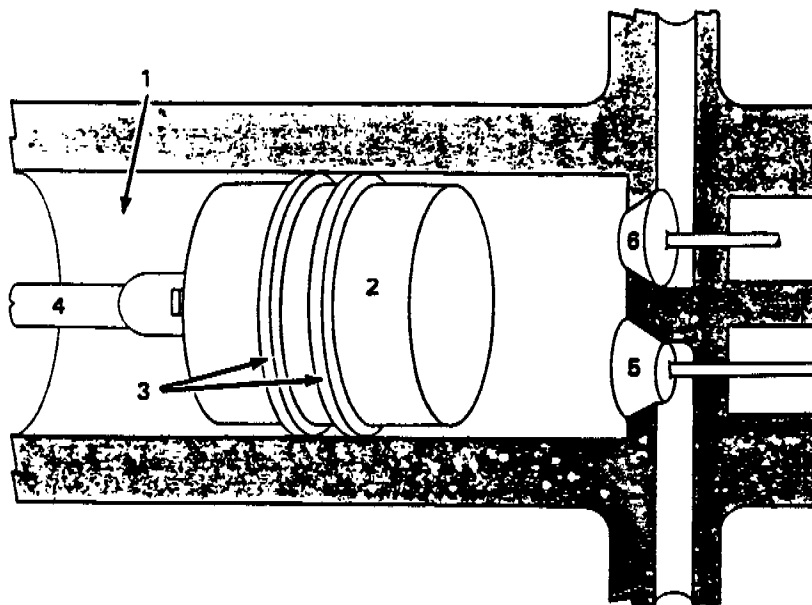


PUMPS 2

SECTION 2.1

QUESTIONS

- 2.1-1. Piston pumps are a type of (reciprocating, rotary) positive displacement pump.
- 2.1-2. True or False. In a single-acting pump, liquid is admitted on one stroke and discharged on a second stroke.
- 2.1-3. The following simplified illustration represents a single-stroke piston pump. Identify its parts by writing the correct number in each blank.
- a. 4 Connecting rod
 - b. 2 Piston
 - c. 1 Cylinder
 - d. 3 Piston rings
 - e. 5 Suction valve
 - f. 6 Discharge valve.



PUMPS 2

Section 2.1 (cont'd)

Questions

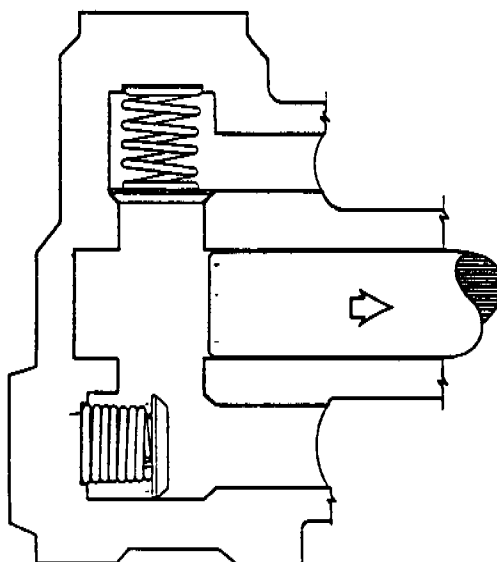
- 2.1-4. True or False. A double-acting simplex piston pump uses two pistons to increase the amount of liquid that the pump is able to move.
- 2.1-5. (a) (Single-acting, Double-acting) piston pumps provide a smoother discharge of liquid than (b) (single-acting, double-acting) piston pumps.

PUMPS 2

Section 2.2

Questions

- 2.2-1. The Plunger that is used in some types of reciprocating pumps looks a lot like a piston, but it is usually long and smooth.
- 2.2-2. The following is an illustration of part of a plunger-type pump. In the illustration the (suction, discharge) valve is open.



- 2.2-3. True or False. The amount of liquid that is discharged from a plunger pump can be controlled in many cases by adjusting a mechanical linkage called a stroke adjustment.
- 2.2-4. True or False. Diaphragm pumps can use mechanical means, air pressure, or hydraulic pressure to cause the diaphragm to flex.

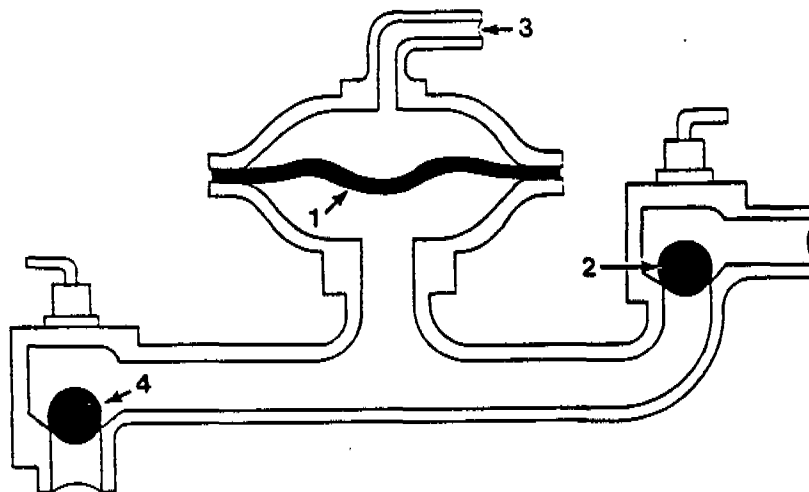
PUMPS 2

Section 2.2 (cont'd)

Questions

2.2-5. The following illustration represents a diaphragm pump and associated components. Identify the indicated components by writing the correct number in each blank.

