



VANAIR

AIR POWER TO GO™

**Vanair Tiger Hydraulic
20 to 45 CFM
Rotary Screw Air Compressor**

**Installation, Operating,
and Maintenance Manual**

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02-08

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DEFINITION OF TERMS

| | |
|-------|--|
| AD | Abovedeck |
| ADBD | Abovedeck Belt Drive |
| ADHD | Abovedeck Hydraulic Drive |
| ASME | American Society of Mechanical Engineers |
| BD | Belt Drive |
| CA | Cab to axle Length |
| CFM | Cubic Feet per Minute |
| EC | Electric Cooled |
| FC | Front Cooled |
| GAWR | Gross Axle Weight Rating |
| GPM | Gallons per Minute |
| GVWR | Gross Vehicle Weight Rating |
| HC | Hydraulic Cooled |
| HD | Hydraulic Drive |
| ICFM | Inlet Cubic Feet per Minute |
| PSI | Pounds per Square Inch |
| PSIG | Pounds per Square Inch Gauge |
| PTO | Power Take Off |
| RPM | Revolutions per Minute |
| SCFM | Standard Cubic Feet per Minute |
| SM | Side Mount |
| TM | Tractor Mount |
| TMBD | Tractor Mount Belt Drive |
| UD | Underdeck |
| UDHD | Underdeck Hydraulic Drive |
| UDISS | Underdeck Integral Split-Shaft |
| UDSM | Underdeck Side Mount |
| WB | Wheel Base |

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WARRANTY (Applies to following models: Tiger Hydraulic and Viking 65 Hydraulic)

The rotary screw compressor unit is warranted by the manufacturer for three (3) years against defects in materials and workmanship. The unit will be replaced or repaired at VANAIR'S option as result of such defects. The hydraulic motor unit is warranted for two (2) years. All other parts including the compressor unit shaft seal are warranted for twelve (12) months. This warranty does not cover damage caused by accident, misuse or negligence. If a compressor unit is disassembled the warranty is void. Any disassembly of major components must be approved by Vanair to avoid voiding of warranty. Any and all such claims for warranty consideration must be coordinated through the Warranty-Service Department at the address below. Please do **not** return parts without prior authorization.

Warranty is limited to the supply of replacement parts failing within the warranty period. Credit for labor required to refit replacement parts is NOT included. All warranted parts are to be shipped PREPAID to VANAIR. Replacement parts will be shipped back to the customer by VANAIR via ground shipment. Cost to expedite delivery of replacement parts will be incurred by customer. Factory installed units will also include warranty on the installation for one year.

Warranty will commence upon receipt of the Warranty Registration Card. If the Warranty Registration Card is not received within six (6) months, then warranty commencement date shall be thirty (30) days from the date of shipment from VANAIR. Records of warranty adherence are the responsibility of end user.

This statement of warranty is expressly in lieu of and disclaims all other express warranties, implied warranties of merchantability and fitness for a particular purchase and all other implied warranties which extend beyond the description on the face hereof. The warranty does not include incidental or consequential damages.

This warranty shall be void and VANAIR shall have no responsibility to repair, replace or repay the purchase price of defective or damaged parts resulting from the use of or repair of replacement parts or fluids not of VANAIR'S manufacture or from buyer's failure to store, install, maintain and operate the compressor according to the recommendations contained in the Manual.

All claims under the Warranty shall be made by contacting VANAIR Warranty-Service Department.



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SPECIFICATIONS – Vanair Tiger Hydraulic

Ratings:

| | | | | | | |
|--|------|------|------|------|------|------|
| Capacity (cfm) | 20 | 25 | 30 | 35 | 40 | 45 |
| Air Pressure (psig) | 175 | 175 | 175 | 175 | 175 | 175 |
| Hydraulic Flow required (gpm) | 9.2 | 11.0 | 12.0 | 14.0 | 15 | 16.5 |
| Hydraulic Pressure Required (psig) Min | 2400 | 2375 | 2400 | 2510 | 2620 | 2620 |
| Speed Compressor (rpm) | 4050 | 4900 | 5800 | 6750 | 7700 | 8400 |

Compressor:

| | |
|-------------------------|--|
| Type | Single Stage, Oil Inj. Rotary Screw |
| Oil Sump Capacity | 4 Quarts |
| Service Valve | One 3/4 in. NPT |
| Air Inlet System | Dry Type Single Stage |
| Inlet Control | Load/Unload |
| Cooling System | Air to Oil (12 vdc) Thermost. Controlled |
| Oil Separation System | Spin on Coalescer Element |
| Hydraulic Motor | Gear Type |
| Ambient Operating Range | -20EF to + 100EF |

Package:

| | |
|--|--|
| Main Frame | Formed Steel with Boltdown Provision |
| Enclosure | Sheet Metal with Service Access |
| Service Items | Grouped in Accessible Location |
| Supply Connections (Customer Hook-Up) | Hydraulic -Oil In 3/4 in. 37E JIC -Oil Out 1 in. 37E JIC |
| | Electrical -12 vdc positive & ground -High Temp. Shutdown |
| Dimensions | Length -35.75 in. Width -19.50 in. Height -21.30 in. |
| Weight (Dry) | 350 lbs. |

Specifications subject to change without notice.

SAFETY – Vanair Tiger Hydraulic

Section 1 - Pg 1

Vanair Manufacturing, Inc. designs and manufactures all of their products so they can be operated safely. However, the responsibility for safe operation rests with those who use and maintain this equipment. The following safety precautions are offered as a guide, which if conscientiously followed will minimize the possibility of accidents. Many of the following items may seem like common sense, which they are. We would ask that you also, use your common sense in operating and maintaining this equipment since each situation may have its own peculiarities and circumstances.

IMPORTANT - The following safety guidelines are for your safety, well-being and also to help protect from injury to others and prevent equipment damage.

WARNING - Read this manual before installing, operating or working on or with this equipment. Failure to do so could result in bodily injury or damage.

CAUTION - Never start this equipment unless it is safe to do so. *Do not operate* the air compressor/systems *with a known unsafe condition*. Tag and render the system inoperative by disconnecting the power source so others who may not know of the unsafe condition cannot operate it.

CAUTION - Install, use and *operate* this equipment *only in full compliance* with all pertinent and applicable O.S.H.A., Federal, State and Local codes, standards and regulations.

WARNING - Do not modify this compressor and/or controls or systems in any way except with written factory approval.

DANGER - Do not attempt to remove any compressor part or work on the compressor or its systems *without first relieving the entire system pressure*. Open a service valve to atmosphere to assure all pressure is vented.

DANGER - *Do not attempt to service* any part of the machine *while it is operating*.

DANGER - *Do not operate the compressor in excess of pressures and speeds* indicated on the name plate, or its ratings as indicated in the ASpecifications@ section.

CAUTION - Periodically check all safety devices for proper operation.

DANGER - Do not play with compressed air. It can cause serious injury.

WARNING - Do not use flammable solvents for cleaning parts or compressor installation.

SAFETY – Vanair Tiger Hydraulic

Section 1 - Pg 2

CAUTION - Be sure *no tools, rags or loose parts* are left on compressor drive systems or *near intake*.

CAUTION - Exercise *care and cleanliness* during maintenance and *when making repairs*. Cover openings and keep dirt and tools away from parts and openings.

WARNING - Do not operate compressor in areas *where there is possibility of ingesting flammable, toxic, noxious or corrosive fumes or substances*.

WARNING - Never disconnect, by-pass or *render inoperative any safety system* and operate the machine.

CAUTION - Do not operate the compressor without proper flow of cooling air, or without *correct lubricant levels or types*.

DANGER - Keep hands, arms, hair and other parts of the body and loose clothing *away from fans, drive shafts, and other moving parts*.

WARNING - Do not operate machine with guards removed or safety devices inoperative.

DANGER - Do not use air from this compressor for breathing purposes, Stellar Industries, Inc. disclaims any and all liabilities for damage or loss due to personal injuries, including death and/or property damages arising out of using Vanair compressors or breathing purposes.

CAUTION - Operate the compressor only in open or well ventilated areas...

CAUTION - Do not install safety devices and/or replacement parts other than *authorized Vanair replacement parts*.

CAUTION - Ensure all plugs, hoses, covers and *parts which may have been removed for service are replaced before operating*.

WARNING - Ensure that hoses connected to the service valves are *fitted with correctly sized and rated flow limiting devices*. This is to prevent broken or disconnected hoses from Awhipping@. These devices must comply with respective codes.

SAFETY – Vanair Tiger Hydraulic

Section 1 - Pg 3

WARNING - Do not use tools, hoses or equipment that are *rated below the maximum rating* of this compressor.

CAUTION - Keep personnel out of line with, and *away from the discharge opening* of valves, hoses and tools.

WARNING - Hot surfaces, compressors generate heat. Take precautions when working on or around this equipment - some surfaces and components are hot!

CAUTION - Clean up any lubricant or spills *immediately*.

CAUTION - Keep electrical wiring including terminals in good condition. Hoses and fittings with no leaks. *Replace any wiring or hoses which have cracked or worn.*

CAUTION - Keep tools or other conductive objects *away* from live electrical parts.

WARNING - Wear respective protective equipment when operating or working on this equipment. Protective equipment should be in full compliance with respective codes.

WARNING - Over speed is hazardous! Never tamper with the governor components or settings to increase the maximum speed. Severe personal injury and equipment damage can result if operated at speeds above maximum.

CAUTION - Never touch electrical wires or components *while the machine is operating*. They can be a source of electrical shock which could cause sever injury or burns.

SAFETY – Vanair Tiger Hydraulic

Section 1 - Pg 4

Safety decals are supplied as part of the decal package. They should be affixed to the completed vehicle prior to going into service. They should be located so that they are clearly visible to both user and service personnel.

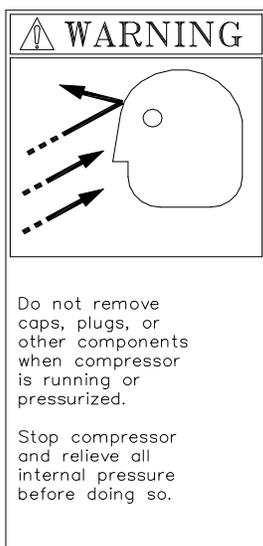


Fig. 3.1

Locate adjacent to oil fill on body...



Fig. 3.2

Locate next to service outlet valve.

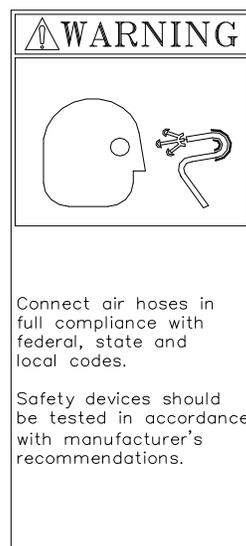


Fig. 3.3

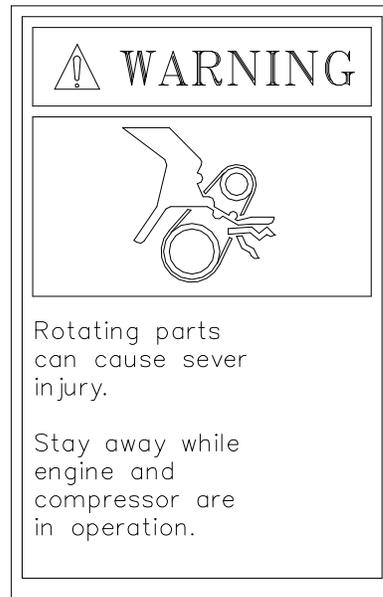
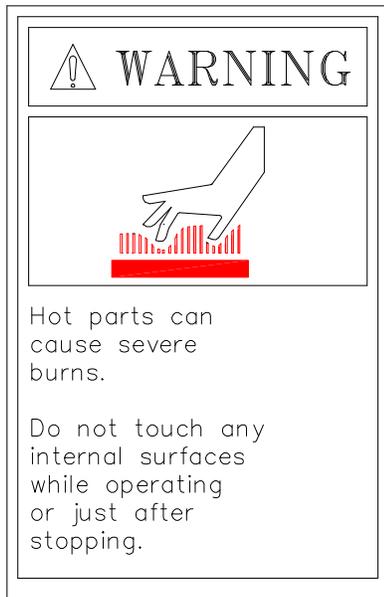
Locate next to service outlet valve.

SAFETY – Vanair Tiger Hydraulic

Section 1 - Pg 5

Hot Parts - To prevent severe burns, do not touch these areas while the compressor is running or immediately after it is turned off.

Rotating Parts - Keep hands, feet, hair and clothing away from all moving parts to prevent injury. Never operate the machine with covers, shrouds or guards removed.



DESCRIPTION – Vanair Tiger Hydraulic

Section 2 - Pg 1

2.1 Introduction:

The 40 cfm Hydraulic Module Series air compressor system will offer superior performance and reliability along with a minimal amount of maintenance requirements.

This Manual should be read in conjunction with other appropriate manuals or literature.

The compressor module is equipped with a Rotary Screw Compressor Unit which is renowned for its durability and reliability.

2.2 Description of Components:

The package includes a heavy duty rotary screw air compressor with integral Inlet Valve assembly, oil separation system, minimum pressure/discharge check valve and oil filter housing. The completed assembly incorporates compressor oil cooling system, hydraulic drive and valving and respective instrumentation and control systems. The complete operating system is mounted in a neat compact durable enclosure providing easy access for maintenance.

2.3 Compressor Assembly

This assembly incorporates various features into one unit:

- X Oil injected, single stage rotary screw compressor.
- X Inlet valve and control valving.
- X Air filter unit.
- X Oil reservoir and primary oil separator.
- X Secondary spin-on oil coalescer/separator.
- X Spin-On oil filter.
- X Minimum pressure valve/check valve.

This makes for a very compact integrated compressor assembly with reduced hose connections and consequently fewer potential leak points.

2.4 Oil Injected, Single Stage Rotary Screw Compressor

Lubricant is injected into the compressor air end unit and mixes directly with the air in the compression chamber; internal porting also injects oil into the bearings and seal area. The lubricant has three primary functions:

- X As a coolant, it controls the rise of air temperature normally associated with the heat of compression.
- X Seals the leakage paths between the rotors and the stator, and also between the rotors themselves

DESCRIPTION – Vanair Tiger Hydraulic

Section 2 - Pg 2

2.4 Cont'd

- X** Acts as a lubricating film between the rotors allowing one rotor to directly drive the other, which is an idler. It also lubricates the bearings and seal.

The screw compressor assembly is mounted inside the main casting and consists of a male and female rotor supported with anti-friction bearings suitably sized for long life.

2.5 Inlet Valve and Control Valving

The inlet valve and control solenoid valve assembly are mounted directly on top of the compressor module. On initial start-up the solenoid is energized and the inlet valve opens from pilot air being passed through the solenoid actuated valve. When final pressure is reached a pressure switch de-activates the solenoid and the inlet valve closes. At the same time the compressor pressure will relieve down to a low pressure (typically about 40 psig). Only the compressed air within the compressor module will reduce down to this lower pressure due to the operation of the discharge minimum pressure/check valve. This reduction in internal air pressure reduces the power requirement considerably during this unloaded state. The pressure switch located in the downstream air line senses air demand and upon reducing pressure in discharge line (i.e. air being used) will re-activate the inlet valve and the compressor again starts to load and produce air.

The discharge air pressure switch will typically be set with a 30 psi differential pressure.

2.6 Air Filter Unit

The air filter is dry type replaceable element and is mounted directly on top of the inlet valve assembly. The element is easily replaced for service change out - Refer to Maintenance Section.

2.7 Oil Reservoir and Primary Oil Separation

The main casting which contains the screw compressor is also the oil reservoir and primary oil separation unit. The initial (primary) oil separation is caused by both changes in velocity and direction. The main casting also contains the oil level/fill plug and oil drain connection. A separate oil reservoir is not required.

2.8 Secondary Spin-on Oil Coalescer/Separator

This spin-on element screws directly onto the filter support housing at the rear of the compressor module. The separator element (coalescer) recovers the finer particles of residual oil after pre-separation

DESCRIPTION – Vanair Tiger Hydraulic

Section 2 - Pg 3

2.8 Cont'd

oil, which is collected in this element, is scavenged back into the compressor unit. The oil return line passes through the Oil Sight Glass which indicates the amount of oil being deposited (scavenged) in the element. At start-up the sight glass most likely will be full for a short period which is due to drainage from the element when it is not in use, this should diminish fairly quickly and a lesser amount should be observed which indicates that the element is separating out oil deposited within the spin-on element.

