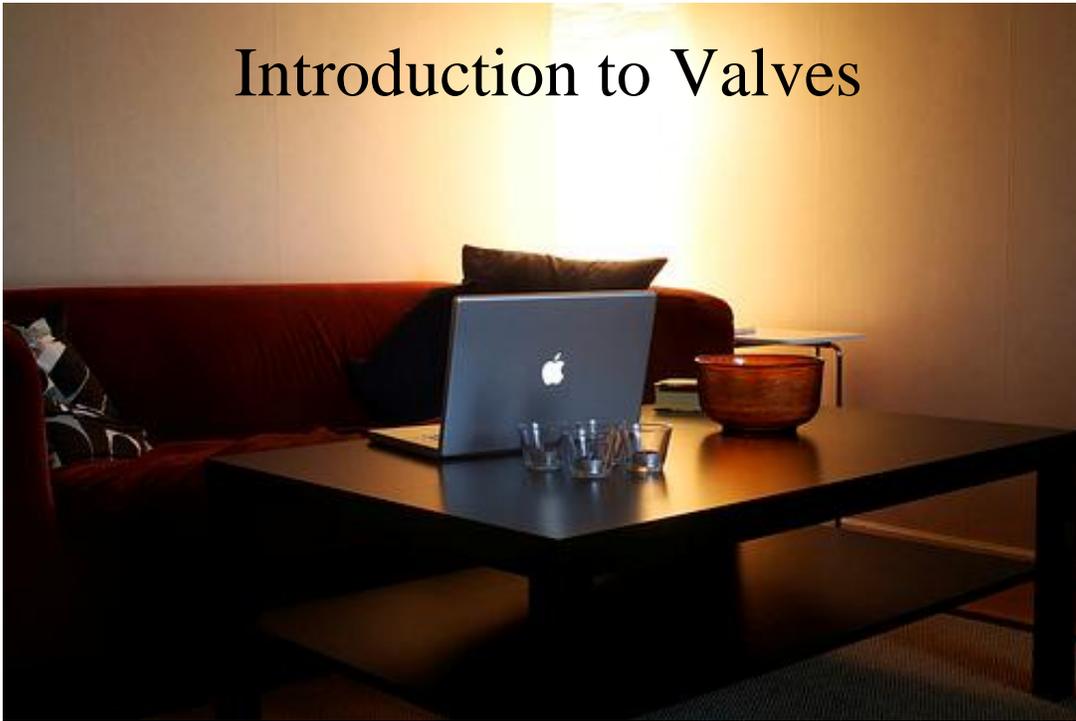


# Introduction to Valves



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# Introduction to Valves

By

Jonathan Russell, BEng Hons

PDHLibrary Course No 2020053  
5 PDH HOURS

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# **Introduction to Valves**

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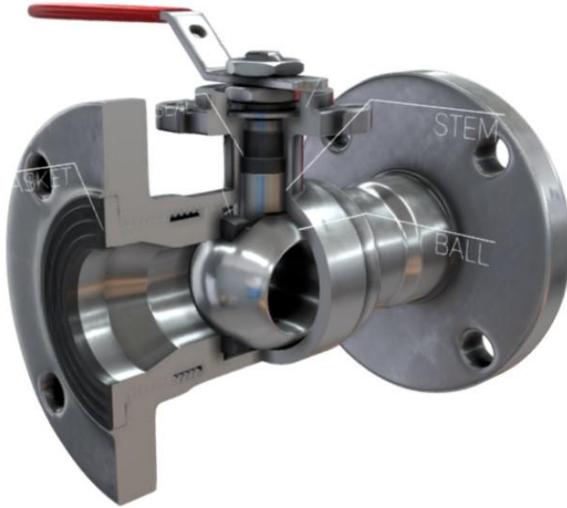
**or**

**352-367-2526**

# Introduction to Valves - Quiz

Updated 3-22-2020

1) Identify this valve:

