

# Brake System Fundamentals

## Chapter 71

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

### Basic Brake System

#### **Matching**

- |   |                         |
|---|-------------------------|
| 1. ___ Metal tubing and rubber hose that transmit pressure to the wheel brake assemblies.           | A. Wheel brake assembly |
| 2. ___ Mechanical system for applying rear brake assemblies   | B. Master cylinder      |
| 3. ___ Foot lever for operating the master cylinder and power booster.                              | C. Emergency brake      |
| 4. ___ Hydraulic-piston pump that develops pressure for the brake system.                           | D. Brake lines          |
| 5. ___ Vacuum or power steering operated device that assists brake pedal application.               | E. Brake pedal assembly |
| 6. ___ Devices that use system pressure to produce friction for slowing or stopping wheel rotation. | F. Brake booster        |

### Drum and Disc Brakes

7. \_\_\_\_\_ houses a hydraulic piston that is forced outward by fluid pressure and is found on drum brakes.
8. \_\_\_\_\_ metal disc that uses friction from the brake pads to stop or slow wheel rotation.
9. \_\_\_\_\_ rubs against the brake shoes to stop or slow wheel rotation.
10. \_\_\_\_\_ assembly that holds the cylinder, piston, and brake pads.
11. \_\_\_\_\_ friction units that are pushed against the rotating brake drum by the action of the wheel cylinder assembly.

12. \_\_\_\_\_ friction members pushed against the rotor by the action of the master cylinder, caliper cylinder, and piston.
13. \_\_\_\_\_ machined hole in the caliper; the piston fits into this cylinder.

### Braking Ratio

14. Typically the front brakes handle \_\_\_%-\_\_\_% of the braking power
- A. 10-20
  - B. 20-30
  - C. 30-40
  - D. 60-70
15. Typically the rear brakes handle \_\_\_%-\_\_\_% of the braking power.
- A. 10-20
  - B. 20-30
  - C. 30-40
  - D. 60-70

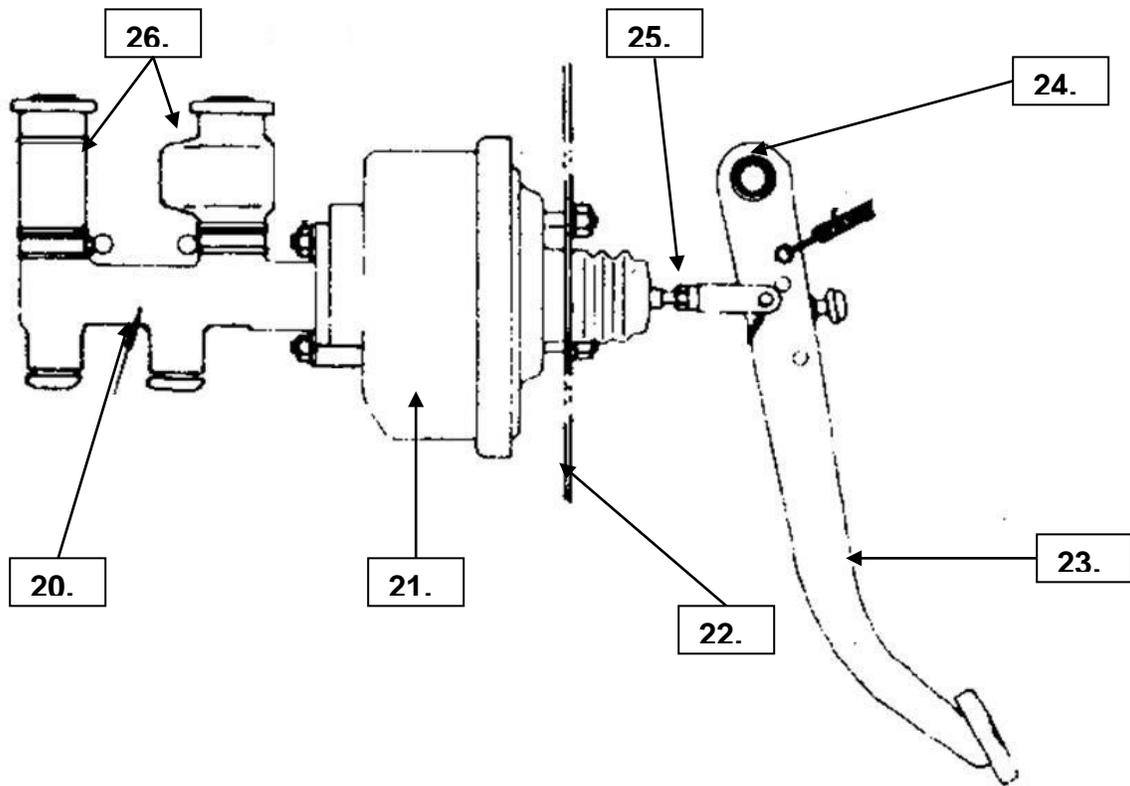
### Brake System Hydraulics

#### *True or False*

16. \_\_\_ When pressure is applied to a closed system, pressure is exerted equally in all directions.
17. \_\_\_ Air in a confined space will not compress.
18. \_\_\_ Air in the brake lines will not compress.

