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General Subjects

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Which of the figures in illustration would be used in conjunction with figure "B" of the device shown in illustration GS-0124?
figure F

Illustrations: GS0124_WM_092618

The open end wrench size for a 3/4 inch American National Standard hex head machine bolt is _____.
1 1/4 inches

Illustrations: WRENCHSIZES

The terms rough, coarse, bastard, second cut, smooth, and dead smooth refer to the _____.
distance between the parallel cuts of a file
coarseness of file teeth
Both A and C are correct.

Illustrations: PARTS OF A FILE
See REF2253

Double cut files are most effective when used for _____.
rough work

Illustrations: PARTS OF A FILE
See REF2253

The rudder torque capacity of the four ram steering gear illustrated is rated at 44,210,000 inch-pounds with one power unit in operation. If the four ram system was able to be operated as a two ram system with both power units on line, what would be the available torque? Illustration GS-0067
22,105,000 inch pounds

Illustrations: GS0067_WM_092418
See REF2251

Work that cannot readily be mounted between lathe centers is usually held in a _____.
chuck

Illustrations: 3JAWUNIVERSALCHUCK, 4JAWINDEPENDENTCHUCK
See REF2250

Work that cannot readily be mounted between lathe centers is usually held in a _____.
chuck

Illustrations: 3JAWUNIVERSALCHUCK, 4JAWINDEPENDENTCHUCK
See REF2250

For proper support when turning a long thin piece of work between lathe centers, you should use a _____.
steady rest

Illustrations: STEADYREST
See REF2248

To properly cut even numbered threads using the lathe thread dial indicator shown in the illustration, you should close the lathe split or half-nut on _____. Illustration GS-0084
any line on the dial

Illustrations: GS0084_WM_092518
See REF2246

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To properly cut an odd numbered thread with a lathe using the thread dial indicator illustrated, you should close the lathe split, or half-nut on _____. Illustration GS-0084
any numbered line on the dial

Illustrations: GS0084_WM_092518
See REF2246

If the distances "A" and/or "B" as shown in the illustration are excessively increased, the tool will _____. Illustration GS-0085
chatter

Illustrations: GS0085_AO_120215WM
See REF2245

The main difference between a common lathe dog and a safety lathe dog is that the latter _____.
has a headless set screw

Illustrations: LATHEDOGS
See REF2244

Which single illustrated lathe tool could be used to turn down the stock in figure II? Illustration GS-0009
B

Illustrations: GS0009_WM_092118, LATHETOOLS

Which of the illustrated lathe tools would be used to produce a smooth finish cut for figure I? Illustration GS-0009
A

Illustrations: GS0009_WM_092118, LATHETOOLS

Which single illustrated lathe tool could be used to turn down the stock in figure II? Illustration GS-0009
B

Illustrations: GS0009_WM_092118, LATHETOOLS

Which of the illustrated lathe tools would be used to produce a smooth finish cut for figure I? Illustration GS-0009
A

Illustrations: GS0009_WM_092118, LATHETOOLS

The angle "A" shown on the illustrated lathe tool bit is properly called the _____. Illustration GS-0164
nose angle

Illustrations: GS0164_WM_092718

Which lathe tool shown in the illustration would best be used on a work piece to perform a right hand facing operation? Illustration GS-0090
R

Illustrations: GS0090_WM_092518, GS0090_2

The lathe tool shown as "Q" in the illustration is a _____. Illustration GS-0090
left hand side facing tool

Illustrations: GS0090_WM_092518, GS0090_2

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See REF2271

The lathe tool shown as figure "R" in the illustration would best be used to _____. Illustration GS-0090
form a right-cut square shoulder

Illustrations: GS0090_WM_092518, GS0090_2

Which of the illustrated figures represents the use of a right hand roughing tool? Illustration GS-0090
Figure T

Illustrations: GS0090_WM_092518, GS0090_2

The lathe tool shown as figure "T" in the illustration is commonly known as a/an _____. Illustration GS-0090
right-cut roughing tool

Illustrations: GS0090_WM_092518, GS0090_2

The lathe tool shown as figure "U" in the illustration is commonly known as a/an _____. Illustration GS-0090
cutting-off tool

Illustrations: GS0090_WM_092518, GS0090_2

The lathe tools shown as figure "M" in the illustration are commonly known as _____. Illustration GS-0090
form tools

Illustrations: GS0090_WM_092518, GS0090_2

The lathe tool shown as figure "N" in the illustration is commonly known as a/an _____. Illustration GS-0090
knurling tool

Illustrations: GS0090_WM_092518, GS0090_2

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Illustrations: GS0090_WM_092518, GS0090_2
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The lathe tools shown as figure "M" in the illustration are commonly known as _____. Illustration GS-0090
form tools

Illustrations: GS0090_WM_092518, GS0090_2

The lathe tool shown as figure "N" in the illustration is commonly known as a/an _____. Illustration GS-0090
knurling tool

Illustrations: GS0090_WM_092518, GS0090_2

The tool shown in the illustration is called a _____. Illustration GS-0072
center gage

Illustrations: GS0072_AO_112015WM
See REF2243

With regards to the American National Screw Thread nomenclature, 'pitch' is the _____.
distance between corresponding points on adjacent threads

Illustrations: SCREW-THREAD-PRINCIPLE
See REF2237

When should the nut lock shown in the illustration, be replaced with standard lock washers or other similar devices used in the industry? Illustration GS-0156
Replacement with another nut locking device is unnecessary.

Illustrations: GS0156_WM_092718

The locking plates shown in the illustration are used in many marine applications. Which figure indicates the improper method for using these devices? Illustration GS-0156
"C"

Illustrations: GS0156_WM_092718

What is the primary function of the devices shown in the illustration? Illustration GS-0156
The locking plates are used to prevent the fastening devices from vibrating loose.

