

U.S.C.G. Merchant Marine Exam

QMED

Q804 Oiler – Part I

(Sample Examination)

Choose the best answer to the following Multiple Choice Questions:

1. Under normal conditions, the rate of heat transfer in a feedwater heater is most greatly affected by the _____.

- ☐ (A) speed of the main feed pump
- ☒ (B) temperature differential between the steam and feedwater
- ☐ (C) pH of the feedwater
- ☐ (D) density of the feedwater

If choice B is selected set score to 1.

2. When starting a turbine driven boiler feed pump, care should be taken to ensure that the recirculating valve is open. Which of the following valves should be closed when starting?

- ☐ (A) Pump suction valve
- ☐ (B) Turbine exhaust valve
- ☒ (C) Pump discharge valve
- ☐ (D) Turbine steam supply valve

If choice C is selected set score to 1.

3. Compared to a naturally aspirated diesel engine, a supercharged diesel engine has _____.

- ☒ (A) a cylinder air charge of higher pressure
- ☐ (B) reduced cylinder mean effective pressure
- ☐ (C) less valve overlap
- ☐ (D) reduced blow-by

If choice A is selected set score to 1.

4. Item 4 shown in the illustration represents a _____. Illustration GS-0125

- ☒ (A) manifold
- ☐ (B) suction line
- ☐ (C) bilge system
- ☐ (D) vacuum branch line

If choice A is selected set score to 1.

5. The lube oil strainer shown in the illustration is used on the reduction gear of a mid-size diesel engine. The strainer elements consist of _____. Illustration MO-0057

- ☒ (A) metal disks
- ☐ (B) pleated paper
- ☐ (C) fibrous braid
- ☐ (D) wire mesh

If choice A is selected set score to 1.

6. Which of the devices listed is commonly used to compensate for the expansion and minor misalignments occurring between the main turbine rotor and the reduction gear?

- ☐ (A) Sliding sleeve
- ☐ (B) Expansion gear
- ☐ (C) Quill shaft
- ☒ (D) Gear-type flexible coupling

If choice D is selected set score to 1.

7. In order for microbiological growths to thrive in a fuel tank it is necessary for _____.

- ☐ (A) vanadium to be present
- ☐ (B) low temperatures to exist
- ☒ (C) moisture or water to be present
- ☐ (D) electrolysis to be occurring

If choice C is selected set score to 1.

8. During the valve overlap period, the exhaust pressure of a turbocharged, four-stroke cycle diesel engine must be less than the intake manifold pressure to ensure _____.

- ☒ (A) effective cylinder scavenging and cooling
- ☐ (B) constant pressure from the turbochargers
- ☐ (C) cooler operation of the exhaust system
- ☐ (D) effective constant pressure for turbocharger operation

If choice A is selected set score to 1.

9. What is a quick and effective way of determining whether or not a boiler water gauge glass is operating properly?

- ☒ (A) Quickly opening and then reclosing the gauge glass drain valve.
- ☐ (B) Quickly opening and then reclosing the gauge glass lower root valve.
- ☐ (C) Watching for the level to fluctuate in the glass corresponding to ship movements such as pitching.
- ☐ (D) Quickly opening and then reclosing the gauge glass upper root valve.

If choice A is selected set score to 1.

10. According to the illustrated diesel engine fuel treatment and fuel service systems schematic, what would be the appropriate valve configuration for operating the two heavy fuel oil purifiers in series?
Illustration MO-0077

- ☐ (A) Valves 2, 3, and 6 all OPEN
- ☐ (B) Valves 2, 3, and 6 all CLOSED
- ☐ (C) Valves 2 and 3 OPEN, and valve 6 CLOSED
- ☒ (D) Valves 2 and 3 CLOSED, and valve 6 OPEN

If choice D is selected set score to 1.

11. Connecting rods in a diesel engine are used to connect the _____.

- ☐ (A) crankshaft to the gear train
- ☐ (B) engine to the bed
- ☒ (C) piston to the crankshaft
- ☐ (D) rocker arm to the camshaft

If choice C is selected set score to 1.

12. In the presence of an open flame or hot surfaces, chlorinated fluorocarbon refrigerants decompose and form what chemical substance?

- ☐ (A) water vapor
- ☐ (B) carbon monoxide
- ☐ (C) petroleum crystals
- ☒ (D) phosgene gas

If choice D is selected set score to 1.

13. On a slow speed, crosshead type, diesel engine, in which application is the lubricating oil considered a consumable?

- ☐ (A) Turbocharger lubricating oil
- ☐ (B) Main circulating oil
- ☒ (C) Cylinder lubricating oil
- ☐ (D) Piston cooling oil

If choice C is selected set score to 1.

14. The diesel engine component labeled "3", shown in the illustration is called the _____.
Illustration MO-0122

- ☐ (A) scavenging air space
- ☒ (B) cylinder head
- ☐ (C) cylinder liner
- ☐ (D) head valve assembly

If choice B is selected set score to 1.

15. Which of the following is the purpose of the steam drum in a D-Type marine boiler?

- ☐ (A) maintains circulation by forcing steam bubbles downward in the generating tubes
- ☒ (B) provides a space for moisture to separate from the steam
- ☐ (C) acts as a receptacle for heavy suspended solids in boiler feedwater
- ☐ (D) supports the superheater tube bank

If choice B is selected set score to 1.

16. On a large diesel engine installation, crankshaft axial alignment is maintained by the _____.

- (A) piston rod guides
- (B) engine thrust bearing
- (C) crosshead bearing
- (D) main shaft flexible coupling

If choice B is selected set score to 1.

17. What will be the FIRST thing to occur if both the main and standby lube oil pumps failed to operate on a geared main propulsion steam turbine operating at full sea speed?

- (A) Vacuum will be lost.
- (B) Ahead throttle will close.
- (C) Shaft brake will engage.
- (D) Lube oil sump will overflow.

If choice B is selected set score to 1.

18. According to the illustrated main and auxiliary diesel engine cooling water systems diagram, which of the following heat exchangers uses high temperature fresh water (jacket water) as a source of heat?
Illustration MO-0129

- (A) Camshaft lube oil cooler
- (B) Scavenge air cooler(s)
- (C) Jacket water cooler
- (D) Fresh water generator (evaporator)

If choice D is selected set score to 1.

19. Which of the following problems could develop due to the accumulation of oil vapors in the crankcase of a diesel engine?

- (A) Reduced lubrication
- (B) Poor fuel economy
- (C) Combustion knock
- (D) Crankcase explosion

If choice D is selected set score to 1.

20. Fuel injection systems are designed to primarily meter fuel, atomize fuel, and _____.

- (A) create turbulence in the combustion chamber
- (B) aid in completing cylinder scavenging
- (C) inject fuel at the proper time
- (D) minimize fuel penetration into the cylinder

If choice C is selected set score to 1.

21. In terms of the completeness of combustion, in viewing the condition of the stack, what would be the indication of the MOST complete combustion and HIGHEST boiler efficiency?

- ☐ (A) Black smoke
- ☐ (B) Clear stack
- ☒ (C) Light brown haze
- ☐ (D) White smoke

If choice C is selected set score to 1.

22. Salt water ballast is to be discharged into the #6 port and starboard wing tanks. Which combination of valves, illustrated, must be opened, and which valves should be closed? Illustration GS-0139

- ☐ (A) 1, 2, 5 and 6 open; 4, 7, 8 and 9 closed.
- ☐ (B) 1, 2, 7 and 9 open; 3, 4, 5, 6, 8 and 10 closed.
- ☒ (C) 1, 3, 5, 6, 8 and 10 open; 2, 4, 7 and 9 closed.
- ☐ (D) 3, 4, 7 and 9 open; 1, 2, 5, 6 and 10 closed.

If choice C is selected set score to 1.

23. What device on the bridge shows the rudder's position?

- ☒ (A) rudder angle indicator
- ☐ (B) follow-up gear
- ☐ (C) telemotor position
- ☐ (D) Rapson slide indicator

If choice A is selected set score to 1.

24. A "hygroscopic" lubricant used in refrigeration compressors would have what characteristic?

- ☐ (A) losing its lubrication qualities at higher temperatures
- ☒ (B) having a high affinity for moisture which requires it to be kept in a sealed container
- ☐ (C) decreasing in viscosity at low temperatures
- ☐ (D) being highly toxic

If choice B is selected set score to 1.

25. Personnel servicing refrigeration systems and subject to the exposure to commonly used refrigerants should wear what type of personal protective equipment?

- ☒ (A) goggles and gloves
- ☐ (B) rubber soled shoes
- ☐ (C) a respirator
- ☐ (D) an all-purpose gas mask

If choice A is selected set score to 1.

26. Which of the valves listed should be closed before lighting off a boiler?

- ☐ (A) Superheater vent valve
- ☐ (B) Superheater drain valve
- ☒ (C) Economizer drain valve
- ☐ (D) Air cock valve

If choice C is selected set score to 1.

27. On a bearing using an oiling ring as means of static oil feed, unless adverse conditions would indicate otherwise, how often should the oil be completely changed at a minimum?

- ☐ (A) Weekly
- ☐ (B) Monthly
- ☐ (C) Quarterly
- ☒ (D) Annually

If choice D is selected set score to 1.

