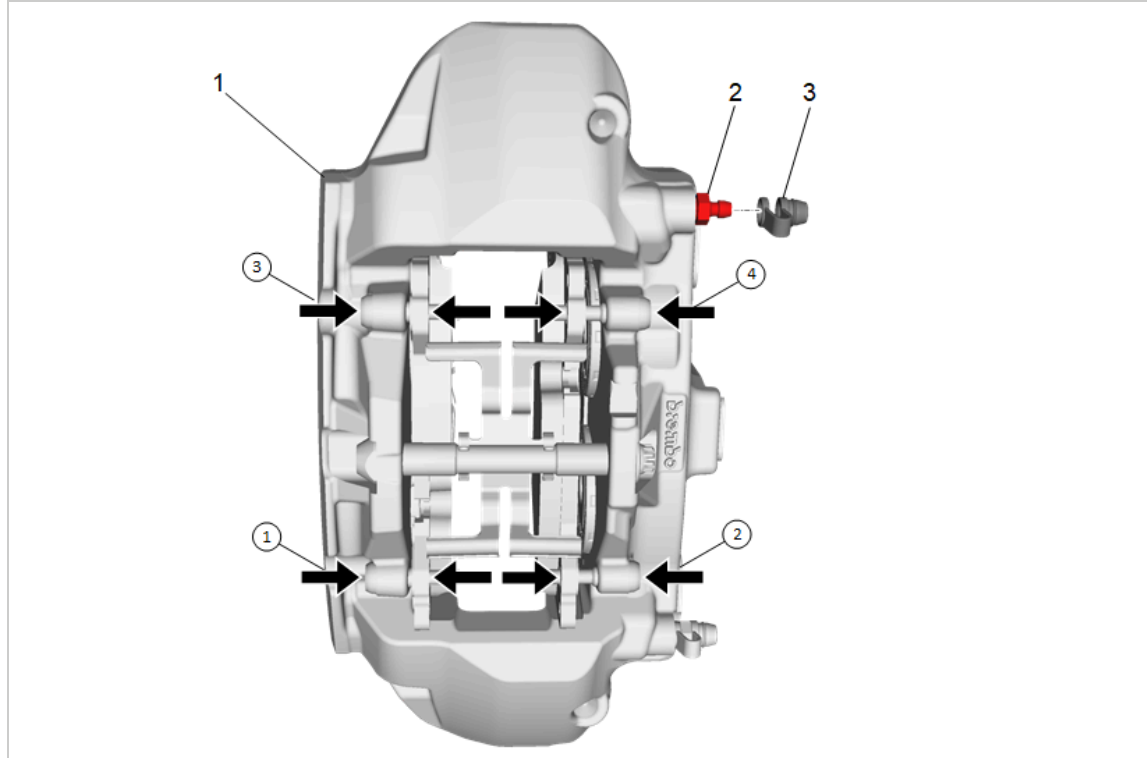
1. Disconnect brake fluid level sensor

2. Use Global Diagnostic System (GDS) to deactivate brake boost system.
3. Place a clean shop cloth beneath the brake master cylinder to prevent brake fluid spills.
4. Clean the outside of the reservoir on and around the reservoir cap prior to removing the cap and diaphragm.  
**Note:** The pressure bleeding equipment must be the diaphragm type. The rubber diaphragm between the air supply and the brake fluid prevents air, moisture, oil, and other contaminants from entering the hydraulic system.
5. Fill the brake master cylinder reservoir with GM approved brake fluid from a clean, sealed brake fluid container. Ensure that the brake master cylinder reservoir remains at least half-full during this bleeding procedure. Add fluid as needed to maintain the proper level. Brake Master Cylinder Reservoir Filling
6. Check the brake fluid level in the CH-29532-A - Pressure Brake Bleeder . Add GM approved brake fluid from a clean, sealed brake fluid container as necessary to bring the level to approximately the half-full point. Adhesives, Fluids, Lubricants, and Sealers
7. Install the CH-44894-A - Brake Bleeder Adapter or CH-35589-A - Brake Bleeder Adapter to the brake master cylinder reservoir.
8. Connect the CH-29532-A - Pressure Brake Bleeder , to the CH-44894-A - Brake Bleeder Adapter or CH-35589-A - Brake Bleeder Adapter .
9. Charge the CH-29532-A - Pressure Brake Bleeder , air tank to **207 - 310 kPa (30 - 45 psi)**.
10. Open the CH-29532-A - Pressure Brake Bleeder , fluid tank valve to allow pressurized brake fluid to enter the brake system.
11. Wait approximately 30 seconds, then inspect the entire hydraulic brake system in order to ensure that there are no existing external brake fluid leaks. Any brake fluid leaks identified require repair prior to completing this procedure. Brake System External Leak Inspection
12. Install a proper box-end wrench onto the wheel hydraulic circuit bleeder valve which has been serviced.
13. Install a transparent hose over the end of the bleeder valve.
