

# Brake System Diagnosis and Repair

## Chapter 72 - Part One

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

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### 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        |
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### 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.

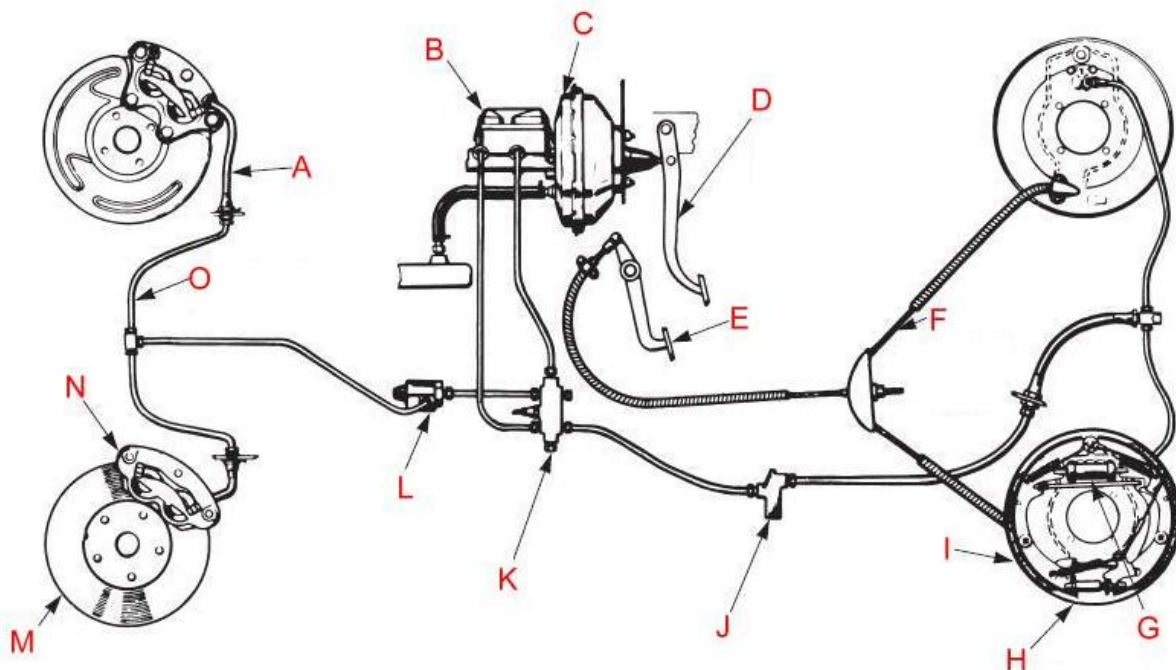
15. \_\_\_ Transmission fluid can be used in place of most brake fluids.

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)

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

**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 \_\_\_\_\_

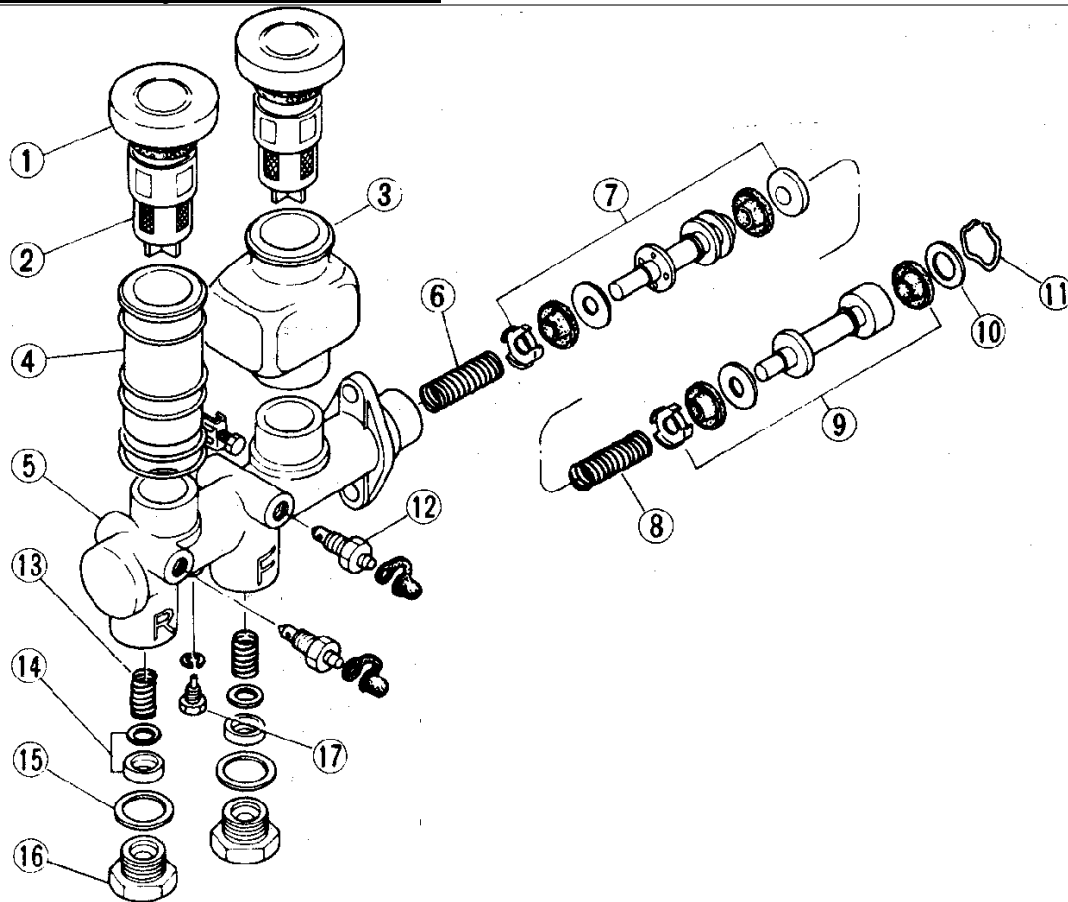
37. Step 4 \_\_\_\_\_

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 _____ |
| 40. 2 _____  | 52. 14 _____ |
| 41. 3 _____  | 53. 15 _____ |
| 42. 4 _____  | 54. 16 _____ |
| 43. 5 _____  | 55. 17 _____ |
| 44. 6 _____  |              |
| 45. 7 _____  |              |
| 46. 8 _____  |              |
| 47. 9 _____  |              |
| 48. 10 _____ |              |
| 49. 11 _____ |              |
| 50. 12 _____ |              |

- |                                   |                  |
|-----------------------------------|------------------|
| A. Primary Piston Assembly        | M. Filter        |
| B. Secondary Piston Assembly      | N. Stopper Screw |
| C. Reservoir Cap                  | O. Snap Ring     |
| D. Front Fluid Reservoir          | P. Valve Cap     |
| E. Rear Fluid Reservoir           | Q. Bleeder       |
| F. Primary Piston Return Spring   |                  |
| G. Secondary Piston Return Spring |                  |
| H. Master Cylinder Body           |                  |
| I. Check Valve Assembly           |                  |
| J. Stopper Washer                 |                  |
| K. Valve Spring                   |                  |
| L. Sealing Washer                 |                  |

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## 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.