



Series 60 PTO Air Compressor

OPERATORS AND PARTS MANUAL

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REVISIONS LIST

DATE	LOCATION	DESCRIPTION OF CHANGE
20020326	42,45	CHANGES TO DISCHARGE SYSTEM
20020429	32	ADDED FLASH RECOVERY PROCEDURE
20020708	42	ITEM #18 - 926102-223 WAS 926102-222
20030131	8	ADDED SUB-ZERO TEMP. OPERATION
20070329	COVER	UPDATED OWNERSHIP STATEMENT

GENERAL ARRANGEMENT

IMT Underdeck PTO Compressors are shipped in kit form for field installation. These kits include:

1. Rotary Screw Compressor and Mounting Bracket.
2. Oil Sump with Mounting Brackets.
3. Spin-on Coalescer/Air Manifold Assembly.
4. Compressor Oil Cooler.
5. Air Inlet Filtration System.
6. Hoses and Fittings.
7. All Necessary Safety and Informational Decals.
8. Wiring Harness.
9. PTO and Drivelines.
10. Parts, Service, and Maintenance Manual.

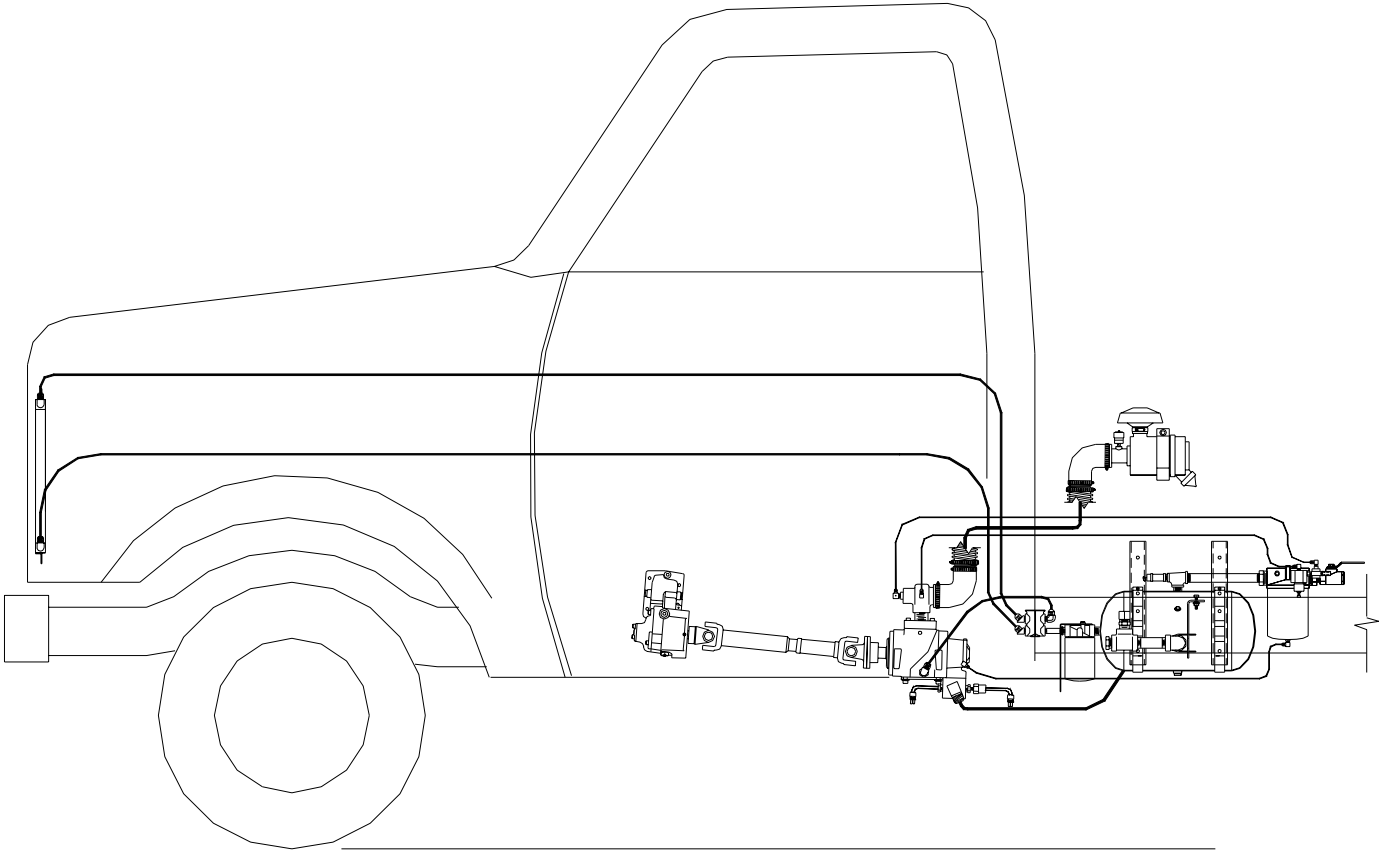
IMT offers factory installation by qualified technicians, as well as a nationwide network of authorized distributors for field installations, parts and service.

SPECIFICATIONS**IMT SERIES 60 (SIDE-MOUNT) COMPRESSOR**

DELIVERY @ 175 PSIG	45 CFM @ 110 PSI to 175 PSI
Input Speed RPM to Compressor	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" Dia. x 18" H
Spin - On Element	5" Dia x 13" H
Cooler / Fan Assembly	24.375" L x 18.125" H x 1.5 W
Weight (dry)	280 lbs.

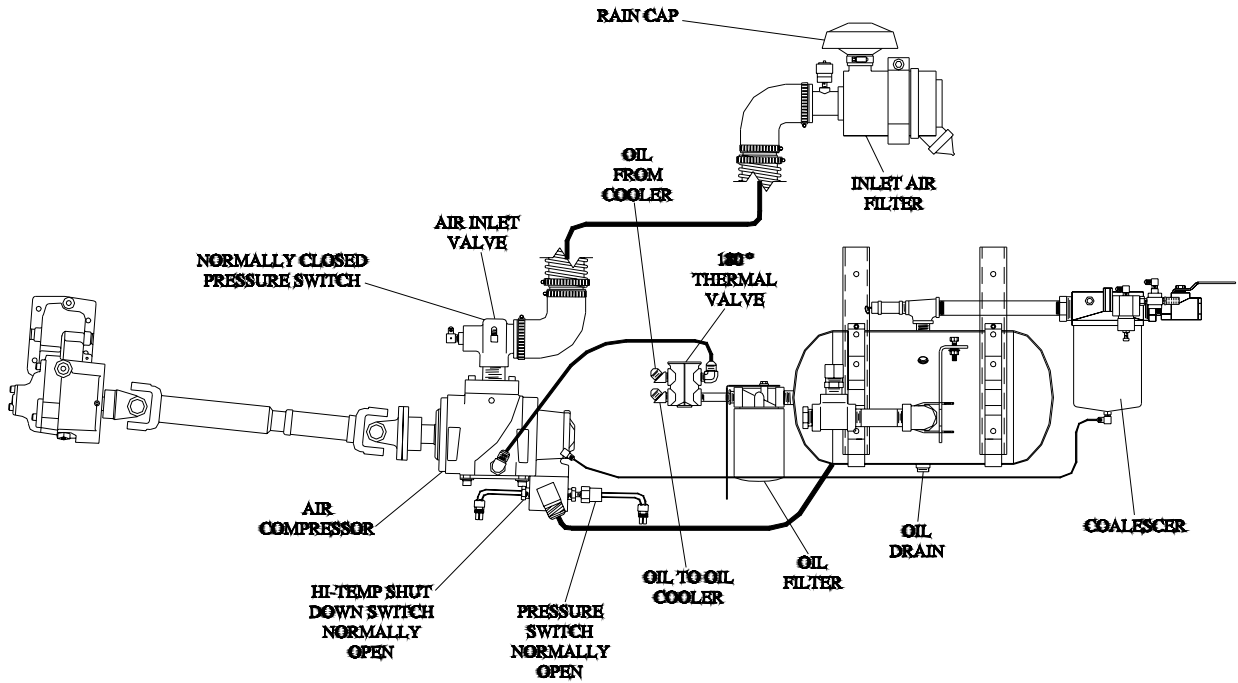
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT PRIOR NOTICE

TYPICAL INSTALLATION



12/16/98-MB (20032)

M10026



12/17/98-MB (20032)

M10032

SAFETY INFORMATION

CONTINUED

WARNING

ALL UNITS ARE SHIPPED WITH A DETAILED OPERATORS AND PARTS MANUAL. THIS MANUAL CONTAINS VITAL INFORMATION FOR THE SAFE USE AND EFFICIENT OPERATION OF THIS UNIT. CAREFULLY READ THE OPERATORS MANUAL BEFORE STARTING THE UNIT. FAILURE TO ADHERE TO THE INSTRUCTIONS COULD RESULT IN SERIOUS BODILY INJURY OR PROPERTY DAMAGE.

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. Therefore with your experience and common sense, you are in a position to ensure your safety. Lack of attention to safety can result in: accidents, personal injury, reduction of efficiency and worst of all - Loss of Life. Watch for safety hazards. 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 machine is operating.

DANGER

CHECK THE COMPRESSOR SUMP OIL LEVEL ONLY WHEN THE COMPRESSOR IS NOT OPERATING AND SYSTEM IS COMPLETELY RELIEVED OF PRESSURE. OPEN SERVICE VALVE TO ENSURE RELIEF OF SYSTEM AIR PRESSURE WHEN PERFORMING MAINTENANCE ON COMPRESSOR AIR/OIL SYSTEM. FAILURE TO COMPLY WITH THIS WARNING MAY CAUSE DAMAGE TO PROPERTY AND SERIOUS BODILY HARM.

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.

SAFETY INFORMATION

Do not install a shut-off valve between the compressor and compressor oil sump.

DANGER

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.

ANGER

CONTINUED

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.
- Tools, rags, or loose parts must not be left 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.

SUB-ZERO TEMPERATURE OPERATION INSTRUCTIONS

CAUTION

READ AND UNDERSTAND THE SUB-ZERO TEMPERATURE OPERATION INSTRUCTIONS BELOW. DO NOT OPERATE COMPRESSOR WITH THE OIL TEMPERATURE BELOW 0° F.

Sub-Zero Operation

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 0° F. It is possible to operate an IMT rotary screw compressor when the **ambient** temperature is below 0° F, but only by adhering to the following guidelines:

Maintenance Requirements

If the IMT rotary screw compressor is expected to operate at temperatures below 0° F, the oil filter, coalescer, air filter, and oil should be changed before the compressor is ran 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.

Storage Requirements

The IMT rotary screw compressor should be stored at or above 0° F. If the ambient temperature is below 0° 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.

CONTINUED

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 0° 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.

Failure to Follow Maintenance & Storage Requirements

At temperatures below 0° F, failure to follow the above 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 0° 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.

SAFETY INFORMATION

A compliment of warning decals is supplied with each unit. These decals must be affixed to the vehicle after it has been painted, trimmed, and undercoat, etc. and prior to being put into service. The decals shall be placed so as to be clearly visible to the user and service personnel. (Figures 1 through 6.)

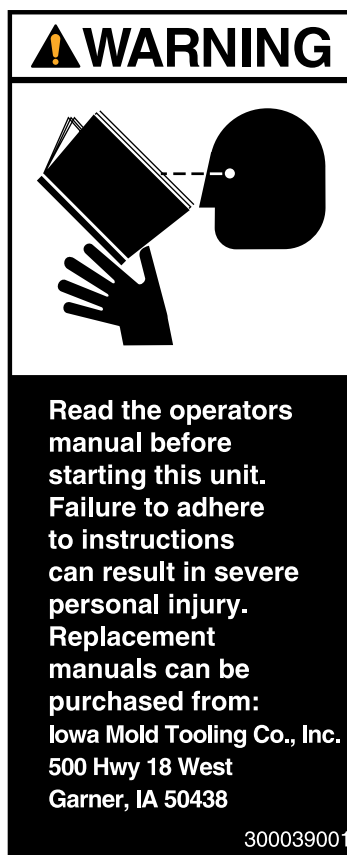


Figure 1. To be placed on visor or dash near start-up procedure decal.



Figure 2. To be placed on body near oil sump filler cap.

SAFETY INFORMATION

CONTINUED



Figure 3. To be placed on body near air service valve.

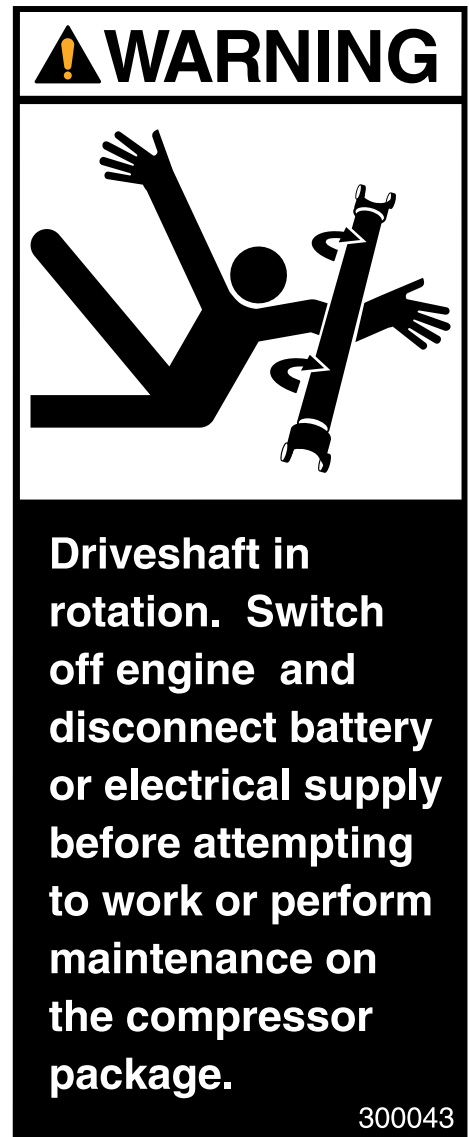


Figure 4. To be placed on body near compressor mounting foot.

SAFETY INFORMATION**COMPRESSOR FLUID**

**USE IMT ROTARY SCREW COMPRESSOR
FLUID ONLY.**

- 1. CHECK FLUID LEVEL WITH TRUCK OFF
AND PARKED ON LEVEL GROUND BEFORE
STARTING COMPRESSOR.**
- 2. ADD FLUID IF NONE IS SHOWING IN
SIGHTGLASS.**

301475

Figure 5. To be placed on body near oil sump filler cap.

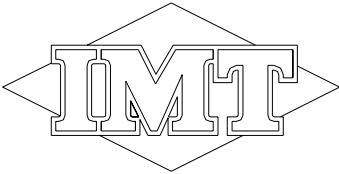
	
IOWA MOLD TOOLING CO., INC.	
500 HWY 18 WEST	GARNER, IA 50438
MODEL NO. _____	
SERIAL NO. _____	
INPUT RPM _____	
301480	

Figure 6. Serial number and name plate to be placed on door jam.



Figure 7. To be placed on body near oil sump filler cap.

COMPRESSOR TERMINOLOGY

ATF

Automatic transmission fluid.

AIR/OIL COALESCER

Performs second stage separation of oil from compressed air feeding air 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 and 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.

SAFETY VALVE

A valve located on the oil sump which opens in case of excessive pressure. Sometimes referred to as the pop-off or pressure relief valve.

SHUTDOWN SWITCH

Works in conjunction with a power relay, sending a signal to stop the compressor power source in cases of high temperature. 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

CONTINUED

COMPRESSOR ASSEMBLY

The IMT PTO 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 engine is transferred to the male rotor through a drive shaft and gears in the gear housing. The female rotor is driven by the male rotor. There are four lobes on the male rotor while the female rotor has five roots.