2.9 Spin-On Oil Filter

Located on the filter support housing at the rear of the compressor. The filter incorporates a by-pass valve which will open to by-pass the filter during cold start-up when the oil is very viscous. It will also open if the filter element is plugged. Filter element rating is 10 Micron.

2.10 Minimum Pressure Valve/Check Valve Assembly

This combined valve located in the filter support housing has two functions.

The Minimum Pressure Valve - will maintain a pressure of approximately 65 psig in the compressor unit to ensure oil injection during load conditions and also to maintain effective oil separation. Once this internal pressure is exceeded it will allow air to discharge downstream to the service outlet.

The Discharge Check Valve - prevents air in service lines or downstream receiver from venting down through the compressor during unload (when the compressor automatically will unload to approximately 40 psig internally) and also during shutdown.

2.11 Hydraulic Drive System

Scope of supply may vary depending upon customer specifications.

Hydraulic pump, oil reservoir, return line oil filter and hoses to and from the completed packaged compressor are not furnished with the compressor. This is customer responsibility.

The packaged compressor unit will normally contain the hydraulic motor, hydraulic pressure relief valve, and on/off solenoid valve.

DESCRIPTION – Vanair Tiger Hydraulic**Section 2 - Pg 4****2.11 Cont'd**

Input hydraulic oil pressure feed is connected to the bulkhead provided on the compressor package. Within the package the high pressure oil feeds to a manifold containing the pressure relief valve and directional solenoid valve. If a malfunction in the hydraulic motor/compressor assembly causes the hydraulic pressure to rise, it will by-pass to the return line to safeguard damage or potential injury.

The directional solenoid valve is normally activated by the on/off selector switch mounted in the instrument cluster on the package, this valve is also connected through the compressor safety circuits for over-temperature and over-pressure; if either condition occurs it will shut the unit down, by diverting oil back to tank. It is possible to add remote on/off switch in parallel with the instrument cluster to permit on/off operation from another location on the vehicle.

Hydraulic oil from the manifold is hoses directly to the hydraulic motor and the outlet from the motor passes to the return line connection on the package. Customer to provide both hydraulic feed and return lines.

The hydraulic motor powers the compressor through a belt drive system.

2.12 Compressor Cooling System

The package contains a cooler assembly powered by a 12 volt D.C. electric fan. Oil from the compressor sump passes through this cooler before being filtered for re-injection into the compressor...A thermostatic fan temperature switch activates the fan to come on/off to maintain the correct operating temperature for the compressor oil. This switch will activate the fan to come on at approximately 185EF and will switch off again at approximately 165EF. The purpose of maintaining an elevated temperature during operation is to keep intake air moisture in suspension as it passes through the compressor. Thermal switch activation is affected by ambient conditions, load/unload cycles (or low oil level).

2.13 Instruments and Electrical System

- X Air Pressure Gauge - Monitors service air pressure and incorporates an over-pressure shutdown switch.
- X Air Temperature Gauge - Monitors discharge air temperature at the compressor and incorporates an over-temperature shutdown switch.
- X Hour Meter - To monitor operation hours for service.
- X Reset Button - To cancel/reset over-pressure/over-temperature shutdown condition.

DESCRIPTION – Vanair Tiger Hydraulic

Section 2 - Pg 5

2.13 Cont'd

- X On/Off Switch - To direct hydraulic oil supply for compressor start/stop.
- X Electrical Connections to be made by the installer are provided at the bulkhead connection location. There are normally only three connections to be made: ignition supply; battery supply; ground, refer to respective wiring diagram.

2.14 Mainframe and Enclosure

The steel mainframe is provided with bolt down holes.

The enclosure which is attached to the mainframe, is made from steel and is powder coated to provide a durable finish. There are two main components:

- X Cooler/Instrument housing which is bolted to the frame.
- X The enclosure provides guarding, protection for the unit and an aesthetically appealing practical enclosure.

Service Air Outlet is located on the main bulkhead connection strip and the service valve incorporates a venting feature which vents downstream air to the atmosphere when it is in the closed position.

Compressor oil level can be checked and filled from the outside of the enclosure.

Safety and Information Decals are appropriately located on the machine. Please read and understand all the information contained thereon.

OPERATION – Vanair Tiger Hydraulic**Section 3 - Pg 1****3.1 General:**

Built into the compressor is a comprehensive array of controls and safety systems, you will want to recognize and interpret the readings or malfunctions which will call for service or indicate the beginning of a problem.

Before starting your compressor, read this section thoroughly and familiarize yourself with the controls and operation.

3.2 Purpose of Controls:

| <u>Control or Indicator:</u> | <u>Purpose:</u> |
|--|---|
| On/Off Switch | Starts/stops compressor. |
| Discharge Air Pressure (Pressure Gauge) | Continuously monitors service line discharge air pressure, will activate shutdown if over-pressure occurs. |
| Discharge Air Temperature (Temperature Gauge) | Continuously monitors service line discharge temperature, will activate shutdown if over-temperature occurs. |
| Hour Meter Gauge (Operation Hours) | Indicates accumulated hours of operation for planning and logging service schedules. |
| Reset Button | To reset latch-in relay in event of over-pressure or over-temperature. |
| Oil Fill/Level Plug | To check/fill compressor oil level. |
| Minimum Pressure/Check Valve | Maintains minimum operating pressure and prevents back flow when unloaded/shutdown. |
| Pressure Switch | Controls operating pressure |
| Inlet Solenoid Valve | Opens/closes inlet valve in response to pressure switch. |
| Air Inlet Valve | Opens/closes in response to air demand and acts as check valve upon unload/shutdown to prevent oil blow back into air filter. |
| Fan Temperature Switch | Thermostatically switches cooling fan on/off to maintain optimum operating temperature. |

OPERATION – Vanair Tiger Hydraulic**Section 3 - Pg 2****3.2 Cont'd**

| | |
|---------------------------------|---|
| Hydraulic Pressure Relief Valve | Relieves hydraulic pressure to return line in event of hydraulic over-pressure condition. |
| Hydraulic Solenoid Valve | Responds to on/off switch to direct flow to compressor motor or to return line. |
| Air Pressure Relief Valve | Opens sump pressure to atmosphere in case of air over-pressure condition. |

3.3 Installation

1. Locate the machine so that there is no restriction of cooling air through the enclosure. Cooling air enters the enclosure at the instrument panel end of the machine, passes through the cooler and exits through vents in the upper sides and the rear.

Ensure adequate height and clearance at the rear to swing the rear enclosure back for service access.

2. Mounting surface or support should be adequate for the weight of the machine and should be level for normal operation. Mounting holes for 4 qty. 1/2" hold down bolts are provided. Refer to General Assembly drawing.
3. Service Connections are conveniently grouped at the rear lower section of the unit in the base frame.

Connections are:

Hydraulic supply (high pressure) - 1 1/6 - 12 x 37E Flare (male) - 3/4" J.I.C.

Hydraulic return (low pressure) - 1 5/16 - 12 x 37E Flare (male) - 1" J.I.C.

Air Service - 3/4" N.P.T. (female)

Electrical Connections - 4 pin with leads (3 qty)

4. Electrical connections - system designed for 12V DC negative ground.
Wire #1 - Battery +12V DC supply
Wire #9 - Ignition supply +12V DC supply
Wire #7/13/15 - Ground - Battery/Chassis
5. Hydraulic Supply Circuit - It is recommended that the compressor unit have a separate pump/flow/return hydraulic circuit to other hydraulic equipment. This is to prevent the possibility of pressure/flow drops which may occur if other hydraulically powered equipment is activated during compressor operation which may cause the compressor to stall out. Alternatively, use of a diverter valve which would permit hydraulics to power different equipment selectively.

OPERATION – Vanair Tiger Hydraulic

Section 3 - Pg 3

6. Ensure all supply hoses and electrical wiring is correctly specified, adequately supported and does not touch or rest on any sharp edges. Wiring should be protected with split loom to prevent damage, soldered & heat shrunk connections are recommended to prevent corrosion and consequently loss due to down time.

3.4 Initial Start-Up

The following procedure should be used to make the initial start-up of your compressor:

1. Position the compressor on a level surface so that the proper amounts of oil can be added if required.
2. Unit should be bolted down, do not rely on hoses to hold the module in position.
3. Check all hose connections are tight and wiring connections correct and tight.
4. Check compressor oil level, top up if necessary.
5. Switch instrument panel to OFF.
6. Ensure hydraulic oil to pump inlet. (Prime if necessary)
7. Engage hydraulic system (PTO or hydraulic supply) and allow hydraulic oil to circulate back to tank. Check for leaks.
8. Service valve on compressor closed.
9. Switch the instrument panel switch to ON, this should very quickly pass oil to the hydraulic motor on the compressor and start producing air.
10. Check pressure and temperature gauges. Pressure switch may need adjustment to achieve desired operating pressure (see Maintenance Section).
11. Partly open service valve to load compressor and allow to warm up. Monitor temperature gauge, the ideal operating temperature should be between 165EF and 190EF although it may be higher in high ambient conditions.
12. Cycle compressor on/off with service valve to ensure operation is O.K.
13. Close service valve then switch instrument switch to OFF.
14. Disengage hydraulic system.
15. Allow all air to vent to atmosphere, and then check compressor oil level - top up if necessary. Check and correct any leaks, tighten any loose fittings, check drive belt tension.

3.5 Normal Start-Up Procedure

1. Check compressor oil level - top up if necessary.
2. Instrument panel switch OFF - air service valve closed.
3. Engage hydraulic system (PTO or hydraulic supply).
4. Instrument panel switch ON - compressor should activate.
5. Allow machine to warm up for several minute before operating.

OPERATION – Vanair Tiger Hydraulic

Section 3 - Pg 4

3.6 Normal Shutdown Procedure

1. Close service valve and allow compressor to unload and cool down (approx. 5 min.).
2. Switch instrument panel switch OFF.
3. Shut off hydraulic power supply.

3.7 Operating Conditions

1. Operate only in well ventilated areas.
2. Ensure no obstructions of cooling air intakes and outlets around machine.
3. Do not leave anything resting on top of the machine. Hot cooling air will generate high heat and must not be restricted.
4. Be sure to leave sufficient room around the machine for cooling air circulation. Minimum 18 ins. cooler intake, sides and rear 12 ins. Heated air must be able to vent away from intake.
5. Operate machine with top cover closed.
6. Refer to specifications for operating parameters.

MAINTENANCE – Vanair Tiger Hydraulic**Section 4 - Pg 1****4.1 General:**

A good maintenance program is the key to long compressor life. Below is a program that when adhered to, should keep the compressor in top operating condition. However, it should be understood that these intervals are for normal operation in a good clean environment. More frequent inspections, oil changes and general maintenance should be carried out in dusty environments, high ambient temperatures or extended light load conditions. Units that have not yet been installed should be stored in a dry, temperature controlled environment. Unit should be recharged with oil if it has been in extensive storage.

WARNING - DO NOT remove caps, plugs or any components when the compressor is running or pressurized. Stop the compressor and relieve all internal pressure before doing so.

4.2 Daily Operation:

Before Starting:

1. Check compressor oil level.
2. Check for any leaks or loose bolts.
3. Check drive belt is tight.

After Starting:

4. Check pressure gauge for correct operating pressure.
5. Check for leaks.

4.3 MAINTENANCE AFTER INITIAL 50 HOURS OF OPERATION

After the initial 50 hours of operation, a few maintenance requirements are needed to rid the system of any foreign materials. Perform the following maintenance operations to prevent unnecessary future problems.

1. Change the oil filter element.
2. Drain and refill air/oil receiver sump.
3. Inspect intake air filter (change if necessary)

4.4 EVERY 500 HOURS OR YEARLY, WHICHEVER COMES FIRST

IMPORTANT – It may be necessary to change at earlier intervals if oil has water contamination or if compressor is operated in poor/dirty environment.

1. Change the oil filter element.
2. Drain and refill air/oil receiver sump.
3. Replace intake air filter.
4. Annually replace separator element (located in air-oil sump).
5. Inspect exterior of front mounted oil cooler, clean if necessary.

4.5 Lubrication Guide:

WARNING - It is important that the compressor oil be Vanguard Rotary Screw Compressor Oil and that it is inspected and replaced together with the oil and air filters, in accordance with this manual.

The result of poorly maintained lubricant and/or filters may produce hazardous conditions resulting in ignition, which could cause a fire in the sump. Damage to equipment and serious bodily harm may result.

1. Required Lubricant: Vanguard Rotary Screw Compressor Oil

2. Prime Lubricant Characteristics:

- | | |
|----------------|-------------------------------|
| 1. Viscosity: | 178 SUS at 100°F(38°) |
| 2. Flashpoint: | 457°F(236°C) |
| 3. Pour point | -49°F (-45°C) |
| 4. Contain: | Rust and Oxidation Inhibitors |
| 5. Contain: | Detergents |

3. Factory Fill – Vanguard Rotary Screw Compressor Oil

CAUTION - DO NOT MIX OILS OF DIFFERENT TYPES.

4.6 Oil Filter Replacement:

The compressor oil filter is a spin on, throw away type. Before attempting to remove the oil filter; ensure all air is relieved from the system. **CAUTION** - Use only original equipment filters, other filters may not have correct pressure rating or even different thread.

Remove:

1. Remove old filter (use strap wrench if required) by turning Anti-Clockwise and discard as appropriate and in accordance with any pertinent regulations.
2. Clean filter head with lint free wiper or cloth.

Replacement:

3. Apply a light film of oil to the seal surface on the new element.
4. Screw new element on, clockwise by hand until seal contacts filter head, then turn an additional 3/4 turn (by hand).
5. Run compressor and test for leaks.

4.7 Coalescer (Air/Oil Separator) Replacement:

This is a spin-on, throw away type unit. Before attempting to change ensure all pressure is relieved from the system. Change in accordance with Maintenance Guidelines. If oil carryover into the service line occurs and the oil scavenge return line scavenge shows little or no oil return, and then change the element. Verify receiver is not over full. **CAUTION** - Use only original equipment coalescer element to ensure pressure rating and performance is satisfactory.

Remove:

1. Remove old element (use strap wrench if required) by turning anti-clockwise and discard as appropriate and in accordance with any pertinent regulations.

Replacement:

3. Apply a light film of oil to the seal surface on the new element.
4. Screw element on clockwise until it seats on the head, rotate an additional 3/4 turn (by hand). Take care not to damage element.
5. Start up and check for leaks.

4.8 Air Filter Replacement:

DO NOT replace with compressor in operation. If environment is dirty or dusty an earlier change out may be required. To ensure correct filtration use only original equipment filters.

Remove:

1. Unscrew the wing nut on top of the air filter and remove filter cover.
2. Discard filter as appropriate and in accordance with any pertinent regulations.

Replacement:

3. Clean cover and any dirt inside filter housing taking extreme care that no dust/dirt particles reach the air intake of the compressor.
4. Fit new element inside housing.
5. Replace lid and tighten wing nut on top of air filter assembly.
6. Test run and functional test.

4.9 Belts - Tightening and Replacement:

Correct tensioning and alignment is important for belt life, bearing life and power transmission.

Correct tensioning and alignment was provided at time of shipment from the factory. However, since maximum belt elongation will occur within the first 50 hours of operation (Of new belts), their tension should be checked several times during this period and corrected as required. The belts should thereafter be checked periodically in order to obtain maximum life and performance.

NOTICE - To avoid possible belt damage, never force belts over the sheaves. Oil spilled or splashed onto the belts in any quantity will cause slippage and severely reduce belt life - take care when filling compressor oil.

Replacing/Tightening V-Belts:

1. Loosen slightly the bolt at the base of the hydraulic motor mounting bracket. This will allow the hydraulic motor to be moved in or out to tighten or loosen the belts.
2. Back off adjusting bolt lock nut. Screw the adjusting bolt clockwise to tighten belt or anti clockwise to loosen belts.
3. After adjustments have been made, tighten base bolt to insure no further movement.

Tension Data

Deflection at center of belt span 0.25 inches
With a force of 4 pounds.

Pulley alignment is set at factory and shouldn't need to be adjusted, if it is found necessary to adjust the pulley alignment, this is done by loosening the four bolts that hold down the base plate to the frame and adjust per following instructions.

Ensure pulleys are aligned by using a long straight edge which will span both pulleys. Position the straight edge on the sides of the pulleys, if they are in-line there should be no gaps between the straight edge and the pulleys (for the full contact distance across each pulley side), adjust as necessary to get correct alignment and tension.

It may be necessary to repeat and check several times before both tension and alignment are satisfied.

4.10 Cooler Core Cleaning (exterior):

Remove leaves, papers, etc. from outside face. Use compressed air and carefully blow through the core from the inside of the canopy (through fan assembly or remove fan assembly).

DO NOT use high pressure air or pressure washer.