Illustrations: GS0156_WM_092718

The reading on the vernier caliper scale shown in figure "G" in the illustration is _____. Illustration GS-0082
2.368 inches

Illustrations: GS0082_AO_120115WM

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What is the reading of the vernier micrometer caliper scale shown in figure "G" in the illustration? Illustration GS-0083
0.2470 inch

Illustrations: GS0083_WM_052919

The reading on the micrometer scale shown in figure "D" in the illustration is _____. Illustration GS-0081
0.4815 inch

Illustrations: GS0081_WM_052919

The purpose of the instrument illustrated is to _____. Illustration GS-0079
measure wire diameter

Illustrations: GS0079_WM_092418
See REF2233

Which of the instruments listed is used to measure the gauge of a piece of sheet metal?
Wire gauge

Illustrations: WIRE_GAUGE

The best tool to use to measure the number of threads per inch on a bolt is a _____.
screw pitch gauge

Illustrations: SCREWPITCHGAGE
See REF2229

Which of the devices shown in the illustration should be used with a bridge gage? Illustration GS-0073
A

Illustrations: GS0073_WM_092418
See REF2228

Which of the devices shown in the illustration is designed for both inside and outside measurements? Illustration GS-0073
C

Illustrations: GS0073_WM_092418
See REF2228

Which of the following statements correctly describes the construction of the close coupled sanitary pump shown in the illustration? Illustration GS-0070
The pump and motor have a common shaft.

Illustrations: GS0070_WM_031416

In addition to the indicated gauge pressure, what other information is presented on the compound gauge for the hypothetical refrigerant illustrated? Illustration GS-RA-16
the saturation temperature of the refrigerant that corresponds to the gauge pressure at the point of measurement

Illustrations: RA0016_WM_091818, GSRA16_032117WM

In addition to the indicated gauge pressure, what other information is presented on the compound gauge for the hypothetical refrigerant illustrated? Illustration GS-RA-16
the saturation temperature of the refrigerant that corresponds to the gauge pressure at the point of measurement

Illustrations: RA0016_WM_091818, GSRA16_032117WM

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Through which of the components shown in the illustration is flash gas formation a normal occurrence? Illustration GS-RA-25
thermostatic expansion valve

Illustrations: GSRA25_WM_033117

As shown in the illustrated refrigeration system piping schematic diagram with the various accessories and controls and equipped with an air-cooled condenser with high side pressure controls, what statement is true concerning the fan cycling control pressure switch? Illustration GS-RA-39
With a condenser fitted with a single fan driven by a multi-speed electric motor, the fan speed would decrease under low ambient temperature conditions.

Illustrations: GSRA39_AO_050117

If it is necessary to increase the operating head pressure of the refrigeration system using the device shown in the illustration, what should be done? Illustration GS-RA-14
"2" should be turned to further compress the spring

Illustrations: RA0014_WM_091718, GSRA14_WM_032017

In a refrigeration system, the valve shown in the illustration is used for what purpose? Illustration GS-RA-14
head pressure regulating valve

Illustrations: RA0014_WM_091718, GSRA14_WM_032017

The set point adjustment of the device shown in the illustration is made by rotating what component? Illustration GS-RA-14
"2"

Illustrations: RA0014_WM_091718, GSRA14_WM_032017

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"2"

Illustrations: RA0014_WM_091718, GSRA14_WM_032017

You are checking the supply chilled water temperature thermistor probe on a high-pressure hermetic centrifugal chiller. Using the illustrated chart, what statement is true if the supply water temperature is verified 45 ° F with a digital thermometer? Illustration GS-RA-48
When checked with control power on and the thermistor probe connected into the circuit, the thermistor probe voltage drop should be 3.805 volts.

Illustrations: GSRA48_FAMEWM

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Which of the following conditions will occur if the power element of the thermostatic expansion valve shown in the illustration loses its charge? Illustration GS-RA-07
The valve will fail closed, providing no cooling capacity.

Illustrations: RA0007_WM_091718, GSRA07_AO_030917WM

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The valve will fail closed, providing no cooling capacity.

Illustrations: RA0007_WM_091718, GSRA07_AO_030917WM

Of the various possible methods shown in the illustration, which is the correct method of attaching a TXV feeler bulb to a small large line (7/8" and larger) with a horizontal run? Illustration GS-RA-50
C

Illustrations: RA0050_WM_091818, GSRA50_WM_051017

Of the various possible methods shown in the illustration, which is the correct method of attaching a TXV feeler bulb to a small large line (7/8" and larger) with a horizontal run? Illustration GS-RA-50
C

Illustrations: RA0050_WM_091818, GSRA50_WM_051017

As shown in the illustrated flow diagram for a self-contained recovery unit designed for the recovery of refrigerants from high pressure appliances as defined by the EPA Clean Air Act rules, what is the functional purpose of the item labeled "FS2"? Illustration GS-RA-32
It automatically transitions the recovery unit from the direct liquid recovery mode to the direct vapor recovery mode.

Illustrations: RA0032_WM_091818

What is the correct color coding of refrigerant recovery cylinders regardless of the refrigerant contained within?
yellow top and gray body

Illustrations: REFRIGERANT RECOVERY CYLINDERS

After the refrigerant has been recovered, leaks repaired if necessary, the system ideally should undergo a dehydration evacuation prior to recharging with refrigerant. As shown in the illustration, besides the vacuum pump suction manifold isolation valve being opened, what would be the proper valve positions to accomplish and prove the evacuation? Illustration GS-RA-51
Valves 1, 2, and 3 should be in the mid-position and the low-side gauge manifold hand valve should be closed, and the high-side gauge manifold hand valve should be open.

