U.S.C.G. Merchant Marine Exam

OSV – Assistant Engineer

Q652 General Subjects

(Sample Examination)

Choose the best answer to the following Multiple-Choice Questions:

1. Under what conditions is it permissible to pump machinery space bilges directly overboard without processing by an oily-water separator?

   A. When presented with a flooding emergency
   B. When operating in international waters beyond the 200 mile limit
   C. When, by visual inspection, the bilges appear to be free of oil
   D. When the bilge water holding tank is full

   Correct answer: A

2. Which of the following bilge pumping applications would most likely use a non-automated centrifugal pump under manual supervision?

   A. Machinery space bilges
   B. Shaft alley bilges
   C. Engine room bilges
   D. Dry cargo-hold bilges

   Correct answer: D

3. Which of the following compressors would be used for a dead ship start-up of a ship's service diesel-generator on a motor ship?

   A. Emergency air compressor
   B. Starting air compressor
   C. Topping air compressor
   D. Ship's service air compressor

   Correct answer: A

4. Which of the listed valve types is typically used for the low-pressure stage of a reciprocating air compressor?

   A. Sliding
   B. Rotary
   C. Ring-plate
   D. Strip-type

   Correct answer: D

5. The "tare weight" of a refrigerant storage cylinder refers to what weight?

   A. the weight of an empty cylinder
   B. the maximum weight of the refrigerant allowed
   C. the total weight of a fully charged cylinder
   D. the weight of a cylinder AND its current contents

   Correct answer: A

6. What is the physical state and pressure condition of refrigerant as it enters the condenser of a typical refrigeration system?

   A. high-pressure liquid
   B. low-pressure vapor
   C. high-pressure vapor
   D. low-pressure liquid

   Correct answer: C

7. The carbon seal ring of a refrigeration compressor crankshaft mechanical seal is held in position against the stationary ring face by using what device?

   A. snap ring
   B. woodruff key
   C. spring
   D. thrust washer

   Correct answer: C

8. Capacity control of a centrifugal refrigeration compressor can be accomplished by what means?

   A. varying the speed of the compressor
   B. varying the position discharge bypass valve
   C. varying the position of the prerotation inlet vanes
   D. all of the above

   Correct answer: D

9. Which of the following illustrated thermal expansion valves would be appropriate to use on an evaporator coil with a 2 psi pressure drop, where externally adjustable superheat and a replaceable power element are both desired? Illustration RA-0006

   A. A
   B. B
   C. C
   D. D

   Correct answer: B

10. As shown in figure "B" of the illustrated self-contained recovery unit connection diagrams, what is the recovery method supported by the connection scheme? Illustration RA-0033

    A. direct liquid recovery
    B. direct vapor recovery
    C. liquid recovery/push-pull
    D. vapor recovery/push-pull

    Correct answer: B

11. In a twin-tower desiccant type air dryer using silica gel as an adsorbing agent, what is the procedure for rejuvenating the tower presently on service when the desiccant becomes saturated with moisture?

    A. The towers are shifted, and heat is applied to the off-going tower.
    B. Heat is applied to the tower on service and it remains on service while heating.
    C. The tower on service is refrigerated and it remains on service while cooling.
    D. The towers are shifted, and the off-going tower is refrigerated.

    Correct answer: A

12. Which of the following statements represents the proper criteria to decide when to drain a filter/moisture separator as used in a ship's service air system hose station?

    A. The bowl should be drained before the moisture level reaches the lower baffle.
    B. The bowl should be drained after the bowl completely fills with moisture.
    C. The bowl should be drained daily with no need to check the moisture level.
    D. The bowl should be drained whenever moisture droplets appear in the bowl.

    Correct answer: A

13. Before charging a refrigeration unit, unless quick disconnect fittings are used, the refrigerant charging hoses should be prepared in what way?

    A. they should be flushed with clean refrigerant oil
    B. they should be cleaned with carbon tetrachloride
    C. they should be purged with refrigerant
    D. they should be warmed in an oven

    Correct answer: C

14. Which of the following statements is true concerning the gauge labeled "A" of the illustrated gauge manifold set? Illustration RA-0001

    A. The gauge labeled "A" is a compound gauge and is usually color-coded blue.
    B. The gauge labeled "A" is a standard pressure gauge and is usually color-coded blue.
    C. The gauge labeled "A" is a standard pressure gauge and is usually color-coded red.
    D. The gauge labeled "A" is a compound gauge and is usually color-coded red.

    Correct answer: A

15. As shown in figure "A" of the illustrated block diagram of a central operating system configured for direct digital control, what does the input system block "ANALOG A/D" represent? Illustration EL-0095

    A. It receives digital outputs from the binary device sensors and conditions these as digital signals for CPU processing.
    B. It receives digital outputs from the binary device sensors and converts these to analog signals for CPU processing.
    C. It receives analog outputs from the analog device sensors and conditions these as analog signals for CPU processing.
    D. It receives analog outputs from the analog device sensors and converts these to digital signals for CPU processing.

    Correct answer: D

16. As shown in figure "B" in the illustrated block diagram of a central operating system configured for supervisory control, what is the function of the block "ANALOG (A-D MUX)"? Illustration EL-0094

    A. A high-speed solid-state switching device called a multiplexer capable of scanning a large number of analog sensors in a short period of time and converting these signals to digital values for processing by the CPU.
    B. A high-speed solid-state switching device called a multiplexer capable of scanning a large number of digital sensors in a short period of time and converting these signals to analog values for processing by the CPU.
    C. A low-speed solid-state switching device called a multiplexer capable of scanning a small number of analog sensors in a long period of time and converting these signals to digital values for processing by the CPU.
    D. A low-speed solid-state switching device called a multiplexer capable of scanning a small number of digital sensors in a long period of time and converting these signals to analog values for processing by the CPU.

    Correct answer: A

17. As shown in figure "A" of the illustrated block diagram of a central operating system configured for direct digital control, what does the output system block "DIGITAL CONTACT" represent? Illustration EL-0095

    A. It receives digital outputs from the binary device sensors and conditions these as digital signals for CPU processing.
    B. It receives digital outputs from the binary device sensors and converts these to analog signals for CPU processing.
    C. It receives analog outputs from the analog device sensors and conditions these as analog signals for CPU processing.
    D. It receives analog outputs from the analog device sensors and converts these to digital signals for CPU processing.

    Correct answer: A

18. Which of the following liquid level sensors would be most suitable for measuring the liquid level in a pressure vessel, such as a water-tube boiler steam drum?

    A. Capacitance probe
    B. Differential pressure sensor
    C. Static pressure sensor
    D. Displacement float level sensor

    Correct answer: B

19. In a closed-loop process control system, what term is used to describe the action of measuring the difference between the actual result and the desired result and using that difference to drive the actual result toward the desired result?

    A. Instability
    B. Deadband
    C. Gain
    D. Feedback

    Correct answer: D

20. With respect to shaft bearing load absorption capability in terms of direction, what is meant by an axial load?

    A. An axial load is a load applied parallel to the axis of the shaft.
    B. An axial load is a load applied perpendicular and parallel to the axis of the shaft.
    C. An axial load is a load applied tangent to the circumference of the shaft.
    D. An axial load is a load applied perpendicular to the axis of the shaft.

    Correct answer: A

21. Rolling element bearings may experience fatigue failure after a length of service. What is the first evidence of the beginnings of fatigue failure?

    A. The presence of metallic particles in the lubricant
    B. Discoloration of the races or rolling elements
    C. The presence of small cracks in the races
    D. The presence of small cracks in the rolling elements

    Correct answer: C

22. According to the illustration, which of the following conditions would most likely cause pump "A" to short cycle? Illustration GS-0173

    A. The hydro-pneumatic expansion tank is operating with an insufficient air charge.
    B. The hydro-pneumatic tank is operating with a low water level.
    C. A low water level exists in the potable water storage tank.
    D. Pump "A" wearing rings have excessive clearance.

    Correct answer: A

23. If a heat exchanger is designed to evaporate sea water using diesel engine jacket water as an evaporating medium, what statement is true?

    A. The sea water gains latent heat, and the diesel engine jacket water loses latent heat.
    B. The sea water gains latent heat, and the diesel engine jacket water loses sensible heat.
    C. The sea water loses latent heat, and the diesel engine jacket water gains sensible heat.
    D. The sea water gains sensible heat, and the diesel engine jacket water loses latent heat.

    Correct answer: B

24. If both the shell-and-tube lube oil cooler and shell-and-tube jacket water cooler of a diesel engine are sea water-cooled, what statement is true?

    A. Sea water flows through the tubes of both the lube oil and jacket water coolers.
    B. Sea water flows through the shells of both the lube oil and jacket water coolers.
    C. Sea water flows through the tubes of the lube oil cooler and through the shell of the jacket water cooler.
    D. Sea water flows through the tubes of the jacket water cooler and through the shell of the lube oil cooler.

    Correct answer: A

25. Which term represents the ability of a speed control governor to maintain prime mover speed without hunting?

    A. Promptness
    B. Deadband
    C. Stability
    D. Sensitivity

    Correct answer: C

26. What statement is true concerning the term "isochronous" as it applies to prime mover speed control governors?

    A. Isochronous governors are able to maintain constant prime mover speed regardless of load by employing temporary speed droop.
    B. Isochronous governors are able to maintain constant prime mover load regardless of speed by employing temporary speed droop.
    C. Isochronous governors are able to maintain constant prime mover speed regardless of load by employing permanent speed droop.
    D. Isochronous governors are able to maintain constant prime mover load regardless of speed by employing permanent speed droop.

    Correct answer: A

27. For marine-type shell-and-tube heat exchangers, what is the most common arrangement for baffles?

    A. Disc
    B. Segmental
    C. Solid
    D. Doughnut

    Correct answer: B

28. Which characteristic or condition will have the greatest effect on increasing a hydraulic oil's viscosity?

    A. Pour point
    B. Vacuum
    C. Cloud point
    D. Pressure

    Correct answer: D

29. A flare-type tubing connector is used in the hydraulic hatch cover system and has developed a slight leak. To stop the leak you should _____.

    A. Keep the system in operation and tighten the flare nut
    B. Shut down the power unit and use two wrenches to avoid damaging the tubing when tightening
    C. Stop the system and use only one wrench to tighten the flare nut
    D. Replace both the tubing sections and the fitting

    Correct answer: B

30. Which of the following components listed is shown in the illustration? Illustration GS-0041

    A. Filter
    B. Heat exchanger
    C. Variable displacement pump
    D. All of the above

    Correct answer: A

31. A two-stage hydraulic pump unit is used to _____.

    A. supply two individual flows to the same segments of the system if one of the pump elements were to fail
    B. establish two individual flows to segregated segments of one system
    C. develop the same flow rate across both pump elements with the discharge pressure of the second pump element being substantially higher than that of the first stage
    D. produce twice the flow rate than if only one element were to be used

    Correct answer: C

32. In which lubrication application is a detergent type oil most likely to be used?

    A. Crosshead diesel engine bearing lubricating oil
    B. Air compressor lubricating oil
    C. Steam turbine lubricating oil
    D. Trunk type diesel engine lubricating oil

    Correct answer: D

33. In a forced-feed lubrication system, what statement is true concerning lube oil reservoir/sump residence time?

    A. The higher the oil level, the longer the residence time, and the cooler the oil will be as delivered by the pump.
    B. The higher the oil level, the longer the residence time, and the hotter the oil will be as delivered by the pump.
    C. The higher the oil level, the shorter the residence time, and the hotter the oil will be as delivered by the pump.
    D. The higher the oil level, the shorter the residence time, and the cooler the oil will be as delivered by the pump.

