U.S.C.G. Merchant Marine Exam

DDE – Unlimited HP

Q624 General Subjects

(Sample Examination)

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

1. What is meant by the term emergency bilge suction?

   A. The means by which the machinery space bilge is pumped out by a pump normally used as a bilge pump and drawing a suction on the bilge through either bilge manifolds or automatic bilge suction valves.
   B. The means by which the machinery space bilge is pumped out by a pump not normally used as a bilge pump and drawing a suction on the bilge through either bilge manifolds or automatic bilge suction valves.
   C. The means by which the machinery space bilge is pumped out by a pump normally used as a bilge pump and drawing a suction directly on the bilge independent of any bilge manifolds or automatic bilge suction valves.
   D. The means by which the machinery space bilge is pumped out by a pump not normally used as a bilge pump and drawing a suction directly on the bilge independent of any bilge manifolds or automatic bilge suction valves.

   Correct answer: D

2. 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

3. How often should the air receivers on a compressed air system be drained of moisture and emulsions?

   A. Daily
   B. Weekly
   C. Monthly
   D. Quarterly

   Correct answer: A

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

   Correct answer: B

5. In a closed-loop process control system, what statement concerning feedback is true as it relates to stability and the direction of error displacement?

   A. Negative feedback is used to minimize instability by pushing the system in the opposite direction as the error displacement.
   B. Positive feedback is used to minimize instability by pushing the system in the opposite direction as the error displacement.
   C. Positive feedback is used to minimize instability by pushing the system in the same direction as the error displacement.
   D. Negative feedback is used to minimize instability by pushing the system in the same direction as the error displacement.

   Correct answer: A

6. In which of the following freshwater generators would an air ejector be unnecessary?

   A. Flash type unit
   B. Submerged tube unit
   C. Titanium plate unit
   D. Reverse osmosis unit

   Correct answer: D

7. Which of the following roller bearing types would be limited to radial thrust load applications?

   A. Single row tapered roller bearing
   B. Double row spherical roller bearing
   C. Single row spherical roller bearing
   D. Single row cylindrical roller bearing

   Correct answer: D

8. A dented race in an antifriction bearing could be caused by _____.

   A. Abrasives in the lubricant
   B. Dirt in the bearing
   C. Vibration while the bearing is not in operation
   D. Water in the bearing

   Correct answer: C

9. Regarding a freshwater generator of the reverse-osmosis type, what statement is true?

   A. The solute is saltwater and the solvent is salt.
   B. The solute is freshwater and the solvent is salt.
   C. The solute is salt and the solvent is freshwater.
   D. The solute is salt and the solvent is saltwater.

   Correct answer: C

10. For the operation of the illustrated device, what fluid flow would be expected at the connection labeled "I"? Illustration MO-0110

    A. The saltwater feed
    B. Main engine jacket water
    C. The distillate discharge
    D. The sea water used for condensing the water vapor

    Correct answer: D

11. 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

12. Suppose a prime mover rotates at a steady speed of 900 rpm at rated full load and rotates at a steady speed of 1000 rpm at no load. Assuming that no adjustments have been made to the governor speed control setting, what is the speed regulation of the prime mover expressed in percent?

    A. 10.0%
    B. 11.1%
    C. 88.9%
    D. 90.0%

    Correct answer: B

13. If a heat exchanger is designed to condense refrigerant vapor using central cooling fresh water as a condensing medium, what statement is true?

    A. The refrigerant vapor loses latent heat, the central cooling fresh water gains sensible heat.
    B. The refrigerant vapor loses latent heat, the central cooling fresh water loses latent heat.
    C. The refrigerant vapor gains latent heat, the central cooling fresh water loses sensible heat.
    D. The refrigerant vapor loses sensible heat, the central cooling fresh water gains latent heat.

    Correct answer: A

14. When placing a shell-and-tube heat exchanger with a removable tube bundle such as a bayonet-tube heavy fuel oil service heater into service, to avoid thermal shock what statement represents the correct operating procedure?

    A. Introduce the steam first, then gradually introduce the heavy fuel oil until full flow is established to avoid thermal shock.
    B. Introduce the heavy fuel oil and steam simultaneously establishing full flow of both fluids immediately to avoid thermal shock.
    C. Introduce both the heavy fuel oil and steam simultaneously and gradually to avoid thermal shock.
    D. Introduce the heavy fuel oil first, then gradually introduce the steam until full flow is established to avoid thermal shock.

    Correct answer: D

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

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

    Correct answer: A

16. The hydraulic tubing installation shown as figure "D" is INCORRECT and will probably leak when in operation because the tubing _____. Illustration GS-0065

    A. Will stretch and overstress the male threads on the fitting
    B. And its fittings cannot be properly installed and tightened
    C. Will contract in diameter and expand in length under pressure
    D. Cannot flex at right angles to the pressure applied by the fluid because it is not properly twisted

    Correct answer: B

17. A hydraulic system flow control circuit is shown in the illustration and is known as a _____. Illustration GS-0105

    A. metered-in circuit
    B. bleed-in circuit
    C. metered-out circuit
    D. bleed-off circuit

    Correct answer: A

18. Which of the listed pressure control valves would be used to permit the completion of one action of a hydraulic system before a second action would be permitted?

    A. Unloading valve
    B. Sequence valve
    C. Counterbalance valve
    D. Pressure-reducing valve

    Correct answer: B

19. If you attempt to tighten a leaking hydraulic fitting with pressure on the system, you will _____.

    A. dislodge any scale in the tubing, and it will damage the system
    B. find that the pressure will prevent the components from being tightened
    C. cause the system to vibrate
    D. be successful every time

    Correct answer: B

20. With respect to lubricating oils, what statement is true concerning viscosity and viscosity index?

    A. Viscosity is a measure of an oil's lubricity and viscosity index is a measure of an oil's ability to resist change in lubricity as the pressure changes.
    B. Viscosity is a measure of an oil's ability to resist oxidation and viscosity index is a measure of an oil's ability to resist change in viscosity as the temperature changes.
    C. Viscosity is a measure of an oil's internal resistance to flow, and viscosity index is a measure of an oil's ability to resist change in viscosity as the temperature changes.
    D. Viscosity is a measure of an oil's resistance to emulsification and viscosity index is a measure of an oil's ability to resist change in viscosity as the temperature changes.

    Correct answer: C

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

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

    Correct answer: D

22. Which of the filter/strainer units listed permits you to replace or clean the element while leaving the system on the line?

    A. Bypass
    B. Simplex
    C. Canister
    D. Duplex

    Correct answer: D

23. Monel metal is an alloy composed mainly of _____.

    A. Nickel and copper
    B. Zinc and copper
    C. Copper and tin
    D. Bronze and tin

    Correct answer: A

24. What type of oil as part of an oily-water mixture is most likely to require heating to facilitate separation in an oily-water separator?

    A. Marine diesel oil
    B. Heavy residual fuel oil
    C. Steam turbine lubricating oil
    D. Diesel engine lubricating oil

    Correct answer: B

25. The function of item "7" shown in the illustration is to _____. Illustration GS-0153

    A. Allow the oil accumulated to exit the device, while remaining separated from the liquid
    B. Direct the flow of the oily-water mixture against the coalescer bed
    C. Prevent separated oil from mixing with the incoming bilge water
    D. Support the tank access panel

    Correct answer: C

26. Referring to the illustration, what would be the result if the lower oil/water interface detection probe became faulty? Illustration GS-0175

    A. The unit would not be able to transition from ending the separation processing mode to initiating the oil discharge mode.
    B. The unit would not be able to transition from the overboard discharge mode to the recirculation mode while in the separation processing mode.
    C. The unit would not be able to transition from ending the oil discharge mode to initiating the separation processing mode.
    D. The unit would not be able to come out of the oily-water separator idle mode and begin processing bilge water.

    Correct answer: A

27. In the illustrated self-contained, internal-pilot, piston-operated steam pressure-reducing valve, what statement is true concerning the opening and closing forces acting upon the control diaphragm? Illustration GS-0044

    A. The spring (F) force acting on the control diaphragm is a pilot valve opening force, and the downstream pressure (J) acting on the control diaphragm is a pilot valve closing force.
    B. The spring (F) force acting on the control diaphragm is a pilot valve opening force, and the upstream pressure (C) acting on the control diaphragm is a pilot valve closing force.
    C. The spring (F) force acting on the control diaphragm is a pilot valve closing force, and the upstream pressure (C) acting on the control diaphragm is a pilot valve opening force.
    D. The spring (F) force acting on the control diaphragm is a pilot valve closing force, and the downstream pressure (J) acting on the control diaphragm is a pilot valve opening force.

    Correct answer: A

28. 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

29. In the illustration, line "D" is a/an _____. Illustration GS-0006

    A. hidden line
    B. sectioning line
    C. outline
    D. phantom line

    Correct answer: A

30. What is the distance between the center of the discharge outlet and the top of the motor illustrated? Illustration GS-0011

    A. 34 5/8 inches
    B. 35 inches
    C. 35 5/8 inches
    D. 36 inches

    Correct answer: D

31. Which line shaft bearing is most likely to have both upper and lower half bearing shells on merchant ships?

    A. The forwardmost line shaft bearing
    B. All line shaft bearings have only a lower bearing shell
    C. The intermediate line shaft bearing
    D. The aftermost line shaft bearing

    Correct answer: D

32. Of the following propulsion modes, which one would operate with a geared-drive featuring a double reduction?

    A. Slow-speed diesel
    B. Medium-speed diesel
    C. High-speed diesel
    D. Gas turbine

    Correct answer: D

33. If a centrifugal pump were continually operated with the discharge valve closed, the _____.

    A. motor controller overload would open
    B. pump would eventually overheat
    C. relief valve would continuously cycle open
    D. motor would overheat

    Correct answer: B

34. 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. tightened an additional 10% to compress the packing
    D. left in that position

    Correct answer: A

35. Assuming that a standard micrometer (without a Vernier scale) has the ability to read to the nearest one thousandths of an inch, such a micrometer with a vernier scale would make it possible to read to the nearest _____.

    A. five thousandths of an inch
    B. ten thousandths of an inch
    C. twenty-five thousandths of an inch
    D. one fortieth of an inch

    Correct answer: B

36. What is the primary function of the devices shown in the illustration? Illustration GS-0156

    A. The grounding straps help prevent electrolysis by improving the conductivity between the components.
    B. The locking plates are used to prevent the fastening devices from vibrating loose.
    C. These abrasion resistors prevent damage to the surface around the bolt holes when tightening the bolts.
    D. The transit washers transmit the rotary motion of the cap screw to the actuating assembly.

    Correct answer: B

37. As it applies to a transverse-framed ship with double bottom construction, what does the term "floor" represent?

    A. Floors are the actual inner-bottom tank tops.
    B. Floors are vertical transverse members supporting the inner-bottoms.
    C. Floors are the actual outer-bottom shell plating.
    D. Floors are vertical longitudinal members supporting the inner-bottoms.

    Correct answer: B

38. Even though bilge keels do provide some improvement in longitudinal strength at the bilge radius, what is the primary purpose of the bilge keels?

    A. Dampen the tendency the ship has to pitch
    B. Dampen the tendency the ship has to roll
    C. Dampen the tendency the ship has to heave
    D. Dampen the tendency the ship has to yaw

    Correct answer: B

39. What statement is true concerning watertight doors fitted below the waterline of a vessel?

    A. Watertight doors below the waterline may be either of the horizontal sliding type or the swinging hinged type.
    B. Watertight doors below the waterline may be either of the vertical sliding type or the swinging hinged type.
    C. Watertight doors below the waterline may be of the vertical or horizontal sliding type or the swinging hinged type.
    D. Watertight doors below the waterline may be either of the vertical or horizontal sliding type.

    Correct answer: D

40. In accordance with international MARPOL Annex I regulations and federal regulations under 33 CFR Subchapter O (Pollution), for vessels of 400 gross tons and above which are all required to carry an oily-water separator to process bilge slops, what is the design criteria in terms of maximum oil content of the overboard discharge?

    A. 3 parts per million
    B. 15 parts per million
    C. 100 parts per million
    D. 150 parts per million

    Correct answer: B

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

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

    Correct answer: C

42. The function of the section labeled "C" in the device illustrated is to provide a/an _____. Illustration GS-0075

    A. passage for gas to be discharged
    B. passage for sealing liquid to enter the pump
    C. area for pump packing
    D. bearing surface for the rotor shaft

    Correct answer: A

43. A distinguishing feature of an eductor, when compared to other pumps, is the _____.

    A. Ease at which the wearing rings may be changed
    B. Discharge end being smaller than the suction end
    C. Small size of impeller
    D. Lack of moving parts

    Correct answer: D

44. A vessel is in compliance with federal regulations regarding the discharge of sewage by _____.

    A. holding all sewage onboard
    B. pumping the sewage ashore to an approved container
    C. treating sewage in an approved system
    D. all of the above

    Correct answer: D

45. 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

46. How would you prevent the rudder from moving while a repair is made on the steering system using the illustrated actuator? Illustration GS-0116

    A. tighten the locking pins, item "H" at each position of item "I" to keep the rudder from swinging
    B. tighten the locking screws in item "S"
    C. secure the valves in the supply and return lines
    D. screw in the locking pin, item "J"

    Correct answer: C

47. The action necessary to use the steering gear room trick wheel when transferring the steering control from the wheelhouse to local control is to _____.