14. Submerge the open end of the transparent hose into a transparent container partially filled with GM approved brake fluid from a clean, sealed brake fluid container. Adhesives, Fluids, Lubricants, and Sealers
15. Loosen the bleeder valve to purge air from the wheel hydraulic circuit.
16. Allow fluid to flow until air bubbles stop flowing from the bleeder.
17. Cycle the park brake ON and OFF after opening the bleeder valve on the rear calipers.  
**Caution:** Refer to Fastener Caution.
18. After all air has been purged from the hydraulic circuit, tighten the bleeder valve to the necessary torque specification and install the dust cap. Rear Brake Bleeder Valve Replacement  
**Note:** The brake reservoir may have residual pressure after the bleeding operation is complete. Wrap a clean shop towel around the bleeder adapter and all hose connections before disconnecting the pressure bleeding equipment to prevent brake fluid from contacting and damaging vehicle components and painted surfaces
19. Close the CH-29532-A - Pressure Brake Bleeder , fluid tank valve, then disconnect the CH-29532-A - Pressure Brake Bleeder , from the CH-44894-A - Brake Bleeder Adapter or CH-35589-A - Brake Bleeder Adapter .
20. Remove the CH-44894-A - Brake Bleeder Adapter or CH-35589-A - Brake Bleeder Adapter from the brake master cylinder reservoir.
21. Fill the brake master cylinder reservoir to the maximum-fill level with GM approved brake fluid from a clean, sealed brake fluid container. Adhesives, Fluids, Lubricants, and Sealers
22. Inspect the brake system for external leaks. Brake System External Leak Inspection
23. Run the GDS - Brake Hydraulic Test, if it fails, perform the Bleeding the Complete Brake Hydraulic System procedure.
24. Connect the brake fluid level sensor
25. Turn the ignition ON, with the engine OFF. Check to see if the brake system warning lamp remains illuminated.
26. Inspect the brake system for external leaks. Brake System External Leak Inspection  
**Note:** DO NOT allow the vehicle to be driven until it is diagnosed and repaired.
27. If the brake system warning lamp remains illuminated, go to Diagnostic Starting Point - Vehicle.