- a. 3 Compressed air inlet and exhaust
- b. 2 Discharge valve
- c. 1 Diaphragm
- d. 4 Suction valve



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PUMPS 2

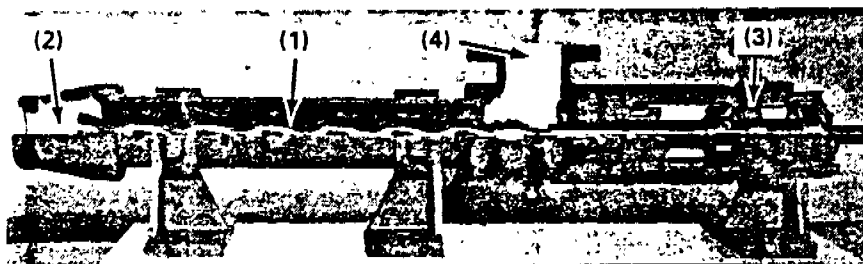
Section 2.3

Questions

2.3-1. Screw pumps and gear pumps are both examples of _____ pumps.
(reciprocating, rotary)

2.3-2. Identify the indicated components of the progressing cavity screw pump shown below. Write the correct number in each blank.

- a. 4 Suction
- b. 1 Screw
- c. 3 Bearing
- d. 2 Discharge



2.3-3. In a typical two-screw pump, the screw that is connected to a driver is called the (a) _____
(idler, power) screw, while the other screw is called the (b) _____ screw.
(idler, power)

2.3-4. True or False. As the gears of an external gear pump rotate, liquid is trapped in the spaces between the gear teeth and the pump casing.

PUMPS 2

Section 2.3 (cont'd)

Questions

2.3-5. Circle the correct answer.
In a typical internal gear pump, the _____ gear
rotates inside the _____ gear.

a. Spacer, idler

b. Idler, power

☒ c. Power, idler

d. Rotor, spacer

2.3-6. What is the purpose of a pressure relief device in a
positive displacement pump?

IF THE DISCHARGE IS BLOCKED SOMEHOW
THE RELIEF PROTECTS THE PUMP

PUMPS 2

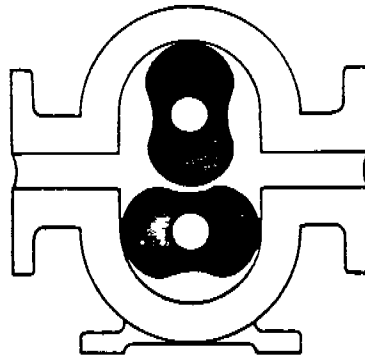
Section 2.4

Questions

2.4-1. True or False. Lobe pumps are similar to gear pumps because they have rotating parts that mesh together.

2.4-2. Circle the correct answer.
The pump illustrated below is a _____ pump.

- a. Progressing cavity
- b. Lobe
- c. Sliding vane
- d. Flexible vane



2.4-3. True or False. Vane pumps use a sweeping motion to move liquid through the pump.

2.4-4. The advantage of using a flexible vane pump is that the vanes bend to form a seal with the CASING, allowing the pump to be used in vacuum applications.

2.4-5. In a tubing pump, ROLLERS are used to force liquid through the tubing and out of the pump.

PUMPS 2

Section 2.5

Questions

- 2.5-1. True or False. Paths for liquid flow into and out of a pump are provided by opening and closing the appropriate valves.
- 2.5-2. The steam end of a duplex, double-acting piston pump is brought up to operating temperature (slowly, quickly) to help avoid breaks and cracks.
- 2.5-3. True or False. The condensate that collects in an idle duplex double-acting piston pump does not have to be removed before startup.
- 2.5-4. Why is it critical to have the discharge valve of a positive displacement pump open during startup?
SO THE FLUID WILL HAVE SOMEWHERE TO GO
- 2.5-5. What is the last step performed during the shutdown procedure shown in the videotape example?
CLOSE DISCHARGE VALVE

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PUMPS 2

Section 2.6

Questions

2.6-1. True or False. One of the first steps of a typical rotary pump startup procedure is to make sure that the pump has a liquid supply to its suction.

2.6-2. After the appropriate suction valves were opened, what was the next step in the videotape example?

Link up Discharge

2.6-3. AIR that is trapped in the suction line can cause a pump to bind, decreasing its effectiveness in pumping liquid.

2.6-4. Circle the correct answer.
During operation, a rotary pump should be checked for

- a. Abnormal leaks
- b. Excessive heat
- c. Abnormal discharge pressure
- d. All of the above
- e. Only a. and c.

2.6-5. Oil flow from a fuel oil pump can be blocked off by closing valves in the discharge, vent line.

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