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 and serves these purposes:

1. Lubricates the rotating parts and bearings.
2. Serves as a cooling agent for the compressed air.
3. 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 de-fusion 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.

DESCRIPTION OF COMPONENTS

CONTINUED

SAFETY VALVE

The pop safety valve is set at 200 PSI and 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 a spin-on housing and is independent of the sump. 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 elbow hose fitting which is located at the compressor.

MINIMUM PRESSURE ORIFICE

The minimum pressure orifice 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 and has a safety bypass built into it.

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 down stream of the oil filter. This valve maintains compressor oil temperature of 180°F in ambient temperatures less than 100°F.

DESCRIPTION OF COMPONENTS

CONTINUED

ELECTRICAL AND SAFETY CIRCUIT SYSTEM

The IMT PTO unit is supplied with a hourmeter, wire harness and a high compressor discharge temperature switch. Engine shutdown occurs in the event of high compressor temperature, on compressor trucks with cable shift PTO's. Compressor trucks with hot shift PTO's 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. Blow down time interval takes between 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 on the coalescer head 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 175 psi.

NOTE

Most air tools operating pressure range is between 90 and 125 psi. Operating above the tools recommended pressures will decrease the life of the tool. Higher operating pressure can also over torque nut and bolts fatiguing the fastener and mating parts. 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 serving as a check valve at shutdown.

DESCRIPTION OF COMPONENTS

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.

INSPECTION, LUBRICATION, AND MAINTENANCE

This section contains instructions for performing the inspection, lubrication, and maintenance procedures required to maintain the compressor in proper operating condition. The importance of performing the maintenance described herein cannot be over emphasized.

The periodic maintenance procedures to be performed on the equipment covered by this manual are listed below. It should be understood that the intervals between inspections specified are maximum interval. 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 repairs. Daily visual inspections should become a routine.

The LUBRICATION AND MAINTENANCE CHART lists serviceable items on this compressor package. The items are listed according to their frequency of maintenance, followed by those items which need only "As Required" maintenance.

The maintenance time intervals are expressed in hours. The hourmeter shows the total number of hours your compressor has run. Use the hourmeter readings for determining your maintenance schedules. 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, and all items under "EVERY 50 HOURS" should be serviced for the second time, and so on.

DANGER

COMPRESSOR MUST BE SHUT DOWN AND COMPLETELY RELIEVED OF PRESSURE PRIOR TO CHECKING FLUID LEVELS. OPEN SERVICE VALVE TO ENSURE RELIEF OF SYSTEM AIR PRESSURE. FAILURE TO COMPLY WITH THIS WARNING MAY CAUSE DAMAGE TO PROPERTY AND SERIOUS BODILY HARM.

LUBRICATION AND MAINTENANCE CHART

INTERVAL	ACTION
PERIODICALLY DURING OPERATION	1. Observe all gauge reading. Note any change from the normal reading and determine the cause. Have necessary repairs made. (NOTE: "NORMAL" is the usual gauge reading when operating at similar conditions on a day to day operation.)
EVERY 10 HOURS OR DAILY	1. Check the 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 HOURS OR MONTHLY	1. Drain water from compressor oil.
EVERY 100 HOURS	1. Grease compressor drive shaft.
EVERY 500 HOURS OR 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 HOURS	1. Change coalescing element.
PERIODICALLY OR 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 is to be changed after the first 50 hours of operation. After this, normal intervals are to be followed.

LUBRICANT RECOMMENDATIONS

CONTINUED

WARNING

IT IS IMPORTANT THAT THE COMPRESSOR OIL BE OF A RECOMMENDED TYPE AND THAT THIS OIL AS WELL AS THE AIR FILTER, OIL FILTER, AND COALESCER ELEMENTS BE INSPECTED AND REPLACED 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.

FAILURE TO COMPLY WITH THIS WARNING MAY CAUSE DAMAGE TO PROPERTY AND SERIOUS BODILY HARM.

The following are general characteristics for IMT rotary screw lubricant. Due to the impossibility of 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, 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 PTO 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

MIXING DIFFERENT TYPES OR BRANDS OF LUBRICANTS IS NOT RECOMMENDED DUE TO THE POSSIBILITY OF A DILUTION OF THE ADDITIVES OR A REACTION BETWEEN ADDITIVES OF DIFFERENT TYPES.

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 forfeit the warranty.

LUBRICANT RECOMMENDATIONS

LUBRICANT CHARACTERISTICS

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.

NOTE

NO LUBRICANT, HOWEVER GOOD AND/OR EXPENSIVE, CAN REPLACE PROPER MAINTENANCE AND ATTENTION. SELECT AND USE IT WISELY.

MAINTENANCE

CONTINUED

If some of the maintenance intervals in the schedule outlined in this manual seem to be rather short, it should be considered that one hour's operation of a compressor is 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 make sure that the sump is completely relieved of pressure. Oil is added at the fill cap on the side of the receiver/sump. A drain plug is provided at the bottom of the sump. The proper oil level, when unit is shut down and 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 given in "Compressor Specifications".

DANGER

DO NOT ATTEMPT TO DRAIN CONDENSATE, REMOVE THE OIL LEVEL FILL PLUG, OR BREAK ANY CONNECTION IN THE AIR OR OIL SYSTEM WITHOUT SHUTTING OFF COMPRESSOR AND MANUALLY RELIEVING PRESSURE FROM THE SUMP. FAILURE TO COMPLY WITH THIS WARNING MAY CAUSE DAMAGE TO PROPERTY AND SERIOUS BODILY HARM.

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.

Frequency of maintenance of the filter depends on dust conditions at the operating site. The filter element must be serviced 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 it's reading first and then by the maintenance intervals outlined.

MAINTENANCE

CONTINUED

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 pressure drop across it exceeds 15 PSI. Dirty oil clogs the element and increases the pressure drop across it.

To replace element proceed as follows:

1. Shutdown compressor and wait for complete blow down (zero pressure).
2. Disconnect drain line.
3. Turn element counterclockwise for removal (viewing element from bottom).
4. Install new rubber seal in head and supply a film of fluid directly to seal.
5. Rotate element clockwise by hand until element contacts seal (viewing element from bottom).
6. Rotate element approximately one more turn clockwise with band wrench near the top of element.
7. Reconnect drain line.
8. Run system and check for leaks.

NOTE

When connecting drain line care must be taken to hold onto canister nut securely when tightening the hose fitting.

WARNING

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, POSSIBLY VOIDING THE WARRANTY AND/OR RESULTING IN DAMAGE TO PROPERTY AND SERIOUS BODILY HARM.

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.

MAINTENANCE

CONTINUED

OIL FILTER

The compressor oil filter is a spin-on, throw away type.

To replace filter proceed as follows:

1. Make sure system pressure is relieved.
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.

WARNING

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, POSSIBLY VOIDING THE WARRANTY AND/OR RESULTING IN DAMAGE TO PROPERTY AND SERIOUS BODILY HARM.

OIL COOLER

The interior of the oil cooler should be cleaned when the pressure drop across it at full flow exceeds 25 PSI. The following procedure has been recommended by the vendor who supplies the 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.

MAINTENANCE

CONTINUED

SHAFT SEAL INSTALLATION INSTRUCTIONS

1. Remove pto drive shaft, companion flange and key.
2. Remove (4) socket head metric bolts on cover and 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 it's removal.
4. Clean shaft and surface of bearing remove all burrs from shaft where the wear sleeve gets installed.
5. Press new wear sleeve on to shaft. Oil heating new wear sleeve to 212°F approximately aids in the installation of this ring.
6. Press old shaft seal out of cover and clean cover for assembly of new seal.
7. Press new seal into cover (included in repair kit).
8. Apply silicone to outside diameter of assembly tool and slide assembly onto drive shaft until it touches the wear sleeve (tool and silicone included in repair kit).
9. Install cover, new o-ring, new seal assembly, over shaft and assembly tool. Note: Assembly tool is slip fit on shaft and allows new seal in cover to slide on to wear sleeve without cutting the lip of shaft seal. One new cover is on the assembly tool.
10. Bolt cover on squarely and slide off assembly tool.
11. Reinstall drive line assembly.

NOTE

THE SEAL COVER IS INSTALLED USING A O-RING GASKET. CARE SHOULD BE TAKEN TO NOT PINCH THE O-RING OUT OF IT'S GROOVE UPON REINSTALLATION.

PTO

The PTO should be serviced in accordance with the PTO manual. The SAE side-mount type of PTO is lubricated by the transmission oil and thus requires little maintenance. It is strongly recommended that you periodically torque the fasteners in accordance with the PTO manual.

HYDRAULIC PUMP OPTION

The single cog belt arrangement is sized for an average life of 1000 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 there after. Belt deflection is to be checked at midpoint between both pulleys. Belt deflection is to be 1/8" at 3.5 lbs. Minimum to 5.0 lbs. Maximum.

BELT TENSION - Belt tension is accomplished as follows:

1. Loosen the 3/8" bolts that attaches the hydraulic pump to mounting plate. Pump should now pivot free on bottom mounting bolt.
2. Pivot hydraulic pump until the correct deflection is accomplished. Hold pump in the position until the two 3/8" bolts are retightened.

NOTE

Over-tensing belt can damage compressor and hydraulic pump. When tensing belt all hardware should be broken loose only to the point in which the hydraulic pump can pivot.

TROUBLESHOOTING

CONTINUED

This section contains instructions for troubleshooting the equipment following a malfunction.

The troubleshooting procedures to be performed on the equipment are listed below. Each symptom of trouble for a component or system is followed by a list of probable causes of the trouble and suggested procedures to be followed to identify the cause.

In general, the procedures listed should be performed in the order in which they are listed, although the order may be varied if the need is indicated by conditions under which the trouble occurred. In any event, the procedures which can be performed in the least amount of time and with the least amount of removal or disassembly of parts, should be performed first.

TRUCK ENGINE WILL NOT START

Most problems in this area will not be connected with the compressor, and should therefore be checked out with the engine manual.

Manual transmissions require our safety shutdown switch to shut off the engine in cases of high temperature. If this occurs the truck can be restarted once the high temperature condition is not present or by disengaging the PTO. In most cases this switch is located in the 1" discharge line between the compressor and the receiver tank. If the compressor hi-temperature switch has shut off the engine the compressor truck should be taken in for service/ troubleshooting.

UNPLANNED SHUTDOWN

When the operation of the machine has been interrupted by an unexplained shutdown, check the following:

1. Check the fuel level and truck dash gauges and indications for possible engine problems.
2. Check that the compressor oil is at proper level.
3. Check oil cooler for dirt, slush, ice on the fins, or any other obstructions to the cooling air flow.
4. Compressor Hi-Temp Switch is normally open until the 240° F shutdown temperature is reached. At this time the switch closes sending power to relay thus interrupting the engine operation. Check continuity across this switch. If it shows a normally closed state when the oil is below 240°, then the switch is defective. Compressors installed on the FORD 4R100 automatic do not kill the truck motor in the event of high discharge temperature. The shutdown switch and relay, control the power to the hot shift PTO only. In situations of high compressor discharge temperature, the PTO will disengage.
5. Make a thorough external check for any cause of shutdown such as broken hose, broken oil lines, loose or broken wire, etc.

TROUBLESHOOTING

CONTINUED

IMPROPER DISCHARGE PRESSURE

1. If discharge pressure is too low, check the following:
 - a. Too much air demand. (Air tools require more air than what the compressor can produce, air tools are free wheeling without resistance.)
 - b. Service valve wide open to atmosphere.
 - c. Leaks in service line.
 - d. Restricted compressor inlet air filter.
 - e. Faulty control system operation (i.e. regulator is sending a signal to close inlet valve at all times.)
2. If discharge pressure is too high or safety valve blows, check the following:
 - a. Faulty discharge pressure gauge.
 - b. Coalescer plugged up.
 - c. Faulty safety valve.
 - d. Faulty regulator (regulator air pressure signal is not getting to inlet valve).

SUMP PRESSURE DOES NOT BLOW DOWN

If after the compressor is shutdown, pressure does not automatically blow down, check for:

1. Automatic blow down valve may be inoperative at coalescer head.
2. Blockage in air line from side of inlet valve to blow down valve.
3. Muffler at blow down clogged.

OIL CONSUMPTION

Abnormal oil consumption or oil in service line, check for the following:

1. Over filling of oil sump.
2. Leaking oil lines or oil cooler.
3. Plugged oil return line: check entire line, to the compressor.
4. Defective coalescer element.
5. Compressor shaft seal leakage.
6. Discharge pressure below 65 PSI or above 175 PSI.

TROUBLESHOOTING

ENGINE LUGGING

If engine does not accelerate or will not maintain full load speed, check the following:

1. Engine problem (refer to engine manual).
2. Compressor discharge pressure too high.
3. Improper compressor speed. (Compressor running at truck idle.)
4. Operating at above maximum altitude rating of compressor and truck.

COALESCER PLUGGING

If the coalescer element has to be replaced frequently because it is plugging up, it is an indication that foreign material may be entering the compressor inlet or the compressor oil is breaking down.

Compressor oil can break down prematurely for a number of reasons.

(1) Extreme operating temperature, (2) negligence in draining condensate from oil sump, (3) using the improper type of oil, (4) dirty oil, (5) oil return line plugged.

The complete air inlet system should be checked for leaks.

HIGH COMPRESSOR DISCHARGE TEMPERATURE

1. Check compressor oil level. Add oil if required (see Section for oil specifications).
2. Check thermal valve operation.
3. Clean outside of oil cooler.
4. Clean oil system (cooler) internally.

COMPRESSOR OPERATION


CONTINUED

STARTING/STOPPING

An operating procedure decal is furnished with every PTO Compressor. The decal should be attached to the dashboard or visor of the truck where it will be visible to the driver. Cable shift PTO's require the use of decal 301476. Hot shift PTO's are to use decal 301661. Both decals are supplied with your kit. Install the appropriate decal based on the type of PTO used.

The following decal is a sample.

THIS TRUCK IS EQUIPPED WITH A



PTO COMPRESSOR PACKAGE

START UP PROCEDURE

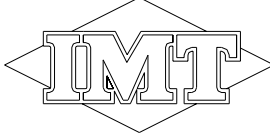
1. SET BRAKES PER COMPANY PROCEDURE AND CHOCK WHEELS.
2. CHECK COMPRESSOR OIL LEVEL, ADD IF LOW.
3. DEPRESS CLUTCH, ENGAGE P.T.O.
4. PUT TRANSMISSION IN NEUTRAL.
5. LET OUT CLUTCH AND DEPRESS FUEL PEDAL MOMENTARILY.

SHUTDOWN PROCEDURE

1. CLOSE SERVICE VALVE.
2. DEPRESS CLUTCH AND HOLD FOR COMPRESSOR BLOWDOWN.
3. DISENGAGE P.T.O.

301476

THIS TRUCK IS EQUIPPED WITH A



PTO COMPRESSOR PACKAGE

START UP PROCEDURE

1. STOP VEHICLE AND ENGAGE PARKING BRAKES.
2. SHIFT TRANSMISSION TO NEUTRAL.
3. DEPRESS PTO ON/OFF SWITCH TO ON POSITION. ENGAGEMENT WILL BE COMPLETE WHEN RED INDICATOR LIGHT COMES ON.

SHUTDOWN PROCEDURE

1. CLOSE SERVICE VALVE.
2. DEPRESS PTO ON/OFF SWITCH TO OFF POSITION.

301661

COMPRESSOR OPERATION**CONTINUED**

Before starting the PTO/compressor, read this section thoroughly. Familiarize yourself with the controls and indicators, their purpose, location, and use.

CONTROL OR INDICATOR	PURPOSE
HOURLMETER	Indicator accumulated hours of actual compressor operation.
FLUID LEVEL SIGHTGLASS	Indicates fluid level in the sump. Proper level should fill half the glass. Check this level when the compressor is disengaged 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 unit 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	Resticts air flow to balance sump and service air pressure. Assures a minimum of 65 PSI to maintain compressor lubrication.