    A. Align the trick wheel to the rudder angle position before engaging
    B. Set the six-way control valve in the trick wheel position
    C. Open the power transfer switch before engaging the trick wheel
    D. Always place the rudder in the amidships position to engage the trick wheel

    Correct answer: A

48. What mode of heat transfer is associated with the transport of thermal energy within a body or between two bodies in direct contact?

    A. Conduction
    B. Convection
    C. Sublimation
    D. Radiation

    Correct answer: A

49. Light and other forms of radiation can act as a means of transporting heat energy from one body to another. This radiative transport is different from conduction and convection in that it does not involve _____.

    A. indirect transfer due to friction
    B. direct transfer of molecular motion
    C. direct transfer of temperature gradient
    D. indirect transfer due to inefficiencies

    Correct answer: B

50. Referring to illustrated diagram, what type of HVAC system is shown? Illustration RA-0042

    A. A dual duct system
    B. A terminal reheat system
    C. A single zone system
    D. A variable air volume system

    Correct answer: B

51. Referring to the illustrated diagram for a central-station hookup for a hot water heating system, what statement represents the configuration of the system? Illustration GS-0191

    A. The system is a multi-zone system, with one circulating pump and one heating coil.
    B. The system is a multi-zone system, with multiple circulating pumps and multiple heating coils.
    C. The system is a single zone system, with multiple circulating pumps and multiple heating coils.
    D. The system is a single zone system, with one circulating pump and one heating coil.

    Correct answer: A

52. Generally speaking, when using a twist drill to bore a hole in metal, the harder the metal, the greater the drill's required _____.

    A. cutting speed
    B. diameter
    C. included point angle
    D. lip clearance

    Correct answer: C

53. Which of the listed temperature sensors is made of heat-treated metallic oxides and generally has a negative coefficient of resistance?

    A. Resistance temperature detector
    B. Thermistor
    C. Thermocouple
    D. Bimetallic device

    Correct answer: B

54. What type of flow measuring device would measure totalized flow volume as opposed to an instantaneous flow rate?

    A. Constriction type, differential head such as a venturi tube
    B. Variable area type, such as a rotameter
    C. Velocity flowmeter such as a turbine type
    D. Positive displacement meter, such as a nutating disk

    Correct answer: D

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

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

    Correct answer: A

56. A horizontal electro-mechanical anchor windlass is equipped with two warping heads, two wildcats, two manual brake handwheels, two clutch control levers, and a multipoint lever-operated, pedestal-mounted controller. What statement is true as it pertains to the operation of the warping heads and wildcats?

    A. The warping heads can be rotated in either direction of rotation without rotating the wildcats by disengaging the wildcat clutches. As long as electric power is applied to the electric drive motor, the warping heads will rotate.
    B. The wildcats can be rotated in either direction of rotation without rotating the warping heads by disengaging the warping head clutches. As long as electric power is applied to the electric drive motor, the wildcats will rotate.
    C. The wildcats can be rotated in either direction of rotation without rotating the warping heads by disengaging the warping head clutches. As long as electric power is applied to the electric drive motor, the warping heads will rotate.
    D. The warping heads can be rotated in either direction of rotation without rotating the wildcats by disengaging the wildcat clutches. As long as electric power is applied to the electric drive motor, the wildcats will rotate.

    Correct answer: A

57. As it pertains to the automatic electric brake of a capstan, what statement is true?

    A. The brake is electrically set and spring released, and the brake automatically releases when electric power is removed from the electric drive motor.
    B. The brake is spring set and electrically released, and the brake automatically releases when electric power is removed from the electric drive motor.
    C. The brake is spring set and electrically released, and the brake automatically sets when electric power is removed from the electric drive motor.
    D. The brake is electrically set and spring released, and the brake automatically sets when electric power is removed from the electric drive motor.

    Correct answer: C

58. The term "oil foaming" in refrigeration practice, is used to describe what event?

    A. sudden evaporation of entrapped moisture from the crankcase lubricant
    B. sudden evaporation of dissolved refrigerant from the lubricant in the crankcase
    C. sudden evaporation of entrapped air from the refrigerant liquid
    D. release of dissolved lubricant from the refrigerant in the crankcase

    Correct answer: B

59. A device used to hold open the refrigeration compressor suction valve during starting to reduce the compression load is called what?

    A. suction line bypass
    B. discharge line bypass
    C. cylinder unloader
    D. relief valve

    Correct answer: C

60. When one belt of a multiple V-belt drive requires replacing, what will be required?

    A. replace the entire belt set
    B. season the new belt prior to installation
    C. ensure the proper belt dressing is applied
    D. ensure the seasoned belts are reinstalled in their proper sequence

    Correct answer: A

61. Leaking suction valves in a refrigeration compressor are indicated by which of the following?

    A. higher than normal suction pressure
    B. lower than normal evaporator temperature
    C. lower than normal suction pressure
    D. noticeable increase in compressor noise

    Correct answer: A

62. 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

63. The coil temperature measured at the expansion valve sensing bulb of an operating system is 10°F. The low side pressure with the compressor running as shown on the gauge illustrated indicates 15 psig. What adjustments or changes, if any, should be made to the system? Illustration RA-0016

    A. The filter drier needs to be changed to increase the suction pressure.
    B. The evaporator coils need to be steam cleaned or high-pressure washed.
    C. The liquid line strainer is fouled and needs to be cleaned.
    D. The expansion valve should not be adjusted, as the degree of superheat is within the accepted range.

    Correct answer: D

64. A high-pressure centrifugal chiller currently charged with R-134a is being evaluated for the need for leak testing. Using the leak test procedures decision tree illustrated and the R-134a pressure-temperature chart illustrated, with the machine idle and the pressures equalized at 10 psig with an ambient temperature of 60°F, what statement is true? Illustration RA-0011 and Illustration RA-0047

    A. The machine definitely does not have a leak; therefore, no attempt at leak detection is necessary.
    B. The machine may or may not have a leak; therefore, the machine should be checked for leaks without any adjustments in pressure.
    C. The machine has a suspected leak; therefore, nitrogen should be added to bring the pressure to 70 psig prior to checking for leaks.
    D. The machine has a suspected leak; therefore, the refrigerant pressure should be raised to 35 psig by adding refrigerant prior to checking for leaks.

    Correct answer: D

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

    Correct answer: D

66. Which of the following statements is true concerning the illustrated gauge manifold set? Illustration RA-0001

    A. The valves labeled "G" and "C" must both be open to read system pressures on the respective gages labeled "A" and "B".
    B. Closing the valve labeled "G" isolates the port labeled "H" from the gauge labeled "A".
    C. Closing the valve labeled "G" isolates the port labeled "H" from the port labeled "J".
    D. Opening fully and back-seating the valve labeled "G" isolates the gauge labeled "A" from the port labeled "H".

    Correct answer: C

67. In general, the thermal bulb for a thermal expansion valve used in a reciprocating air conditioning system is usually charged with what substance?

    A. mercuric sulfate
    B. the same refrigerant as the system
    C. bees wax
    D. distilled water

    Correct answer: B

68. Concerning the arrangement of equipment and associated hoses shown in the illustration, what statement is true? Illustration RA-0058

    A. When recovering refrigerant from the centrifugal chiller using this method, it minimizes the risk of chiller tube freeze-up.
    B. When recovering refrigerant from the centrifugal chiller using this method, the vent hose connection should be closed.
    C. When recovering refrigerant from the centrifugal chiller using this method, it is permissible to exceed 90% of the weight capacity of the refrigerant drum.
    D. When recovering refrigerant from the centrifugal chiller using this method, it is possible to achieve the recovery levels required by law without any further recovery.

    Correct answer: A

69. In an air conditioning system set up as shown in the illustration, as the room humidistat initiates the lowering of the humidity of the conditioned supply air to a space, the actual process is accomplished by what means? Illustration RA-0009

    A. raising the cooling coil temperature and lowering the reheater temperature
    B. lowering both the cooling coil temperature and the reheater temperature
    C. raising both the cooling coil temperature and the reheater temperature
    D. lowering the cooling coil temperature and raising the reheater temperature

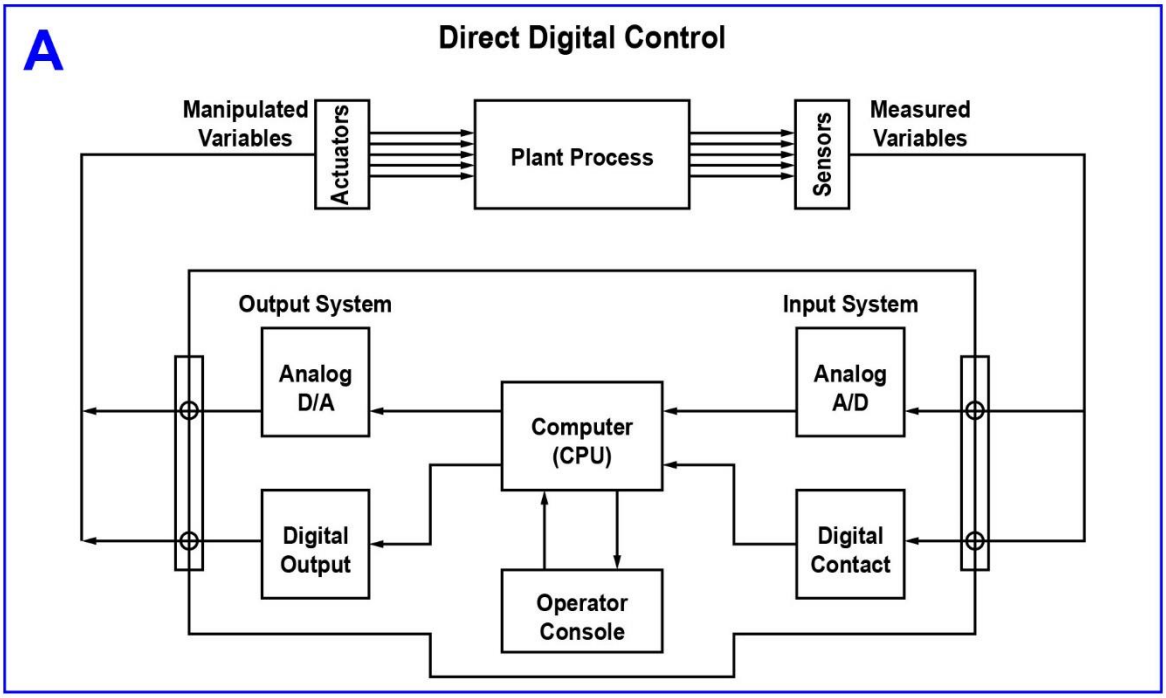
    Correct answer: D

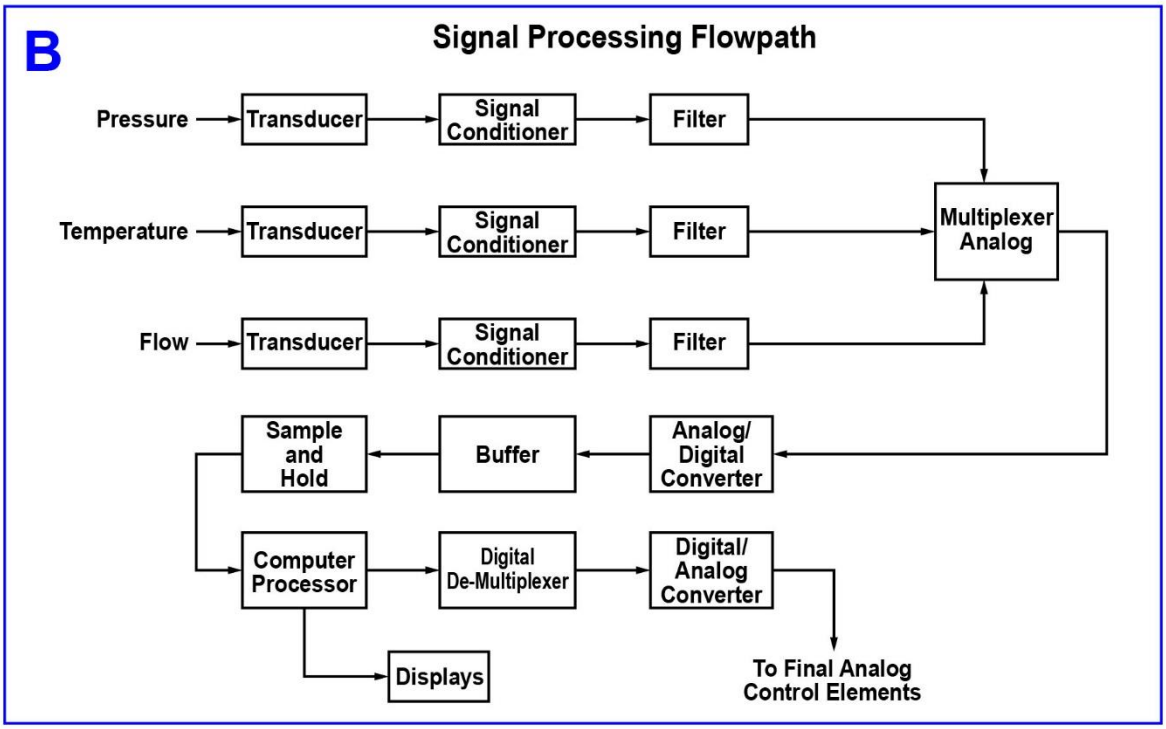
70. If a reverse osmosis freshwater generator has fouled membrane modules, what statement is true?

