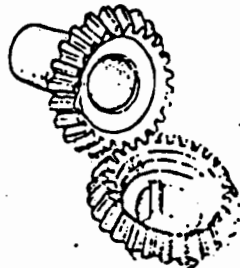


40 05 05 00 05

THE TYPE OF GEARING ILLUSTRATED IS KNOWN AS \_\_\_\_\_

GEARING.

- (1) spur
- (2) rack and pinion
- (3)  bevel
- (4) worm



MARTIN'S M.E. PAGE  
WWW.DIESELDUCK.CA

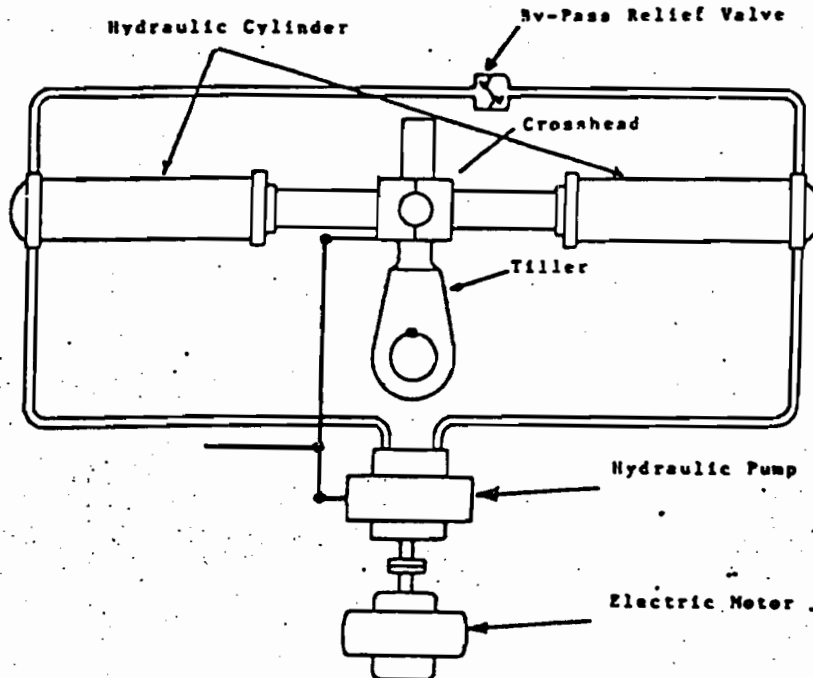
PART II OF II

40 06 01 01 02

79.

A HEAVY SEA STRIKING THE RUDDER WILL CAUSE SEVERE STRESSES TO BE SET UP IN THE STEERING GEAR MECHANISM ILLUSTRATED. TO DIMINISH THESE EFFECTS:

- (1) ✓ hydraulic fluid by-pass relief valves are fitted
- (2) buffer springs are fitted between the tiller cross-head and the hydraulic rams
- (3) hydraulic fluid leakage occurs in the hydraulic pump
- (4) springs are located at the ends of each of the hydraulic cylinders

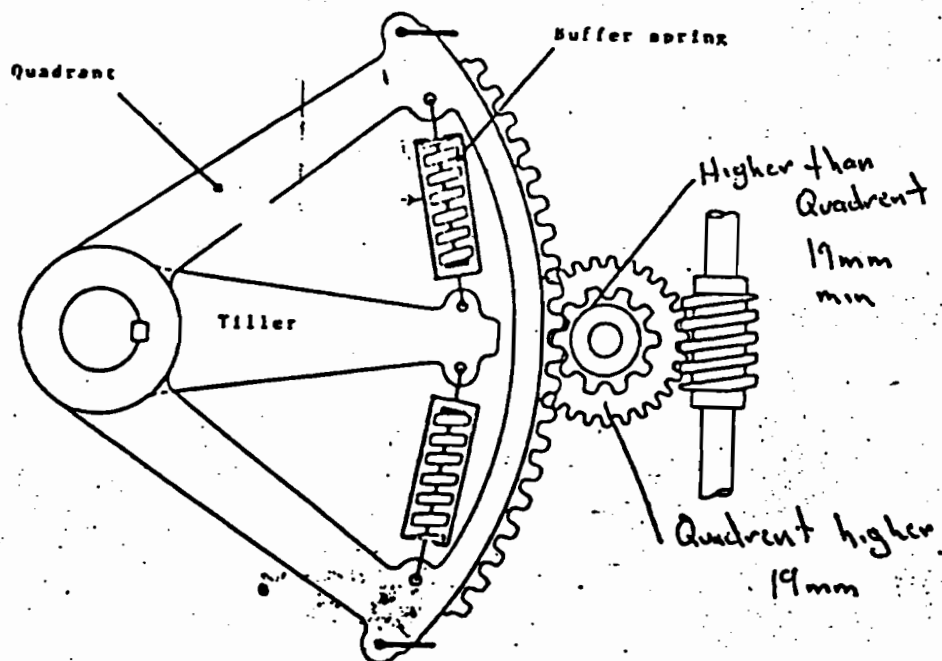


78.

40 06 01 01 01

THE BUFFER SPRINGS USED WITH THE TILLER AND QUADRANT OF THE STEERING GEAR ILLUSTRATED ARE NECESSARY TO:

- (1) prevent damage occurring to the rudder and tiller when rapid reversal of the steering engine occurs.
- (2) - absorb the shock when a heavy sea strikes the rudder
- (3) prevent the rapid operation of the steering engine placing undue strain on the tiller and rudder stock
- (4) connect the rudder to the tiller when using the emergency steering gear



*Quadrant not keyed to Rudder Stock but tiller is (below Quadrant)*

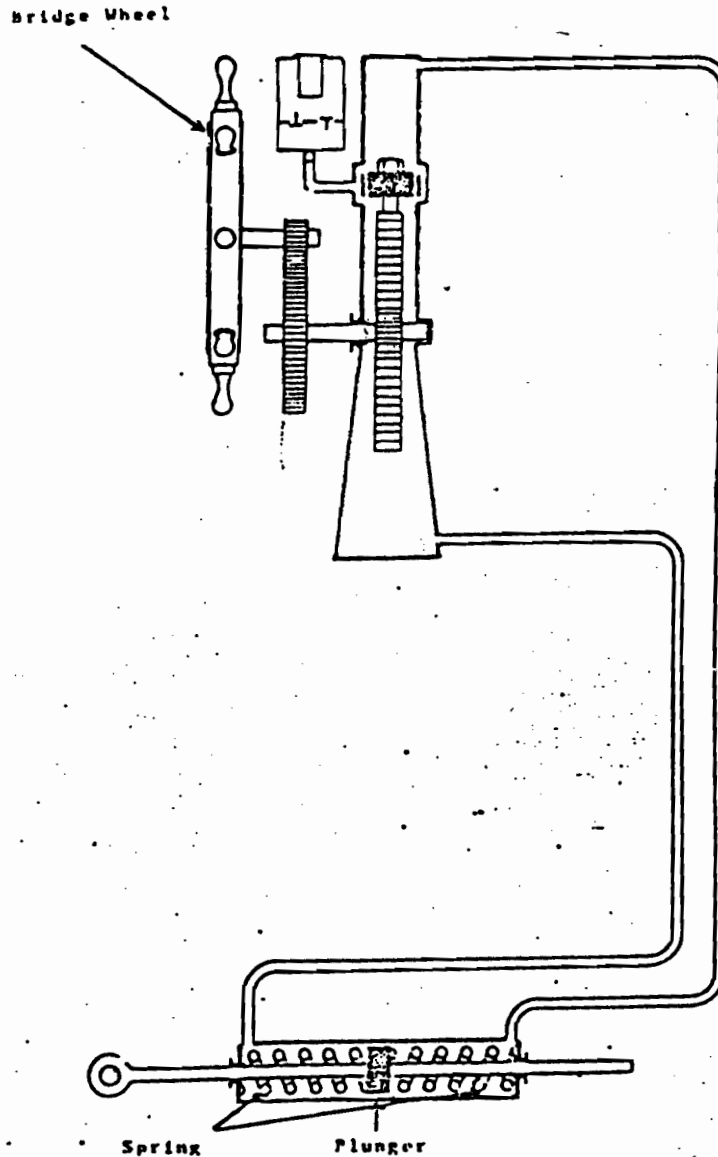
45

80.

40 06 01 01 04

THE TELEMOTOR SYSTEM ILLUSTRATED IS USED:

- (1) when it is necessary to recharge the hydraulic steering gear with fluid
- (2) as an emergency steering system
- (3) to operate the rudder directly from the bridge
- (4) to hydraulically connect the bridge wheel to the steering gear operating controls



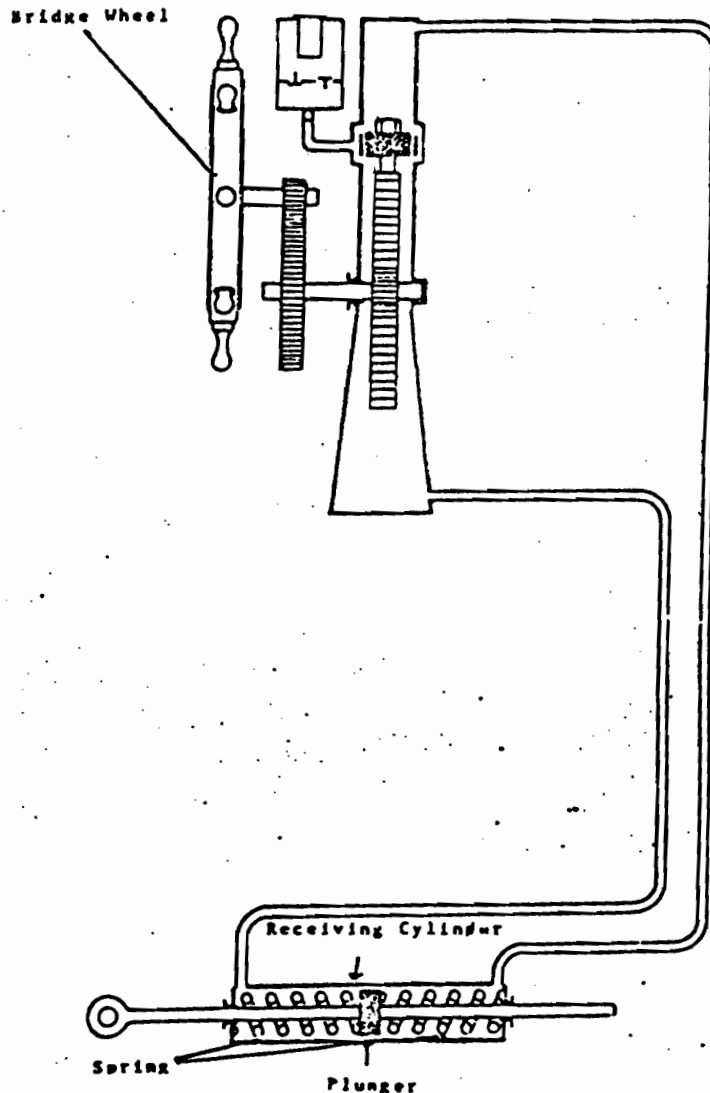
47

81.

40 06 01 01 05

IN THE TELEMOTOR SYSTEM ILLUSTRATED THE SPRINGS ON THE RECEIVING CYLINDER ARE FITTED TO:

- (1) prevent shock loads from damaging the mechanism .
- (2) - return the bridge wheel (helm) to central position
- (3) act as an accumulator thus speeding up movement of the rudder
- (4) create a resistance for the transmitting piston to act against



418

82.