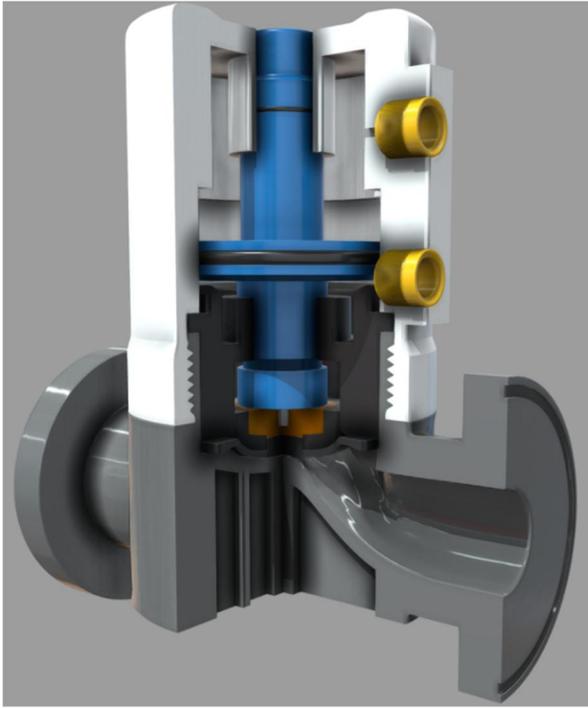


- A) Bell
- B) Ball
- C) Glove
- D) Round

2) Which of these two motions best describes how valves are actuated?

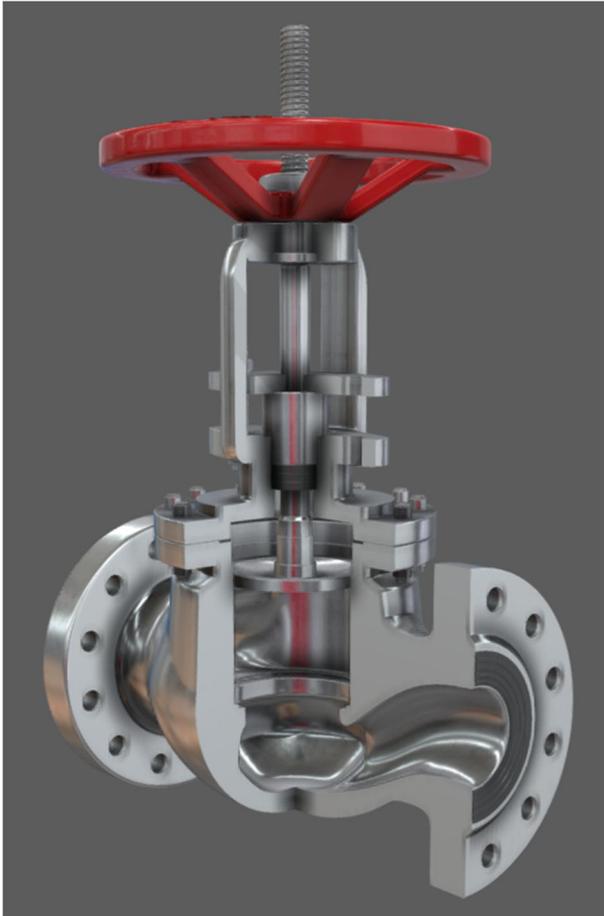
- A) Exponential and rotary.
- B) Linearly and rotary.
- C) Linearly and round.
- D) Oscillating and rotary.

3) Identify this valve:



- A) Diaphragm
- B) Bladder
- C) Ball
- D) Plunger

4) Identify this valve:

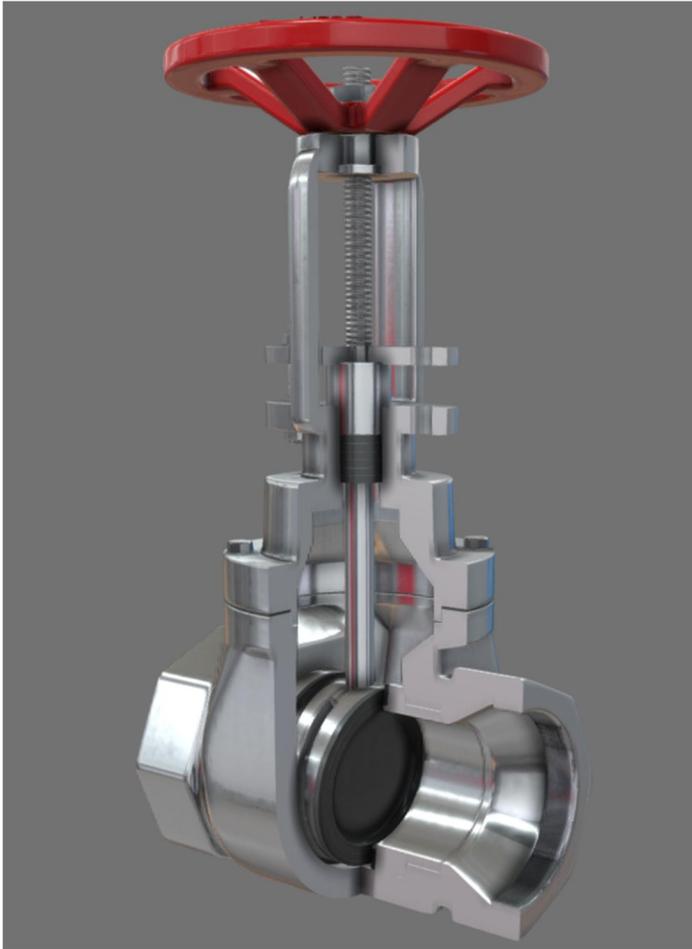


- A) World
- B) Globe
- C) Ball
- D) Gate

5) What is the main purpose of a valve?