A. The feed pressure would be lower than normal and the pressure drop across the membrane modules would be higher than normal.
B. The feed pressure would be higher than normal and the pressure drop across the membrane modules would be higher than normal.
C. The feed pressure would be higher than normal and the pressure drop across the membrane modules would be lower than normal.
D. The feed pressure would be lower than normal and the pressure drop across the membrane modules would be lower than normal.

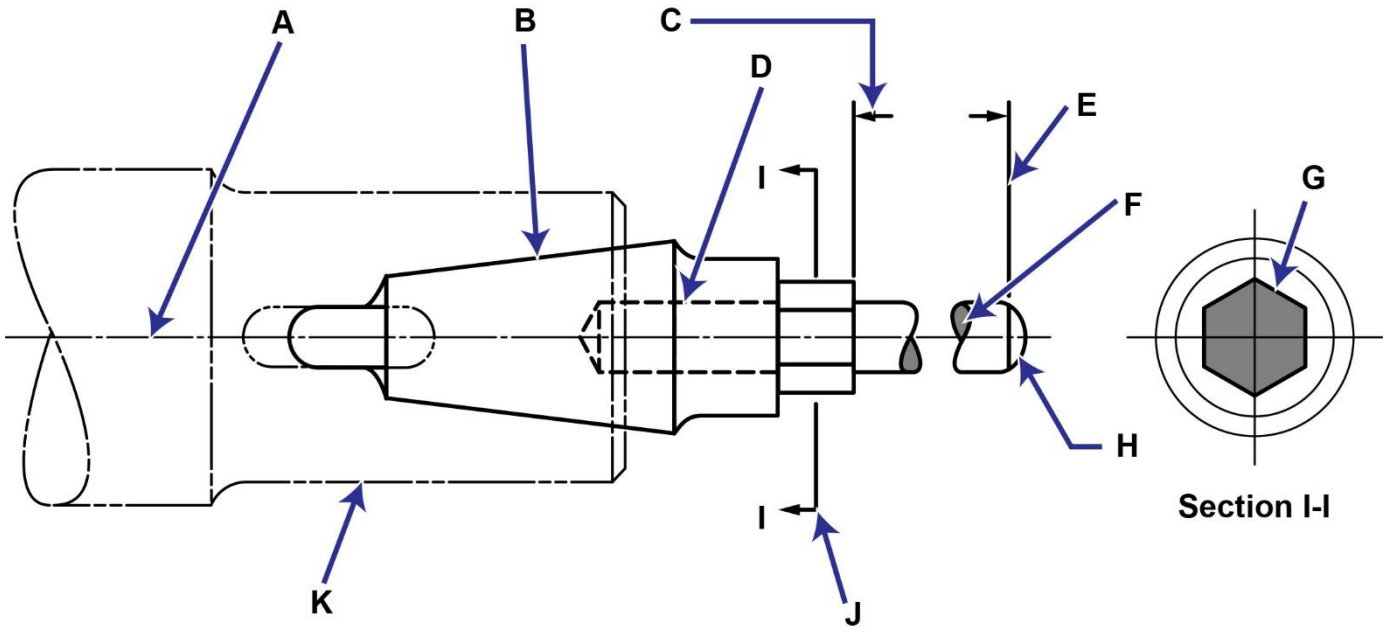
Correct answer: B

EL-0095

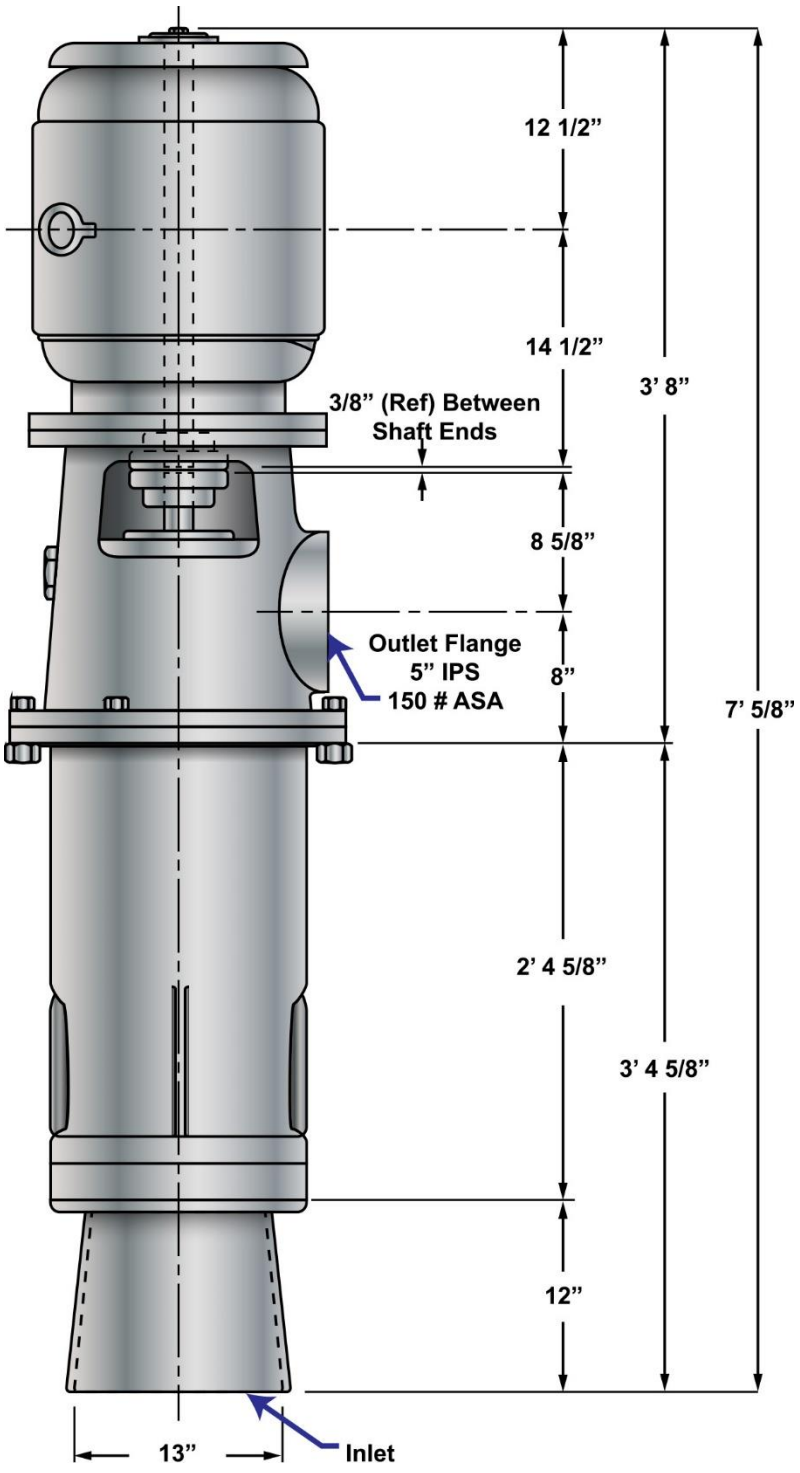




GS-0006



GS-0011



MOTOR CHARACTERISTICS

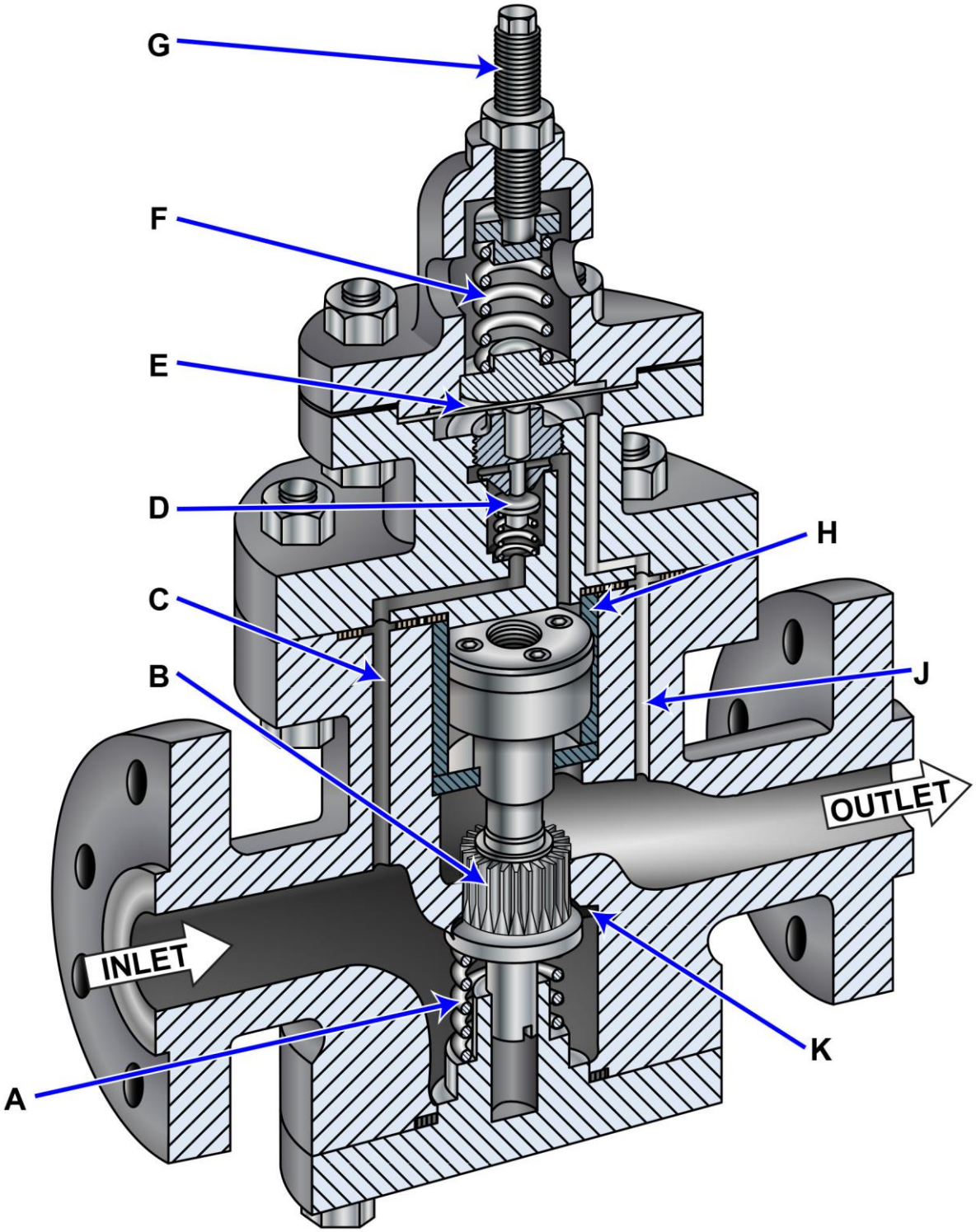
Motor (A. C.)	Electro Dynamic
Rating H. P.	25
Speed R. P. M. (SYN.)	1200
Frame	365 VY
Type	TN
Volts	440
Cycles	60
Phase	3