COMPRESSOR OPERATION

OPERATING CONDITIONS

The following conditions should exist for maximum performance of the PTO/compressor. The truck should be as close to level as possible when operating. The compressor will operate on a 15 degree sideward and lengthwise tilt without any adverse problems. Fluid carry over and/or oil starvation may occur if operated beyond this tilt.

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 (13.78kPa) OPERATING AND A CAPACITY RATING EQUAL TO THE COMPRESSOR.

NOTE

THE COMPRESSOR SERVICE VALVE SHOULD BE RELOCATED TO THE HOSE REEL INLET OR BE THE CUSTOMERS AIR CONNECTION PORT WHEN A HOSE REEL IS NOT USED. TYPICAL PLUMBING FROM 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).

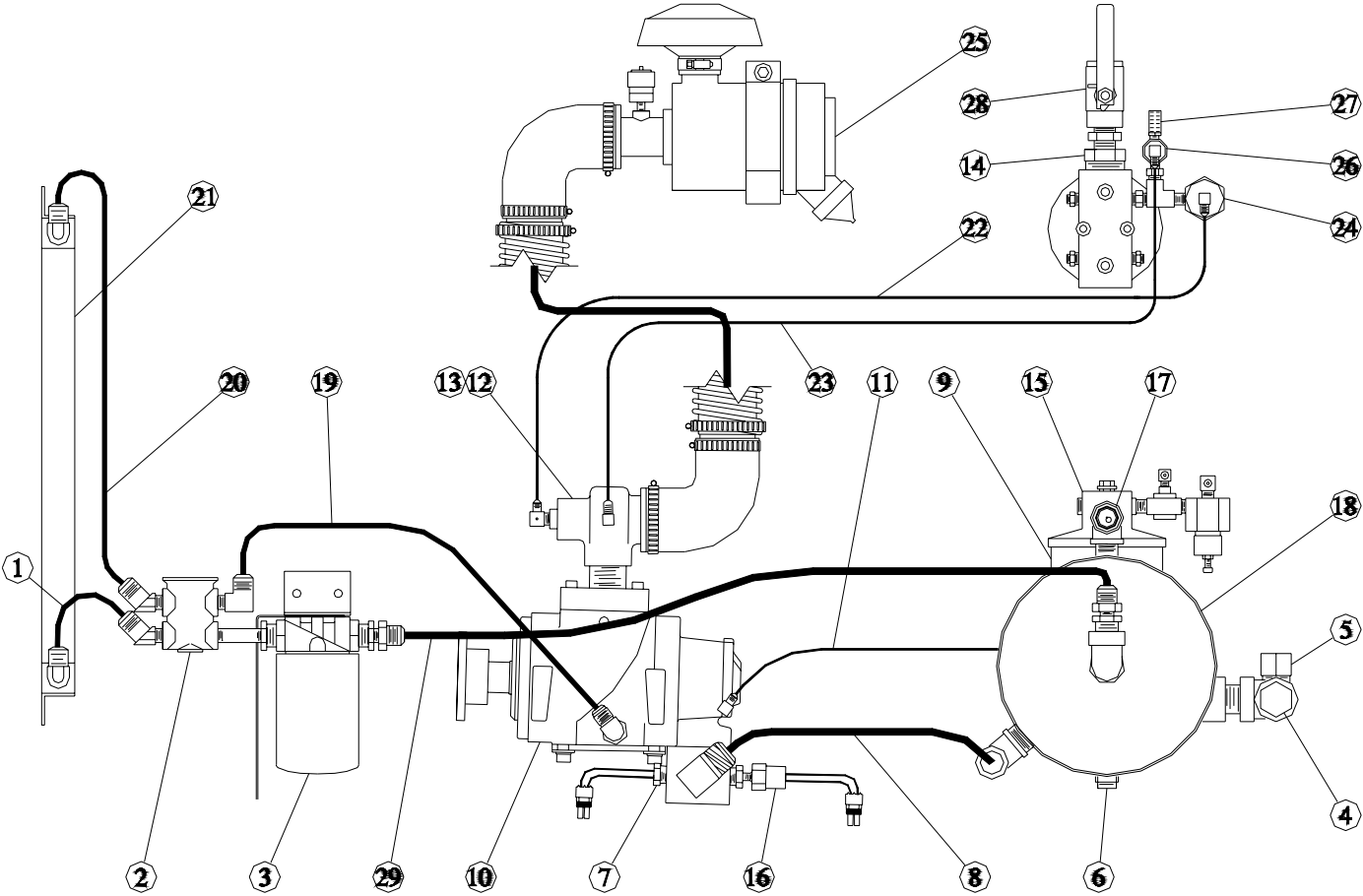
FLASH RECOVERY PROCEDURE FOR ROTARY COMPRESSORS

The following highlights the steps required to flush system when it has flashed.

1. Flush air compressor and check for rotor grinding.
 - (a) Remove 2½" inlet hose from inlet valve and remove the driveshaft.
 - (b) Drain sump tank.
 - (c) Remove 1" hose from side of oil sump tank.
 - (d) Place the 1" hose at same height of inlet valve and fill inlet of compressor with clean synthetic cool blue oil. Once full, lower hose into bucket and rotate compressor by hand to evacuate any remaining oil. Repeat until oil is clean. Make sure the 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, disconnect and mark all hoses and remove oil tank. Remove tank.
 - (b) Fill tank with synthetic cool blue oil, until about half full. Slop oil from end to end, then drain out oil at drain plug in bottom of tank. Check drain-plug and tee for any restrictions, (i.e. chunks of hose).
 - (c) Reinstall tank and install the filler tube.
 - (d) Replace the ½" hose from oil tank to oil filter head. Verify that plastic bypass valve is intact in filter head.
3. Flush oil cooler
 - (a) Replace both hoses from cooler to thermal valve.
 - (b) Inspect 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 blows out towards cab of truck.
 - (c) Replace 1" hose from compressor to oil sump tank.
 - (d) Replace all filters, air, oil and coalescer.
 - (e) Re-connect all hoses and add synthetic cool blue oil to proper 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 and truck should kill.
 - (b) You should be ready to start air compressor for testing. Start truck; engage PTO, run compressor for five minutes. Drain oil, change oil filter, fill oil to proper level, and finish testing.

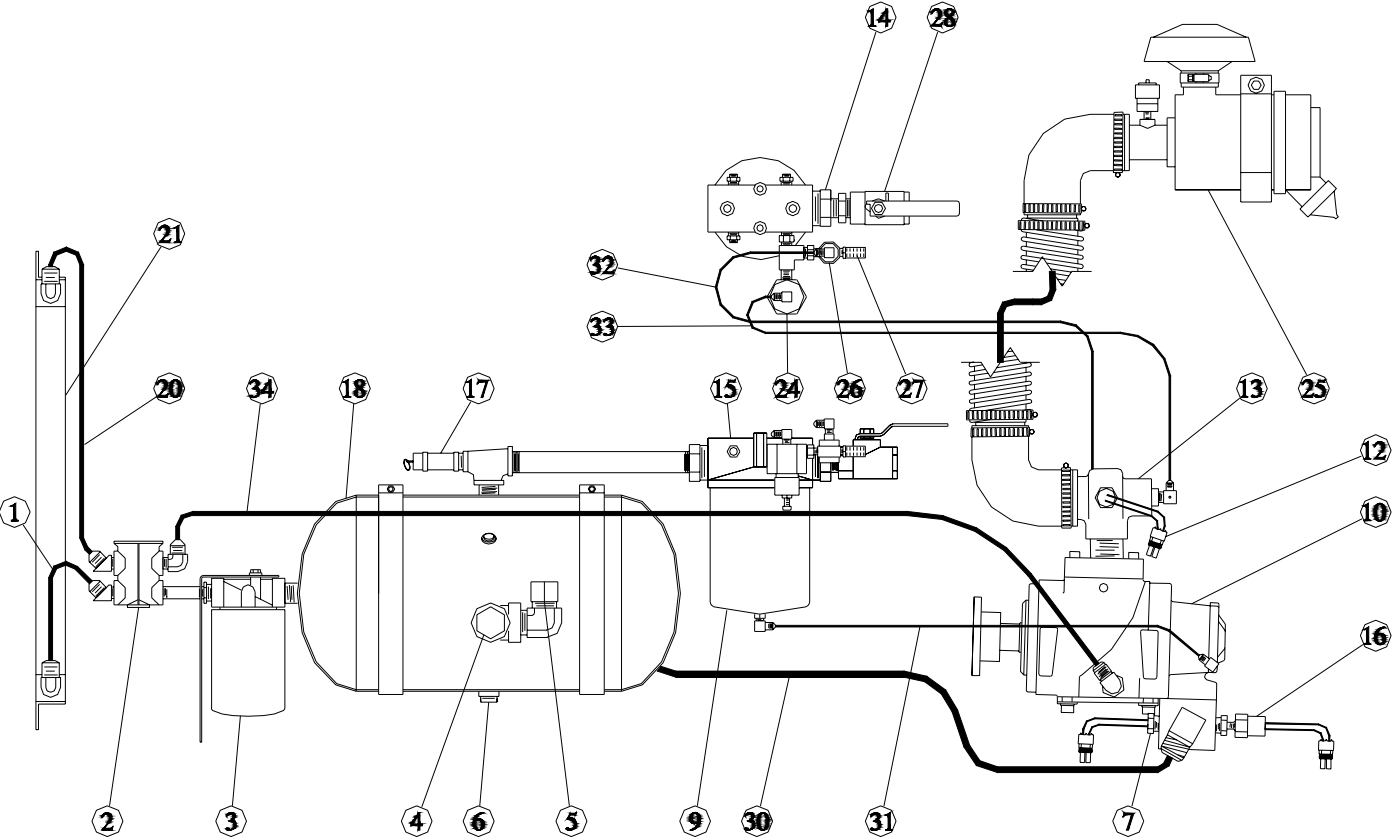
AIR/OIL SCHEMATIC-20019 & 20031-DWG

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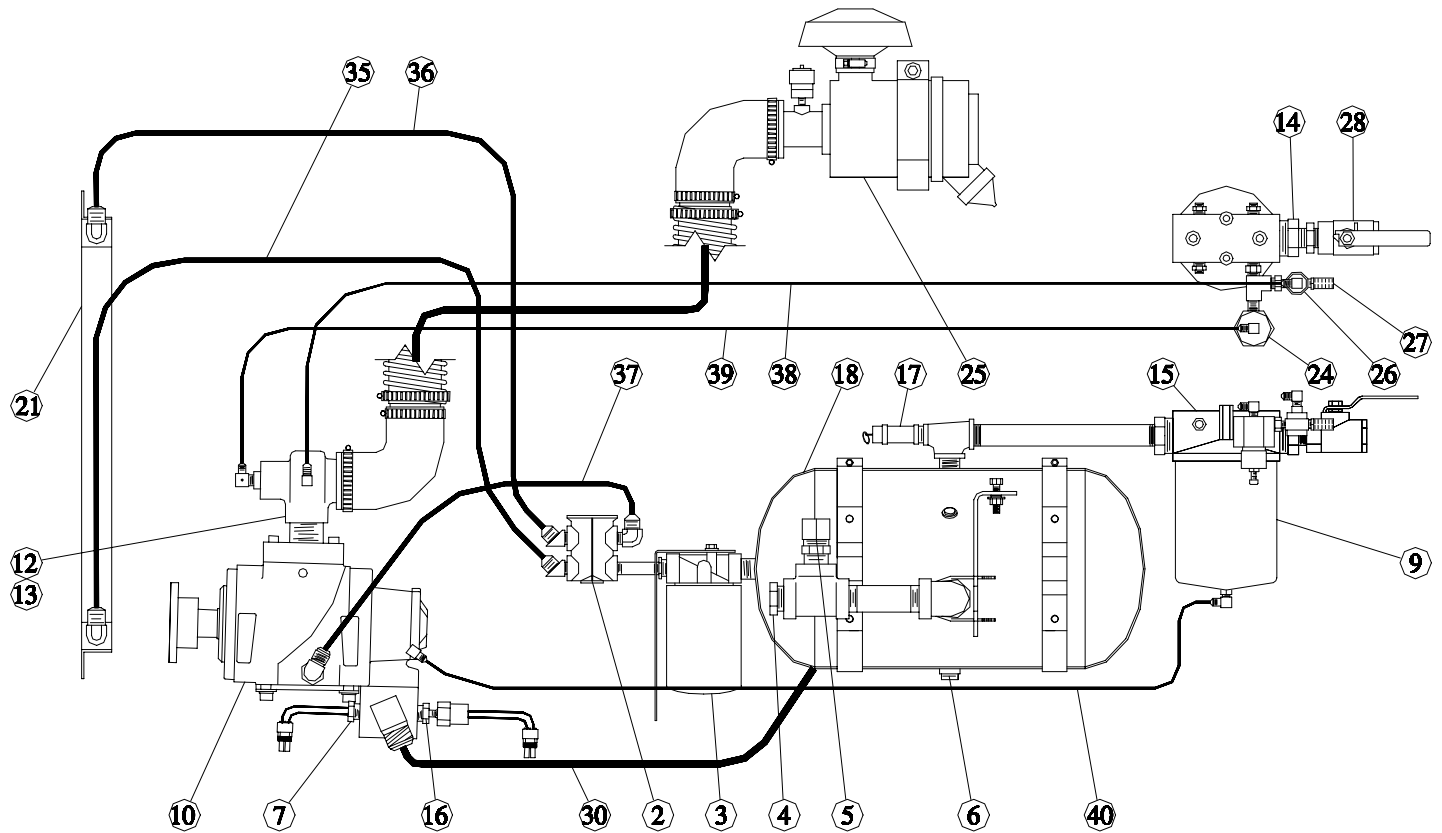
AIR/OIL SCHEMATIC-20021-DWG

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AIR/OIL SCHEMATIC-20028 & 20032