- A) Regulate (throttle) flow.
- B) Start and stop flow.
- C) Start, stop and circulate flow.
- D) Start, stop and regulate (throttle) flow.

6) Identify this valve:



- A) Door
- B) Gate
- C) Window
- D) Globe

7) How do valves get their names?

- A) Valves are typically named after the disc design they use.
- B) Valves are typically named after the body design they use.
- C) Valves are typically named after the stem design they use.
- D) Valves are typically named after the actuator design they use.

8) Identify this valve:



- A) Pump
- B) Plug
- C) Plain
- D) Globe

9) Which of these sentences best describes the concept of 'response time'?

- A) The time a valve requires to move from the throttled to fully open, or fully closed position.
- B) The time a valve requires to correctly regulate flow.
- C) The time a valve requires to move from the fully open to fully closed position, or vice versa.
- D) The time a valve requires to begin moving after receiving a signal to move.

10) Identify this valve:



- A) Butterfly
- B) Bird
- C) Ball
- D) Globe

11) Which of these is not a main valve component?

- A) Stem
- B) Disc
- C) Body
- D) Arm

12) The term “throttling” refers to:

- A) A valve operating with a high level of vibration.
- B) Regulation of fluid flow by partially closing/opening of the valve.

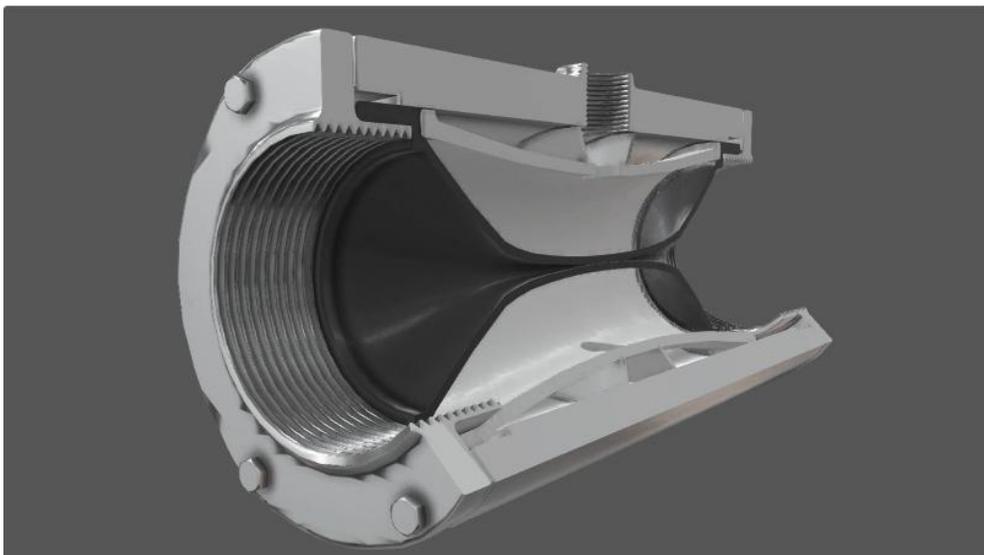
13) Which of the following IS a type of valve actuator?

- A) Hydraulic actuator.
- B) Pneumatic actuator.
- C) Electric actuator.
- D) All these options.

14) Concerning globe valves, which of the following statements is NOT true?

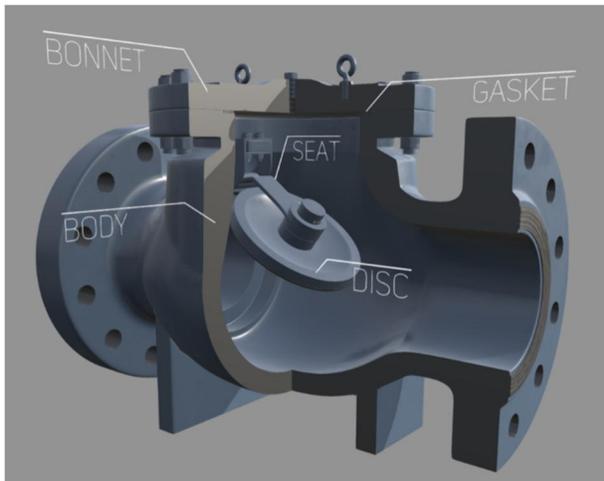
- A) There is good sealing between the seat and disk because the valve disk is positioned at a right angle to the valve seat.
- B) Globe valves are often installed with the system pressure on the underside of the valve seat. This reduces the sealing arrangement's exposure to system pressure and thus increases its useful working life.
- C) Large globe valves require more power to operate and can be noisy when used for high pressure applications.
- D) Globe valves are lighter and more compact than all other valve types.

