Manual Part # 99904954

980 Rotary 60 Compressor

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Contents

Revisions

DATE	LOCATION	DESCRIPTION

SECTION 1

Compressor Introduction

This volume provides information on the installation, operation, and repair of IMT hydraulic air compressors. In addition to reading the manual, it is your responsibility to become familiar with government regulations, hazards, and the specific operation of your equipment. Use caution and common sense while operating and maintaining the equipment and follow all safety procedures and regulations. Treat this equipment with respect and service it regularly.

MODIFICATIONS

Modifications to your equipment must be performed with IMT approved accessories, parts and optional equipment. If in doubt, contact IMT prior to making any modifications. DO NOT alter or modify any safety device! All safety devices must be inspected, tested and maintained in proper working condition.

Decals regarding safety and operation are considered safety equipment, and must be kept clean and legible.

The equipment owner and/or designated employee is responsible for informing all operators, maintenance personnel, and others involved in equipment operation about the safe operation and maintenance of the equipment. If questions arise concerning safe operation, contact IMT or your IMT distributor for clarification.

WARRANTY

Warranty of this unit will be void on any part of the unit subjected to misuse due to overloading, abuse, lack of maintenance and unauthorized modifications. No warranty - verbal, written or implied - other than the official, published IMT new machinery and equipment warranty will be valid with this unit.

NOTICE TO THE OWNER / USER

If your equipment is involved in a property damage accident, contact your IMT distributor immediately and provide them with the details of the accident and the serial number of the equipment. If an accident involves personal injury, immediately notify your distributor and IMT Technical Support at:

IOWA MOLD TOOLING CO., INC.
500 HWY 18 WEST
GARNER, IA 50438
641 - 923 - 3711

WARNING

READ YOUR MANUAL!! FAILURE TO READ, UNDERSTAND AND FOLLOW ANY SAFETY PROCEDURES APPLICABLE TO YOUR EQUIPMENT MAY RESULT IN EQUIPMENT DAMAGE, SERIOUS INJURY, OR DEATH.

MANUAL STRUCTURE

Throughout this manual, three means are used to draw the attention of personnel. They are NOTEs, CAUTIONs and WARNINGs and are defined as follows:

NOTE

A NOTE is used to either convey additional information or to provide further emphasis for a previous point.

CAUTION

A CAUTION is used when there is the very strong possibility of damage to the equipment or premature equipment failure.

WARNING

A WARNING is used when there is the potential for personal injury or death.

Compressor Precautions

	Failure to follow operating and maintenance procedures as outlined in this manual could result in equipment damage, personal injury or death. Follow all maintenance procedures and intervals.
	Maintenance must be performed only by trained and qualified personnel, using correct tools, specified torques and approved replacement parts.
	All electrical components and cable wiring must be installed and grounded in accordance with NFPA, national electrical codes and applicable state and local codes.
	Before removing guards or servicing the compressor, disconnect all power supplies. Display warning signs and lock out electrical circuits.
	All guards must be in position and secure before and during operation.

	Do not use air from this compressor for breathing or food processing. Air from this compressor will cause severe injury or death if used for breathing or food processing.
	Hot oil under pressure can cause severe injury or death. Shut down, let cool and relieve pressure in compressor before servicing.
	Do not overfill the compressor with oil. Use correct quantity of manufacturer's lubricant. Repair leaks and clean spills immediately.
	Compressors generate high temperatures. Do not touch or otherwise come in contact with hot surfaces. Doing so can cause severe personal injury.

Compressor Safety

WARNING

AVOID PERSONAL INJURY OR PROPERTY DAMAGE! READ YOUR MANUAL! All units are shipped with a detailed operators and parts manual which contains vital information for the safe use and efficient operation of this unit.

AIR COMPRESSOR SAFETY PRECAUTIONS

Safety is basically common sense. While there are standard safety rules, each situation has its own peculiarities that cannot always be covered by rules, and with your experience and common sense, you are in a position to ensure your safety. Lack of attention to safety can result in death, serious injury, accidents, and efficiency reductions. Watch for safety hazards and correct them promptly. Use the following safety precautions as a general guide to safe operation:

- Do not attempt to remove any compressor parts without first relieving the entire system of pressure.
- Do not attempt to service any part while the machine is operating.

WARNING

AVOID PERSONAL INJURY OR PROPERTY DAMAGE! Check the compressor sump oil level only when the compressor is not operating and the system is completely relieved of pressure. Open the service valve to ensure relief of system air pressure when performing maintenance on compressor air/oil system.

- Do not operate the compressor at pressure or speed in excess of its rating as indicated in Compressor Specifications.
- Periodically check all safety devices for proper operation.
- Do not play with compressed air. Pressurized air can cause serious injury to personnel.
- Exercise cleanliness during maintenance and when making repairs. Keep dirt away from parts by covering parts and exposed openings.
- Do not install a shut-off valve between the compressor and compressor oil sump.

DANGER

AVOID DEATH OR SERIOUS INJURY!

Do not use IMT compressor systems to provide breathing air. Such usage, whether supplied immediately from the compressor source, or supplied to breathing tanks for subsequent use, can cause serious bodily injury.

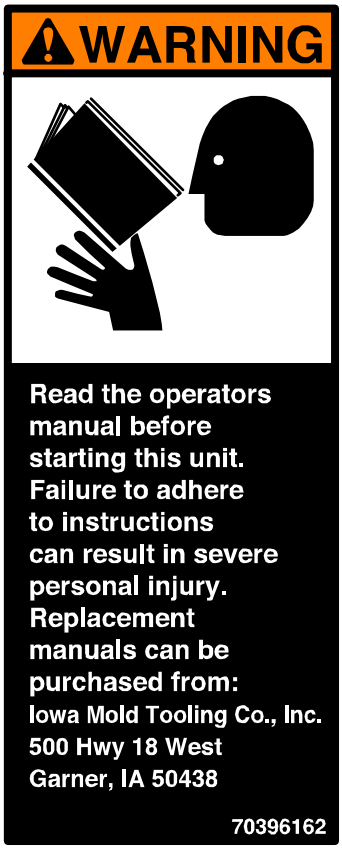
IMT disclaims any and all liabilities for damage for loss due to personal injuries, including death, and/or property damage including consequential damages arising out of any IMT compressors used to supply breathing air.

- Do not disconnect or bypass safety circuit system.
- Do not install safety devices other than authorized IMT replacement devices.
- Close all openings and replace all covers and guards before operating compressor unit.
- Do not leave tools, rags, or loose parts on the compressor or drive parts.
- Do not use flammable solvents for cleaning parts.
- Keep combustibles out of and away from the compressor and any associated enclosures.

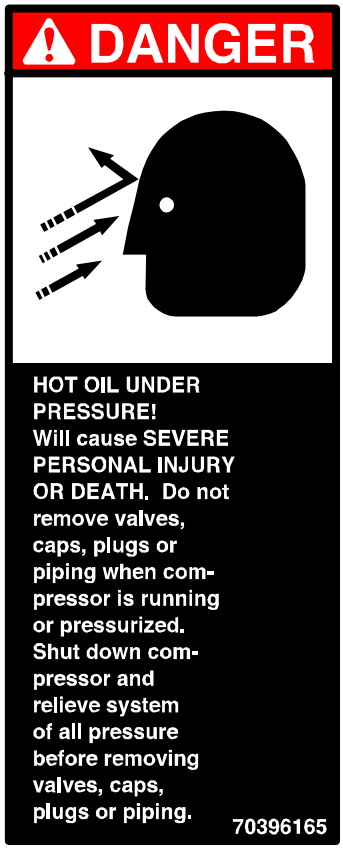
The owner, lessor, or operator of the compressor are hereby notified and forewarned that any failure to observe these safety precautions may result in damage or injury.

IMT expressly disclaims responsibility or liability for any injury or damage caused by failure to observe these specified precautions or by failure to exercise that ordinary caution and due care required when operating or handling the compressor, even though not expressly specified above.

Compressor Decals

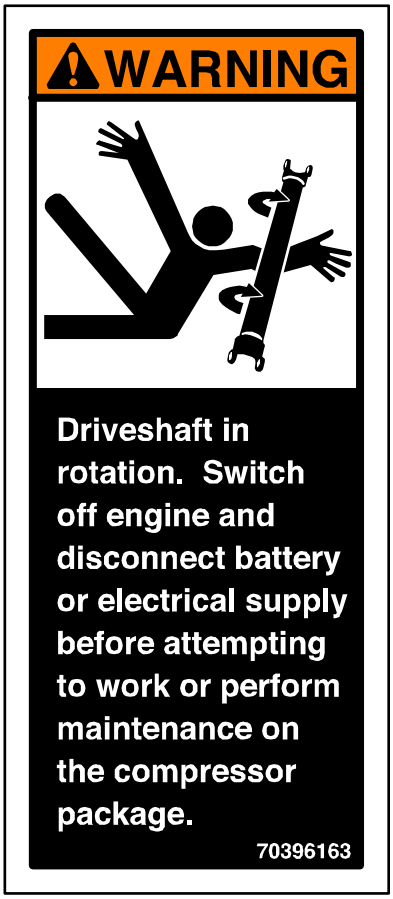


70396162 - Located on visor or dash near start-up procedure decal.

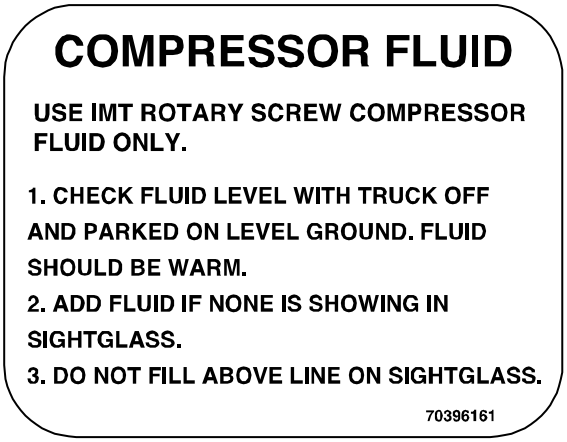


70396165 - Located on body near oil sump filler cap.

70396164 - Located on body near air service valve.



70396163 - Located on body near compressor mounting foot.



70396161 & 70396127 - Located on body near oil sump filler cap.

Compressor Information Record

TO BE COMPLETED BY DEALER	
CHASSIS INFORMATION	
TRANSMISSION MAKE:	MODEL:
PTO NUMBER:	PTO %:
COMPRESSOR AND HYDRAULIC PUMP INFORMATION	
COMPRESSOR MODEL:	SERIAL NUMBER:
PUMP MAKE:	MODEL:
RESERVOIR CAPACITY:	ENGINE RPM:

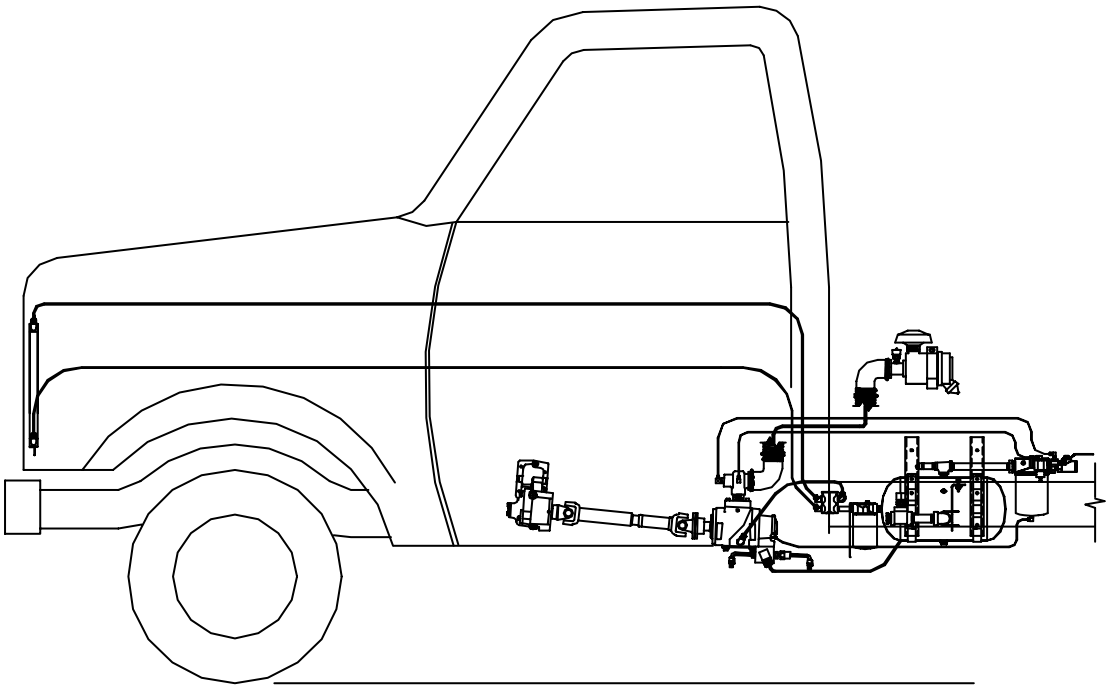
SECTION 2

Specifications

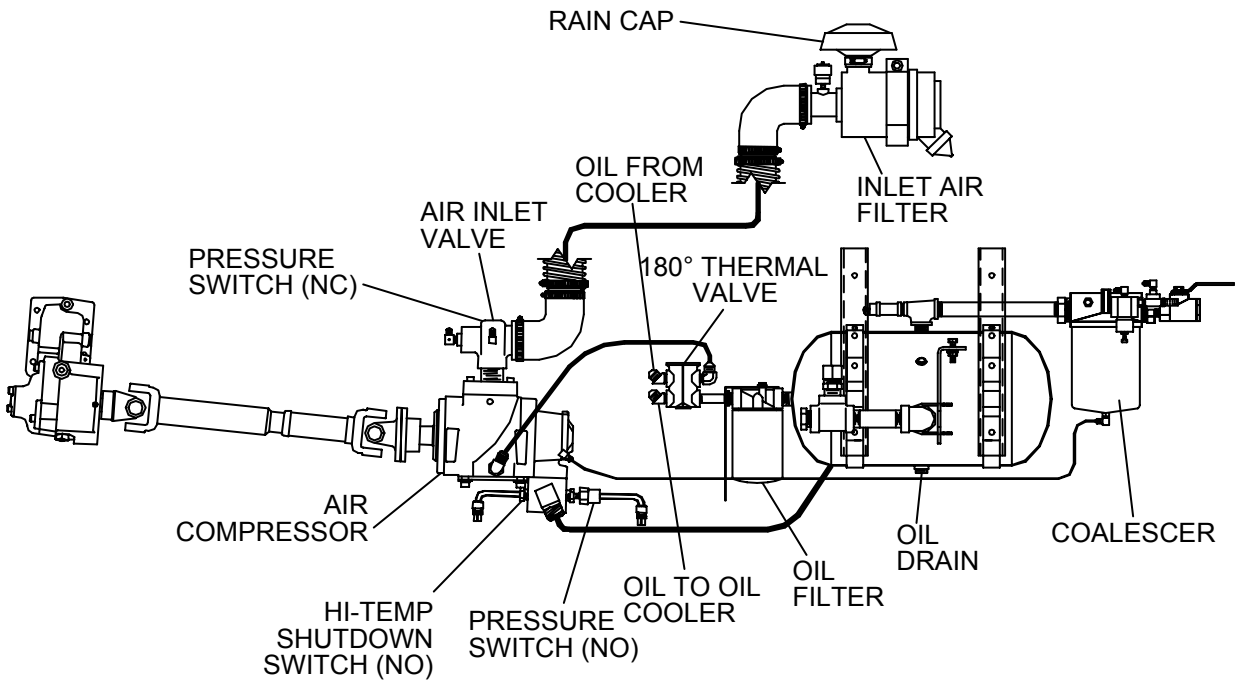
980 Rotary 60 Compressor Specifications

DELIVERY @ 175 psig	45 cfm @ 110 -175 psi
Input speed to compressor (RPM)	2250 rpm
Fluid capacity	2.2 gallons
Components - Compressor System	(Overall Dimensions)
Compressor / Air Inlet	9" W x 10.5" H x 13.25" L
Receiver / Sump	10" diameter x 18" H
Spin-On Element	5" diameter x 13" H
Cooler / Fan Assembly	24.375" L x 18.125" H x 1.5 W
Dry Weight	280 lb
Specifications subject to change without prior notice.	

Compressor Layout & Components



980 Rotary 60 Compressor Component Identification



Compressor Terminology

ATF	Automatic transmission fluid.
AIR/OIL COALESCER	Performs second stage separation of oil from compressed air feeding tools. Sometimes referred to as the separator element.
CFM	Refers to the volume of compressed air being produced expressed as cubic feet of air per minute.
LOAD CONTROLLER	Sometimes referred to as the engine speed control.
OIL SUMP	The first stage of oil separation from compressed air. Also serves as reservoir area for compressor lubricant. Sometimes referred to as the receiver tank.
PSI	Refers to the operating pressure the system is set up at, expressed as pounds per square inch.
PRESSURE RELIEF VALVE	A valve located on the oil sump which opens in case of excessive pressure. Sometimes referred to as the pop-off valve or the check valve.
SHUTDOWN SWITCH	Works in conjunction with a power relay, sending a signal to stop the compressor power source in cases of high temperature. The power relay incorporates an additional wire for remote engine/speed control kill.
SIDE MOUNT PTO	Power take-off gearbox that bolts to the side of the transmission. The PTO input gear meshes with one of the gears in the vehicle's transmission. The rotation developed by the engine drives the transmission which turns the PTO gear box and rotates the PTO output shaft.

Description of Components

COMPRESSOR ASSEMBLY

The IMT compressor assembly is a positive displacement, oil flooded, rotary screw type unit employing one stage of compression to achieve the desired pressure. Components include a housing (stator), two screws (rotors), bearings, and bearing supports. Power from the hydraulic motor is transferred to the male rotor through a belt and pulley configuration. The female rotor is driven by the male rotor. There are four lobes on the male rotor and five roots on the female rotor.

PRINCIPLES OF OPERATION

In operation, two helical grooved rotors mesh to compress air. Inlet air is trapped as the male lobes roll down the female grooves, pushing trapped air along, compressing it until it reaches the discharge port in the end of the stator and delivers smooth-flowing, pulse-free air to the receiver.

During the compression cycle, oil is injected into the compressor. The oil lubricates the rotating parts and bearings, serves as a cooling agent for the compressed air, and seals the running clearances.

LUBRICATION SYSTEM

Oil from the compressor oil sump, at compressor discharge pressure, is directed through the oil filter, cooling system, and to the side of the compressor stator, where it is injected into the compressor. At the same time oil is directed internally to the bearings and shaft seal of the compressor. The oil-laden air is then discharged back into the sump.

OIL SUMP

Compressed, oil-laden air enters the sump from the compressor. As the oil-laden air enters the sump, most of the oil is separated from the air as it passes through a series of baffles and diffusion plates. The oil accumulates at the bottom of the sump for recirculation. However, some small droplets of oil remain suspended in the air and are passed on to the coalescer.

PRESSURE RELIEF VALVE

The pressure relief valve is set at 200 PSI. It is located at the top of the air/oil sump. This valve acts as a backup to protect the system from excessive pressure that might result from a malfunction.

AIR/OIL COALESCER

The coalescer is self-contained within the air end assembly. When air is demanded at the service line, it passes through the coalescer which efficiently provides the final stage of oil separation.

OIL RETURN LINE

The oil that is removed by the coalescer accumulates at the bottom of the can and is returned through an oil return line leading to the compressor. The oil return line is 1/4" and goes to the elbow hose fitting which is located at the compressor.

MINIMUM PRESSURE VALVE

The minimum pressure valve is located at the outlet of the coalescer head and serves to maintain a minimum discharge pressure of 65 PSIG in operation, which is required to assure adequate compressor lubrication pressure.

OIL FILTER

The compressor oil filter is the full-flow replaceable element type. It has a built in safety bypass.

COMPRESSOR COOLING SYSTEM

The compressor cooling system consists of an oil cooler mounted in front of the truck's radiator. Oil temperature is controlled by a thermal valve located downstream of the oil filter. This valve maintains compressor oil temperature of ambient 180°in ambient temperatures of less than 100°F.

ELECTRICAL AND SAFETY CIRCUIT SYSTEM

The unit is supplied with an hourmeter, wire harness and a high temperature compressor discharge switch. Engine shutdown occurs in the event of high compressor temperature on compressor trucks with cable shift PTOs. Compressor trucks with hot shift PTOs will disengage the PTO in the event of high compressor temperature.

AUTOMATIC BLOW DOWN VALVE

There is one blow down valve in the compressor system. It is located at the downstream side of the coalescer head and will automatically bleed the sump to zero pressure when the compressor is disengaged. The blow down time interval is typically 30 to 60 seconds.

CONTROL SYSTEM

The prime component of the compressor control system is the compressor inlet valve. The control system is designed to match air supply to air demand and to prevent excessive discharge pressure when compressor is at idle. Control of air delivery is accomplished by the inlet valve regulation and modulation as directed by the discharge pressure regulator.

DISCHARGE PRESSURE REGULATOR VALVE

This valve, located inside the compressor, is used to set the desired discharge pressure within the operating pressure range. Turning the regulator screw clockwise increases the working pressure; a counterclockwise movement of the screw reduces the working pressure. This system has a maximum operating pressure of 150 psi.

NOTE

The operating pressure range for most air tools is between 90 and 100 psi. Operating above the tools' recommended pressure will decrease the life of the tool. Higher operating pressure can also overtorque nuts and bolts, causing fastener and mating part fatigue. Strictly adhere to tool operating pressures and torque standards set forth by the tool manufacturer and the specifications of the equipment that work is being performed on.

INLET VALVE

The compressor inlet valve is a piston operated disc valve that regulates the inlet opening to control capacity and serves as a check valve at shutdown.

CONTROL SYSTEM OPERATION

The following discussion explains the operation of the control system from a condition of “no load” to a condition of “full capacity” at working pressure. For the working pressure range of your machine, refer to applicable data in “Specifications”.

The pressure regulator, mounted on the coalescer head, operates as follows:

1 As the demand for air decreases, the receiver pressure rises. When this pressure exceeds the set point of the pressure regulator, the regulator opens sending a secondary pressure signal to the inlet valve. The poppet valve moves towards the valve inlet against the force of the modulating spring inside the valve. This regulates the opening area of the inlet valve.

2 If the air demand goes to zero, (service valve closed or air dead headed at tool) the inlet valve will close completely.

3 As the demand for air increases, the secondary pressure signal to the inlet valve is removed and the inlet valve poppet modulates to full open.

SECTION 3

Compressor Operation

Compressor Start Up/Shutdown

An operating procedure decal is furnished with every PTO compressor. The decal should be attached to the truck dashboard or visor where it will be visible to the driver.

Cable Shift PTO Operating Procedure (Decal # 301476)

Start-Up

1 Set brakes per company procedure. Chock wheels.

2 Check compressor oil level. Add oil if low.

3 Depress clutch. Engage PTO.

4 Put transmission in neutral.

5 Let out clutch. Depress fuel pedal momentarily.

Shutdown

1 Close service valve.

2 Depress clutch and hold for compressor blowdown.

3 Disengage PTO.

Hot Shift PTO Operating Procedure (Decal # 301661)

Start-Up

1 Stop vehicle. Engage parking brakes.

2 Shift transmission to neutral.

3 Depress PTO On/Off switch to *on* position. Engagement is complete when red indicator light comes on.

Shutdown

1 Close service valve.

2 Depress PTO On/Off switch to *off* position.

Compressor Controls

CONTROL OR INDICATOR	PURPOSE
HOURMETER	Indicates accumulated hours of actual compressor operation.
FLUID LEVEL SIGHTGLASS	Indicates fluid level in the sump. Should be half full when at proper level. Check this level when the compressor is disengages and the vehicle is parked on level ground.
PRESSURE RELIEF VALVE	Vents sump pressure to the atmosphere if the pressure inside the sump exceeds 200 PSI.
COMPRESSOR INLET CONTROL VALVE	Regulates the amount of air intake in accordance with the amount of compressed air being used. Isolates fluid in compressor on shutdown.
PRESSURE REGULATING VALVE	Senses air pressure from sump to provide automatic regulation of the compressor inlet control valve and load controller.
BLOW DOWN VALVE	Coalescer head blow down valve vents the sump pressure to the atmosphere at shut down.
MINIMUM PRESSURE ORIFICE	Restricts air flow to balance sump and service air pressure. Assures a minimum of 65 PSI to maintain compressor lubrication.

Compressor Operating Conditions

If possible, operate the compressor with the truck as close to level as possible. The compressor will operate on a 15° tilt from side to side and end to end without adverse problems. Fluid carry over and/or oil starvation may occur if operated at a tilt beyond 15°. Operation in ambient temperatures above 100° F may result in high temperature shutdown.

NOTE

If the compressor is being used to power sandblasting equipment or an air storage tank, use a check valve directly after the minimum pressure orifice to prevent backflow into the sump. This check valve should have a maximum pressure drop rating of 2 PSIG (13.78 kPa) operating and a capacity rating equal to the compressor.

NOTE

When a hose reel is not used, the compressor service valve should be relocated to the hose reel inlet, or to a customer-supplied air connection port. Typical plumbing from a minimum pressure orifice should flow in the following order:

1 Minimum pressure orifice

2 Check valve

3 Air tank (when used)

4 Service valve

5 Moisture trap/ gauge / oiler combination (when used)

6 Hose reel (when used)

Compressor Flash Recovery Procedure

When the compressor has flashed, take the following steps to flush the system:

1 Flush air compressor and check for rotor grinding.

a) Remove 2-1/2” inlet hose from inlet valve.

b) Drain sump tank.

c) Remove 1" hose from side of oil sump tank.

d) Place the 1" hose at the same height as the inlet valve. Fill compressor inlet with clean, synthetic IMT Cool Blue compressor oil. Once full, lower hose into bucket and rotate compressor by hand to evacuate any remaining oil. Repeat until oil is clean. Make sure compressor turns freely by hand, and that there is no grinding present.

e) Reinstall drive shaft.