Note - Oil cooler core is aluminum, if this does at some point require internal cleaning, this is best done by a suitable equipped radiator shop. Internal cleaning is **NOT** a normal maintenance item if the oil is maintained in good condition.

4.11 Adding/Changing Compressor Oil:

Ensure all pressure is relieved from the system. Check oil level with unit level, otherwise a false oil level indication will occur.

1. Remove oil fill plug located on main compressor base casting. (**NOTE** - This can be done without lifting canopy.)
2. Carefully add lubricant and monitor oil level, allow time for oil to level out.
A complete refill is approximately 2 quarts. Correct oil level is minimum to bottom threads on oil fill port up until oil runs out of port. Overfill can only occur if unit is out of level.
3. Refit oil fill cap tightly by hand.
4. Run unit and recheck oil level after shutdown, allowing time for oil to settle.

Oil drain is provided with short drain hose. This can be routed to a more convenient location if required, dependent upon installation. Use only Schedule 80 pipe or suitably rated hose.

NOTE - Fill cap has a vent release hole as a safety feature and to act as a “tell-tale”. If air escapes while unscrewing the fill cap, then the system still has pressure. Re-tighten the cap and wait until all pressure is relieved.

4.12 Pressure Adjustments:

Before adjusting the pressure control system it is necessary to determine the rated full load pressure setting. These can be found in the Specification Section.

Pressure Switch Location:

The pressure switch is located directly behind the cooling fan inside a black plastic box. Removing the one single screw from the bottom of the plastic cover allows the cover to be removed exposing the two adjustment screws at the top and also exposes the electrical terminations.

MAINTENANCE – Vanair Tiger Hydraulic**Section 4 - Pg 7**

DANGER - Adjustments should be made with compressor switched **OFF** since electrical terminals inside pressure switch will be exposed and opening the canopy exposes belt drive system.

Procedure for Setting:

1. Start compressor and allow to warm up. **NOTE** - Pressure reading on gauge with service valve closed. Switch off compressor.
2. Adjustment screws on pressure switch.
Steel slotted screw (L.H. side upper) will adjust both cut-out and cut-in pressures together. Screw in clockwise to increase screw out counter clockwise to decrease. Plastic head slotted screw (R.H. side upper) will permit changes to cut-out pressure (higher pressure) without affecting cut-in pressure. (i.e. changes differential pressure range) screw in clockwise to increase and counterclockwise to decrease upper pressure setting.

Nominal differential setting 25 to 30 psi. This is to reduce load/unload cycle in cases where minimal air usage or leaks in hoses/connections may occur. The recovery period from unload to load is rapid with the screw compressor and this initial setting will suit most applications.

It is suggest to make adjustments in ½ turn increments then close canopy, restart and check pressure. Re-adjust as necessary.

When desired pressure is set, replace switch cover and close canopy for operation.

CAUTION - Increasing air pressure will increase the required compressor H.P. Be sure the hydraulic power supply is capable (Hydraulic pressure) otherwise the compressor may stall out during operation due to increased power requirement.

4.13 Intake Control:

The intake control consists of two main sub-assemblies:

1. Inlet Valve Assembly

The inlet valve opening/closing (load/unload) is controlled by admitting/exhausting pilot air pressure through the solenoid valve to the piston which is part of the inlet valve assembly. The inlet valve is not a routine maintenance item. Maintenance kits are available which include replacement seals, etc.

2. Solenoid Valve

Attaches directly to the inlet valve and responds to signals from the pressure switch to admit/vent pilot air pressure to the inlet valve to control load/unload.

4.13 Cont'd

In the unlikely event of failure this item is to be replaced as a complete item.

4.14 Minimum Pressure Valve:

Normally factory set to 65 psig.

Provides two main functions:

1. Maintains Minimum Pressure

Prevents downstream air to pass until compressor system is up to minimum pressure valve setting which aids in maintaining good oil supply to the compressor and also is a requirement for good oil separation.

2. Back Pressure Check Valve

Allows for compressor to be unloaded to lower pressure than supply air line system and permits compressor air pressure to be totally relieved when stopped.

This valve is not a routine maintenance item. Seals and replacement parts are available.

4.15 Compressor Thermal Valve

Controls compressor oil temperature and permits for rapid compressor oil warm up. Commences to pass oil through cooler at 160EF and is fully open at 185EF.

4.16 Safety Shutdown Systems:

Protection for over-pressure and/or over-temperature is provided. If either condition should occur the diverter valve should activate to divert hydraulic fluid back to tank and the compressor will stop, the reset on instrument panel will pop out and stay out until reset. Reason for shutdown should be investigated before pressing reset.

Periodically (every 6 months or every 500 hours) the shutdown system should be tested as follows: Compressor operating, close service valve and allow compressor to unload (say 2 minutes or more) then touch across button on gauge face to Bezel surrounding the respective gauge with coin or screwdriver. Reset button should pop out and compressor stop. Switch off compressor and press reset button to reactive shutdown system.

TROUBLE SHOOTING – Vanair Tiger Hydraulic**Section 5 - Pg 1**

The information contained in the Troubleshooting Chart has been compiled from information gathered. It contains symptoms and usual causes for the most common types or problem. All available data concerning the trouble should be systematically analyzed before undertaking any repairs or component replacement.

A visual inspection is worth performing for almost all problems and may avoid unnecessary additional damage to the machine. 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.

WARNING - Before working on any machine, ensure it is shut down and isolated, air pressure relieved, and unit has cooled down.

SYMPTOM:**PROBABLE CAUSE:**

| | | |
|--|---|--|
| 1. Compressor shuts down with air demand | 1.1 Compressor temperature----- switch opening. ----- | Low oil level-top up. Restricted cooling air intake-clean-reposition machine. Fan not operating-check ground-check fan switch. |
| | 1.2 Plugged oil filter----- | Replace |
| | 1.3 Dirty cooler core----- | Clean |
| | 1.4 Contaminated cooler core----- | Remove and clean |
| | 1.5 Hydraulic pressure & Flow incorrect---- | Adjust and reset |
| 2. Compressor will not build up pressure | 2.1 Air demand too great----- | Check for leaks and correct Too much air demand |
| | 2.2 Air filter plugged----- | Check and replace |
| | 2.3 Press. switch out of adjustment | Reset |
| | 2.4 Defective pressure switch----- | Replace |
| | 2.5 Motor does not speed up----- | Pressure switch Check hydraulic flow & pressure |
| | 2.6 Belts slipping----- | Readjust/tighten |
| | 2.7 Service valve wide open----- | Close |
| | 2.8 Sol. valve stuck----- | Replace |
| | 2.9 Leak in air pilot line----- | Check for leaks & correct |
| 3. Compressor over pressures | 3.1 Press. Regul. out of adjustment | Reset |
| | 3.2 Defective press. switch----- | Replace |
| | 3.3 Leak in air control line----- | Check and correct |
| | 3.4 Inlet valve stuck----- | Free or replace |
| | 3.5 Restriction in control line----- | Dirt or ice, clean/free up |

TROUBLE SHOOTING – Vanair Tiger Hydraulic**Section 5 - Pg 2**

| SYMPTOM: | PROBABLE CAUSE: | |
|---|--|---------------------------------------|
| 4. Insufficient air delivery | 3.6 Sol. valve not energized/faulty | Check for power/replace |
| | 3.7 Faulty gauge----- | Check with shop air/replace |
| | 3.8 Defective safety valve----- | Replace |
| | 3.9 Plugged coalescer----- | Replace |
| | 4.1 Plugged air filter----- | Replace |
| | 4.2 Plugged coalescer----- | Replace |
| | 4.3 Motor speed too low----- | Check hydraulic flow & pressure |
| | 4.4 Inlet valve stuck----- | Free or replace |
| 5. Oil carryover | 4.5 Belts slipping----- | Readjust |
| | 5.1 Oil level overfull----- | Drain to correct level |
| | 5.2 Plugged oil scavenge line----- | Remove and clean |
| | 5.3 Discharge pressure too low-- | Check minimum pressure valve |
| 6. Compressor overheating | 5.4 Defective coalescer----- | Replace |
| | 6.1 Insufficient oil----- | Check level and top up |
| | 6.2 Restricted cooling air flow--- | Reposition machine |
| | 6.3 Fan not operating----- | Check ground connection |
| | ----- | Check fan switch |
| | ----- | Check air pressure switch |
| | ----- | Check circuit breaker |
| | ----- | Check for shorted wires |
| | ----- | Check fan motor |
| | 6.4 Plugged oil filter----- | Replace |
| 6.5 Cooler core plugged----- | Clean | |
| 6.6 Pressure set too high----- | Readjust | |
| 6.7 Contaminated cooler core--- | Remove and clean | |
| 6.8 Running too fast----- | Check hydraulic flow & pressure | |
| 7. System retains pressure after shutdown | 6.9 Thermal Valve----- element faulty | Replace |
| | 7.1 Solenoid valve stuck----- | Should be no power to solenoid valve |
| | ----- | Valve stuck. Replace |
| | ----- | Pressure switch faulty/replace |
| | 7.2 Leak back from airline----- | Check minimum pressure valve for leak |

TROUBLE SHOOTING – Vanair Tiger Hydraulic

Section 5 Pg 3

SYMPTOM:

PROBABLE CAUSE:

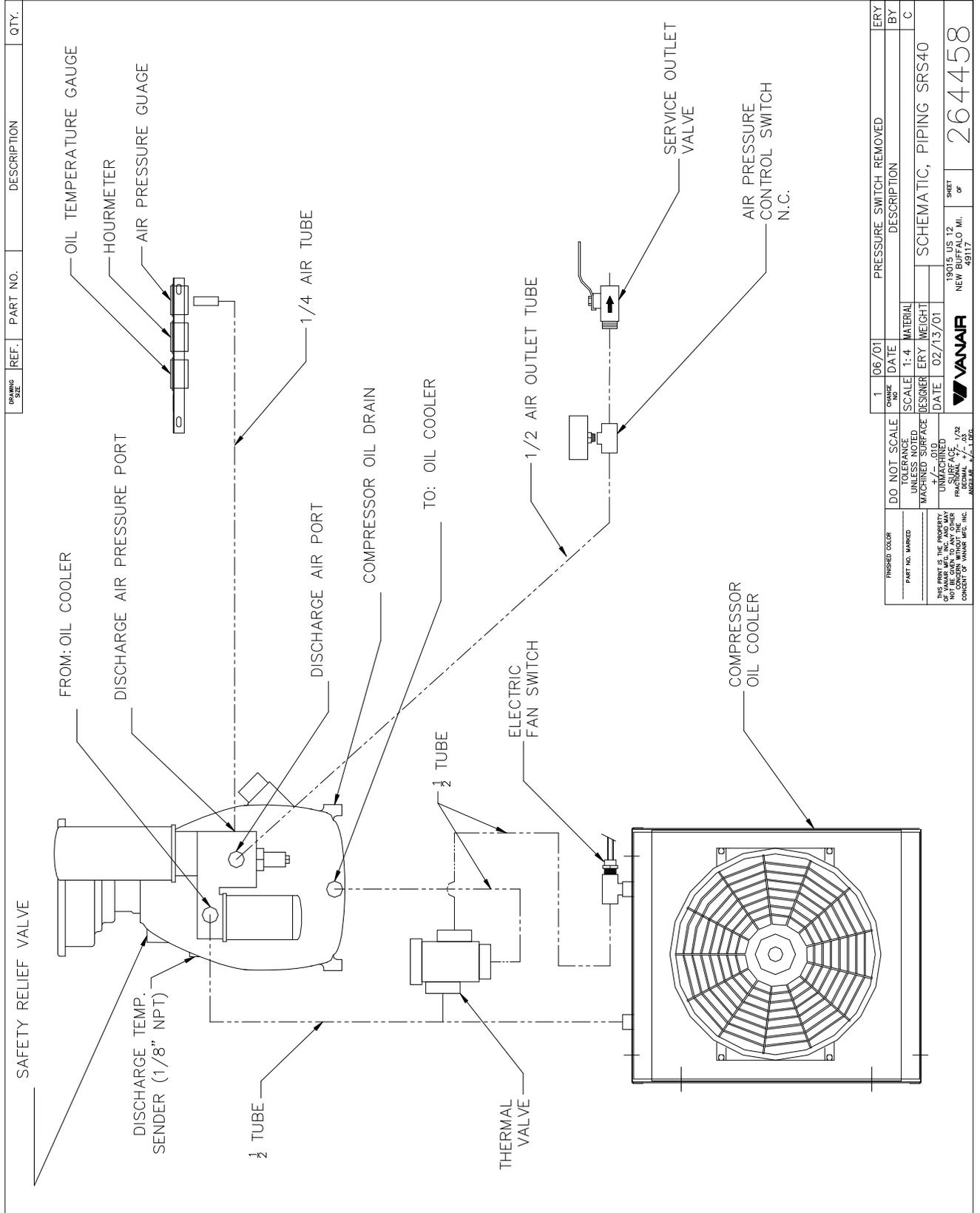
8. Compressor stalls

- 8.1 Belts slipping-----
- 8.2 Insufficient hydraulic system pressure/flow.
This can occur if another hydraulically activated component is used off same pump system. Activating the secondary component may drop hydraulic supply system pressure/flow and leave insufficient for compressor. NOTE - even a momentary drop in supply hydraulic supply pressure/flow may initiate compressor blowdown to commence.
- 8.3 Pressure relief valve set too low-----
- 8.4 Leak in seals on pressure relief valve----
- 8.5 Air pressure set too high for hydraulic system-----
- 8.6 Leak in solenoid valve cartridge (directional flow control valve) on manifold-----
- 8.7 Check over-pressure or over-temperature

- Readjust/tighten
- Check setting on supply pressure system relief valve. Check to ensure adequate pressure/flow. Check if other systems activated off same supply.
- Check & reset
- Remove & check seals or fit new valve cartridge
- Adjust pressure switch to reduce air pressure.
- Remove & check seals or fit new valve cartridge.

DIAGRAMS – Vanair Tiger Hydraulic

Section 6 - Pg 2

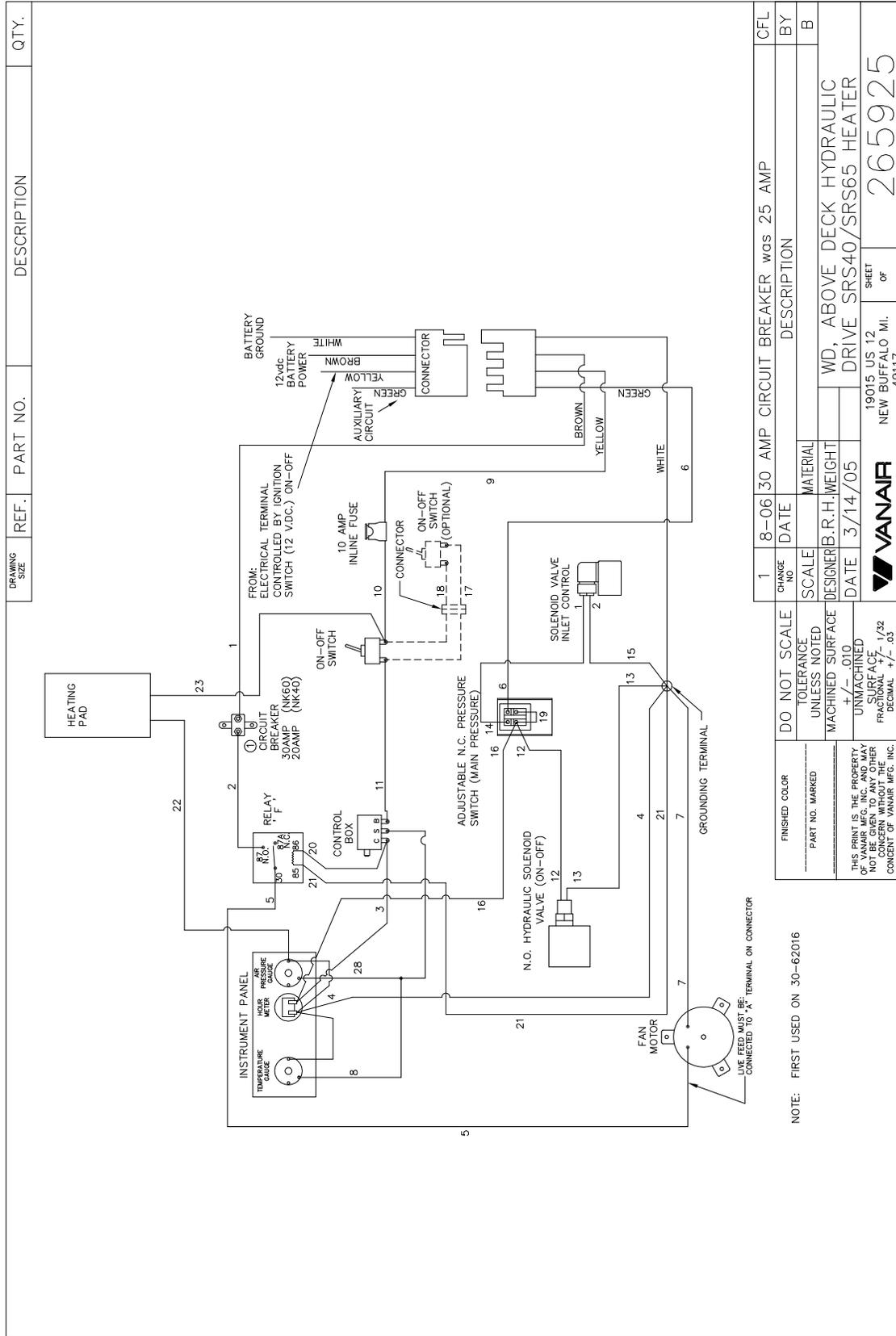


| REF. | PART NO. | DESCRIPTION | QTY. |
|------|----------|----------------------|-------------|
| 1 | 06/01 | CHANGE NO. | |
| | | DATE | |
| | | SCALE | 1:4 |
| | | MATERIAL | |
| | | DESIGNER | ERY, WEIGHT |
| | | DATE | 02/13/01 |
| | | UNMACHINED | |
| | | FRAC. MARK ACT. 1/32 | |
| | | ASSEMBLY 7/1/00 | |
| | | 10015 US 12 | |
| | | NEW BUFFALO MI. | |
| | | 49117 | |
| | | SHEET | 264458 |
| | | OF | |

| DO NOT SCALE | 1 | 06/01 | DATE | DESCRIPTION | ERY |
|----------------------|---|-------|------|-------------|-----|
| UNLESS NOTED | | | | | BY |
| WASHED SURFACE | | | | | C |
| UNMACHINED | | | | | |
| FRAC. MARK ACT. 1/32 | | | | | |
| ASSEMBLY 7/1/00 | | | | | |
| 10015 US 12 | | | | | |
| NEW BUFFALO MI. | | | | | |
| 49117 | | | | | |
| SHEET | | | | | |
| OF | | | | | |