    Correct answer: A

34. Which of the following statements best describes the straining ability of a fine mesh metal lube oil strainer?

    A. A 100 wire mesh screen will prevent passage of smaller particles than a 200 wire mesh screen.
    B. A 200 mesh screen has larger wires than a 100 mesh screen.
    C. A 200 wire mesh screen will prevent passage of smaller particles than a 100 wire mesh screen.
    D. A 200 wire mesh screen and a 100 wire mesh screen both prevent passage of the same size particles, but each allows a different number of particles to pass through.

    Correct answer: C

35. What type of fuel oil as part of an oily-water mixture is most likely to have a density approaching that of water?

    A. Marine diesel oil
    B. Heavy residual fuel oil
    C. Light distillate oil
    D. Distillate/residual fuel oil blends

    Correct answer: B

36. In the illustration, line "C" is a _____. Illustration GS-0006

    A. dimension line
    B. leader line
    C. cutting plane line
    D. phantom line

    Correct answer: A

37. Suppose the illustrated self-contained, internal-pilot, piston-operated temperature control valve is part of the temperature control system for a steam-heated heavy fuel oil service heater for a steam boiler. If there was an increase in demand for fuel by the boiler, what statement correctly represents how the valve would initially respond? Illustration GS-0045

    A. The fuel oil heater fuel outlet temperature would decrease, causing the remote bulb pressure to decrease and the thermostatic diaphragm to flex downward and through lever action, further close the pilot valve.
    B. The fuel oil heater fuel outlet temperature would decrease, causing the remote bulb pressure to decrease and the thermostatic diaphragm to flex upward and through lever action, further open the pilot valve.
    C. The fuel oil heater fuel outlet temperature would increase, causing the remote bulb pressure to increase and the thermostatic diaphragm to flex downward and through lever action, further close the pilot valve.
    D. The fuel oil heater fuel outlet temperature would increase, causing the remote bulb pressure to increase and the thermostatic diaphragm to flex upward and through lever action, further open the pilot valve.

    Correct answer: B

38. Suppose the pilot pressure range is from 3 to 15 psig for the illustrated pneumatically operated diaphragm actuated control valve. Assuming the control valve is trimmed for a linear response and the travel position indicator is calibrated in percentage, what would be the approximate valve position with a 9 psig pilot pressure? Illustration GS-0051

    A. 25% open
    B. 33% open
    C. 50% open
    D. 75% open

    Correct answer: C

39. In the pump shown in the illustration, what is the distance from the bottom of the inlet to the bottom end of the motor shaft? Illustration GS-0011

    A. 45 1/4 inches
    B. 45 5/16 inches
    C. 53 5/8 inches
    D. 57 5/8 inches

    Correct answer: D

40. What type of propeller consists of a flat disc set flush with the under surface of the vessel's hull with a number of vertical, rudder-like blades projecting from it?

    A. Helicoidal propeller
    B. Tandem propeller
    C. Contra-rotating propeller
    D. Cycloidal propeller

    Correct answer: D

41. Concerning steerable internal duct thrusters, what statement is true?

    A. The thrust direction of the steerable internal duct thruster is determined by the direction of rotation of the pump.
    B. The thrust direction of the steerable internal duct thruster is determined by reversing the pitch angle of the pump impeller.
    C. The thrust direction of the steerable internal duct thruster is determined by the orientation of the water discharge vectoring ring.
    D. The thrust direction of the steerable internal duct thruster is determined by the orientation of the pump inlet guide vanes.

    Correct answer: C

42. What is an example of an epicyclic gear?

    A. Planetary gear
    B. Articulated gear
    C. Nested gear
    D. Locked train gear

    Correct answer: A

43. With respect to a "tractor" type azimuthing thruster, what statement is true?

    A. With an azimuthing angle of 0o, the gear unit is directly abaft of the azimuthing thruster's propeller, but the azimuthing thruster's propeller is in the wake of the gear unit.
    B. With an azimuthing angle of 0o, the gear unit is directly abaft of and in the wake of the azimuthing thruster's propeller.
    C. With an azimuthing angle of 0o, the azimuthing thruster's propeller is directly abaft of and in the wake of the gear unit.
    D. With an azimuthing angle of 0o, the azimuthing thruster's propeller is directly abaft of the gear unit, but the gear unit is in the wake of the azimuthing thruster's propeller.

    Correct answer: B

44. Which of the following statements is true regarding mechanical seals?

    A. They may be used in lieu of conventional packing glands for any service other than salt water.
    B. They are not suitable for use on fuel oil transfer pumps.
    C. They are normally lubricated and cooled by the fluid being pumped.
    D. Once placed into service, leakage between the dynamic seal surfaces may be reduced by monthly adjustment of the spring compression.

    Correct answer: C

45. Charring or glazing of the inner circumference of the packing rings in a centrifugal pump is caused by _____.

    A. under-tightening the packing
    B. packing ring rotation
    C. failure to seat the packing rings
    D. insufficient lubrication of the packing

    Correct answer: D

46. When renewing spiral packing in a centrifugal pump stuffing box, after the packing is firmly seated, the packing gland nuts should be _____.

    A. loosened, and then retightened with the pump running under normal conditions
    B. loosened until the gland clears the stuffing box
    C. left in that position
    D. tightened an additional 10% to compress the packing

    Correct answer: A

47. The output volume of a positive fixed displacement pump can be changed only by _____.

    A. moving the slide block and rotor
    B. moving the shaft trunnion block
    C. changing the angle of the tilting plate
    D. changing the speed of the pump

    Correct answer: D

48. In accordance with 33 CFR Subchapter O (Pollution), which type of Marine Sanitation Device (MSD) is used solely for the storage of sewage and flush water at ambient air pressure and temperature?

    A. Type I
    B. Type II
    C. Type III
    D. Type IV

    Correct answer: C

49. In an electro-hydraulic steering system, damage due to rudder shock is prevented by _____.

    A. buffer springs
    B. relief valves
    C. oil flowing through the pumps
    D. dashpots

    Correct answer: B

50. Which of the following statements is true concerning the operation of the device shown in the illustration? Illustration GS-0116

    A. Item "I" moves as the rudder stock rotates.
    B. Item "N" moves as the rudder stock rotates.
    C. Both item "I" and item "N" move as the rudder stock rotates.
    D. Neither item "I" nor item "N" move as the rudder stock rotates.

    Correct answer: B

51. While at normal sea speed the rudder movement stops, but is restored after changing over power units. At the earliest opportunity the faulty power unit is placed in operation with the following results: The main pump discharge/return pressures are equal and there is no rotation of the rotary actuator, regardless of the direction of helm input. Which of the following is the probable cause of the failure? Illustration GS-0123

    A. Solenoid coil No.2 in component "F" has burned out
    B. Stroke control linkage has mechanically failed with "M"
    C. Solenoid coil No.3 in component "F" has burned out
    D. Replenishing circuit relief valve is stuck open

    Correct answer: A

52. What advantage does a 4-pipe hydronic heating/cooling system have over a 2-pipe hydronic heating/cooling system? Illustration GS-0192

    A. A 4-pipe hydronic heating/cooling system can serve twice as many zones as a 2-pipe hydronic heating/cooling system.
    B. A 4-pipe hydronic heating/cooling system allows simultaneous heating and cooling of different zones, whereas a 2-pipe hydronic heating/cooling system does not.
    C. A 4-pipe hydronic heating/cooling system requires one-half the amount of piping as compared to a 2-pipe hydronic heating/cooling system serving the same number of zones.
    D. A 4-pipe hydronic heating/cooling system requires double the amount of piping as compared to a 2-pipe hydronic heating/cooling system serving the same number of zones.

    Correct answer: B

53. What type of centrifugal fan is characterized by the highest operating efficiency?

    A. Flat blade fans
    B. Backward-curved blade fans
    C. Radial blade fans
    D. Forward-curved blade fans

    Correct answer: B

54. Referring to the illustrated single zone HVAC system diagram, what statement is true concerning the damper controls? Illustration RA-0009

    A. The exhaust and outside air dampers are normally closed, and the recirculation damper is normally open, and all three dampers are controlled by a single pilot air signal.
    B. The exhaust and outside air dampers are normally closed, and the recirculation damper is normally open, and each damper is controlled by its own pilot air signal.
    C. The exhaust and outside air dampers are normally open, and the recirculation damper is normally closed, and all three dampers are controlled by a single pilot air signal.
    D. The exhaust and outside air dampers are normally open, and the recirculation damper is normally closed, and each damper is controlled by its own pilot air signal.

    Correct answer: A

55. A metal scribe commonly found on a combination square measuring tool should only be used to _____.

    A. punch gasket holes
    B. mark on metal
    C. clean file teeth
    D. remove packing

    Correct answer: B

56. For the power hacksaw shown in the illustration, how should the teeth point for the blade being installed? Illustration GS-0187

    A. pointing away from the motor end of the machine
    B. pointing toward the motor if using a 4 or 6 tooth blade and away from the motor if using a 10 or 14 tooth blade
    C. pointing either toward or away from the motor end of the machine
    D. pointing toward the motor end of the machine

    Correct answer: D

57. Which of the figures illustrated would be LEAST desirable for use as a set screw? Illustration GS-0080

    A. figure A
    B. figure F
    C. figure G
    D. figure L

    Correct answer: A

58. For a pneumatic transmission system for instrumentation purposes, if a pneumatic temperature indicator has a calibrated scale of -40 to +40oF, what would be the actual measured temperature if the transmitted pneumatic signal pressure to the indicator is 9 psig, assuming the industry standard of 3 to 15 psig is used for instrument air?

    A. -10oF
    B. 0oF
    C. +10oF
    D. +25oF

    Correct answer: B

59. What is used to protect a direct sensing steam pressure gauge from damage from contact with steam?

    A. The installation of a damping needle valve in the entrance to the gauge
    B. The installation of a siphon tube (pigtail) oriented horizontally in the entrance to the gauge
    C. The installation of thermal insulation on the gauge
    D. The installation of a siphon tube (pigtail) oriented vertically in the entrance to the gauge

    Correct answer: D

60. In attempting to start the hydraulic pump drive motor of a horizontal electro-hydraulic anchor windlass, what condition would prevent the electric motor from starting?

    A. Failure to start could be the result of an electrical interlock associated with the hydraulic pump stroke control being in the neutral position.
    B. Failure to start could be the result of an electrical interlock associated with handwheel operated wildcat band brakes being set.
    C. Failure to start could be the result of an electrical interlock associated with the hydraulic pump stroke control being in other than the neutral position.
    D. Failure to start could be the result of an electrical interlock associated with the wildcat clutches being disengaged.

    Correct answer: C

61. You are on a ship with a large slow speed main engine that operates an Unattended Machinery Space. When entering the main machinery space to conduct maintenance or a machinery space round, what should be done?

    A. The first assistant engineer should be telephoned at agreed to intervals.
    B. The chief engineer should be telephoned at agreed to intervals.
    C. The navigational watch officer should be telephoned at agreed to intervals.
    D. The master should be telephoned at agreed to intervals.

    Correct answer: C

62. At appropriate intervals, inspection rounds should be made of the main propulsion plant, auxiliary machinery, and steering spaces. If bilge levels are identified to be high, they should be _____.

    A. pumped overboard through an OWS or to a holding tank
    B. pumped directly overboard
    C. pumped overboard through a filter
    D. any of the above depending on the oil content of the water

    Correct answer: A

63. What statement is true concerning the door interlock devices associated with a winding drum or traction drive passenger elevator onboard ship?

    A. Door interlocks are used to override elevator emergency status in a shipboard emergency when elevators are required to be used.
    B. Door interlocks are used to prevent elevator operation if the doors are still open and only allow elevator operation if the doors are proved closed.
    C. Door interlocks are used to prevent elevator operation in a shipboard emergency when elevators are not to be used.
    D. Door interlocks are used to prevent elevator operation if the doors are still closed and only allow elevator operation if the doors are proved open.