2 Flush oil sump tank.

a) Leave the 1" hose from the compressor flush procedure off. Loosen tank-mounting bands, mark and disconnect all hoses, and remove oil tank.

b) Fill tank with synthetic IMT Cool Blue compressor oil until half full. Move oil from end to end, then drain oil from drain plug in bottom of tank. Check drain plug and tee for any restrictions, like chunks of hose.

c) Reinstall tank. Install filter tube.

d) Replace 1/2" hose from oil tank to oil filter head. Verify that plastic bypass valve is intact in filter head.

3 Flush oil cooler.

a) Remove both hoses from oil cooler to thermal valve.

b) Verify that the plastic shroud and fan blades are intact. Put power direct to red lead (ground black lead) at fan motor to verify that motor works. Do not run the motor outside of the shroud. Leave package assembled. Fan is a puller style; verify that air from fan pulls air through the oil cooler from the outside.

c) Replace 1" hose from compressor to oil sump tank.

d) Replace air, oil and coalescer filters.

e) Re-connect hoses. Add synthetic IMT Cool Blue compressor oil to proper oil level in tank.

4 Test safety circuit

a) Start truck. Do not start air compressor; go to Murphy switch gauge and short across the post to the metal bezel of the gauge. Truck engine should be killed.

b) You should now be ready to test the air compressor. Start truck, engage PTO, and run compressor for five minutes. Drain oil, change oil filter, fill with oil to proper level, and finish testing.

Sub-Zero Temperature Operating Instructions

For IMT rotary screw compressors (both shaft driven and hydraulically driven) sub-zero temperature operation is defined as operation of the compressor when the oil temperature is below 0º F. It is possible to operate an IMT rotary screw compressor when the ambient temperature is below 0º F, as long as the oil temperature is above 0° F. Follow these guidelines to protect the compressor:

1 MAINTENANCE REQUIREMENTS

If the IMT rotary screw compressor is expected to operate at temperatures below 0º F, the oil filter, coalescer, air filter, and oil should be changed before the compressor is run in sub-zero temperatures (ex: late fall, but this may vary by location and environment). Performing this maintenance will improve the performance of the system during sub-zero temperature operation. Use only IMT approved rotary screw compressor oils and filters.

2 STORAGE REQUIREMENTS

The IMT rotary screw compressor should be stored at or above 0º F. If the ambient temperature is below 0º F the vehicle should be stored inside, preferably in a heated environment. After moving the vehicle from the heated environment, the compressor system should be operated for 15 minutes before proceeding to a job site. During this time, the service valve must be slightly ajar such that the pressure gauge reads between 100 and 140 psi. This ensures that the oil temperature has had adequate time to come up to operating temperature, and that most of the water in the system has been removed. This will allow for approximately one hour of travel time before the oil cools to ambient temperature. If an extended driving time is expected, the operator may need to stop driving and run the system for 15 minutes every hour to ensure that the oil temperature does not cool to below 0º F. The operator should use his/her judgment when deciding what interval is needed between running the compressor to warm the oil. Lower ambient temperature will require more frequent warming of the compressor oil.

3 FAILURE TO FOLLOW MAINTENANCE AND STORAGE REQUIREMENTS

At temperatures below 0º F, failure to follow the guidelines may result overheating of the compressor due to the oil's inability to circulate through the compressor system. The lack of circulation leads to rapid warming of the compressor air end, and eventually the compressor air end will exceed the maximum operating temperature. If the system shuts down due to high temperature during sub-zero temperature operation, the oil will need to be warmed before restarting. This may require moving the vehicle to a heated location or waiting for the ambient temperature (and therefore the oil temperature) to exceed 0º F.

CAUTION

Failure to adhere to these guidelines and repeated running of the compressor to high temperature shutdown may result in permanent damage to the air end.

Compressor Lubrication and Maintenance

The periodic maintenance procedures which must be performed on the compressor are listed in this section. The intervals between inspections specified are the maximum interval, and more frequent inspections should be made if the unit is operating in a dusty environment, in high ambient temperature, or in other unusual conditions. A planned program of periodic inspection and maintenance will help avoid premature failure and costly repair. Daily visual inspections should be a routine part of the compressor operation.

The Lubrication and Maintenance Chart lists serviceable items on this compressor package. The items are listed according to the frequency of maintenance, followed by those items which need only "As Required" maintenance.

The maintenance time intervals are expressed in hours. The compressor hourmeter shows the total number of hours your compressor has run. Use the hourmeter readings to determine your maintenance schedule. Perform the maintenance at multiple intervals of the hours shown. For example, when the hourmeter shows "100" on the dial, all items listed under "Every 10 Hours" should be serviced for the tenth time, all items listed under "Every 50 Hours" should be serviced for the second time, and so on.

WARNING

AVOID INJURY OR EQUIPMENT DAMAGE! SHUT DOWN COMPRESSOR AND RELIEVE PRESSURE BEFORE CHECKING FLUID LEVELS. OPEN SERVICE VALVE TO ENSURE RELIEF OF SYSTEM AIR PRESSURE.

Lubrication and Maintenance Chart

PERIODICALLY DURING OPERATION

1 Observe all gauge readings. Note any change from the normal reading and determine the cause. Repair as necessary. Note: “Normal” is the usual gauge reading when operating at similar conditions on a day-to-day operation.

EVERY 10 HRS (DAILY)

1 Check compressor oil level.

2 Check air filter. Pressure drop indicator while compressor is operating.

3 Check for oil and air leaks.

4 Check safety circuit switches.

EVERY 25 HRS (MONTHLY)

1 Drain water from compressor oil.

EVERY 100 HRS

1 Grease compressor drive shaft (if applicable).

EVERY 500 HRS (6 MONTHS)

1 Change compressor oil and oil filter.

2 Check compressor shaft seal for leakage.

3 Check air filter piping, fittings and clamps.

4 Check compressor supports.

5 Install new air filter element. Shorter interval may be necessary under dusty conditions.

6 Check sump safety valve.

EVERY 1000 HRS

1 Change coalescer element.

PERIODICALLY (AS REQUIRED)

1 Inspect and clean air filter element.

2 Inspect and replace spin-on coalescer element if necessary.

3 Inspect and clean oil cooler fans.

NOTE

Compressor oil and filter must be changed after the first 50 hours of operation. After this, follow normal intervals.

Lubricant Recommendations

WARNING

AVOID INJURY OR EQUIPMENT DAMAGE!

Use IMT-recommended compressor oil. Inspect and replace oil, air filter, oil filter, and coalescer elements as stated in this manual.

The combination of a coalescer element loaded with dirt and oxidized oil products together with increased air velocity as a result of this clogged condition may produce a critical point while the machine is in operation where ignition can take place and could cause a fire in the oil sump.

The following are general characteristics for IMT rotary screw lubricant. It is impossible to establishing limits on all physical and chemical properties of lubricants which can affect their performance in the compressor over a broad range of environmental influences, so the responsibility for recommending and consistently furnishing a suitable heavy duty lubricant must rest with the individual supplier if they choose not to use the recommended IMT rotary screw lubricant. The lubricant supplier's recommendation must, therefore, be based upon not only the following general characteristics, but also upon his own knowledge of the suitability of the recommended lubricant in helical screw type air compressors operating in the particular environment involved. The owner of this equipment should contact the factory if IMT rotary screw lubricant is not used as supplied with this equipment.

CAUTION

We do not recommend mixing different types or brands of lubricants, due to the possibility of a dilution of the additives or reaction between additives of different types.

LUBRICANT SPECIFICATIONS

IMT "Cool Blue" rotary screw lubricant shipped with your kit contains additives for rust, corrosion, and anti-wear inhibitors. Use of any other lubricant is not recommended and may void the equipment warranty.

1 Flash point 400°F minimum

2 Pour point -40°F.

3 Contains rust and corrosion inhibitors.

4 Contains foam suppressors.

5 Contains oxidation stabilizer.

NOTE

Due to environmental factors, the useful life of all 'Extended Life' lubricants may be shorter than quoted by the lubricant supplier. IMT encourages the user to closely monitor the lubricant condition and to participate in an oil analysis program with the supplier.

No lubricant, however good and/or expensive, can replace proper maintenance and attention. Select and use lubricant wisely.

Preventative Maintenance Schedule

IMT Value Plus PM Package Service Schedule
COMMERCIAL FLEET PACKAGES
PM KIT REQUIRED:

TYPE OF SERVICE	MONTH											
	1	2	3	4	5	6	7	8	9	10	11	12
Change rotary screw compressor oil filter						X						X
Change rotary compressor oil						X						X
Change rotary compressor coalescer filter												X
Change rotary compressor air filter						X						X
Grease rotary compressor driveline	X	X	X	X	X	X	X	X	X	X	X	X
Change moisture separator filter						X						X
Drain moisture from rotary compressor oil tank sump	X	X	X	X	X	X	X	X	X	X	X	X
Change liftgate hydraulic oil												X
Start new 12 month PM chart												X

Daily checks include compressor fluid levels, compressor air intake indicator, and draining of moisture separator.
Weekly checks include greasing of compressor driveline.

Kit Includes: Rotary Screw Air Compressor filter (1), oil filter (2), compressor oil (2 changes), air filters (2), and moisture separator filter (2).
Recommended for average equipment usage rate. Required crane and liftgate lubricants not included.

Compressor Maintenance Procedure

Maintenance intervals in the schedule outlined in this manual are based on one hour of compressor operation equal to about 40 road miles on an engine. Thus, eight hours operation is equal to 320 road miles, 250 hours is equal to 10,000 road miles, etc.

COMPRESSOR OIL SUMP FILL, LEVEL, AND DRAIN

Before adding or changing compressor oil, relieve all pressure from the sump. Add oil at the fill cap located between the cooler assembly and the cab. Use the drain plug provided at the bottom of the sump. The proper oil level, when the unit is shut down and oil has had time to settle, is at the midpoint of the oil sightglass. The truck must be level when checking the oil. DO NOT OVERFILL. The oil sump capacity is listed in the Compressor Specifications section.

WARNING

AVOID EQUIPMENT DAMAGE AND PERSONAL INJURY! Shut off the compressor and manually relieve pressure from the sump before attempting to drain condensate, remove the oil level fill plug, or break any connection in the air or oil system.

GREASE

Lubricate the compressor drive shaft universal joints every time the truck is lubricated, or every 100 hours of compressor operation, whichever comes first.

AIR INTAKE FILTER

The air intake filter is a heavy-duty two-stage dry type high efficiency filter designed to protect the compressor from dust and foreign objects. The filter is equipped with an evacuator cup for continuous dust ejection while operating and when stopped. Maintain the filter depending on the dust conditions at the operating site. Service the filter element when clogged (maximum pressure drop for proper operation is 15" H2O). The filter is equipped with a pressure drop indicator, and the element should be changed based on the pressure drop reading first, at least as frequently as outlined in the maintenance schedule.

AIR/OIL COALESCER

The air/oil coalescer employs an element permanently housed within a spin-on canister. This is a single piece unit that requires replacement when it fails to remove the oil from the discharge air, or when the pressure drop across it exceeds 15 PSI. Dirty oil clogs the element and increases the pressure drop across it.

To replace the coalescer element:

1 Shut down compressor and wait for complete blow down (zero pressure).

2 Disconnect drain line.

3 Turn element counterclockwise for removal (viewing element from the bottom).

4 Install new rubber seal in head. Supply a film of fluid directly to seal.

5 Rotate element clockwise, by hand, until element contacts seal (viewing element from the bottom).

6 Using band wrench near the top of the element, rotate element approximately one more turn clockwise.

7 Reconnect drain line.

8 Run system. Check for leaks.

WARNING

AVOID PERSONAL INJURY, PROPERTY DAMAGE, AND VOIDED WARRANTY! Do not substitute element. Use only a genuine IMT replacement element. This element is rated at 200 psi working pressure. Use of any other element may be hazardous and could impair the performance and reliability of the compressor.

NOTE

When connecting drain line, hold canister nut securely when tightening the hose fitting.

OIL RETURN LINE

This line originates at the bottom of the air/oil coalescer and flows through a 1/4" hose elbow, located at the air end. On the DAR130 Rotary Screw Compressor, the elbow incorporates an oil return line check valve which stops the flow of oil into the coalescer at shutdown.

OIL FILTER

The compressor oil filter is a spin-on, throw away type. After replacing filter, dispose of used filter according to local and state hazardous waste regulations.

To replace filter:

1 Relieve system pressure.

2 Remove filter by unscrewing from filter head (turn counterclockwise by hand, viewing from bottom) and discard.

3 Install a new filter by applying a little oil to the seal and then screw the filter on by hand (turning it clockwise until hand tight, plus one - third turn, viewing from bottom). Do not use tools to tighten the filter.