DIAGRAMS – Vanair Tiger Hydraulic

Section 6 - Pg 3



| DRAWING SIZE | REF. | PART NO. | DESCRIPTION | QTY. |
|--------------|------|----------|-------------|------|
| | | | | |

| | | | |
|-----------|---------------|---|-----------------|
| 1 | 8-06 | 30 AMP CIRCUIT BREAKER was 25 AMP | CFL |
| CHANGE NO | DATE | DESCRIPTION | BY |
| SCALE | MATERIAL | | B |
| DESIGNER | B.R.H./WEIGHT | WD, ABOVE DECK HYDRAULIC DRIVE SRS40/SRS65 HEATER | |
| DATE | 3/14/05 | | |
| | | 19015 US 12 NEW BUFFALO MI. 49117 | SHEET OF 265925 |

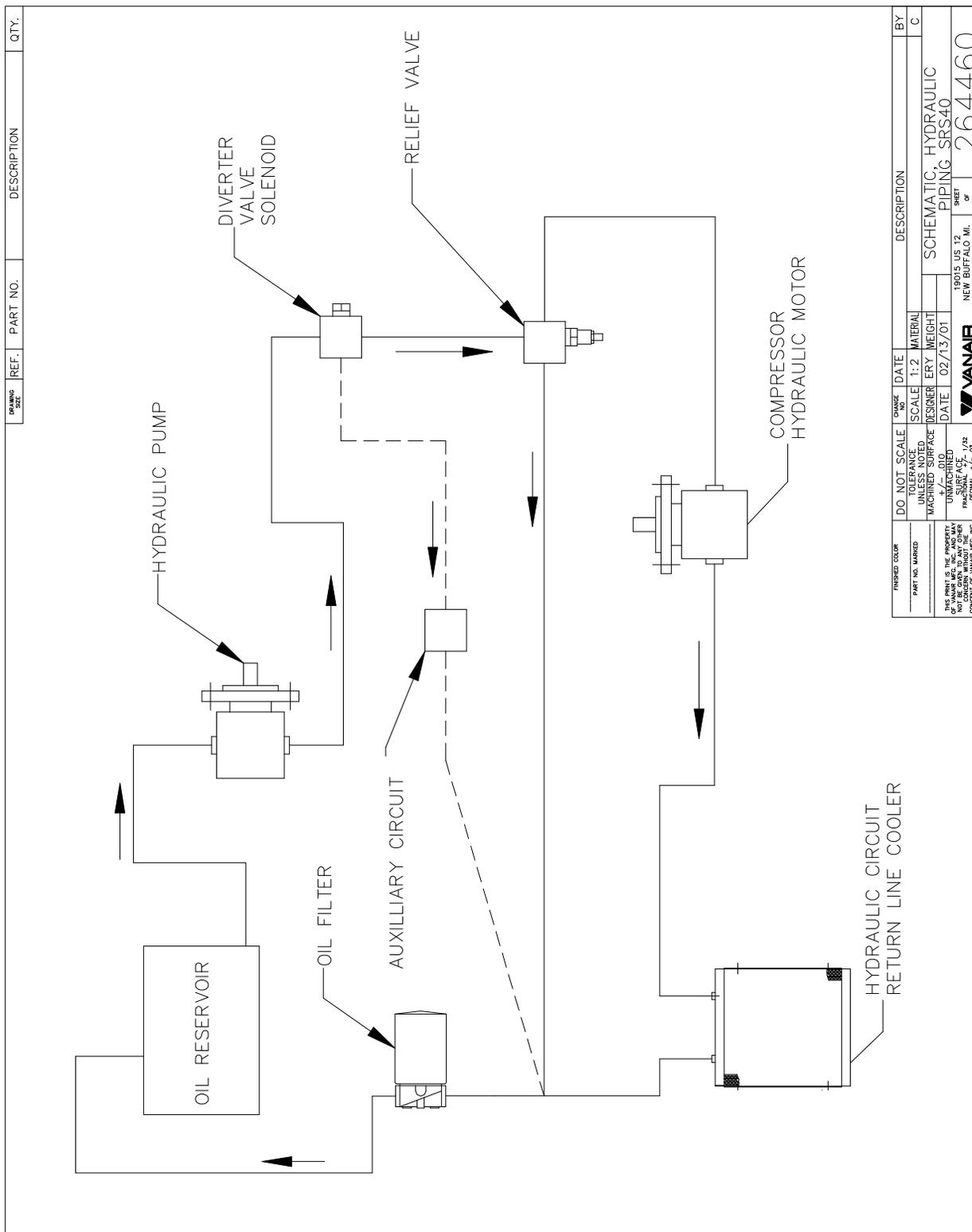
| | | |
|--|---------------------|------------------------|
| FINISHED COLOR | DO NOT SCALE | TOLERANCE UNLESS NOTED |
| PART NO. MARKED | UNLESS NOTED | MACHINED SURFACE |
| | +/- .010 | UNMACHINED SURFACE |
| | FRACTIONAL +/- 1/32 | DECIMAL +/- .005 |
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NOTE: FIRST USED ON 30-62016

LIVE FEED MUST BE CONNECTED TO 'A' TERMINAL ON CONNECTOR

DIAGRAMS – Vanair Tiger Hydraulic

Section 6 - Pg 4



PARTS LIST & ILLUSTRATION –Vanair Tiger Hydraulic Section 7 - Pg 1

7.1 Procedure for Ordering Parts:

Parts should be ordered from the nearest Distributor or from whom the unit was purchased. If for any reason parts cannot be obtained in this manner, contact the factory direct.

When ordering parts it is **IMPORTANT** to indicate the **SERIAL NUMBER** of the machine. This is attached to the main base inside the enclosure (example 30 - 12345) and is marked on the “Vanair Tag”.

Some standard fasteners (capscrews, nuts, washers, etc.) and fittings plus other standard hardware may not have been included in the Parts List. Where not illustrated, use Grade 5 fastenings and schedule 40 fittings.

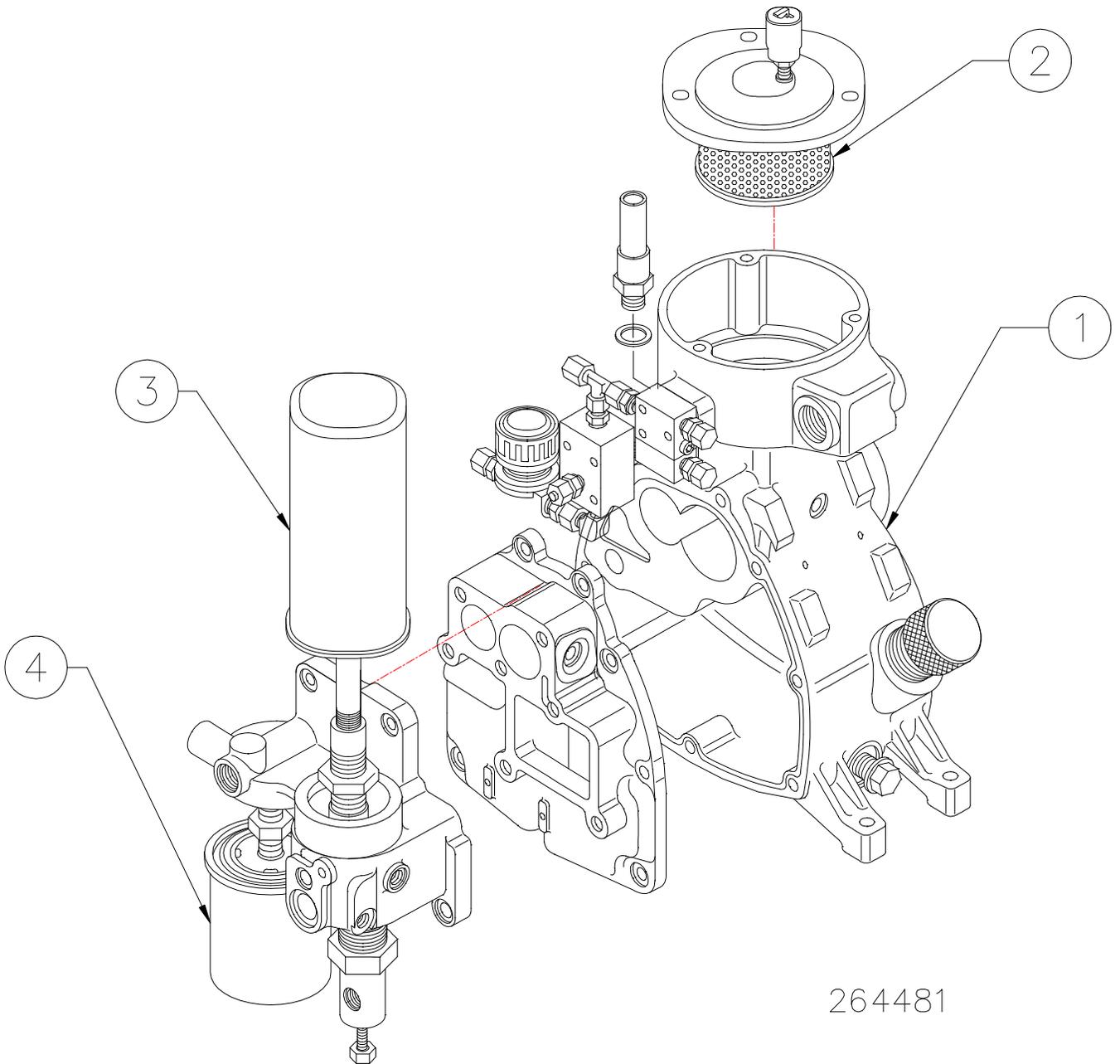
Vanair Manufacturing, Inc.
19015 US Highway 12
Tel: 269-469-4461
800-526-8817
Fax: 269-469-0497

7.2 Recommended common replacement parts:

| <u>Part Number:</u> | <u>Description:</u> |
|----------------------------|----------------------------------|
| 264469 | Element, Air Filter |
| 264471 | Element, Oil Filter |
| 264470 | Element, Coalescer Filter |
| 264153 | Drive Belt |
| 264472 | Kit, Shaft Seal |

PARTS LIST & ILLUSTRATION – Vanair Tiger Hydraulic Section 7 - Pg 2

COMPRESSOR REPLACEMENT PARTS



264481

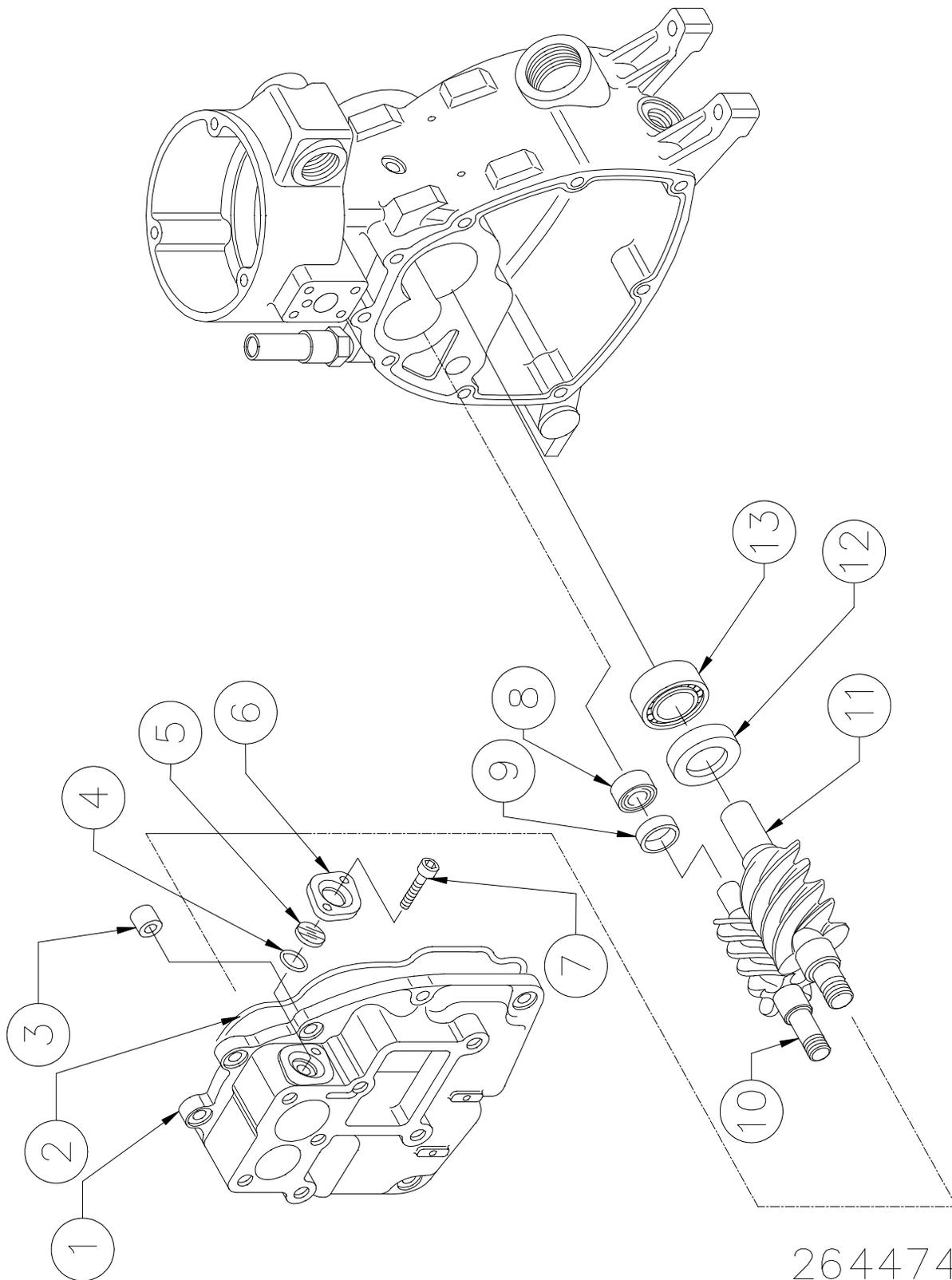
PARTS LIST & ILLUSTRATION- Vanair Tiger Hydraulic Section 7 - Pg 3**7.3 264481 COMPRESSOR REPLACEMENT PARTS LISTING**

| REF # | PART NO. | DESCRIPTION | QTY. |
|-------|----------|------------------------------|------|
| 1 | 264154 | COMPRESSOR COMPLETE ASSEMBLY | 1 |
| 2 | 264469 | AIR FILTER ELEMENT | 1 |
| 3 | 264470 | COALESCER SPIN-ON ELEMENT | 1 |
| 4 | 264471 | OIL FILTER ELEMENT | 1 |
| N/S | 264472 | SHAFT SEAL KIT | 1 |

