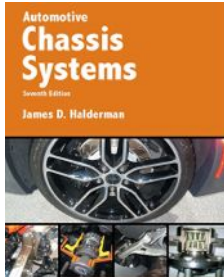


Automotive Chassis Systems



CHAPTER 08

Brake Bleeding Methods and Procedures

ALWAYS LEARNING Automotive Chassis Systems, 7e Copyright © 2017 by Pearson Education, Inc. All Rights Reserved. PEARSON

FIGURE 8.1 Bench bleeding a master cylinder. Always clamp a master cylinder in a vise by the mounting flange to prevent distortion of the cylinder bore.



ALWAYS LEARNING Automotive Chassis Systems, 7e Copyright © 2017 by Pearson Education, Inc. All Rights Reserved. PEARSON

FIGURE 8.2 Typical bleeder valve from a disc brake caliper. The arrows point to the taper section that does the actual sealing. It is this taper that requires a shock to loosen.



ALWAYS LEARNING Automotive Chassis Systems, 7e Copyright © 2017 by Pearson Education, Inc. All Rights Reserved. PEARSON

FIGURE 8.3 Typical bleeder locations. Note that the combination valve and master cylinder shown do not have bleeder valves; therefore, bleeding is accomplished by loosening the brake line at the outlet ports.

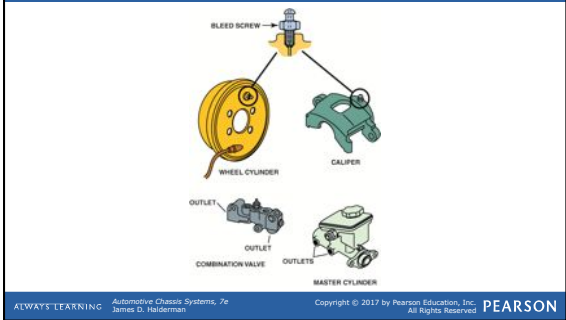


FIGURE 8.4 Using an air punch next to the bleeder valve to help "break the taper" on the bleeder valve.



FIGURE 8.5 Most vehicle manufacturers recommend starting the brake bleeding process at the rear wheel farthest from the master cylinder.

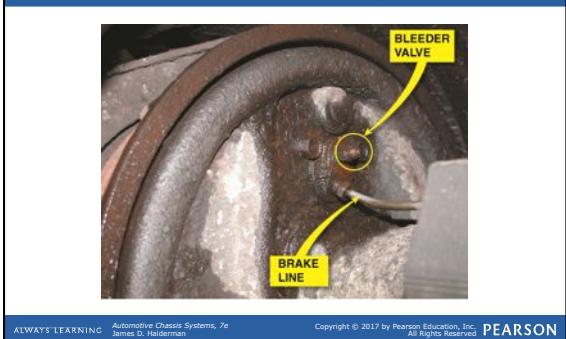


FIGURE 8.6 Bleeding brakes using clear plastic tubing makes it easy to see air bubbles.



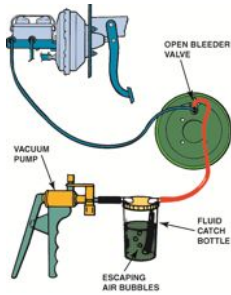
ALWAYS LEARNING Automotive Chassis Systems, 7e James D. Halderman Copyright © 2017 by Pearson Education, Inc. All Rights Reserved. PEARSON

FIGURE 8.7 Using a compressed air-powered vacuum bleeder.



ALWAYS LEARNING Automotive Chassis Systems, 7e James D. Halderman Copyright © 2017 by Pearson Education, Inc. All Rights Reserved. PEARSON

FIGURE 8.8 Vacuum bleeding uses atmospheric pressure to force brake fluid through the hydraulic system.



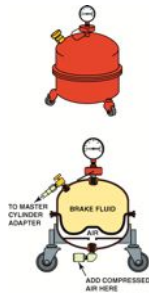
ALWAYS LEARNING Automotive Chassis Systems, 7e James D. Halderman Copyright © 2017 by Pearson Education, Inc. All Rights Reserved. PEARSON

FIGURE 8.9 Gravity bleeding is simply opening the bleeder valve and allowing gravity to force the brake fluid out of the bleeder valve.



ALWAYS LEARNING Automotive Chassis Systems, 7e James D. Halderman Copyright © 2017 by Pearson Education, Inc. All Rights Reserved. PEARSON

FIGURE 8.10 A typical pressure bleeder. The brake fluid inside is pressurized with air pressure in the air chamber.



