Brake System Fundamentals

Chapter 71

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