N/S NOT SHOWN

PARTS LIST & ILLUSTRATION- Vanair Tiger Hydraulic Section 7 - Pg 4

COMPRESSOR ASSEMBLY



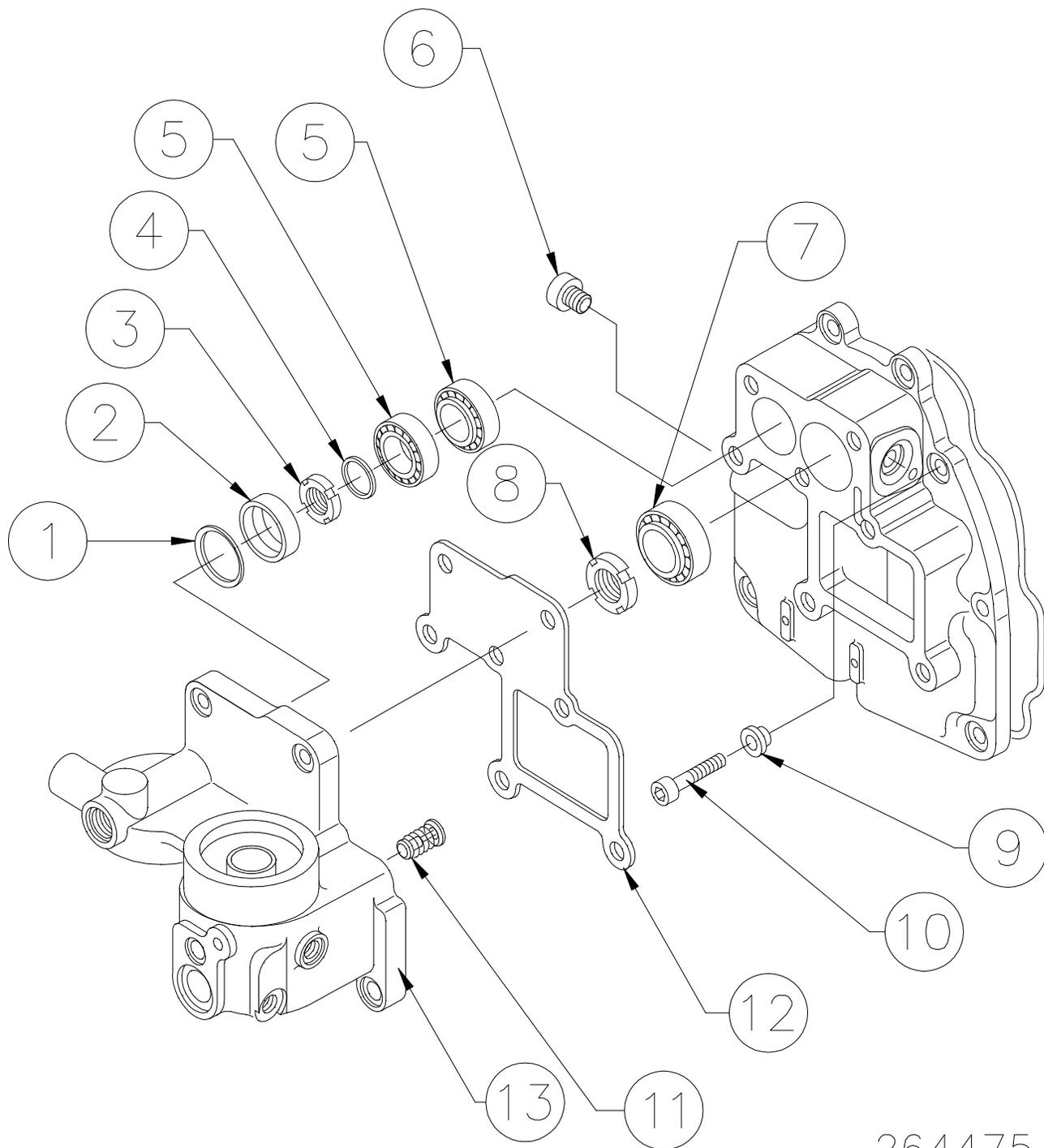
264474

PARTS LIST & ILLUSTRATION- Vanair Tiger Hydraulic Section 7 - Pg 5**7.4 264474 COMPRESSOR ASSEMBLY PARTS LISTING**

| REF # | PART NO. | DESCRIPTION | QTY. |
|--------------|-----------------|--------------------|-------------|
| 1 | 264154-001 | HOUSING | 1 |
| 2 | 264154-002 | GASKET | 1 |
| 3 | 264154-003 | SPACER | 1 |
| 4 | 264154-004 | SEAL | 1 |
| 5 | 264154-005 | GLASS | 1 |
| 6 | 264154-006 | SIGHT GLASS COVER | 1 |
| 7 | 264154-007 | SCREW | 1 |
| 8 | 264154-008 | BEARING | 1 |
| 9 | 264154-009 | SEAL | 1 |
| 10 | 264154-010 | ROTOR | 1 |
| 11 | 264154-011 | ROTOR | 1 |
| 12 | 264154-012 | SEAL | 1 |
| 13 | 264154-013 | BEARING | 1 |

PARTS LIST & ILLUSTRATION- Vanair Tiger Hydraulic Section 7 - Pg 6

COMPRESSOR ASSEMBLY



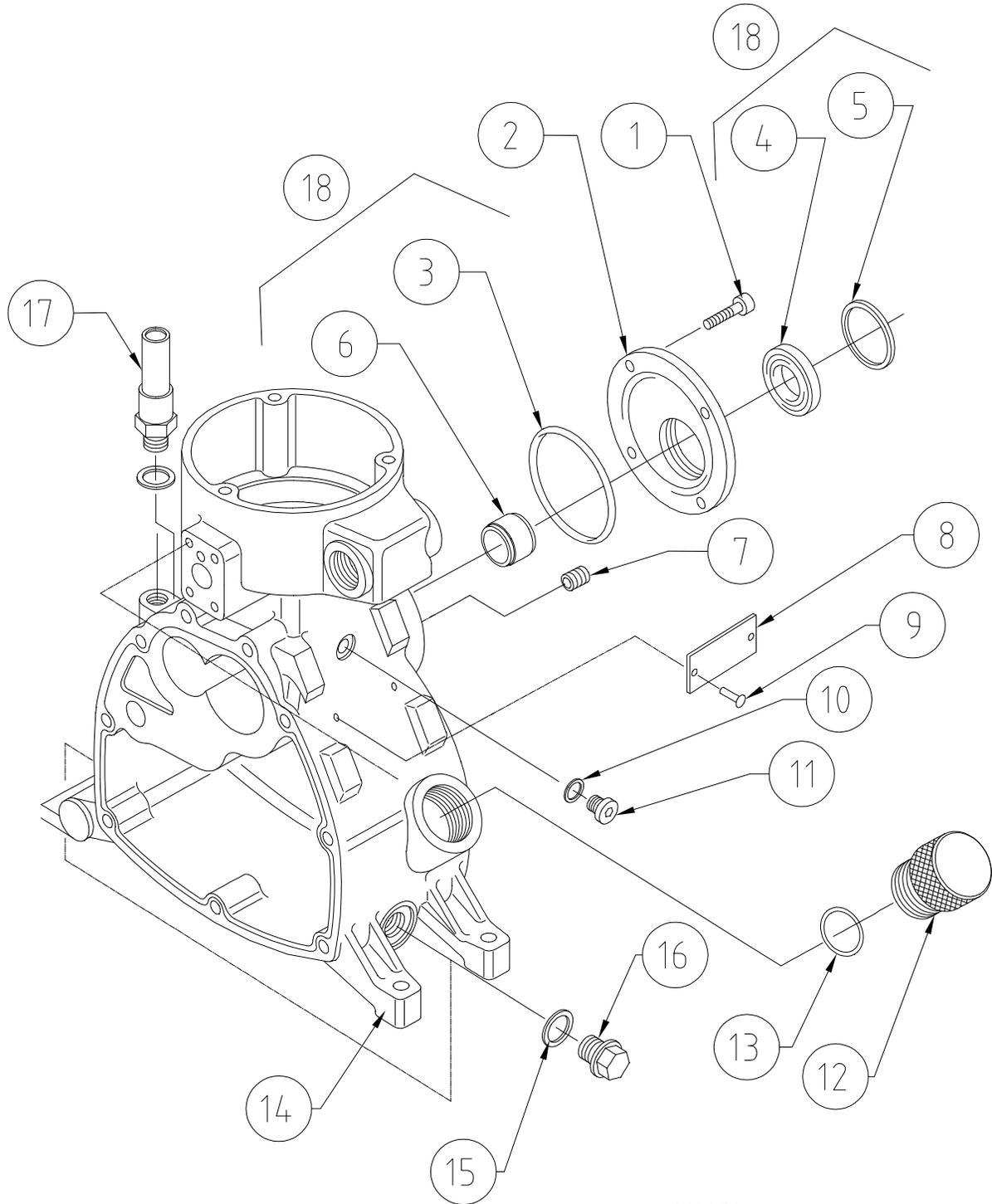
264475

PARTS LIST & ILLUSTRATION- Vanair Tiger Hydraulic Section 7 - Pg 7**7.5 264475 COMPRESSOR ASSEMBLY PARTS LISTING**

| REF. # | PART NO. | DESCRIPTION | QTY. |
|---------------|-----------------|----------------------------|-------------|
| 1 | 264154-038 | PRELOAD WASHER | 1 |
| 2 | 264154-039 | SPACER | 1 |
| 3 | 264154-040 | BEARING LOCK NUT | 1 |
| 4 | 264154-041 | SPACER | 1 |
| 5 | 264154-042 | BEARING | 1 |
| 6 | 264154-043 | PLUG | 1 |
| 7 | 264154-044 | BEARING | 1 |
| 8 | 264154-045 | NUT | 1 |
| 9 | 264154-046 | SPACER | 1 |
| 10 | 264154-047 | SCREW | 1 |
| 11 | 264154-048 | CHECK VALVE (OIL SCAVENGE) | 1 |
| 12 | 264154-049 | GASKET | 1 |
| 13 | 264154-050 | HOUSING | 1 |

PARTS LIST & ILLUSTRATION – Vanair Tiger Hydraulic Section 7 - Pg 8

COMPRESSOR ASSEMBLY



264476

PARTS LIST & ILLUSTRATION-Vanair Tiger Hydraulic Section 7 - Pg 9**7.6 264476 COMPRESSOR ASSEMBLY PARTS LISTING**

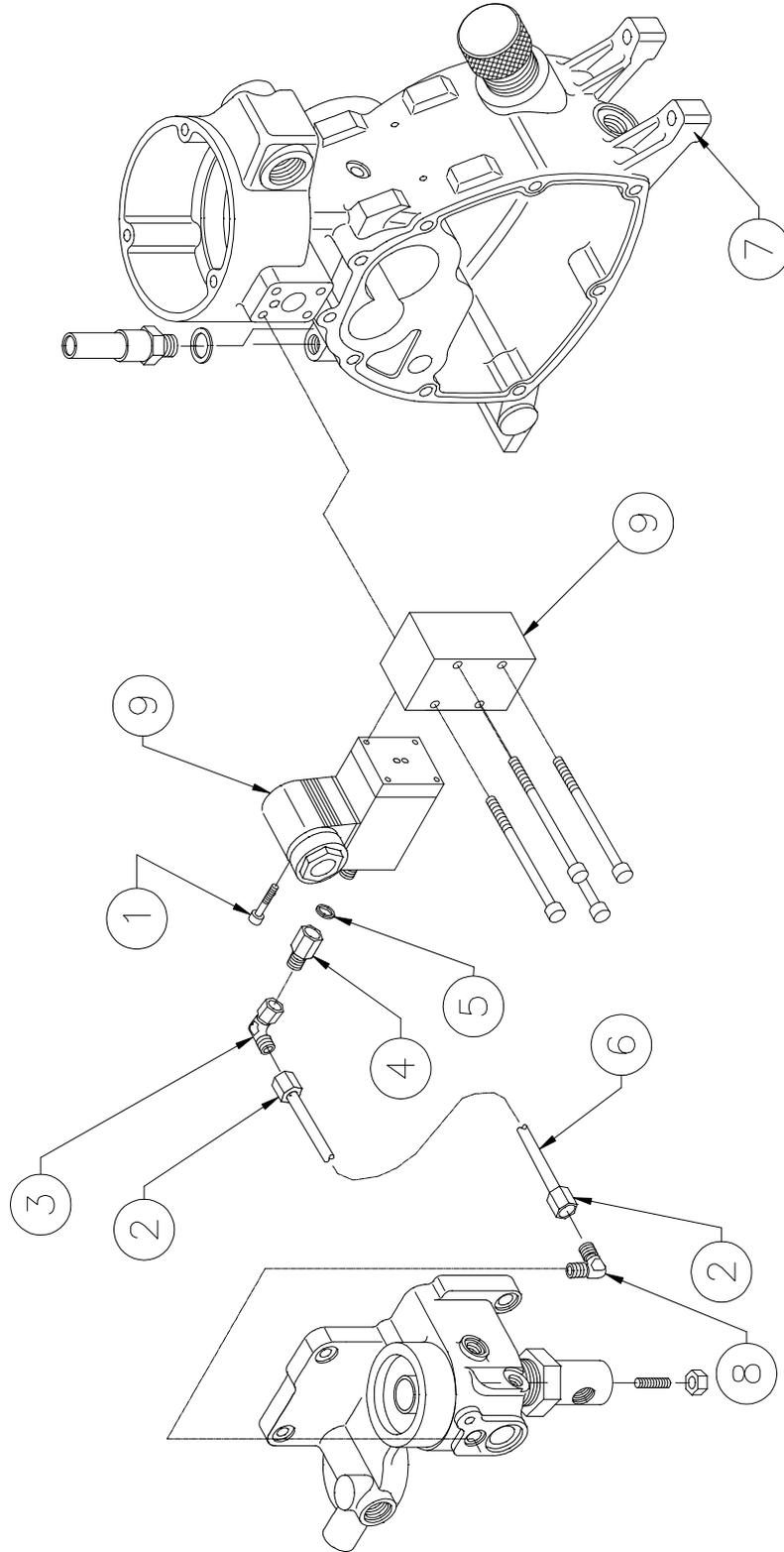
| REF. # | PART NO. | DESCRIPTION | QTY |
|--------|------------|---|-----|
| 1 | 264154-052 | SCREW | 1 |
| 2 | 264154-053 | COVER | 1 |
| 3 | 264154-054 | O-RING | 1 |
| 4 | 264154-055 | SEAL, SHAFT | 1 |
| 5 | 264154-056 | RING, SNAP | 1 |
| 6 | 264154-057 | WEAR SLEEVE | 1 |
| 7 | 264154-058 | PLUG | 1 |
| 8 | 264154-059 | SERIAL NUMBER PLATE | 1 |
| 9 | 264154-060 | RIVET | 1 |
| 10 | 264154-061 | COPPER WASHER | 1 |
| 11 | 264154-062 | PLUG | 1 |
| 12 | 264154-063 | OIL FILL CAP | 1 |
| 13 | 264154-064 | O-RING | 1 |
| 14 | 264154-065 | FRONT HOUSING | 1 |
| 15 | 264154-066 | COPPER WASHER | 1 |
| 16 | 264154-067 | PLUG | 1 |
| 17 | 264232 | PRESSURE RELIEF | 1 |
| 18 | 264472 | SHAFT SEAL KIT (INCLUDES ITEMS 3,4 & 6) | 1 |