PUMP CHARACTERISTICS

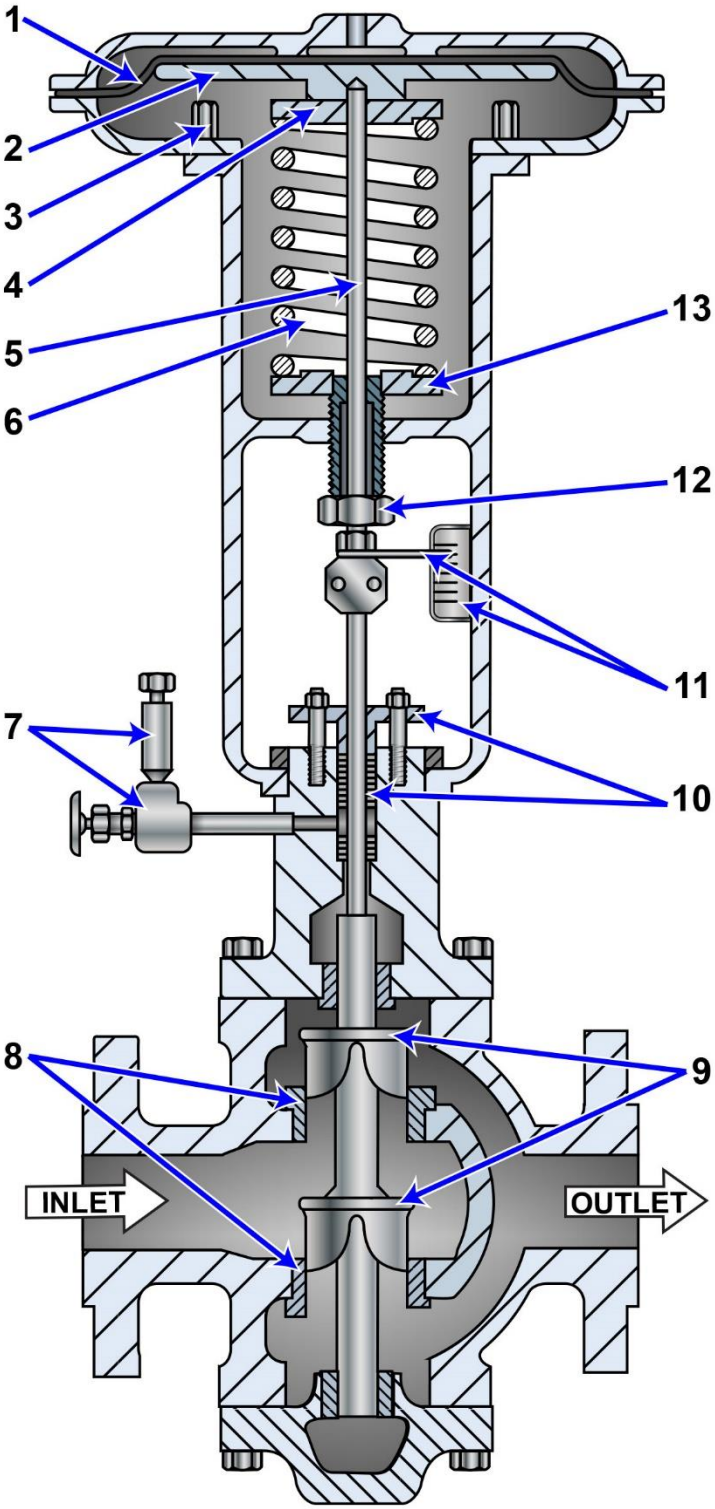
Capacity G. P. M.	400
Speed R. P. M.	1150
Suction Lift “HG	10
B, H, P. @ 1200 SSU-75° F	24.9
Oil viscosity Range, SSU	74-7000
Viscosity Normal SSU @ 140° F	155
Discharge Normal PSIG	55
Fluid Handled, Lube Oil	2190 TEP.
Navy Specification	MIL-L-17331
Oil Temperature Range ° F	40-180

Illustration scale: 1” = 1’

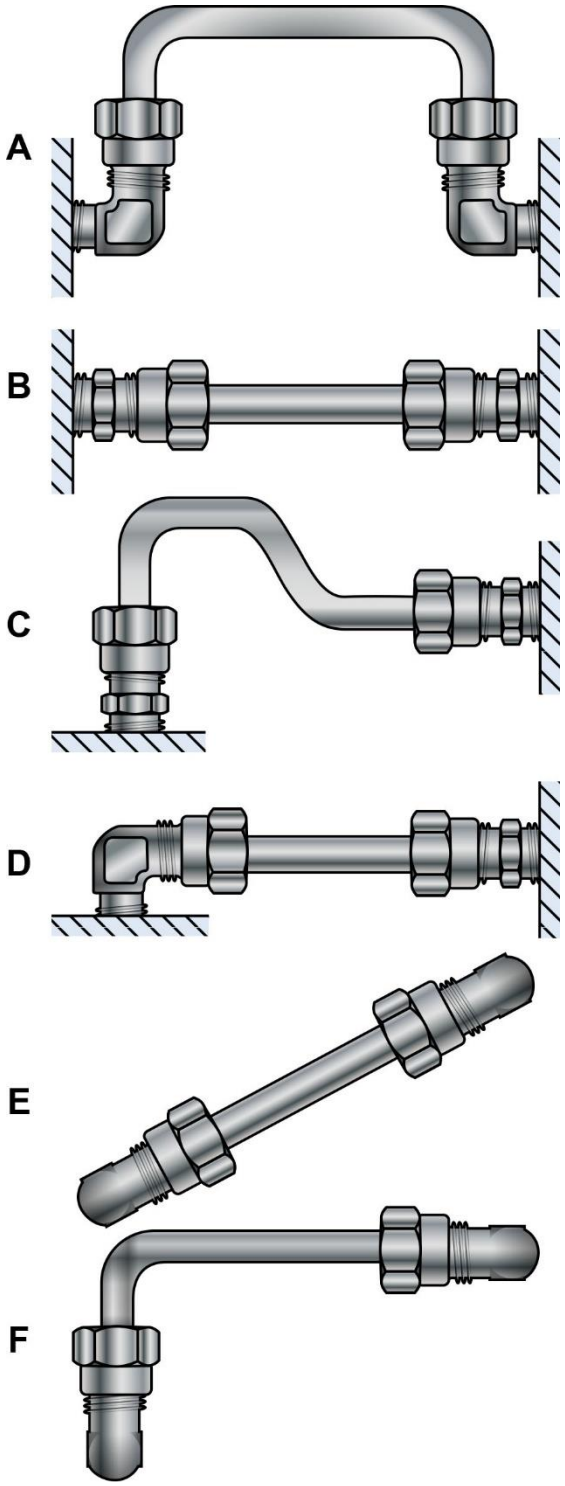
GS-0044



GS-0051



GS-0065



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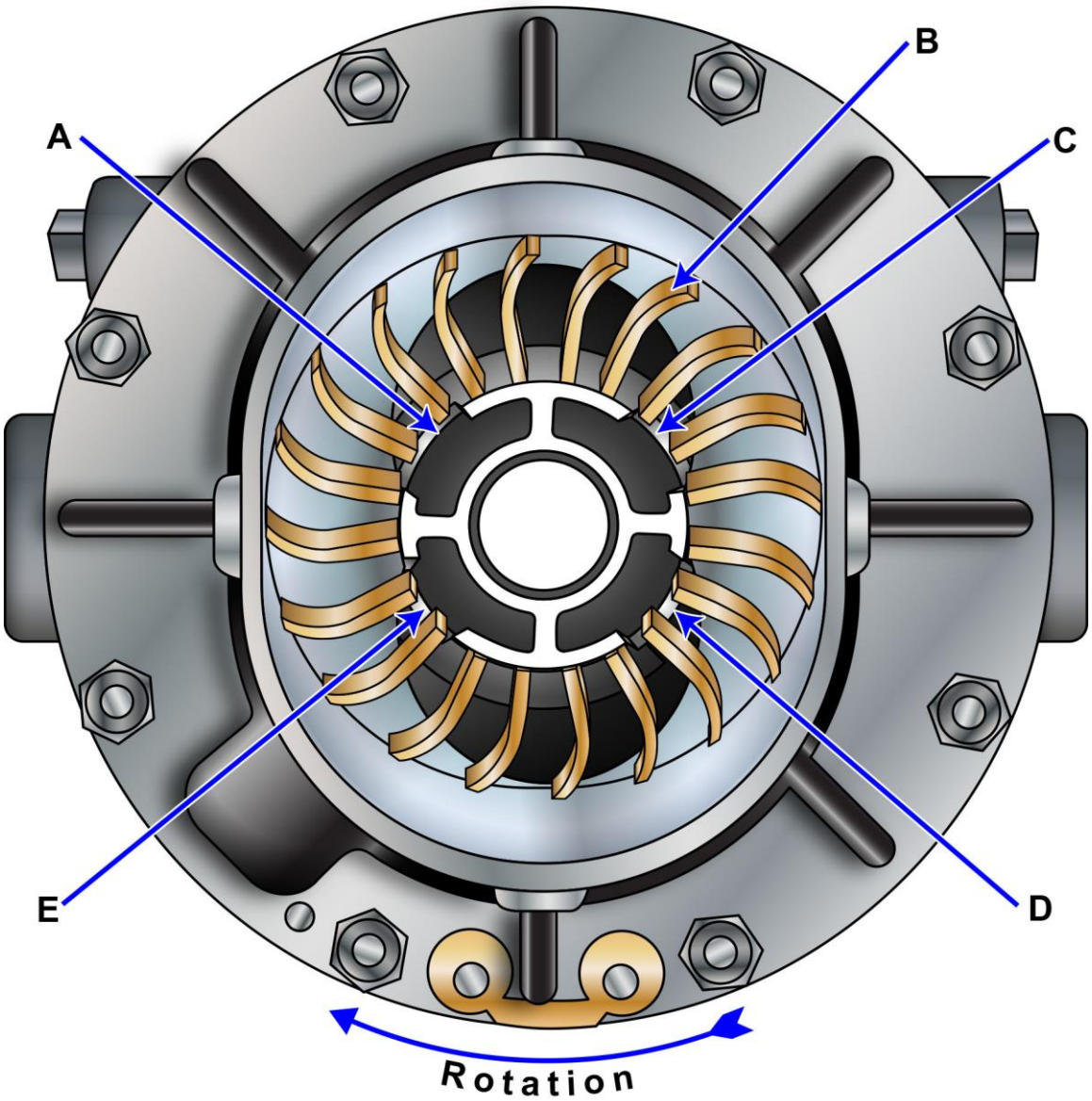

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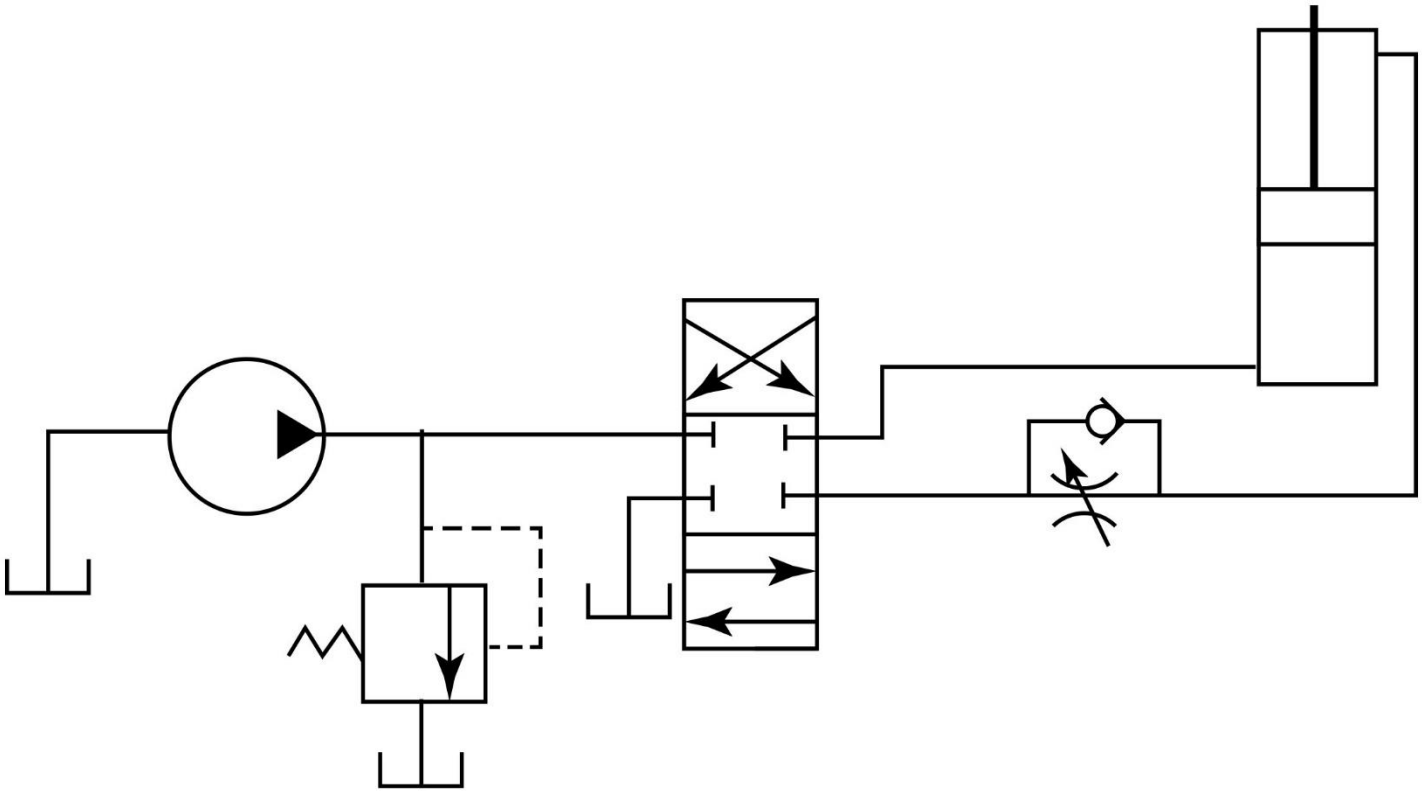