40 06 01 02 02

THE DEVICE EMPLOYED TO PREVENT THE RUDDER FROM TURNING WHILE EMERGENCY REPAIRS ARE BEING CARRIED OUT IS A RUDDER:

- (1) stopper
- (2) pintle
- (3) stock
- (4) brake

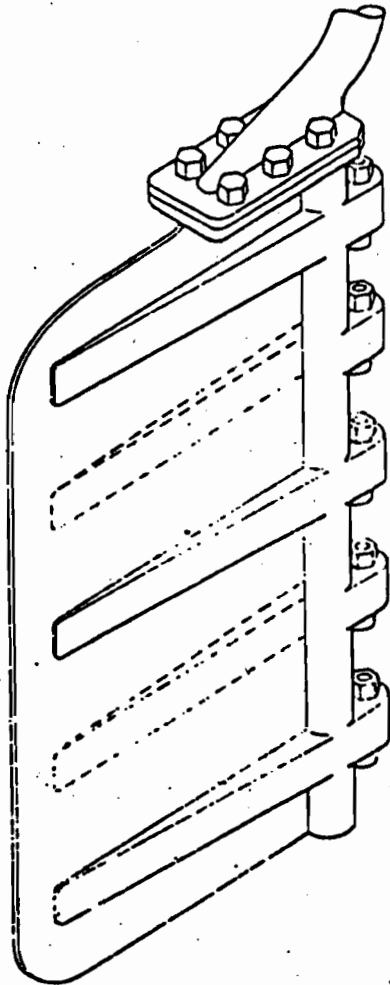
49

40 06 02 01 01

83.

THE TYPE OF RUDDER ILLUSTRATED IS KNOWN AS A \_\_\_\_\_  
RUDDER.

- (1) ✓ single plate
- (2) double plate
- (3) balanced
- (4) spade

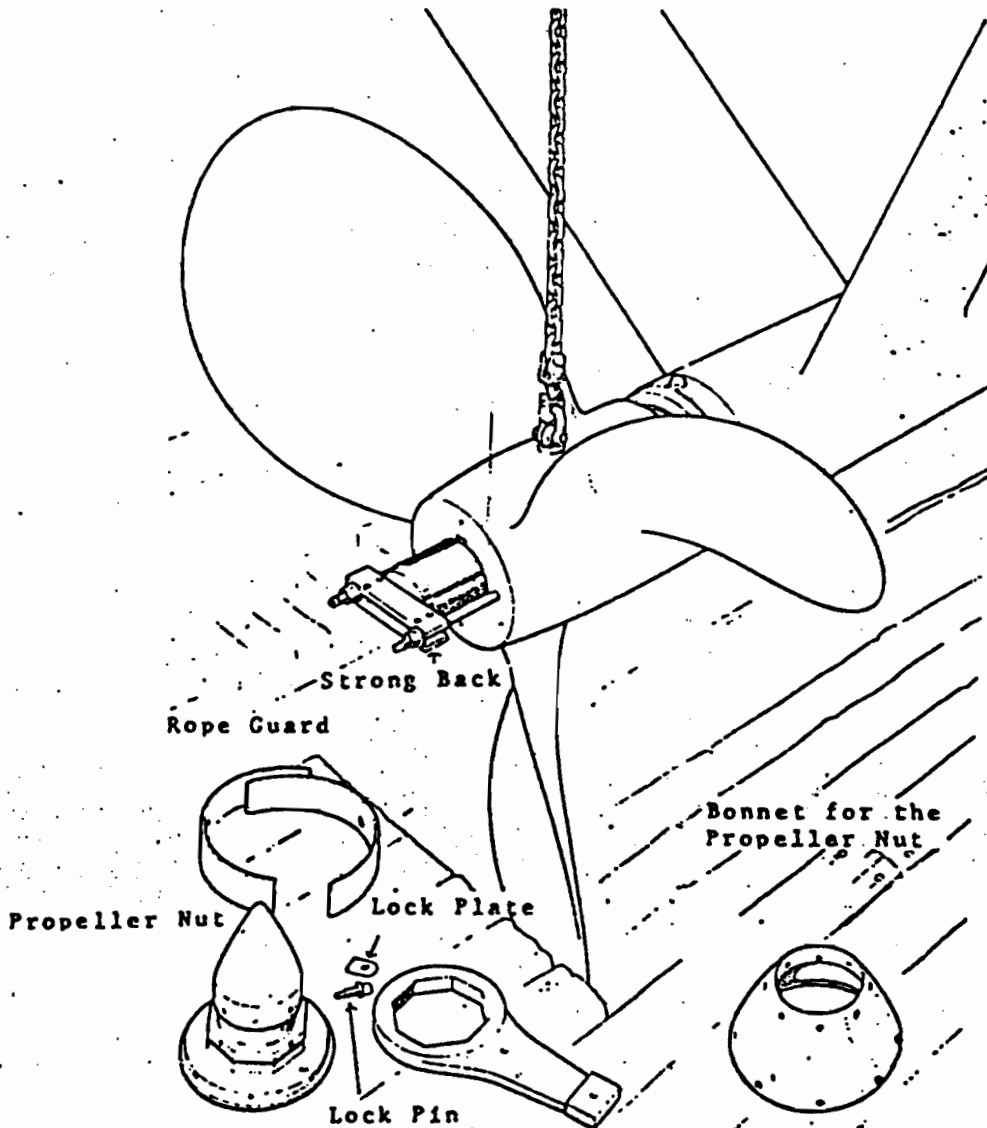


84.

40 06 02 02 04

A ROPE GUARD AS SHOWN IN THE ILLUSTRATION OF THE PROP-  
 ELLER ASSEMBLY, IS FITTED TO PREVENT DAMAGE TO THE:

- (1) propeller
- (2) propeller shaft
- (3) stern bearing
- (4) items mentioned in (2) and (3)



51



55.

40 06 02 04 01

WHEN A SHIP IS TO BE LAID UP IN A VERY COLD CLIMATE  
THE SEA CONNECTIONS SHOULD BE FILLED WITH:

- (1) mineral oil
- (2) a non-pollutant substance
- (3) fuel oil
- (4) lubricating oil

56.

40 06 03 01 01

THE MANUALLY OPERATED BRAKE ON A WINDLASS IS USUALLY  
TIGHTENED BY MEANS OF A:

- (1) lever
- (2) wedge
- (3) screw mechanism
- (4) cam device

40 06 03 01 02

AFTER A STOCKLESS ANCHOR AND CHAIN CABLE HAVE BEEN  
PROPERLY STOWED, THESE ITEMS ARE SECURED IN PLACE  
BY MEANS OF:

- (1) the cable stopper
- (2) the windlass wild-cat
- (3) a steel cable attaching the chain cable to a bollard
- (4) a clevis securing the last link of the cable to the  
side or bottom of the chain locker

88.

40 06 03 01 04

THE WINDLASS CABLE-LIFTER (WILD-CAT) IS FITTED IN A MANNER WHICH:

- (1) prevents the links of the cable from stretching out of shape
- ~~(2)~~ permits the anchor to drop freely
- (3) controls the amount of chain cable paid out
- (4) controls the speed at which the anchor is lifted.

89.

40 06 03 01 18

WITH A TWO CYLINDER STEAM WINCH THE CRANKPINS ARE ARRANGED AT RIGHT ANGLES TO EACH OTHER IN ORDER TO:

- (1) ensure the winch will start from any position
- (2) ensure a uniform torque is applied to the winch drum
- (3) supply more power when lifting heavy loads
- (4) balance the amount of steam supplied to the winch

90.

40 07 01 01 01

THE VISCOSITY OF A FUEL OIL IS A MEASURE OF ITS ABILITY TO:

- (1) resist compressive forces
- (2) flow or circulate
- (3) resist the effects of thermal expansion or contraction
- (4) resist chemical change

53

40 07 01 02 01

91.  
A SHIP IS CONSIDERED READY TO START TAKING FUEL OIL SUPPLIES ON-BOARD (BUNKERING) AFTER:

- (1) all precautions against spillage have been taken
- (2) the condition of the fuel tank vents and screens has been checked
- (3) the amount of fuel remaining in the tanks has been determined
- (4) all of the conditions stated in (1), (2) and (3) have been complied with

40 07 01 02 07

92.  
AFTER THERE HAS BEEN AN OIL SPILL ON THE DECK OF A SHIP, THE PROCEDURE TO FOLLOW WOULD BE:

- (1) to immediately wash the oil off the deck
- (2) to cover the oil with an absorbent substance
- (3) to comply with items (2) and (4)
- (4) to clean up the oil and place it in containers until it can be properly disposed of.

52

93.

40 07 01 02 08

AFTER COMPLETING THE TRANSFER OF FUEL OIL FROM A STORAGE TANK TO A SETTLING TANK, THE PROCEDURE TO FOLLOW IS:

- (1) to close the fuel transfer pump valves and shut-down the pump
- (2) to close the storage tank suction valve
- (3) to close the settling tank filling valve
- (4) to attend to all the operations stated in (1), (2) and (3). ✓ But reverse procedure in # 1

94.

40 07 01 02 42

THE PURPOSE OF THE VENT PIPE ON A FUEL TANK IS TO:

- (1) Provide a means of escape for excess fuel when the tank is being filled
- (2) allow air and vapour to escape when the tank is being filled and air to enter when it is being emptied
- (3) provide for the expansion of the fuel after it has been heated
- (4) provide workmen with extra air when the tank is being cleaned.

97.

40 02 01 04

A DIESEL ENGINE LUBRICATING OIL DESIGNATED D.G. BY THE AMERICAN PETROLEUM INSTITUTE (A.P.I.) CLASSIFICATION SYSTEM, INDICATES THAT THE LUBRICATING OIL IS SUITABLE FOR:

- (1) ✓ severe service with high sulphur fuels
- (2) severe service with low sulphur fuels
- (3) light and general service conditions
- (4) all conditions of service stated in items (1), (2) and (3).

98.

40 07 02 02 01

LUBRICATING OIL SHOULD BE ADMITTED TO A CENTRIFUGAL PURIFIER:

- (1) during the formation of the water seal
- (2) ✓ after both the conditions stated in (3) and (4) are achieved
- (3) after the water seal has formed
- (4) after the bowl has reached its operating speed.

40 07 02 03

9.

A SAMPLE OF LUBRICATING OIL MAY BE TESTED FOR ACIDITY

BY USING \_\_\_\_\_ PAPER.

- (1) blue litmus
- (2) red litmus
- (3) green litmus
- (4) white filter.

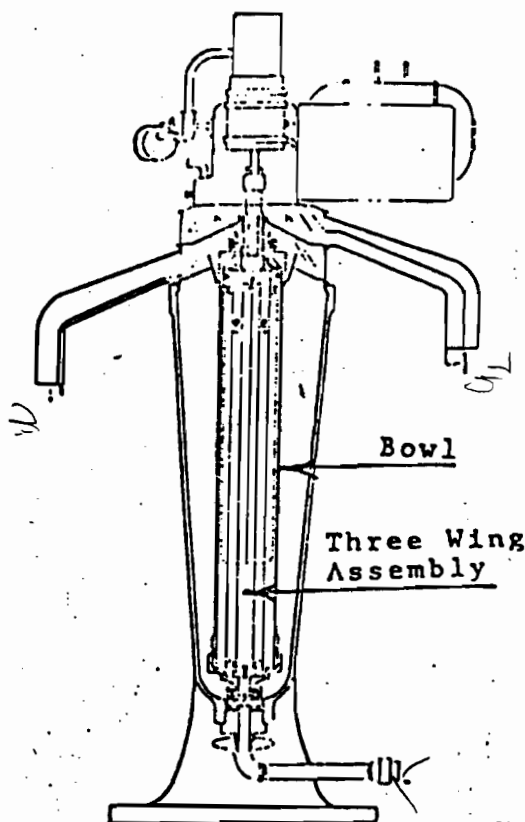
57

100.

40 07 02 02 18

IN THE CENTRIFUGAL PURIFIER ILLUSTRATED THE THREE-WING ASSEMBLY INSIDE THE BOWL IS PROVIDED TO:

- (1) assist with the balance of the machine
- (2) prevent the bowl from enlarging due to centrifugal force
- (3) ensure that the liquid being purified rotates at the same speed as the bowl
- (4) permit flow of the liquid from the bottom to the top of the bowl.