## Bleeding Complete Brake Hydraulic System

1. Disconnect brake fluid level sensor

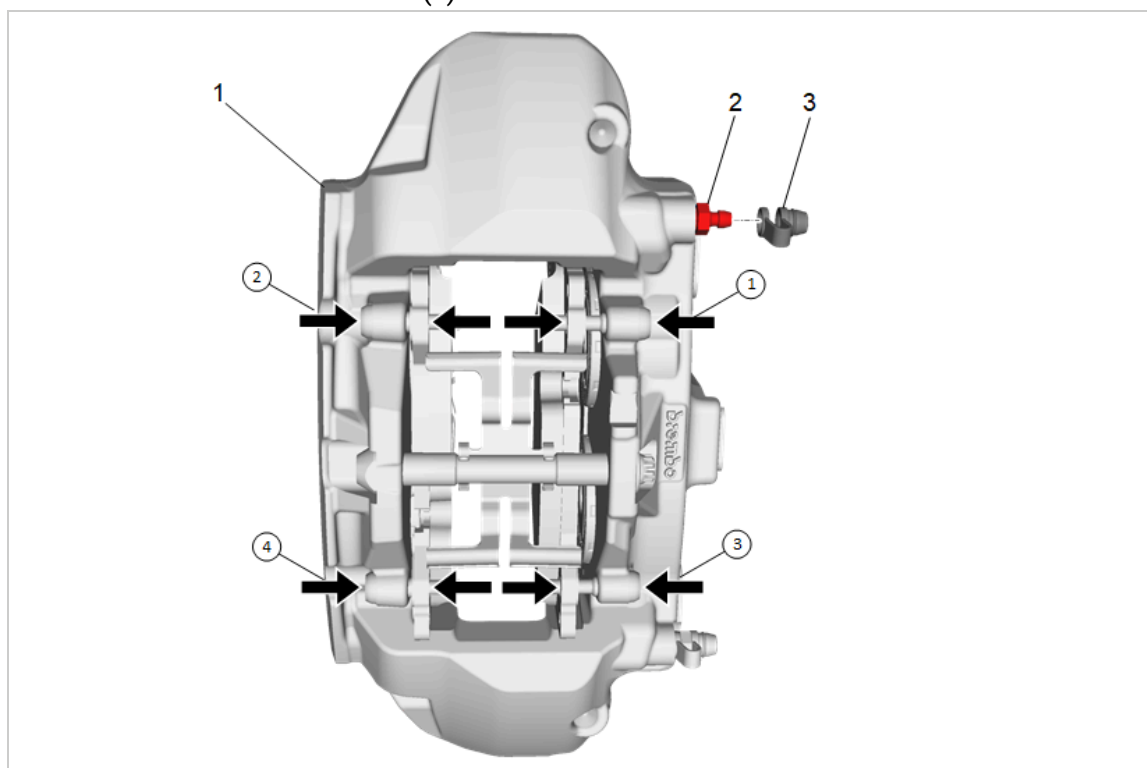
2. Use Global Diagnostic System (GDS) to deactivate brake boost system.
3. Place a clean shop cloth beneath the brake master cylinder to prevent brake fluid spills.
4. Clean the outside of the reservoir on and around the reservoir cap prior to removing the cap and diaphragm.  
**Note:** The pressure bleeding equipment must be the diaphragm type. The rubber diaphragm between the air supply and the brake fluid prevents air, moisture, oil, and other contaminants from entering the hydraulic system.
5. Fill the brake master cylinder reservoir with GM approved brake fluid from a clean, sealed brake fluid container. Ensure that the brake master cylinder reservoir remains at least half-full during this bleeding procedure. Add fluid as needed to maintain the proper level. Brake Master Cylinder Reservoir Filling
6. Check the brake fluid level in the CH-29532-A - Pressure Brake Bleeder . Add GM approved brake fluid from a clean, sealed brake fluid container as necessary to bring the level to approximately the half-full point. Adhesives, Fluids, Lubricants, and Sealers
7. Install the CH-44894-A - Brake Bleeder Adapter or CH-35589-A - Brake Bleeder Adapter to the brake master cylinder reservoir.
8. Connect the CH-29532-A - Pressure Brake Bleeder , to the CH-44894-A - Brake Bleeder Adapter or CH-35589-A - Brake Bleeder Adapter .
9. Charge the CH-29532-A - Pressure Brake Bleeder , air tank to **207 - 310 kPa (30 - 45 psi)**.
10. Open the CH-29532-A - Pressure Brake Bleeder , fluid tank valve to allow pressurized brake fluid to enter the brake system.
11. Wait approximately 30 seconds, then inspect the entire hydraulic brake system in order to ensure that there are no existing external brake fluid leaks. Any brake fluid leaks identified require repair prior to completing this procedure. Brake System External Leak Inspection
12. Remove the tire and wheel assemblies.
13. Install a proper box-end wrench onto the RIGHT FRONT UPPER bleeder valve.
14. Install a transparent hose over the end of the UPPER bleeder valve.
15. Submerge the open end of the transparent hose into a transparent container partially filled with GM approved brake fluid from a clean, sealed brake fluid container. Adhesives, Fluids, Lubricants, and Sealers
16. Open the UPPER bleeder, allow fluid to flow for 10 seconds, close bleeder and repeat the step two more times before moving on.  
**Note:**
  - Ensure to protect the caliper painted surface.
  - Squeeze rapidly, as faster pad/piston retraction guarantees high fluid flow to release air.
17. Reopen UPPER bleeder, use channel locks to quickly squeeze pad to caliper in locations by each piston beginning with **Sequence A**, then repeating with **Sequence B**:  
**Note:** Left side shown, right side similar.
  1. **Sequence A:** Beginning with the pad section furthest from the UPPER bleeder (2) and ending with the pad section nearest to the UPPER bleeder (2):