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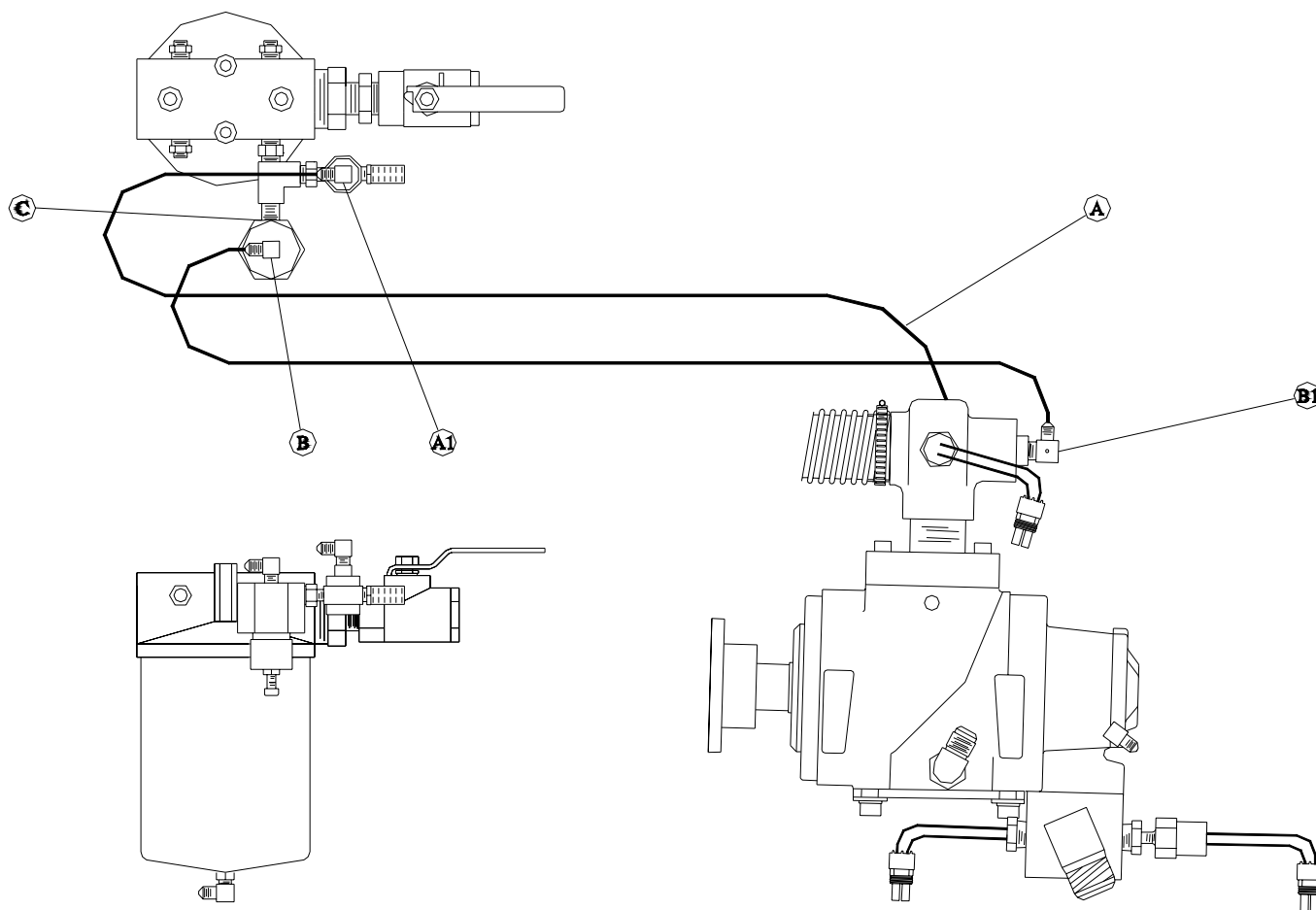


AIR/OIL SCHEMATIC-PARTS

ITEM	PART NUMBER	DESCRIPTION	20019	20021	20028	20031	20032
			QTY	QTY	QTY	QTY	QTY
1	975408-108	HOSE, COOLER FEED 1/2	1	1		1	
2	301261	VALVE, THERMAL 3/8 - 180 DEG	1	1	1	1	1
3	300005	ELEMENT, OIL FILTER 8060	1	1	1	1	1
4	300783	SIGHT GLASS, OIL LEVEL 1 SAE	1	1	1	1	1
5	301466	CAP, JIC 1 W/ HOLE	1	1	1	1	1
6	300108	PLUG, MAGNETIC 1/2 NPT	1	1	1	1	1
7	301040	SWITCH, SAFETY SHUTDOWN N.O.	1	1	1	1	1
8	975416-156	HOSE, COMPRESSOR DICHARGE 1	1			1	
9	301670	COALESCER, SPIN-ONELEMENT IMT SHORT	1	1	1	1	1
10	301331	COMPRESSOR, R.S. D.D. B101	1	1	1	1	1
11	975404-175	HOSE, COALESCER OILRETURN 1/4	1			1	
12	301421	SWITCH, PRESSURE 5# N.C.	1	1	1	1	1
13	301587	VALVE, 1-1/4 TEE INLET	1	1	1	1	1
14	301404	ORFICE, MINIMUM PRESSURE 1/2	1	1	1	1	1
15	300331	HEAD, COALESCER	1	1	1	1	1
16	301422	SWITCH, PRESSURE 30# N.O.	1	1	1	1	1
17	300023-200	VALVE, RELIEF 1/2 NPT 200 LBS.	1	1	1	1	1
18	300017	SUMP, 10 DISCHARGE	1	1	1	1	1
19	975508-030	HOSE, COMPRESSOR OIL FEED 1/2	1			1	
20	975508-090	HOSE, COOLER RETURN 1/2	1	1		1	
21	301400	COOLER, FRONT MOUNT IMT	1	1	1	1	1
22	975404-168	HOSE, REGULATOR OUTLET 1/4	1			1	
23	975404-168	HOSE, BLOWDOWN PILOT 1/4	1			1	
24	300057	VALVE, REGULATOR 1/4	1	1	1	1	1
25	300918	ASSY, AIR FILTER 4.8	1	1	1	1	1
26	300715	VALVE, BLOWDOWN 1/8 NPT	1	1	1	1	1
27	300716	MUFFLER, EXHAUST 1/8	1	1	1	1	1
28	300022-050	VALVE, SERVICE 1/2 W/ VENT	1	1	1	1	1
29	975408-144	HOSE, OIL FILTER FEED 1/2	1			1	
30	975416-027	HOSE, COMPRESSOR DISCHARGE 1		1	1		1
31	975404-044	HOSE, COALESCER OIL RETURN		1			
32	975404-041	HOSE, BLOWDOWN PILOT 1/4		1			
33	975404-040	HOSE, REGULATOR OUTLET 1/4		1			
34	975508-044	HOSE, COMPRESSOR OIL FEED 1		1			
35	975408-120	HOSE, COOLER FEED 1/2			1		1
36	975408-103	HOSE, COOLER RETURN 1/2			1		1
37	975508-015	HOSE, COMPRESSOR OIL FEED			1		1
38	975404-048	HOSE, BLOWDOWN PILOT 1/4			1		1
39	975404-050	HOSE, REGULATOR OUTLET 1/4			1		1
40	975404-056	HOSE, COALESCER OIL RETURN			1		1

CONTROL HOSE PORT CALL OUTS

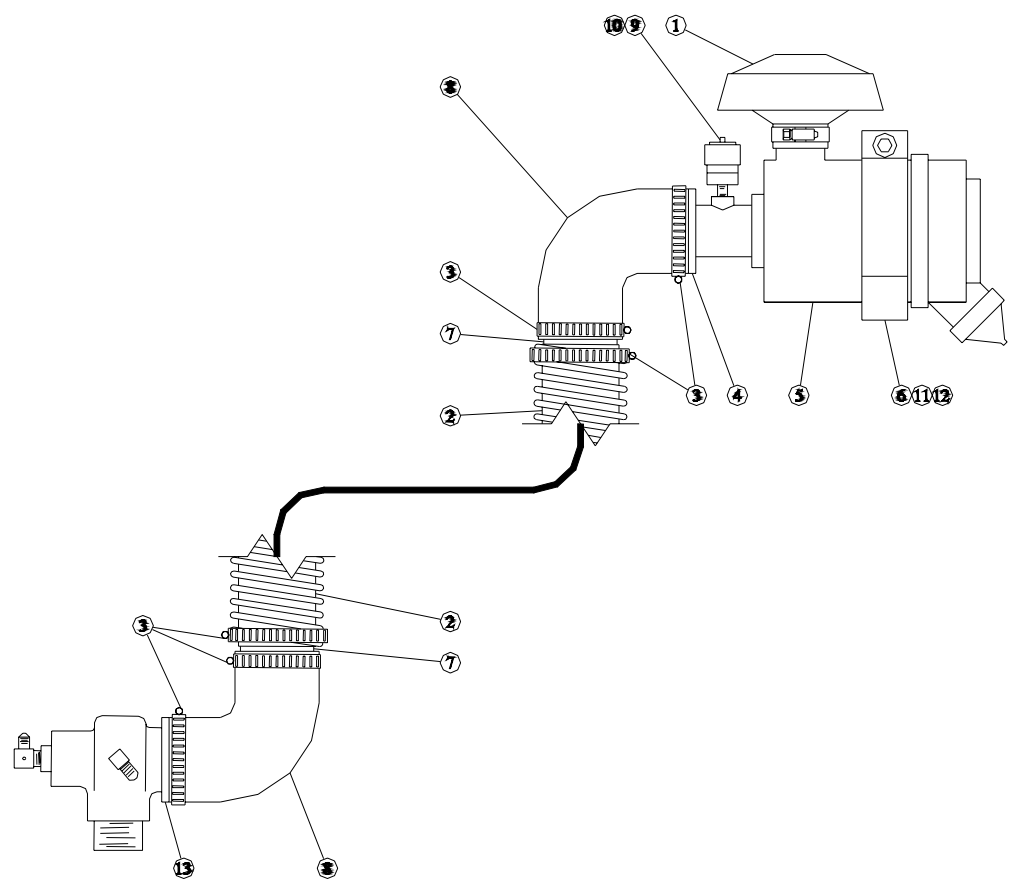
PORT	DESCRIPTION
A	AIR SIGNAL SUPPLY, AT SHUTDOWN ONLY TO A1
A1	SIGNAL FROM "A" AT SHUTDOWN TO EXHAUST AIR FROM COMPRESSOR SYSTEM
B	OUTLET REGULATED AIR PRESSURE SIGNAL, PRESENT ONLY WHEN THERE IS NO DEMAND FOR AIR. I.E. CLOSED SERVICE VALVE OR AIR PRESSURE DEAD HEADED INTO TOOL THAT IS NOT BEING USED. MAXIMUM PRESSURE IN THIS LINE IS 50 PSIG.
B1	AIR SIGNAL FROM "B" REGULATOR OUTLET TO COMPRESSOR INLET VALVE REGULATING PORT. AIR SIGNAL MODULATES AIR OPENING FROM OPEN TO CLOSED WHEN THERE IS NO DEMAND FOR AIR.
C	SYSTEM AIR PRESSURE SIGNAL PORT TO AIR PRESSURE REGULATOR INLET. AIR PRESSURE IS PRESENT ANYTIME THERE IS AIR PRESSURE IN THE SYSTEM.



AIR INLET SYSTEM

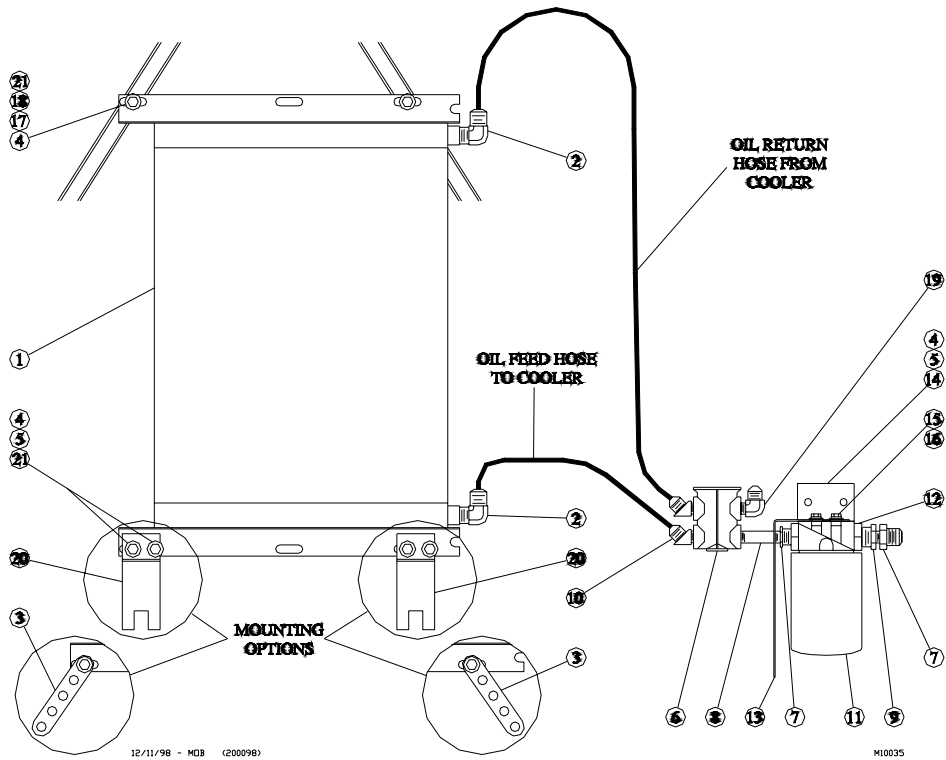
ITEM	PART NUMBER	DESCRIPTION	20019	20021	20028	20031	20032
			QTY	QTY	QTY	QTY	QTY
1	300857	CAP, AIR FILTER 4.8	1	1	1	1	1
2	300109-250	HOSE, AIR INLET 2-1/2 ID GT	8.3 FT	8.3 FT	8.3 FT	8.3 FT	8.3 FT
3	300033-250	CLAMP, AIR INLET HOSE 2-1/2	8	8	8	8	8
4	301397	INSERT, RUBBER 2 1/2 X 1-3/4	1	1	1	1	1
5	300918	ASSY, AIR FILTER 4.8	1	1	1	1	1
6	300855	BAND, AIR FILTER MTG. 4.8	1	1	1	1	1
7	300034-250	SLEEVE, 2-1/2 AIR	3	3	3	3	1
8	300071-250	ELBOW, RUBBER 2-1/2 90 DEG	2	2	2	2	1
9	922202-015	NIPPLE, 1/8 X 1 1/2	1	1	1	1	1
10	300853	INDICATOR, AIR FILTER ELEMENT	1	1	1	1	1
11	929705-100	BOLT, WHIZLOCK GRS 5/16-18 X 1	2	2	2	2	1
12	925305-283	NUT, WHIZLOCK 5/16-18	2	2	2	2	1
13	301588	INLET, RUBBER 2-1/2 X 2	1	1	1	1	1

* REPLACEMENT AIR FILTER ELEMENT P/N 300854

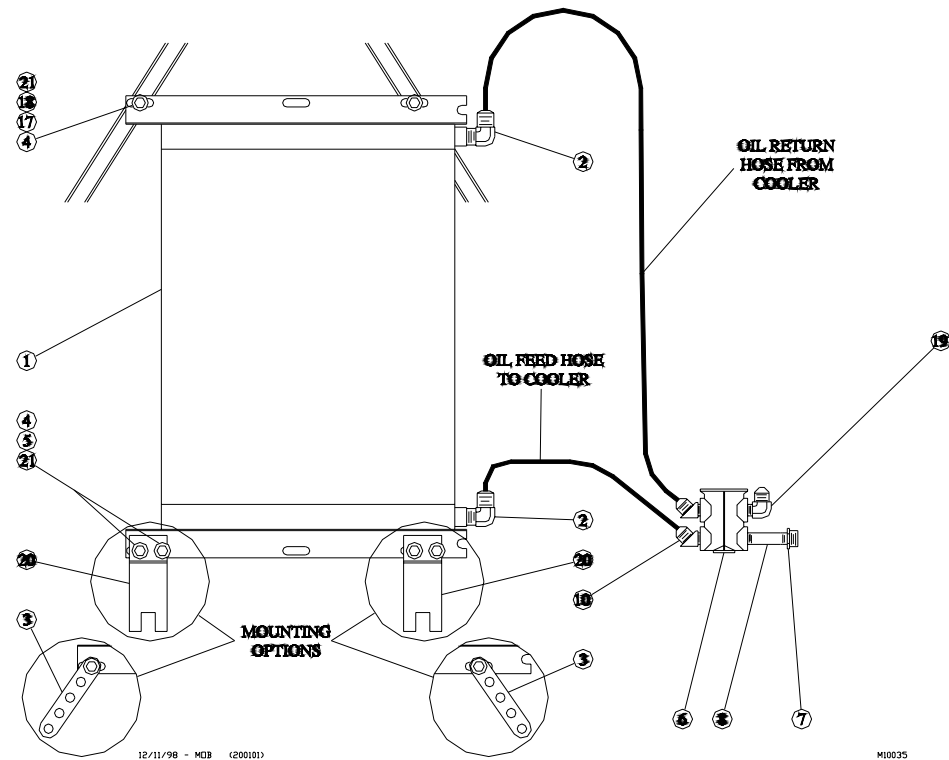


OIL COOLING SYSTEM-20019 & 20031

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OIL COOLING SYSTEM-20021, 20028 & 20032