4 Check for leaks in operation.

5 Re-check compressor oil level.

WARNING

AVOID PERSONAL INJURY, PROPERTY DAMAGE, AND VOIDED WARRANTY! Do not substitute element. Use only a genuine IMT replacement element. This element is rated at 200 psi working pressure. Use of any other element may be hazardous and could impair the performance and reliability of the compressor.

OIL COOLER

The interior of the oil cooler should be cleaned when the pressure drop across it at full flow exceeds 25 PSI. Follow these steps to clean the oil cooler:

1 Remove cooler.

2 Circulate a suitable solvent to dissolve and remove varnish and sludge.

3 Flush generously with IMT compressor lubricant.

4 After cooler is reinstalled and compressor is filled with fresh oil, change compressor oil after 50 hours of normal operation.

SHAFT SEAL INSTALLATION

1 Remove PTO drive shaft, companion flange, and key.

2 Remove (4) socket head metric bolts on cover. Slide cover off shaft.

3 Pull seal wear sleeve off shaft with puller. Adding heat to one area only on wear sleeve will help enlarge and aid in removal.

4 Clean shaft and surface of bearing. Remove all burrs from shaft where the wear sleeve gets installed.

5 Press new wear sleeve onto shaft. To aid in installation, oil heat new wear sleeve to approximately 212° F.

6 Press old shaft seal out of cover. Clean cover prior to assembly.

7 Press new seal (included in repair kit) into cover.

8 Apply silicon to outer diameter of assembly tool. (The assembly tool and silicon are included in the repair kit.) Slide assembly onto drive shaft until it touches the wear sleeve.

9 Install cover, new o-ring and new seal assembly over shaft and assembly tool. Note: The assembly tool slip fits on the shaft and allows the new seal, in cover, to slide onto wear sleeve without cutting the lip of the shaft seal. One new cover is on the assembly tool.

10 Bolt cover on squarely. Slide off assembly tool

11 Reinstall drive line assembly.

NOTE

The seal cover is installed using an o-ring gasket. Avoid pinching the o-ring out of its groove upon reinstallation.

PTO

Service the PTO in accordance with the PTO manual. The SAE side-mount type of PTO is lubricated by the transmission oil and requires little maintenance. Torque fasteners in accordance with the PTO manual.

HYDRAULIC PUMP OPTION

The single cog belt arrangement is sized for an average life of 1,000 hours. This time frame can be increased or decreased depending on the end users' periodic maintenance schedule. Drive belt tension should be checked for adjustment every 100 hours thereafter. Belt deflection should be checked at the midpoint between both pulleys. Belt deflection should be 1/8" at 3.5 to 5 lb.

To adjust belt tension:

1 Loosen the 3/8" bolts that attach the hydraulic pump to the mounting plate. The pump should pivot freely on the bottom mounting bolt.

2 Pivot the hydraulic pump until the correct deflection is achieved. Hold the pump in position until the two 3/8" bolts are re-tightened.

NOTE

Over-tensioning belt can damage the compressor and hydraulic pump. When tensioning the belt, loosen hardware only to the point where the pump can pivot.

Compressor Troubleshooting

This section includes instructions for troubleshooting the equipment following a malfunction. Each problem symptom for a component or system is followed by a list of probable causes and suggested resolutions.

In general, perform the procedures in the order in which they are listed. Vary the order if needed due to specific conditions.

PROBLEM	CAUSE	RESOLUTION
Truck Engine Will Not Start	Vehicle engine problem.	▪ Check vehicle manual.
	High temperature.	▪ The compressor shutdown safety switch causes the vehicle engine to shut down on vehicles with manual transmissions. If this occurs, restart the truck once the temperature drops, or by disengaging the PTO. If the compressor high-temperature switch has shut off the engine, take the vehicle for service.
Unplanned Shutdown	Engine problem.	▪ Check fuel level, truck dash gauges and indicators.
	Low compressor oil.	▪ Check compressor oil level. Add if needed.
	Airflow obstruction.	▪ Check the oil cooler for dirt, slush, ice on fins, or other obstructions.
	Hose or wiring break.	▪ Check for broken hoses, oil lines, or loose or broken wires.
	Hi-temp switch failure. (The switch is located in the 1-inch discharge line between with compressor and receiver tank.)	▪ The hi-temp switch is open until the 240° F shutdown temperature is reached. The switch closes once 240° is reached, killing the engine. If the switch shows a normally closed condition when the oil temperature is below 240°, it is defective. Replace.
Low Discharge Pressure	Too much air demand.	▪ If air tools require more air than the compressor can produce, change tools.
	Open service valve.	▪ Close service valve.
	Leaks in service lines.	▪ Repair line leaks
	Restricted compressor inlet air filter.	▪ Replace filter.
	Faulty control system operation.	▪ Check regulator signal. Repair system if needed.

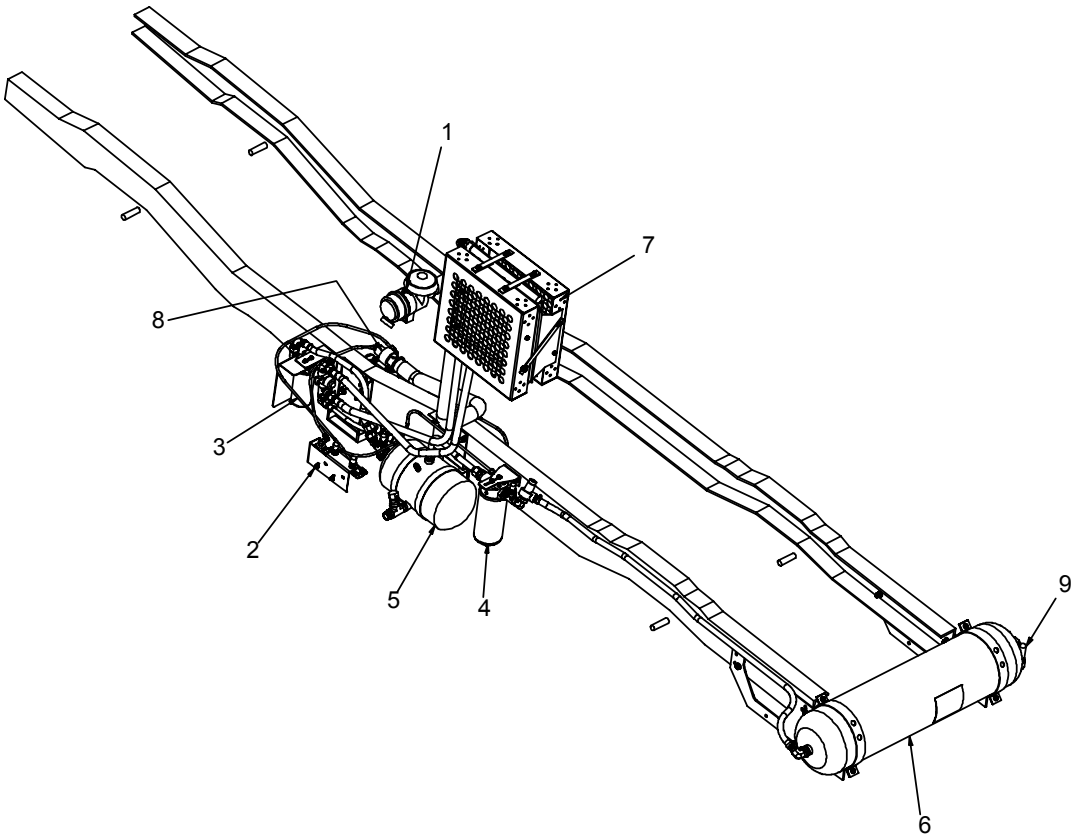
PROBLEM	CAUSE	RESOLUTION
High Discharge Pressure (Safety Valve Blows)	Faulty discharge pressure gauge.	▪ Replace pressure gauge.
	Coalescer plugged.	▪ Clean coalescer.
	Faulty safety valve.	▪ Replace safety valve.
	No regulator air pressure signal to inlet valve.	▪ Check signal, and replace faulty components.
Sump Pressure Does Not Blow Down	Inoperative automatic blow down valve at coalescer head.	▪ Replace valve
	Blockage.	▪ Check air line from side of inlet valve to blow down valve.
	Clogged muffler.	▪ Check / clean muffler.
Oil Consumption	Excess oil consumption, or oil in service line.	▪ Check overfilling of oil sump. ▪ Repair leaking oil lines or oil cooler. ▪ Inspect oil line to the compressor. Open plugged oil return line if needed. ▪ Replace coalescer element if defective. ▪ Repair leaks in compressor shaft seal. ▪ Check discharge pressure. Pressure should be below 65 PSI or above 150 PSI.
Engine Will Not Accelerate or Maintain Full Load Speed	Engine problem.	▪ Refer to engine manual.
	High compressor discharge pressure.	▪ Reduce discharge pressure
	Compressor running at truck idle. (Improper speed)	▪ Correct speed
	Operating above maximum altitude rating of compressor and truck.	▪ Move to lower altitude
Coalescer Element Plugging	Oil breakdown.	▪ Extreme operating temperature - reduce temperature. ▪ Water in oil. Drain condensate from oil sump. ▪ Wrong oil. Use only IMT-approved compressor oil. ▪ Dirty oil - change oil. ▪ Oil return line plugged. Clean oil return line.
	Compressor air inlet.	▪ Check system for leaks.
High Compressor Discharge Temperature	Low oil level.	▪ Add oil if required

PROBLEM	CAUSE	RESOLUTION
	Thermal valve	▪ Check thermal valve operation
	Reduced flow through cooler.	▪ Clean outside of oil cooler
		▪ Clean oil system (cooler) internally.

SECTION 4

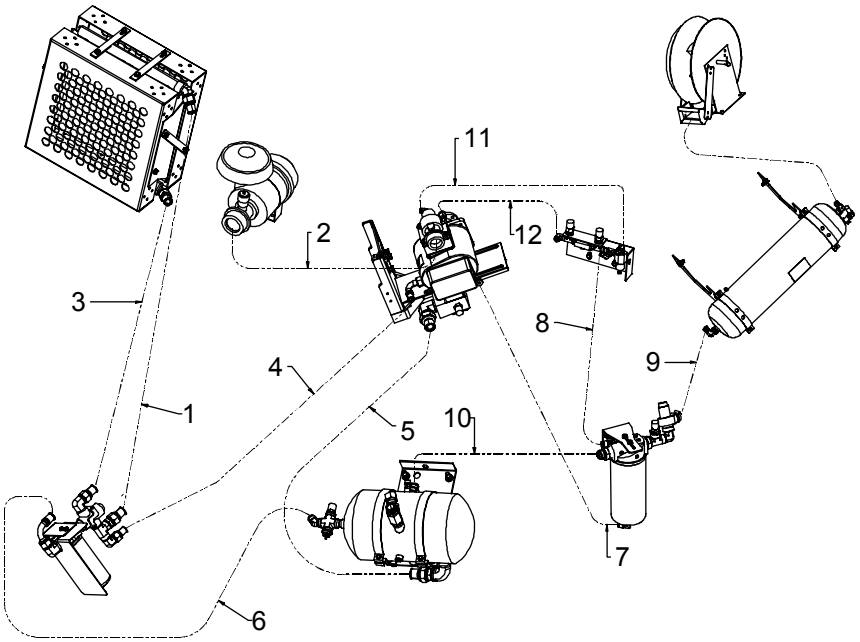
980 Rotary 60 Compressor Parts & Installation

Compressor Installation (99903635-1)



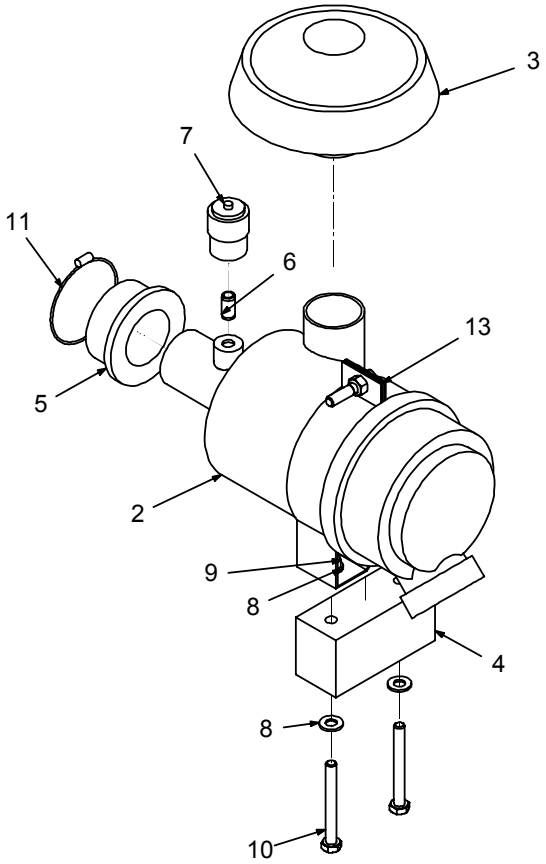
99903635-1 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	99904119	DWG-AIR FILTER 980 COMPRESSOR	1
2.	99904267	DWG-980 CONTROLS CPRSR	1
3.	99904266	DWG-980 OIL FILTER	1
4.	99904265	DWG-980 COALESCER	1
5.	99904264	DWG-980 SUMP	1
6.	99904263	DWG-980 AIR TANK	1
7.	99903564	DWG-REMOTE COOLER 980	1
8.	99903452	DWG-AIR END ASM PREDATOR/980	1
9.	51717633	DRAIN ASM-AIR TANK 8513 PREDATOR/980	1
REV. B 20070731			