Illustrations: GSRA51_AO_NOILLUSTRATION

Which of the illustrated valves is used to gain access to a hermetic system and features a Schrader core valve which is unseated by the core depressor of hose fitting when attached? Illustration GS-RA-69
D

Illustrations: GSRA69_FAMEWM

Which of the following statements is true concerning the illustrated gauge manifold set? Illustration GS-RA-01
Closing the valve labeled "G" isolates the hose labeled "H" from the hose labeled "J".

Illustrations: RA0001_WM_091718, GSRA01_WM_021717

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Using the device shown in the illustration, which of the following statements is true when adding refrigerant as a vapor to the low side of the refrigeration system _____. Illustration GS-RA-01
The hose labeled "H" should be connected to the suction service valve service port, the hose labeled "J" should be connected to the vapor valve on the refrigerant cylinder and the valve labeled "G" should be open.

Illustrations: RA0001_WM_091718, GSRA01_WM_021717

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Illustrations: RA0001_WM_091718, GSRA01_WM_021717

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Illustrations: RA0001_WM_091718, GSRA01_WM_021717

With a service gauge manifold set connected to a refrigerant compressor as shown in the illustration, which arrangement of the gauge manifold set valves and compressor Service Valves would allow for simultaneous reading of the compressor suction and discharge pressures? Illustration GS-RA-03
Valves "2" and "5" both closed, along with valves "1" and "6" both cracked open off their backseats.

Illustrations: RA0003_WM_091718, GSRA03_WM_022217

With a service gauge manifold set connected to a refrigerant compressor as shown in the illustration, which arrangement of the gauge manifold set valves and compressor Service Valves would allow for simultaneous reading of the compressor suction and discharge pressures? Illustration GS-RA-03
Valves "2" and "5" both closed, along with valves "1" and "6" both cracked open off their backseats.

Illustrations: RA0003_WM_091718, GSRA03_WM_022217

Which pair of the illustrated service gauge manifold sets would require switching hoses when transitioning from a dehydration evacuation to refrigerant charging? Illustration GS-RA-30
B and D

Illustrations: GSRA30_WM_091818

The function of the section labeled "C" in the device illustrated is to provide a/an _____. Illustration GS-0075
passage for gas to be discharged

Illustrations: GS0075_WM_092418

What type of pump is shown in the illustration? Illustration GS-0144
Triple screw rotary pump

Illustrations: GS0144WM_092618

The shaft sleeve for the pump illustrated is identified by the item numbered as _____. Illustration GS-0143
14

Illustrations: GS0143WM_052319

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What type of valve is shown in the illustration? Illustration GS-0047
Gate valve

Illustrations: GS0047_WM_092418
See REF2198

Which of the following statements is true concerning the valve shown in the illustration. Illustration GS-0047
The valve is a non-rising stem design.

Illustrations: GS0047_WM_092418
See REF2198

Which of the illustrations depicts the correct procedure for applying pipe dope? Illustration GS-0046
B

Illustrations: GS0046_WM_092418
See REF2193

The valve depicted in the illustration shown is a _____. Illustration GS-0055
butterfly valve

Illustrations: GS0055_AO_092418
See REF2191

The illustrated valve is known as a _____. Illustration GS-0056
swing check valve

Illustrations: GS0056_WM_092418
See REF2190

Which illustration correctly depicts a double bevel groove weld? Illustration GS-0077
3B

Illustrations: GS0077_WM_092418

In the illustration, the welded neck flange is attached to the pipe by a _____. Illustration GS-0078
V-weld over a backing ring

Illustrations: GS0078_AO_112515WM

The welding symbol reference line using the inverted "V", indicates _____. Illustration GS-0076
a "V" groove weld is to be made

Illustrations: GS0076_WM_091019

The root opening dimension shown in the illustration is used to indicate the _____. Illustration GS-0076
distance across the bottom of the "V" groove

Illustrations: GS0076_WM_091019

Which of the devices listed is used to maintain a snug interface between the rotating and stationary seal members shown in the illustration? Illustration GS-0071
spring

Illustrations: GS0071_WM_092418

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The discharge capacity of the axial piston hydraulic pump, shown in the illustration, is _____. Illustration GS-0058
fixed by the pump housing angle

Illustrations: GS0058_WM_040419

Of the hydraulic tubing fittings illustrated, the flared fitting for high pressure use is represented by figure _____. Illustration GS-0100
A or B

Illustrations: GS0100_AO_121415WM

Item "B" shown in the illustrated hydraulic circuit is used to _____. Illustration GS-0103
shut down the remotely operated electric motor driven pump when the watertight door has closed

Illustrations: GS0103_AO_102815WM

Item "F" shown in the illustration represents two hydraulic pumps that are _____. Illustration GS-0103
manually operated with one located in the engine room and the other in the shaft alley of the water tight door

Illustrations: GS0103_AO_102815WM

An arrow superimposed on a hydraulic graphic symbol at approximately 45°, as shown in the illustrated figures A, B, and C, indicates the component _____. Illustration GS-0068
can be adjusted or varied

Illustrations: GS0068_WM_092418

The illustrated hydraulic pump graphic symbol is used to depict a _____. Illustration GS-0098
combined, pump unit

Illustrations: GS0098_AO_102715WM

The illustrated hydraulic pump graphic symbol is used to depict a/an _____. Illustration GS-0097
double pump unit