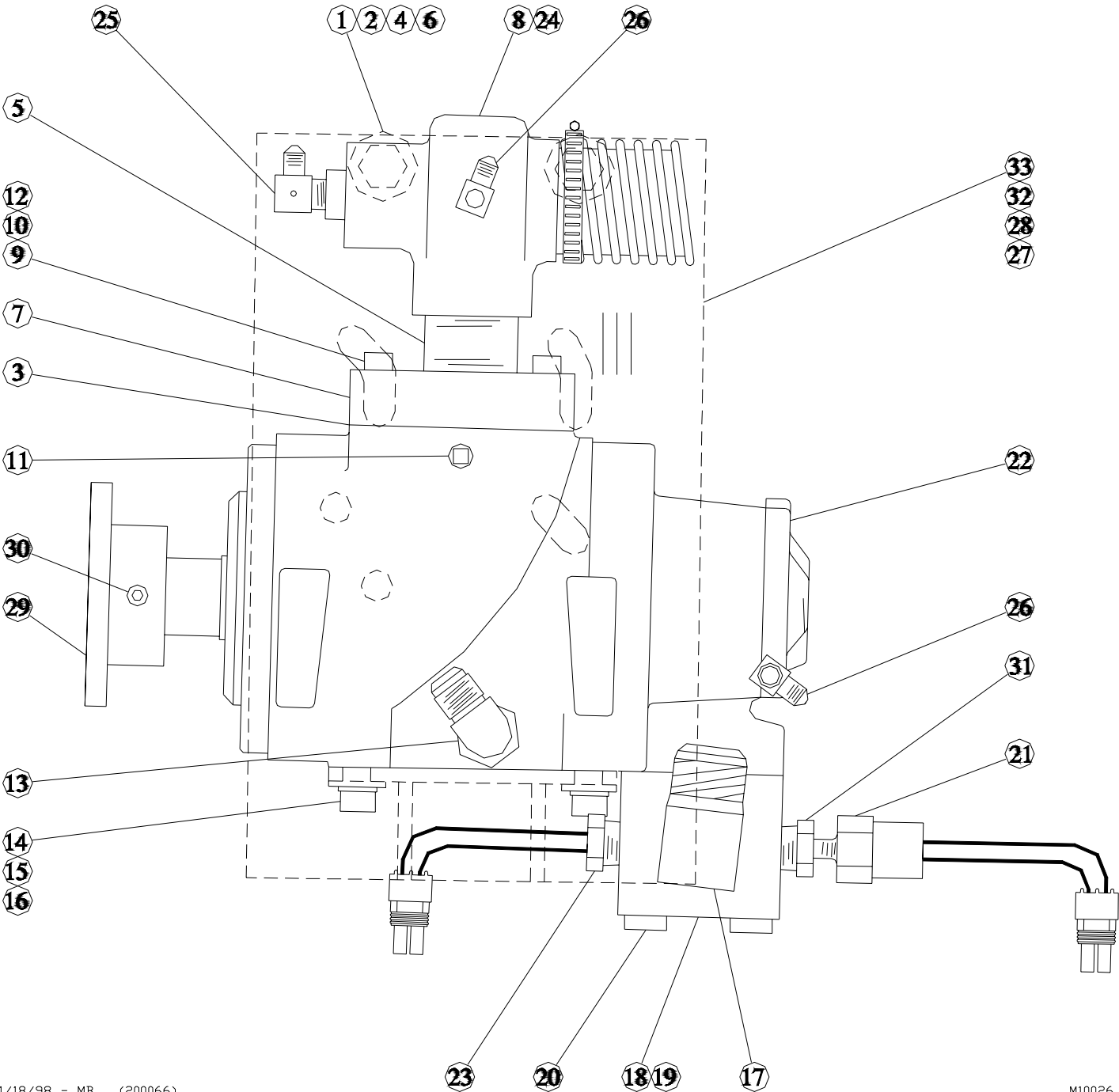


OIL COOLING SYSTEM-PARTS

ITEM	PART NUMBER	DESCRIPTION	20019	20021	20028	20031	20032
			QTY	QTY	QTY	QTY	QTY
1	301400	COOLER, FRONT MOUNT IMT	1	1	1	1	1
2	960208-050	ELBOW, 1/2 X 1/2 37 DEG FL	2	2	2	2	2
3	301481	STRAP, OIL COOLER MTG.	2	2	2	2	2
4	925305-283	NUT, WHIZLOCK 5/16-18	8	8	8	8	8
5	929705-100	BOLT, WHIZLOCK GR5 5/16-18 X 1	6	6	6	6	6
6	301261	VALVE, THERMAL 3/8-180 DEG	1	1	1	1	1
7	907603-015	BUSHING, REDUCING 3/4 X 3/8	2	1	1	2	1
8	922206-030	NIPPLE, 3/8 X 3 HEAVY	1	1	1	1	1
9	960108-038	CONNECTOR, 3/8 NPT X 1/2 JIC M	1			1	
10	960008-038	ELBOW, 1/2" X 3/8" 45 DEG	2	2	2	2	2
11	300005	ELEMENT, OIL FILTER 8060	1			1	
12	300599	HEAD, OIL FILTER	1			1	
13	301487	GUARD, OIL FILTER	1			1	
14	300625	BRACKET, COALESCER/OIL	1			1	
15	938004-062	WASHER, LOC 1/4	2			2	
16	929104-075	BOLT, HEX GR5 1/4-20 X 3/4	2			2	
17	901215-010	COUPLING, PIPE 1/4	2	2	2	2	2
18	929105-200	BOLT, HEX GR5 5/16-18 X 2	2	2	2	2	2
19	960208-038	ELBOW, 1/2 JIC X 3/8 NPT 37 DEG FL	1	1	1	1	1
20	301633	BRACKET, OIL COOLER FR MTG	2	2	2	2	2
21	938205-071	WASHER, FLAT 5/16	8			8	

COMPRESSOR MOUNTING SYSTEM-DWG

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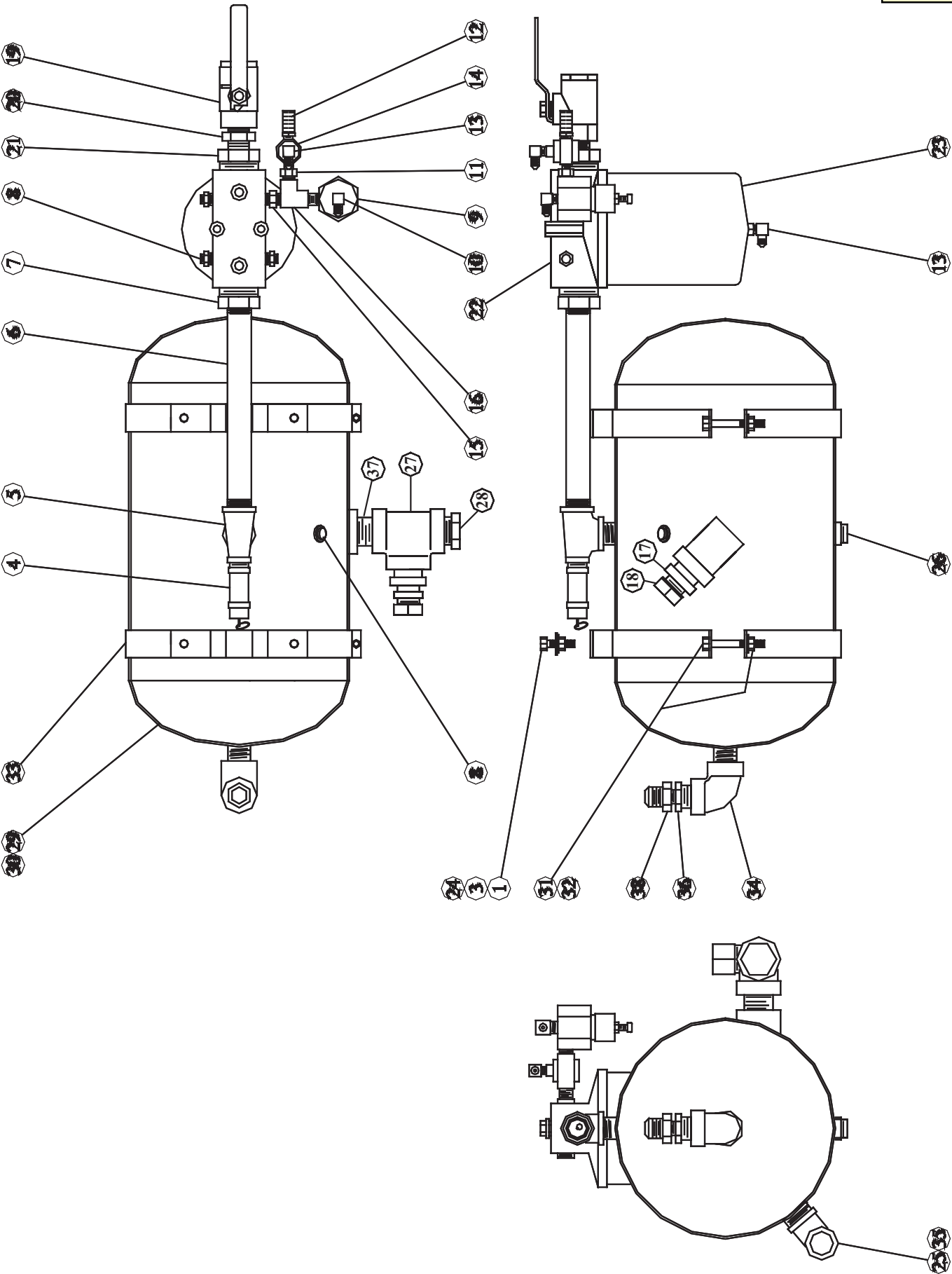


COMPRESSOR MOUNTING SYSTEM-PARTS

ITEM	PART NUMBER	DESCRIPTION	20019	20021	20028	20031	20032
			QTY	QTY	QTY	QTY	QTY
1	929808-200	BOLT, HEX GR8 1/2-13 X 2	4	4	4	4	4
2	937808-125	WASHER, LOC 1/2	4	4	4	4	4
3	301558	GASKET, .062 INLET VALVE ELBOW	1	1	1	1	1
4	938208-112	WASHER, PLAIN 1/2 PLATED	4	4	4	4	4
5	922220-000	NIPPLE, PIPE 1 1/4 X CLOSE SCH	1	1	1	1	1
6	926008-448	NUT, HEX GR8 1/2-13	4	4	4	4	4
7	301568	ADAPTER, INLET VALVE	1	1	1	1	1
8	301587	VALVE, 1 1/4 TEE INLET	1	1	1	1	1
9	929308-300	BOLT, SOC HD 8MM X 30MM	4	4	4	4	4
10	938908-180	WASHER, FLAT M8	4	4	4	4	4
11	974700-025	PLUG, 1/4 BSPP	1	1	1	1	1
12	938808-200	WASHER, LOC M8	4	4	4	4	4
13	970608-050	ELBOW, 1/2 BSPP M X 1/2 37 DEG FL	1	1	1	1	1
14	929312-300	BOLT, 12MM X 30MM	3	3	3	3	3
15	938812-250	WASHER, LOC M12	7	7	7	7	7
16	938912-200	WASHER, FLAT M12	3	3	3	3	3
17	960216-100	ELBOW, 1 X 1 37 DEG FL	1	1	1	1	1
18	926102-223	O-RING, B101 DISCHARGE	1	1	1	1	1
19	301538	FLANGE, DISC B101 1"	1	1	1	1	1
20	929312-800	BOLT, SOC HD GR12.8 12MM X 80M	4	4	4	4	4
21	301422	SWITCH, PRESSURE N.O. 30 PSI W	1	1	1	1	1
22	301331	COMPRESSOR, R.S. DD B101 NON G	1	1	1	1	1
23	301040	SWITCH, SAFETY SHUTDOWN N.O.	1	1	1	1	1
24	301421	SWITCH, PRESSURE N.C.	1	1	1	1	1
25	960204-025M	ELBOW, 1/4 X 1/4 37 DEG FL WITH H	1	1	1	1	1
26	960204-012	ELBOW, 1/4 JIC 90 DEG X 1/8 NPT	2	2	2	2	2
27	943102-038	RIVET, 1/8 X 3/8 LONG	4	4	4	4	4
28	301480	PLATE, SERIAL NO# - IMT SERIES	1	1	1	1	1
29	301401	FLANGE, COMPANION B101 IMT	1	1	1	1	1
30	932206-050	SCREW, SET 3/8 X 1/2	1	1	1	1	1
31	907602-005	BUSHING, REDUCING 1/2 X 1/8	1	1	1	1	1
32	301600	PLATE, SPACER COMP. MOUNTING I	1	1	1	1	1
33	301565	FOOT, COMP MTG B 101S	1	1	1	1	1