Compressor Hose Routings (Kit 51720249) (Dwg. 99903635-2)



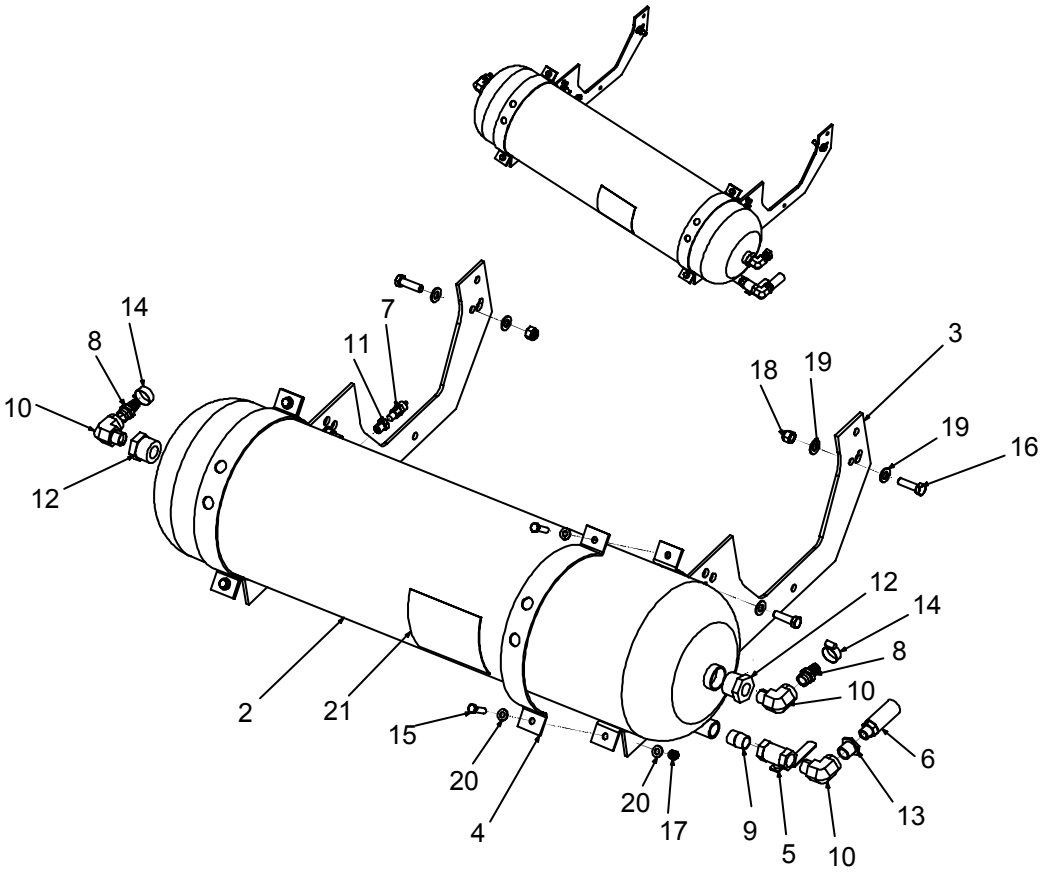
51720249 PARTS LIST (99903635-2)			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51396618	HOSE-FF 1.00 X 89.00 (16-16)	1
2.	70396152	HOSE-2.5 ID GT RUBBER W/WIRE	9'
3.	51396619	HOSE-FF 1.00 X 74.00 (16-16)	1
4.	51396615	HOSE-FJ .75 X 27.00 (12-12)	1
5.	51396617	HOSE-FF 1.25 X 21.50 (16-16)	1
6.	51396616	HOSE-FJ 1.00 X 21.00 (16-16)	1
7.	70034472	TUBE-NYLON .375 OD X .225 ID	32"
8.	70034472	TUBE-NYLON .375 OD X .225 ID	48"
9.	89392349	HOSE-GP .75 X 250 WP GRAY 801-12	54"
10.	71410917	TUBE ASM-SUMP TO COAL 980	1
11.	70034472	TUBE-NYLON .375 OD X .225 ID	76"
12.	70034472	TUBE-NYLON .375 OD X .225 ID	36"
13.	89392349	HOSE-GP .75 X 250 WP GRAY 801-12	42"
NEW 20060424			

Air Filter Installation (Kit 51720692, Dwg. 99904119)



51720692 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51720692	KIT-AIR FILTER 980	1
2.	70048215	FILTER-AIR ASSY	1
3.	70048223	CAP-AIR FILTER 4.8	1
4.	60121084	SPACER-BLOCK 980 AIR	1
5.	76396153	INSERT-RUBBER AIR FILTER 2.5 X 1.75	1
6.	72053001	NIPPLE-PIPE BLK .12X 1.50	1
7.	70048222	INDICATOR-AIR FILTER	1
8.	72063002	WASHER .31 FLAT	4
9.	72062109	NUT .31-18 HEX NYLOCK	2
10.	72060032	CAP SCR .31-18X 2.75 HH GR5 Z	2
11.	72661549	CLAMP-DUCT 2.5"	2
12.	76396154	INSERT-RUBBER INLET 2.5 X 2	1
13.	70048216	BAND-AIR FILTER 4.8	1
REV. B 20070731			

Air Tank Installation (Kit 51720260) (Dwg. 99904263)



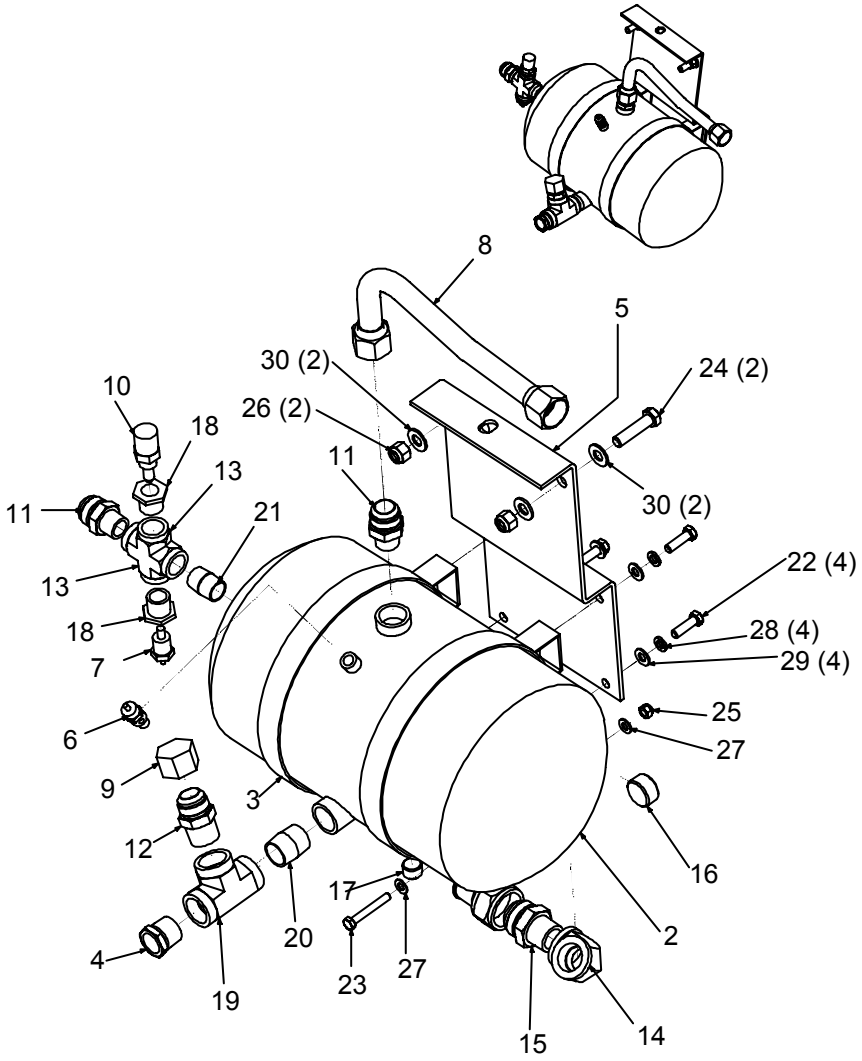
NOTE:

1 APPLY PIPE SEALANT TO ALL PIPE THREADS.

51720260 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51720260	KIT-980 AIR TANK	REF
2.	70733423	TANK-AIR 22 GAL 12"X48"	1
3.	52710649	BRACKET-AIR TANK/BUMPER 980	2
4.	60106492	BRACKET-AIR TANK 15 GAL	2
5.	73054230	VALVE-BALL .75	1
6.	70396133	MUFFLER-AIR 1/2" NPT	1
7.	73054032	VALVE-PRESSURE RELIEF .25 200 PSI	1
8.	72053458	NIPPLE-BARB BRS .75MPT .75	2
9.	72053141	NIPPLE-PIPE BLK .75X CLOSE	1
10.	72053556	ELBOW-STREET STL .75 X 90 DEG	3
11.	72532138	REDUCER BUSH-STL .38- .25	1
12.	72531836	REDUCER BUSH-STL 1.25- .75	2
13.	72053375	REDUCER BUSH-BLK .75- .50	1
14.	72661657	CLAMP-.75 STEPLESS EAR (WAS 72066000)	2

51720260 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
15.	72060048	CAP SCR .38-16X 1.50 HH GR5 Z	4
16.	72060094	CAP SCR .50-13X 1.75 HH GR5 Z	4
17.	72062103	NUT .38-16 HEX NYLOCK	4
18.	72062080	NUT .50-13 HEX NYLOCK	4
19.	72063132	WASHER .50 FLAT ASTM F436	8
20.	72063003	WASHER .38 FLAT	8
21.	71393886	DECAL-DANGER EXPLODING TANK	1
REV. A 20080613			

Sump Installation (Kit 51720244/Dwg. 99904264)



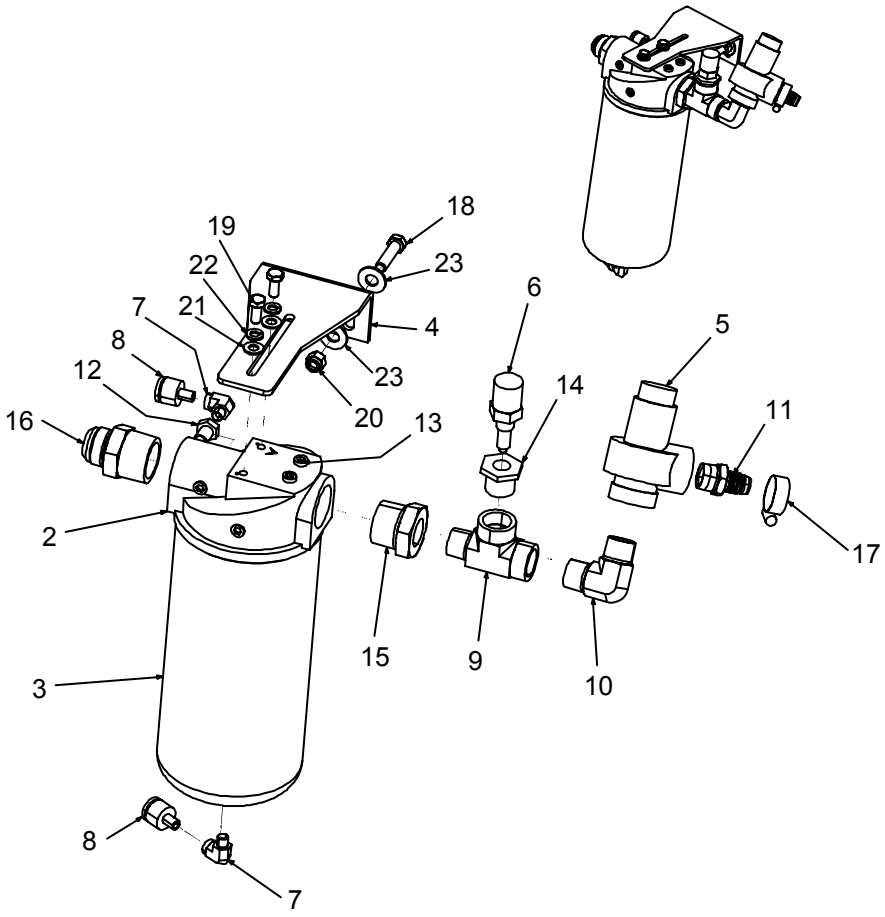
NOTE:

1 APPLY PIPE SEALANT TO ALL PIPE THREADS.

51720244 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51720244	KIT-980 SUMP	1
2.	300017	SUMP,10 GAL	1
3.	300067	BAND-SUMP MTG 10 GAL	2
4.	300783	SIGHTGLASS-OIL LEVEL	1
5.	60126175	BRACKET-SUMP 980	1
6.	73054032	VALVE-PRESSURE RELIEF .25 200 PSI	1
7.	70048224	SENDER-TEMPERATURE 02025-00	1

51720244 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
8.	71410917	TUBE ASM-SUMP TO COAL 980	1
9.	60124690	CAP-VENTED 1 in.	1
10.	77041645	SWITCH-TEMP 1/2" 180R NO	1
11.	72053679	ADPTR-MPT/M JIC .75 16	2
12.	72053680	ADPTR-MPT/M JIC 1.00 16	1
13.	72534344	CROSS-FEMALE PIPE 3/4"	1
14.	72531103	ELBOW-STL 1.00 X 90 DEG	1
15.	72053681	ADPTR-MPT/M JIC 1.00 20	1
16.	72534405	PLUG-PIPE SOC HEX STL 1.00	1
17.	72532661	PLUG-PIPE SOC HEX STL .50	1
18.	72531833	REDUCER BUSH-STL .75- .50	2
19.	72053614	TEE-STL 1.00	1
20.	72053185	NIPPLE-PIPE BLK 1.00X CLOSE	1
21.	72053141	NIPPLE-PIPE BLK .75X CLOSE	1
22.	72060047	CAP SCR .38-16X 1.25 HH GR5 Z	4
23.	72060030	CAP SCR .31-18X 2.25 HH GR5 Z	2
24.	72060118	CAP SCR .50-13X 2.00 HH GR8 Z	2
25.	72062109	NUT .31-18 HEX NYLOCK	2
26.	72062080	NUT .50-13 HEX NYLOCK	2
27.	72063002	WASHER .31 FLAT	4
28.	72063051	WASHER .38 LOCK	4
29.	72063003	WASHER .38 FLAT	4
30.	72063005	WASHER .50 FLAT	4
NEW 20070731			

Coalescer Installation (51720245) (Dwg. 99904265)



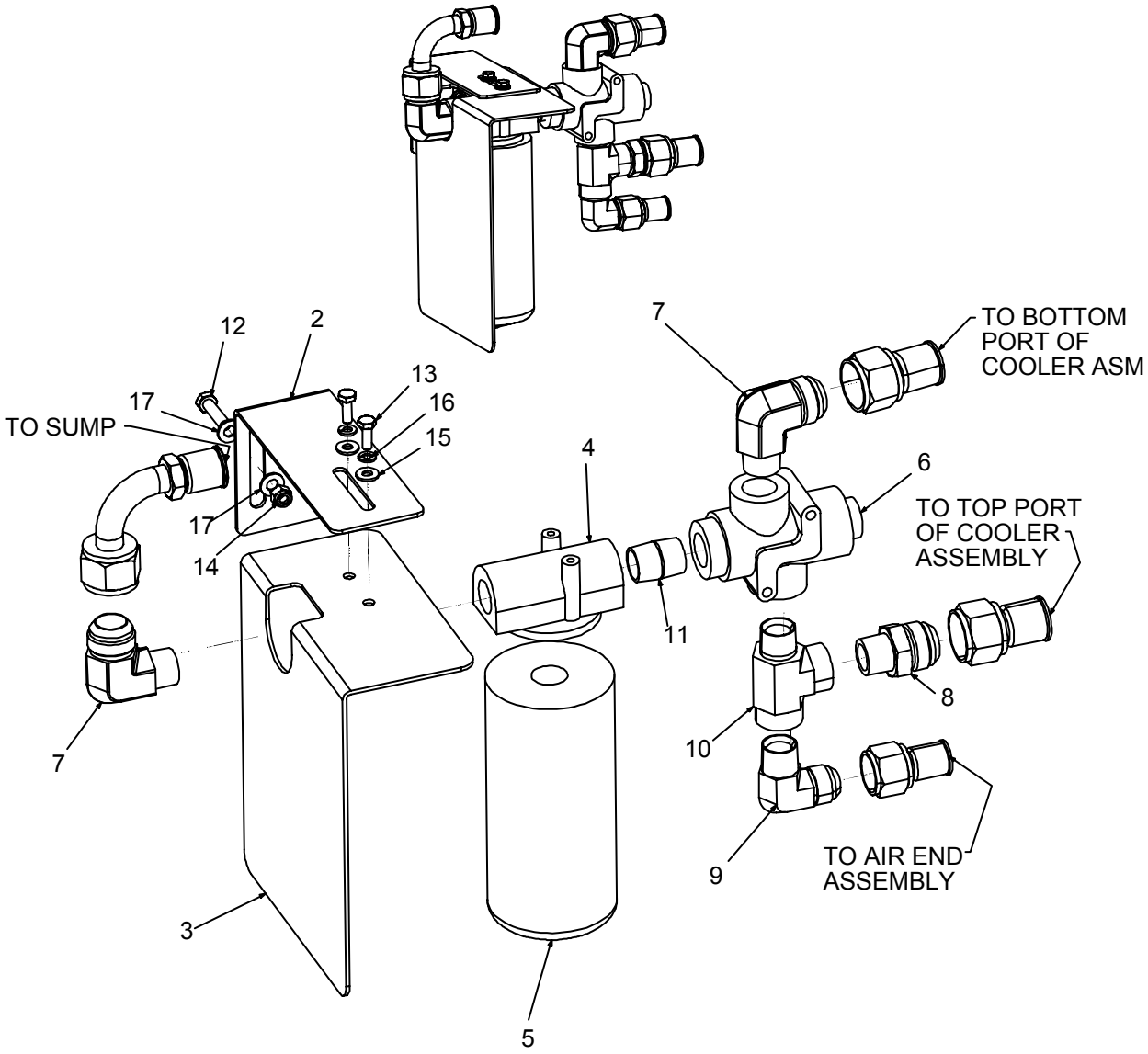
NOTE:

1 APPLY PIPE SEALANT TO PIPE THREADS.

51720245 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51720245	KIT-980 COALESCER	REF
2.	60124515	HEAD-COALESCER REWORK PREDATOR	1
3.	73733692	FILTER-COALESCER	1
4.	60124204	BRACKET-COALESCER	1
5.	73540111	VALVE-MINIMUM PRESSURE 0.75	1
6.	77041647	SWITCH-TEMP 3/8" 240R NC	1
7.	72531130	ELBOW-STREET STL .12 X 90 DEG	2
8.	72534338	ADPTR-PRESTOLOK 68PL-6-2	2
9.	72534403	TEE-STREET STL 0.75	1
10.	72534404	ELBOW-MPT/90/MPT .75 0.75	1
11.	72053458	NIPPLE-BARB BRS .75MPT .75	1
12.	72531826	REDUCER BUSH-BLK .25- .12	1

51720245 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
13.	72053392	PLUG-PIPE SOC HD STL .25	4
14.	72531832	REDUCER BUSH-STL .75- .38	1
15.	72531836	REDUCER BUSH-STL 1.25- .75	1
16.	72533564	ADPTR-MPT/M JIC 1.25 16	1
17.	72066000	CLAMP-HOSE .50-1.25 SAE 12	1
18.	72060048	CAP SCR .38-16X 1.50 HH GR5 Z	2
19.	72060023	CAP SCR .31-18X .75 HH GR5 Z	2
20.	72062103	NUT .38-16 HEX NYLOCK	2
21.	72063002	WASHER .31 FLAT	2
22.	72063050	WASHER .31 LOCK	2
23.	72063186	WASHER .38 FLAT ASTM F436	4
NEW 20070731			

Oil Filter Installation (Kit 51720246) (Dwg. 99904266)

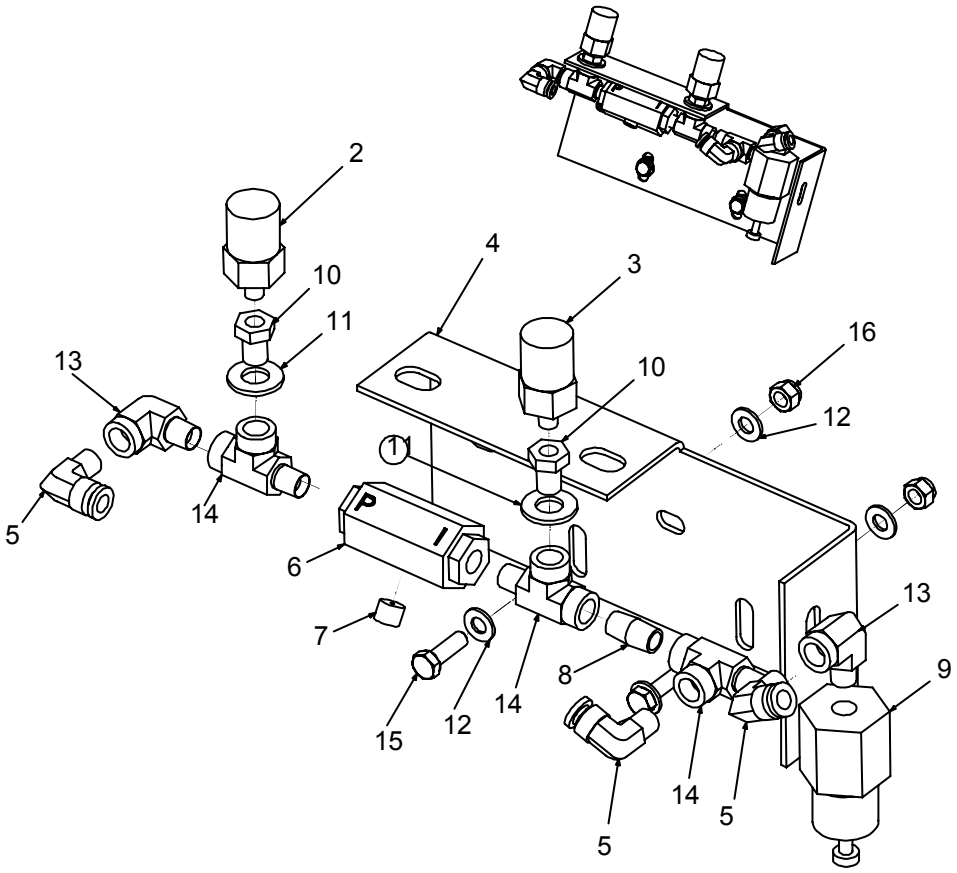


NOTE:

1 APPLY PIPE SEALANT ON ALL PIPE THREADS.

51720246 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51720246	KIT-980 OIL FILTER	1
2.	60126173	BRACKET-OIL FILTER 980	1
3.	60126174	GUARD-OIL FILTER 980	1
4.	73029602	HEAD-OIL FILTER	1
5.	70048214	ELEMENT-OIL FILTER 80	1
6.	73540113	VALVE-THERMAL	1
7.	72531429	ELBOW-MPT/90/M JIC .75 16	2
8.	72053679	ADPTR-MPT/M JIC .75 16	1
9.	72531427	ELBOW-MPT/90/M JIC .75 12	1
10.	72534403	TEE-STREET STL 0.75	1
11.	72053141	NIPPLE-PIPE BLK .75X CLOSE	1
12.	72060026	CAP SCR .31-18X 1.25 HH GR5 Z	2
13.	72060002	CAP SCR .25-20X .75 HH GR5 Z	2
14.	72062109	NUT .31-18 HEX NYLOCK	2
15.	72063001	WASHER .25 FLAT	2
16.	72063049	WASHER .25 LOCK	2
17.	72063002	WASHER .31 FLAT	4
NEW 20070731			

Compressor Controls Installation (Kit 51720247) (Dwg. 99904267)