40 08 01 02 04

THE ELECTRICAL UNIT FOR MEASURING POTENTIAL DIFFERENCE IS THE:

- (1) watt
- (2) ampere
- (3) volt ←
- (4) ohm

40 08 01 02 15

THE ELECTRICAL UNIT FOR MEASURING POWER IS THE:

- (1) ampere
- (2) watt ←
- (3) volt
- (4) ohm

40 08 01 02 17

THE ELECTRICAL UNIT FOR MEASURING CURRENT IS THE:

- (1) ampere ←
- (2) watt
- (3) volt
- (4) ohm

RESISTANCE



40 08 01 04 02

THE ELECTROLYTE (LIQUID) IN A LEAD-ACID STORAGE BATTERY IS:

- (1) distilled water
- (2) nitric acid and distilled water
- (3) ✓ diluted sulphuric acid
- (4) hydrochloric acid and distilled water

40 08 01 04 22

THE ELECTROLYTE (LIQUID) IN A NICKEL-CADMIUM STORAGE BATTERY IS:

- (1) sulphuric acid
- (2) ammonium chloride
- (3) potassium chlorate
- (4) ✓ potassium hydroxide

40 08 01 04 04

DURING THE PERIOD A LEAD-ACID STORAGE BATTERY IS BEING DISCHARGED, THE SPECIFIC GRAVITY OF THE ELECTROLYTE:

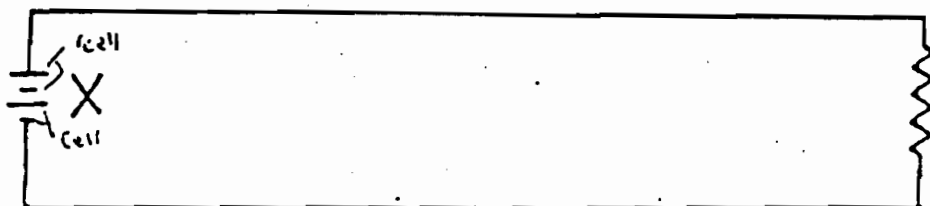
- (1) ✓ decreases
- (2) increases by a small amount
- (2) remains unaltered
- (4) increases by a large amount

(60)

40 08 01 05 01

IN THE ELECTRICAL CIRCUIT ILLUSTRATED THE SYMBOL SHOWN AT "X" IS USED TO INDICATE A:

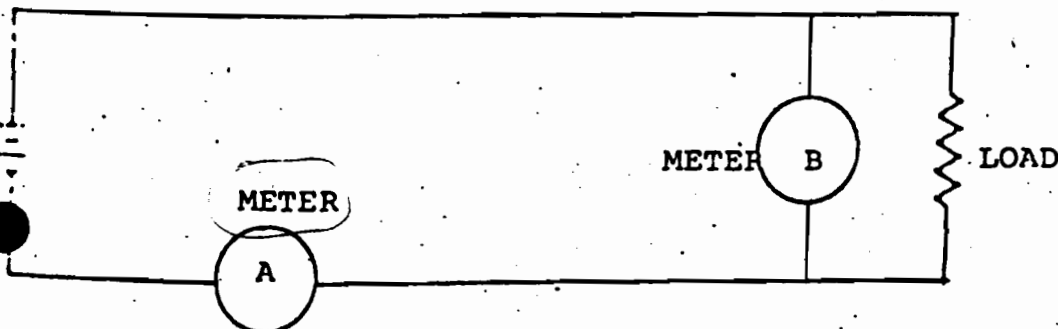
- (1) resistance
- (2) battery ✓
- (3) ground
- (4) voltmeter



40 08 01 05 08

IN THE SIMPLE DIRECT CURRENT CIRCUIT ILLUSTRATED, METER "A" IS USED TO MEASURE:

- (1) power
- (2) voltage
- (3) current ✓
- (4) resistance

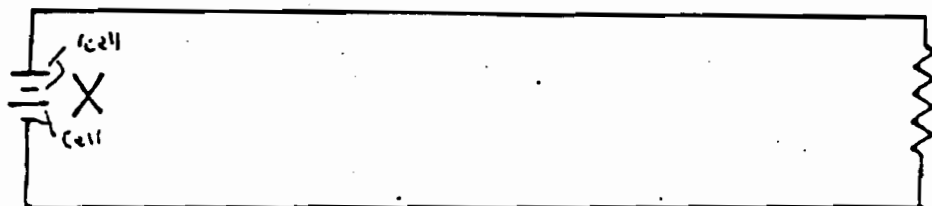


(61)

40 08 01 05 01

IN THE ELECTRICAL CIRCUIT ILLUSTRATED THE SYMBOL SHOWN AT "X" IS USED TO INDICATE A:

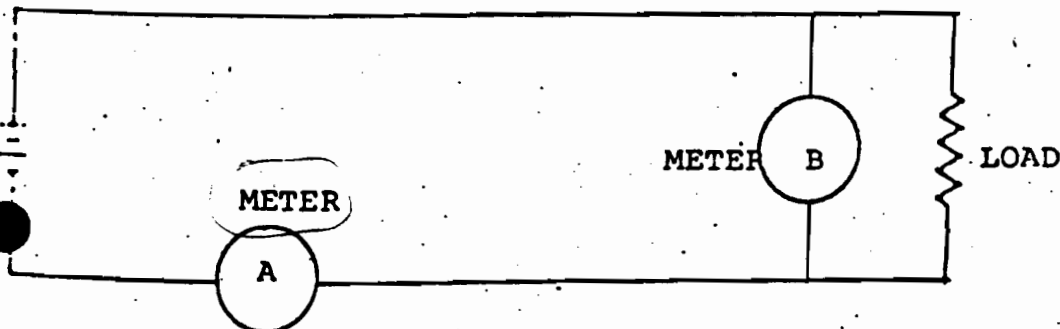
- (1) resistance
- (2) battery ✓
- (3) ground
- (4) voltmeter



40 08 01 05 08

IN THE SIMPLE DIRECT CURRENT CIRCUIT ILLUSTRATED, METER "A" IS USED TO MEASURE:

- (1) power
- (2) voltage
- (3) current ✓
- (4) resistance



(61)

40 08 01 05 14

IN A SIMPLE ELECTRICAL LIGHTING SYSTEM ONE OF THE REASONS INCANDESCENT LAMPS ARE CONNECTED IN PARALLEL, RATHER THAN IN SERIES, IS:

- (1) / to prevent all of the lamps from going out if one should fail
- (2) because a smaller current will flow through each lamp
- (3) because the current passing through one lamp must pass through each of the other lamps
- (4) because the resistance of each lamp will be decreased

40 08 02 01 01

INSTRUMENTS MAY BE PROTECTED FROM THE EFFECTS OF THE MAGNETIC FIELD PRODUCED BY AN ELECTRIC CURRENT BY MEANS OF A SHIELD MADE FROM:

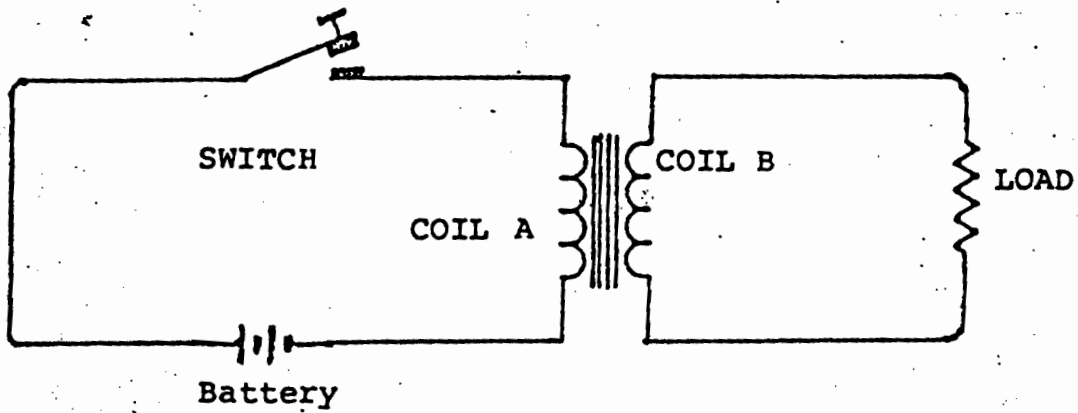
- (1) cardboard
- (2) / iron
- (3) wood
- (4) glass

1.

40 08 02 01 05

IN THE ELECTRICAL CIRCUIT ILLUSTRATED, A VOLTAGE WILL BE INDUCED IN COIL "B" ONLY WHEN THE:

- (1) switch is opened ✓
- (2) switch is closed
- (3) load is connected
- (4) switch is either being opened or closed ✓



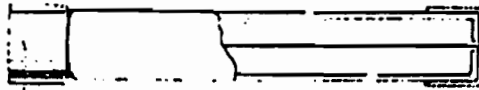
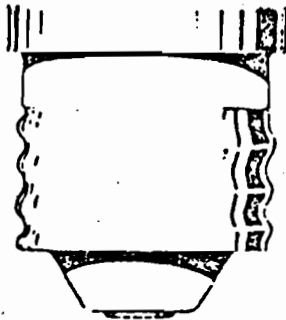
63

112.

40 08 02 02 01

TWO COMMON TYPES OF FUSES FOUND IN ELECTRICAL CIRCUITS ARE ILLUSTRATED. THESE DEVICES ARE INTENDED TO:

- (1) open the circuit when the electrical load becomes excessive
- (2) prevent a reversal of current from occurring
- (3) open the circuit when the frequency increases
- (4) prevent the ground lamps from burning brightly



113.

40 08 02 02 04

GROUND LAMPS OR GROUND DETECTION METERS ON AN ELECTRICAL SWITCHBOARD ARE USED TO INDICATE:

- (1) an overloaded motor
- (2) a failure of the insulation between an insulated ✓ conductor and the metal hull of the ship
- (3) a short circuit between conductors
- (4) the generator that is supplying energy

114.

40 08 03 01 01

A DIRECT CURRENT GENERATOR DIFFERS FROM AN ALTERNATING CURRENT GENERATOR BECAUSE IT HAS:

- (1) a commutator ✓
- (2) brushes
- (3) slip rings
- (4) a rotor

115.

40 08 03 01 02

ALTERNATING CURRENT CAN BE CHANGED TO DIRECT CURRENT BY:

- (1) a circuit with a capacitor and inductor in series
- (2) a circuit containing a resistor and capacitor
- (3) an inductive circuit
- (4) a motor-generator unit ←

116.

40 08 03 01 03

BEFORE CONNECTING A DIRECT CURRENT GENERATOR IN PARALLEL WITH ONE ALREADY IN SERVICE, IT IS ESSENTIAL THAT:

- (1) the speed of each generator should be exactly the same
- (2) the current on each generator should be exactly the same
- (3) its voltage should be slightly higher than the one already in service
- (4) its voltage should be slightly lower than the one already in service

PAR) NO CAUSE  
THEY COULD BE  
RUNNING AT  
DIFFERENT SPEEDS  
THIS IS DC

117.

40 08 03 01 04

A SHUNT WOUND DIRECT CURRENT MOTOR OPERATES OFF A CONSTANT <sup>CONSTANT SPEED</sup> VOLTAGE SUPPLY. IF THE SHUNT FIELD RESISTANCE IS INCREASED, THIS WILL CAUSE THE:

- (1) motor armature speed to decrease ✓
- (2) motor armature speed to increase
- (3) shunt field current to increase
- (4) supply voltage to decrease

118.

40 08 03 03 03

THE WIRE USED IN THE STATOR AND ROTOR WINDINGS (COILS) OF MANY ELECTRICAL MACHINES IS COVERED WITH:

- (1) a heat-resistant aluminum paint
- (2) a red lead paint
- (3) an insulating varnish
- (4) a neoprene compound

66



119.

40 08 03 03 21

ELECTRICAL EQUIPMENT AND APPLIANCES ARE CONSIDERED TO BE PROPERLY GROUNDED (EARTHED) WHEN: -

- (1) the frame of the equipment or appliance is connected to the metal structure of the ship
- (2) a grounded armour on the power supply cable is connected to the frame of the equipment or appliance
- (3) a ground wire in the power supply cable is connected to the frame of the equipment or appliance
- (4) any of the above methods are employed

120.