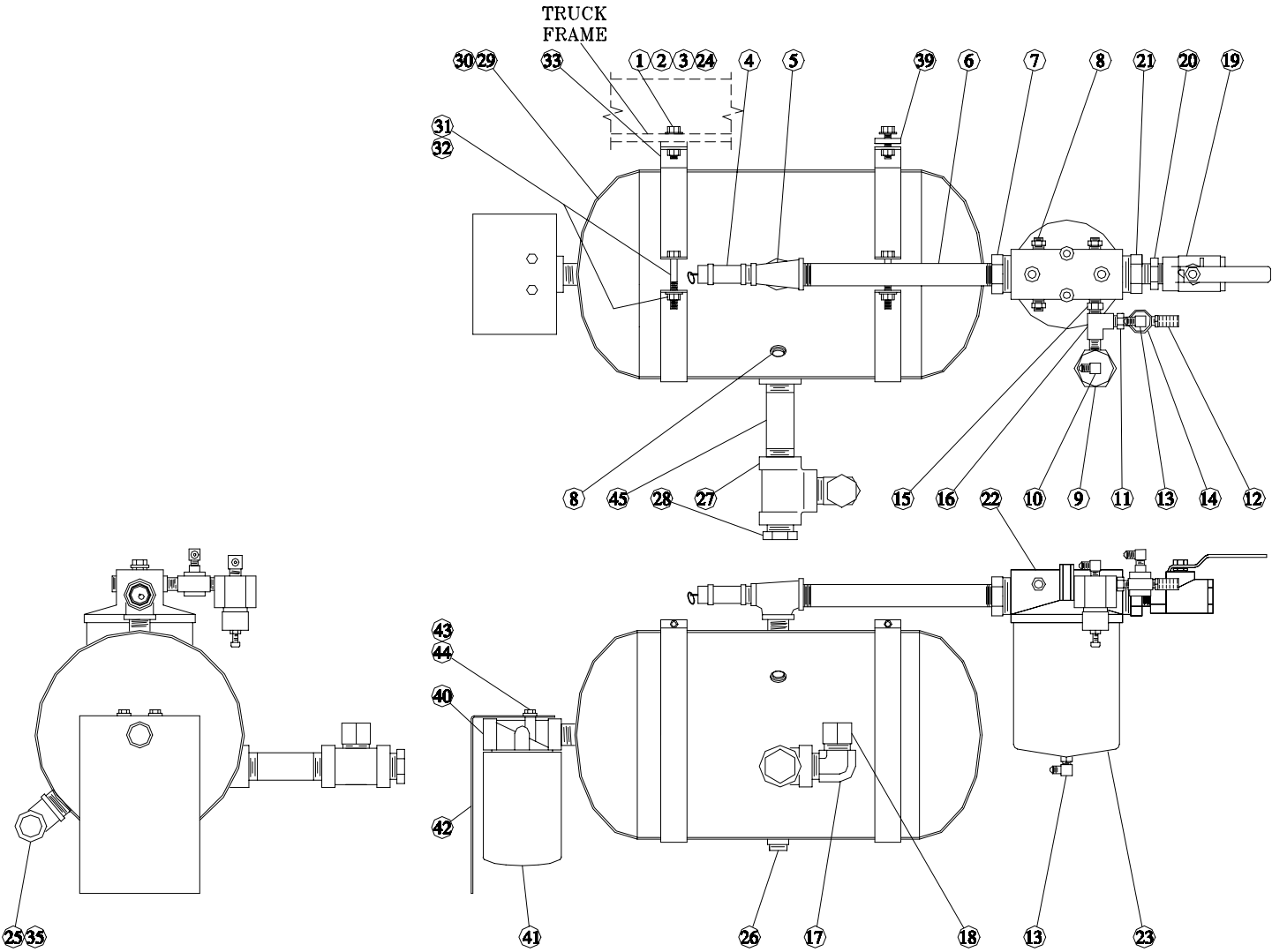
DISCHARGE SYSTEM-20019 & 20031-DWG

CONTINUED



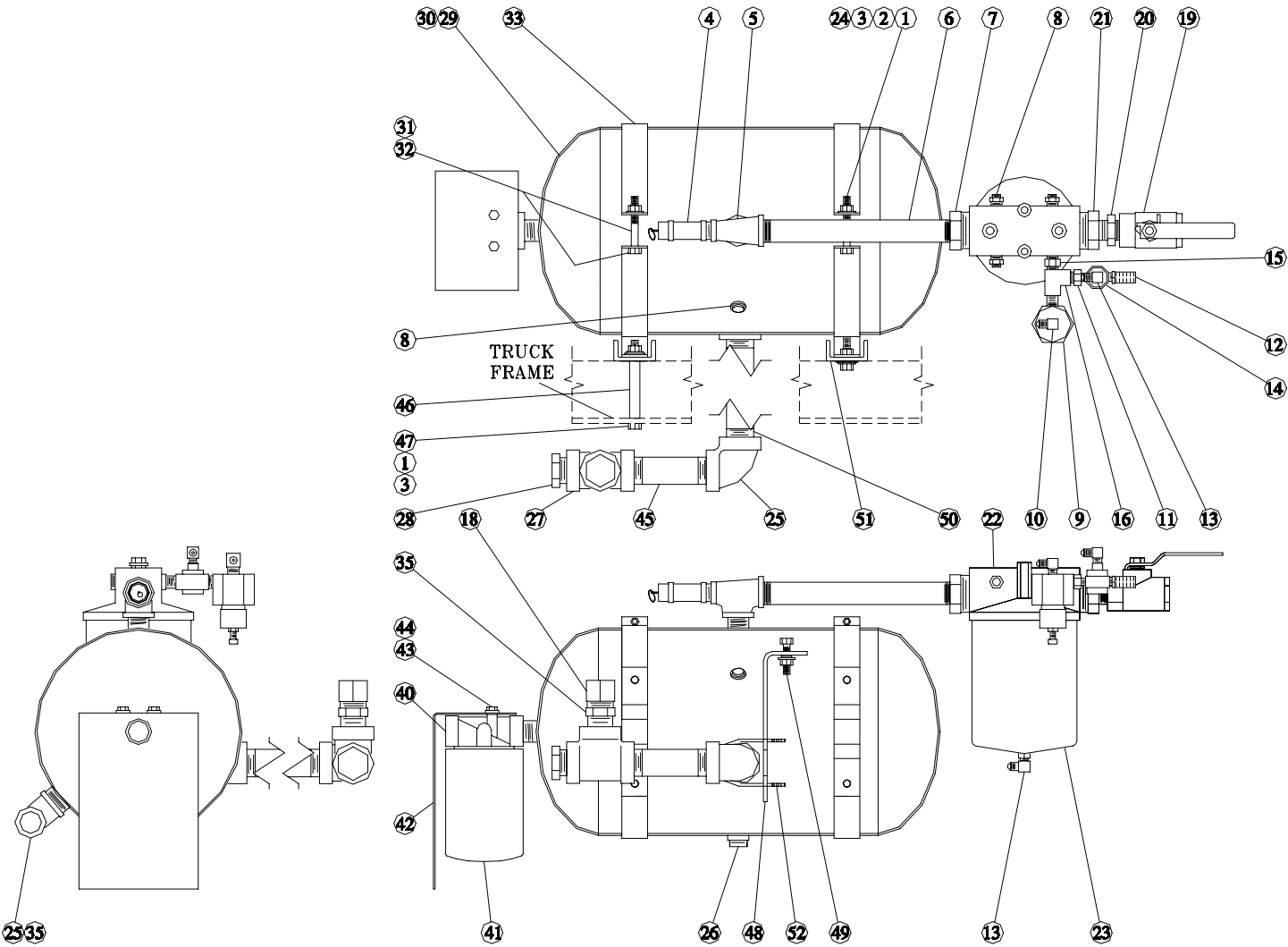
DISCHARGE SYSTEM-20021-DWG

CONTINUED



DISCHARGE SYSTEM-20028 & 20032-DWG

CONTINUED



DISCHARGE SYSTEM-PARTS

CONTINUED

			20019	20021	20028	20031	20032
ITEM	PART NO.	DESCRIPTION	QTY	QTY	QTY	QTY	QTY
1	937806-094	WASHER, LOCK 3/8 GRADE 8	4	6	8	4	8
2	926006-337	NUT, HEX GR8 3/8-16		2	4		4
3	938206-071	WASHER, FLAT 3/8	4	6	8	4	8
4	300023-200	VALVE, RELIEF 1/2 NPT 200 LG	1	1	1	1	1
5	906703-023	TEE, PIPE RED 3/4 X 1/2	1	1	1	1	1
6	922212-100	NIPPLE, PIPE 3/4 X 10 SCH80	1	1	1	1	1
7	907605-030	BUSHING, RED 1-1/4 X 3/4	1	1	1	1	1
8	902915-010	PLUG, PIPE 1/4 RECESSED	4	4	4	4	4
9	300057	VALVE, REGULATOR 1/4	1	1	1	1	1
10	960204-025	ELBOW, 1/4 X 1/4 37° FL	1	1	1	1	1
11	961604-012	NIPPLE, HEX RED 1/4 X 1/8	1	1	1	1	1
12	300716	MUFFLER, EXHAUST 1/8	1	1	1	1	1
13	960204-012	ELBOW, 1/4 JIC 90° X 1/8 NPT	2	2	2	2	2
14	300715	VALVE, BLOWDOWN 1/8 NPT	1	1	1	1	1
15	960404-025	NIPPLE, HEX 1/4 HYD	1	1	1	1	1
16	964804-025	TEE, PIPE 1/4F X 1/4M X 1/4F	1	1	1	1	1
17	960216-100	ELBOW, 1 x 1 37°		1			
	72053680	STRAIGHT 1 X 1 37°	1			1	
18	301466	CAP JIC 1" W/HOLE	1	1	1	1	1
19	300022-050	VALVE, SERVICE 1/2 W/VENT	1	1	1	1	1
20	960408-050	NIPPLE, HEX 1/2"	1	1	1	1	1
21	301404	ORIFICE, MIN PRESSURE 1/2"	1	1	1	1	1
22	300331	HEAD, COALESCER	1	1	1	1	1
23	301670	COALESCER, SPIN-ON ELEMENT IMT	1	1	1	1	1
24	929806-125	BOLT, HEX 3/8-16 X 1-1/4	4	6	4	4	4
25	906530-040	ELBOW, PIPE 90° 1 X 1 HEA	1	1	2	1	2
26	300108	PLUG, MAGNETIC 1/2 NPT	1	1	1	1	1

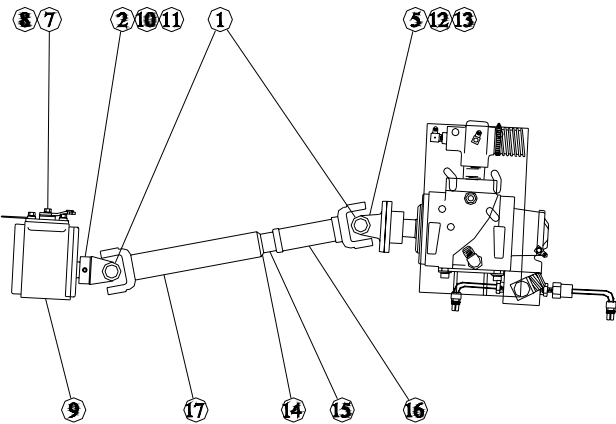
DISCHARGE SYSTEM-PARTS (cont)

ITEM	PART NUMBER	DESCRIPTION	20019	20021	20028	20031	20032
			QTY	QTY	QTY	QTY	QTY
27	906630-040	TEE, PIPE 1" HEAVY	1	1	1	1	1
28	300783	SIGHTGLASS, OIL LEVEL 1	1	1	1	1	1
29	300017	SUMP, 10 DISCHARGE	1	1	1	1	1
30	902915-040	PLUG, 1 HEX SOCKET	1	1	1	1	1
31	925305-283	NUT, WHIZLOCK 5/16-18	2	2	4	2	4
32	929105-250	BOLT, HEX GR5 5/16-18 X 2 1/2	2	2	2	2	2
33	300067	BAND, SUMP MTG 10	2	2	2	2	2
34	906530-030	ELBOW, PIPE 90 DEG 3/4" X 3/4" H	1			1	
35	960116-100	CONNECTOR, 1 X 37 DEG FL	1	1	2	1	2
36	907603-015	BUSHING, REDUCING 3/4 X 3/8	1			1	
37	922216-000	NIPPLE, PIPE 1 X CLOSE SCH80	1			1	
38	960108-038	CONNECTOR, 3/8 NPT X 1/2 JIC M	1			1	
39	301402	BRACKET, TANK TO FRAME IMT		2			
40	300599	HEAD, OIL FILTER		1	1		1
41	300005	ELEMENT, OIL FILTER 8060		1	1		1
42	301487	GUARD, OIL FILTER		1	1		1
43	929104-050	BOLT, HEX GR5 1/4-20 X 1/2		2	2		2
44	938004-062	WASHER, LOC 1/4		2	2		2
45	922216-040	NIPPLE, 1 X 4 HVY		1	1		1
46	301601	SPACER, .44IN X 2.75 LG			4		4
47	929806-400	BOLT, HEX GR8 3/8-16 X 4			4		4
48	300625	BRACKET, COALESCER/OIL			1		1
49	929705-100	BOLT, WHIZLOCK GR5 5/16-18 X 1			2		2
50	922216-230	NIPPLE, PIPE 1" X 23			1		1
51	300068-1541	BRACKET, TANK MTG 15.41			2		2
52	929004-100	U-BOLT, W/1/1"-20 HEX NUTS X 1			1		1

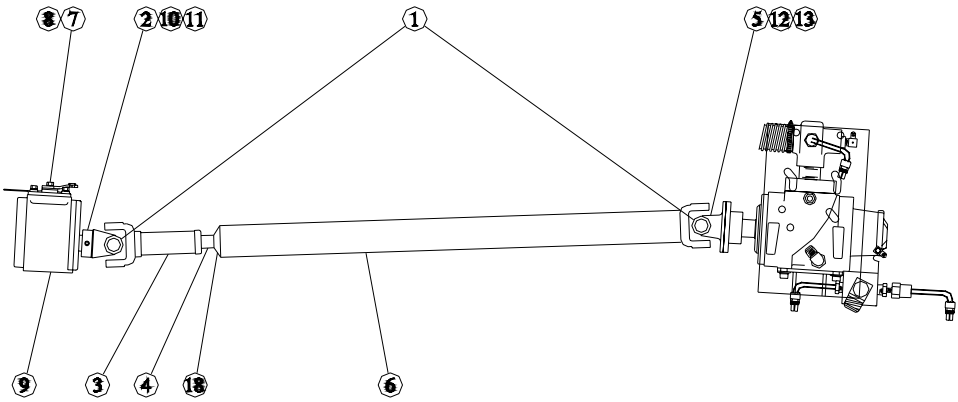
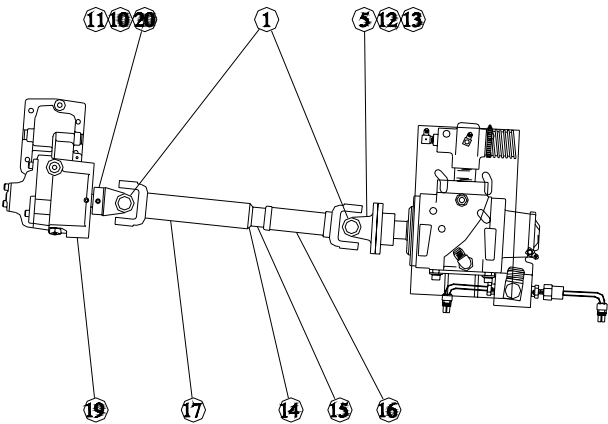
PTO AND DRIVELINE SYSTEM-DWG

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20019



20031 & 20032

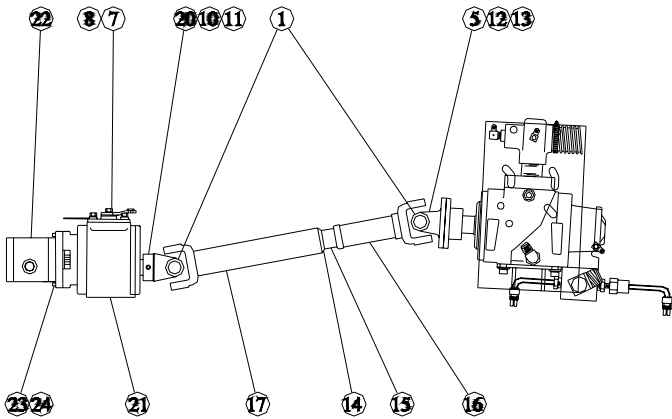
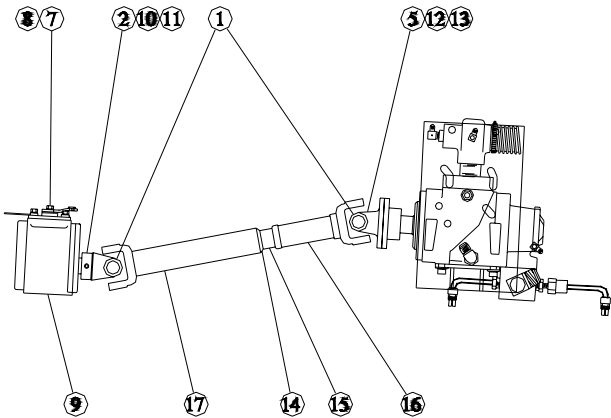


20021

PTO AND DRIVELINE SYSTEM-DWG

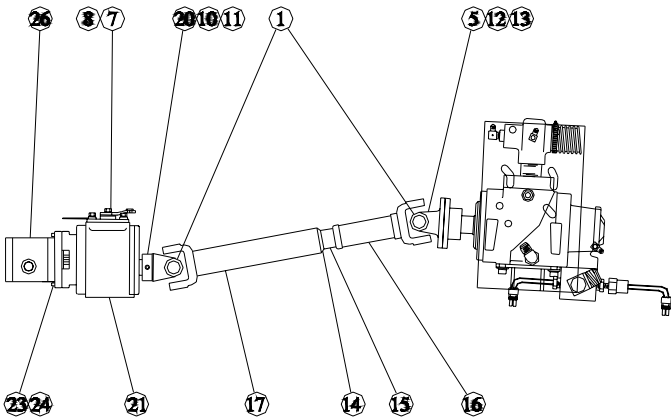
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20028



11/18/98-MB (200121, 200105, & 200106)