15) Pinch valves are inexpensive and have a simple design (see image). Concerning pinch valves, which of the following statements is NOT true?



- A) Pinch valves cannot be used to regulate flow.
- B) There is a very low pressure drop when a pinch valve is fully open.
- C) Pinch valves are well suited for handling fluids that contain a large amount of suspended solids.
- D) Pinch valves are well suited for applications where corrosive and contaminated liquids are present in the system.

16) Select the statement that best describes the valve shown in the image.



- A) Swing check valves are designed to prevent flow reversal. Any reversal in flow will close the valve. Closure is accomplished using a counterweight mechanism, backpressure, or by a spring.
- B) Plug valves are rotary motion valves used to start and stop flow. The name is derived from the shape of the disk which resembles a plug.
- C) Piston check valves allow flow in only one direction and belong to the check (non-return) valve group. Closure is accomplished with a piston.

17) Relief and safety valves prevent equipment damage by relieving system overpressure. Which of the statements shown best describes a relief valve's operation?

- A) A relief valve gradually opens as the system pressure increases above a defined setpoint. The valve only opens enough to relieve the overpressure condition.
- B) A relief valve opens fully as soon as the setpoint pressure is reached. It remains fully open until the pressure drops below the reset pressure.

18) Relief and safety valves prevent equipment damage by relieving system overpressure. Can you identify the valve shown in the image?



- A) Safety valve.
- B) Relief valve.

19) Relief and safety valves prevent equipment damage by relieving system overpressure. Select the statement that best describes a safety valve's function:

- A) A safety valve gradually opens as the system pressure increases above a defined setpoint. The valve only opens enough to relieve the system overpressure condition.
- B) A safety valve opens fully as soon as the setpoint pressure is reached. It remains fully open until the pressure drops below the reset pressure.

20) With reference to solenoid valves, which of the following statements is NOT true?

- A) Solenoid valves are electromechanically operated valves.
- B) Solenoid valves are well suited for regulating flow.
- C) An electromagnet will actuate the valve when electrical current is applied.
- D) A spring will actuate the valve when electrical current is no longer present.

21) Which option best describes the 'length of travel':

- A) The distance a fluid travels when passing from the inlet to the outlet side of the valve.
- B) The distance a valve disk travels when moving from the fully open to fully closed position (or vice versa).
- C) The distance a valve travels from the factory to the point of use.
- D) The distance the valve handle rotates on a rotary valve (the circumference of the handle's arc is calculated then multiplied by a constant of 0.25).

22) Concerning butterfly valves, which of the following statements is NOT true?

- A) Butterfly valves are well suited for start, stop and regulating of fluid flow.
- B) Butterfly valves offer a saving in weight, size and cost, compared to many other types of valve.
- C) Butterfly valves are well suited for handling slurries and liquids with a large amount of suspended solids.
- D) Butterfly valves have a high pressure drop and tend to form gas pockets.

23) Gate valves are classified as 'rising stem' or 'non-rising stem'. Which valve design is shown in the image? *Tip: the valve is currently in the open position.*

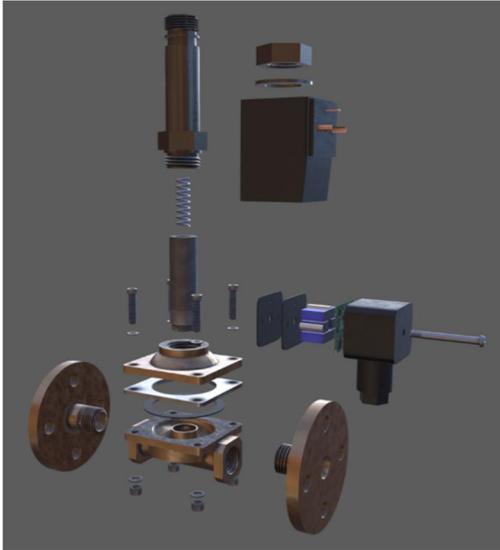


- A) Non-rising.
- B) Rising.

24) Which of these components is NOT a component of a pinch valve?

- A) Sleeve.
- B) Cartridge.
- C) Cartilage.
- D) End plate.

25) What type of valve is shown in the image?



- A) Gate
- B) Ball
- C) Piston
- D) Solenoid

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