28. The DC heater functions to _____.

- ☐ (A) store feedwater
- ☐ (B) remove air from feedwater
- ☐ (C) heat feedwater
- ☒ (D) all of the above

If choice D is selected set score to 1.

29. As shown in the illustrated D type single furnace boiler, what does item "F" represent? Illustration SG-0008

- ☒ (A) Generating tubes
- ☐ (B) Screening tubes
- ☐ (C) Superheater tubes
- ☐ (D) Desuperheater tubes

If choice A is selected set score to 1.

30. A main condenser utilizing a scoop for the circulation of sea water must be constructed as a _____.

- ☒ (A) single-pass heat exchanger
- ☐ (B) counterflow heat exchanger
- ☐ (C) two-pass heat exchanger
- ☐ (D) parallel flow heat exchanger

If choice A is selected set score to 1.

31. Kingsbury thrust bearings are lubricated by _____.

- (A) flooding the thrust bearing assembly with oil
- (B) submerging oil wiper rings in an oil bath
- (C) pressure lubricating through internal passages
- (D) spraying oil directly on the thrust collar and shoes

If choice A is selected set score to 1.

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

- (A) sudden evaporation of entrapped air from the refrigerant liquid
- (B) release of dissolved lubricant from the refrigerant in the crankcase
- (C) sudden evaporation of entrapped moisture from the crankcase lubricant
- (D) release of miscible refrigerant from the lubricant in the crankcase

If choice D is selected set score to 1.

33. Whether using a centrifuge or a simple filter, oil cleaning and filtration will be the most effective when the oil is at a _____.

- (A) high temperature and a high viscosity
- (B) high temperature and a low viscosity
- (C) low temperature and a high viscosity
- (D) low temperature and a low viscosity

If choice B is selected set score to 1.

34. When checking the oil level in a refrigeration compressor, under what conditions would the most accurate reading be obtained?

- (A) immediately after start-up
- (B) after being shut down for 3 hours with the crankcase heater secured
- (C) several minutes after shutdown following a prolonged period of operation
- (D) immediately after adding oil

If choice C is selected set score to 1.

35. The expansion tank in a diesel engine closed fresh water cooling system is located at _____.

- (A) or near the floor plate level
- (B) the lowest point in the system
- (C) the highest point in the system
- (D) or near the tank top level

If choice C is selected set score to 1.

36. An excess pressure governor is a special type of control device. On what equipment would an excess pressure governor normally be found?

- ☐ (A) main circulator pump
- ☐ (B) forced draft fan
- ☒ (C) turbine-driven feed pump
- ☐ (D) low-pressure propulsion turbine

If choice C is selected set score to 1.

37. While fires are lit in a boiler, in terms of uptake dampers and air register doors, what conditions must be met?

- ☒ (A) All uptake dampers should be locked open, all air register doors on lit burners should be wide open or throttled, and all air register doors on idle burners should be closed.
- ☐ (B) All uptake dampers should be throttled according to the firing rate, all air register doors on lit burners should be wide open, and all air register doors on idle burners should be closed.
- ☐ (C) All uptake dampers should be throttled according to the firing rate, all air register doors on lit burners should be throttled according to the firing rate, and all air register doors on idle burners should be closed.
- ☐ (D) All uptake dampers should be locked open, all air register doors on lit burners should be throttled according to the firing rate, and all air register doors on idle burners should be open.

If choice A is selected set score to 1.

38. The purpose of try-cocks used on an auxiliary boiler is to _____.

- ☒ (A) provide an alternate means of determining the water level, if the gage glass fails
- ☐ (B) provide a means of adding chemical feed to the boiler water
- ☐ (C) provide a means for blowing down the gage glass
- ☐ (D) act as a steam sentinel valve, if any of the fusible plugs should melt

If choice A is selected set score to 1.

39. Which of the listed devices would be installed in the air compressor discharge line between the compressor and receiver of a control air system?

- ☐ (A) Vacuum breaker
- ☐ (B) Lubricator
- ☒ (C) Moisture separator
- ☐ (D) P-I converter

If choice C is selected set score to 1.

40. The component shown in the illustration, labeled "IV", is the _____. Illustration SE-0013

- ☐ (A) high-speed pinion
- ☒ (B) bull gear
- ☐ (C) first reduction gear
- ☐ (D) low-speed pinion

If choice B is selected set score to 1.

41. What is the purpose of the main steam stop bypass valve?

- ☒ (A) gradually increase the pressure and temperature of the main steam piping when warming up
- ☐ (B) isolate the main steam stop for repairs while steaming
- ☐ (C) cross-connect two steaming boilers
- ☐ (D) supply auxiliary steam when the main steam stop is closed

If choice A is selected set score to 1.

42. Which of the following statements concerning fire-tube boilers is correct?

- ☒ (A) Combustion gases flow through the tubes.
- ☐ (B) Flames impinge on the tubes.
- ☐ (C) Combustion occurs in the tubes.
- ☐ (D) Water flows through the tubes.

If choice A is selected set score to 1.

43. By which of the listed methods may heat be transferred from one body to another?

- ☐ (A) Radiation
- ☐ (B) Conduction
- ☐ (C) Convection
- ☒ (D) All of the above

If choice D is selected set score to 1.

44. The automatic recirculating valve in the main condensate recirculating line is controlled by a temperature sensor which is located at the _____.

- ☒ (A) air ejector condensate discharge
- ☐ (B) main condensate pump suction
- ☐ (C) condensate inlet to the main air ejectors
- ☐ (D) main condensate pump discharge

If choice A is selected set score to 1.

45. Which of the following represents the motivating power fluid used in conjunction with the ejector pumps on plate type evaporators?

- ☐ (A) The motive power is the jacket water flowing through the ejectors.
- ☐ (B) The ejectors do not require a motive power.
- ☐ (C) The motive power is the brine pump output, prior to being discharged overboard.
- ☒ (D) The motive power is the feedwater supply.

If choice D is selected set score to 1.

46. In a main propulsion steam turbine installation, the condensate pump initially discharges to the _____.

- ☐ (A) distillate tank
- ☐ (B) deaerating feed tank
- ☒ (C) air ejector condenser
- ☐ (D) first stage heater

If choice C is selected set score to 1.

47. The component shown in the illustration, labeled "IV", is the _____. Illustration SE-0013

- ☐ (A) high-speed pinion
- ☒ (B) bull gear
- ☐ (C) first reduction gear
- ☐ (D) low-speed pinion

If choice B is selected set score to 1.

48. Diesel engine jacket water is used in the fresh water distillation process as the _____.

- ☐ (A) coolant for the brine cooler
- ☒ (B) means of heating the feedwater
- ☐ (C) coolant for the distillate
- ☐ (D) primary means of producing a vacuum within the distiller

If choice B is selected set score to 1.

49. According to the illustrated steam tables, what would be the superheater outlet temperature if saturated steam at 400 psia was elevated 192.83 °F? Illustration SG-0004

- ☐ (A) 192.83 °F
- ☐ (B) 247.31 °F
- ☐ (C) 444.59 °F
- ☒ (D) 637.42 °F

If choice D is selected set score to 1.

50. An exhaust gas bypass is installed on a waste heat boiler in order to _____.

- ☐ (A) bypass exhaust gas at high loads to prevent excessive back pressure
- ☐ (B) bypass a portion of the exhaust gas at peak loads for better efficiency
- ☐ (C) recycle exhaust gas to the turbocharger
- ☒ (D) minimize moisture condensation in the boiler gas passages at low loads

If choice D is selected set score to 1.

51. When the compressed air reservoir is placed in line with an air compressor and is used as an aftercooler, what must be done with the reservoir?

- ☒ (A) It must be frequently drained of condensed water.
- ☐ (B) It must be fitted with a sight glass.
- ☐ (C) It must be fitted with a manhole.
- ☐ (D) It must be fitted with a moisture trap at the inlet.

If choice A is selected set score to 1.

52. What is the purpose of the item labeled "nozzle" located on the illustrated steam turbine? Illustration SE-0003

- ☒ (A) Convert the potential energy of the supply steam to kinetic energy.
- ☐ (B) Convert the kinetic energy of the supply steam to potential energy.
- ☐ (C) Convert the kinetic energy of the supply steam to mechanical energy.
- ☐ (D) Convert the potential energy of the supply steam to mechanical energy.

If choice A is selected set score to 1.

53. If you hear a continuous blast of the whistle for not less than 10 seconds supplemented by the continuous ringing of the general alarm bells for not less than 10 seconds, what does this indicate?

- ☐ (A) Man overboard.
- ☐ (B) Dismissal from a boat drill.
- ☒ (C) Fire and emergency.
- ☐ (D) Abandon ship.

If choice C is selected set score to 1.

54. For an emergency stop of the rotor of a main turbine while underway at sea you should _____.

- ☒ (A) admit astern steam to the turbine after securing the ahead steam
- ☐ (B) apply the pronny brake
- ☐ (C) tighten the stern tube packing gland
- ☐ (D) secure all steam to the turbine

If choice A is selected set score to 1.