    Correct answer: B

64. Which of the drill sets listed would commonly be referred to as a 'Jobbers Set'?

    A. A set of fractional size drills from 1/2" to 2"
    B. A set of lettered size drills from A to Z
    C. A set of numbered size drills from 1 to 60
    D. A set of fractional size drills from 1/16" to 1/2"

    Correct answer: D

65. Before boring a blind tapered hole, a good shop practice to follow is to _____.

    A. bore a straight hole
    B. drill to the large diameter of the taper
    C. use a tapered reamer
    D. drill to the small diameter of the taper

    Correct answer: D

66. What is the name of an internal passage of watertight construction fitted along the centerline between the double bottoms of some ships, usually from the forepeak to the forward machinery space bulkhead, used to carry pipe work along the length of the ship to the various holds or tanks?

    A. Pipe keel
    B. Vertical keel
    C. Duct keel
    D. Bar keel

    Correct answer: C

67. What statement is true concerning the plating meeting at the gunwales of a ship?

    A. The strakes of side plating nearest to the deck and the deck plating nearest to the side are both termed "stringer plates". These stringer plates meet at the gunwales.
    B. The strakes of side plating nearest to the deck and the deck plating nearest to the side are both termed "sheer strakes". These sheer strakes meet at the gunwales.
    C. The strakes of deck plating nearest to the sides are termed "sheer strakes" and the side plating nearest to the deck are termed "stringer plates". The sheer strakes and stringer plates meet at the gunwales.
    D. The strakes of side plating nearest to the deck are termed "sheer strakes" and the deck plating nearest to the side are termed "stringer plates". The sheer strakes and stringer plates meet at the gunwales.

    Correct answer: D

68. When accomplishing welding repairs using the electric arc welding process, what statement is true concerning the characteristics of a good quality weld when welding a single-V butt joint?

    A. There should be a slight reinforcement or build-up of material on the top surface, and there should be root penetration along the bottom surface.
    B. There should be a slight reinforcement or build-up of material on the top surface, but there should be no root penetration along the bottom surface.
    C. There should be a no reinforcement or build-up of material on the top surface, and there should be no root penetration along the bottom surface.
    D. There should be no reinforcement or build-up of material on the top surface, but there should be root penetration along the bottom surface.

    Correct answer: A

69. A spur gear pump should be operated with the discharge valves _____.

    A. slightly opened
    B. halfway opened
    C. throttled
    D. fully opened

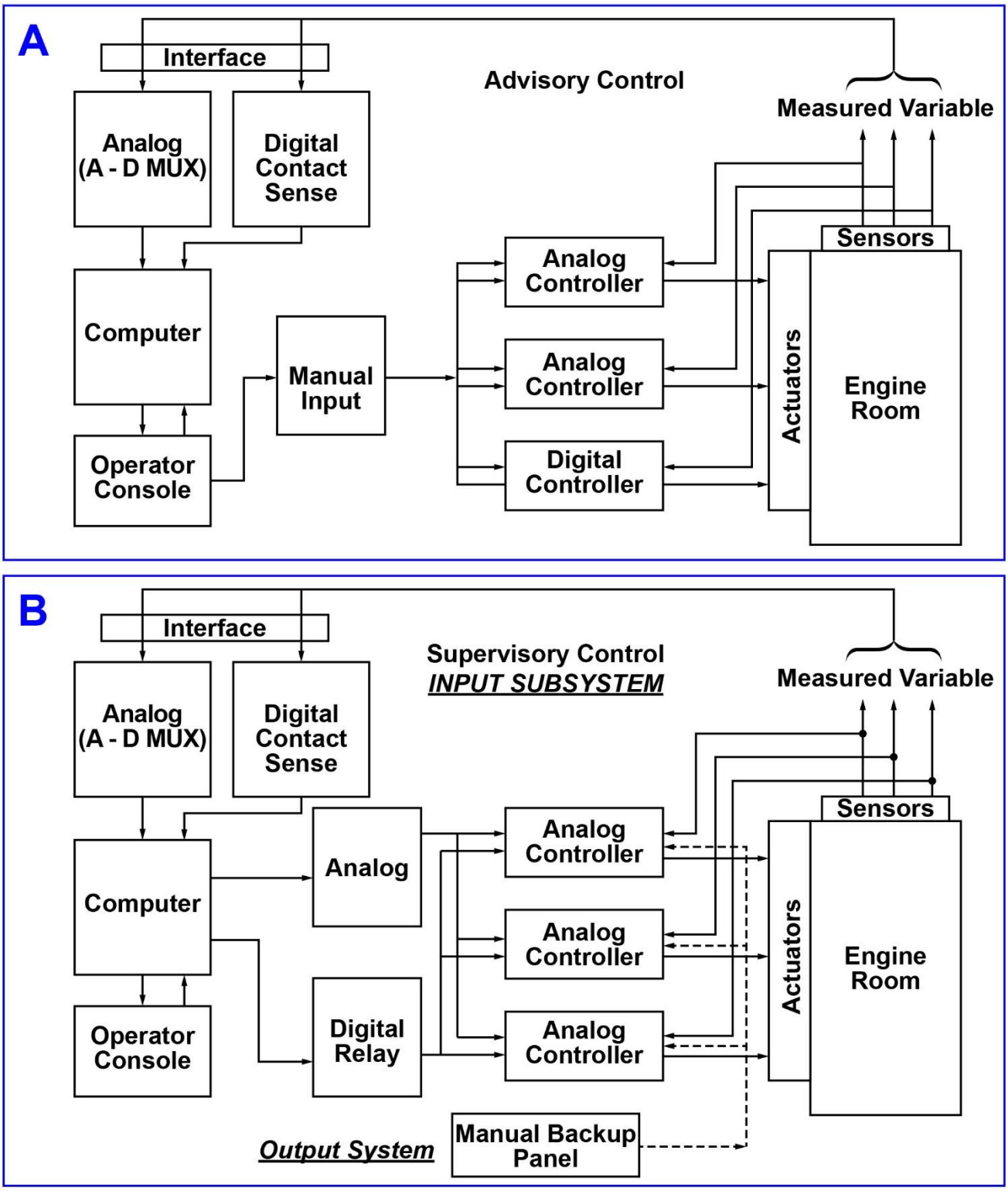
    Correct answer: D

70. Referring to the illustration, note that the solenoid in line "C" is closed. The check valve in line "E" is open. The separator service pump is running. The check valve in line "G" is closed. Valve "B" is closed. Valve "D" is open. What is the operational status of the oily-water separator unit? Illustration GS-0175

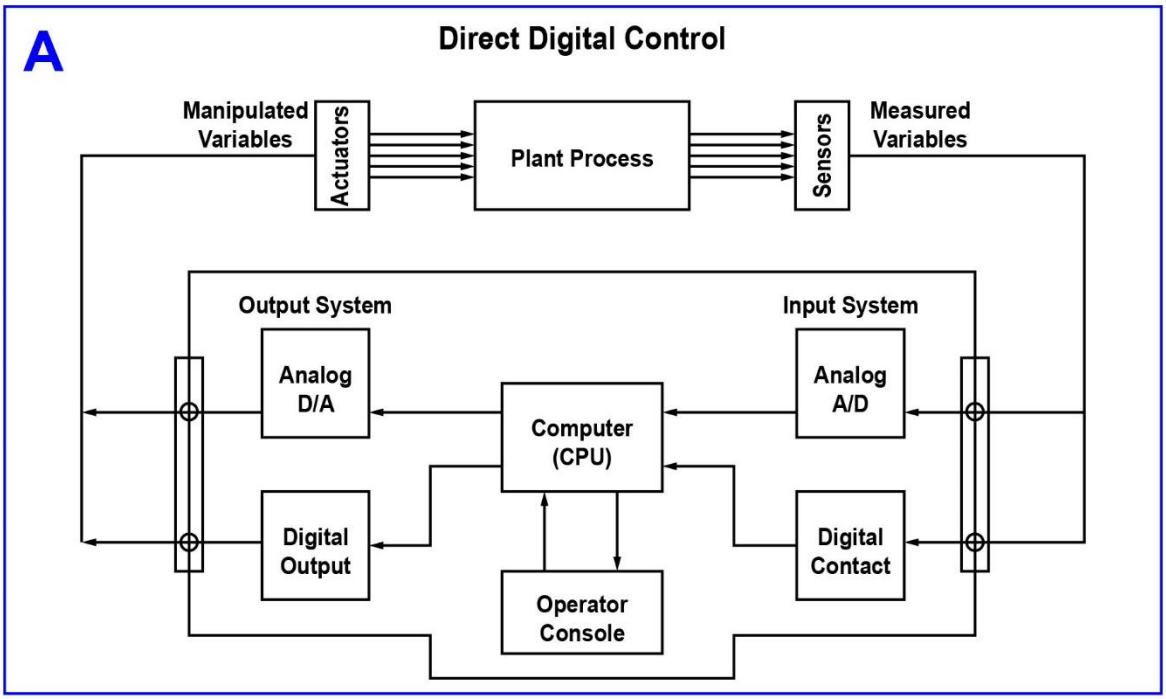
    A. The oily-water separator is in the bilge water separation processing mode with water discharging back to the bilge water holding tank with an oil content greater than 15 ppm.
    B. The oily-water separator is in the bilge water separation processing mode with water discharging overboard with an oil content greater than 15 ppm.
    C. The oily-water separator is in the bilge water separation processing mode with water discharging back to the bilge water holding tank with an oil content less than 15 ppm.
    D. The oily-water separator is in the bilge water separation processing mode with water discharging overboard with an oil content less than 15 ppm.

