



VANAIR[®]
MOBILE POWER SOLUTIONS[®]



EPEQ[™] Electrified Power Equipment[®]
AIR5 COMPRESSOR
Part Number: 283165



USER GUIDE

OPERATION MANUAL AND SERVICE PARTS LIST KEEP THE MANUAL WITH THE VEHICLE

NOTE: Read this manual before installing, operating or servicing this equipment. Failure to comply with the operation and maintenance instructions in this manual will VOID THE EQUIPMENT WARRANTY.

This publication contains the latest information available at the time of preparation. Every effort has been made to ensure accuracy. Vanair[®] Manufacturing, Inc. reserves the right to make design change modifications or improvements without prior notification.

Making unauthorized modification to the system components WILL VOID THE WARRANTY! Always contact Vanair[®] before beginning any changes to the EPEQ[™] AIR5 compressor system.

 **WARNING!**

[This manual provides critical safety instructions on the proper setup, operation, maintenance, and service of this machine/tool. Save this document, refer to it often, and use it to instruct other operators.

Failure to read, understand and follow the instructions in this manual may result in fire or serious personal injury—including amputation, electrocution, or death.

The owner of this machine/tool is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, cutting/sanding/grinding tool integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

 **WARNING!**

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- Lead from lead-based paints.
- Crystalline silica from bricks, cement and other masonry products.
- Arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

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GLOSSARY

Air Filter - Porous element contained within a plastic or metal housing attached to the compressor cylinder head which removes impurities from the air intake of the compressor.

Air Tank - Cylindrical component which contains the compressed air.

Check Valve - Device which prevents compressed air from flowing back from the air tank to the compressor pump.

Electric Motor - Device that provide rotational force to operate the compressor pump.

Pressure Gauge - Device that shows the tank air or regulated pressure of compressed air.

Pressure Switch - Device that automatically controls the ON/OFF cycle of the compressor depending on the cut-off and cut-in pressures set.

PSI - Pounds per square inch, a measurement of the pressure exerted by a force (in this case, compressed air). The actual PSI us measured by a pressure gauge on the compressor.

Pump - Device which produces the compressed air with a reciprocating piston in a cylinder.

Safety Valve - Device which prevents air pressure in the air tank from rising over a predetermined limit.

Thermal Overload Switch - Device integrated into the electric motor armature which automatically shuts OFF the compressor if the temperature of that motor exceeds a set limit.

CONTROLS AND COMPONENTS

The pump compresses the air and discharges it into the tank - where the air is stored under pressure, The pressure switch then shuts down the motor and relieves the air pressure in the pump and transfer tube when the air pressure in the tank reaches the cut-put pressure.

As the pressurized air in the tank is used, the level of pressure drops to the cut-in pressure and the pressure switch restarts the motor automatically, and the pump resumes compressing the air. The motor will start and stop in this fashion without additional warning while unit is turned on.

COMPRESSOR CONTROLS

POWER SWITCH

The switch turns the compressor power ON and OFF.

PRESSURE RELIEF VALVE

Should the pressure switch fail to shut down the motor when the pressure reaches the pre-set level, this valve opens automatically to prevent over-pressurization. This valve can be operated manually to reduce pressure by pulling on the ring attached to the relief valve.

TANK PRESSURE GAUGE

This gauge measures the pressure level of the air stored in the tank. The gauge is not adjustable by the operator and only indicates the tank pressure, and does not show the line pressure.

DRAIN VALVE

This valve is located at the front bottom of the tank, and is used to release moisture that may accumulate in the tank during normal use.

SAFETY INSTRUCTIONS

Owner's Manual - Read and understand this manual prior to using the machine.

Trained Operators Only - Untrained persons operating machinery have a higher risk of being hurt or killed. Only allow trained/supervised people to use this machine. When the machine is not being used, disconnect from power, remove switch keys or lock out the machine to prevent unauthorized use - especially where children may be present.

Dangerous Environments - Do not use machinery in areas that are wet, cluttered or in areas with poor visibility. Operating machinery under these conditions greatly increases the risk of accidents and injuries.

Mental Alertness Required - Full mental alertness is required for safe operation of the machine. Never operate under the influence of drugs or alcohol, when tired or distracted.

Electrical Equipment Injury Risk - You can be shocked, burned or killed by touching live electrical components, or improperly grounded machinery. To reduce this risk, only allow qualified service personnel to do electrical installation or repair work. Always disconnect power from machine prior to accessing or exposing electrical components or equipment.