Illustrations: GS0097_WM_092518

In the system illustrated, which of the following readings should be indicated on the pressure gage, if the load (x) is 8000 lbs (3632 kg) and the piston area (y) is 10 sq. in (64.5 sq. cm)? Illustration GS-0062
800 psi (56.31 kg/cm2)

Illustrations: GS0062_WM_092418
See REF2166

Which of the listed pumps, shown in the illustration, discharges directly to the fuel oil settling tanks of a diesel engine main propulsion plant? Illustration MO-0058
Transfer pump

Illustrations: MO0058_WM_061620
See REF2161

The primary function of line 'J' shown in the illustration is to _____. Illustration MO-0110
remove air and non-condensable gases from the unit

Illustrations: MO0110_WM_102218

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The function of device "O" shown in the illustration is to _____. Illustration MO-0110
control the amount of feed water entering the evaporator

Illustrations: MO0110_WM_102218

What is the function of device "A" shown in the illustration? Illustration MO-0110
It serves as a hinge for ease of opening the shell.

Illustrations: MO0110_WM_102218

In the hydraulic anchor windlass system illustrated, if the power to the electric motor is on, but the wildcat turns slowly or not at all, even without a load being applied, and nearly normal pressure is indicated on the high side of the system, the probable cause is the _____. Illustration GS-0160
relief valve "L" is not closing

Illustrations: GS0160_AO_111215WM

In the hydraulic anchor windlass system illustrated, if the power to the electric motor is on, but the wildcat does not turn, the pressure developed on either side of the system increases to half of the normal operating pressure regardless of the direction of movement in which the servo control is placed, the probable cause is the _____. Illustration GS-0160
manual transfer valve is in the wrong position for the main pump being operated

Illustrations: GS0160_AO_111215WM

In the hydraulic anchor windlass system illustrated, the main pressure relief valve opens as the load increases its strain on the system. The probable cause is the _____. Illustration GS-0160
manual transfer valve is in the wrong position for the main pump being operated

Illustrations: GS0160_AO_111215WM

In the hydraulic anchor windlass system illustrated, pressure relief of the main pressure piping is provided by _____. Illustration GS-0160
L

Illustrations: GS0160_AO_111215WM

The device shown in the illustration is commonly used to _____. Illustration GS-0120
compress air

Illustrations: GS0120_WM_033016

One of the functions of the component labeled "E", shown in the illustration, is to _____. Illustration GS-0119
act as a lube oil sump

Illustrations: GS0119_WM_092618

As demand on the device shown in the illustration fluctuates in the pressure range of 100 to 110 psi, the output of the unit is controlled by _____. Illustration GS-0119
the modulation of the opening of a butterfly valve located in the air intake

Illustrations: GS0119_WM_092618

One of the functions of the component labeled "E", shown in the illustration, is to _____. Illustration GS-0119
act as a lube oil sump

Illustrations: GS0119_WM_092618

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One of the functions of the component labeled "E", shown in the illustration, is to _____. Illustration GS-0119
act as a lube oil sump

Illustrations: GS0119_WM_092618

The air compressor shown in the illustration, when used aboard a vessel is typically operated as _____. Illustration GS-0119
a constant capacity unit

Illustrations: GS0119_WM_092618

The primary function of the device illustrated is to _____. Illustration GS-0029
remove all but the frictional load of an air compressor at start-up

Illustrations: GS0029_AO_101515WM

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
1, 3, 5, 6, 8 and 10 open; 2, 4, 7 and 9 closed.

Illustrations: GS0139_WM_092618
See REF2151

In order to take suction on the lube oil drain tank cofferdam with the bilge pump shown in the illustration, how many suction side valves must be open? Illustration GS-0042
Two

Illustrations: GS0042_WM_092418

The boiler shown in the illustration would be classed as _____. Illustration MO-0064
single-pass, fire-tube, scotch marine

Illustrations: MO0064_WM_101918

As shown in the illustrated LP centrifugal chiller high efficiency purge recovery unit piping schematic, what statement is true concerning the vacuum pump? Illustration GS-RA-55
The vacuum pump is designed to remove refrigerant vapor from the carbon filter tank and transfer these vapors to the evaporator to minimize the loss of refrigerant to the atmosphere.

Illustrations: GSRA55_WM_051517, RA0055_WM_091818

As shown in the illustrated LP centrifugal chiller high efficiency purge recovery unit piping schematic, what statement is true concerning the vacuum pump? Illustration GS-RA-55
The vacuum pump is designed to remove refrigerant vapor from the carbon filter tank and transfer these vapors to the evaporator to minimize the loss of refrigerant to the atmosphere.

Illustrations: GSRA55_WM_051517, RA0055_WM_091818

Concerning the arrangement of equipment and associated hoses shown in the illustration, what statement is true? Illustration GS-RA-58
When recovering refrigerant from the centrifugal chiller using this method, it minimizes the risk of chiller tube freeze-up.

Illustrations: RA0058_WM_091818, GSRA58_WM_051517

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Concerning the arrangement of equipment and associated hoses shown in the illustration, what statement is true? Illustration GS-RA-58
When recovering refrigerant from the centrifugal chiller using this method, it minimizes the risk of chiller tube freeze-up.