40 11 01 00 02

IN A WATER-TUBE BOILER THE WATER CIRCULATES:

- (1) inside the tubes
- (2) outside the tubes
- (3) outside the mud-drum
- (4) outside the steam drum

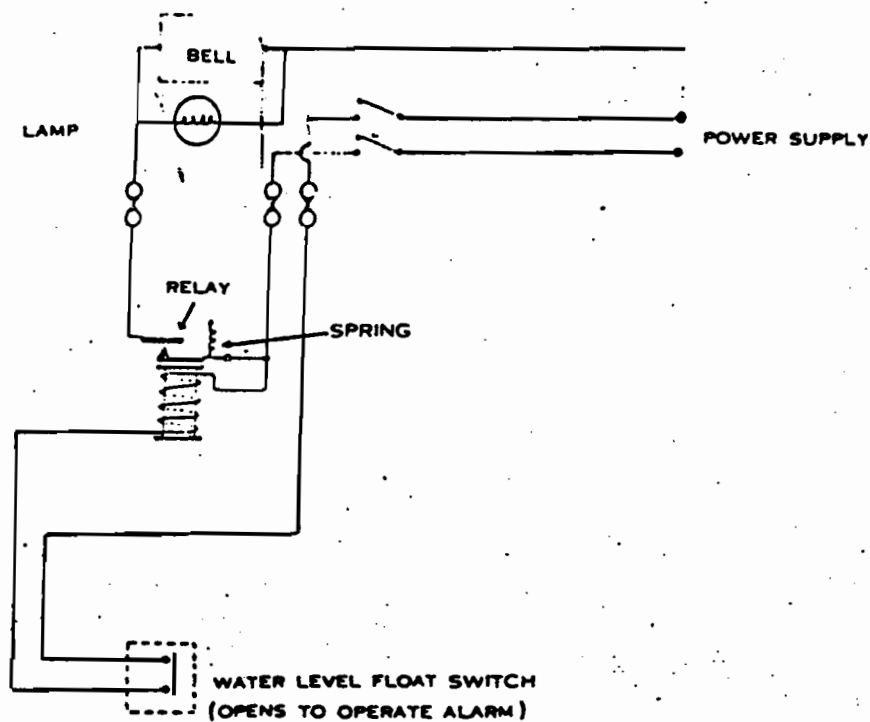
(67)

121.

40 08 04 01 03

THE ILLUSTRATION SHOWS A SIMPLE CONTROL CIRCUIT FOR AN AUTOMATIC BOILER WATER LEVEL ALARM. THE PURPOSE OF THE RELAY IN THIS ARRANGEMENT IS TO:

- (1) disconnect the power supply if the water rises too high in the boiler
- (2) provide a control circuit to allow the float switch to operate
- (3) activate the audible and visible alarms
- (4) keep the float switch closed magnetically



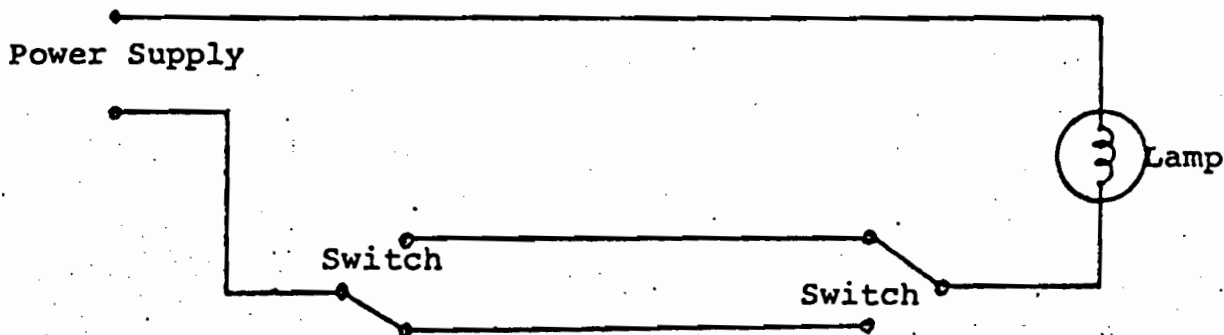
68

122.

40 08 04 03.03

TWO-WAY SWITCHES ARE FITTED IN AN ELECTRICAL CIRCUIT,  
AS SHOWN IN THE ILLUSTRATION, TO:

- (1) provide extra protection against the lamp being lighted inadvertently
- (2) allow the lamp to be switched on or off from more than one location
- (3) prevent overloading the circuit by acting as a safety device
- (4) provide for the connection of additional lamps or appliances into the circuit

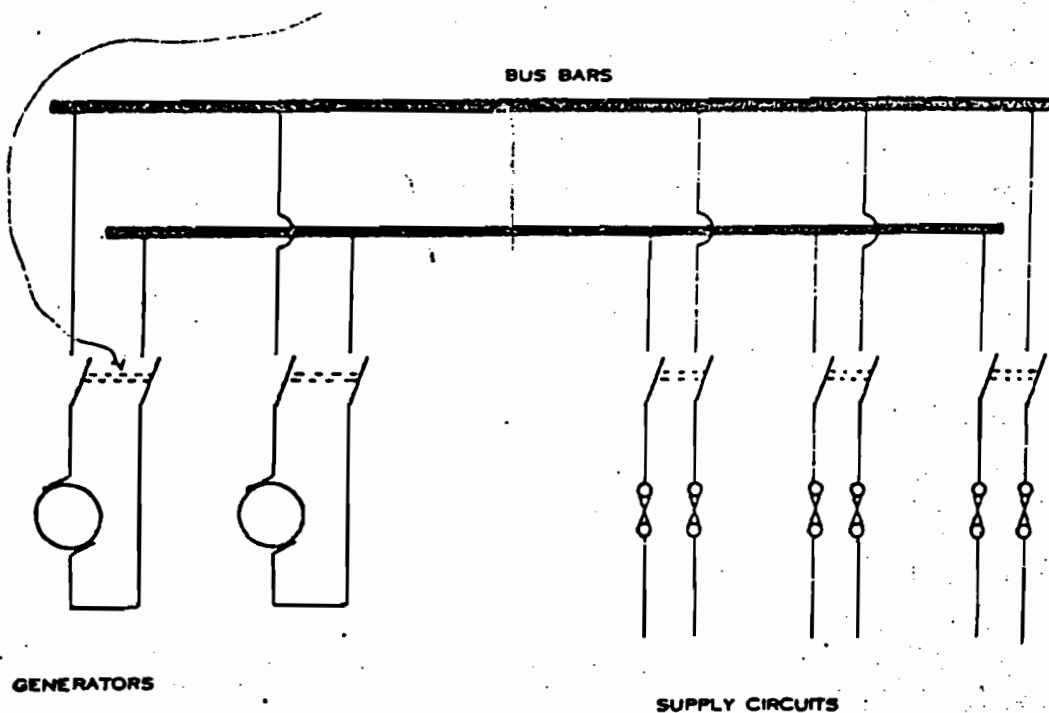


23.

40 08 04 03 07

IN THE ELECTRICAL CIRCUIT ILLUSTRATED, THE TYPE OF SWITCH USED TO CONNECT THE GENERATORS TO THE BUS-BARS IS KNOWN AS A \_\_\_\_\_ SWITCH.

- (1) single-pole, single throw
- (2) single-pole, double throw
- (3) double-pole, double throw
- (4) double-pole, single throw



70

124.

40 11 01 00 01

IN A FIRE-TUBE BOILER THE WATER CIRCULATES:

- (1) inside the tubes
- (2) outside the tubes
- (3) outside the steam-drum
- (4) outside the mud-drum

125.

40 11 02 00 01

A STEAM BOILER INSTALLATION DESIGNED FOR AUTOMATIC OPERATION SHOULD BE FITTED WITH \_\_\_\_\_ TO PREVENT OVERHEATING OF THE BOILER TUBES.

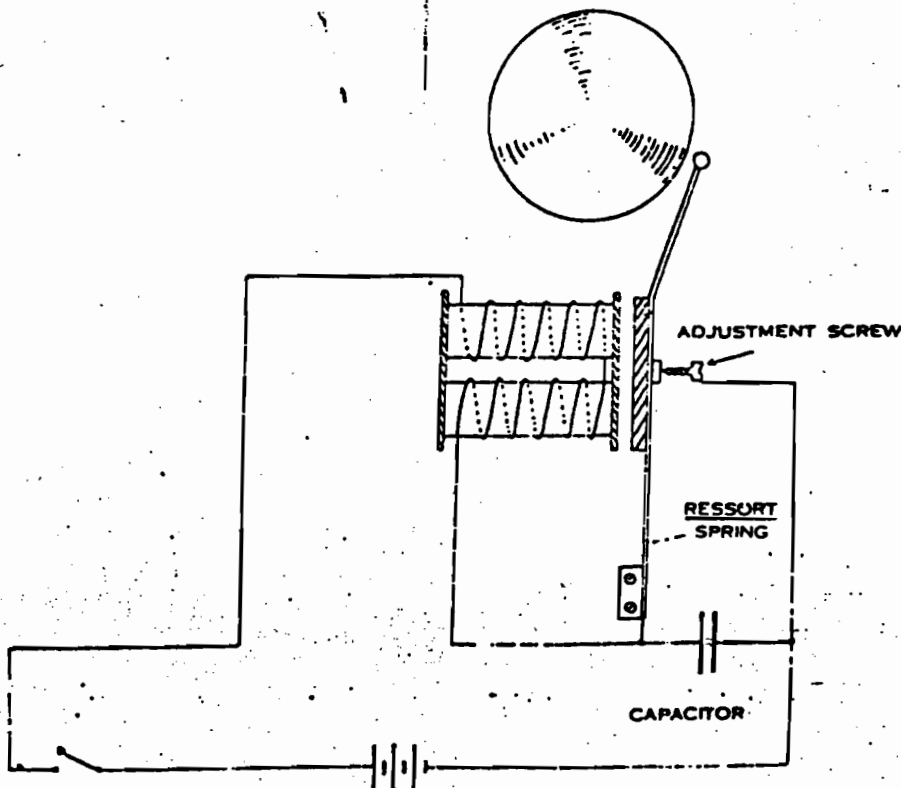
- (1) a low water cut-out device ✓
- (2) a burner flame failure device
- (3) a steam pressure limiting device
- (4) all the devices referred to in (1), (2) and (3)

126.

40 08 04 01 01

THE CAPACITOR (CONDENSER) SHOWN IN THE BELL CIRCUIT ILLUSTRATED IS FITTED IN ORDER TO:

- (1) reduce the sparking at the adjustment screw
- (2) form a by-pass circuit for the current
- (3) increase the current to the coils, so that the bell will ring louder
- (4) reduce the current to the coils, to prevent overheating

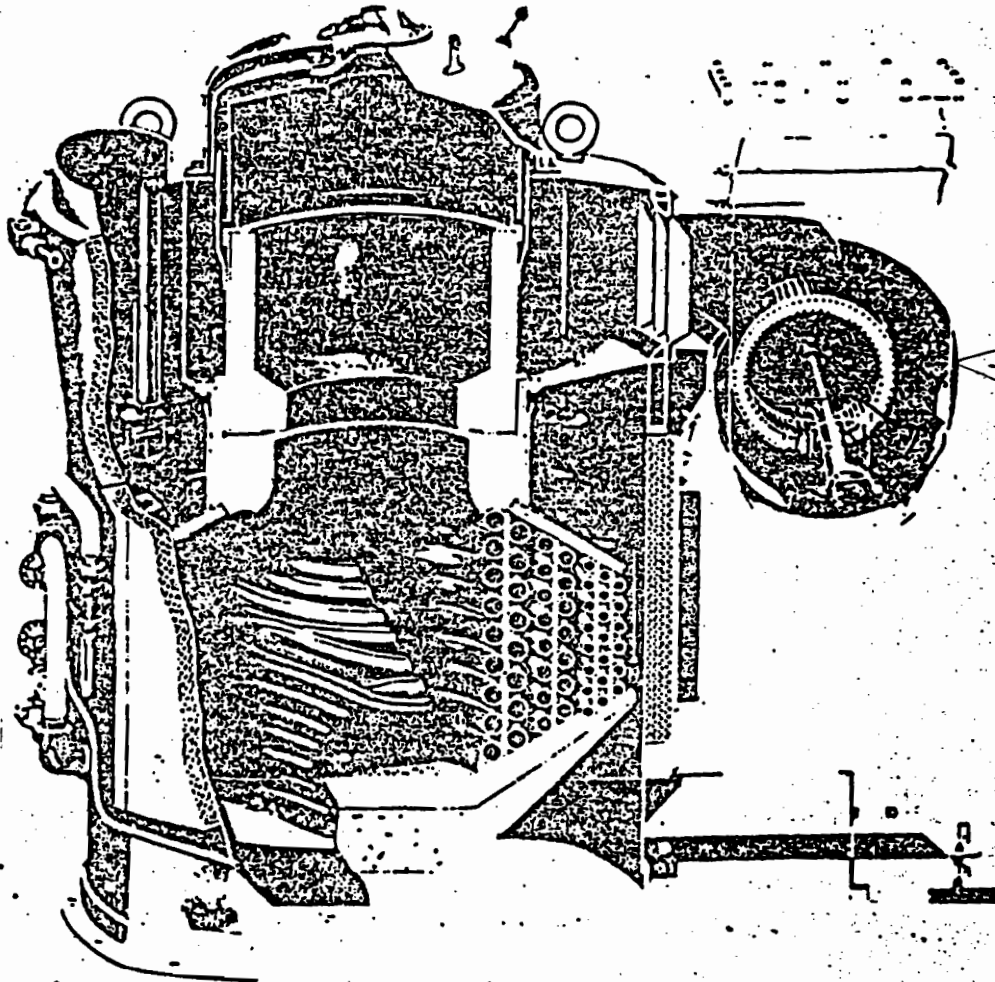


127.