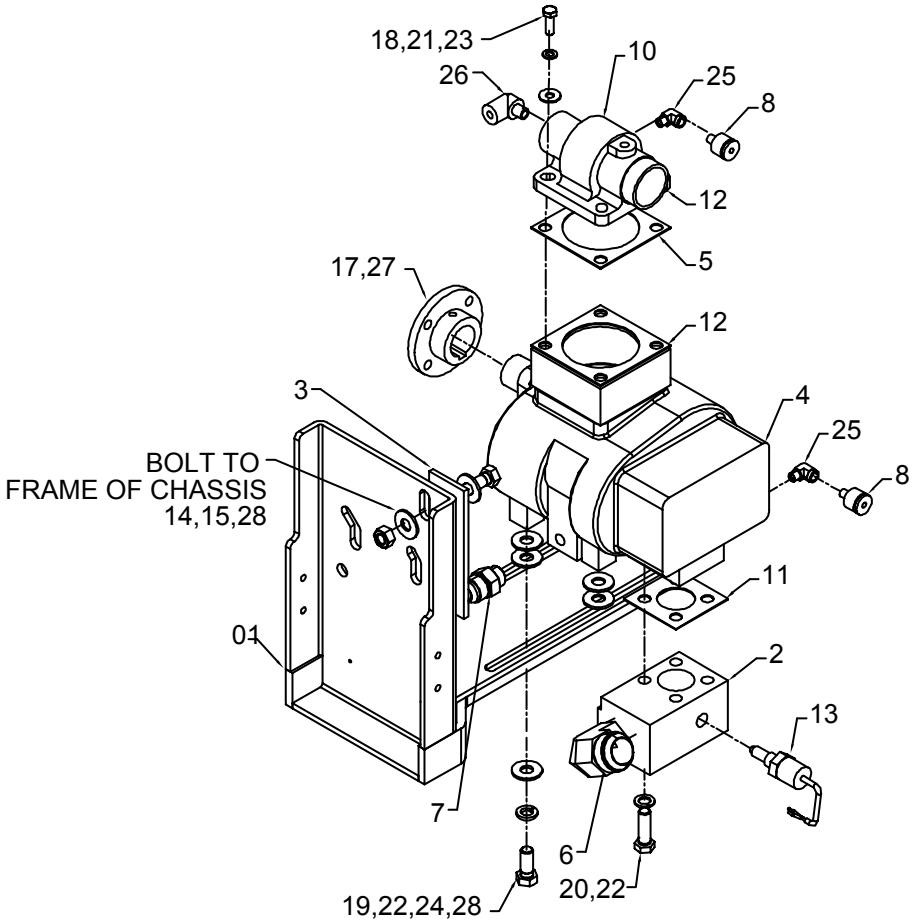
NOTE:

1 APPLY PIPE SEALANT TO ALL PIPE THREADS.

51720247 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1	51720247	KIT-980 CONTROLS CPRSR	1
2	77041638	SWITCH-PRESSURE 5LB 1/8" N/C	1
3	77041639	SWITCH-PRESSURE 20LB 1/8" N/O	1
4	60124691	BRACKET-CONTROLS COMPRESSOR	1
5	72534339	ELBOW-PRESTOLOK 169PLNS 6 4	3
6	73540110	VALVE-BLOWDOWN	1
7	60124689	PLUG-BLOWDOWN	1
8	72053013	NIPPLE-PIPE BLK .25X CLOSE	1
9	73540109	VALVE-REGULATOR .25	1
10	72053371	REDUCER BUSH-BLK .25- .12	2
11	72063005	WASHER .50 FLAT	2
12	72063002	WASHER .31 FLAT	4
13	72531131	ELBOW-STREET STL .25 X 90 DEG	2

51720247 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
14	72533726	TEE-M PIPE/F PIPE MALE RUN .25	3
15	72060025	CAP SCR .31-18X 1.00 HH GR5 Z	2
16	72062109	NUT .31-18 HEX NYLOCK	2
NEW 20070731			

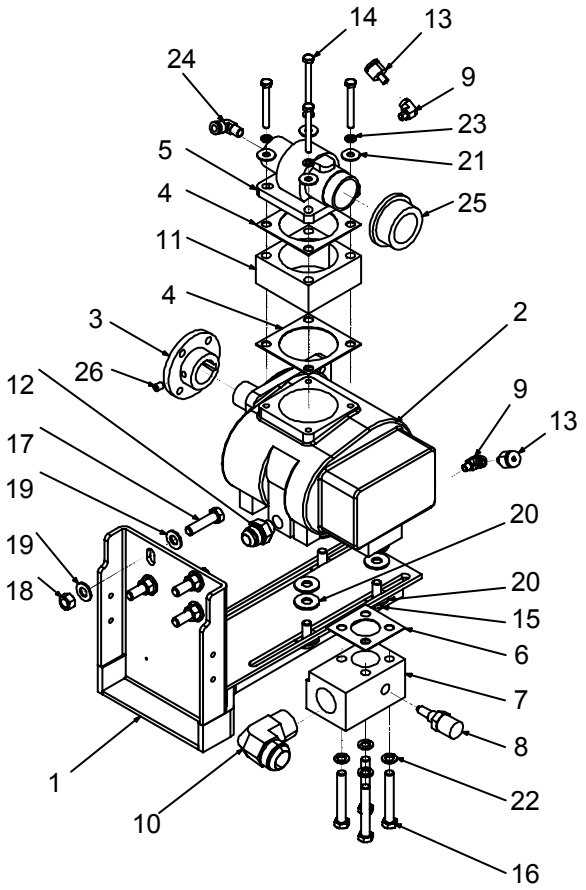
Air End Assembly (99903452)



99903452 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52717347	FOOT-COMPRESSOR MOUNTING NON-FORD	A/R
1.	52717346	FOOT-COMPRESSOR MOUNTING NON GEARED B101	A/R
2.	60124893	BLOCK-DISCHARGE B101 W/PROBE	1
3.	60124694	PLATE-SPACER COMPRESSOR FOOT	A/R
4.	70733760	AIR END B101G-H	A/R
4.	70733693	AIR END B101	A/R

99903452 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
5.	60125045	SPACER-AIR INTAKE B101	A/R
6.	72534343	ELBOW-MPT/90/JIC 1.25 20	1
7.	72533656	ADPTR-M BSPP/M JIC 8-12	1
8.	72534338	ADPTR-PRESTOLOK 68PL-6-2	2
9.	.	.	.
10.	73540112	VALVE-INLET	1
11.	76396253	GASKET-DISCHARGE BLOCK B101	1
12.	76396269	GASKET-INLET B101	A/R
13.	77041647	SWITCH-TEMP 3/8" 240R NC	1
14.	72060118	CAP SCR .50-13X 2.00 HH GR8 Z	4
15.	72062232	NUT .50-13 HEX TOP LOCK GR8 Z	4
16.	.	.	.
17.	72060579	SET SCR .38-16X .50 SOC PLAI	1
18.	72601809	CAP SCR-METRIC 8-1.25X 70 HHZ	
18.	72601677	CAP SCR-MET 8-1.25X25HEX H10.9	A/R
19.	72601394	CAP SCR-METRIC 12-1.25X 30 HHZ	4
20.	72601496	CAP SCR-METRIC 12-1.75X 80 HHZ	4
21.	72601797	WASHER-LOCK 8MM	4
22.	72601798	WASHER-LOCK 12MM	8
23.	72601799	WASHER-FLAT 8MM	4
24.	72601800	WASHER-FLAT 12MM	4
25.	72053589	ELBOW-STREET BRS .12X90 DEG	2
26.	60124756	ELBOW-MODIFIED PRESTOLOCK	1
27.	70580167	FLANGE-COMPANION ALLISON	A/R
27.	70580156	FLANGE-COMPANION FORD AUTO PRED	A/R
28.	72063132	WASHER .50 N FLAT H ASTM F436	16
REV. J 20060512			

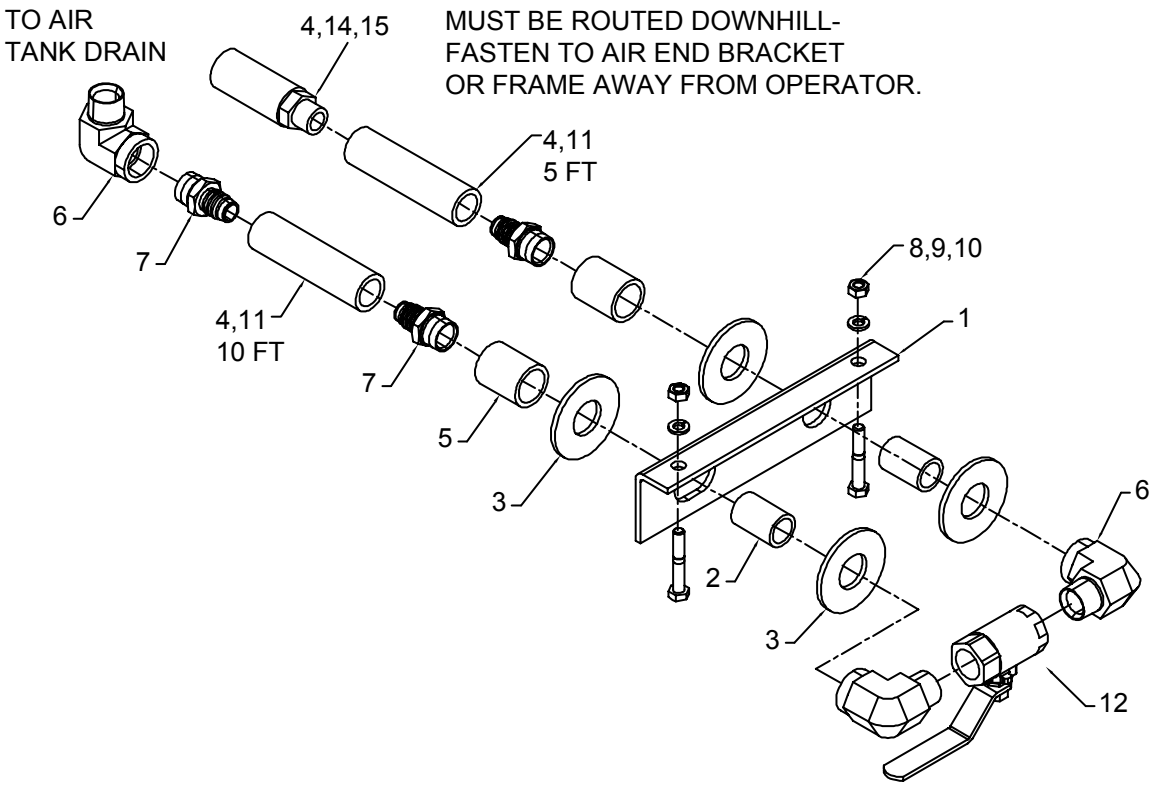
Air End Assembly for 2008 Ford (99904376)



99904376 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52721517	FOOT-COMPRESSOR B101 08 FORD 980	1
2.	70733693	AIR END B101	1
3.	70580156	FLANGE-COMPANION PRED	1
4.	76396269	GASKET-INLET B101	2
5.	73540112	VALVE-INLET	1
6.	76396253	GASKET-DISCHARGE BLOCK B101	1
7.	60124893	BLOCK-DISCHARGE W/PROBE B101	1
8.	77041647	SWITCH-TEMP 3/8" 240R NC	1
9.	72531130	ELBOW-STREET STL .12 X 90 DEG	2
10.	72534343	ELBOW-MPT/90/JIC 1.25 20	1
11.	60125045	SPACER-AIR INTAKE B101	1
12.	72533656	ADPTR-M BSPP/M JIC 8-12	1
13.	72534338	ADPTR-PRESTOLOK 68PL-6-2	2
14.	72601809	CAP SCR M 8-1.25X 70 HHZ	4
15.	72601394	CAP SCR M12-1.75X 30 HHZ	3

99904376 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
16.	72601496	CAP SCR M12-1.75X 80 HHZ	4
17.	72060118	CAP SCR .50-13X 2.00 HH GR8 Z	4
18.	72062232	NUT .50-13 HEX TOP LOCK GR8 Z	4
19.	72063132	WASHER .50 FLAT ASTM F436	8
20.	72601800	WASHER-FLAT M12	9
21.	72601799	WASHER-FLAT M 8	4
22.	72601798	WASHER-LOCK 12MM	7
23.	72601797	WASHER-LOCK 8MM	4
24.	60124756	ELBOW-MODIFIED PRESTOLOCK	1
25.	76396153	INSERT-RUBBER AIR FILTER 2.5 X 1.75	1
26.	72060579	SET SCR .38-16X .50 SOC PLAI	1
NEW 20080306			

Drain Assembly, Air Tank (51717633)