Illustrations: RA0058_WM_091818, GSRA58_WM_051517

If outside air at 80 degrees F and 70 percent relative humidity is conditioned, what will be the resulting dew point temperature of the air just before it comes into contact with the cooling coil? Illustration GS-RA-22
70 degrees F

Illustrations: RA0022_WM_091818, GSRA22_032717WM, GSRA22_73DEG_GRAPH
See REF2142

If outside air at 80 degrees F and 70 percent relative humidity is conditioned, what will be the resulting dew point temperature of the air just before it comes into contact with the cooling coil? Illustration GS-RA-22
70 degrees F

Illustrations: RA0022_WM_091818, GSRA22_032717WM, GSRA22_73DEG_GRAPH
See REF2142

If outside air at 80 degrees F and 70 percent relative humidity is conditioned, what will be the resulting dew point temperature of the air just before it comes into contact with the cooling coil? Illustration GS-RA-22
70 degrees F

Illustrations: RA0022_WM_091818, GSRA22_032717WM, GSRA22_73DEG_GRAPH
See REF2142

In the illustrated schematic, the device used to replace the six-way valve, as found on many older type steering gears, is the component labeled as _____. Illustration GS-0123
"A"

Illustrations: GS0123_WM_092618

Spring reinforced oil seals are generally installed with the tail or lip of the seal facing _____. Illustration GS-0152
toward the oil pressure being sealed

Illustrations: GS0152_WM_092618

The fluid used as a source of actuating power against the underside of the unloader power element piston of the refrigeration compressor capacity control mechanism illustrated is obtained from where? Illustration GS-RA-13
discharge of the compressor lube oil pump

Illustrations: RA0013_WM_091718, GSRA13_WM_031717

During operating periods of a multi-box refrigeration system using a capacity controlled compressor, when all of the evaporators of a four box plant are actively being fed with liquid refrigerant, the control oil pressure acting on the hydraulic relay piston will be at what value? Illustration GS-RA-13
the highest

Illustrations: RA0013_WM_091718, GSRA13_WM_031717

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The fluid used as a source of actuating power against the underside of the unloader power element piston of the refrigeration compressor capacity control mechanism illustrated is obtained from where? Illustration GS-RA-13
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the highest

Illustrations: RA0013_WM_091718, GSRA13_WM_031717

In the multi-evaporator refrigeration system shown in the illustration, what is the proper name for the valve labeled "29"? Illustration GS-RA-12
chill box thermostatic expansion valve

Illustrations: RA0012_WM_091718, GSRA12_WM_101017

In the illustrated refrigeration system, what is the proper name for the component labeled "A"? Illustration GS-RA-12
compressor

Illustrations: RA0012_WM_091718, GSRA12_WM_101017

Which lettered component, shown in the illustration, indicates the location of the receiver? Illustration GS-RA-12
C

Illustrations: RA0012_WM_091718, GSRA12_WM_101017

Heat is removed from the refrigerant circulating through the refrigeration system, shown in the illustration, by which component? Illustration GS-RA-12
B

Illustrations: RA0012_WM_091718, GSRA12_WM_101017

Which of the lettered components shown in the illustration indicates the high-pressure cut-out? Illustration GS-RA-12
X

Illustrations: RA0012_WM_091718, GSRA12_WM_101017

In the illustrated refrigeration system, what is the proper name for the component labeled "A"? Illustration GS-RA-12
compressor

Illustrations: RA0012_WM_091718, GSRA12_WM_101017

Which lettered component, shown in the illustration, indicates the location of the receiver? Illustration GS-RA-12
C

Illustrations: RA0012_WM_091718, GSRA12_WM_101017

Heat is removed from the refrigerant circulating through the refrigeration system, shown in the illustration, by which component? Illustration GS-RA-12
B

Illustrations: RA0012_WM_091718, GSRA12_WM_101017

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Which of the lettered components shown in the illustration indicates the high-pressure cut-out? Illustration GS-RA-12
X

Illustrations: RA0012_WM_091718, GSRA12_WM_101017

In the multi-evaporator refrigeration system shown in the illustration, what is the proper name for the valve labeled "29"? Illustration GS-RA-12
chill box thermostatic expansion valve

Illustrations: RA0012_WM_091718, GSRA12_WM_101017

In a hydraulic system using the device illustrated, the high pressure return is provided by _____. Illustration GS-0118
A

Illustrations: GS0118_WM_032416

The hydraulic pump which would be mounted on the unit shown in the illustration, may begin to cavitate if _____. Illustration GS-0118
"D" is not kept clean

Illustrations: GS0118_WM_032416

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

Illustrations: GS0080_WM_092418

Which of the figures illustrated is not suitable for use as a hex head set screw? Illustration GS-0080
figure D

Illustrations: GS0080_WM_092418

The device "F" shown in the illustration is best used to _____. Illustration GS-0080
assist in securing a coupling half to its shaft

Illustrations: GS0080_WM_092418

The device shown in the illustration is a/an _____. Illustration GS-0116
vane type steering gear

Illustrations: GS0116_WM_012920

If it is necessary to prevent the rudder from moving while a repair is made on the steering system using the illustrated actuator _____. Illustration GS-0116
secure the valves in the supply and return lines

Illustrations: GS0116_WM_012920

Which of the following technologies would be associated with a Type III marine sanitation device?
Sewage holding tank

How is solid trash and garbage generally admitted to a solid-waste incinerator on most ships?
The trash is admitted manually via a loading door.

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Under what circumstances could equipment be operated when tagged with DANGER tags?
Only when the tags have been removed by an authorized person.

The water seal in a centrifuge, operating at normal speed, prevents the lube oil from discharging from the water outlet. Another function of the seal is to _____.
provide an area for separated water to pass and create a path to remove the water from the bowl

The unloading system on an air compressor will _____.
allow the motor to turn the compressor opposed only by friction

What color is used to indicate the last shot of anchor chain?
Red
See REF021

Overheating of the hydraulic fluid in an electro-hydraulic anchor windlass can result from a/an _____.
low fluid level in the reservoir

Which of the following represents the motivating power fluid used in conjunction with the ejector pumps on plate type evaporators?
The motive power is the feed water supply.

Which factor determines the size of the ring dam for a fuel oil centrifugal purifier?
The specific gravity of the fuel.