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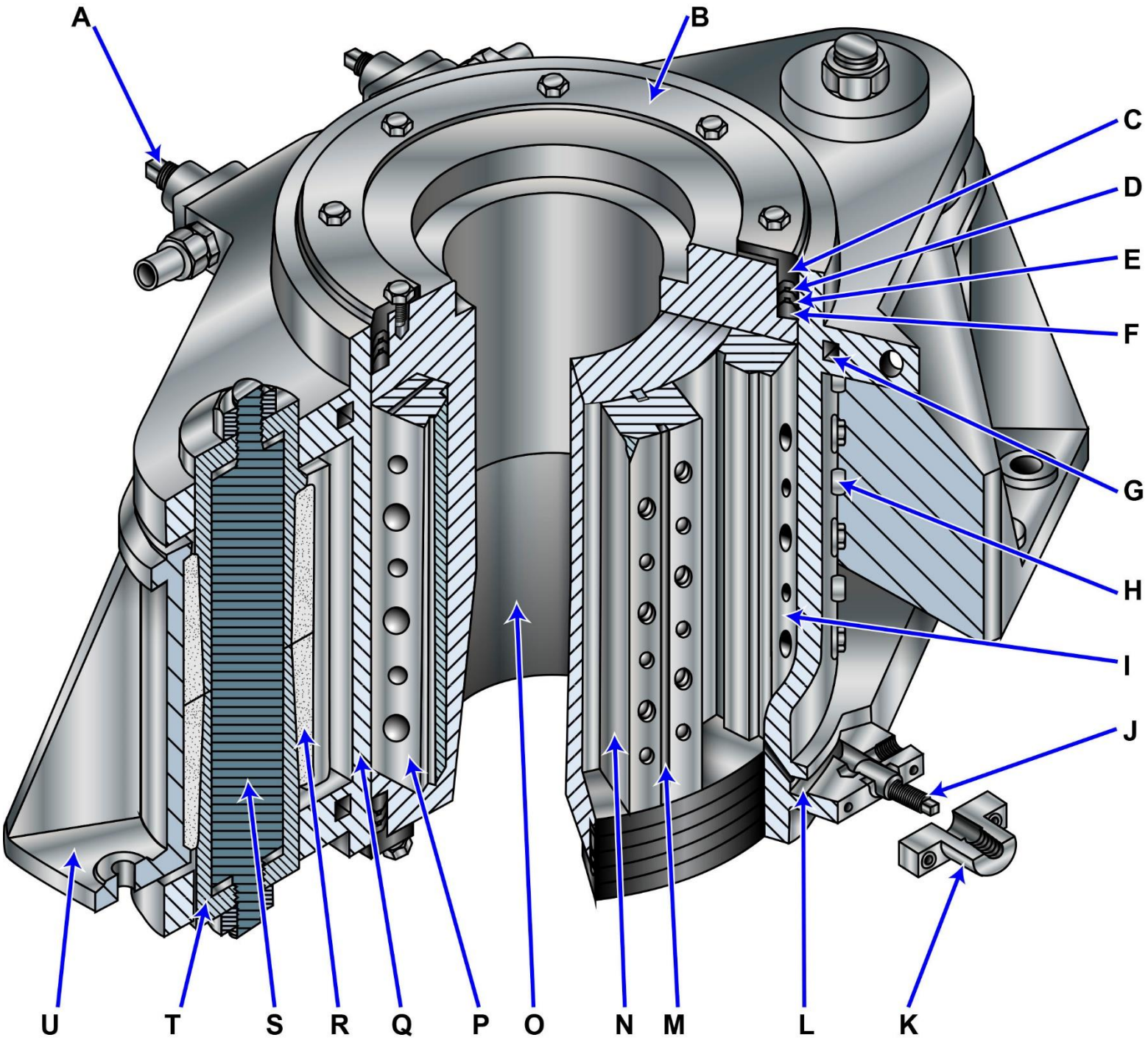

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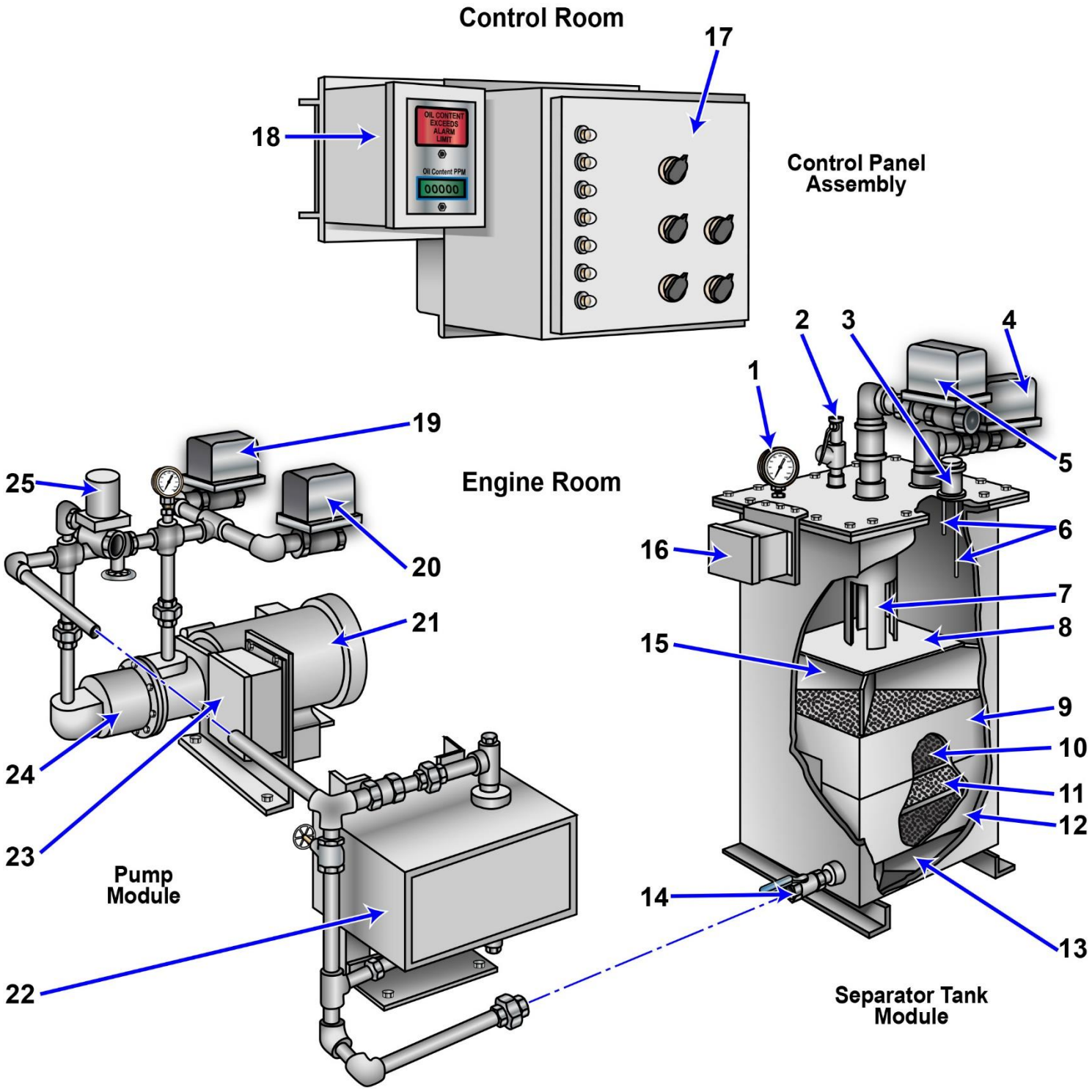

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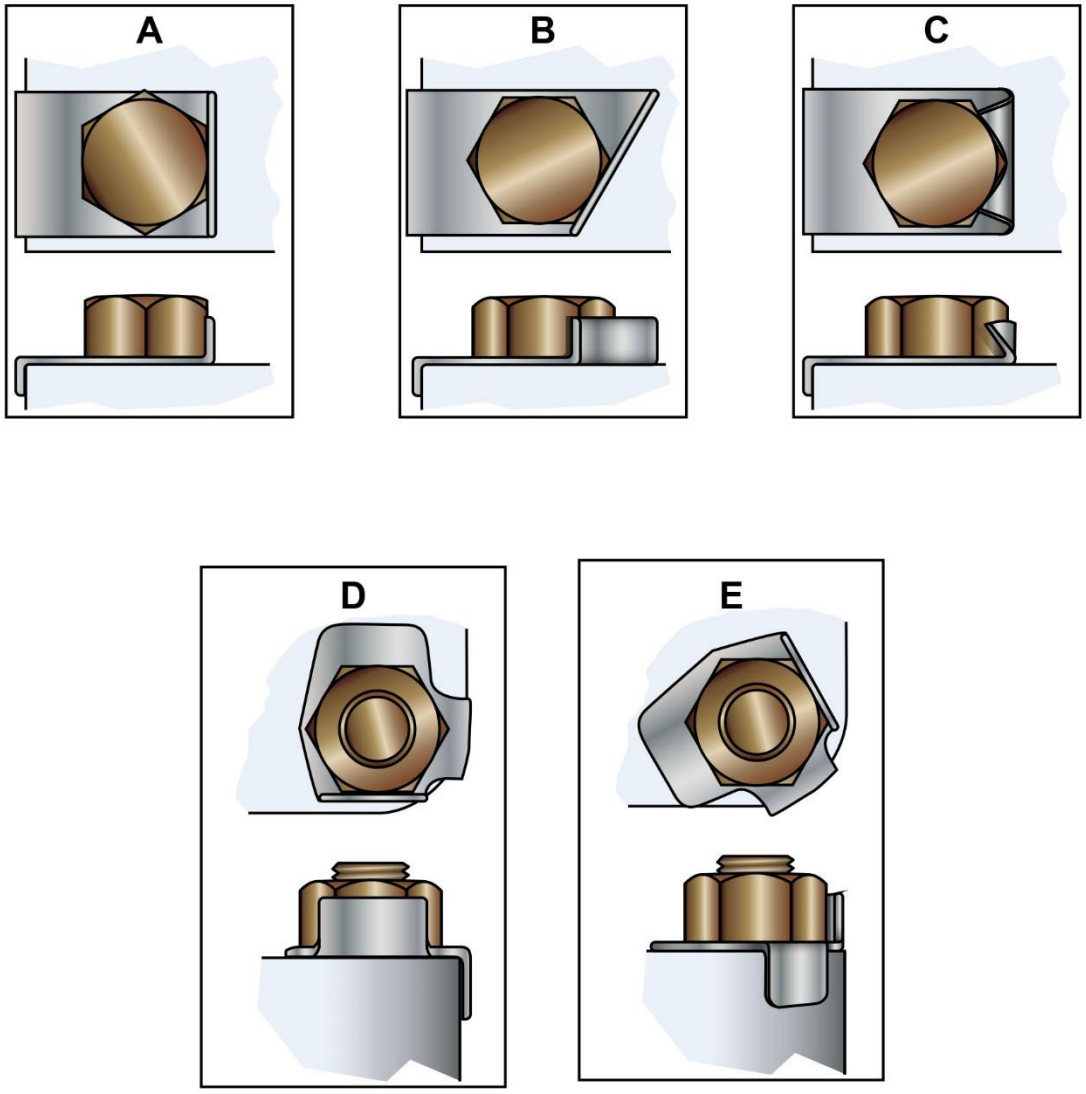

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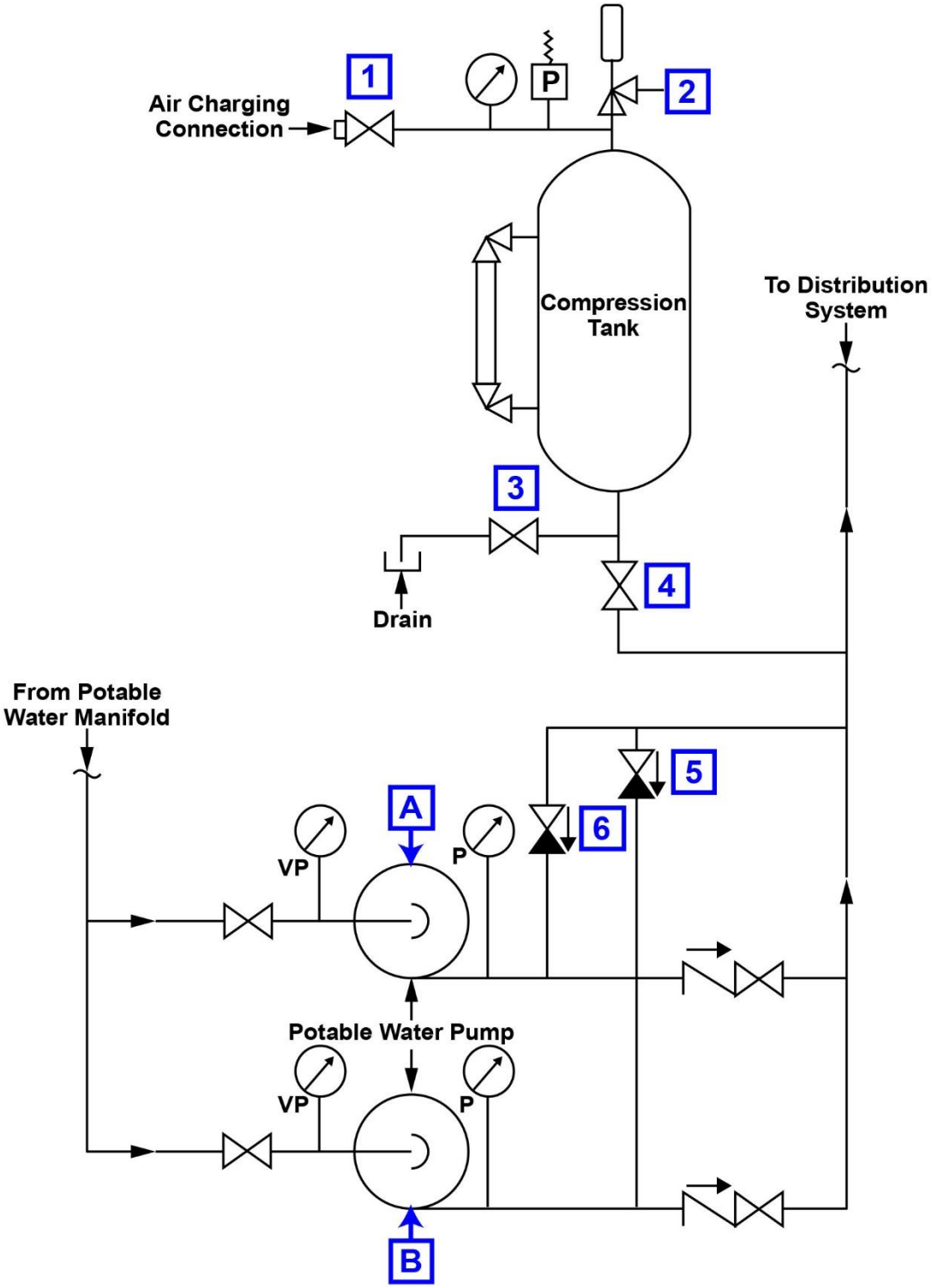