55. Main condensate recirculating systems are primarily intended to _____.

- (A) prevent excessive overheating of the condensate pumps
- (B) vent accumulated vapors from the condensate pump discharge
- (C) balance and control condensate temperatures at full load
- (D) provide adequate cooling water for the air ejector condensers

If choice D is selected set score to 1.

56. To prevent pulsations from developing in the boiler feedwater lines, the discharge side of a reciprocating feed pump is equipped with a/an _____.

- (A) relief valve
- (B) reed valve
- (C) feedwater regulator
- (D) air chamber

If choice D is selected set score to 1.

57. The power consumed during the scavenging process of a diesel engine is known as the _____.

- (A) compression loss
- (B) valve loss
- (C) back pressure loss
- (D) pumping loss

If choice D is selected set score to 1.

58. Starting air check valves are held firmly on their seats by _____.

- (A) cam rollers on the camshaft
- (B) spring force
- (C) air pressure on top of the valve differential piston
- (D) air pressure on the bottom of the valve differential piston

If choice B is selected set score to 1.

59. What is the alarm signal for manning boat stations or boat drills onboard a merchant ship?

- (A) Continuous blast of the whistle for not less than 10 seconds supplemented by the continuous ringing of the general alarm bells for not less than 10 seconds.
- (B) Continuous blast of the whistle for not less than 3 seconds supplemented by the continuous ringing of the general alarm bells for not less than 3 seconds.
- (C) General alarm sounded 3 times supplemented by 3 short blasts of the whistle.
- (D) A succession of more than 6 short blasts followed by 1 long blast of the whistle supplemented by a comparable signal on the general alarm.

If choice D is selected set score to 1.

60. Which of the following statements correctly describes the construction of the close coupled sanitary pump shown in the illustration? Illustration GS-0070

- ☐ (A) The pump suction and discharge connections are made with screwed pipe fittings.
- ☐ (B) The pump impeller is classified as double suction.
- ☒ (C) The pump and motor have a common shaft.
- ☐ (D) The pump housing and motor frame provide for radial adjustment of the shaft coupling.

If choice C is selected set score to 1.

61. What type of disinfection system has the disadvantage that it would fail to provide residual disinfectant in the potable water?

- ☒ (A) An ultraviolet irradiator at the desalinator discharge to the potable water storage tank.
- ☐ (B) A chlorinator located at the desalinator discharge piping to the potable water storage tank.
- ☐ (C) A brominator located at the desalinator discharge piping to the potable water storage tank.
- ☐ (D) A chlorinator located at the potable water storage tank recirculation line.

If choice A is selected set score to 1.

62. Greases used for most marine applications would have what National Lubricating Grease Institute (NLGI) grade?

- ☐ (A) 00
- ☒ (B) 2
- ☐ (C) 4
- ☐ (D) 6

If choice B is selected set score to 1.

63. What statement is true concerning the charge air system of a modern turbocharged slow-speed two-stroke cycle diesel engine?

- ☐ (A) A charge air cooler is usually provided to decrease the charge air density.
- ☐ (B) A charge air heater is usually provided to decrease the charge air density.
- ☐ (C) A charge air heater is usually provided to increase the charge air density.
- ☒ (D) A charge air cooler is usually provided to increase the charge air density.

If choice D is selected set score to 1.

64. Why are two fuel oil heaters "E" provided in the fuel oil system shown in the illustration? Illustration SG-0009

- ☒ (A) To provide a backup in case one of the heaters becomes inoperable.
- ☐ (B) Each heater supplies fuel to a different boiler.
- ☐ (C) To allow fuel of different temperatures to be provided to each boiler.
- ☐ (D) Two heaters are necessary when both boilers steam at full load.

If choice A is selected set score to 1.

65. Which of the tanks, shown in the illustration, supplies fuel to the emergency generator? Illustration MO-0058

- (A) Diesel Oil Service Tank
- (B) Diesel Oil Settling Tank
- (C) Diesel Oil Boiler Tank
- (D) Diesel Oil Booster Tank

If choice A is selected set score to 1.

66. Diesel engines are classified as reciprocating internal combustion engines because they _____.

- (A) burn fuel in a closed chamber which imparts linear motion to pistons
- (B) burn fuel in a combustion chamber that moves back and forth
- (C) use a continuous combustion process to impart rotary motion to the pistons
- (D) use energy from fuel burned outside their cylinders

If choice A is selected set score to 1.

67. When an air started, four-stroke cycle diesel engine is being cranked over, the starting air is admitted to each cylinder during the beginning of its _____.

- (A) intake stroke
- (B) compression stroke
- (C) power stroke
- (D) exhaust stroke

If choice C is selected set score to 1.

68. A naturally aspirated diesel engine at full throttle will have an intake manifold pressure _____.

- (A) slightly less than atmospheric pressure
- (B) approximately equal to exhaust manifold pressure at all times
- (C) that is widely fluctuating
- (D) constantly decreasing as engine load increases

If choice A is selected set score to 1.

69. A three-way thermostatic control valve regulates the diesel engine cooling water temperature by passing a portion of the water _____.

- (A) overboard
- (B) around the cooler
- (C) to the expansion tank
- (D) around the engine

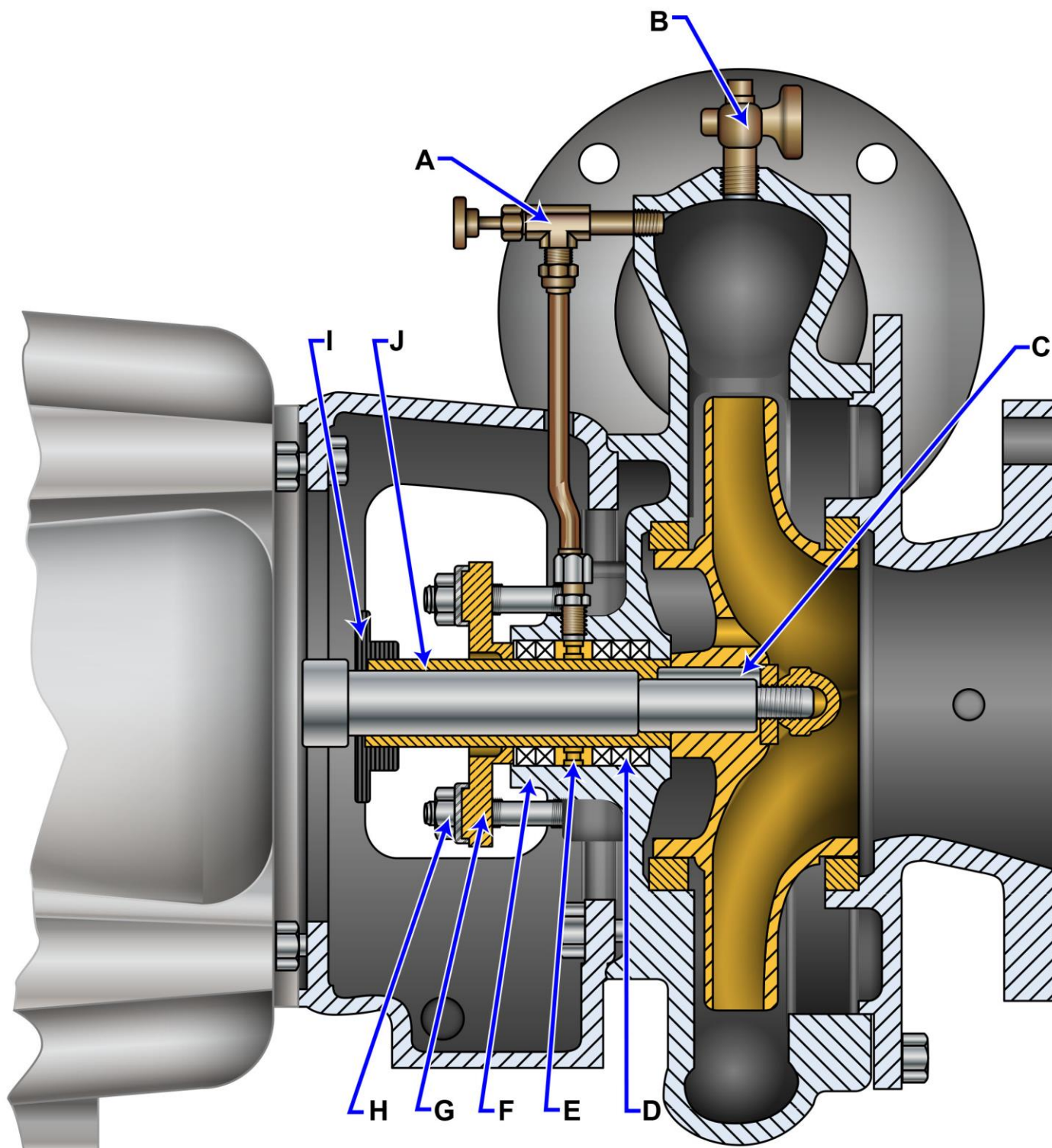
If choice B is selected set score to 1.

70. Fuel piping should be regularly inspected for leaks. What leak location would be particularly troublesome in terms of presenting a fire hazard?

- (A) Fuel oil transfer pump suction strainer.
- (B) Fuel oil service pump suction strainer.
- (C) Fuel oil service pump shaft seal.
- (D) Fuel oil service pump discharge strainer.