Which characteristic or condition will have the greatest effect on increasing a hydraulic oil's viscosity?
Pressure
See REF2167

With respect to a lubricating oil's viscosity and the bearing loading characteristics at the points of lubrication, what statement is true?
The viscosity should be high enough to withstand the greatest anticipated torque load, but the viscosity should be low enough to minimize power losses.

The welding process using an electric arc developed between a flux covered electrode and the metal being welded is known as _____.
shielded metal arc welding

When an aluminum plate is bolted to a steel plate, what is required at the bolted joint to minimize bimetallic corrosion?
The plates should be electrically insulated from one another by use of non-conductive gaskets and non-conductive ferrule sleeves with the bolts.

If a thermometer reads 80°C, what is the equivalent temperature in °F?
176oF

If you were uncertain as to what type of gasket material to install in a pipeline, you should _____.
check the ship's plans or manufacturer's instructions

The tool used to prepare copper tubing for the installation of fittings is called a _____.
flaring tool

The basic function of the centrifugal pump impeller is to _____.
directly increase the velocity of the liquid being pumped

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Excessive air leakage into the suction side of a centrifugal pump would be indicated by which of the following operational problems?
The pump delivers full capacity when started, but gradually slackens off to an abnormally low flow.

Which of the following is NOT an identifiable characteristic of a steam reciprocating pump?
Diffuser

When piston rod packing persists in leaking on a reciprocating steam pump, the cause may be _____.
misalignment of the crosshead guide

Which of the fluids listed is suitable for use as a secondary refrigerant?
Brine

What is the physical state and pressure condition of refrigerant as it leaves a receiver in a typical refrigeration system?
high pressure liquid

How should small appliances with less than three pounds of refrigerant be charged with refrigerant?
vapor charged

Which recovery procedure should be used to minimize the loss of oil from the system during the recovery of refrigerant from small appliances such as a water cooler?
vapor recovery

When installing a mechanical shaft seal on a refrigeration compressor, extreme care must be taken to prevent what from happening?
dirt and foreign particles from coming in contact with the highly polished sealing surfaces

Excessive moisture being collected in the purge unit of a low pressure refrigeration system could indicate which probable condition?
leaking condenser or chiller tubes

If the compressor is heard to knock while pumping down the low side for repairs, but otherwise the compressor sounds normal; this is a possible indication of what condition?
foaming of the crankcase oil

A box solenoid valve used in a refrigeration system should be installed in what manner?
upright, controlled by a thermostat sensing the temperature of the box, and upstream of the thermal expansion valve

The safety heads of most large reciprocating compressors used in refrigeration systems are held in place by what means?
heavy coil springs

Overfilling a refrigerant container is extremely dangerous because of the high pressures generated. The generation of pressure is the result of what?
hydrostatic pressure of the expanding liquid

Which of the files listed is tapered on all sides and used to enlarge rectangular- shaped holes and slots?
Square

Open end wrenches are _____.
nonadjustable solid wrenches
See REF2257

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degrees. If there is a danger of freezing temperatures, cycle the reciprocating pumps several times a day. Packing Type Use Fabric, such as flax or hemp Low temperature applications High pressure Steam reciprocating pumps Cargo/fuel oil lines Oil resistant sheet

REF2213
You can change the output of a positive fixed displacement pump only by changing the pump's speed

REF2216
In the past, R-12 refrigerant was considered safe and ideal for use in marine service and for applications with different types of compressors. However, its use in new refrigerant machines for shipping containers ceased several years ago because of its role in ozone depletion and global warming.

REF2217
Low-pressure appliance means an appliance that uses a refrigerant with a liquid phase saturation pressure below 45 psia at 104 °F. This definition includes but is not limited to appliances using R–11, R–123, and R–113.

REF2218
Tare weight is simply the empty weight of the tank and must be factored for whenever you are weighing the total weight of the tank.

REF2219
Note: The purpose of attaching a gauge manifold set to a refrigeration unit is either to check the low- and high-side system pressures or to assist in performing a particular service procedure. If the purpose is to check the refrigeration unit's system pressure, the gauge manifold set valves are to be closed, and the refrigeration unit's low- and high-side service valves must be in the mid position. This is accomplished by cracking the service valves off their back-seats by turning in clockwise approximately ¼ to ½ a turn of the stem.

REF2220
Note: Passive recovery is a recovery method that utilizes the refrigeration system's internal pressure and/or compressor to remove refrigerant from the system. This method of recovery can only be used with appliances that contain 15 lbs. or less of refrigerant. recovery from the high side only: Incorrect answer. Choice "C" is the only correct answer. recovery from the low side only: Incorrect answer. Choice "C" is the only correct answer. recovery from both the high and low sides: Correct answer. If the compressor of a small appliance ftted with a capillary tube metering device fails, the system pressure will equalize across the low- and high-pressure sides. To speed the recovery process as well as achieve the required recovery effciency requirements, recovery should be made from both the low and high sides. by venting to the atmosphere, as the refrigerant cannot be recovered: Incorrect answer. As long as there is evidence of a refrigerant charge remaining in the system, the technician is obligated to properly recover the refrigerant to the levels required by law. Venting the refrigerant to the atmosphere is prohibited under the Clean Air Act rules.

REF2221
Bottles of refrigerant (R-12) should not be exposed to temperatures above 125■ F. A Halide Torch flame turns from blue to green in the presence of R-12 refrigerant. You should wear eye goggles when working where there may be a refrigerant leak.