40 11 01 00 06

THE STEAM GENERATOR ILLUSTRATED IS USUALLY REFERRED TO AS A:

- (1) fire tube type
- (2) flue tube type
- (3) once-through or continuous coil type ← ?
- (4) vertical return tubular type

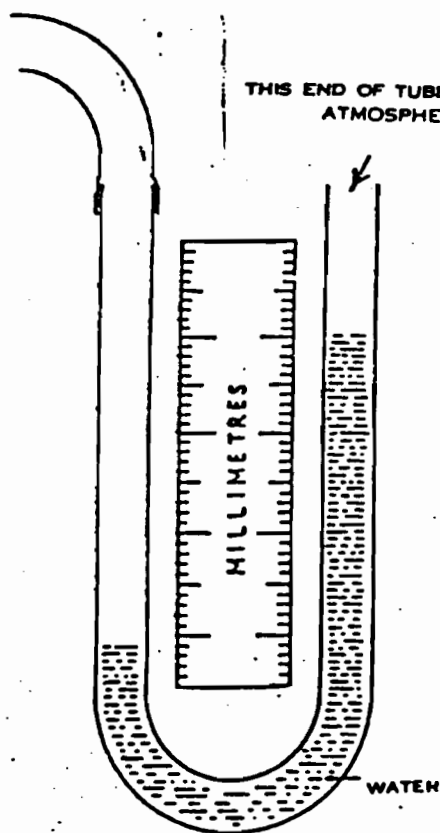


128..

40.11.03.00.03

THE ILLUSTRATION SHOWS A HYDROSTATIC GAUGE OF A TYPE  
SOMETIMES FITTED TO BOILERS TO MEASURE THE PRESSURE OF  
THE:

- (1) feed water
- (2) fuel oil
- (3) steam
- (4) combustion air



(73)

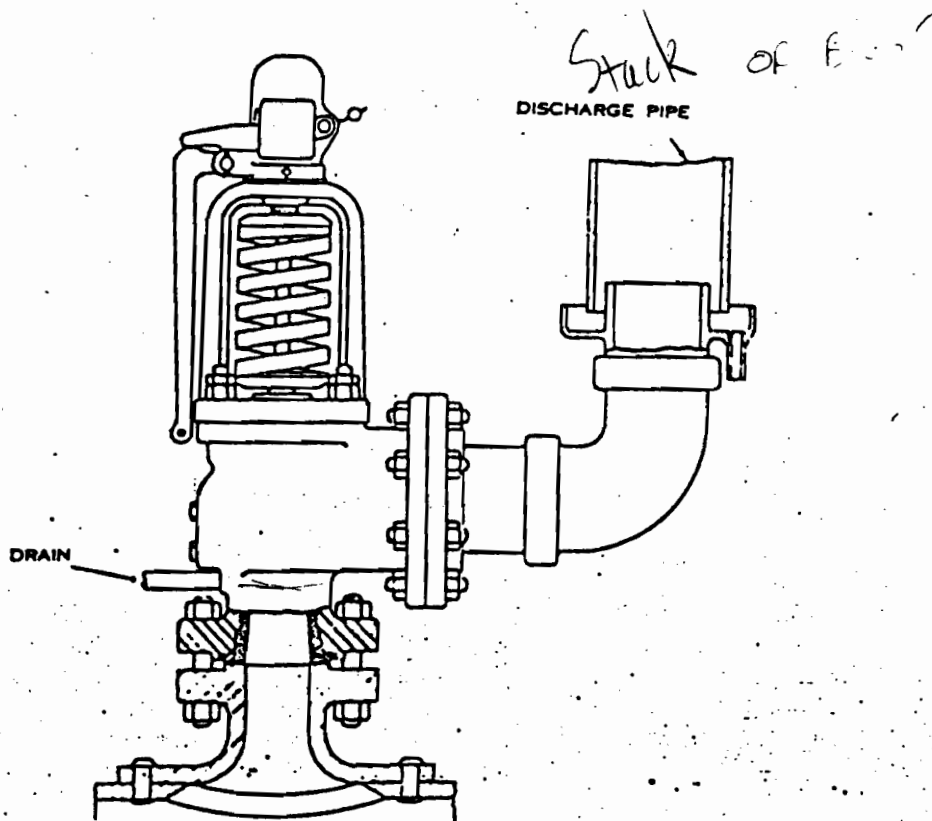


129.

40 11 03 00 05

THE DRAIN SHOWN ON THE SAFETY VALVE IS NECESSARY TO:

- (1) allow the water to escape while blowing down the boiler
- (2) prevent a vacuum being formed when the steam condenses
- (3) prevent the safety valve operating at a pressure greater than that for which the boiler is intended
- (4) prevent any rain water from accumulating in the discharge pipe



130.

40 11 02 00 02

IN SOME AREAS THE WATER SUPPLIED TO THE SHIP MAY CONTAIN SALTS COMPOSED OF MAGNESIUM SULPHATE OR CALCIUM SULPHATE. IF SUCH WATER IS USED IN A BOILER IT WILL:

- (1) produce a very hard scale that is difficult to remove
- (2) produce a very soft scale that is easy to remove
- (3) not produce a scale of any type
- (4) prevent the boiler from foaming

131.

40 11 02 00 03

THE OBJECT OF TREATING BOILER WATER WITH CHEMICALS IS:

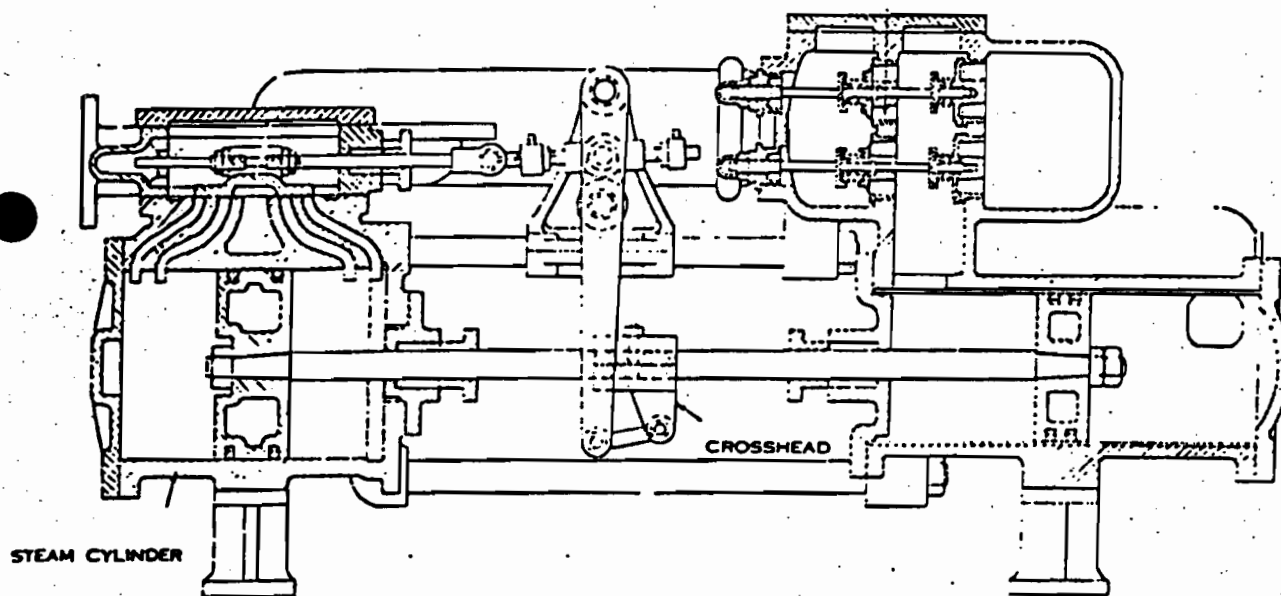
- (1) to reduce or prevent the formation of scale
- (2) to reduce or prevent corrosion
- (3) to increase the quantity of carbon dioxide in the boiler water
- (4) for the reasons stated in items (1) and (2)

132.

40 11 05 00 05

THE LENGTH OF THE STROKE OF THE DUPLEX PUMP ILLUSTRATED  
MAY BE ALTERED BY ADJUSTING THE:

- (1) valve rod steam glands
- (2) valve rod tappets or nuts - *CHANGES LENGTH OF STROKE*
- (3) position of the crosshead - *CHANGES CENTERING OF STROKE*
- (4) steam pressure

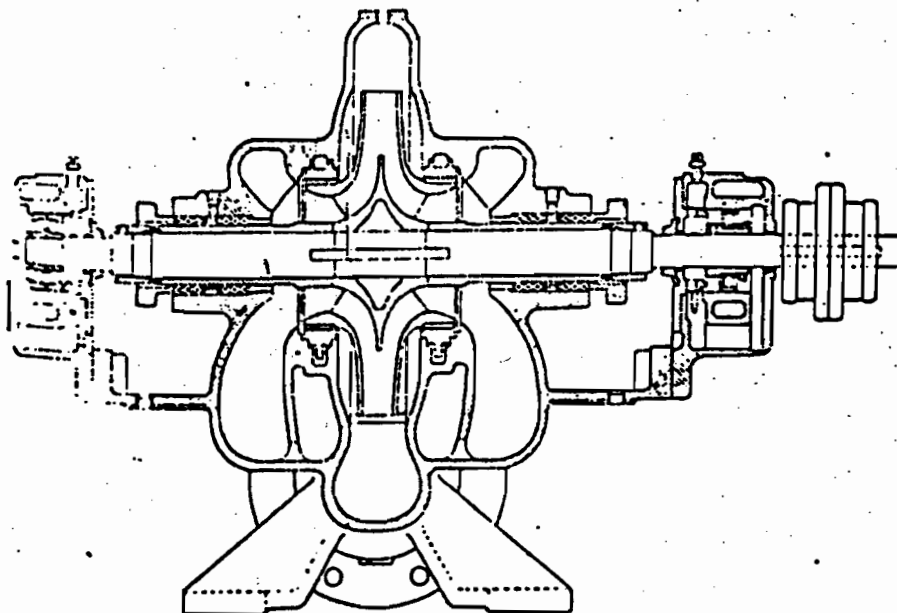


133.

40 11 05 00 08

THE TYPE OF PUMP ILLUSTRATED IS KNOWN AS A \_\_\_\_\_  
PUMP.

- (1) screw displacement
- (2) rotary-vane type
- (3) reciprocating
- (4) centrifugal

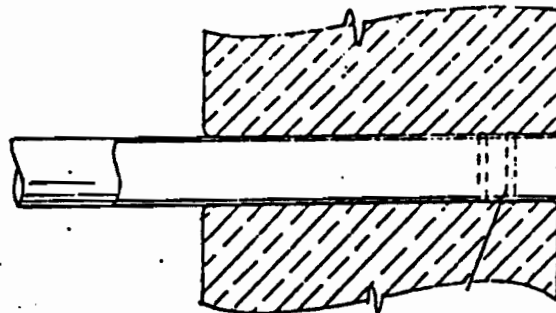


134.