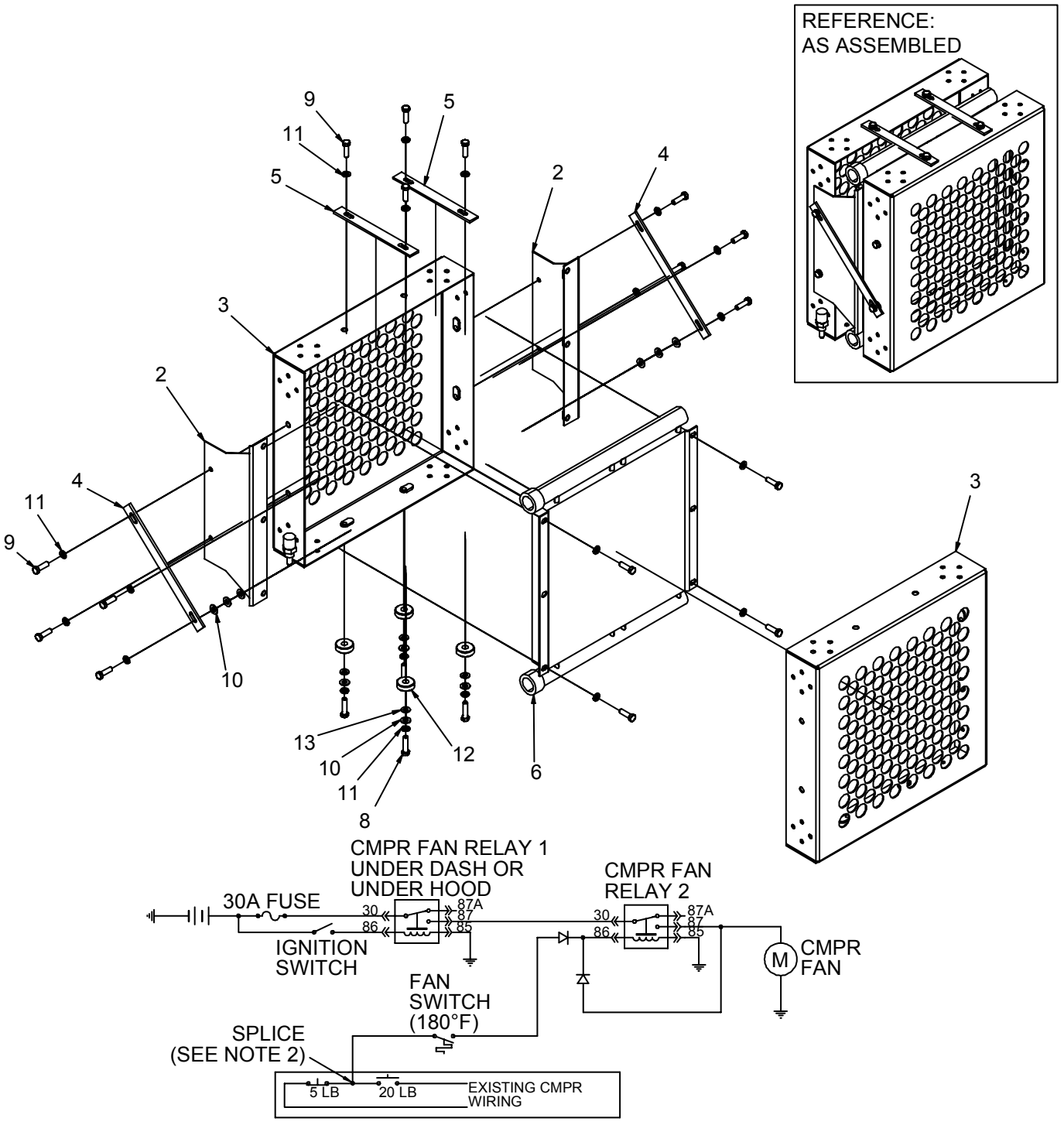
NOTE: ITEM #13, DECAL-AIR TANK DRAIN, NOT SHOWN. LOCATE DECAL AS CLOSE TO DRAIN VALVE AS POSSIBLE, IN CLEAR VIEW OF OPERATOR.

51717633 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	60116097	MTG. BRKT.-3/4 AIR TANK DRAIN	1
2.	72053141	NIPPLE-PIPE BLK .75X CLOSE	2
3.	72063066	WASHER-FLAT 1.00	4
4.	72661657	CLAMP-.75 STEPLESS EAR (WAS 72066000)	4
5.	72053472	COUPLING-STL .75	2
6.	72053556	ELBOW-STREET STL. .75 X 90 DEG.	3
7.	72053458	NIPPLE-BARB BRS. .75 MPT	3
8.	72060025	CAP SCR .31-18 X 1.00 HH GR5	2
9.	72062109	NUT .31-18 HEX NYLOC ZINC	2
10.	72063002	WASHER .31 W FLAT ANSI B27.2Z	2
11.	89392349	HOSE-GP .75X300# WP (GRAY)	15
12.	73054230	VALVE-BALL .75	1
13.	70391601	DECAL-AIR TANK DRAIN	1
14.	72066582	CLAMP-RUBBER COATED	1
15.	70396133	MUFFLER-AIR 3/4" NPT	1
REV. A 20080613			

Stepless Ear Clamp Installation (99904411)

INSTALLING A STEPLESS EAR CLAMP	
When there is sufficient room, use standard jaw pincers to position a properly-sized ear clamp on a hose fitted with a hose stem. Close ear clamp fully with uniform force until there is only a 1/16" gap remaining. The visible deformation of the clamp ear provides a visible, instant check that the closure is complete.	
INSTALLING A STEPLESS EAR CLAMP IN RESTRICTED SPACE	
When space is restricted, use side jaw pincers held parallel to the hose to position and clamp a properly-sized ear clamp on a hose fitted with a hose stem. Close ear clamp fully with uniform force until there is only a 1/16" gap remaining. The visible deformation of the clamp ear provides a visible, instant check that the closure is complete.	
REMOVING A STEPLESS EAR CLAMP	
To remove a stepless ear clamp, grasp the strip end with a pincer and pull it away.	
NOTE: Stepless ear clamps can only be used once. When removed, they must be discarded and replaced with new clamps.	

Remote Cooler (Kit 91718274) (Dwg 99903561)



NOTES:

1 REMOTE COOLER KIT (91718274) REQUIRED ON 2003 AND NEWER FORD SUPER DUTY CHASSIS.

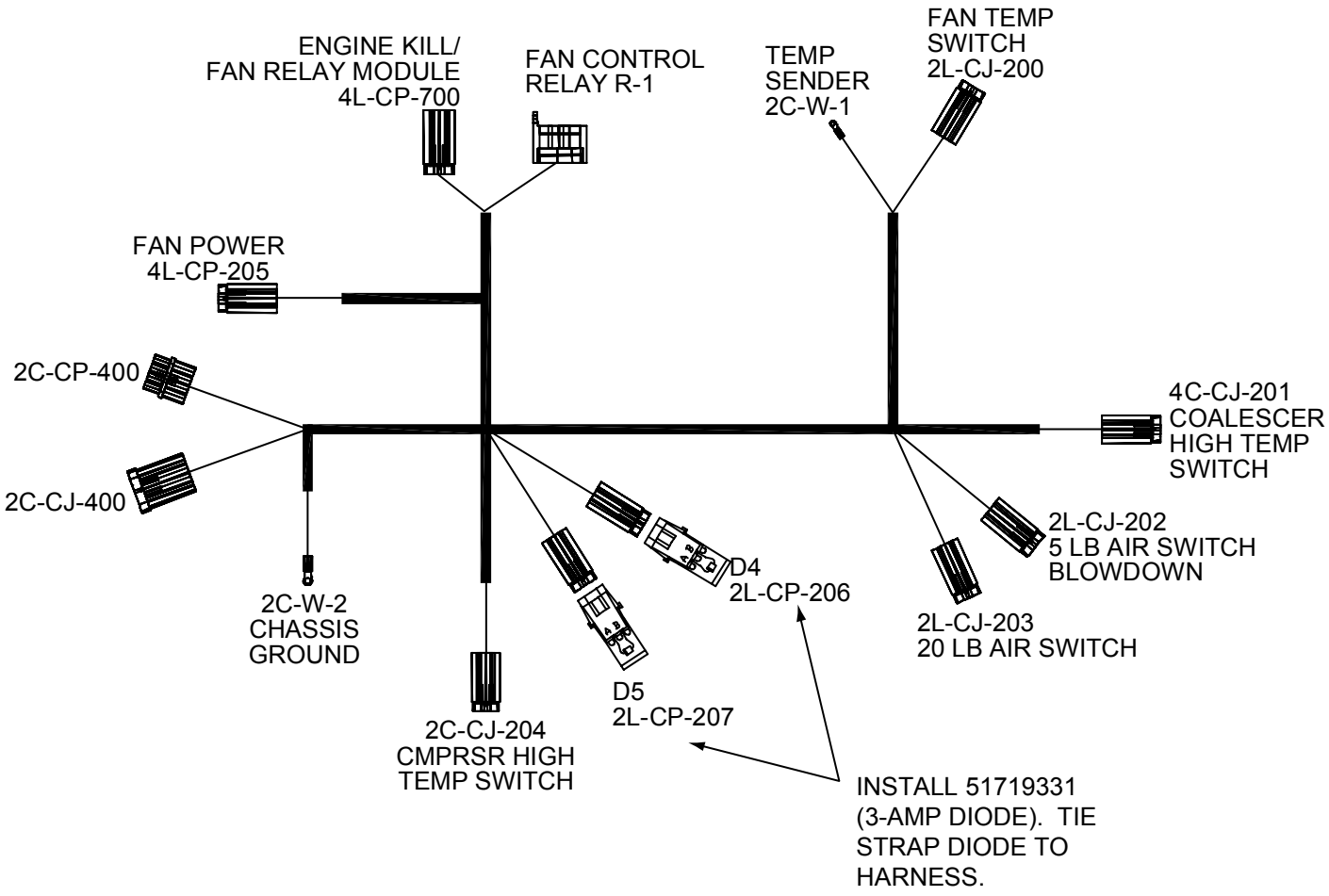
2 INSTALL FAN SWITCH (180°) IN OIL LINE BETWEEN SUMP AND REMOTE OIL COOLER INLET. A TEE MAY BE REQUIRED.

3 WIRING FOR FAN SWITCH (180°) MUST BE SPLICED INTO EXISTING COMPRESSOR WIRING BETWEEN WITH 5 LB N.C. AND 20 LB N.O. SWITCHES.

91718274 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	91718274	KIT-REMOTE COOLER 980	REF
2.	52713702	WLDMT-OIL COOLER MTG BRKT	2
3.	52705023	WLDMT-SHROUD OIL COOLR OTR/LUB	2
4.	60125719	STRAP - 980 REMOTE COOLER 12 IN	2
5.	60125718	STRAP - 980 REMOTE COOLER 9 IN	2
6.	70143092	OIL COOLER/FAN-ASM FAU20 65082	1
7.	77041645	SWITCH-TEMP 1/2" 180R NO	1
8.	72060048	CAP SCR .38-16X 1.50 HH GR5 Z	4
9.	72060047	CAP SCR .38-16X 1.25 HH GR5 Z	16
10.	72063003	WASHER .38 FLAT	10
11.	72063051	WASHER .38 LOCK	20
12.	60030243	SPACER-POL .52X 1.50X .50	4
13.	76392821	WASHER-BONDED PLTD .38	4
NEW 20070731			

Compressor Harness (77441107)

NAIL BOARD



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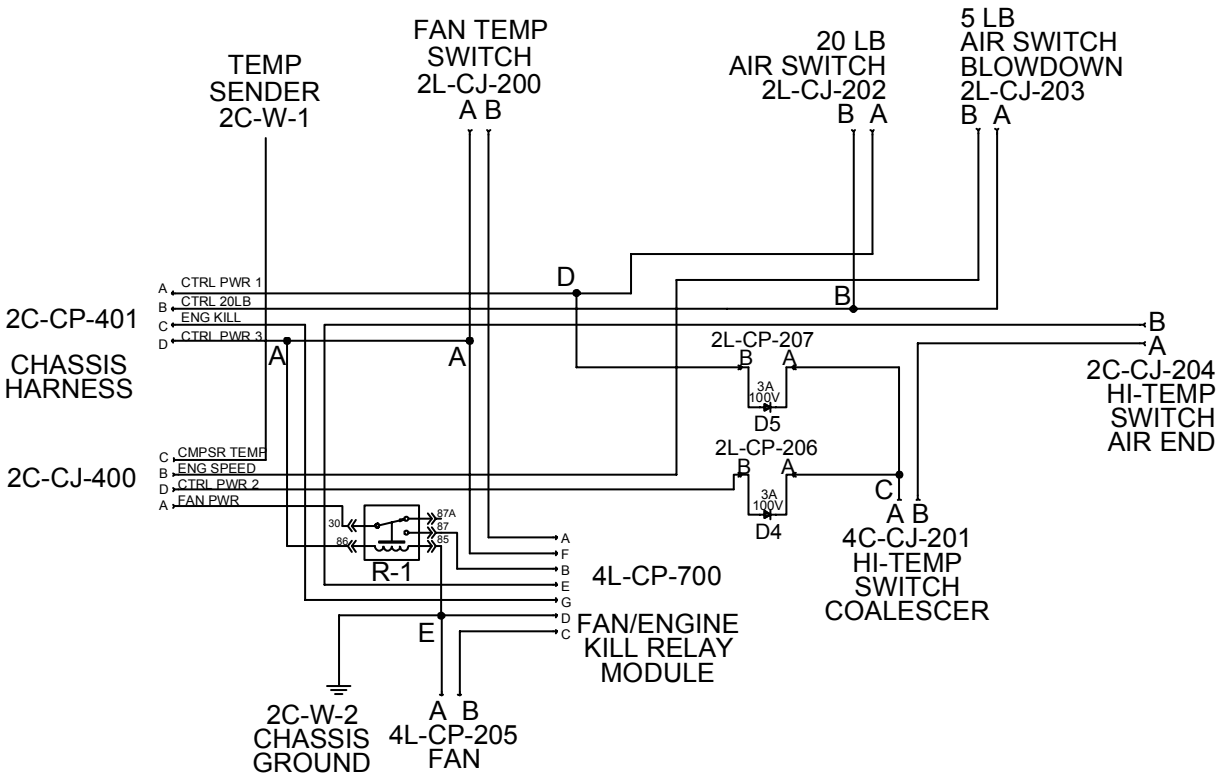

REV D 20100330