If choice D is selected set score to 1.

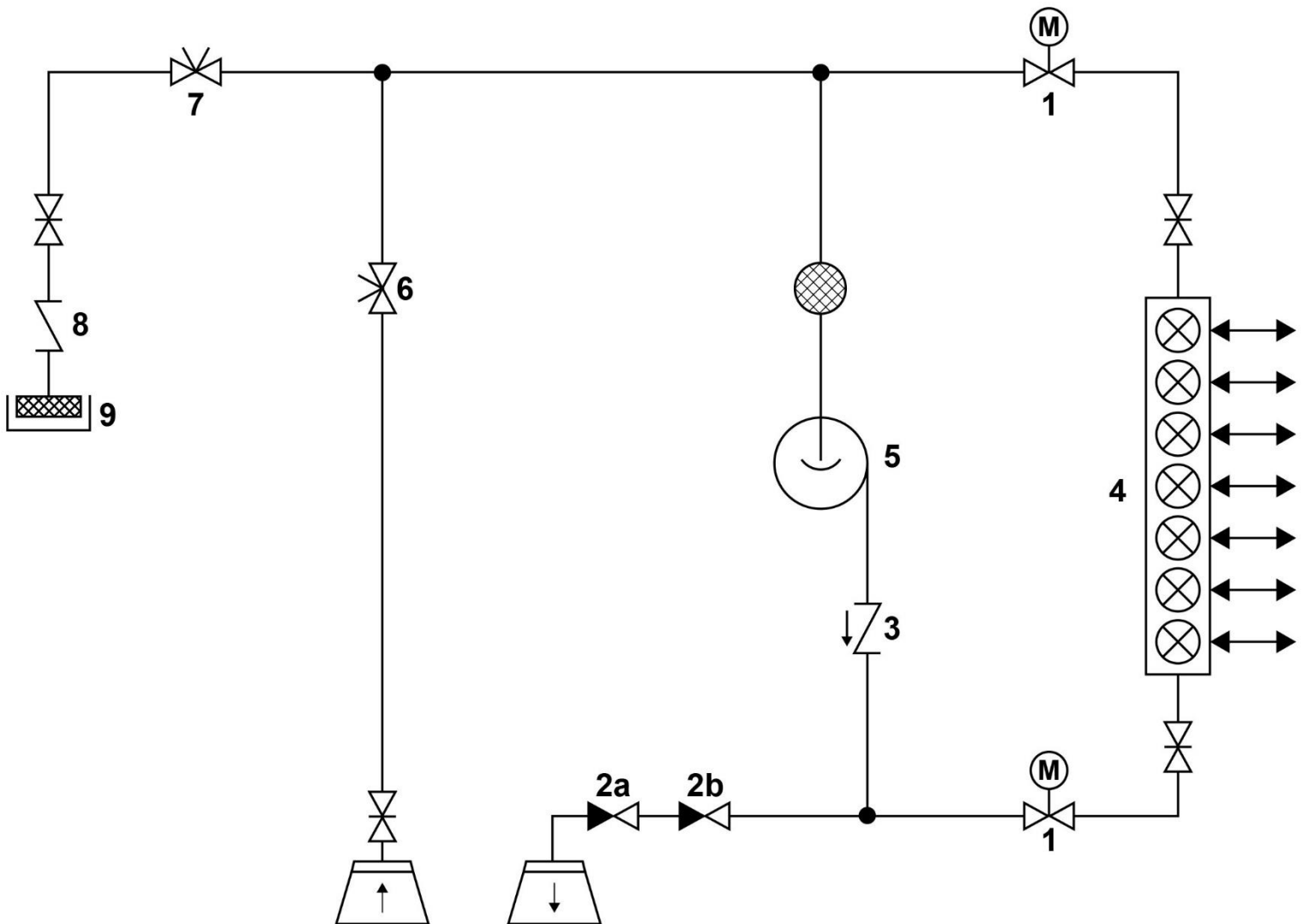
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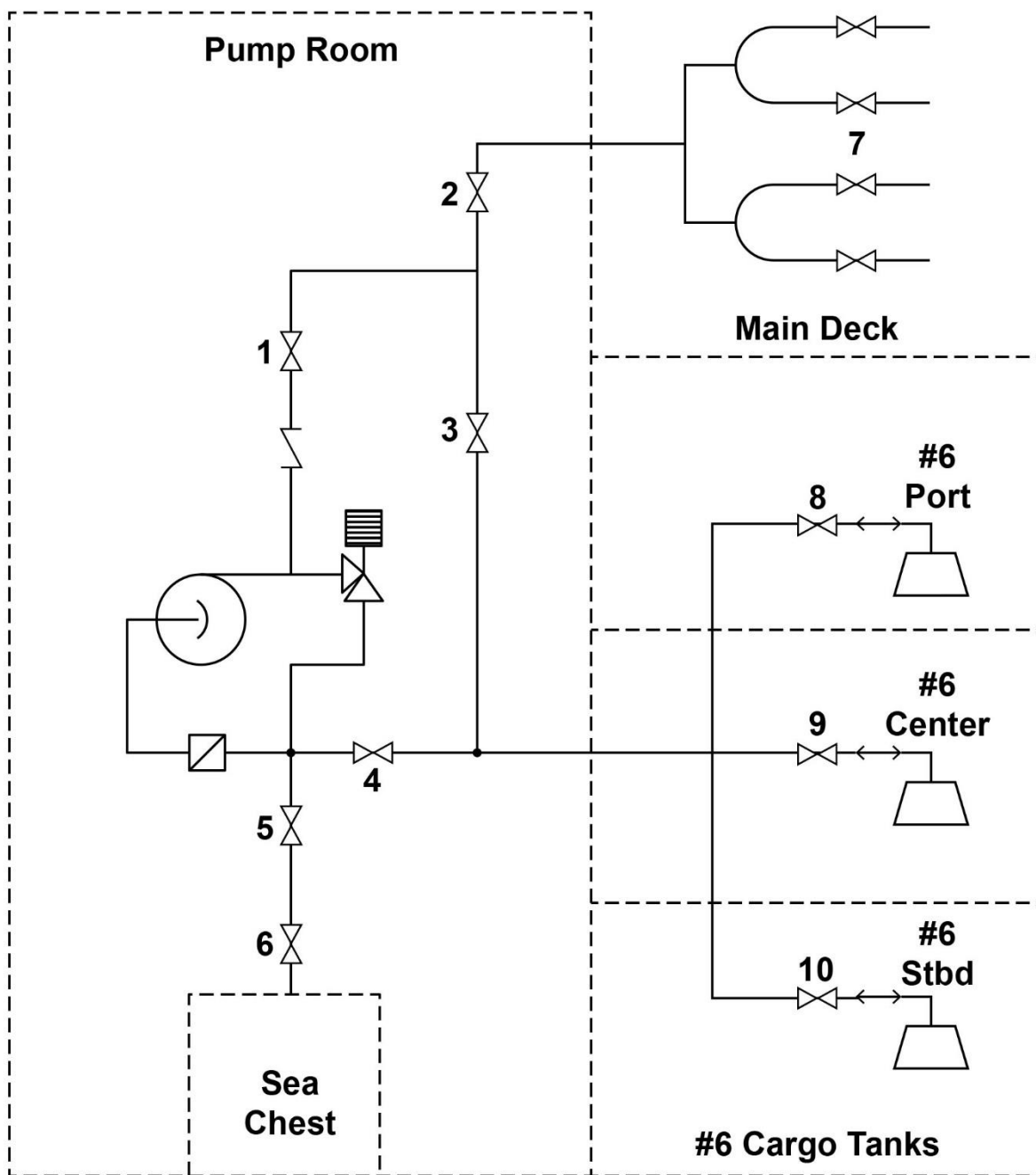
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GS-0125