40 11 06 00 02

THE ILLUSTRATION SHOWS ONE METHOD OF FASTENING THE TUBES INTO THE TUBE SHEETS OF A HEAT EXCHANGER. WITH THIS METHOD THE CHANGE IN LENGTH OF THE TUBES, DUE TO TEMPERATURE VARIATIONS, IS COMPENSATED FOR BY:

- (1) the tubes sliding in and out of the tube sheets
- (2) an expansion joint that forms part of the heat-exchanger shell
- (3) the use of corrugated tubes
- (4) none of the above methods ✓



SERRATIONS

135.

40 11 05 00 11

IN A STEAM MACHINERY INSTALLATION, THE FEED WATER IS HEATED:

- (1) to supply hot water for heating the ship
- (2) to improve the thermal efficiency of the installation
- (3) to reduce the amount of scale forming substance entering the boiler
- (4) to reduce the wear on the feed pumps

136.

40 12 01 00 05

EACH CYLINDER OF A FOUR STROKE CYCLE ENGINE HAS A POWER STROKE EVERY:

- (1) three revolutions
- (2) four revolutions
- (3) two revolutions
- (4) one revolutions

137.

40 12 02 00 03

EXCESSIVE PRESSURE ON THE LUBRICATING OIL SYSTEM OF AN INTERNAL COMBUSTION ENGINE COULD BE CAUSED BY:

- (1) worn bearings on the engine
- (2) a relief valve that does not operate
- (3) insufficient oil in the system
- (4) a weak relief valve spring

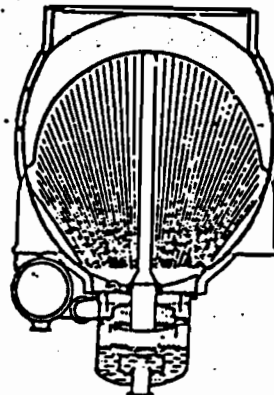
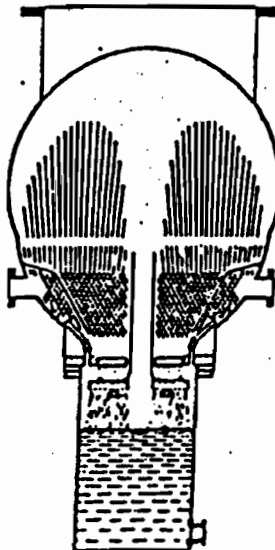
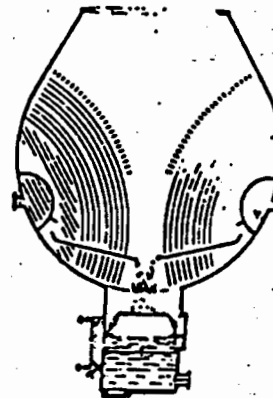
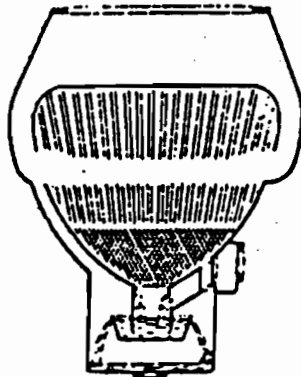
79

138.

40 11 06 00 04

THE ILLUSTRATION SHOWS CROSS-SECTIONAL VIEWS OF A NUMBER OF DIFFERENT CONDENSER DESIGNS. THE REASON THE TUBES ARE MORE WIDELY SPACED NEAR THE STEAM INLET IS TO:

- (1) prevent too great a vacuum from forming
- (2) improve the efficiency of the air removal process
- (3) permit better distribution of the steam to the cooling surfaces
- (4) prevent the steam cooling too quickly

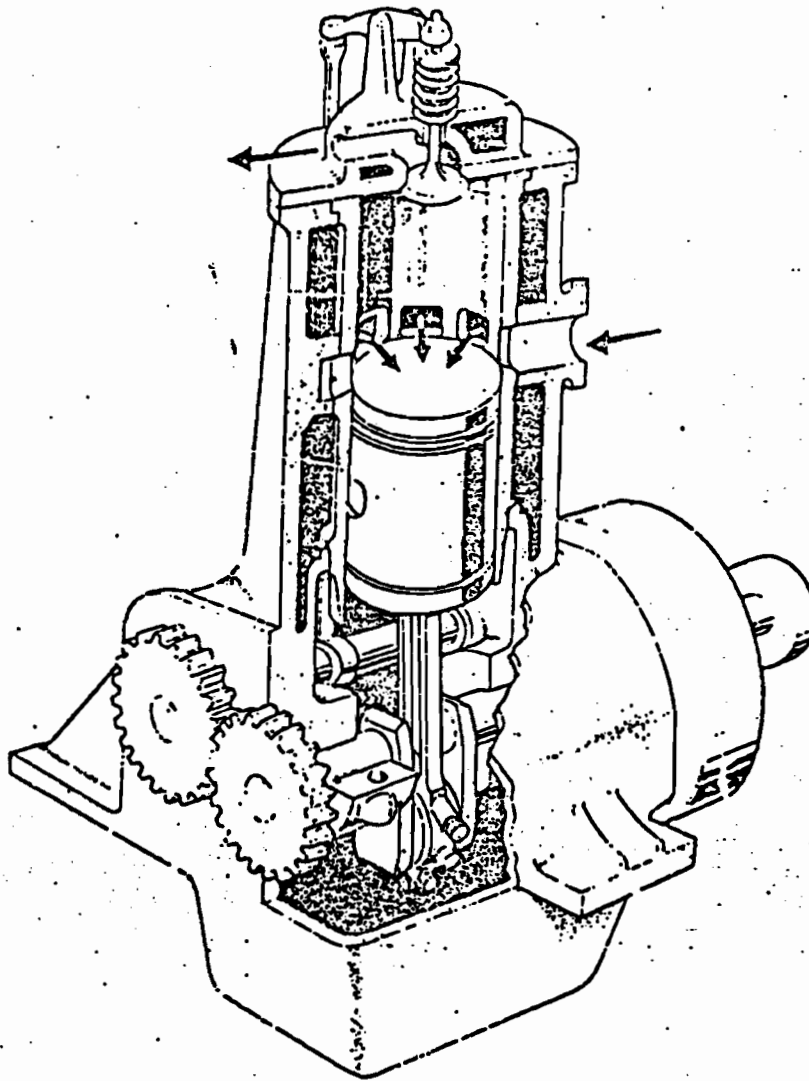


139.

40 12 01 00 03

THE DIESEL ENGINE ILLUSTRATED IS KNOWN AS A \_\_\_\_\_  
ENGINE.

- (1) 4 stroke cycle
- (2) 2 stroke cycle
- (3) double acting
- (4) rotary





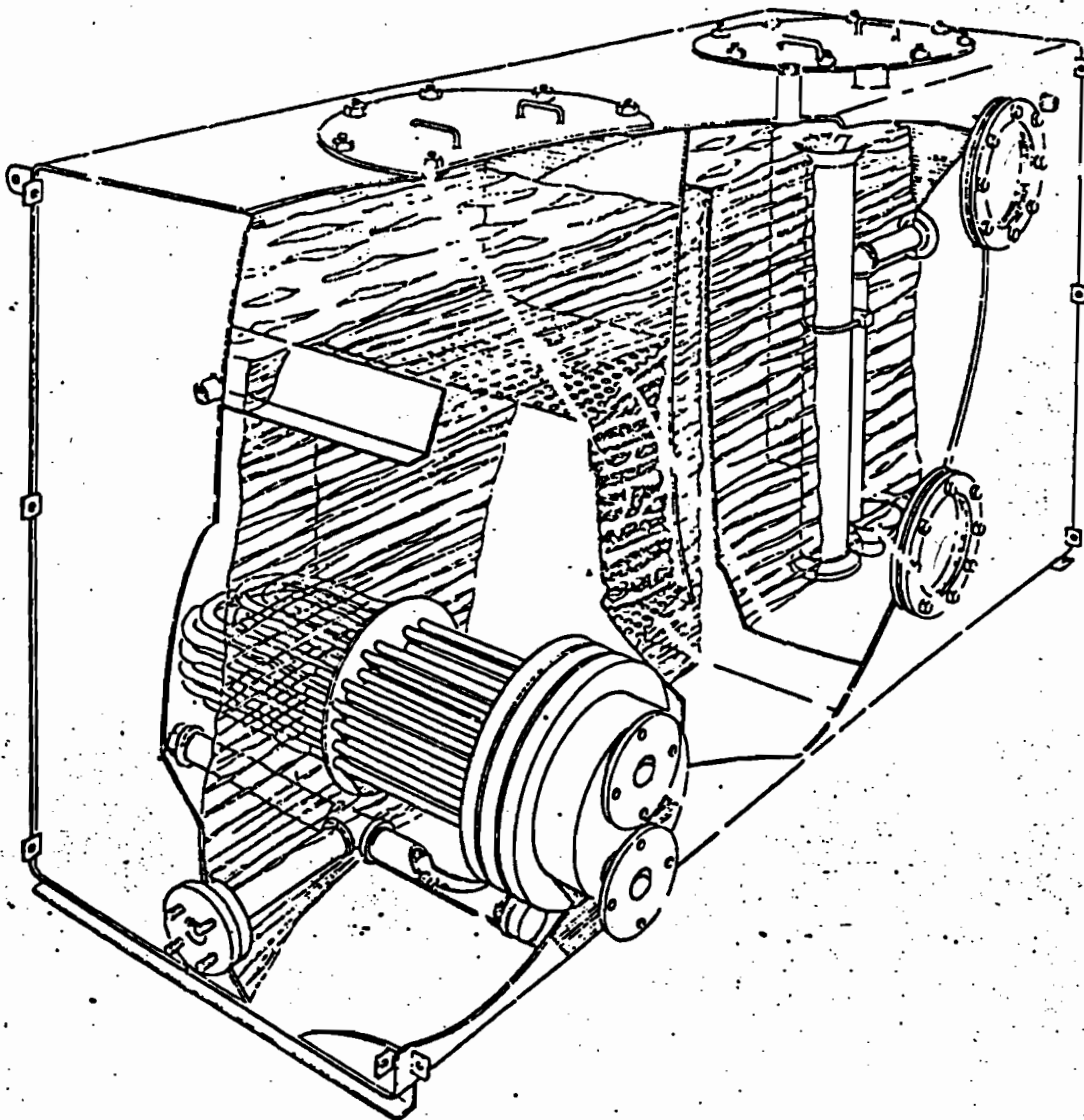
140.

40 11 05 00 12

THE DRAINS INSPECTION TANK ILLUSTRATED MAY BE FITTED ON SHIPS WHERE STEAM IS USED TO HEAT THE:

- (1) fuel oil
- (2) fresh water
- (3) salt water
- (4) ballast water

LUBRICATING OIL



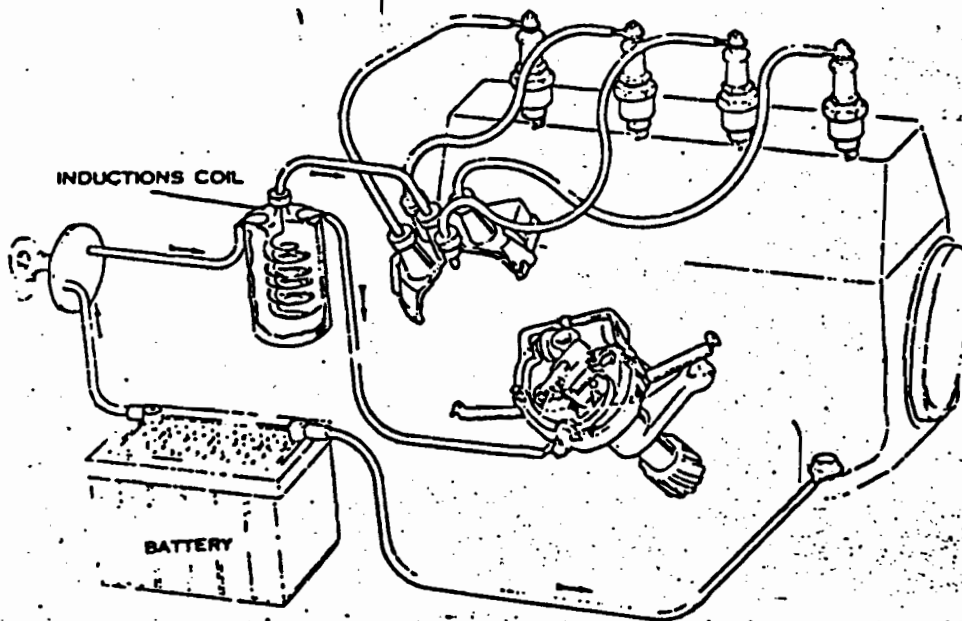
PACIFIC MARINE TRAINING INSTITUTE  
Marine Engineering Dept.  
2019 Dundas Street  
Vancouver, B.C.  
V6L 1J5

141.