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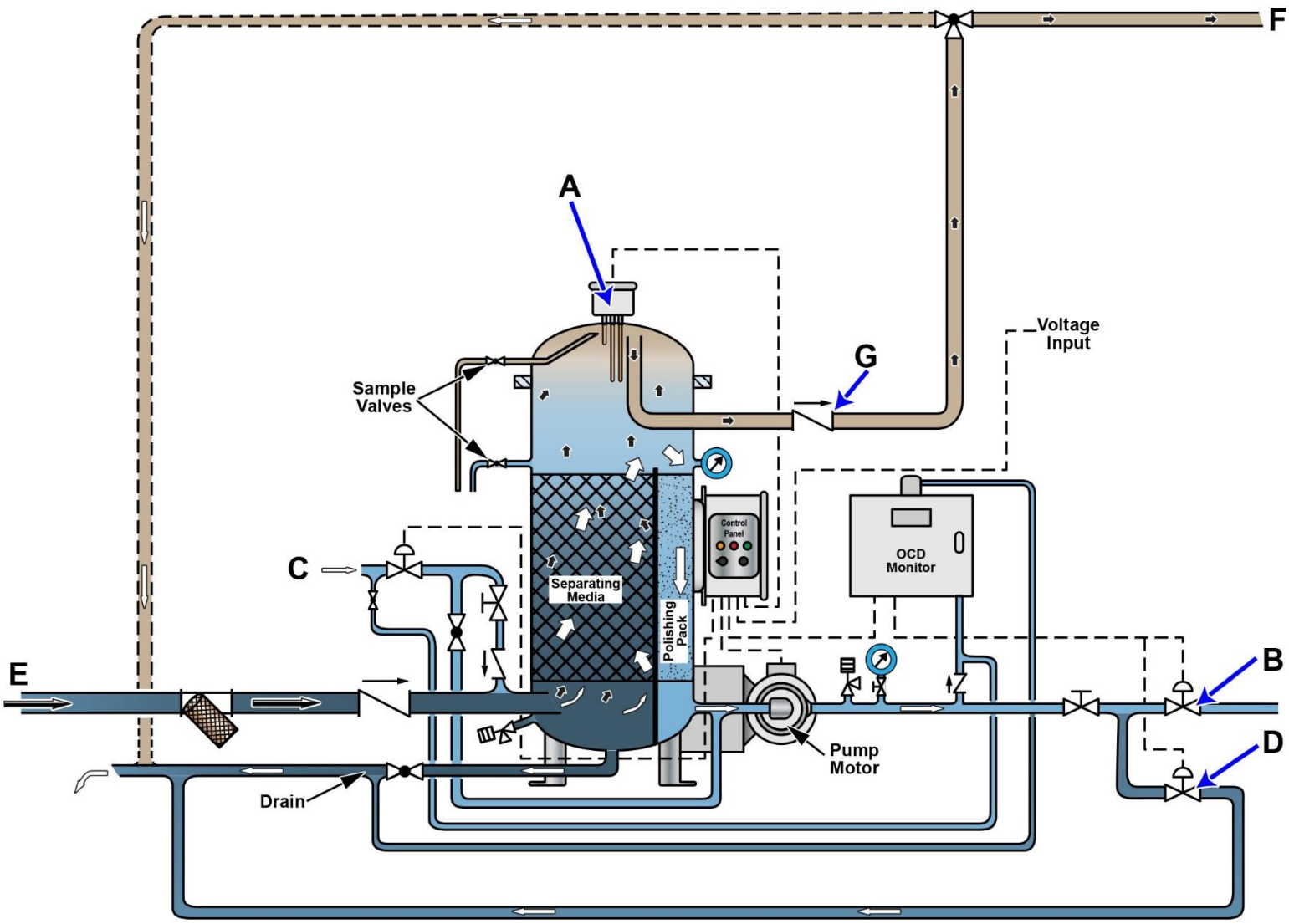

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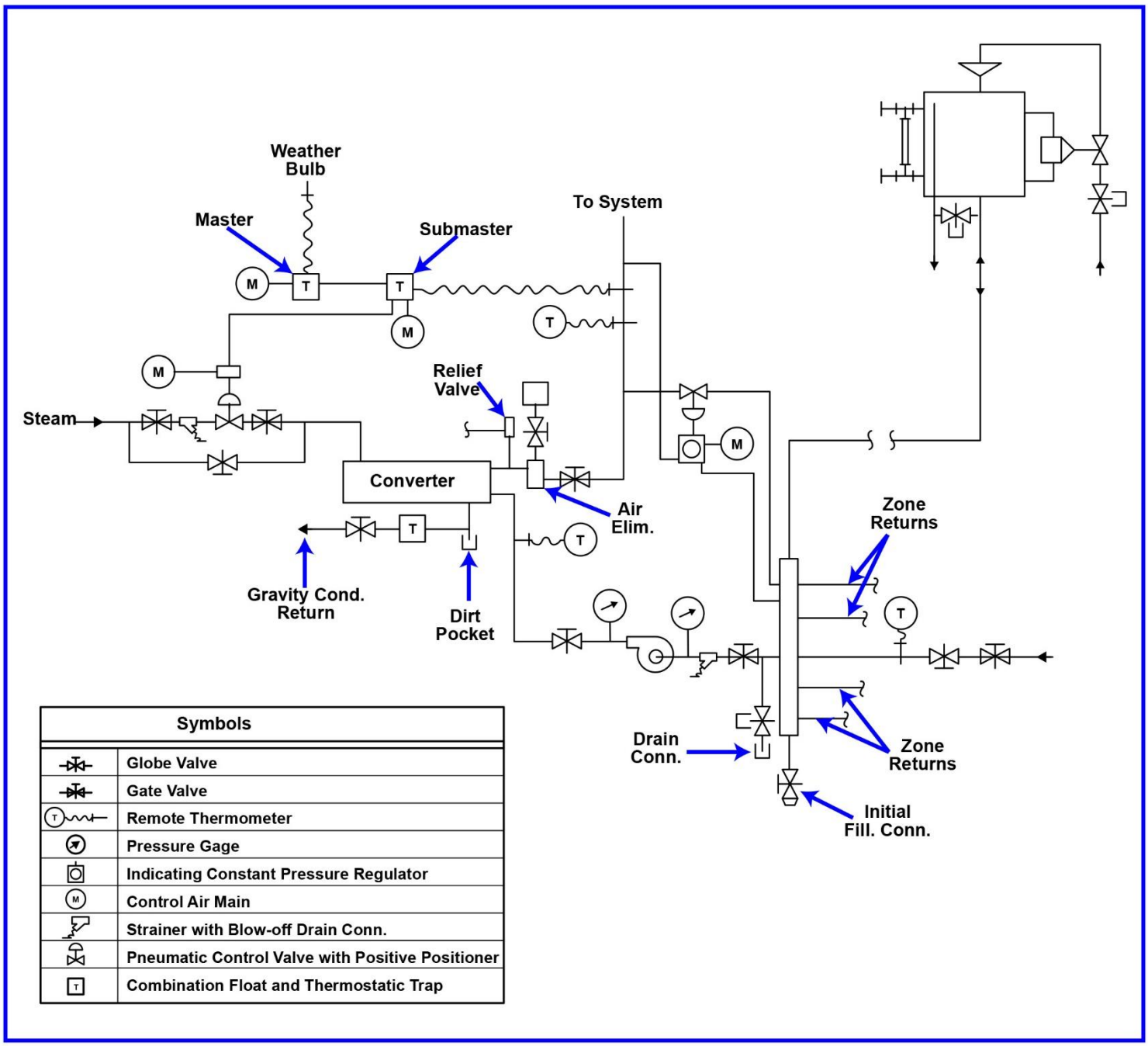
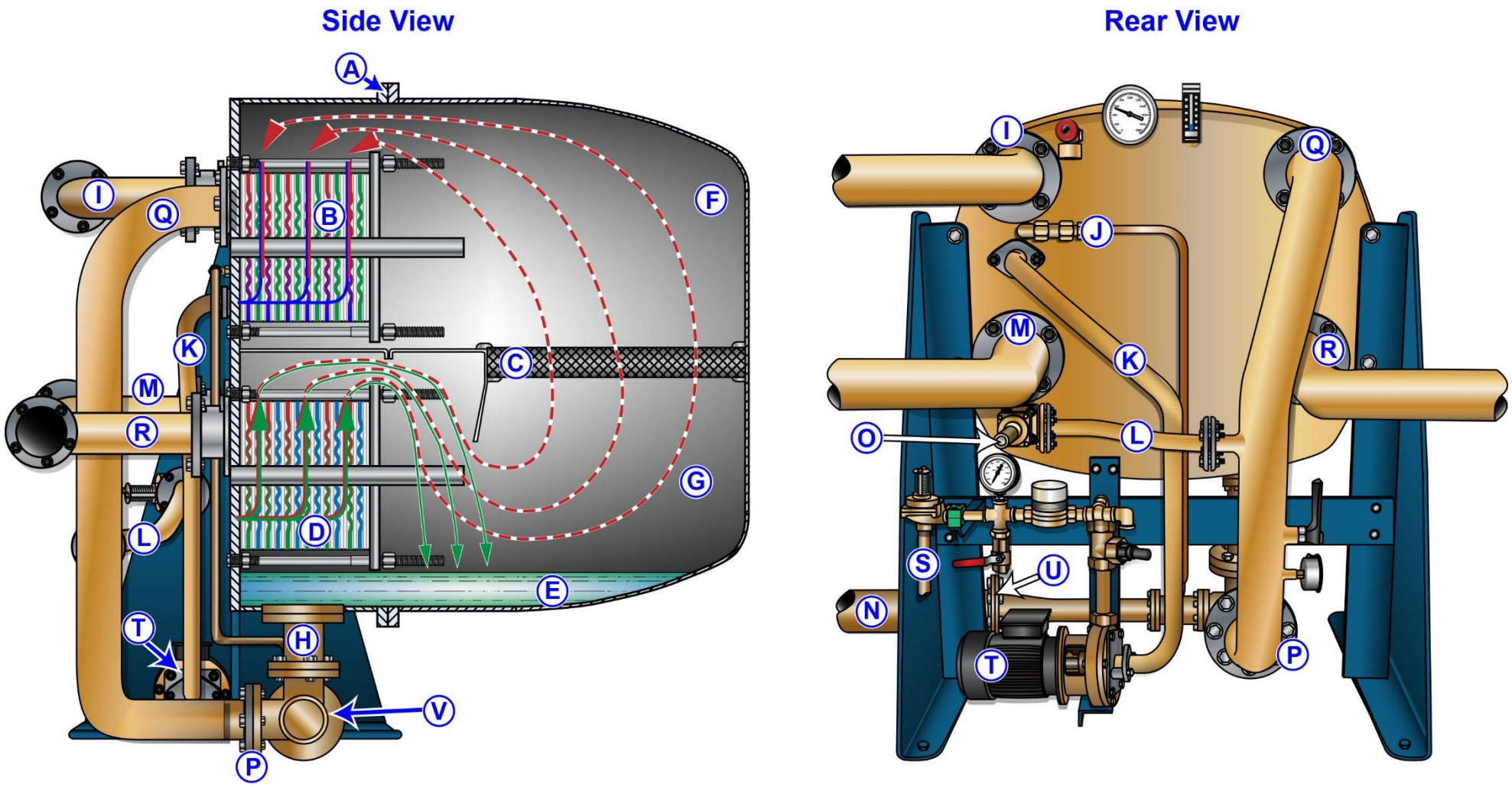
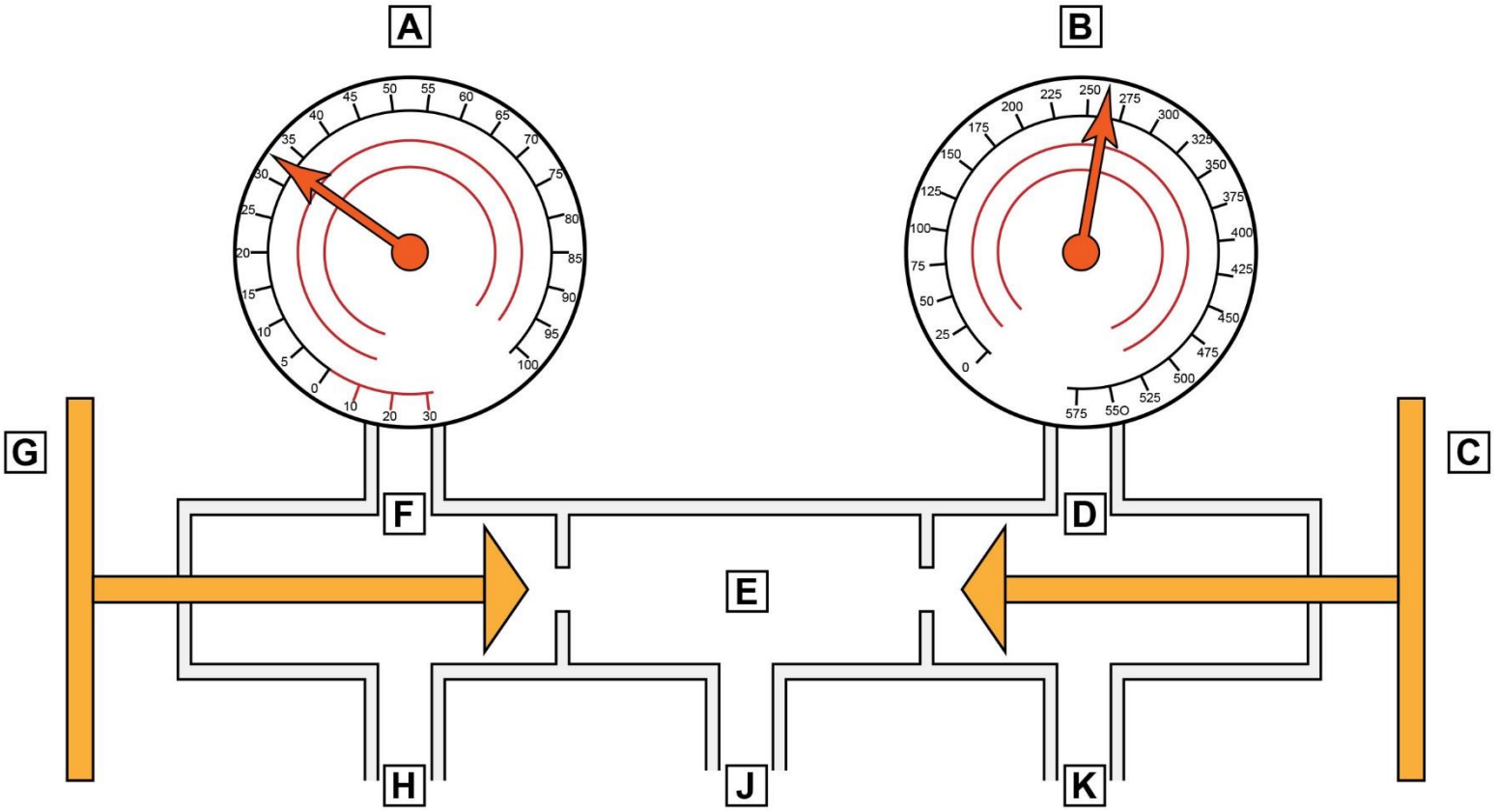