ALWAYS LEARNING Automotive Chassis Systems, 7e James D. Halderman Copyright © 2017 by Pearson Education, Inc. All Rights Reserved. PEARSON

FIGURE 8.11 Brake fluid under pressure from the power bleeder is applied to the top of the master cylinder.



ALWAYS LEARNING Automotive Chassis Systems, 7e James D. Halderman Copyright © 2017 by Pearson Education, Inc. All Rights Reserved. PEARSON

FIGURE 8.12 Metering valve override tool on a General Motors vehicle.

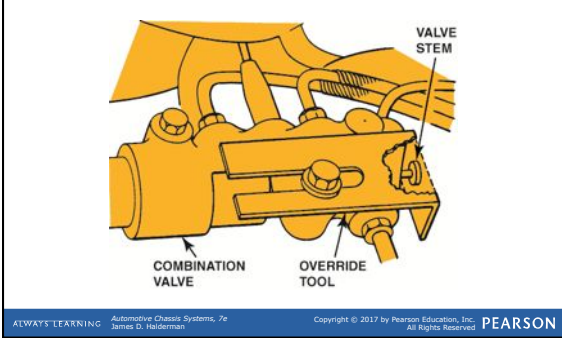


FIGURE 8.13 Pull-out-type metering valves being held out using a special override tool.

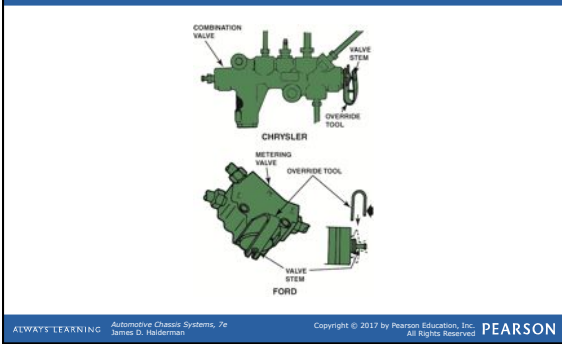
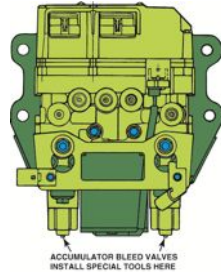


FIGURE 8.14 Special bleed valve tools are often required when bleeding some ABS units such as the Kelsey-Hayes 4WAL system.



FIGURE 8.15 Two bleed valve tools are needed to bleed the Kelsey-Hayes 4WAL system, which attaches to the bleeder valves on the accumulator.



ALWAYS LEARNING Automotive Chassis Systems, 7e James D. Halderman Copyright © 2017 by Pearson Education, Inc. All Rights Reserved. PEARSON

FIGURE 8.16 To perform an automated brake bleed procedure on an antilock brake system, first connect a factory or enhanced scan tool to the data link connector (DLC) located under the dash on this vehicle.



ALWAYS LEARNING Automotive Chassis Systems, 7e James D. Halderman Copyright © 2017 by Pearson Education, Inc. All Rights Reserved. PEARSON

FIGURE 8.17 Access the menu that includes antilock brake system (ABS) functions.



ALWAYS LEARNING Automotive Chassis Systems, 7e James D. Halderman Copyright © 2017 by Pearson Education, Inc. All Rights Reserved. PEARSON

FIGURE 8.18 Scroll through the menus and select automated bleed procedure and follow the on-screen instructions.



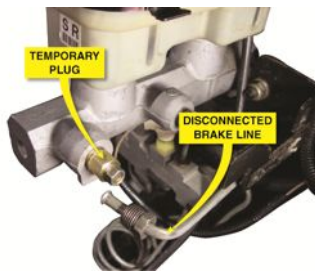
ALWAYS LEARNING Automotive Chassis Systems, 7e James D. Halderman Copyright © 2017 by Pearson Education, Inc. All Rights Reserved. PEARSON

FIGURE 8.19 A turkey baster can be used to remove the old brake fluid from the master cylinder reservoir.



ALWAYS LEARNING Automotive Chassis Systems, 7e James D. Halderman Copyright © 2017 by Pearson Education, Inc. All Rights Reserved. PEARSON

FIGURE 8.20 Using a plug at the outlet of the master cylinder is a common method when diagnosing a low brake pedal complaint.



ALWAYS LEARNING Automotive Chassis Systems, 7e James D. Halderman Copyright © 2017 by Pearson Education, Inc. All Rights Reserved. PEARSON