20028-05P



M10026

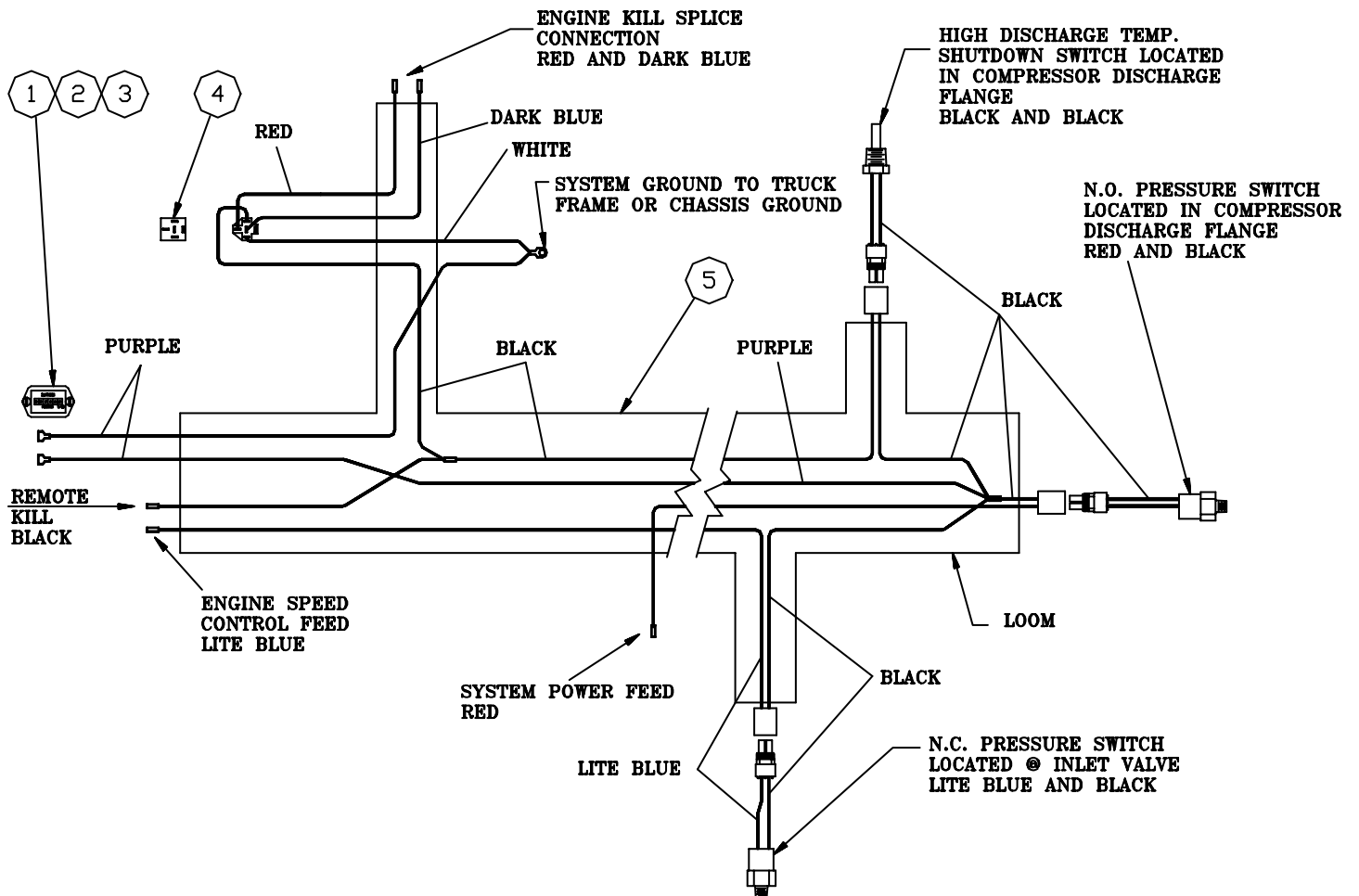
20028-10P

PTO AND DRIVELINE SYSTEM-PARTS

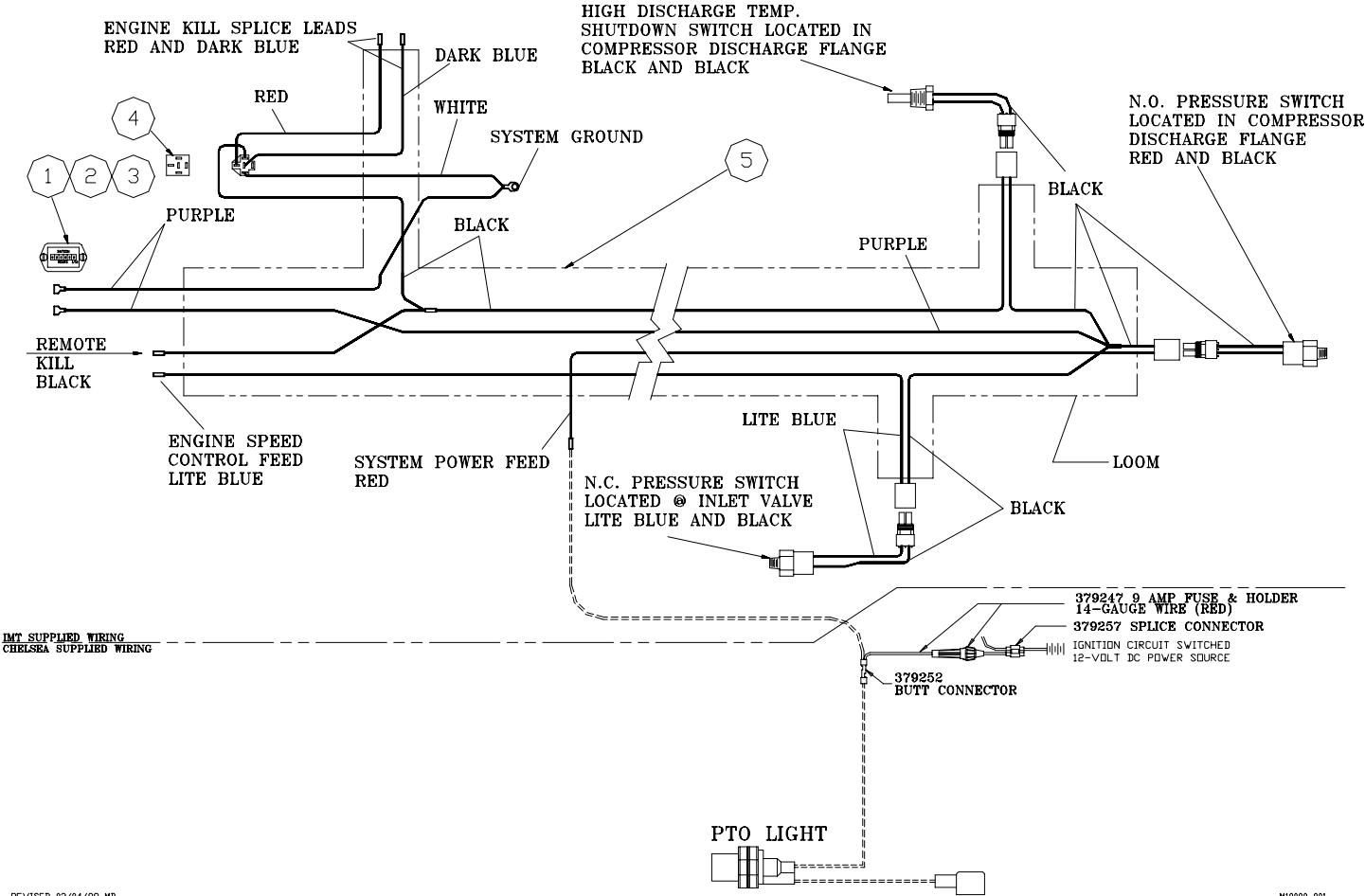
ITEM	PART NUMBER	DESCRIPTION	<div> <div>20019</div> <div>20021</div> <div>20028</div> <div>20028-05P</div> <div>20028-10P</div> <div>20031</div> <div>20032</div> </div>						
			QTY	QTY	QTY	QTY	QTY	QTY	QTY
1	300154-153	U-JOINT 5-153X	2	2	2	2	2	2	2
2	300164-533	YOKE, END SR/SB	1	1	1				
3	300155-128	YOKE, SLIP ASSY 1 3/8-16 SPL		1					
4	300198-1312	SHAFT, SLIP TUBE 2.5 X .083		1					
5	300196-329	YOKE, FLANGE 2-2-329	1	1	1	1	1	1	1
6	301622	TUBE, DRIVELINE 2-1/2" X .083		3.08 FT					
7	301575	BRACKET, WIRE SHIFT PTO F550 9	1	1	1	1	1		
8	934504-150	SCREW, SELF TAP 1/4 X 1 1/2	4	4	4	4	4		
9	300159-105	PTO, 440XXHYX-W5XD	1	1	1				
10	973406-050	SCREW, SET 3/8 WITH HOLE	1	1	1	1	1	1	1
11	301486	WIRE, SET SCREW	1	1	1	1	1	1	1
12	929406-125	BOLT, HEX HED GRADE 8 3/8-24 X	4	4	4	4	4	4	4
13	925706-198	NUT, NYLOC GR8 3/8-24 UNF	4	4	4	4	4	4	4
14	301598-7572	YOKE, TUBE 5-153 X 2" X .120	1		1	1	1	1	1
15	300198-7012	SHAFT, SLIP TUBE 2" X .120	1		1	1	1	1	1
16	300155-0212	YOKE, SLIP ASSY 1 3/8-16 X 5-1	1		1	1	1	1	1
17	301599	TUBE, DRIVELINE 2" X .120 WALL	.67 FT		.67 FT	.67 FT	.67 FT	.67 FT	.67 FT
18	301598-3672	YOKE, TUBE 2-28-367, 2-1/2" X .		1					
19	300159-104	PTO, 242FMHDP-B5XB						1	1
20	300164-473M	YOKE, END STRGHT BORE SR X SET				1	1	1	1
21	300159-137	PTO, 440-09 S6-650 1"RD				1	1		
22	301576-050	PUMP, HYD .67 CIR SAE 'A'				1			
23	929806-125	BOLT, HX HD GR8 3/8-16 X 1-1/4				2	2		
24	937806-094	WASHER, LOC 3/8 GR8				2	2		
25	301576-010	PUMP, HYD 1.27 CIR SAE 'A'					1		

HARNESS-ELECTRICAL SYSTEM (F-SUPERDUTY DIESEL/MNL & AUTO TRANS)

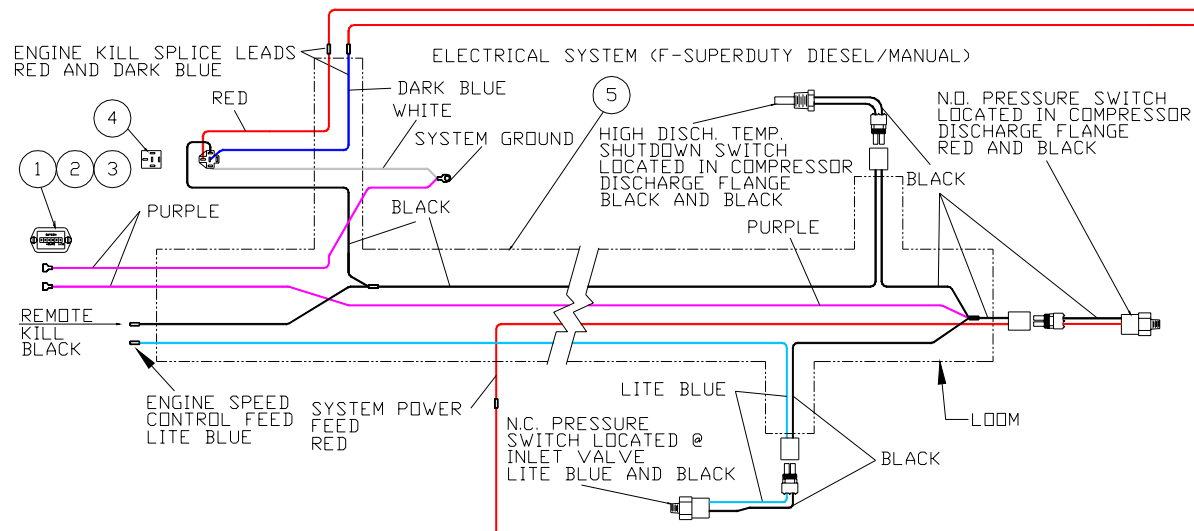
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	300074-1	HOURMETER, MINI	1
2	924200-130	NUT, MACHINE #6-32	2
3	931600-050	SCREW, MACHINE #6-32 - 1/2	2
4	300211	RELAY, POWER	1
5	301429	WIRE, HARNESS F-450	1



ELECTRICAL SYSTEM (F-SUPERDUTY DIESEL/MNL TRANS)

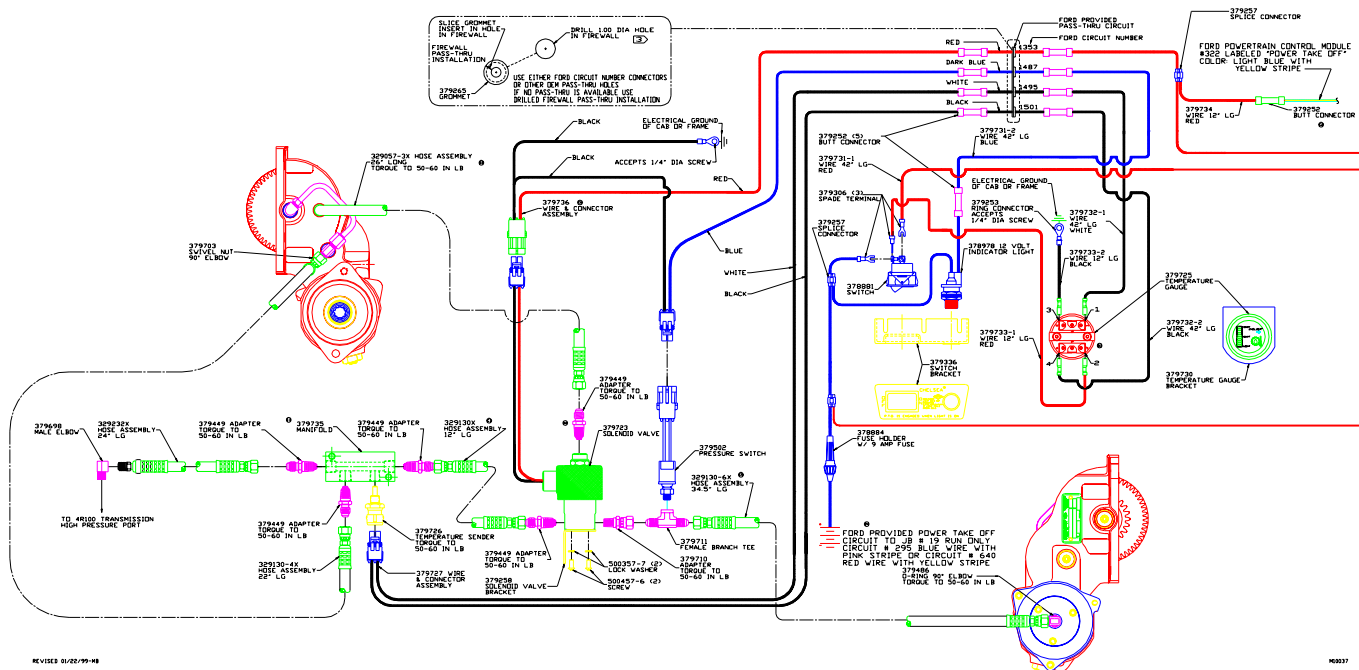


ELECTRICAL SYSTEM (F-SUPERDUTY DIESEL/AUTO TRANS)