REF2222
Zinc anodes are installed in water cooled Condensers to prevent electrolysis. Zinc Anode means: A piece of zinc metal that attracts negative electric charges. Electrolysis = corrosion caused by the flow of electric current. Zinc, when used as a sacrificial anode, reduces and controls electrolysis (i.e., electrolytic action) in a heat exchanger.

REF2228
A vernier caliper is designed to make both inside and outside measurements. [Refer to Illustration GS0073, "C".]

REF2229
It is quite difficult to count accurately fine pitches of screw threads. A screw pitch gage used "See Diagram 1" is very convenient for checking the finer screw threads. This gage consists of a number of sheet metal plates in which are cut the exact form of threads of the various pitches and each plate is stamped with a number indicating the number of threads per inch for which it is to be used. Final check for both diameter and pitch of the thread may be made with the nut that is to be used or with a ring thread gage, if one is available. The nut should fit snugly without play or shake but should not bind on

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the thread at any point.

REF2230
Set a pair of dividers to the proper radius with a scale.

REF2231
The center head of a combination square is used to find the center of round stock. What is a center head used for on a combination square? It is a highly versatile layout tool for scribing right angles and parallel lines, and a measuring tool that can be used as a tri-square, miter, depth gage, height gage, and level. The Center Head is an available attachment that provides an easy means of accurately locating the center of cylindrical or square work.

REF2232
Circumference is a measurement of the distance around a circular object. Use a flexible steel rule to measure circumference. Diameter is the distance across a circular object. Use a micrometer to measure the diameter of round stock.

REF2233
A wire gauge measures the thickness of wire and sheet metal.

REF2234
ECCENTRICITY - the variations of the shaft surface in reference to the centerline of the shaft.

REF2235
Precision tightening, such as done when installing crankpin bearings, should be done with a torque wrench. A micrometer setting torque wrench produces a distinctive sound (Le., an audible click) and the handle releases when you reach the value of the torque you set on the wrench.

REF2237
Pitch - Pitch of a thread is the distance between 2 crests. Angle - The thread angle of a screw is the angle between the threads. Crest - Crest of the thread is the top part of the grove that corresponds with the majr diameter. Flank - The flank is the angle at which the helix is raised to form a crest.

REF2243
The center gage is used to adjust the point of the threading tool and if the tool is carefully set a perfect thread will result. of course , if the threading tool is not set perfectly square with the work, the angle of the thread will be incorrect.

REF2244
A safety lathe dog has a headless set screw. Lathe dogs are used in conjunction with a driving plate or faceplate to drive work being machined on centers. the frictional contact alone between the live center and the work not being sufficient to drive it. The common lathe dog, shown at the left in "Diagram 1" is used for round work or work having a regular section (square . hexagon. octagon) . The piece to be turned is held firmly in hole A by setscrew B. The bent tail C projects through a slot or hole in the driving plate or faceplate, so that when the latter revolves with the spindle it turns the work with it. The clamp dog, "Diagram 1", may be used for rectangular or irregular shaped work. Such work is clamped between the jaws.

REF2245
Chatter is vibration in either the tool or the work. The finished work surface appears to have a grooved or lined finish instead of the smooth surface that is to be expected. The vibration is set up by a weakness in the work, work support, tool, or tool support, and is about the most elusive thing to find in the entire field of machine work. As a general rule, strengthening the various parts of the tool support train will help. It is also advisable to support the work by a center rest or follower rest. Possibly the fault may be in the machine adjustments . Gibs may be too loose ; bearings may, after a long period of heavy service , be worn; the tool may be sharpened improperly , etc. If the machine is in excellent condition, the fault may be in the tool or tool setup. Grind the tool with a point or as near a point as the finish specified will permit; avoid a wide round leading edge on the tool. Reduce the overhang of the tool as much as possible and be sure that all the gib and bearing adjustments are properly made . See that the work " receives proper support for the cut and do not try to turn at a surface speed that is too high. Excessive speed is probably the greatest cause of chatter, and the first thing you should do when chatter occurs is to reduce the speed.

REF2246

When threads are being cut on a lathe, the half-nuts are clamped over the lead screw to engage the threading feed and released at the end of the cut by means of the threading lever. The threading dial provides a means for determining the time to engage the half-nuts so that the cutting tool follows same path during each cut. When an index mark on the threading dial is aligned with the witness mark on its housing, the half-nuts may be engaged. For some thread pitches however, the half-nuts may be engaged only when certain index marks are aligned with the witness mark. On most lathes the half-nuts can be engaged as follows: For all even-numbered threads per inch, close the half-nuts at any line on the dial. For all odd-numbered threads. per inch, close the half-nuts at any numbered line on the dial. For all threads involving one-half of a thread in each inch, such as 11 1/2, close the half-nuts at any odd-numbered line.

REF2247
If lathe centers start to squeal, stop the lathe.

REF2248
A steady rest is used when turning a long piece of work between centers . The center rest, also called the steady rest, is used for the following purposes: 1. To provide an intermediate support or rest for long slender bars or shafts being machined between centers. It prevents them from springing under cut, or sagging as a result of their otherwise unsupported weight. 2. To support and provide a center bearing for one end of work, such as a spindle , being bored or drilled from the end when it is too long to be supported by a chuck alone . The center rest is clamped in the desired position on the bed on which it is properly aligned by the ways . "See Diagram". It is important that the jaws (A) be carefully adjusted to allow the work (B) to turn freely and at the same time keep it accurately centered on the axis of the lathe. The top half of the frame is hinged at C to facilitate placing it is position without removing the work from the centers or changing the position of the jaws.

REF2249
The follower rest is used to back up work of small diameter to keep it from springing under the stress of cutting. It gets its name from the fact it follows the cutting tool along the work. " See Diagram". It is attached directly to the saddle by bolts (B) . The adjustable jaws bear directly on the finished diameter of the work opposite the cutting tool.