N/S NOT SHOWN

* KIT ITEMS

PARTS LIST & ILLUSTRATION-Vanair Tiger Hydraulic Section 7 - Pg 10

INLET VALVE SYSTEM

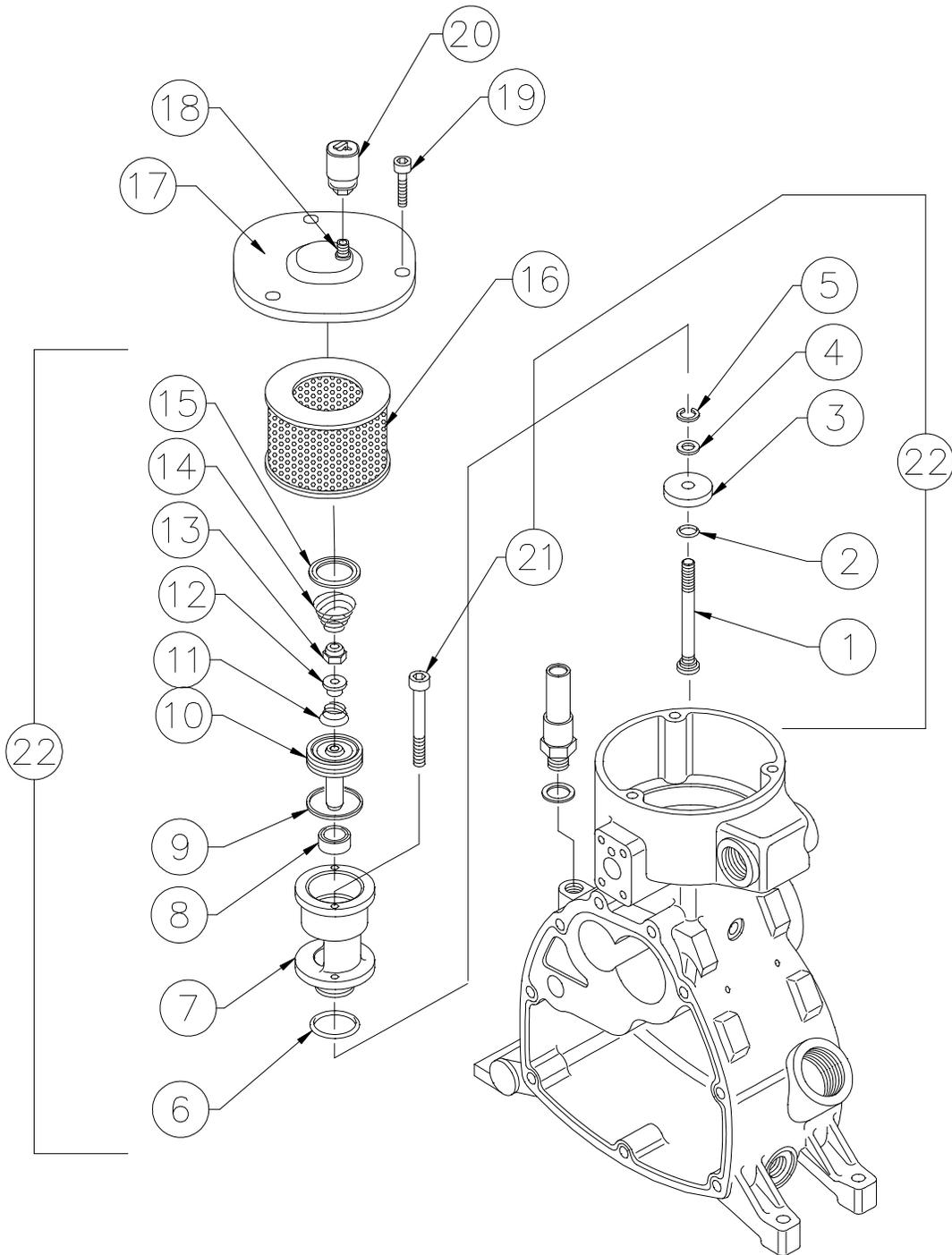


PART LIST & ILLUSTRATION-Vanair Tiger Hydraulic Section 7 - Pg 11**7.7 264477 INLET VALVE SYSTEM PARTS LISTING**

| REF. # | PART NO. | DESCRIPTION | QTY |
|---------------|-----------------|--------------------|------------|
| 1 | 264154-068 | SCREW | 1 |
| 2 | 264154-069 | HOSE FITTING | 2 |
| 3 | 264154-070 | ELBOW CONNECTOR | 1 |
| 4 | 264154-071 | ADAPTER | 1 |
| 5 | 264154-072 | SEAL | 1 |
| 6 | 264154-073 | TUBING | 1 |
| 7 | 264154-074 | HOUSING | 1 |
| 8 | 264154-075 | ELBOW CONNECTOR | 1 |
| 9 | 264154-078 | SOLENOID VALVE | 1 |

PARTS LIST & ILLUSTRATION- Vanair Tiger Hydraulic Section 7 - Pg 12

INLET VALVE ASSEMBLY



264478

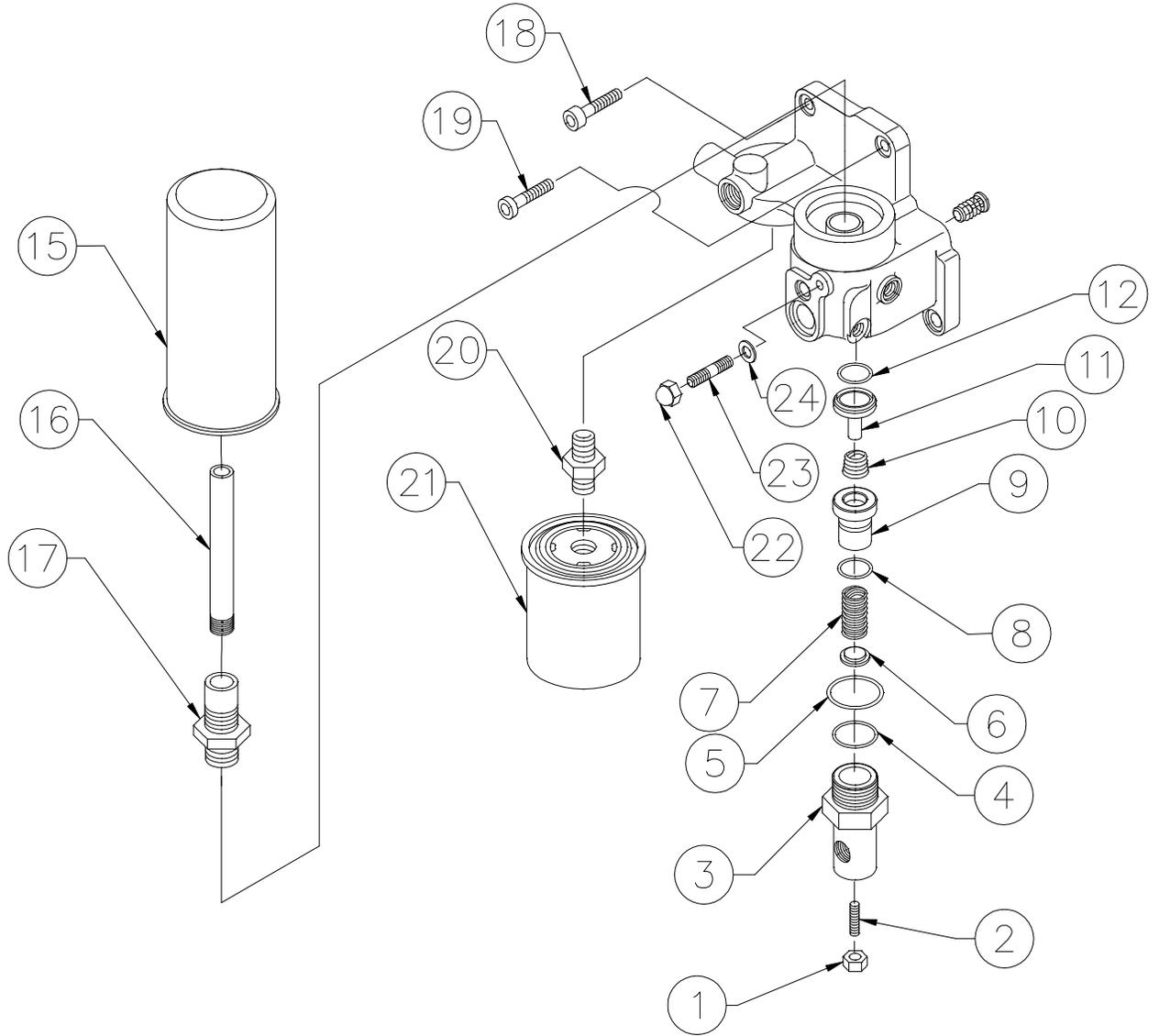
PART LIST & ILLUSTRATION - Vanair Tiger Hydraulic Section 7 - Pg 13**7.8 264478 INLET VALVE ASSEMBLY PARTS LISTING**

| REF. # | PART NO. | DESCRIPTION | QTY |
|--------|------------|--|-----|
| 1 | 264154-080 | STAMP | 1 |
| 2 | 264154-081 | O-RING | 1 |
| 3 | 264154-082 | DISC | 1 |
| 4 | 264154-083 | WASHER | 1 |
| 5 | 264154-084 | SNAP RING | 1 |
| 6 | 264154-085 | SEAL | 1 |
| 7 | 264154-086 | CYLINDER | 1 |
| 8 | 264154-087 | BEARING | 1 |
| 9 | 264154-088 | SEAL | 1 |
| 10 | 264154-089 | PISTON | 1 |
| 11 | 264154-090 | SPRING | 1 |
| 12 | 264154-091 | RETAINER SPRING | 1 |
| 13 | 264154-092 | NUT | 1 |
| 14 | 264154-093 | SPRING | 1 |
| 15 | 264154-094 | RETAINER | 1 |
| 16 | 264469 | AIR FILTER ELEMENT | 1 |
| 17 | 264154-096 | FILTER COVER | 1 |
| 18 | 264154-097 | NIPPLE | 1 |
| 19 | 264154-098 | SCREW | 1 |
| 20 | 264154-099 | RESTRICTION INDICATOR (OPTION) | 1 |
| 21 | 264154-100 | BOLT | 2 |
| 22 | 264154-101 | INLET VALVE ASSEMBLY (INCLUDES ITEMS 1 - 15 & 21) | 1 |
| 23 N/S | 264154-102 | INLET VALVE MAINTENANCE KIT (INCLUDES ITEMS 2, 3, 6, 8, 9, 10, 11 AND 14) | 1 |

N/S Not Shown

PARTS LIST & ILLUSTRATION - Vanair Tiger Hydraulic Section 7 - Pg 14

OIL SEPARATOR/MPV ASSEMBLY



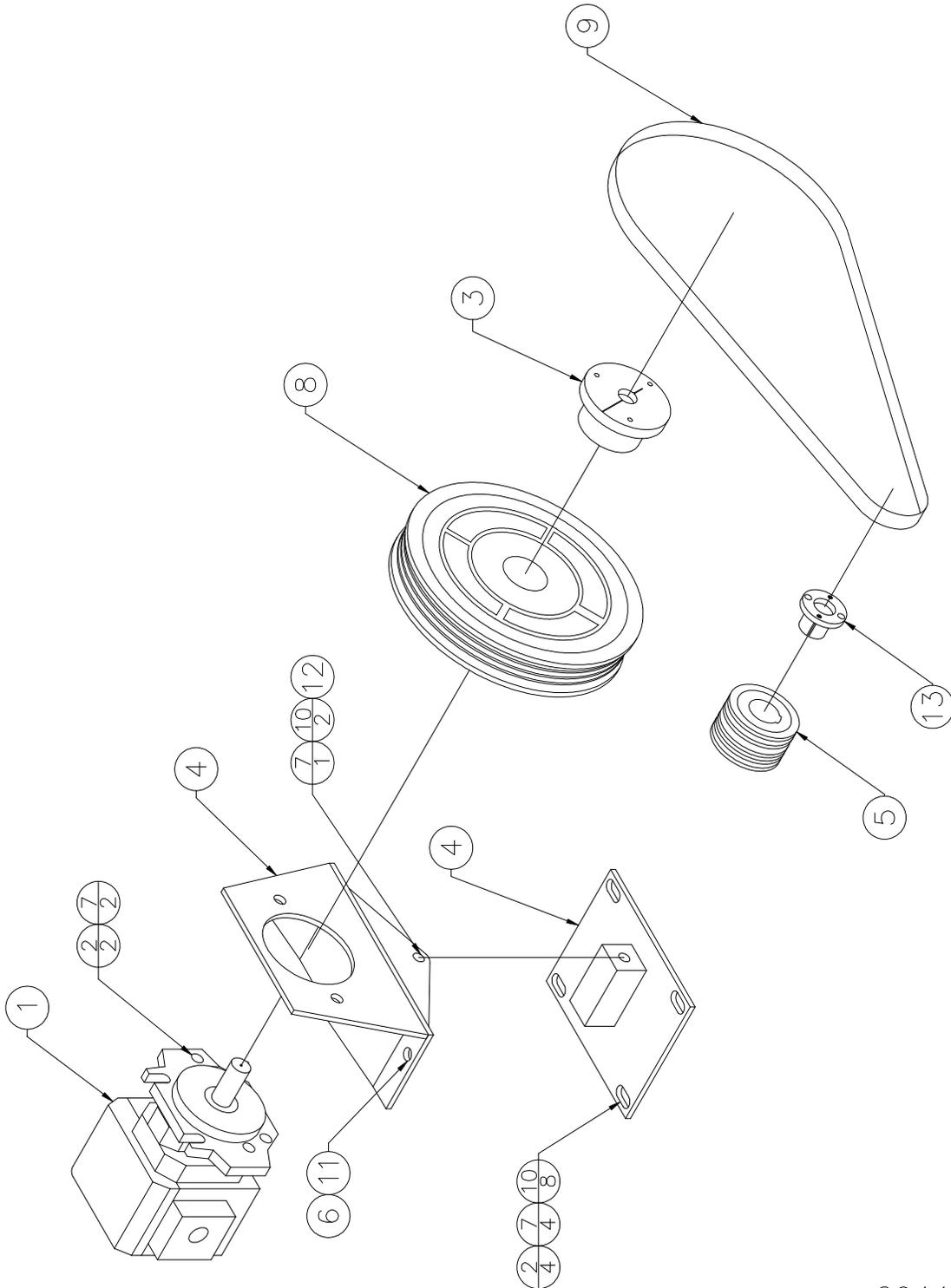
264479

PART LIST & ILLUSTRATION - Vanair Tiger Hydraulic Section 7 - Pg 15**7.9 264479 OIL SEPARATOR/MPV ASSEMBLY PARTS LISTING**

| REF. # | PART NO. | DESCRIPTION | QTY |
|--------|-------------|---------------------------|-----|
| 1 | 264154- 015 | NUT | 1 |
| 2 | 264154- 016 | STUD | 1 |
| 3 | 264154- 017 | CAP | 1 |
| 4 | 264154- 018 | O-RING | 1 |
| 5 | 264154- 019 | O-RING | 1 |
| 6 | 264154- 020 | CENTERING DEVICE | 1 |
| 7 | 264154- 021 | SPRING | 1 |
| 8 | 264154- 022 | O-RING | 1 |
| 9 | 264154- 023 | PLUNGER | 1 |
| 10 | 264154- 024 | SPRING | 1 |
| 11 | 264154- 025 | PLUNGER | 1 |
| 12 | 264154- 026 | SEAL | 1 |
| 15 | 264470 | COALESCER SPIN-ON ELEMENT | 1 |
| 16 | 264154- 030 | TUBE | 1 |
| 17 | 264154- 031 | ADAPTER | 1 |
| 18 | 264154- 032 | SCREW | 1 |
| 19 | 264154- 033 | SCREW | 1 |
| 20 | 264154- 034 | ADAPTER | 1 |
| 21 | 264471 | OIL FILTER ELEMENT | 1 |
| 22 | 264154- 036 | NUT | 1 |
| 23 | 264154- 037 | STUD | 1 |
| 24 | 264154- 035 | WASHER | 1 |