1. Outboard leading piston
2. Inboard leading piston
3. Outboard trailing piston
4. Inboard trailing piston

**Note:** Left side shown, right side similar.

2. **Sequence B:** Beginning with the pad section nearest to the UPPER bleeder (2) and ending with the pad section furthest from the UPPER bleeder (2):



1. Inboard trailing piston
2. Inboard leading piston
3. Outboard trailing piston
4. Outboard leading piston

18. Use a rubber mallet to tap 3 times behind each piston and 3 times gently on the top and bottom of caliper.
19. Close bleeder and wait 5 seconds to allow pressure to rebuild and pistons/pads to spread back out to rotor.
20. Repeat step 18 four more times.
21. Close RIGHT FRONT UPPER bleeder and repeat entire process for LEFT FRONT UPPER bleeder.

**Caution:** Refer to Fastener Caution.

22. After all air has been purged from the front hydraulic circuit, tighten the FRONT UPPER bleeder valves to the necessary torque specification and install the dust cap. Front Brake Caliper Bleeder Valve Replacement
23. Install a proper box-end wrench onto the LEFT REAR bleeder valve.
24. Install a transparent hose over the end of the bleeder valve.
25. Submerge the open end of the transparent hose into a transparent container partially filled with GM approved brake fluid from a clean, sealed brake fluid container. Adhesives, Fluids, Lubricants, and Sealers
26. Loosen the bleeder valve to purge air from the wheel hydraulic circuit.
27. Allow fluid to flow until air bubbles stop flowing from the bleeder.
28. Hand tighten the bleeder valve.
29. Repeat steps 23 - 28 for the RIGHT REAR bleeder.
30. After all air has been purged from the hydraulic circuit, tighten the bleeder valves to the necessary torque specification and install the dust cap. Rear Brake Bleeder Valve Replacement
31. Install the tire and wheel assemblies.

**Note:** The brake reservoir may have residual pressure after the bleeding operation is complete. Wrap a clean shop towel around the bleeder adapter and all hose connections before disconnecting the pressure bleeding equipment to prevent brake fluid from contacting and damaging vehicle components and painted surfaces

32. Close the CH-29532-A - Pressure Brake Bleeder , fluid tank valve, then disconnect the CH-29532-A - Pressure Brake Bleeder , from the CH-44894-A - Brake Bleeder Adapter or CH-35589-A - Brake Bleeder Adapter .
  33. Remove the CH-44894-A - Brake Bleeder Adapter or CH-35589-A - Brake Bleeder Adapter from the brake master cylinder reservoir.
  34. Fill the brake master cylinder reservoir to the maximum-fill level with GM approved brake fluid from a clean, sealed brake fluid container. Adhesives, Fluids, Lubricants, and Sealers
  35. Inspect the brake system for external leaks. Brake System External Leak Inspection
  36. Run the GDS — Brake Hydraulic Test, if it fails. Automated Brake Bleed
  37. Connect the brake fluid level sensor
  38. Turn the ignition ON, with the engine OFF. Check to see if the brake system warning lamp remains illuminated.
  39. Inspect the brake system for external leaks. Brake System External Leak Inspection
- Note:** DO NOT allow the vehicle to be driven until it is diagnosed and repaired.
40. If the brake system warning lamp remains illuminated, go to Diagnostic Starting Point - Vehicle.