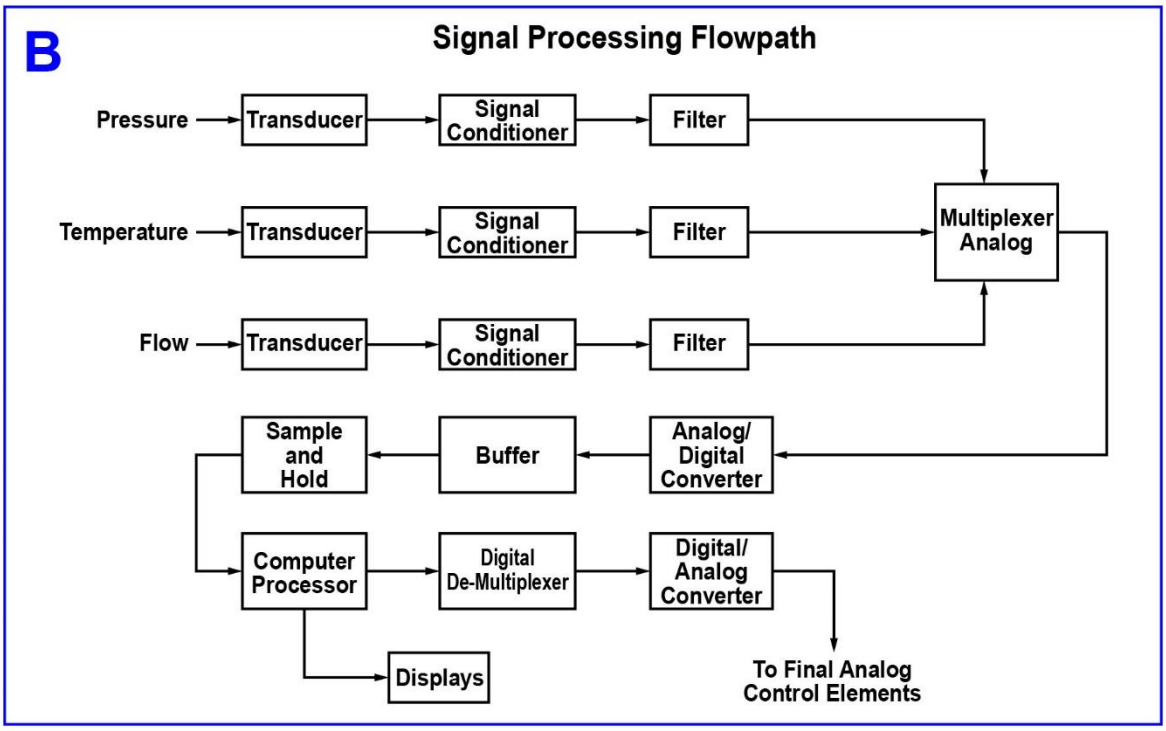
    Correct answer: A

EL-0094

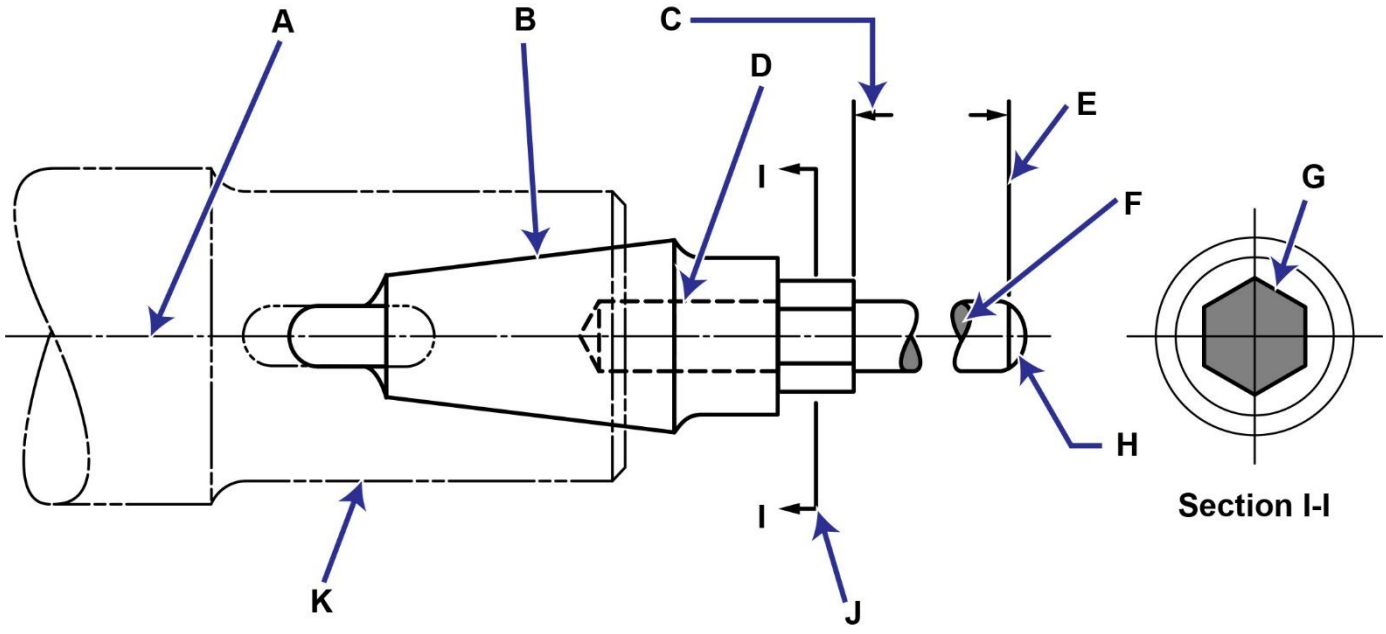


EL-0095

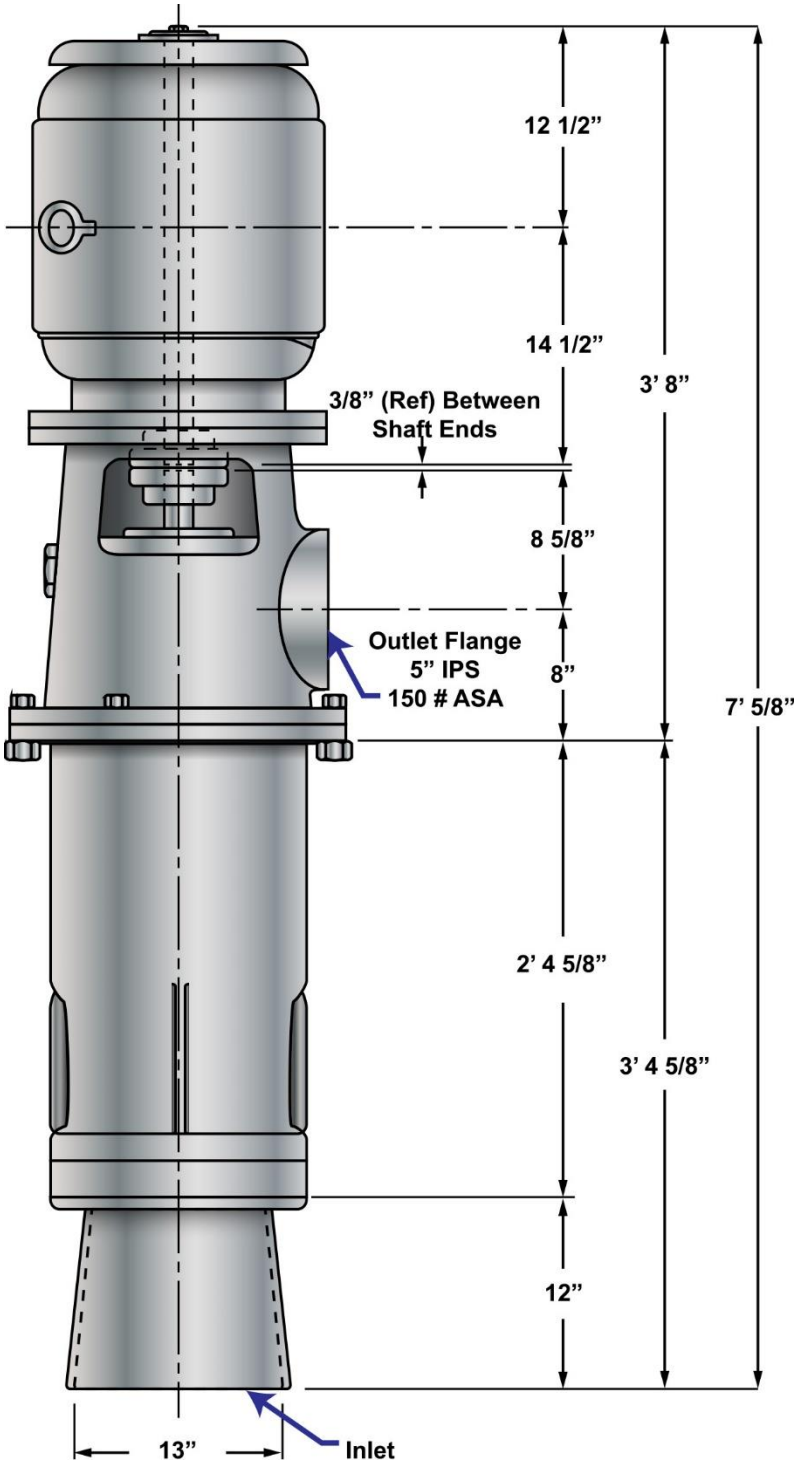




GS-0006



GS-0011



MOTOR CHARACTERISTICS

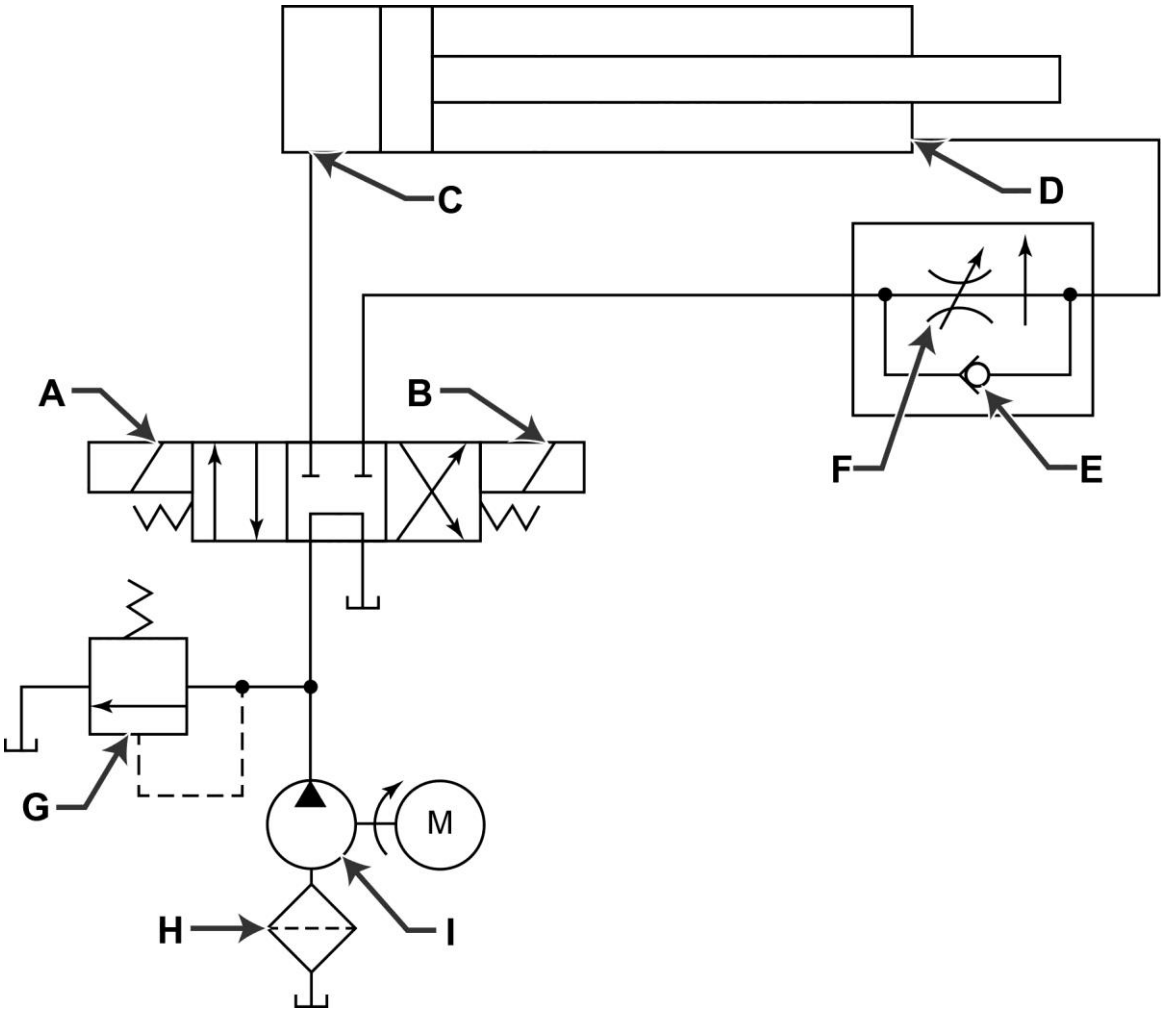
Motor (A. C.)	Electro Dynamic
Rating H. P.	25
Speed R. P. M. (SYN.)	1200
Frame	365 VY
Type	TN
Volts	440
Cycles	60
Phase	3