GS-0139

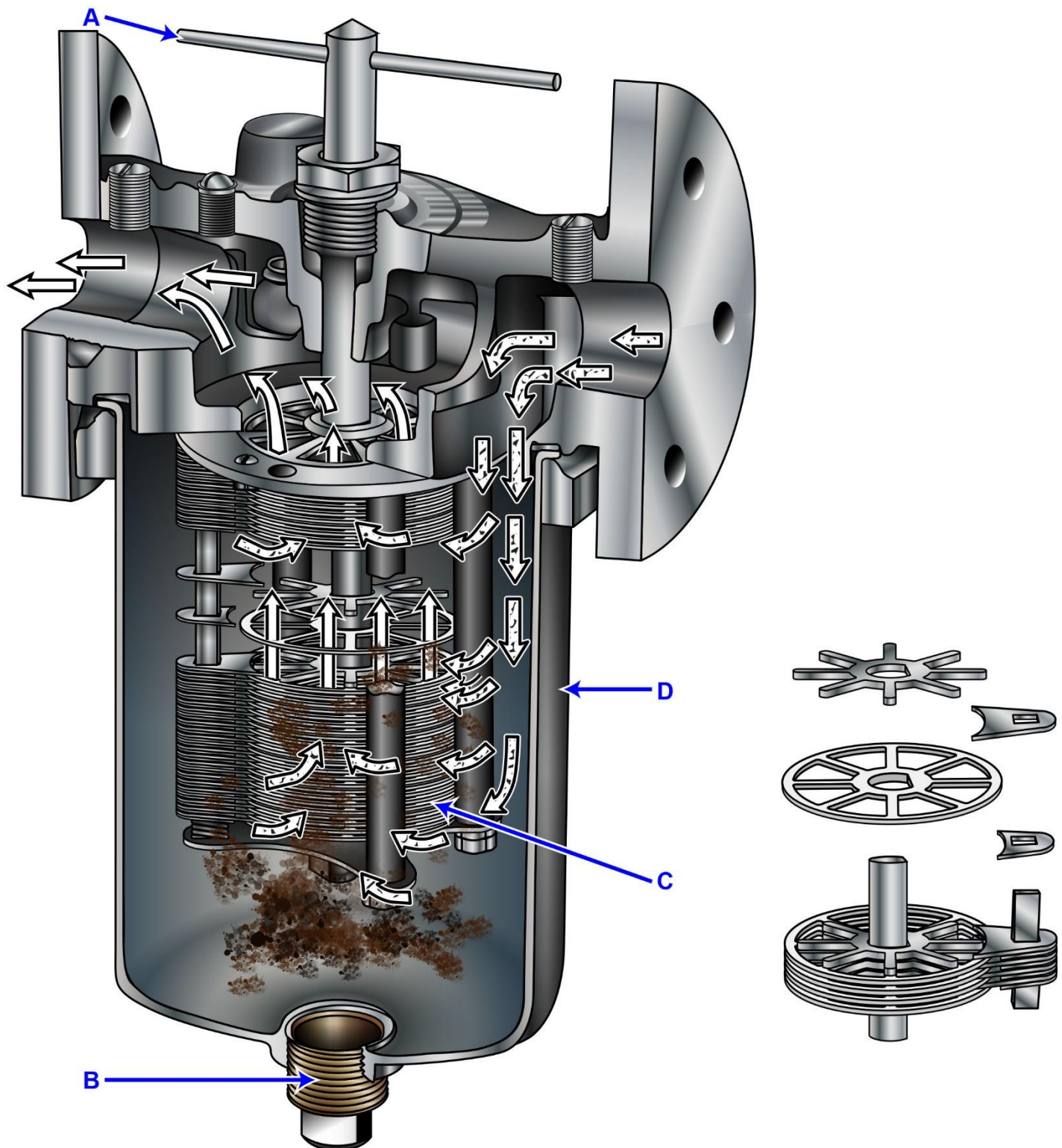


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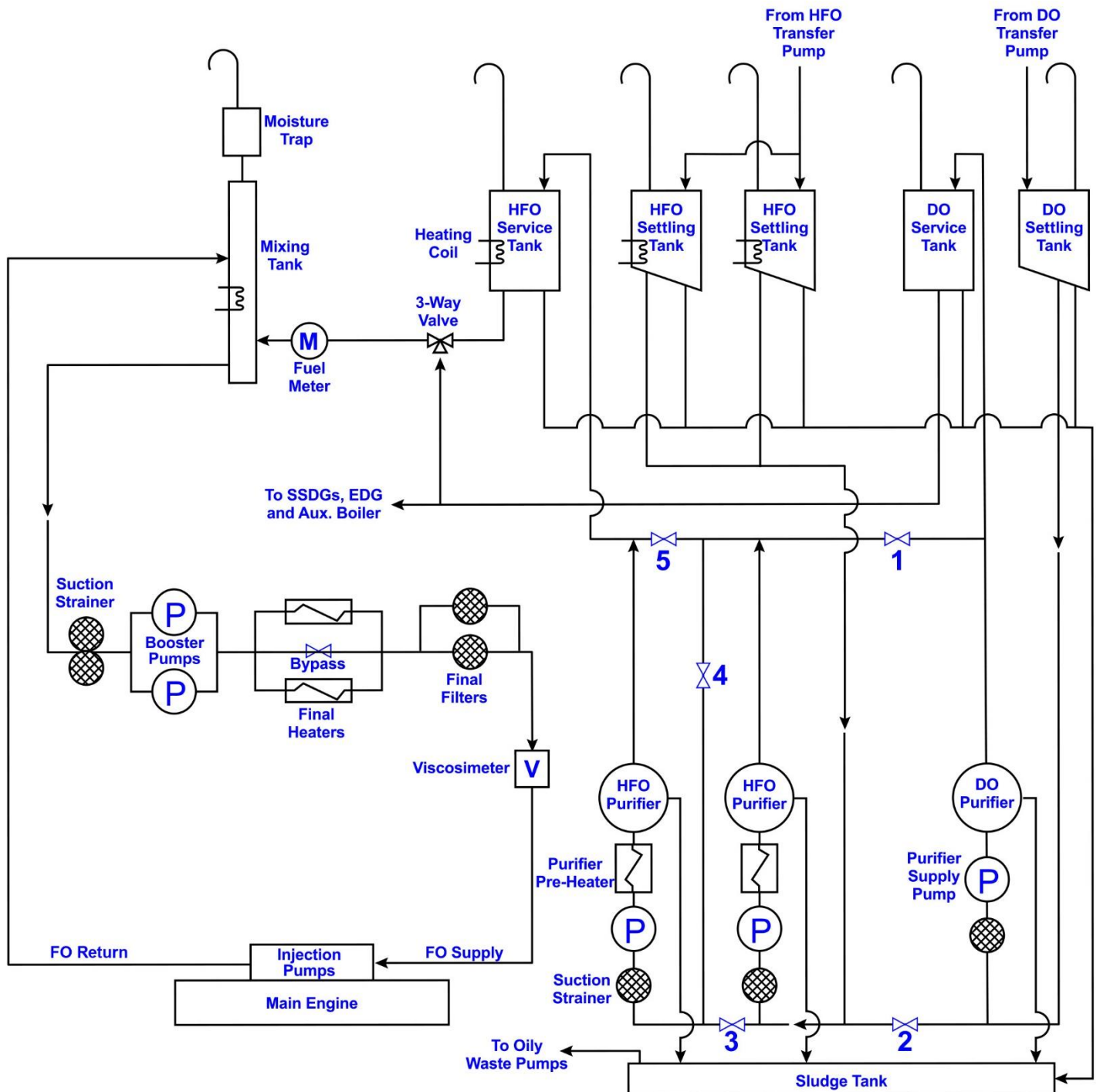