40 12 01 00 13

THE ILLUSTRATION SHOWS THE GENERAL ARRANGEMENT OF THE ELECTRICAL SYSTEM FOR IGNITING THE FUEL-AIR CHARGE OF A SPARK IGNITION ENGINE. THE PURPOSE OF THE INDUCTION COIL IS TO:

- (1) change D.C. to A.C.
- (2) change the low voltage supply from the battery to a high voltage supply to the sparking plugs
- (3) change the high voltage supply from the battery to a low voltage supply to the sparking plugs
- (4) supply power to drive the distributor

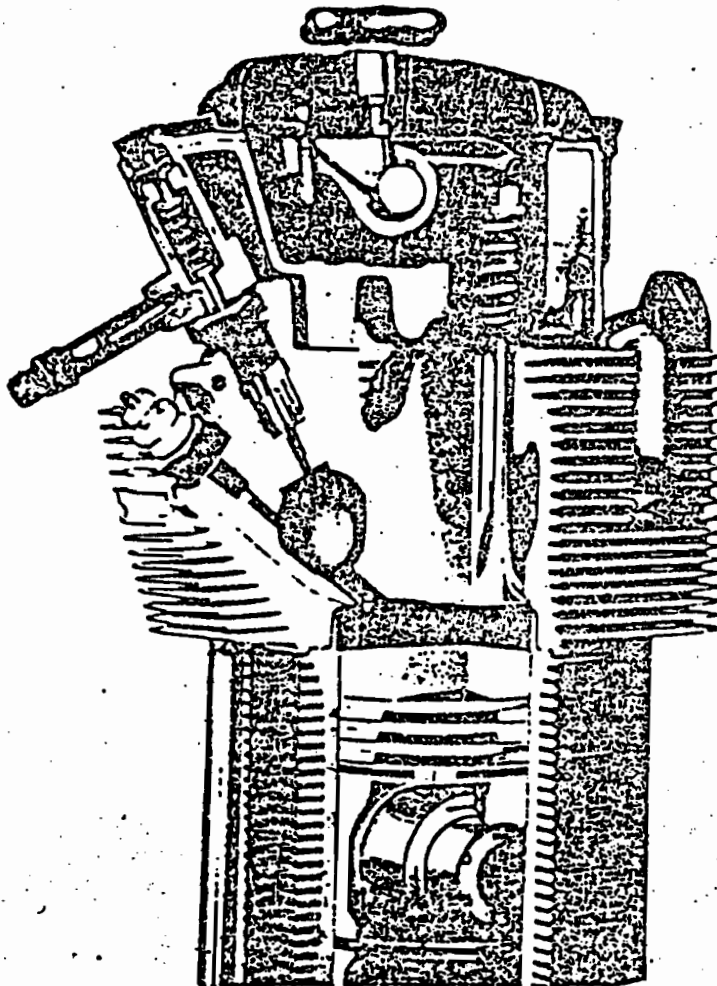


142.

40 1 2 00 07

THE FINS ON THE CYLINDER AND CYLINDER HEAD OF THE AIR-COOLED DIESEL ENGINE ILLUSTRATED ARE NEEDED:

- (1) to reduce the weight of the engine
- (2) to increase the strength of the cylinder and cylinder head
- (3) to provide a large heat transfer area
- (4) for all of the above reasons

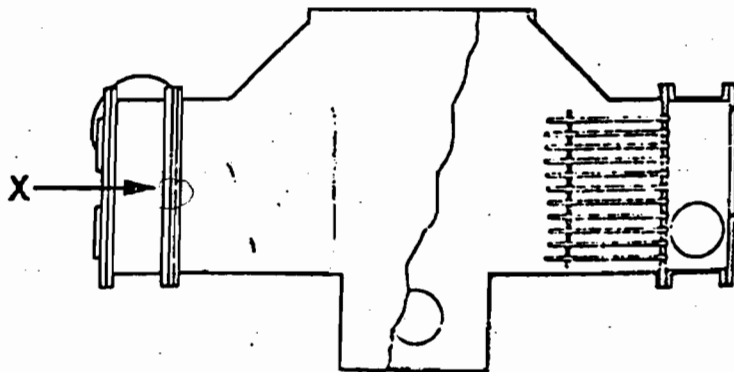


143.

40 11 06 00 05

IN THE CONDENSER ILLUSTRATED THE PART IDENTIFIED AS (X)  
IS CALLED THE:

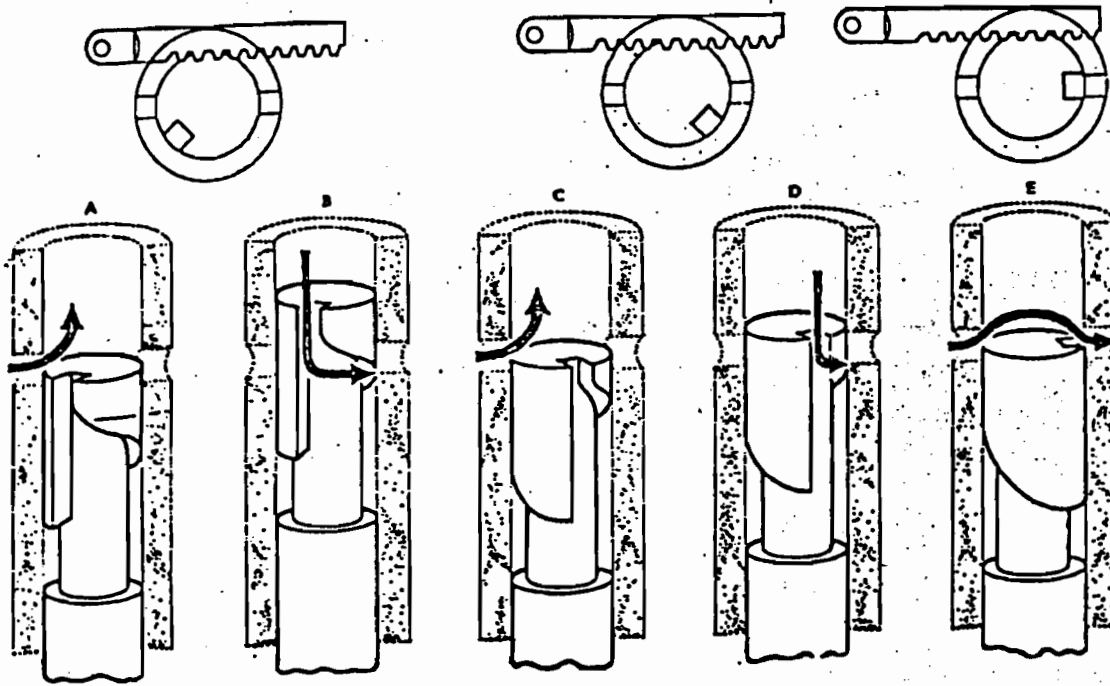
- (1) water-box
- (2) steam inlet
- (3) hot-well
- (4) tube sheet ✓



144.

THE FUEL INJECTION PUMP ILLUSTRATED IS KNOWN AS A  
\_\_\_\_\_ TYPE OF PUMP.

- (1) distributor
- (2) port-and-helix metering
- (3) variable stroke
- (4) variable metering-orifice



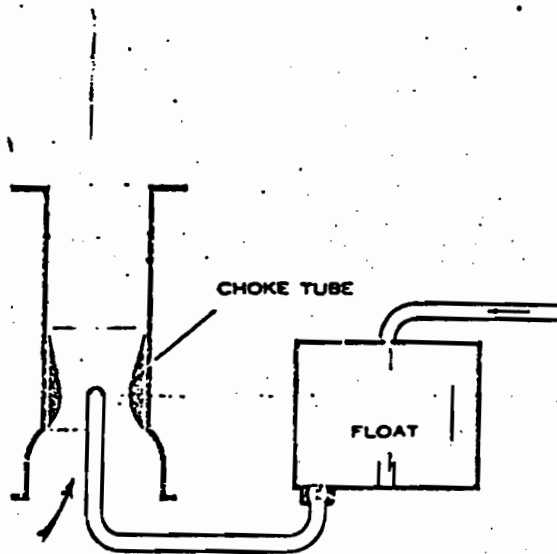
86

145.

40 12 03 00 03

THE REASON FOR FITTING THE CHOKE-TUBE (VENTURI) IN THE CARBURETTOR ILLUSTRATED IS:

- (1) to increase the pressure of the air as it passes through the venturi
- (2) to decrease the pressure of the air as it passes through the venturi
- (3) ✓ for the reasons in (2) and (4) and to ensure that the fuel is mixed with the air
- (4) to increase the velocity of the air as it passes through the venturi

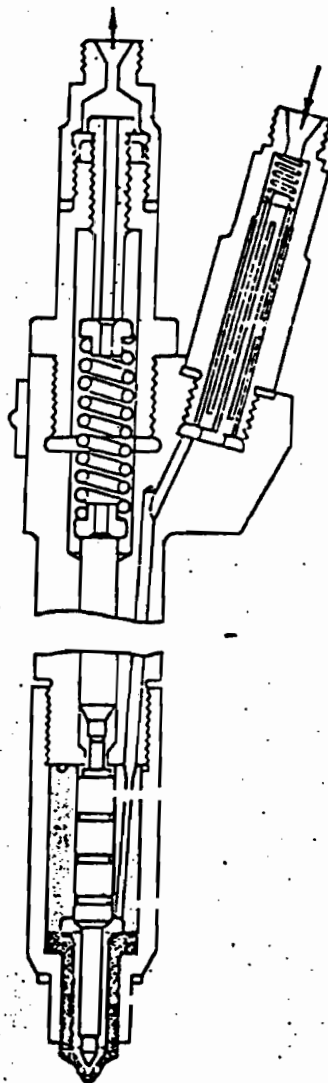


146.

12 03 00 04

THE DEVICE ILLUSTRATED IS FITTED TO A DIESEL ENGINE TO:

- (1) control the starting air pressure
- (2) supply lubricating oil to the cylinder wall
- (3) spray fuel oil into the cylinder
- (4) ignite the fuel at the proper time

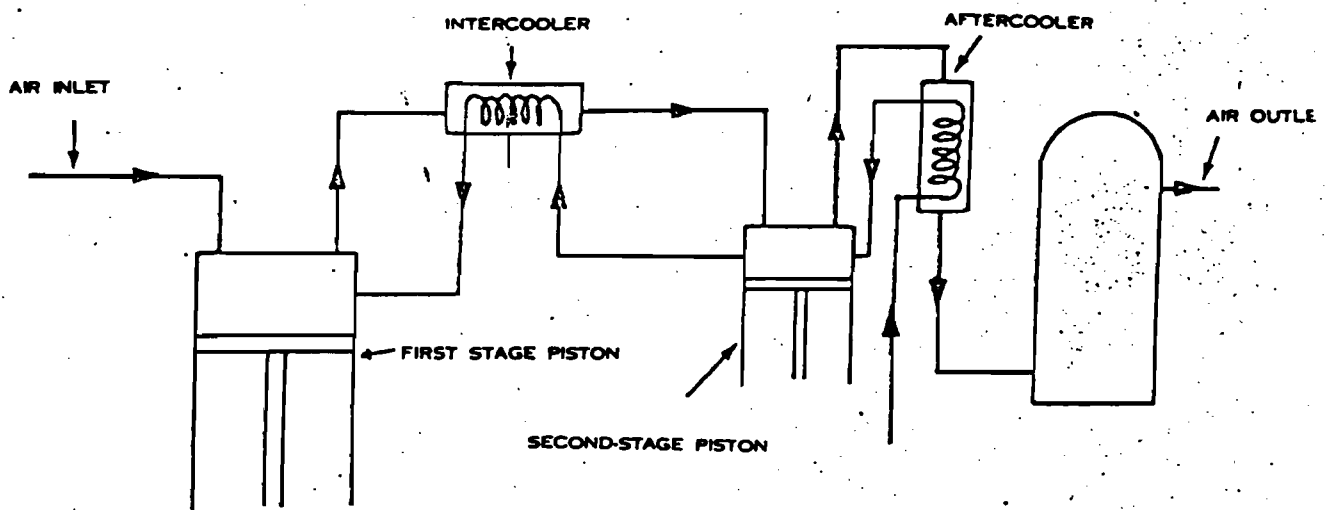


147.