PUMP CHARACTERISTICS

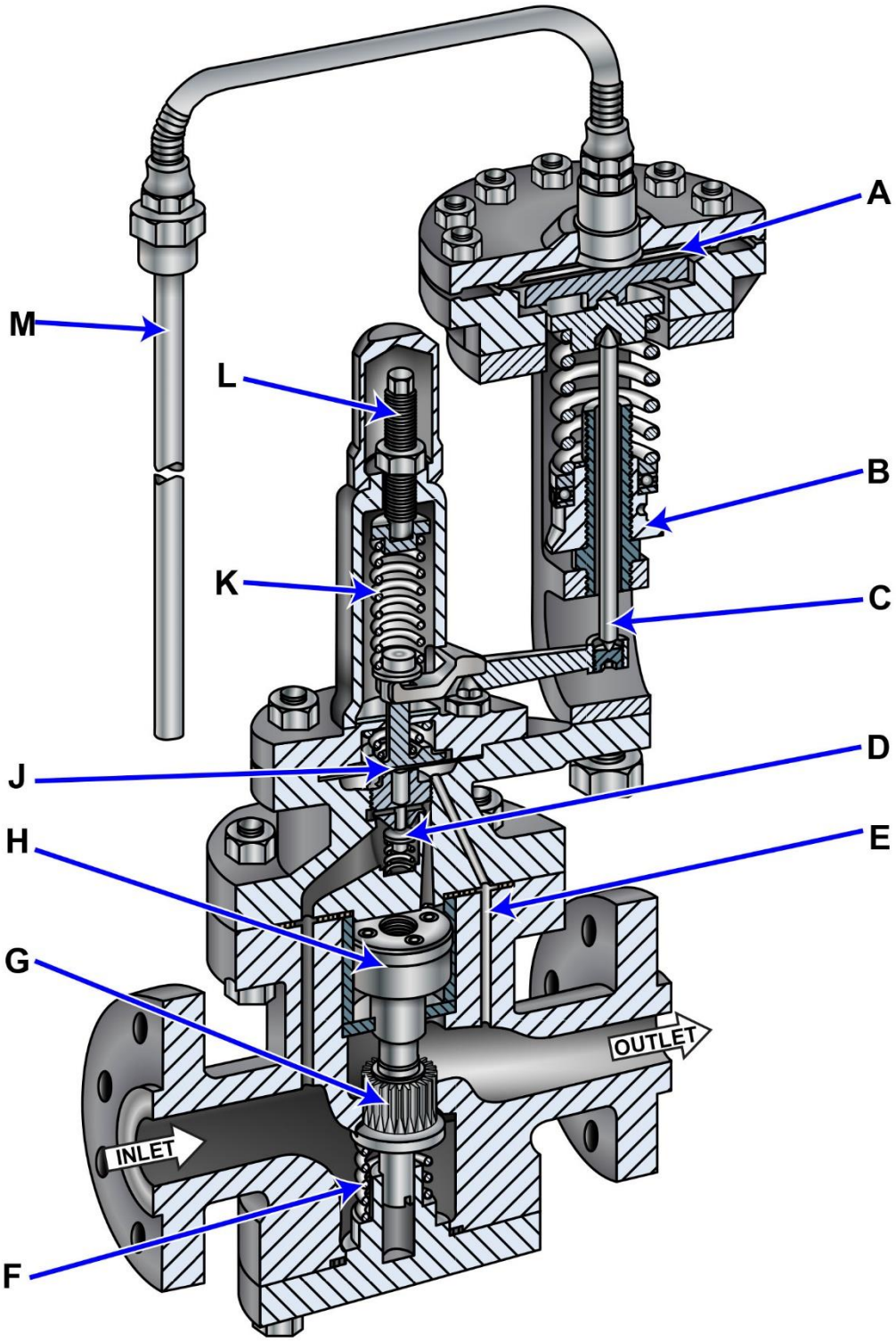
Capacity G. P. M.	400
Speed R. P. M.	1150
Suction Lift "HG	10
B, H, P. @ 1200 SSU-75° F	24.9
Oil viscosity Range, SSU	74-7000
Viscosity Normal SSU @ 140° F	155
Discharge Normal PSIG	55
Fluid Handled, Lube Oil	2190 TEP.
Navy Specification	MIL-L-17331
Oil Temperature Range ° F	40-180

Illustration scale: 1" = 1'