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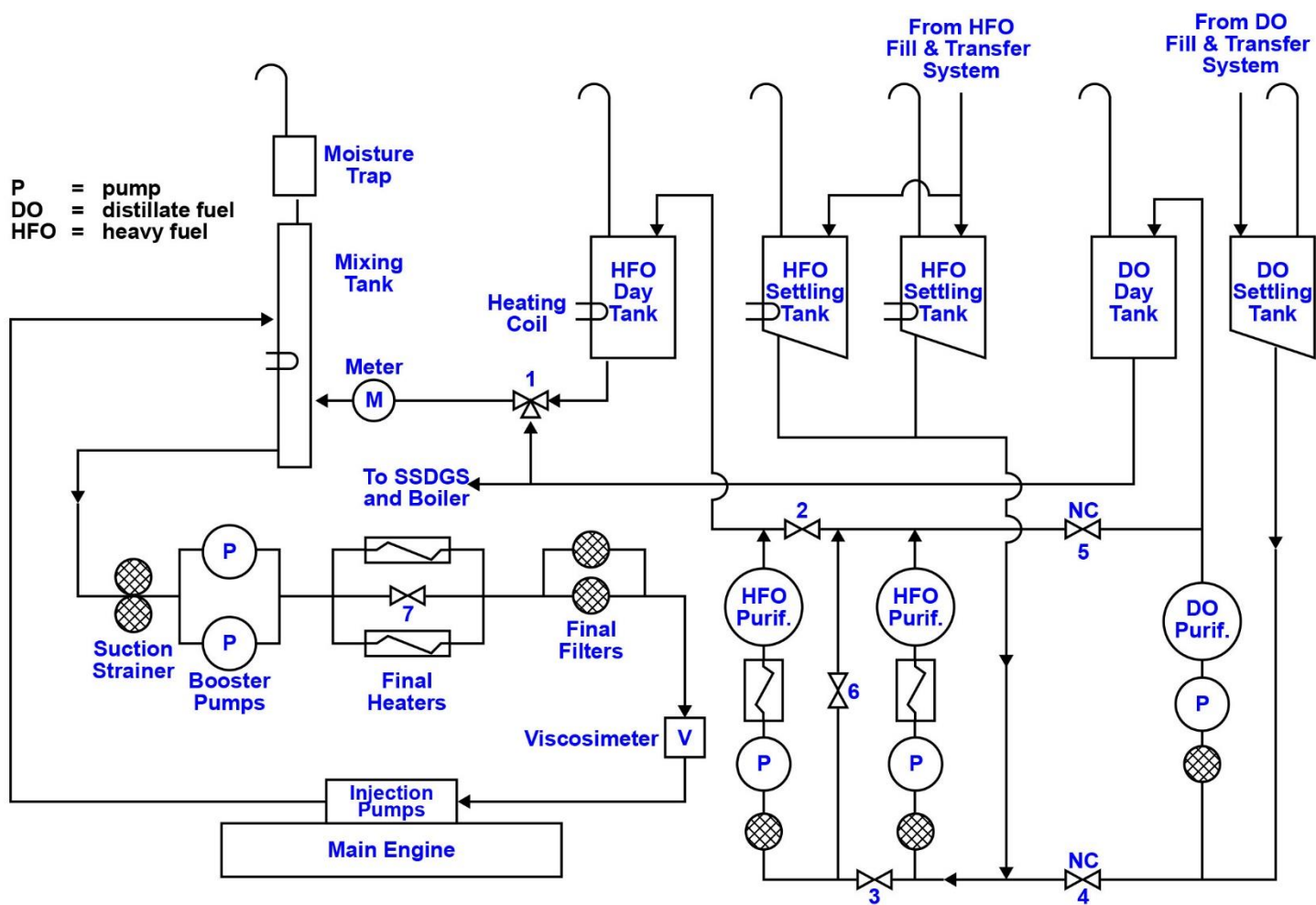
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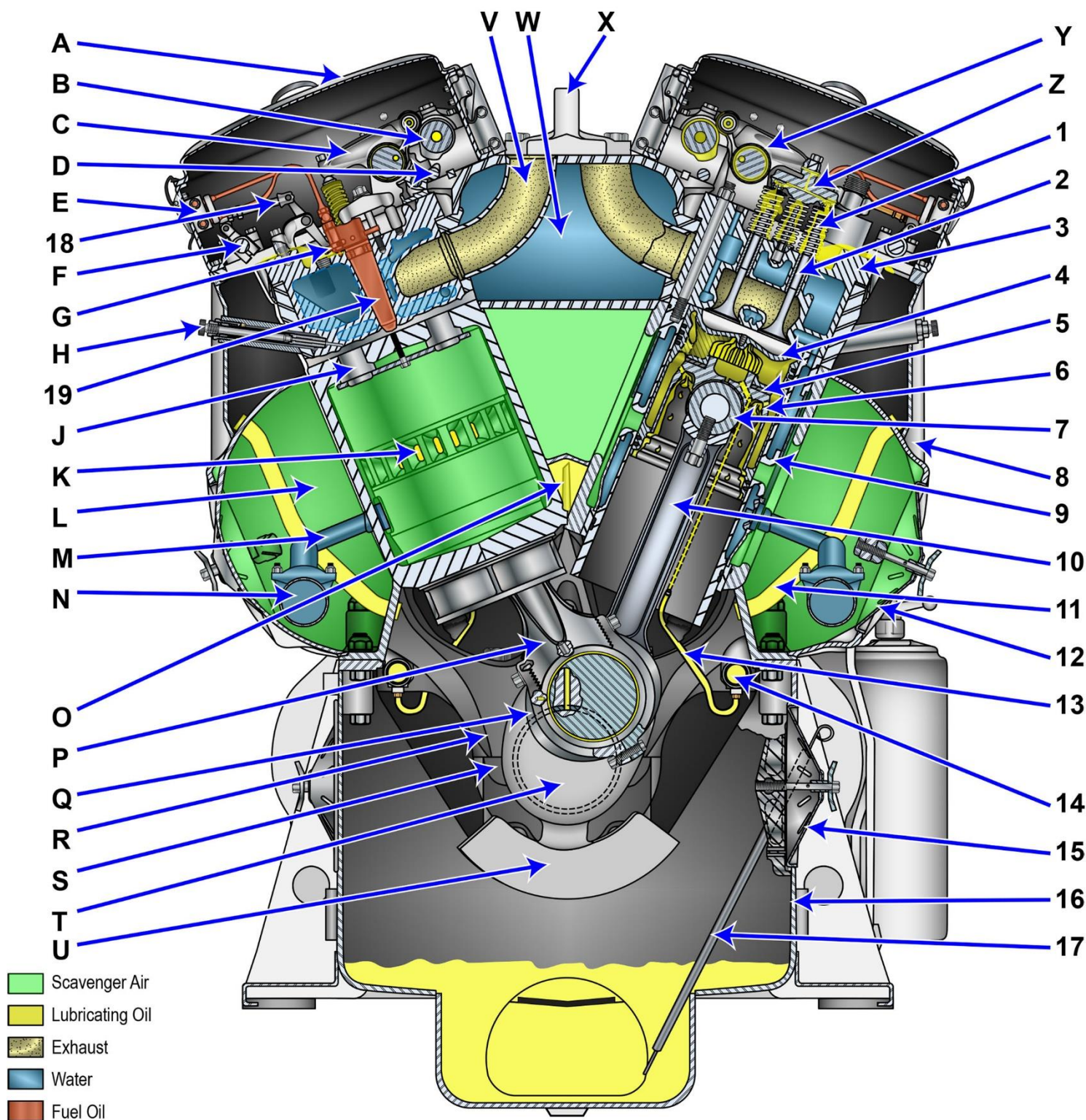