PARTS LIST & ILLUSTRATION - Vanair Tiger Hydraulic Section 7 - Pg 16

DRIVE ASSEMBLY



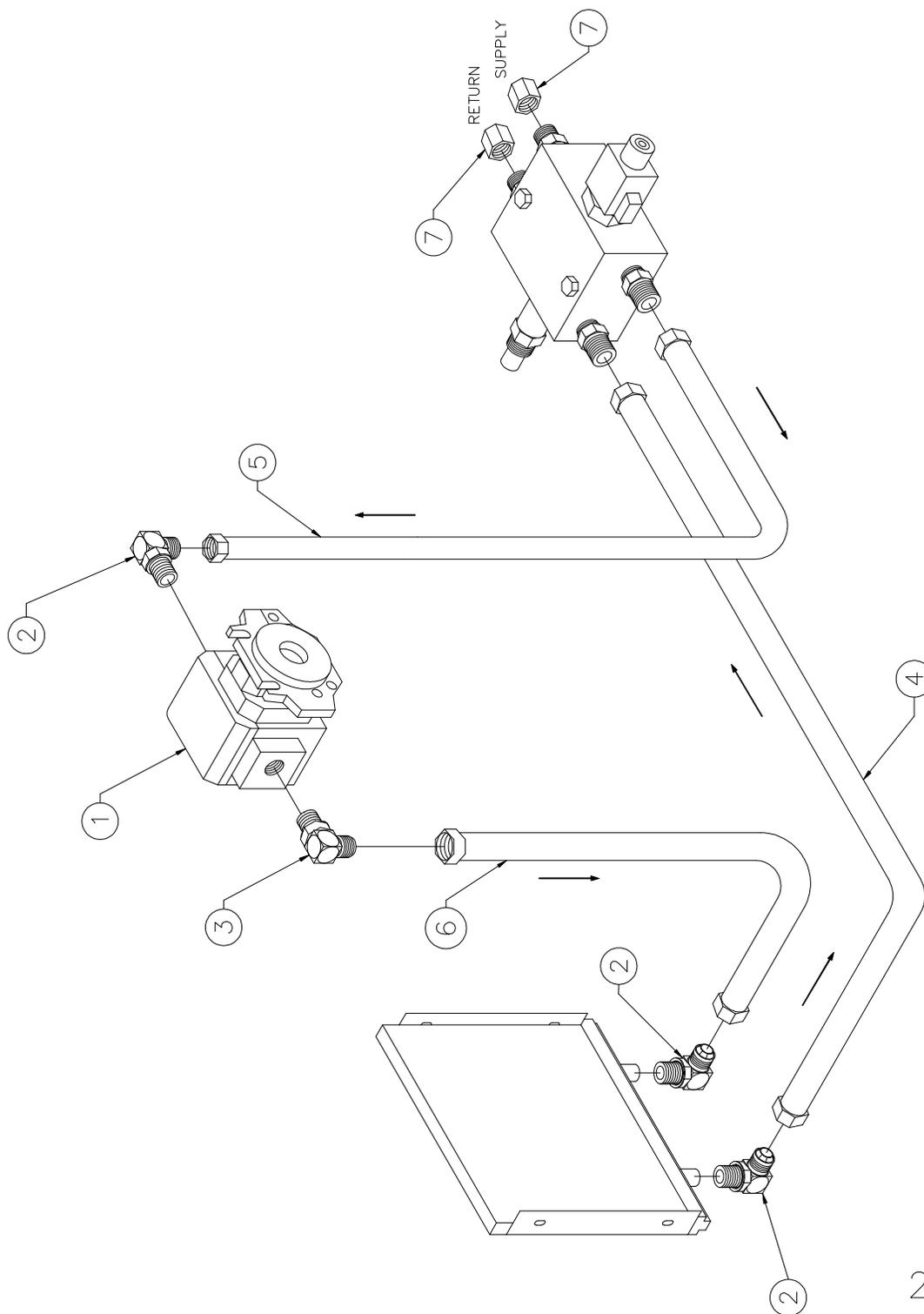
264463

PART LIST & ILLUSTRATION - Vanair Tiger Hydraulic Section 7 - Pg 17**7.10 264463 DRIVE ASSEMBLY**

| REF. # | PART NO. | DESCRIPTION | QTY |
|--------|------------|-------------------|-----|
| 1 | 263351 | HYDRAULIC MOTOR | 1 |
| 2 | 829408-175 | CAPSCREW | 6 |
| 3 | 264152 | BUSHING | 1 |
| 4 | 264145 | BRACKET | 1 |
| 5 | 264150 | SHEAVE | 1 |
| 6 | 263140 | TAP BOLT 1/2 X 6" | 1 |
| 7 | 825508-262 | LOCKNUT | 7 |
| 8 | 263903 | SHEAVE | 1 |
| 9 | 264153 | DRIVE BELT | 1 |
| 10 | 838208-112 | WASHER | 10 |
| 11 | 825208-448 | HEX NUT | 1 |
| 12 | 829408-500 | TAP BOLT 1/2 X 5" | 1 |
| 13 | 264151 | 25mm BUSHING | 1 |

PARTS LIST & ILLUSTRATION - Vanair Tiger Hydraulic Section 7 - Pg 18

HYDRAULIC SUPPLY/RETURN



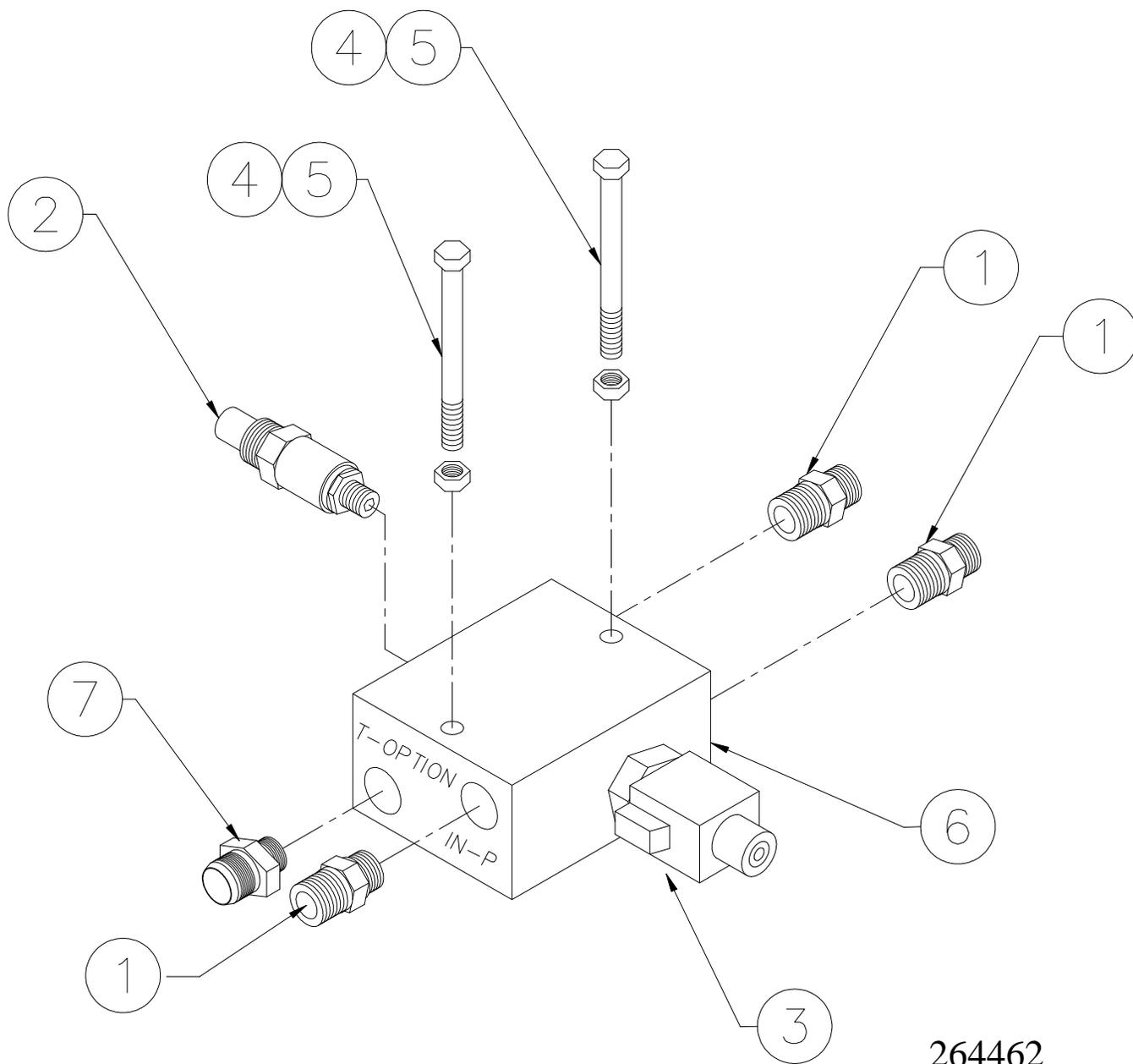
264466

PART LIST & ILLUSTRATION - Vanair Tiger Hydraulic Section 7 - Pg 19**7.11 HYDRAULIC SUPPLY/RETURN**

| REF. # | PART NO. | DESCRIPTION | QTY |
|---------------|-----------------|--------------------|------------|
| 1 | 263351 | HYDRAULIC MOTOR | 1 |
| 2 | 260403-107 | ELBOW | 3 |
| 3 | 260403-116 | ELBOW | 1 |
| 4 | 264313 | TUBE ASSEMBLY | 1 |
| 5 | 264313 | HOSE ASSEMBLY | 1 |
| 6 | 264313 | HOSE ASSEMBLY | 1 |
| 7 | 264322-005 | FEMALE CAP | 2 |

PARTS LIST & ILLUSTRATION - Vanair Tiger Hydraulic Section 7 - Pg 20

VALVE MANIFOLD



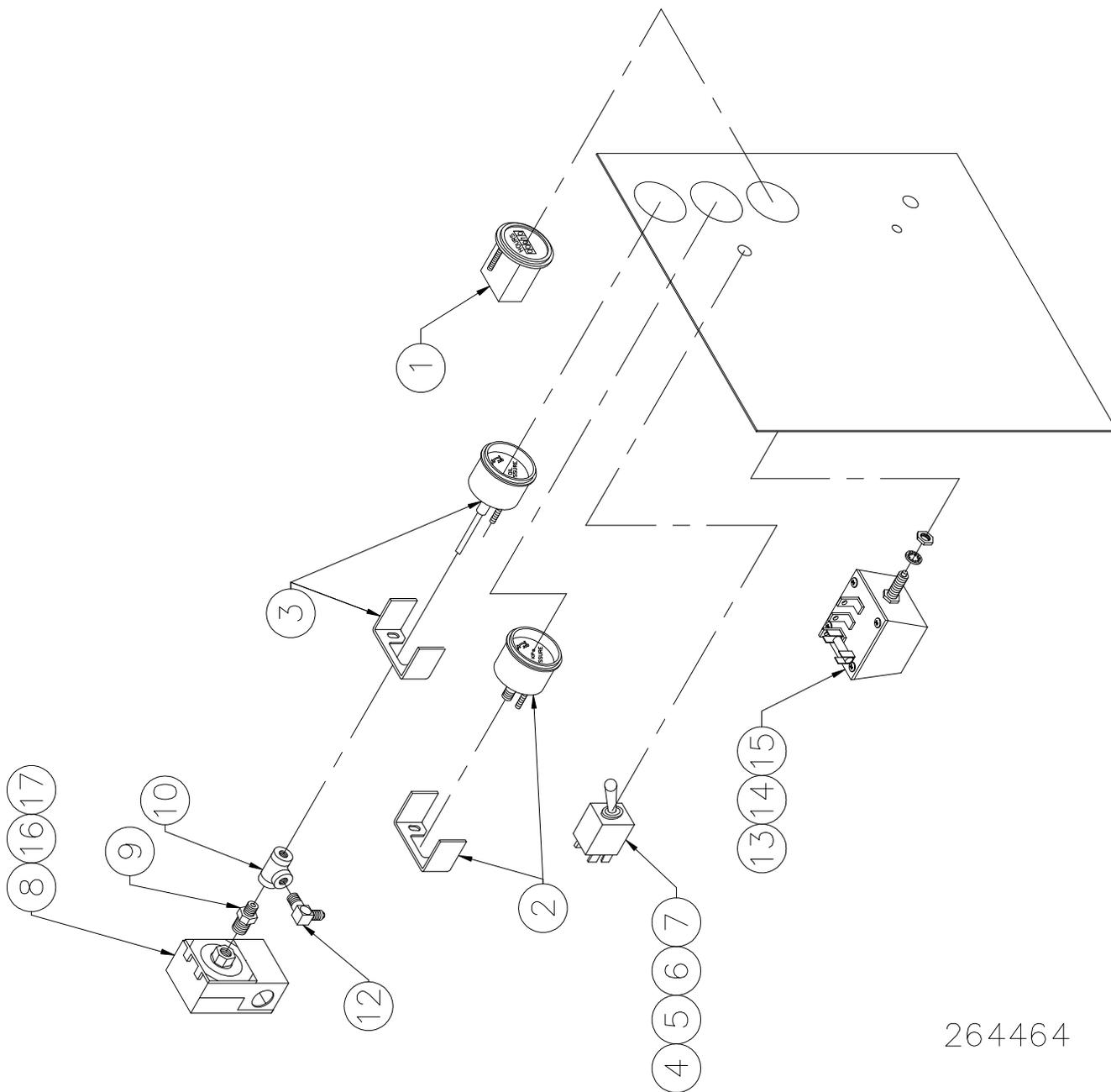
264462

PART LIST & ILLUSTRATION - Vanair Tiger Hydraulic Section 7 - Pg 21**7.12 264462 VALVE MANIFOLD**

| REF. # | PART NO. | DESCRIPTION | QTY |
|---------------|-----------------|--------------------------------|------------|
| 1 | 260387-112 | 3/4" x 3/4" JIC CONNECTOR | 3 |
| 2 | 263896 | PRESSURE RELIEF VALVE | 1 |
| 3 | 263897 | SOLENOID | 1 |
| 4 | 829106-400 | CAPSCREW | 2 |
| 5 | 825506-198 | HEX NUT | 2 |
| 6 | 263878 | VALVE MANIFOLD | 1 |
| 7 | 260387-113 | 1" JIC x 3/4" O-RING CONNECTOR | 1 |

PARTS LIST & ILLUSTRATION - Vanair Tiger Hydraulic Section 7 - Pg 22

CONTROLS/INSTRUMENTATION



264464

PART LIST & ILLUSTRATION - Vanair Tiger Hydraulic Section 7 - Pg 23**7.13 CONTROLS/INSTRUMENTATION**

| REF. # | PART NO. | DESCRIPTION | QTY |
|-----------|-------------------|---|----------|
| 1 | 40035 | HOUR METER GAUGE | 1 |
| 2 | 261974 | AIR PRESSURE GAUGE | 1 |
| 3 | 263785 | TEMPERATURE GAUGE | 1 |
| 4 | 260458 | TOGGLE SWITCH | 1 |
| 5 | 262569 | RUBBER BOOT | 1 |
| 6 | 263173 | 10 AMP FUSE | 1 |
| 7 | 263172 | FUSE HOLDER | 1 |
| 8 | 263850 | ADJUSTABLE PRESSURE SWITCH | 1 |
| 9 | 861604-012 | HEX NIPPLE | 1 |
| 10 | 804415-005 | TEE 1/8" | 1 |
| 11 | 262450 | PRESSURE SWITCH (SEE NOTE BELOW) | 1 |
| 12 | 860204-012 | ELBOW | 1 |
| 13 | 260625 | SWITCH | 1 |
| N/S | 264290 | HARNES | 1 |
| 15 | 262589 | RUBBER BOOT | 1 |
| N/S | 260034 | CIRCUIT BREAKER | 1 |
| 16 | 262905 | GROMMET .875 DIA MOUNTING | 1 |
| 17 | 264443 | 1/2 KNOCKOUT SEAL | 1 |
| 18 | 260246 | NORMALLY CLOSED RELAY 'F' | 1 |
| 19 | NPN | 14 AMP FUSE | 1 |

ITEM 11 NOTE: PRESSURE SWITCH (ITEM 11) AND CROSS (ITEM 10) WERE REPLACED WITH A TEE AND RELAY 'F' (ITEM 18)

(SEE APPROPRIATE WIRING DIAGRAM FOR DETAILS).