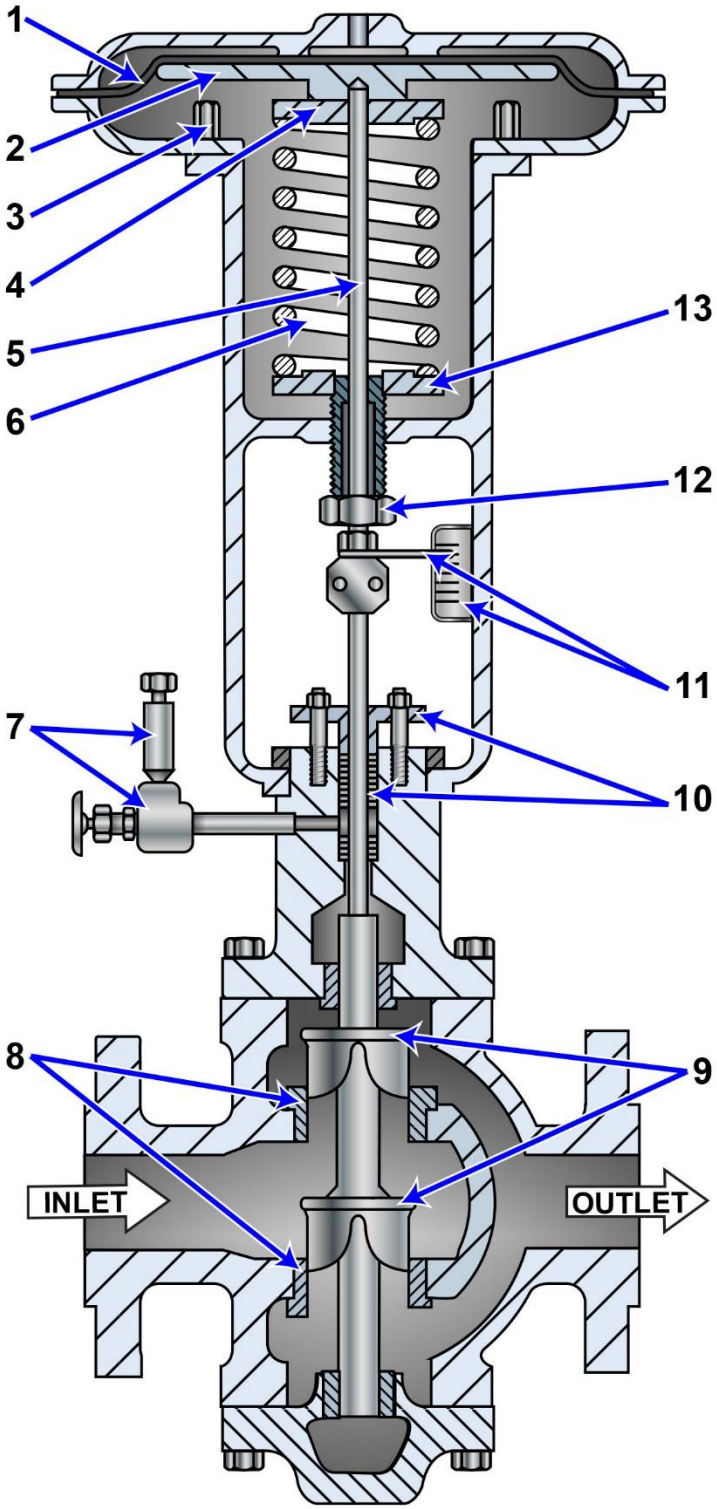
GS-0041



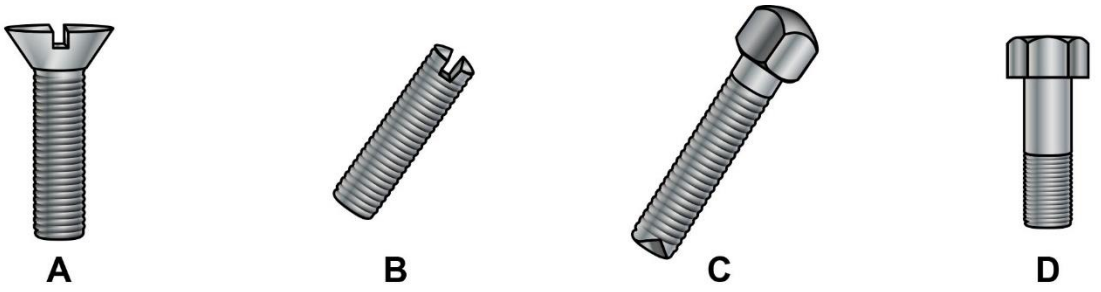
GS-0045

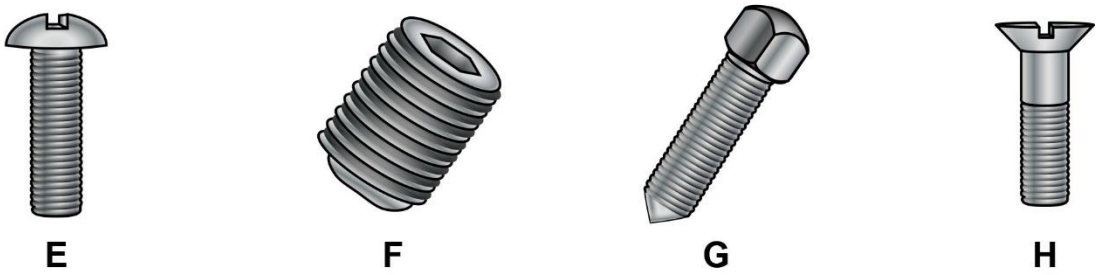


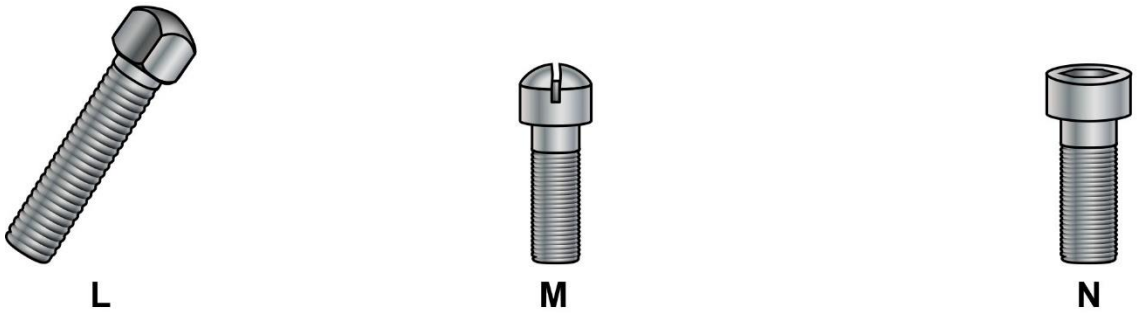
GS-0051



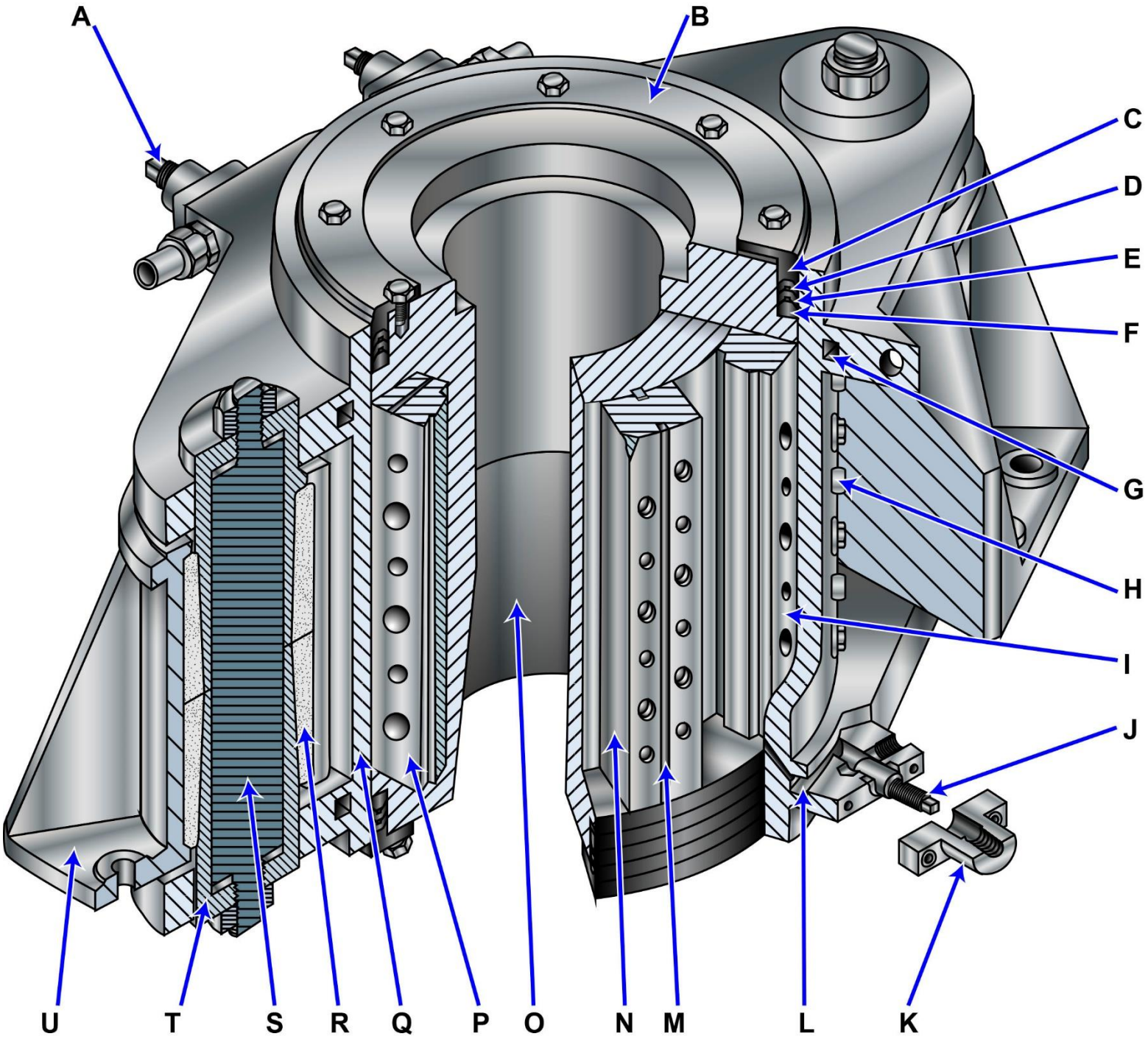
GS-0080



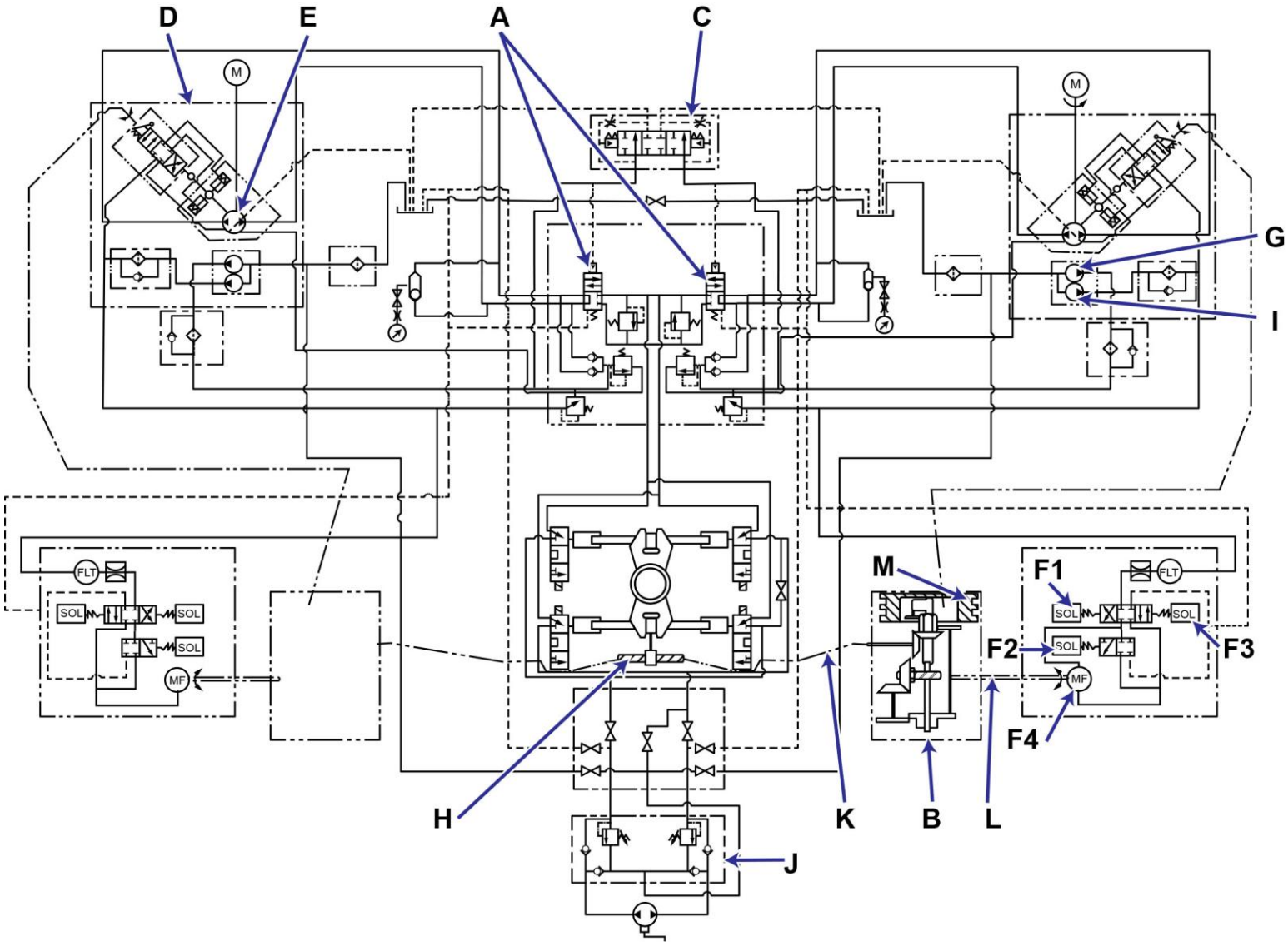




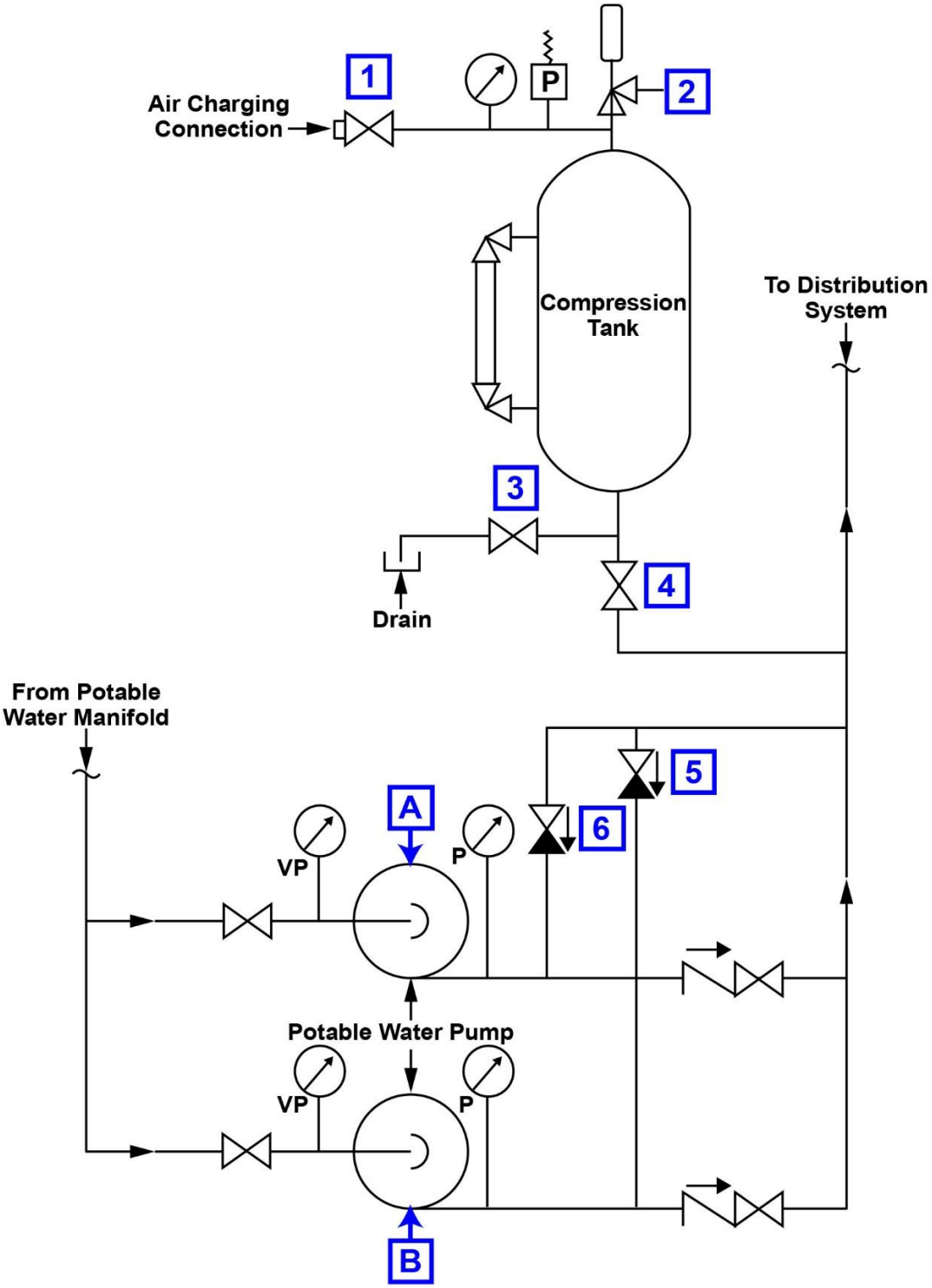
GS-0116



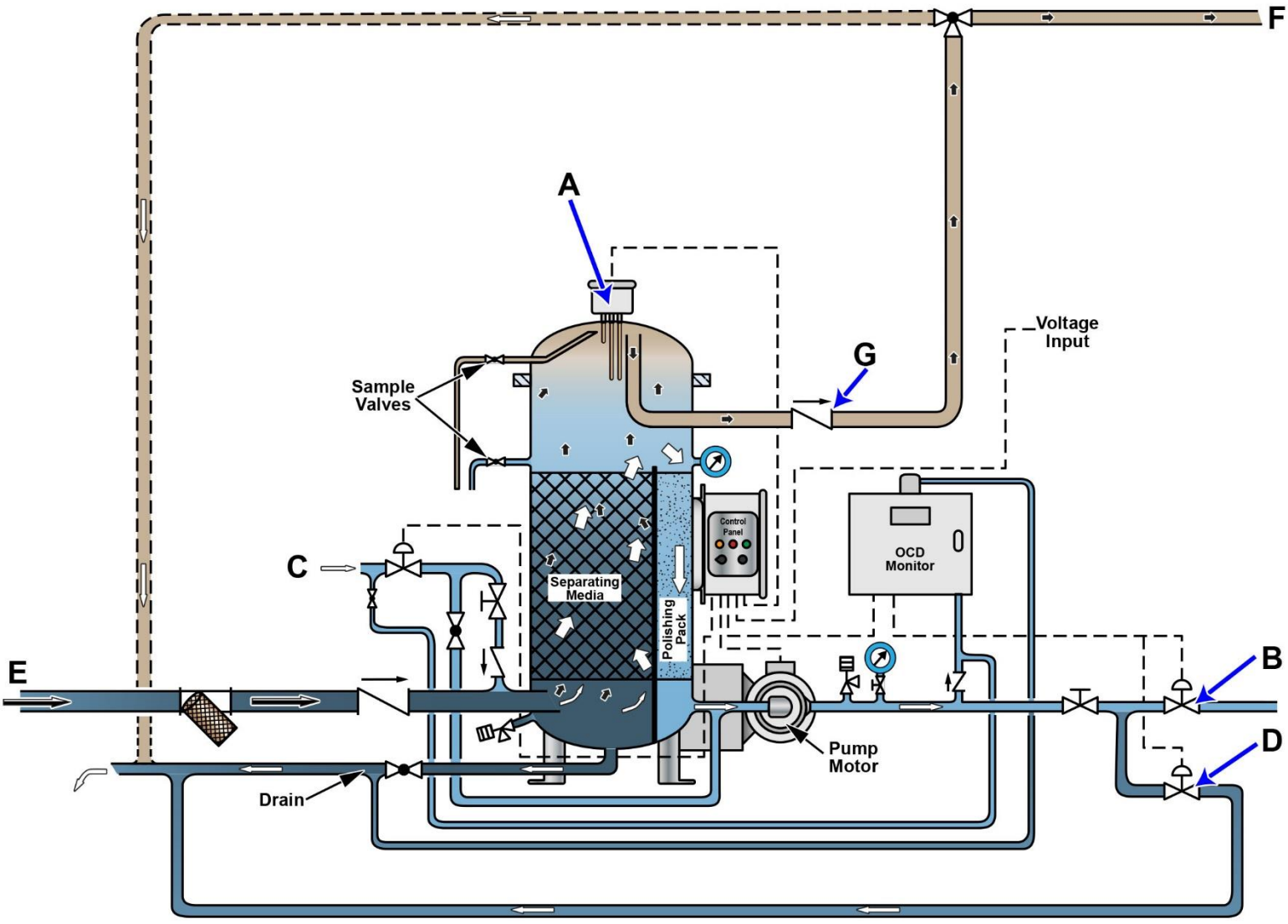
GS-0123



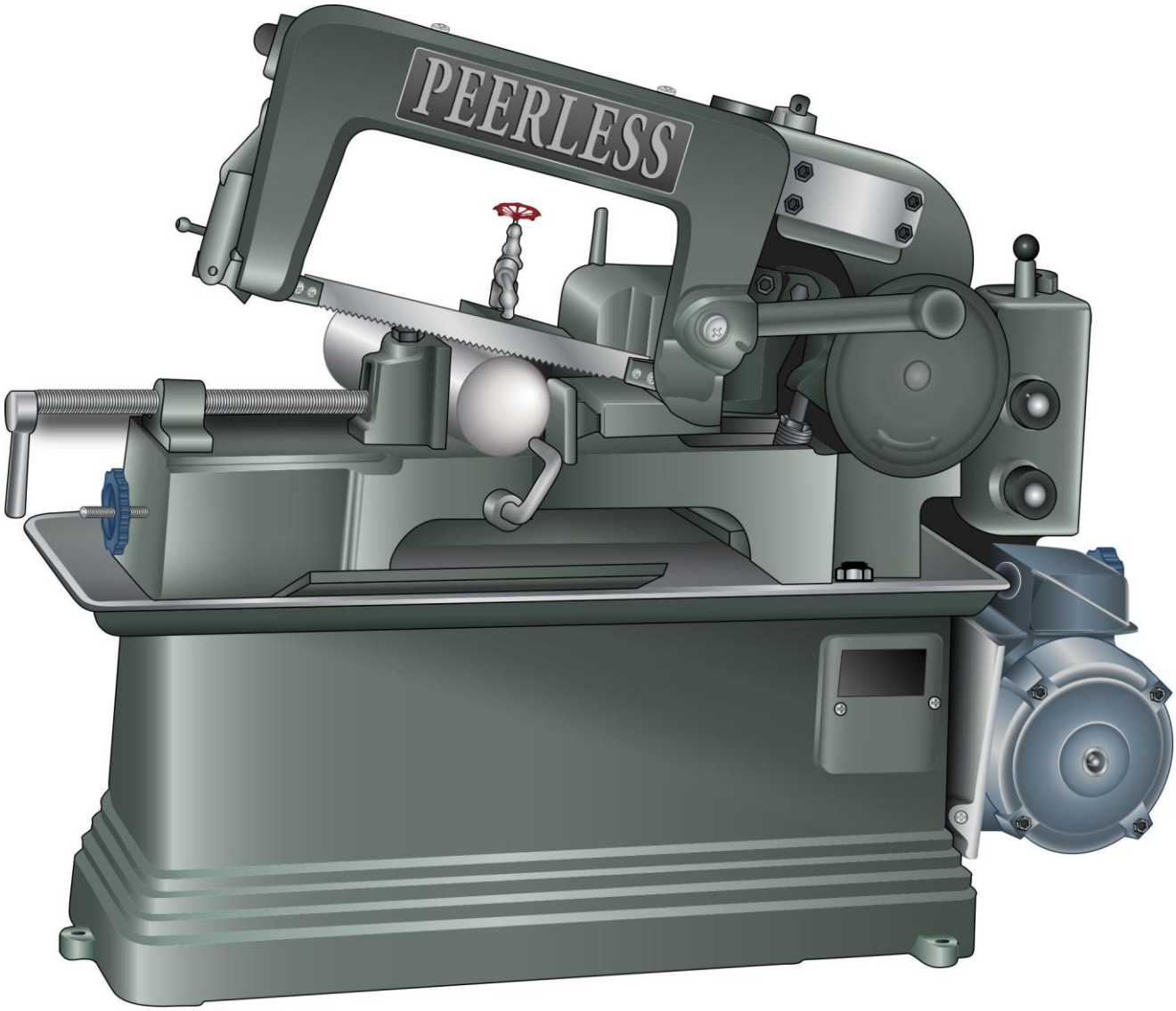