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MO-0077



MO-0122

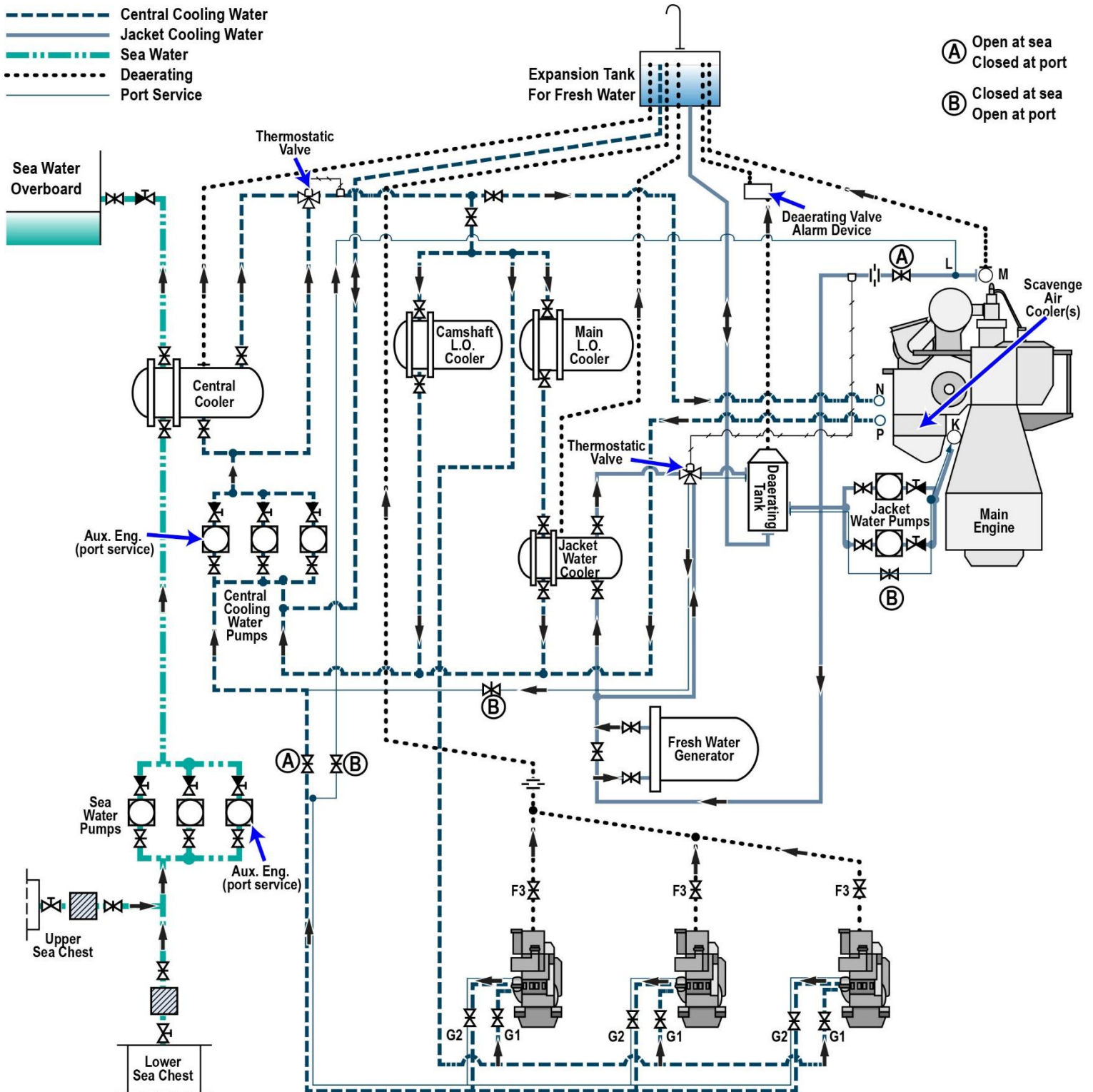


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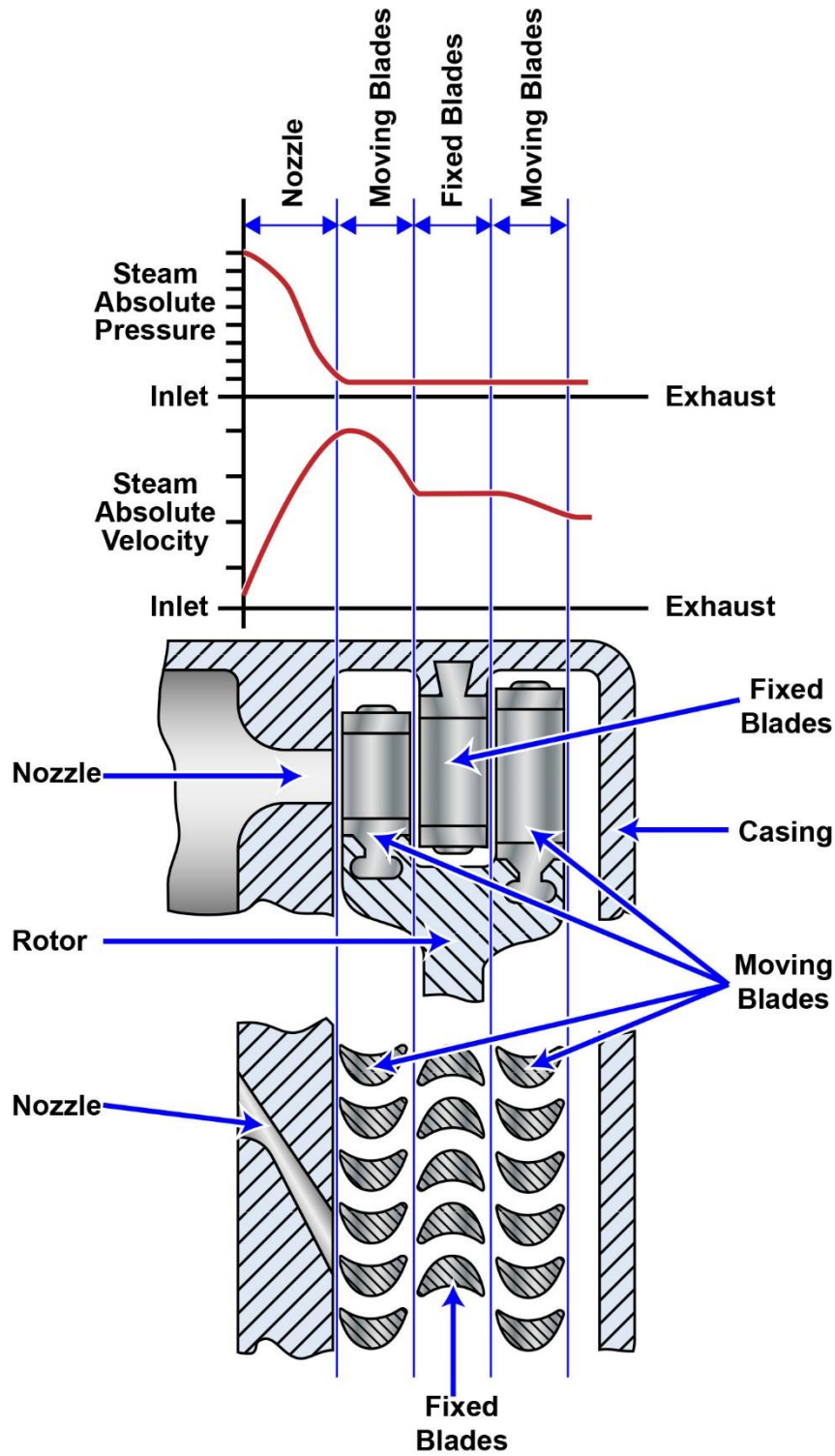
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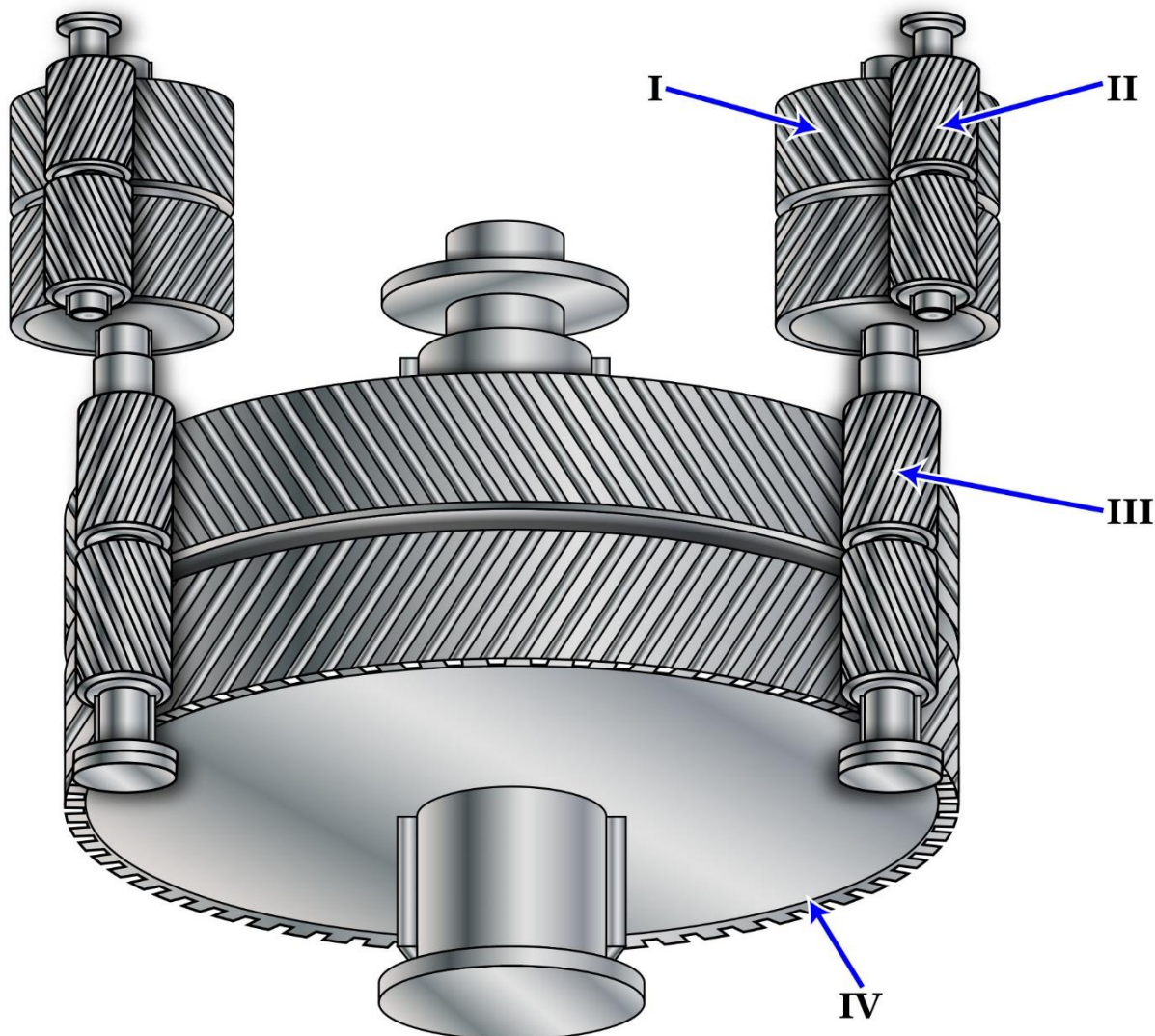
SE-0003



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SG-0004

Table 1
Thermodynamic Properties of
Saturated Steam (Temperature)