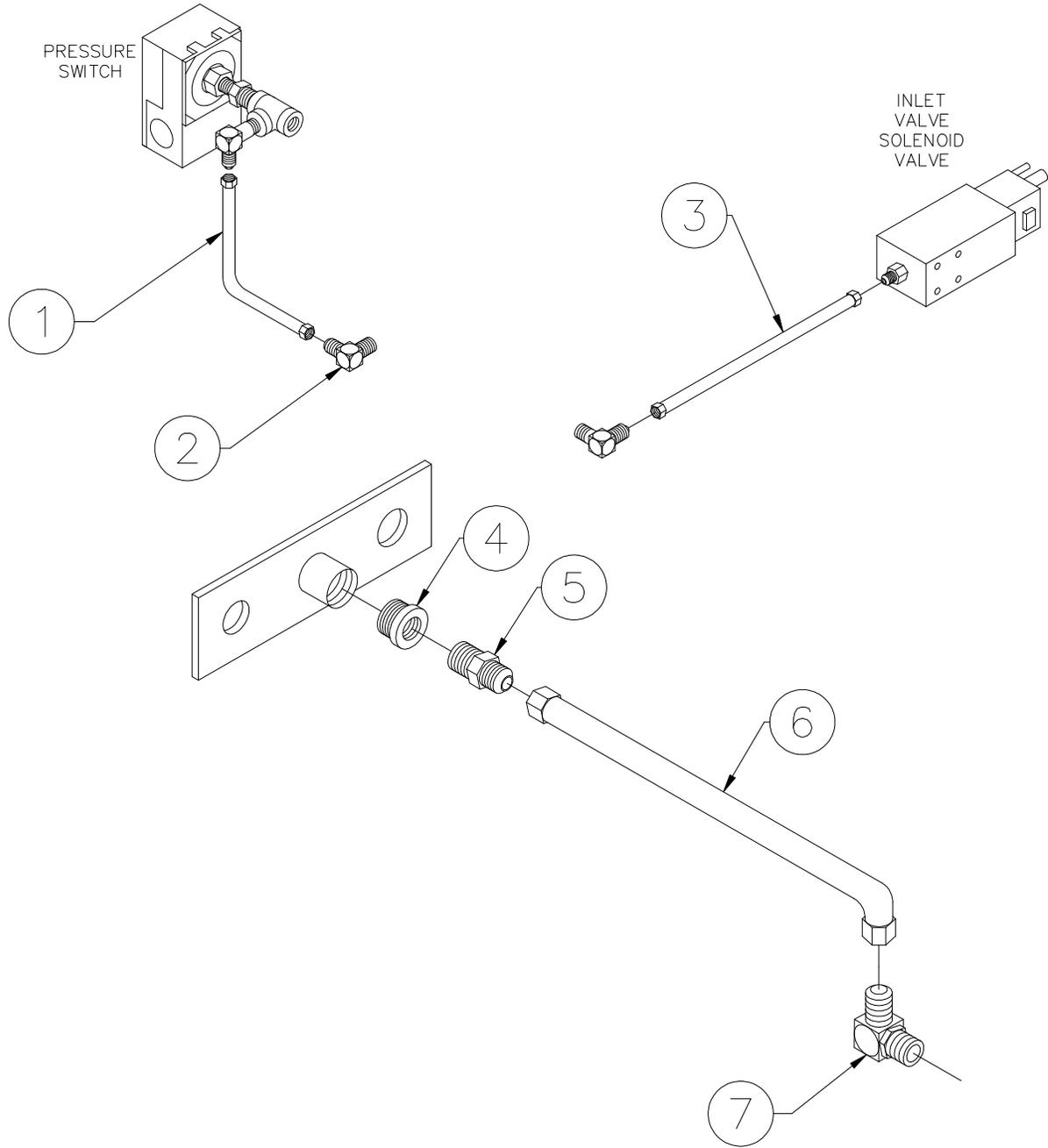
WIRING DIAGRAM WITH RELAY 'F': **264533**

WIRING DIAGRAM WITH PRESSURE SWITCH: **263736**

*N/S NOT SHOWN *NPN NO PART NUMBER

PARTS LIST & ILLUSTRATION - Vanair Tiger Hydraulic Section 7 - Pg 24

COMPRESSOR AIR PIPING



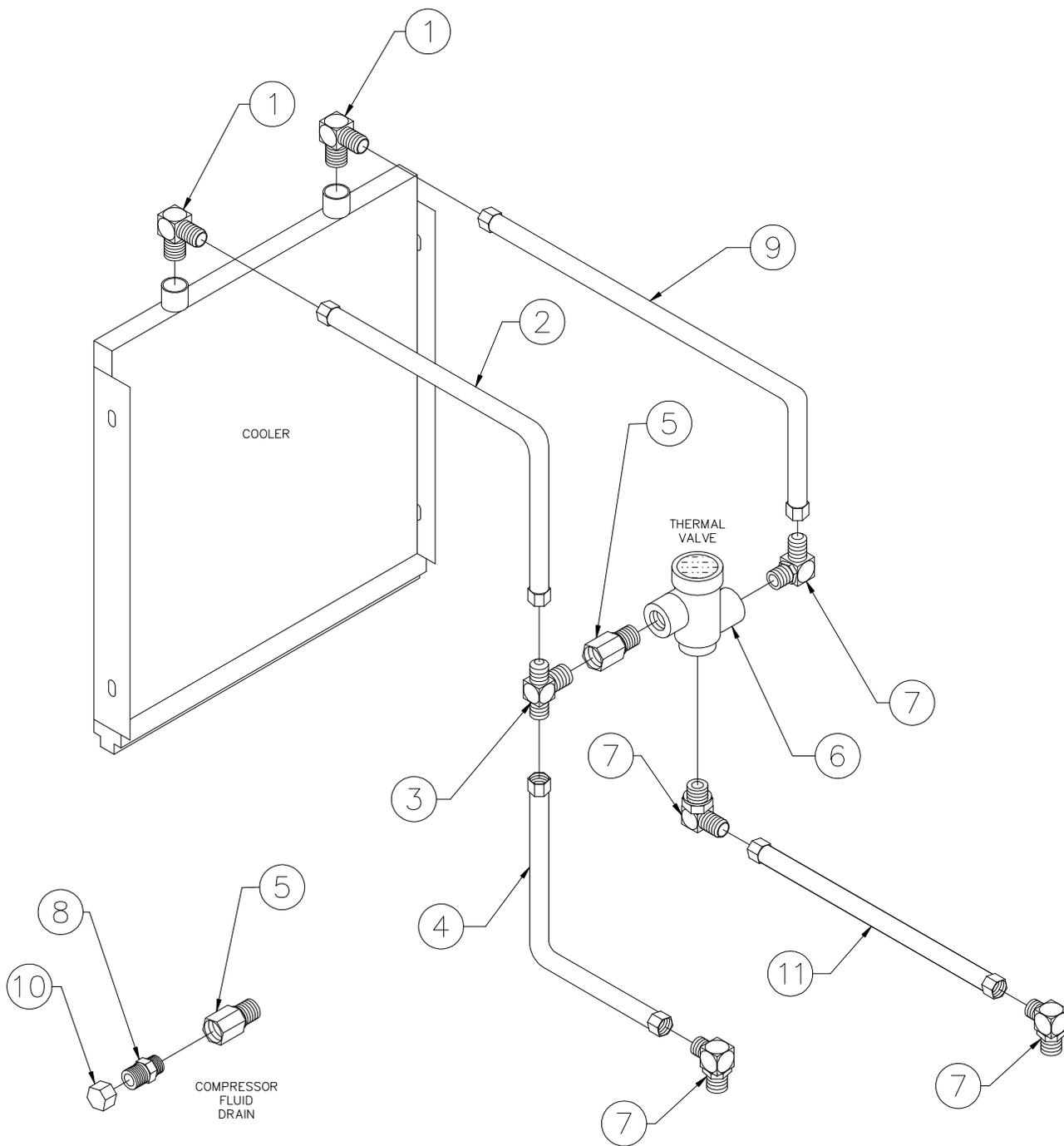
264465

PART LIST & ILLUSTRATION - Vanair Tiger Hydraulic Section 7 - Pg 25**7.14 264465 COMPRESSOR AIR PIPING**

| REF. # | PART NO. | DESCRIPTION | QTY |
|--------|------------|---------------|-----|
| 1 | 264313 | TUBE | 1 |
| 2 | 263747-002 | ELBOW | 1 |
| 3 | 264313 | TUBE | 1 |
| 4 | 804103-020 | BUSHING | 1 |
| 5 | 860108-050 | CONNECTOR | 1 |
| 6 | 264313 | TUBE | 1 |
| 7 | 263747-006 | ELBOW | 1 |
| N/S | 261982 | SERVICE VALVE | 1 |

PARTS LIST & ILLUSTRATION - Vanair Tiger Hydraulic Section 7 - Pg 26

COMPRESSOR OIL PIPING



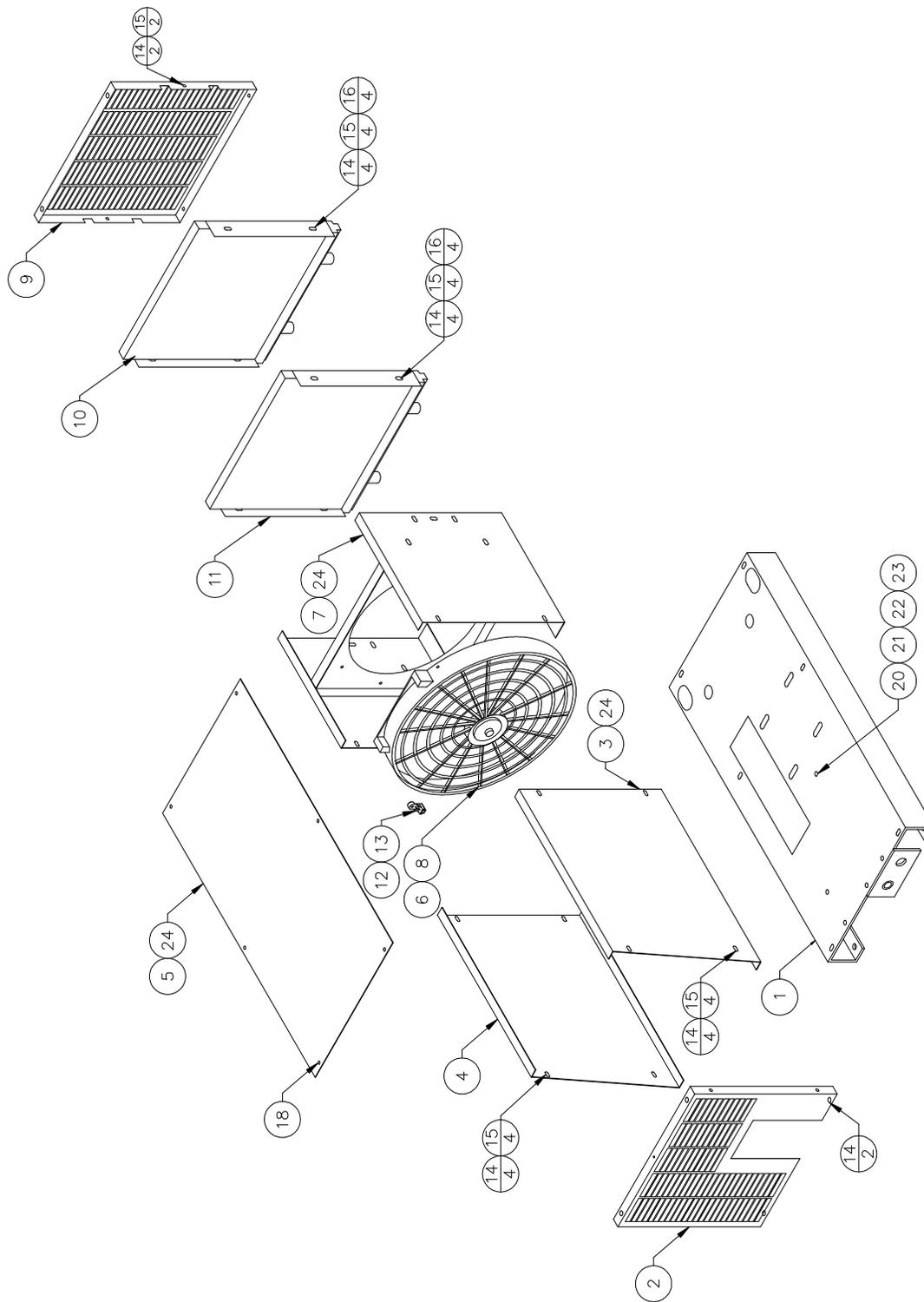
264473

PART LIST & ILLUSTRATION - Vanair Tiger Hydraulic Section 7 - Pg 27**7.15 264473 COMPRESSOR OIL PIPING**

| REF. # | PART NO. | DESCRIPTION | QTY |
|---------------|-----------------|---------------------------|------------|
| 1 | 860208-050 | 1/2" ELBOW | 2 |
| 2 | 264313 | 1/2" TUBE ASSEMBLY | 1 |
| 3 | 861708-050 | 1/2" TEE | 1 |
| 4 | 264313 | 1/2" TUBE ASSEMBLY | 1 |
| 5 | 263748-012 | 1/2" ADAPTER | 2 |
| 6 | 264203 | THERMAL VALVE | 1 |
| 7 | 263747-006 | 1/2" ELBOW | 4 |
| 8 | 860408-050 | 1/2 X 1/2 HEX PIPE NIPPLE | 1 |
| 9 | 264313 | 1/2" TUBE ASSEMBLY | 1 |
| 10 | 264036 | 1/2" CAP | 1 |
| 11 | 264313 | 1/2" TUBE ASSEMBLY | 1 |

PARTS LIST & ILLUSTRATION - Vanair Tiger Hydraulic Section 7 - Pg 28

SHEET METAL, FAN AND SHROUD



264484

PART LIST & ILLUSTRATION - Vanair Tiger Hydraulic Section 7 - Pg 29**7.16 SHEET METAL, FAN AND SHROUD**

| REF. # | PART NO. | DESCRIPTION | QTY |
|--------|------------|------------------------------|-----|
| 1 | 264125 | FRAME | 1 |
| 2 | 264135 | COMPRESSOR END PANEL | 1 |
| 3 | 264137 | LEFT HAND PANEL | 1 |
| 4 | 264136 | RIGHT HAND PANEL | 1 |
| 5 | 264158 | TOP PANEL | 1 |
| 6 | 263744 | FAN | 1 |
| 7 | 264122 | COOLER SHROUD | 1 |
| 8 | 262748 | FAN HARNESS | 1 |
| 9 | 264134 | COOLER END PANEL | 1 |
| 10 | 264196-001 | HYDRAULIC OIL COOLER | 1 |
| 11 | 264121 | OIL COOLER | 1 |
| 12 | 262105 | CLIP, FAN AND MOTOR MOUNTING | 6 |
| 13 | 834204-075 | SELF TAPPING SCREW | 6 |
| 14 | 262945 | 5/16 X 3/4 TRUSS SCREW | 18 |
| 15 | 262943 | 5/16 NYLON WASHER | 14 |
| 16 | 825305-283 | 5/16 FLANGE NUT | 4 |
| 18 | 263959 | LID LATCH | 6 |
| 20 | 264112 | 5/8 THREADED ROD | 1 |
| 21 | 825210-559 | 5/8 NUT | 2 |
| 22 | 838210-112 | 5/8 FLAT WASHER | 1 |
| 23 | 264113 | EYENUT | 1 |
| 24 | 262942 | 3/16 RUBBER BUMPERS | 6 |
| N/S | 264290 | WIRING HARNESS | 1 |

Vanair Manufacturing, Inc.
19015 US 12
New Buffalo, MI 49117
Tel.: 269-469-4461
800-526-8817
Fax.: 269-469-0497

Form Number: 620-TS.wpd
Serial Number: _____

Date: _____

SRS40 Module Data Sheet

Model: _____ c.f.m @ _____ psig

Compressor Serial No. _____

Hydraulic Motor: Make: _____

Model: _____

Serial Number: _____

Belt: Part Number: _____

Number of Grooves: _____

Notes/Special Features: _____

Assembled By: _____ Date: _____

Tested By: _____ Date: _____

_____ gpm _____ psig _____ rpm
_____ gpm _____ psig _____ rpm

PART LIST & ILLUSTRATION - Vanair Tiger Hydraulic Section 7 - Pg 32

DECAL LOCATION

| REF. # | PART NO. | DESCRIPTION | QTY |
|--------|----------|--|-----|
| 1 | 264380 | DECAL, WARNING – HIGH PRESSURE | 1 |
| 2 | 49685 | DECAL, WARNING – DO NOT REMOVE PLUG | 1 |
| 3 | 261886 | DECAL, WARNING – DO NOT USE AIR | 1 |
| 4 | 264374 | DECAL, WARNING – ROTATING PARTS | 1 |
| 5 | 264383 | DECAL, WARNING - DO NOT REMOVE FAN GUARD | 1 |
| 6 | 264372 | DECAL, WARNING – HOT PARTS | 1 |
| 7 | 49117 | DECAL, DANGER – READ THIS MANUAL | 1 |
| 8 | 261885 | DECAL, WARNING – AIR HOSE | 1 |
| 9 | 265090 | DECAL, NK40 TIGER | 1 |
| 10 | 260940 | DECAL, SERIAL NUMBER | 1 |
| 11 | ----- | DECAL, HYDRAULIC RETURN | 1 |
| 12 | ----- | DECAL, HYDRAULIC SUPPLY | 1 |
| 13 | ----- | DECAL, FLUID DRAIN LINE | 1 |
| 14 | ----- | DECAL, COMPRESSOR OIL | 1 |
| 15 | 265605 | DECAL, VANAIR LOGO | 1 |
| 16 | 264867 | DECAL, VANAIR TIGER | 2 |
| | | | |
| | | | |
| | | | |
| | | | |

*NPN NO PART NUMBER
 *N/S NOT SHOWN