Brake System Diagnosis and Repair

Chapter 72 - Part One

Name ___________________ Date ________ Period _____

Brake System Problem Diagnosis

Matching

1. __ Apply too quickly, even with light pedal application.  A. Pulling Brakes
2. __ Slowly moves all the way to the floor when steady pressure is applied to it.  B. Spongy Brake Pedal
3. __ Cause the vehicle to steer to the right or left when the brakes are applied.  C. Brake Vibration
4. __ Travels too far toward the floor before braking.  D. Grabbing Brakes
5. __ Is a very dangerous condition in which the brake pedal moves to the floor with no braking action.  E. Dropping Brake Pedal
6. __ Remain partially applied when the brake pedal is released.  F. Low Brake Pedal
7. __ Indicates either an internal or external leak in the hydraulic system.  G. No Brake Pedal
8. __ Shows up as a chatter, pulsation, or shake in the brake pedal or steering wheel when the brakes are applied.  H. Braking Noise
9. __ Can be grinding sounds, squeaks, rattles, and other abnormal noises.  I. Brake Warning Light On
10. __ Feels like it is connected to a spring or rubber band.  J. Dragging Brakes

Brake System Inspection

Fill in the blanks

11. ___________________________ is measured from the vehicle’s floor to the brake pedal when the brake is applied.
12. _____________________________ is the distance from the vehicle’s floor to the brake pedal when the brake is not applied.

13. _____________________________ is the amount of pedal movement before the beginning of brake application.

**True-False**

14. ___ An important part of a brake inspection includes checking the condition and level of the brake fluid.

15. ___ Transmission fluid can be used in place of most brake fluids.

16. ___ Brake fluid should be kept at least 1-1/2 inches from the top of the fluid reservoir.

17. ___ You should always check for leaks if the brake fluid is low.

18. ___ Air in the brake lines is a normal occurrence.

**Brake System Problems**
### Fill in the Blanks
(USING THE PICTURE ABOVE)

<table>
<thead>
<tr>
<th>Name of Brake Part</th>
<th>Possible Problems with Part</th>
<th>Types of Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(From picture above)</strong></td>
<td>(there may be more than one for each part)</td>
<td></td>
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<tr>
<td>19 A.</td>
<td></td>
<td>Leaking</td>
</tr>
<tr>
<td>20 B.</td>
<td></td>
<td>Warped</td>
</tr>
<tr>
<td>21 C.</td>
<td></td>
<td>Cracking</td>
</tr>
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<td>22 D.</td>
<td></td>
<td>Low</td>
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<tr>
<td>23 E.</td>
<td></td>
<td>Mis-adjusted</td>
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<tr>
<td>24 F.</td>
<td></td>
<td>Worn</td>
</tr>
<tr>
<td>25 G.</td>
<td></td>
<td>Scored</td>
</tr>
<tr>
<td>26 H.</td>
<td></td>
<td>Spongy</td>
</tr>
<tr>
<td>27 I.</td>
<td></td>
<td>Restricted</td>
</tr>
<tr>
<td>28 J.</td>
<td></td>
<td>Clogged</td>
</tr>
<tr>
<td>29 K.</td>
<td></td>
<td>Rusted</td>
</tr>
<tr>
<td>30 L.</td>
<td></td>
<td>In-Operative</td>
</tr>
<tr>
<td>31 M.</td>
<td></td>
<td>Squeaking</td>
</tr>
<tr>
<td>32 N.</td>
<td></td>
<td>Pulsating</td>
</tr>
<tr>
<td>33 O.</td>
<td></td>
<td>Contaminated</td>
</tr>
<tr>
<td>34 P.</td>
<td></td>
<td>Frayed</td>
</tr>
</tbody>
</table>

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### Vacuum Booster Service

**Fill in the Blanks**

How do you test the vacuum booster for correct operation?

List the 4 steps in order:

34. Step 1 __________________________
35. Step 2 __________________________
36. Step 3 __________________________
37. Step 4 __________________________

38. Name two parts that must be removed to replace a vacuum booster:
    _______________
    _______________
Master Cylinder Service

Matching (Using the Datsun 280Z master cylinder exploded view above)

39. 1____ 51. 13____  A. Primary Piston Assembly  M. Filter
40. 2____ 52. 14____  B. Secondary Piston Assembly  N. Stopper Screw
41. 3____ 53. 15____  C. Reservoir Cap  O. Snap Ring
42. 4____ 54. 16____  D. Front Fluid Reservoir  P. Valve Cap
43. 5____ 55. 17____  E. Rear Fluid Reservoir  Q. Bleeder
44. 6____  F. Primary Piston Return Spring
45. 7____  G. Secondary Piston Return Spring
46. 8____  H. Master Cylinder Body
47. 9____  I. Check Valve Assembly
48. 10____  J. Stopper Washer
49. 11____  K. Valve Spring
50. 12____  L. Sealing Washer
Brake System Bleeding

Multiple Choice
51. ___ All of the following are steps in manual brake bleeding except:
   A. Having someone gently press the brake pedal.
   B. Closing the bleeder screw and releasing the brake pedal.
   C. Opening the bleeder screw and releasing the brake pedal.
   D. Filling the master cylinder with fresh brake fluid.

52. ___ When pressure bleeding the brake system, you must fill the pressure bleeder with brake fluid and pressurize the tank to ___ psi.
   A. 150 psi
   B. 32 psi
   C. 15 psi
   D. 2-3 psi

53. ___ All of the following are used as brake fluid except:
   A. DOT 3 Brake Fluid
   B. DOT 4 Brake Fluid
   C. DOT 6 Brake Fluid
   D. Hydraulic Mineral Oil

54. ___ How often should you flush the brake fluid?
   A. Every two years regardless of mileage
   B. Every 15,000 miles
   C. Only if it gets dirty or is contaminated
   D. Once every 150,000 miles or 5 years

True or False
55. ___ You can make your own brake lines.

56. ___ Brake lines are bled to get the air out.

57. ___ You always use double walled steel tubing to make brake lines.

58. ___ Brake fluid should be able to absorb water.

59. ___ You still need to pump the brake pedal when pressure bleeding.

60. ___ Brake fluid can be green in color.