GS-0173



GS-0175

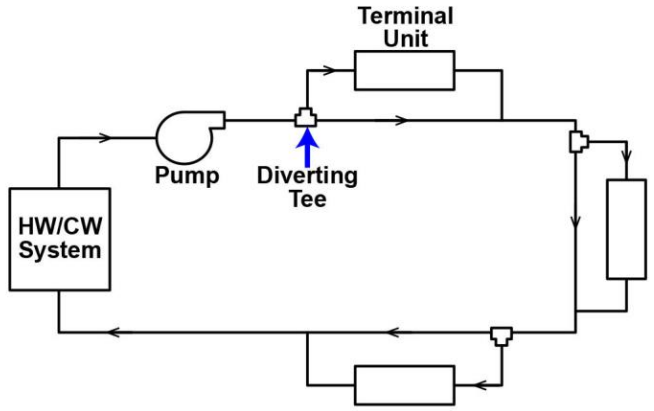


GS-0187

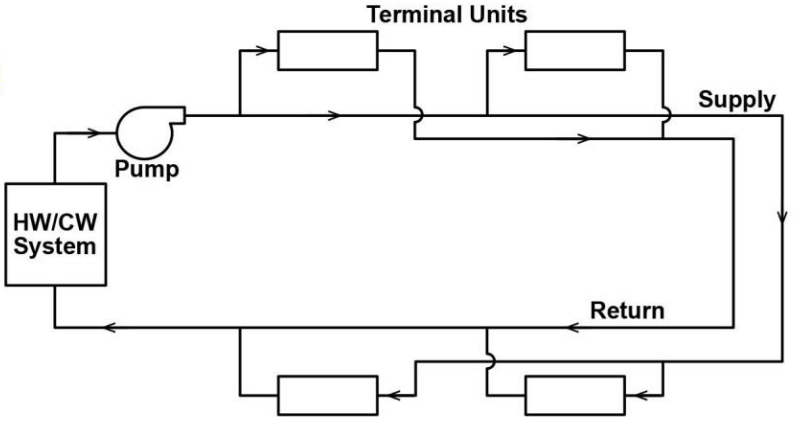


GS-0192

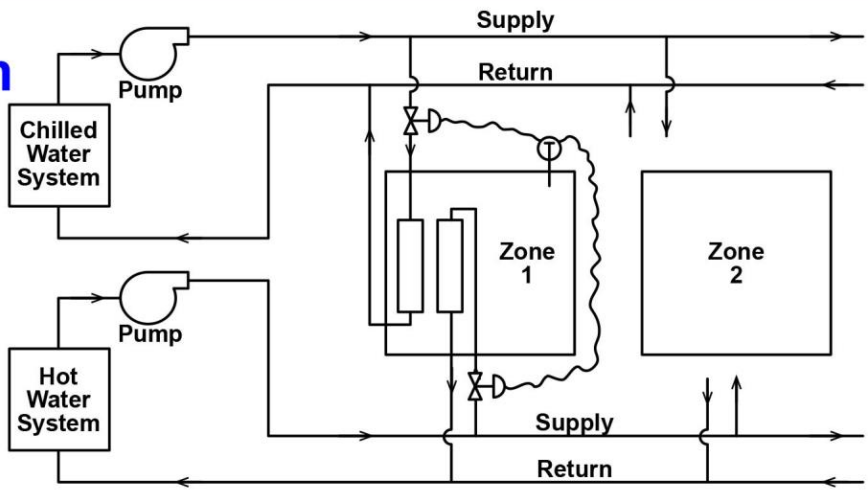
One-Pipe Water System



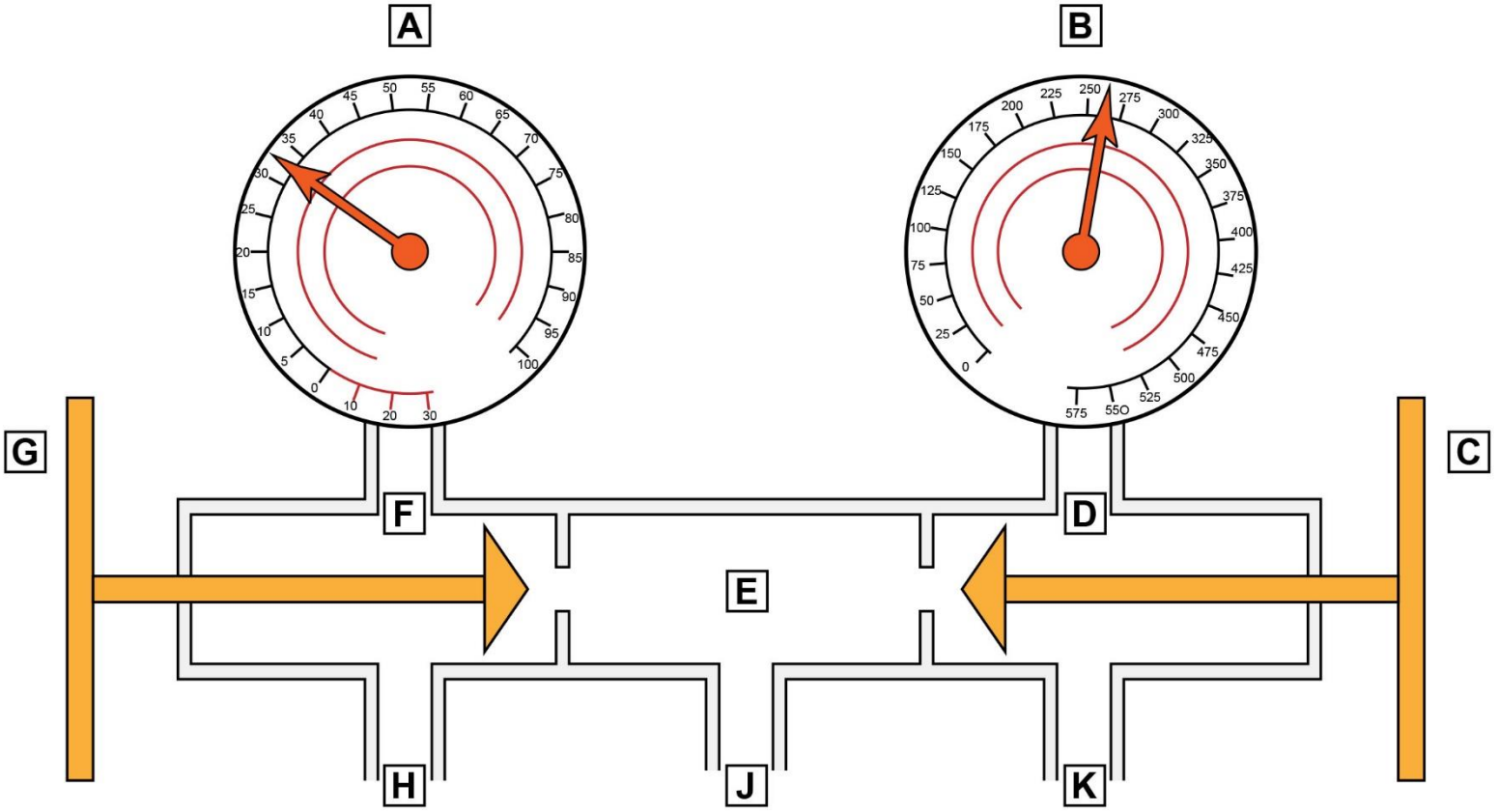
Two-Pipe Water System



Four-Pipe Water System

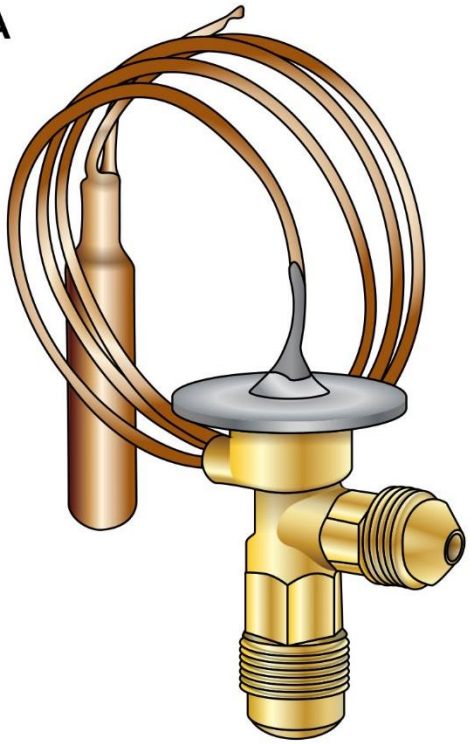


RA-0001

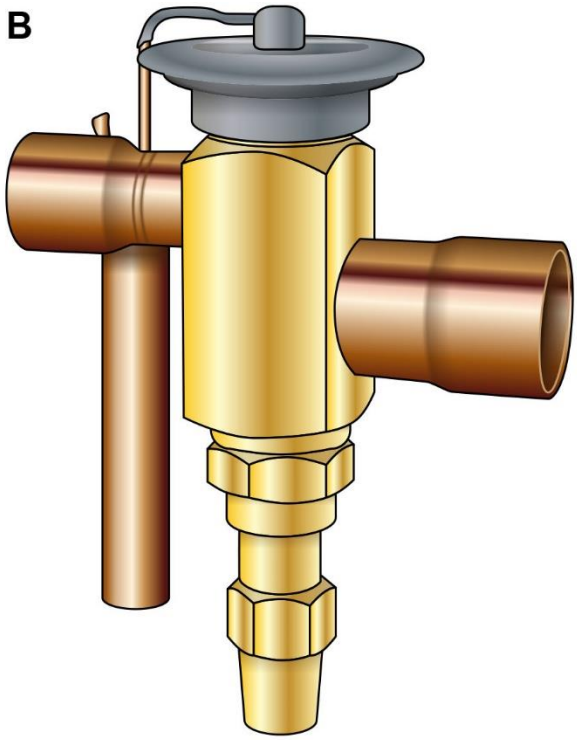


RA-0006

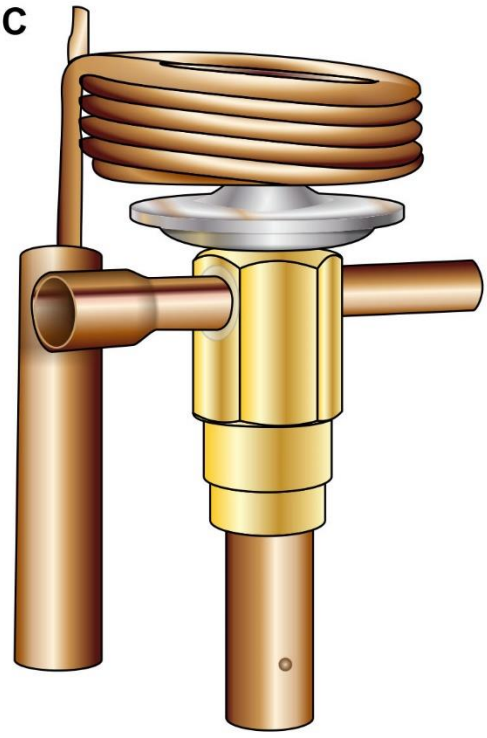
A