Symbols	
	Globe Valve
	Gate Valve
T	Remote Thermometer
	Pressure Gage
	Indicating Constant Pressure Regulator
M	Control Air Main
	Strainer with Blow-off Drain Conn.
	Pneumatic Control Valve with Positive Positioner
T	Combination Float and Thermostatic Trap

MO-0110

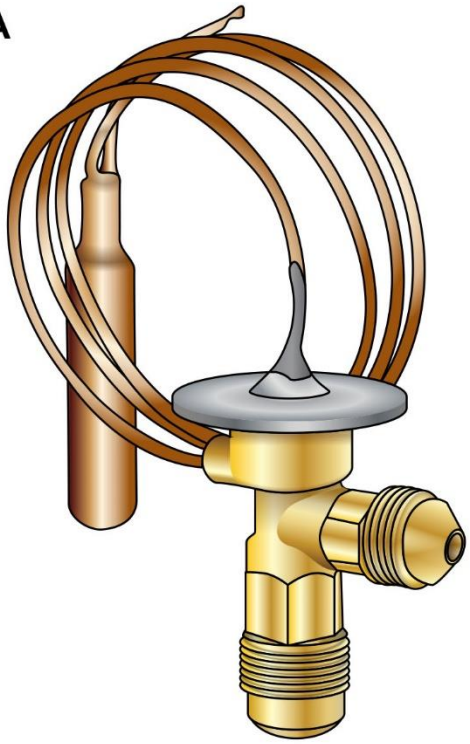


RA-0001



RA-0006

A



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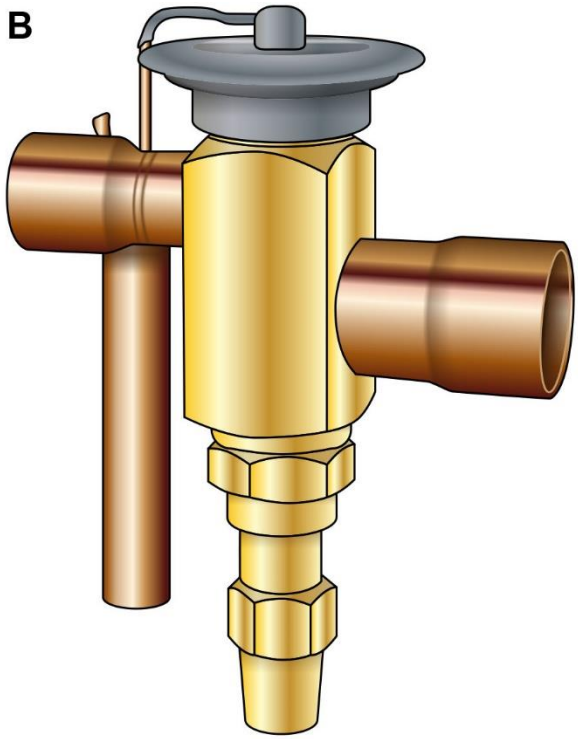

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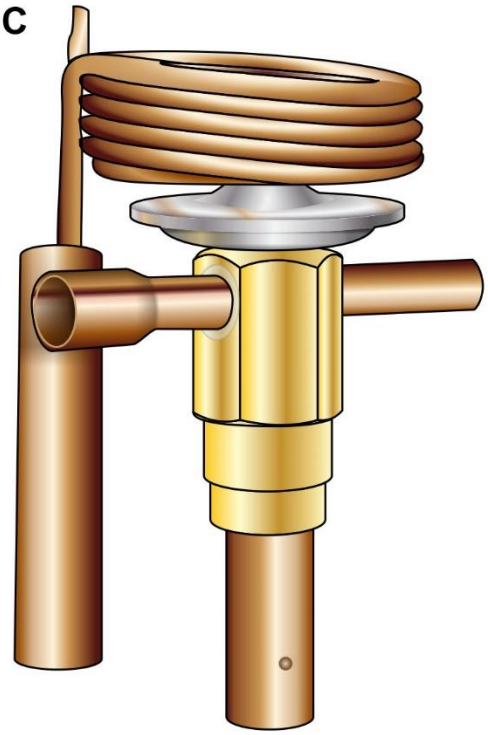

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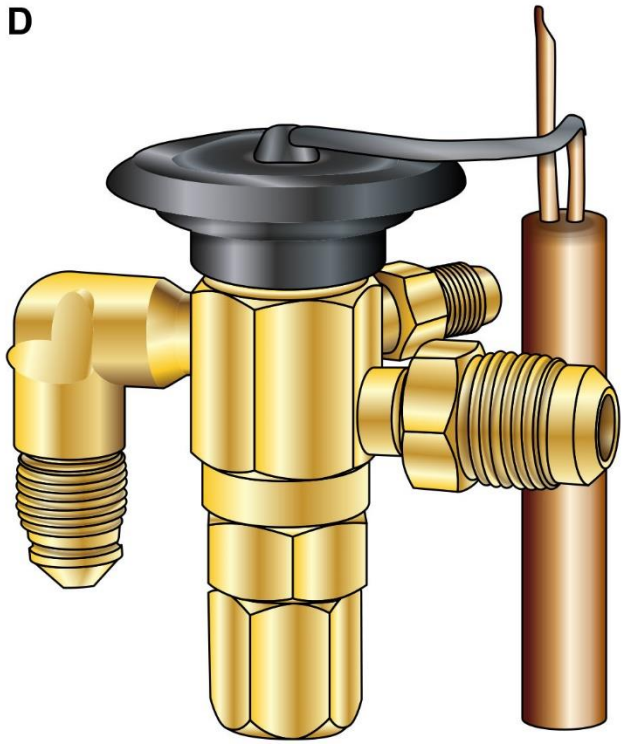
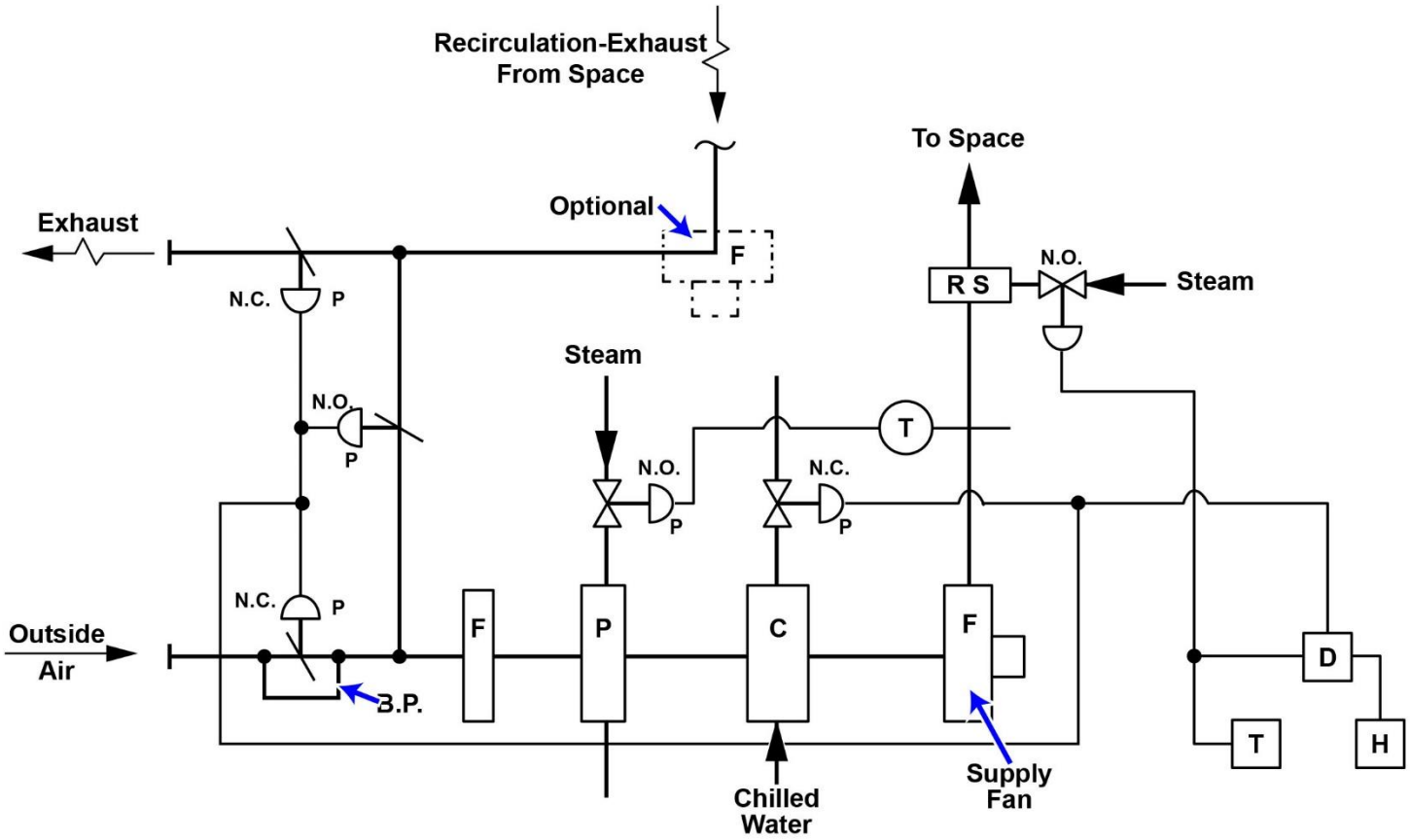