REF2250
The 3-jaw universal or scroll chuck, "See diagram 1", can be used only for holding round or hexagonal work. All three jaws are moved in and out together in one operation. They move universally to bring the work on center automatically . This chuck is easier to operate than the 4-jaw type, but when its parts become worn, its accuracy in centering cannot be relied upon. Proper lubrication and constant care in use are necessary to ensure reliability. The 4-jaw independent lathe chuck, "See diagram 2", is the most practical for general work. The four jaws are adjusted one at a time, making it possible to hold work of various shapes and to adjust the center of the work to coincide with the center of the lathe . The jaws are reversible .

REF2251
There are two power units (i.e., electric motors driving hydraulic pumps) in parallel, as such the total output pressure does not increase when they both are on line, only the volumetric flow rate increases. Force = pressure * area Torque = Force * distance If the pressure does not increase with both power units on line then the output Force does not increase thus, neither does the torque. Thus, the total torque with one or both power units running is 44,210,000 inch-pounds. But operating as a two-ram system instead of a 4-ram system decreases the area of the actuators by half. Thus, the total force is cut in half and so is the torque. Available torque = 44,210,000 inch-pounds / 2 Available torque = 22,105,000 inch-pounds Reference Material for this question courtesy of the FAME Foundation, Inc. Mass. Maritime Academy.

REF2253
A single cut file (i.e., "Mill file") is used for a fine finish on soft metals and for draw filing whereas double cut files are used for rough work. Heavy pressure on the ends of a file causes the work surface to be rounded. Install a file handle on the tang for greater safety, control and comfort. Clean a file with a card if it becomes clogged with filings. The pointed end of a file is its tang.

REF2254
Install a hacksaw blade with its teeth pointing away from the handle. To start a hacksaw with greater ease or certainty, file a nick where you wish to start the cut. Only apply pressure on a hacksaw on the forward stroke. Reduce pressure and speed at the end of a hacksaw stroke. Use an "all-hard" hacksaw blade when cutting soft metals such as brass.

REF2255

Hacksaw blades, designed to cut mainly metal, are categorized by the number of teeth per inch. The standard hacksaw blade has 14 to 32 teeth per inch. The set of the teeth, how they are angled in relation to the sides of the blade, determines how well the blade cuts. Hacksaw blades cut many things from thin copper tubing to unruly rusted bolts. Garden hose, water pipes, plastics and old fencing all succumb to the hacksaw blade.

REF2256
Needle-nose pliers have narrow jaws that can be used in tight spaces.

REF2257
Open-end wrenches are non-adjustable solid wrenches. A box-end wrench is least likely to slip off while tightening a nut or bolt.

REF2258
Only use a pipe wrench also known as a Stillson wrench on round stock. Adjust a pipe wrench to take its bite midway up on the jaw teeth. You can rotate large sized pipe easily with a chain-pipe wrench.

REF2259
Type of chisel Use Cape ..... Cutting keyways Diamond point ..... V grooves; inside sharp angles Round nose ..... Oil grooves Flat ..... Flat stock

REF2260
A head becomes "mushroomed" by constantly beating it with a hammer.

REF2261
An aligning punch has a long, gradual taper and is used to line-up holes in flanges, etc.

REF2262
An offset screwdriver has a 90° angle and is used to turn screws you cannot reach with a straight screwdriver. A heavy-duty screwdriver with a square shank allows you to use a wrench to turn it.

REF2263
Grease guns are normally used to lubricate ball bearings of condensate and other pumps. Grease lubricated ball or roller bearings will run cooler if the grease has a high grease penetration number (is hard). Grease contaminated with dirt is very abrasive. A grease gun is used with a "zerk" or other type of lubrication fitting to apply grease to bearings. Pumps often are lubricated this way.

REF2264
To open a flanged joint use a flange spreader. The flange spreader utilizes a high load compact hydraulic cylinder together with a unique design wedge and retaining mechanism to smoothly and evenly force open the flanged joint.

REF2265
Hammers and mauls are sized according to the weight of their heads.

REF2266
If you start to cut eternal threads with the die at an angle you will have crooked threads.

REF2267
Soft metals such as copper, brass, etc. as well as cast iron do not need a lubricant when drilling or cutting threads. However you may use lard oil on these soft metals. Cast iron needs no lubricant when drilling or machining. Kerosene should be used to lubricate aluminum when drilling.

REF2268
A grinding wheel is trued (Le., reshaped) with a dressing tool. Trued means: Returned to its original circular shape.

REF2269
Power hacksaws normally use a liquid coolant to cool the cutting blade.

REF2270

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The "dead center" does not rotate and is held by the tailstock. Dead centers can only be used when the stock is center drilled.

REF2271
This tool is intended for facing on the left-hand side of the work. The direction of feed is away from the lathe center . The cutting edge is on the right-hand side of the tool and the point of the tool is sharp to permit machining a square corner.

REF306
An "accumulator" contains hydraulic oil under pressure and is ready to do "work". An accumulator is an "unfired pressure vessel" (i.e., one that does not use an outside source of heat) in which energy is stored at high pressure in the form of a gas or a gas and hydraulic fluid. An example of an accumulator would be a tank that stores hydraulic fluid under pressure that, when released, can be used to start a lifeboat engine. Such an accumulator can be designed to recharge itself as the engine runs (assuming that the engine will run) or can be recharged manually by using a hand pump.

REF901
The rudder is prevented from over-traveling the helm command (i.e., the bridge signal) by the follow-up gear. The position of the rudder is displayed on the vessel's bridge by a Rudder Angle Indicator (RAI).

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