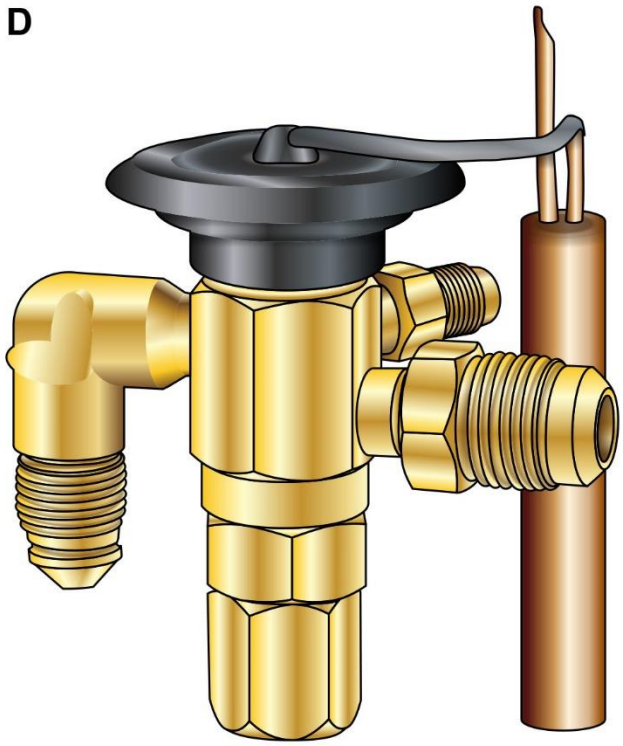
B



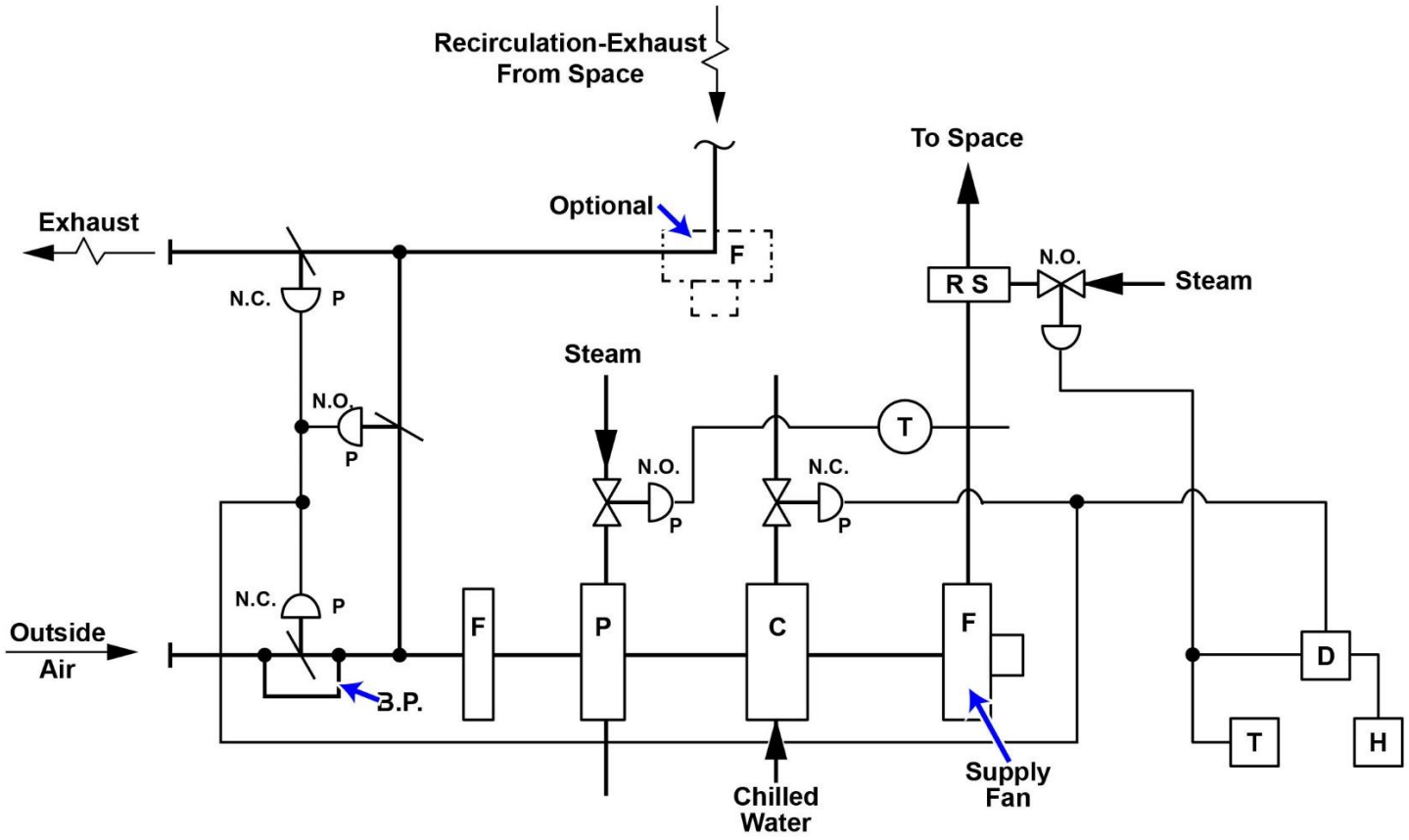
C



D



RA-0009



H	Humidistat	T	Room Thermostat
F	Fan	D	Diverting Relay
F	Filter		Pneumatic Damper and Motor
			Pneumatic Relay
C	Cooling Coil	N.C.	Normally Closed (Valve or Damper)
P	Preheater (Steam)	N.O.	Normally Open (Valve or Damper)
		B.P.	Minimum Outside Air Bypass
R S	Reheater (Steam)		
T	Duct Thermostat	P	Positive Positioning Relay

RA-0033