IMT SUPPLIED WIRING

CHELSEA SUPPLIED WIRING



MISC PARTS-BOX (6X6X12) F-450 '97' DIESEL MNL TRANS**20019, 20031, & 20032**

QTY	PART	DESCRIPTION	LOCATION
8	300033-250	CLAMP, AIR INLET HOSE 2 1/2	AIR INLET SYSTEM #3
1	300853	INDICATOR, AIR FILTER ELEMENT	AIR INLET SYSTEM #10
1	922202-015	NIPPLE, 1/8 X 1 1/2	AIR INLET SYSTEM #9
1	301397	INSERT, RUBBER 2 1/2 X 1 3/4	AIR INLET SYSTEM #4
3	300034-250	SLEEVE, 2 1/2	AIR INLET SYSTEM #7
2	300071-250	ELBOW, RUBBER 2 1/2 90 DEG	AIR INLET SYSTEM #8
1	300855	BAND, AIR FILTER MTG. 4.8	AIR INLET SYSTEM #6
1	301588	INSERT, RUBBER 2 1/2 X 1 3/4	AIR INLET SYSTEM #13
1	960216-100	ELBOW, 1 X 1 37 DEG FL	COMPRESSOR MTG. SYSTEM #17
1	301600	PLATE, SPACER	COMPRESSOR MTG. SYSTEM #32
2	301481	STRAP, OIL COOLER MTG.	OIL COOLER SYSTEM #3
2	301633	BRACKET, OIL COOLER FRONT MTG.	OIL COOLING SYSTEM #20
4	300112	CLAMP, HOSE 3/4	HOSE CLAMPS FOR BUNDLING & SECURING 1/4, 1/2, & 1 HOSE
1	300111	CLAMP, HOSE 1 1/2	SAME AS ABOVE

20021

QTY	PART	DESCRIPTION	LOCATION
8	300033-250	CLAMP, AIR INLET HOSE 2 1/2	AIR INLET SYSTEM #3
1	300853	INDICATOR, AIR FILTER ELEMENT	AIR INLET SYSTEM #10
1	922202-015	NIPPLE, 1/8 X 1 1/2	AIR INLET SYSTEM #9
1	301397	INSERT, RUBBER 2 1/2 X 1 3/4	AIR INLET SYSTEM #4
3	300034-250	SLEEVE, 2 1/2	AIR INLET SYSTEM #7
2	300071-250	ELBOW, RUBBER 2 1/2 90 DEG	AIR INLET SYSTEM #8
1	300855	BAND, AIR FILTER MTG. 4.8	AIR INLET SYSTEM #6
1	301588	INSERT, RUBBER 2 1/2 X 1 3/4	AIR INLET SYSTEM #13
1	960216-100	ELBOW, 1 X 1 37 DEG FL	COMPRESSOR MTG. SYSTEM #17
1	301600	PLATE, SPACER	COMPRESSOR MTG. SYSTEM #32
2	301481	STRAP, OIL COOLER MTG.	OIL COOLER SYSTEM #3
2	301633	BRACKET, OIL COOLER FRONT MTG.	OIL COOLING SYSTEM #20
4	300112	CLAMP, HOSE 3/4	HOSE CLAMPS FOR BUNDLING & SECURING 1/4, 1/2, & 1 HOSE
1	300111	CLAMP, HOSE 1 1/2	SAME AS ABOVE
2	301402	BRACKET, TANK TO FRAME	DISCHARGE SYSTEM #39

BOLT BAG PARTS LOCATED IN BOX**20019 & 20031**

QTY	PART	DESCRIPTION	LOCATION
4 4 4 4	929808-200 937808-125 938208-112 926008-448	BOLT, GR.8 1/2-13 X 2 WASHER, LOC 1/2 WASHER, PLAIN 1/2 PLATED NUT, HEX GR.8 1/2-13	COMPRESSOR MTG. FOOT TO FRAME RAIL- COMPRESSOR MTG. SYSTEM #1, 2, 4, & 6
4 4 4	937806-094 938206-071 929806-125	WASHER, LOC 3/8 GR.8 WASHER, FLAT 3/8 BOLT, GR.8 HEX 3/8-16 X 1 1/4	RECEIVER TANK MTG.-DISCHARGE SYSTEM #1, 3, & 24 NOTE: TANK BANDS HAVE QTY (2) EA. WELDED NUTS ATTACHED
15 13	925305-283 929705-100	NUT, HEX WHIZ 5/16-18 BOLT, WHIZLOCK GR.5 5/16-18 X 1	AIR INLET SYSTEM-QTY. (2) BOLTS & NUTS FOR AIR FILTER BANDS #11 & 12 OIL COOLING SYSTEM-QTY (6) BOLTS & (8) NUTS FOR COOLER STRAPS, BRACKETS, & OIL FILTER MTG. #4 & 5 HOSE SYSTEM QTY (5) BOLTS & NUTS USED ON THE 3/4 HOSE CLAMPS & 1 1/2 HOSE CLAMP. (4) 3/4 HOSE CLAMPS & (1) 1 1/2 HOSE CLAMP IN 6 X 6 X 12 MISCELLANEOUS PARTS BOX.
2 2	929105-200 901215-010	BOLT, HEX GR.5 5/16-18 X 2 COUPLING, PIPE 1/4	UPPER COOLING MTG. BOLTS #18 UPPER COOLING MTG. SPACER #17

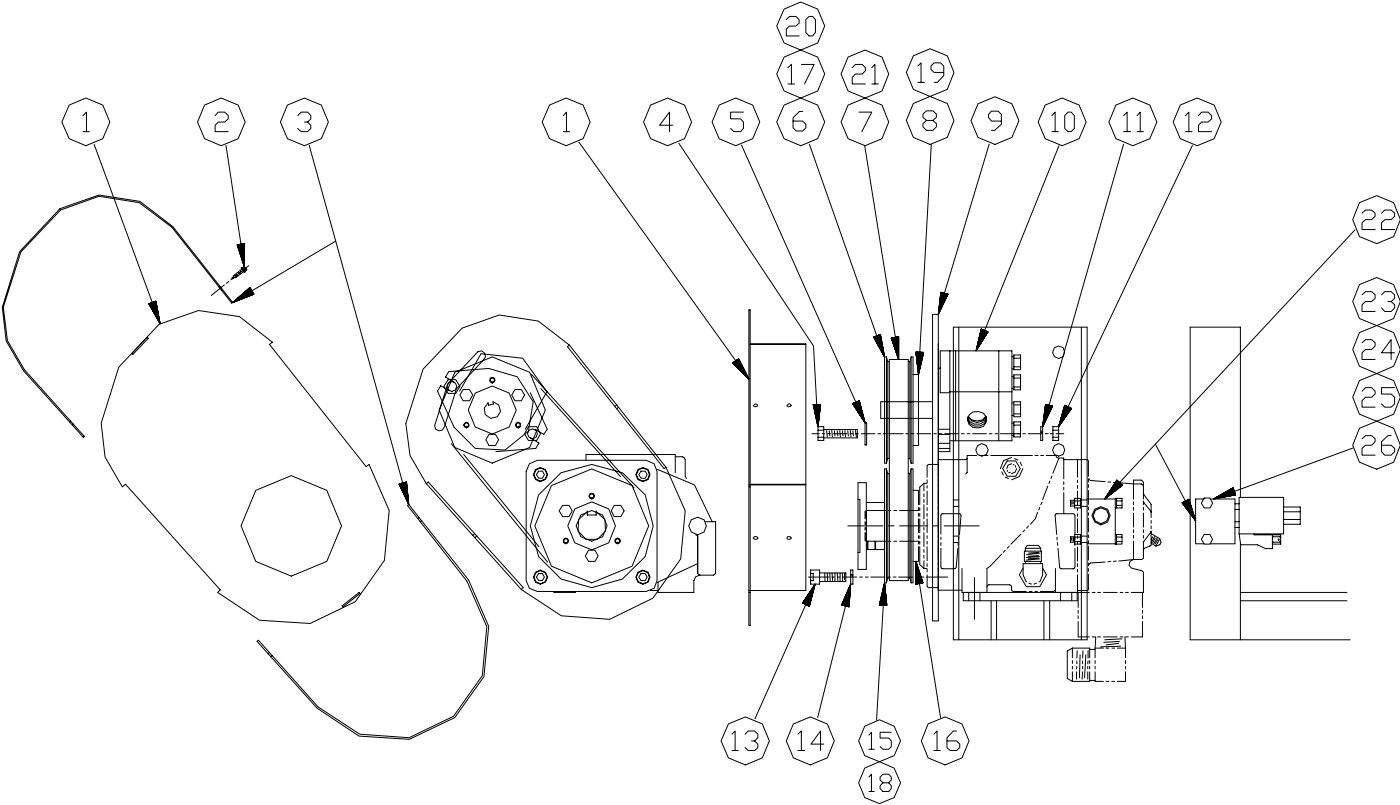
20021

QTY	PART	DESCRIPTION	LOCATION
4 4 4 4	929808-200 937808-125 938208-112 926008-448	BOLT, GR.8 1/2-13 X 2 WASHER, LOC 1/2 WASHER, PLAIN 1/2 PLATED NUT, HEX GR.8 1/2-13	COMPRESSOR MTG. FOOT TO FRAME RAIL- COMPRESSOR MTG. SYSTEM #1, 2, 4, & 6
6 6 6 2	937806-094 938206-071 929806-125 926006-337	WASHER, LOC 3/8 GR.8 WASHER, FLAT 3/8 BOLT, HEX GR.8 3/8-16 X 1 1/4 NUT, HEX GR. 8 3/8-16	RECEIVER TANK MTG.-DISCHARGE SYSTEM #1, 2, 3, & 24 NOTE: TANK BANDS HAVE QTY (2) EA. WELDED NUTS ATTACHED
15 13	925305-283 929705-100	NUT, HEX WHIZ 5/16-18 BOLT, WHIZLOCK GR.5 5/16-18 X 1	AIR INLET SYSTEM-QTY. (2) BOLTS & NUTS FOR AIR FILTER BANDS #11 & 12 OIL COOLING SYSTEM-QTY (6) BOLTS & (8) NUTS FOR COOLER STRAPS, BRACKETS, & OIL FILTER MTG. #4 & 5 HOSE SYSTEM QTY (5) BOLTS & NUTS USED ON THE 3/4 HOSE CLAMPS & 1 1/2 HOSE CLAMP. (4) 3/4 HOSE CLAMPS & (1) 1 1/2 HOSE CLAMP IN 6 X 6 X 12 MISCELLANEOUS PARTS BOX.
2 2	929105-200 901215-010	BOLT, HEX GR.5 5/16-18 X 2 COUPLING, PIPE 1/4	UPPER COOLING MTG. BOLTS #18 UPPER COOLING MTG. SPACER #17

20028 & 20032

QTY	PART	DESCRIPTION	LOCATION
4 4 4 4	929808-200 937808-125 938208-112 926008-448	BOLT, GR.8 1/2-13 X 2 WASHER, LOC 1/2 WASHER, PLAIN 1/2 PLATED NUT, HEX GR.8 1/2-13	COMPRESSOR MTG. FOOT TO FRAME RAIL- COMPRESSOR MTG. SYSTEM #1, 2, 4, & 6
8 8 4 4 4 4	937806-094 938206-071 929806-125 926006-337 301601 929806-400	WASHER, LOC 3/8 GR.8 WASHER, FLAT 3/8 BOLT, HEX GR.8 3/8-16 X 1 1/4 NUT, HEX GR.8 3/8-16 SPACER, .44IN X 2.75 LG. BOLT, HEX GR.8 3/8-16 X 4	RECEIVER TANK MTG.-DISCHARGE SYSTEM #1, 3, & 24 NOTE: TANK BANDS HAVE QTY (2) EA. WELDED NUTS ATTACHED RECEIVER TANK MTG. BRACKETS TO FRAME RAIL, QTY. (4) OF DISCHARGE SYSTEM #46 & 47
15 13	925305-283 929705-100	NUT, HEX WHIZ 5/16-18 BOLT, WHIZLOCK GR.5 5/16-18 X 1	AIR INLET SYSTEM-QTY. (2) BOLTS & NUTS FOR AIR FILTER BANDS #11 & 12 OIL COOLING SYSTEM-QTY (6) BOLTS & (8) NUTS FOR COOLER STRAPS, BRACKETS, & OIL FILTER MTG. #4 & 5 HOSE SYSTEM QTY (5) BOLTS & NUTS USED ON THE 3/4 HOSE CLAMPS & 1 1/2 HOSE CLAMP. (4) 3/4 HOSE CLAMPS & (1) 1 1/2 HOSE CLAMP IN 6 X 6 X 12 MISCELLANEOUS PARTS BOX.
2 2	929105-200 901215-010	BOLT, HEX GR.5 5/16-18 X 2 COUPLING, PIPE 1/4	UPPER COOLING MTG. BOLTS #18 UPPER COOLING MTG. SPACER #17

5, & 10 GPM PUMP OPTIONS FOR CRANE PACKAGES-DWG



REVISED 03/03/99-MB

M10010

5, & 10 GPM PUMP OPTIONS FOR CRANE PACKAGES-PARTS

ITEM	PART NO.	DESCRIPTION	QTY (5GPM)	QTY (10GPM)
1	301388	BELT GUARD	1	1
2	934502-050	SCREW, SELF TAP #10X1/2	4	4
3	301389	GUARD, TOP/BOTTOM BELT	2	2
4	939806-150	BOLT, 3/8-16X1-1/2 HHGR8	2	2
5	938206-071	WASHER 3/8 FLAT GR8	2	2
6	301393-036	SPROCKET 36T POLYCHAIN		1
7	301394-720	BELT 720MMX22MM POLYCHAIN		1
8	301029-075	BUSHING 3/4 SH		1
9	9301366	BRACKET-HYD PUMP MTG	1	1
10	301375	HYD PUMP .67CIR	1	1
11	937806-094	WASHER 3/8 LOCK GR8	2	2
12	926006-337	NUT 3/8-16 HEX GR8	2	2
13	972710-300	BOLT 10MMX30MM SH	4	4
14	938810-220	WASHER M10 LOCK	4	4
15	301393-056	SPROCKET 56T POLYCHAIN		1
16	300745-350	BUSHING 35MM X 10MM SDS	1	1
18	301393-048	SPROCKET 48T POLYCHAIN	1	
19	300745-075	BUSHING 3/4 SDS	1	
20	301393-064	SPROCKET 64T POLYCHAIN	1	
21	301393-800	BELT 800MM X 22MM POLYCHAIN	1	
22	80009	KIT-HYD BLOCK N.O. SOLENOID	1	1
23	929104-200	BOLT 1/4-20X2 HHGR5	2	2
24	938004-062	WASHER 1/4 LOCK GR5	2	2
25	938604-071	WASHER 1/4 FLAT	2	2
26	925204-226	NUT 1/4-20 HEX GR5	2	2

RECOMMENDED SPARE PARTS LIST

PART NUMBER	DESCRIPTION	QTY
300005	OIL FILTER ELEMENT	1
300854	AIR FILTER ELEMENT	1
301670	SPIN ON COALESCER	1
300187	REGULATOR REPAIR KIT	1
301409	SHAFT SEAL REPAIR KIT	1
300186-003 (used on 301010)	INLET VALVE REPAIR KIT	1
300186-004 (used on 301587)	INLET VALVE REPAIR KIT	1

SERVICE QUESTIONNAIRE

DATE: _____

1. Information given by:

2. Information received by:

3. Has anyone helped you:

Yes _____ No _____
4. Distributor:

5. End-User:

6. Phone Number:

7. Make and Model for PTO:

8. IMT Serial #:

9. Make and Model of Engine:

10. Engine:

11. Transmission:

12. Nature of Problem:

13. Engine RPM:

14. Compressor RPM:

15. Action Taken:

ADDITIONAL COMMENTS: _____

PN:301420:

PG-60: SERIES 60 ROTARY SCREW AIR COMPRESSOR