### Brake System Components

19. Which of the following statements about the master cylinder is NOT true?
- A. Keeps the system full of brake fluid.
  - B. Helps equalize the pressure required for braking.
  - C. It is a foot operated pump that pumps brake fluid.
  - D. It maintains a constant high pressure on the brakes.



Using the above diagram and identify the components:

- 20. \_\_\_\_\_
- 21. \_\_\_\_\_
- 22. \_\_\_\_\_
- 23. \_\_\_\_\_
- 24. \_\_\_\_\_
- 25. \_\_\_\_\_
- 26. \_\_\_\_\_

*True or False*

27. \_\_\_ Hydro-boost systems use pressure created by the power steering pump to help stop the vehicle.

*True or False*

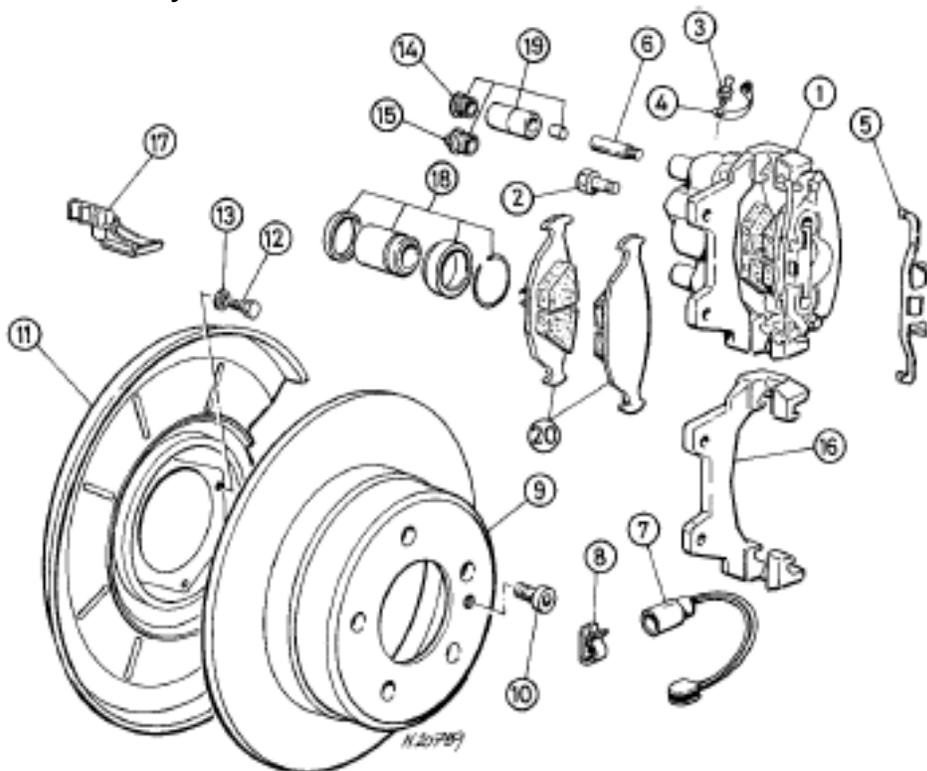
28. \_\_\_ Vacuum brake boosters use engine vacuum to help stop the vehicle.

*True or False*

29. \_\_\_ All brake boost systems are designed to assist the driver to stop the vehicle.