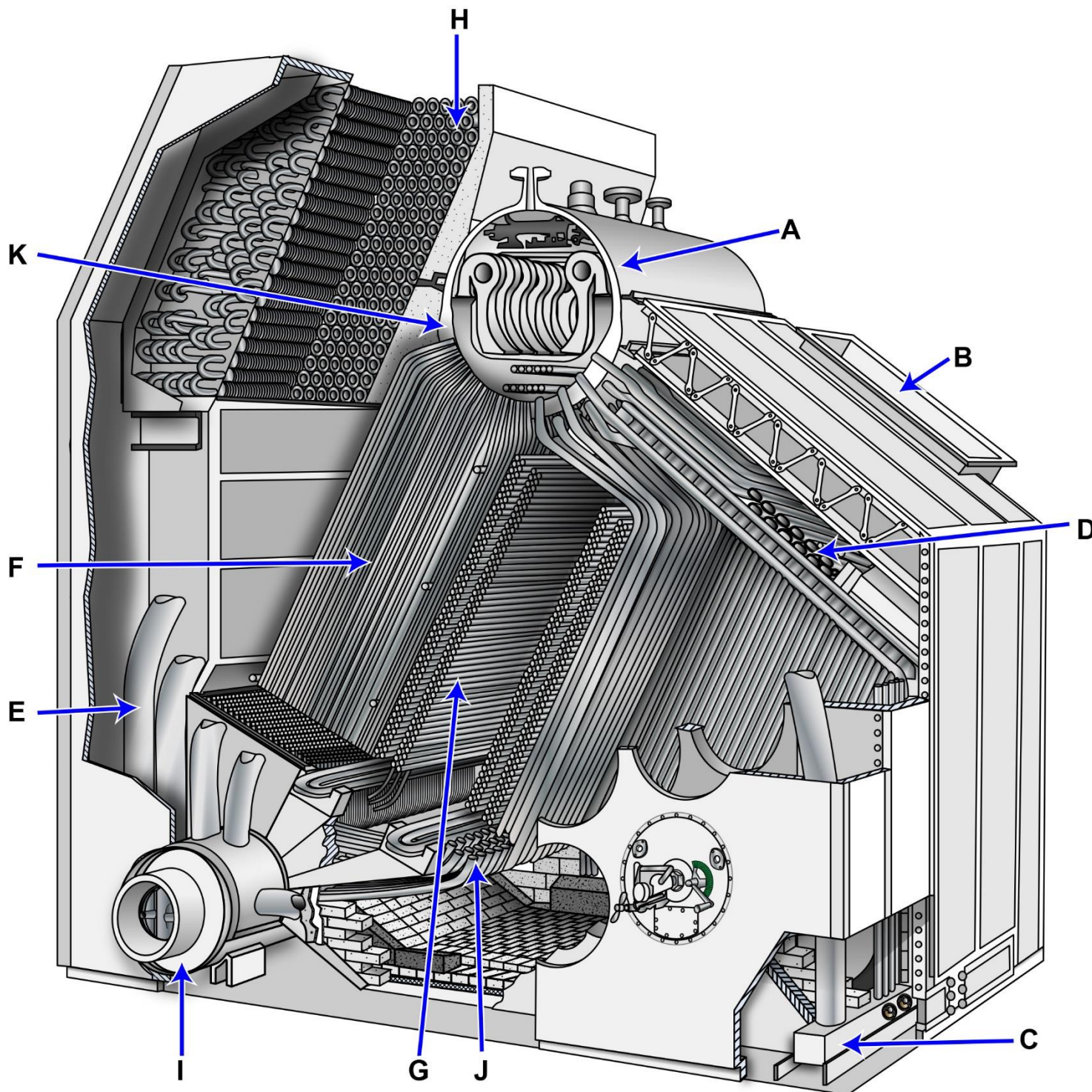
Temp, °F	Absolute. Pressure, psi	Enthalpy (BTU/lb) of Liquid	Enthalpy (BTU/lb) of Evaporation	Enthalpy (BTU/lb) of vapor
32	0.08859	0.01	1075.5	1075.5
40	0.12170	8.05	1071.3	1079.3
50	0.17811	18.07	1065.6	1083.7
60	0.25630	28.06	1059.9	1088.0
70	0.36310	38.04	1054.3	1092.3
80	0.50690	43.02	1048.6	1096.6
90	0.69820	57.99	1042.9	1100.9
100	0.94920	67.97	1037.2	1105.2
110	1.27480	77.94	1031.6	1109.5
120	1.69240	87.92	1025.8	1113.7
130	2.22250	97.90	1020.0	1117.9
140	2.88860	107.90	1014.1	1122.0
150	3.71800	117.90	1008.2	1126.1
160	4.74100	127.90	1002.3	1130.2
170	5.99200	137.90	996.3	1134.2
180	7.51000	147.90	990.2	1138.1
190	9.33900	157.90	984.1	1142.0
200	11.52600	168.00	977.9	1145.9
212	14.69600	180.00	970.4	1150.4
220	17.18600	188.10	965.2	1153.4
240	24.96900	208.30	952.2	1160.5
280	49.20300	249.10	924.7	1173.8
300	67.01300	269.60	910.1	1179.7
340	118.01000	311.10	879.0	1190.1
380	195.77000	353.50	844.6	1198.1
400	247.31000	375.00	826.0	1201.0

Table 2
Thermodynamic Properties of
Saturated Steam (Pressure)

Absolute. Pressure, psi	Temp, °F	Enthalpy (BTU/lb) of Liquid	Enthalpy (BTU/lb) of Evaporation	Enthalpy (BTU/lb) of vapor
0.5	79.58	47.6	1048.8	1096.4
1.0	101.74	69.7	1036.3	1106.0
5.0	162.24	130.1	1001.0	1131.1
10.0	193.21	161.2	982.1	1143.3
14.7	212.00	180.0	970.4	1150.4
15.0	213.03	181.1	969.7	1150.8
20.0	227.96	196.2	960.1	1156.3
25.0	240.07	208.5	952.1	1160.6
30.0	250.33	218.8	945.3	1164.1
40.0	267.25	236.0	933.7	1169.7
50.0	281.01	250.1	924.0	1174.1
60.0	292.71	262.1	915.5	1177.6
70.0	302.92	272.6	907.9	1180.6
80.0	312.03	282.0	901.1	1183.1
90.0	320.27	290.6	894.7	1185.3
100.0	327.81	298.4	888.8	1187.2
110.0	334.77	305.7	883.2	1188.9
120.0	341.25	312.4	877.9	1190.4
130.0	347.32	318.8	872.9	1191.7
140.0	353.02	324.8	868.2	1193.0
150.0	358.42	330.5	863.6	1194.1
200.0	381.79	355.4	843.0	1198.4
250.0	400.95	376.0	825.1	1201.1
300.0	417.33	393.8	809.0	1202.8
350.0	431.72	409.7	794.2	1203.9
400.0	444.59	424.0	780.5	1204.5

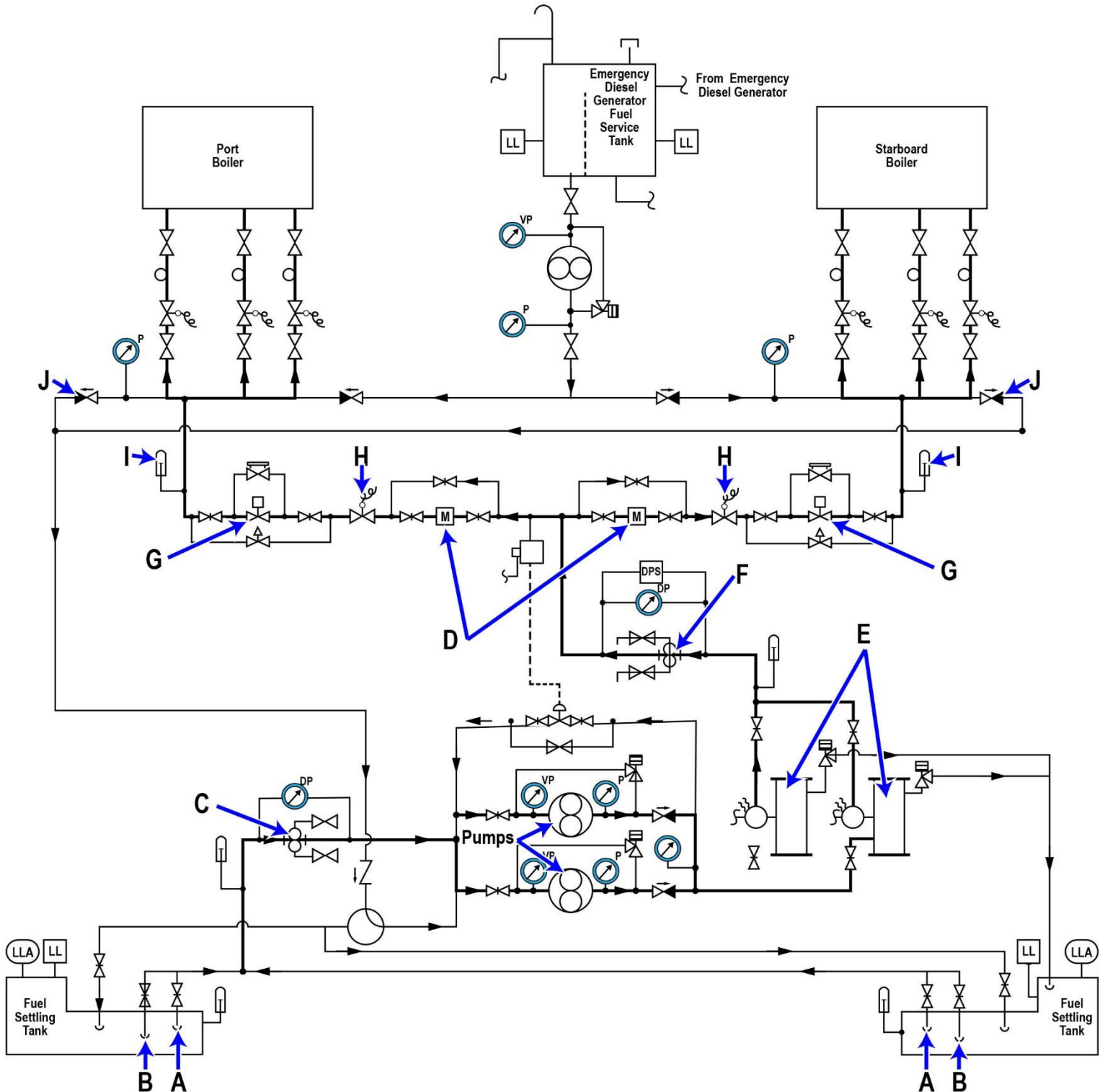
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