RA-0009



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-0011

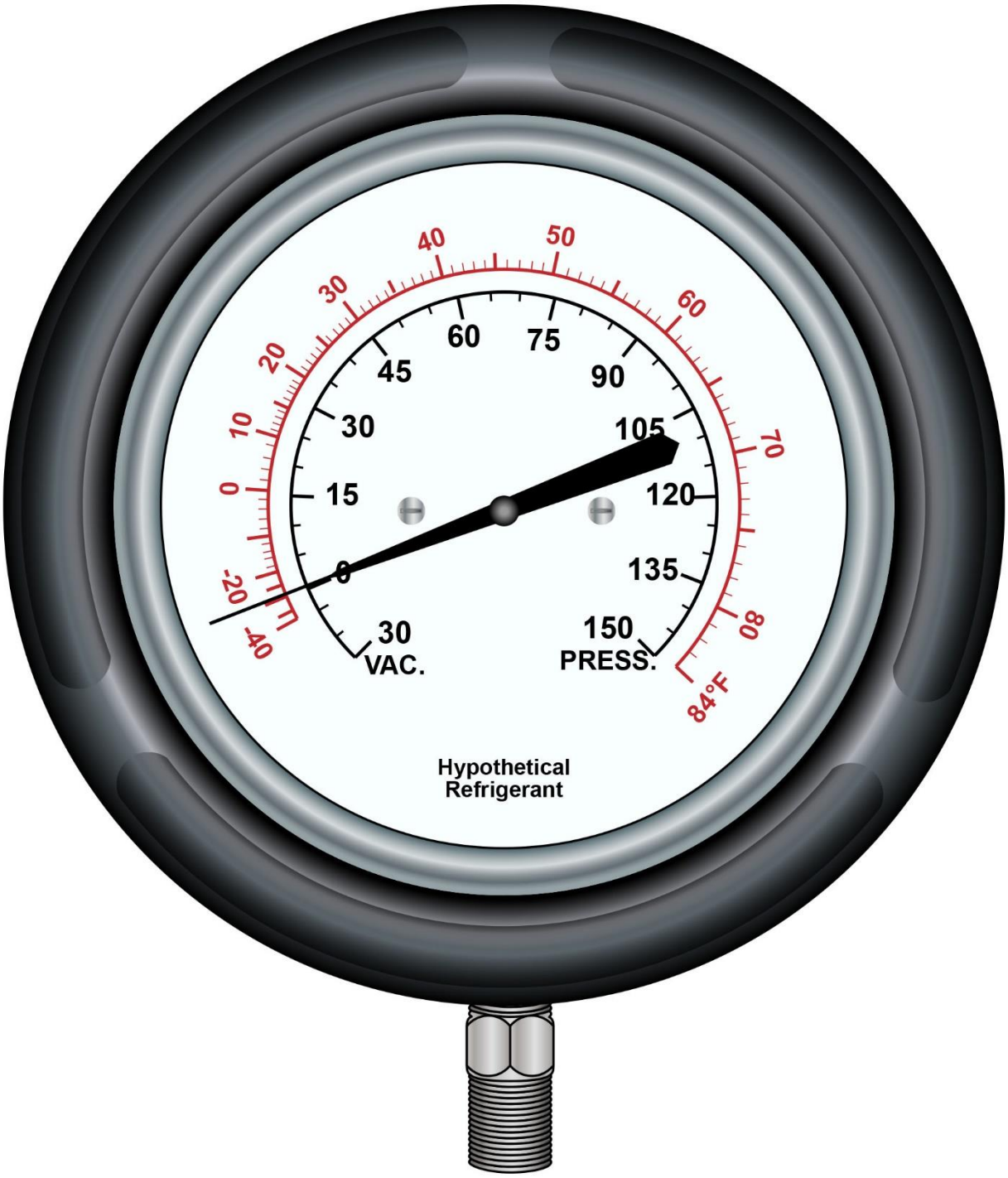
R-134a Pressure-Temperature Chart

Temperature °F	Vacuum "Hg
-40	14.6
-35	12.3
-30	9.7
-25	6.7
-20	3.5
-18	2.1
-16	0.6

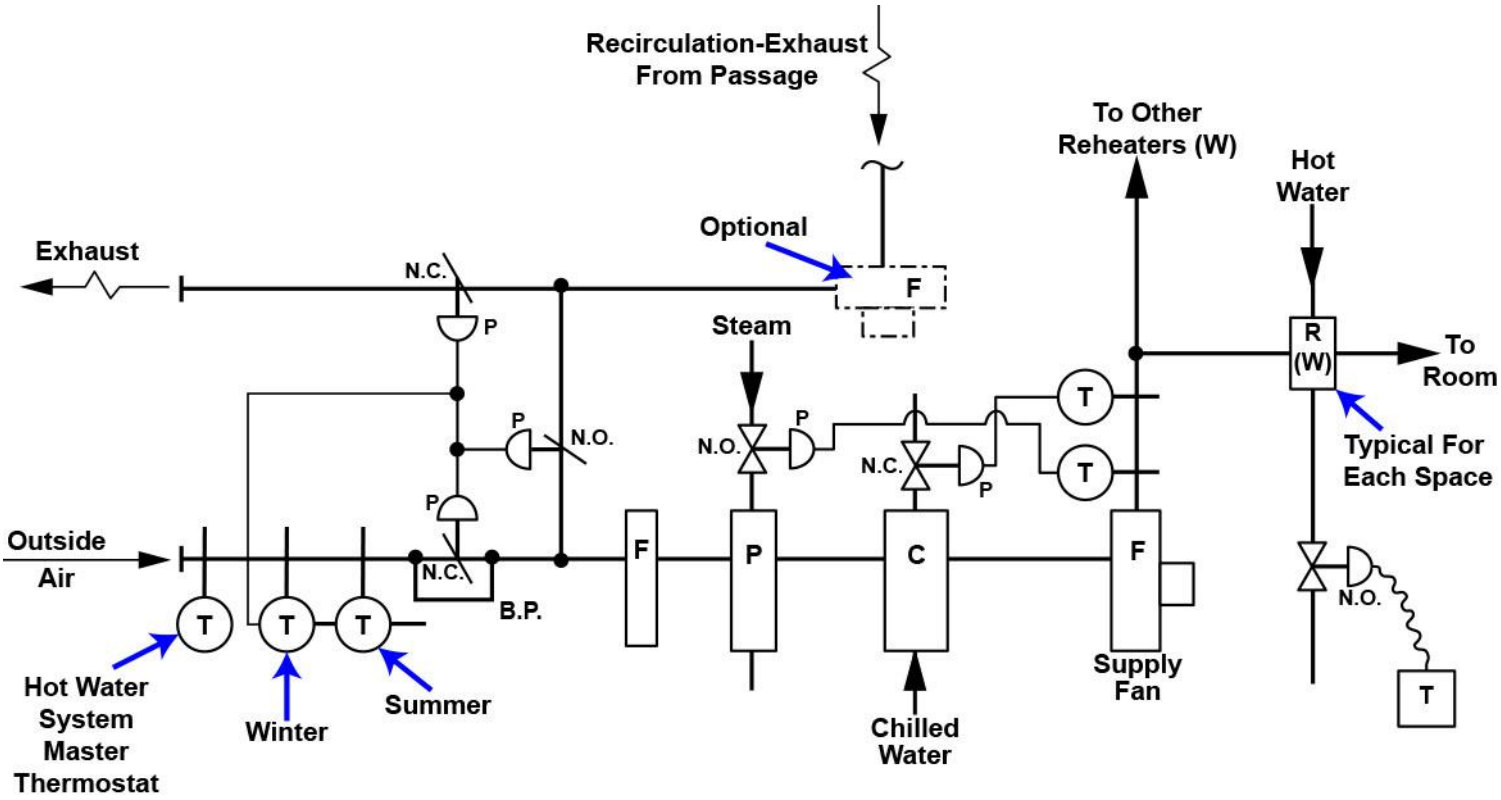
Temperature °F	Pressure psig
-14	0.4
-12	1.2
-10	2.0
-8	2.9
-6	3.7
-4	4.6
-2	5.6
0	6.5
2	7.6
4	8.6
6	9.7
8	10.8
10	12.0
12	13.2
14	14.5
16	15.8
18	17.1
20	18.5
22	19.9
24	21.4
26	22.9

Temperature °F	Pressure psig
28	24.5
30	26.1
32	27.8
34	29.6
36	31.3
38	33.2
40	35.1
45	40.1
50	45.5
55	51.2
60	57.4
65	64.1
70	71.1
75	78.7
80	86.7
85	95.3
90	104.3
95	114.0
100	124.2
105	135.0
110	146.4
115	158.4
120	171.2
125	184.6
130	198.7
135	213.6
140	229.2
145	245.6
150	262.9
155	281.1

RA-0016



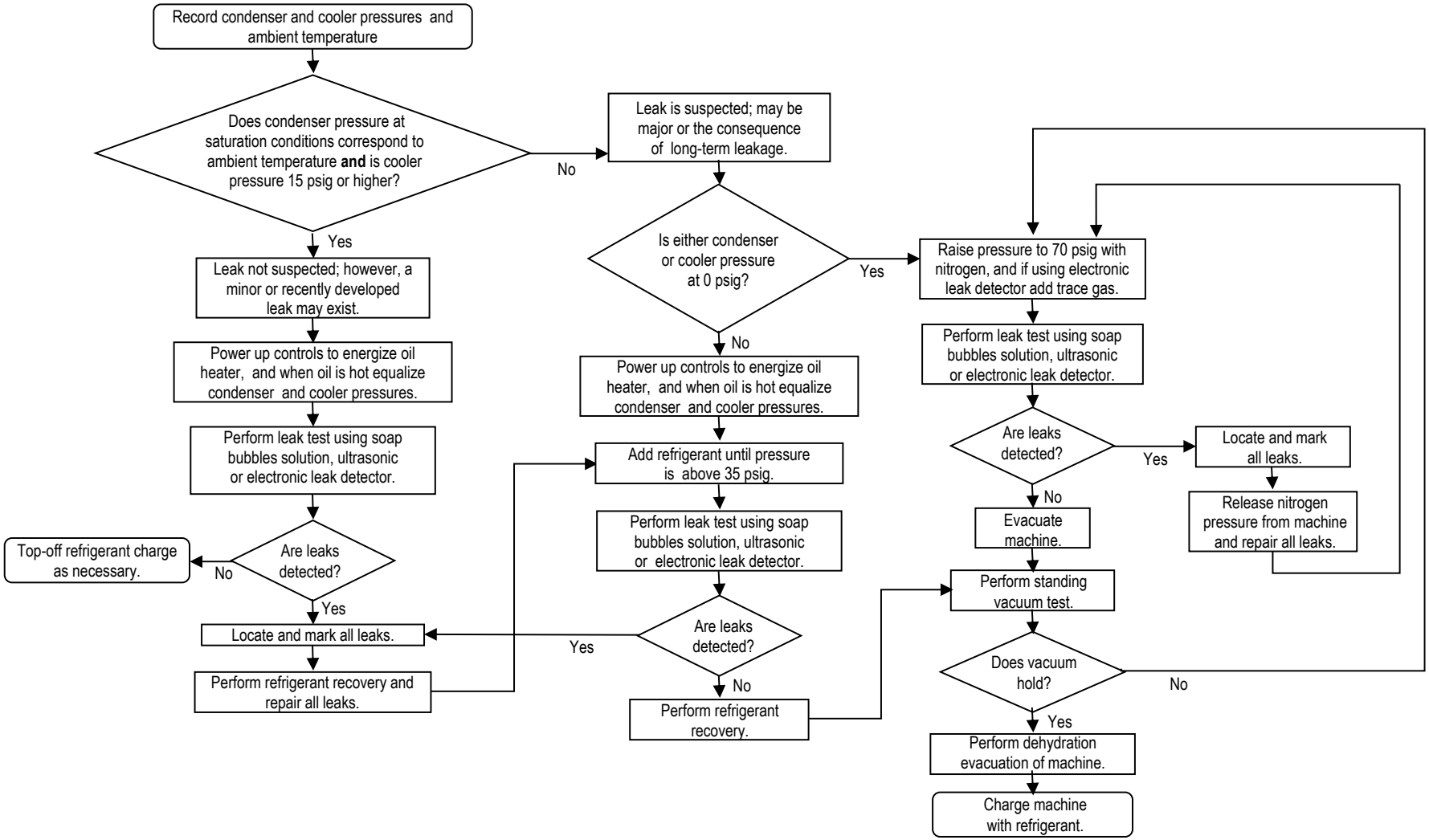
RA-0042



LEGEND

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

RA-0047
Leak Test Procedure for Idle Centrifugal Chiller Charged with R-134a Refrigerant



RA-0058