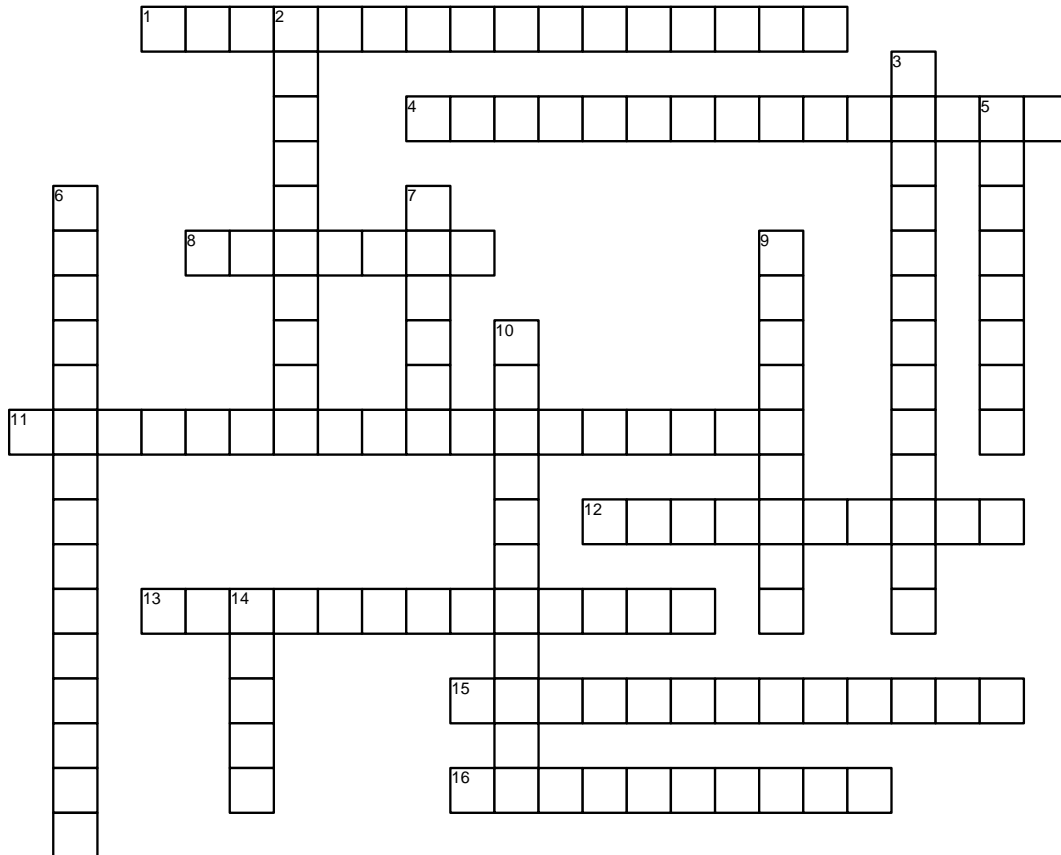


# Hydraulic Valves And Switches

## Chapter 7



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### ACROSS

- 1 Most vehicle manufacturers combine the function of a proportioning valve with one or more other valves into one unit called a \_\_\_\_\_.
- 4 Many master cylinders, especially systems that are diagonal split, usually use a \_\_\_\_\_ sensor or switch in the master cylinder reservoir.
- 8 If the button is steel, then \_\_\_\_\_.
- 11 A \_\_\_\_\_ improves brake balance during hard stops by limiting hydraulic pressure to the rear brakes.
- 12 Before proportioning action will begin, brake system hydraulic pressure must reach a minimum level called the \_\_\_\_\_.
- 13 A \_\_\_\_\_ valve has been used on some drum brake systems to keep a slight amount of pressure, about 5 to 12 PSI, on the entire

hydraulic system for drum brakes.

- 15 A \_\_\_\_\_ is used on all front-disc, rear-drum-brake-equipped vehicles.
- 16 Most new vehicles use the \_\_\_\_\_ position sensor or switch as an input to the body computer for brake lights, ABS input signal, and ESC.

### DOWN

- 2 The job of the \_\_\_\_\_ switch is to turn on the brake lights at the back of the vehicle when the brakes are applied.
- 3 Many vehicles use a proportioning valve that varies the amount of pressure that can be sent to the rear brakes, depending on the height of the suspension. This type of valve is called a \_\_\_\_\_-\_\_\_\_\_ proportioning valve.
- 5 The residual check valve has been eliminated by equipping the wheel

cylinder internal spring with a sealing cup \_\_\_\_\_ to prevent sealing cup lip collapse.

- 6 \_\_\_\_\_ proportioning in the antilock braking system is accomplished by monitoring front- and rear-wheel speeds, and reducing pressure to the rear brakes as needed using the ABS solenoids when there is a difference in wheel deceleration rates.
- 7 If the button is rubber coated, then you \_\_\_\_\_.
- 9 A metering valve consists of a piston controlled by a strong spring and a \_\_\_\_\_ controlled by a weak spring.
- 10 Often referred to as \_\_\_\_\_ proportioning (DRP), this system removes the need for a mechanical proportioning valve.
- 14 Brake engineers refer to the ratio of front to rear brake pressure proportioning as the \_\_\_\_\_.