40 12 04 00 02

THE REASON FOR FITTING THE INTERCOOLER AND AFTERCOOLER WITH THE AIR COMPRESSOR ARRANGEMENT ILLUSTRATED IS:

- (1) to reduce the power required for compression
- (2) to reduce the danger of explosion
- (3) to cool the air so any moisture will condense and can be drained off
- (4) for all the reasons in items (1), (2) and (3)



89



148.

40 12 05 00 01

IF A SPARK IGNITION ENGINE MISFIRES ON ONE CYLINDER THE CAUSE MAY BE:

- (1) ✓ a defective spark plug
- (2) late ignition timing
- (3) a defective capacitor (condensør)
- (4) a faulty ignition coil

149.

40 12 05 00 03

A FAULTY UNIT INJECTOR ON AN OPERATING DIESEL ENGINE CAN BE LOCATED BY:

- (1) ✓ loosening the fuel inlet connection to the injector
- (2) measuring the fuel delivered by the fuel transfer pump
- (3) holding the injector follower down
- (4) increasing the fuel pump rack setting

150.

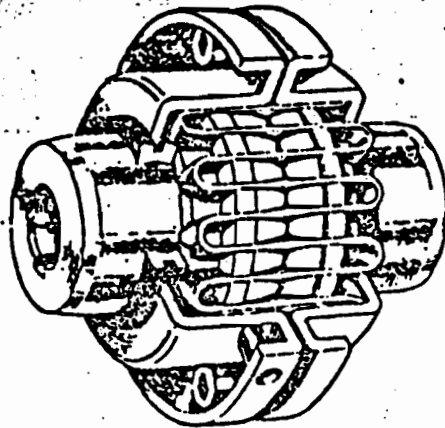
40 12 05 00 21

A MULTI-CYLINDER HIGH PRESSURE FUEL PUMP FOR A DIESEL ENGINE IS CALIBRATED TO DETERMINE THE:

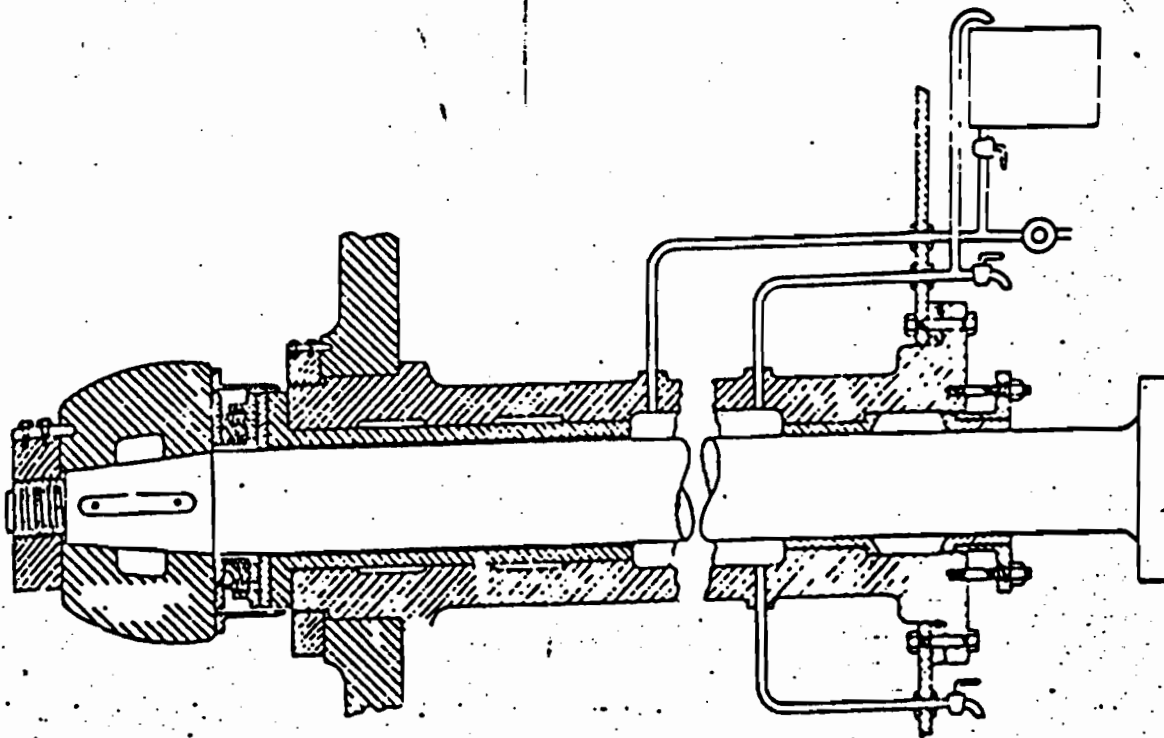
- (1) amount of fuel delivered to the intake manifold
- (2) amount of fuel stored in the fuel filter
- ✓ (3) amount of fuel delivered to each cylinder of the engine
- (4) fuel injection pressure

151 How is this type of coupling lubricated?

- 1. No lubrication
- 2. Oil drip
- 3. Grease filled
- 4. Grease cup



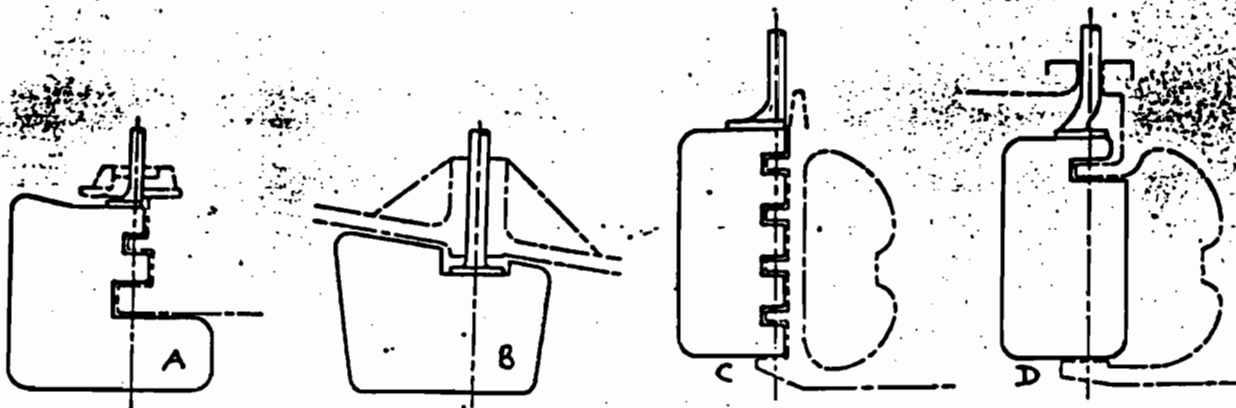
152 In the arrangement illustrated the propeller shaft and the stern bearing are lubricated with:



- 1. Sea water
- 2. Oil
- 3. Grease
- 4. Graphite contained within the bearing material

91

153

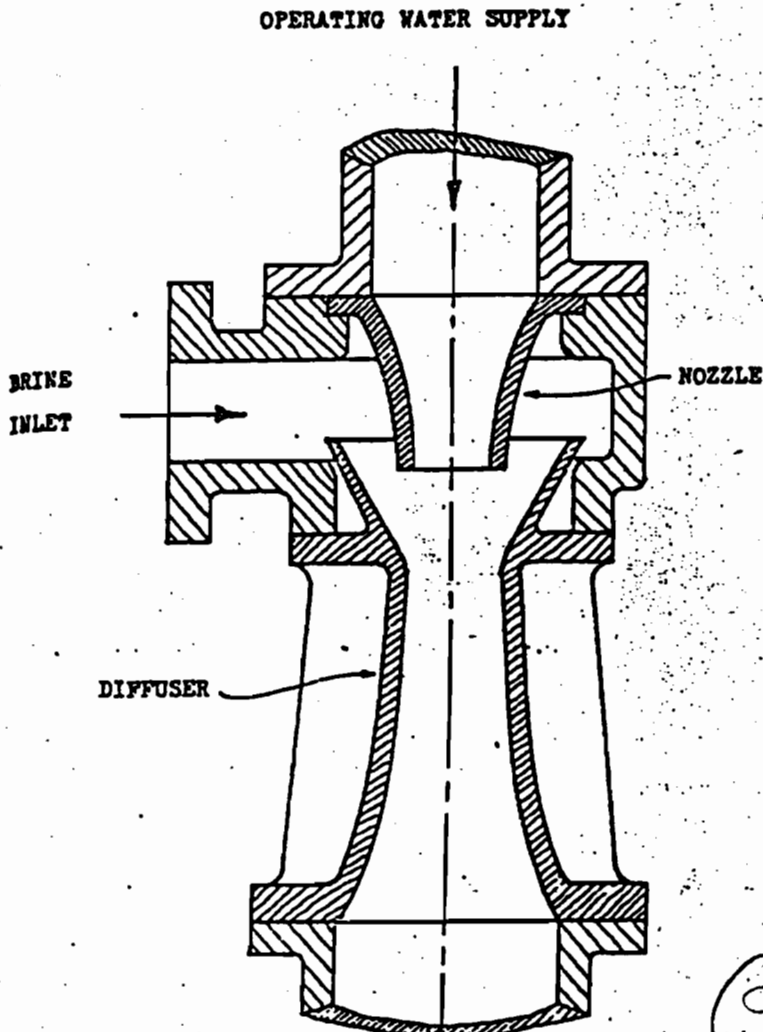


1. A.
2. B.
3. C.
4. D. ✓

Which of the above rudders is a semi-balanced rudder?

154 Is the ejector illustrated?

1. Convergent
2. Divergent
3. Divergent - Convergent
4. Convergent - Divergent ✓



92

**FOLLOWING TOPPING**

**SHUT SHIP'S  
DISCON. HOSE  
SHUT DOWN SHORE**

**up of fuel tanks from a shore facility do you:**

**efore shore pump.  
after stopping shore pump.  
efore shutting tank valve.  
pump and then tank valve.**

56 An engine on no load has RPM of 1260 this drops to 1200 RPM at full load. What is the droop %.

6.66%  
5.0%  
-4.76%  
3.33%

$60 \div 1260$   
 $1260 \sqrt{6000}$

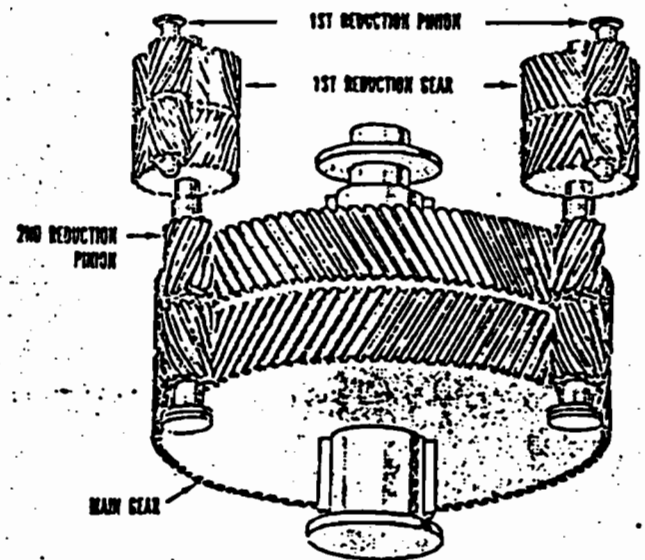
~~1200~~ 1260 1200 0 1260

157 What is not a transfer procedure as defined in the pollution regulations.

- 1. Pumping clean ballast.
- 2. Loading a ship with fuel.
- 3. Pumping oily water ashore
- 4. Pumping bilges.

6000  
4920  
1080

158 Is the gearing illustrated?



- 1. Spur gearing
- 2. Single helical gearing
- 3. Double helical gearing
- 4. Bevel gearing

93