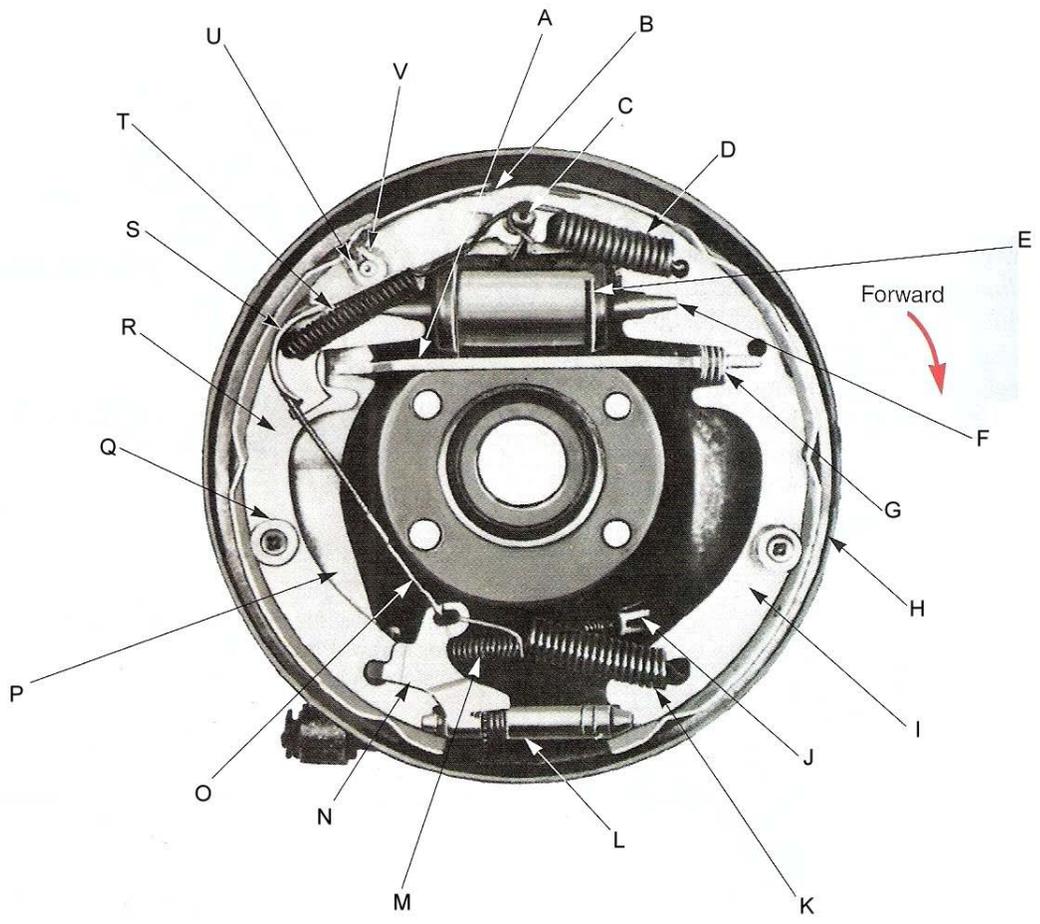
30. All of the following are types of brake fluid used in vehicles except:

- A. DOT 2 Brake Fluid
- B. DOT 3 Brake Fluid
- C. DOT 4 Brake Fluid
- D. DOT 5 Brake Fluid
- E. Hydraulic mineral oil



Using the above diagram and identify the components:

- 31. \_\_\_\_\_ (1)
- 32. \_\_\_\_\_ (9)
- 33. \_\_\_\_\_ (20)
- 34. \_\_\_\_\_ (11)
- 35. \_\_\_\_\_ (18)
- 36. \_\_\_\_\_ (16)
- 37. \_\_\_\_\_ (6)



Using the above diagram and identify the components:

- |                          |                          |
|--------------------------|--------------------------|
| 38. _____ (A in picture) | 49. _____ (L in picture) |
| 39. _____ (B in picture) | 50. _____ (M in picture) |
| 40. _____ (C in picture) | 51. _____ (N in picture) |
| 41. _____ (D in picture) | 52. _____ (O in picture) |
| 42. _____ (E in picture) | 53. _____ (P in picture) |
| 43. _____ (F in picture) | 54. _____ (Q in picture) |
| 44. _____ (G in picture) | 55. _____ (R in picture) |
| 45. _____ (H in picture) | 56. _____ (S in picture) |
| 46. _____ (I in picture) | 57. _____ (T in picture) |
| 47. _____ (J in picture) | 58. _____ (U in picture) |
| 48. _____ (K in picture) | 59. _____ (V in picture) |

Brake Warning Lights

*True or False*

60. \_\_\_ The brake warning light switch warns the driver of a pressure loss in a dual brake system.

*True or False*

61. \_\_\_ The Low-Fluid Warning Light Switch lets the driver know when the brake fluid is full.

Brake System Control Valves

*Matching*

- A. Proportioning Valve
- B. Combination Valve
- C. Metering Valve

62. \_\_\_ is used to equalize braking action in systems with front disc brakes and rear drum brakes.

63. \_\_\_ is used to regulate the pressure going to each wheel cylinder.

64. \_\_\_ is a single unit that functions as a brake warning light switch, a metering valve, and a proportioning valve.

Parking Brakes

*True or False*

65. \_\_\_ Parking brakes provide an electronic means of applying the brakes.

66. \_\_\_ Parking brakes can use either drum or disc brakes.

67. \_\_\_ Parking brakes should be used to help stop the vehicle during normal driving.

68. \_\_\_ Parking brakes need periodic bleeding to work properly.

69. \_\_\_ Parking brakes need periodic inspection and adjustment.