Disconnect Power First - Always disconnect power to machine prior to making adjustments, changing tools or servicing the machine. This can prevent risk of injury from accidental start ups or contact with live electrical components.

Eye Protection - Always wear ANSI-approved safety glasses or face shield when operating or observing machinery to reduce the risk of eye injury or blindness from flying particles. Normal reading or eyeglasses are NOT safety approved eye protection.

Wearing Proper Apparel - Do not wear clothing, apparel or jewelry that can become entangled in moving parts, Always tie back or cover long hair. Wear non-slip footwear to reduce risk of slipping and losing control, or accidentally contacting a cutting tool or moving parts,

Hazardous Dust - Dust created by machinery operations may be hazardous, toxic, cause disease or respiratory damage. Be aware of the materials you are working around. When in doubt, wearing a NIOSH-approved respirator can reduce your risk.

Hearing Protection - Always wear hearing protection when operating or in the presence of loud machinery. Extended exposure to loud noise can damage your hearing and cause permanent hearing loss.

Remove Adjusting Tools - Tools left on the machinery can damage or ruin equipment, and become dangerous projectiles during startup. Never leave chuck keys, wrenches, any other tools or objects on the machine. Verify removal before starting.

Use Correct Tool for the Job - Only use this compressor for its intended purpose - do not force or use a tool for a job for which it was not designed. Never make modifications to this equipment, modify an attached tool or use it differently than intended as it may result in malfunction or mechanical failure that can cause personal injury or death.

Awkward Positions - Keep proper footing and balance at all times while operating machinery. Do not overreach! Avoid awkward hand positions that make workpiece difficult to control or increases the risk of accidents.

Children and Bystanders - Keep children and bystanders at a safe distance from the work area. Stop using equipment if they become a distraction.

Guard and Covers - Guards and covers reduce accidental contact with moving parts, flying debris or electrical connections.

Forcing Machinery - Do not force a machine to do more than what it is designed and rated to do.

Never Stand on the Machine - Serious injury or damage to the equipment may occur if machine is tipped or a cutting tool is unintentionally contacted.

Stabilize Machine - Unexpected movement during operation greatly increases risk of injury or loss of control. Before starting, make sure the unit is stable. If using a mobile base, make sure the wheels are locked.

Use Recommended Accessories - Use only accessories, fitting and hoses designed for this equipment. Using improper accessories can result in unintended failures or personal injury.

Unintended Operation - To reduce chance of accidental injury, turn machine OFF and ensure all moving parts completely stop before walking away. Never leave machine running unattended.

Maintain with Care - Follow all maintenance guidelines and lubrication schedules to keep machine in good working order. An improperly maintained machine can malfunction leading to equipment failure, serious personal injury or death.

Damaged Parts - Regularly inspect machine for damage, loose, or mis-adjusted parts. or any condition that could lead to unsafe operation. Immediately repair or replace any loose, broken or damaged parts. Do not use machine with damaged or broken parts.

Maintain Power Cords - When disconnecting cord-connected machines from power, grab and pull the plug -- not the cord! Pulling the cord may damage the wires inside. Do not handle cord/plug

with wet hands. Avoid cord damage by keeping it away from heated surfaces, high traffic areas, harsh chemicals and wet or damp locations.

Experiencing Difficulties - If at any time you experience difficulty performing an intended operation, the machine behaves unexpectedly or erratically, stop using the machine. Contact Technical Support.

Safety is a combination of common sense, staying alert, and knowing how your compressor works.

Inspect Your Work Area

- Keep your work area clean and uncluttered
- Cluttered areas and benches can lead to accidents
- Make sure surface where operator is standing and working is clean and free from oil, wax, dust or other material that can become slippery

Inspect Your Compressor

1. To reduce risk of injury from accidental starting, turn switch off and disconnect power before checking the compressor.
2. If any parts are missing, damaged or broken, or electrical components are not functioning properly, keep the compressor turned off and disconnected.
3. Check hoses for weak or worn conditions before each use - making sure all connections are secure.



Warning - Do not operate compressor if damaged during shipping, handling or use. Damage may cause compressor to burst - which can cause serious injury and property damage.



Danger - This compressor uses oil during operation and is not designed for and should not be used for “breathing air” applications.

Safety Guidelines - Definitions

Safety is a combination of common sense, staying alert, and knowing how your compressor works. Read this manual to understand this compressor.



DANGER

means if safety information is not followed someone will be seriously injured or killed.



WARNING

means if safety information is not followed someone could be seriously injured or killed.



CAUTION

means if safety information is not followed someone may be moderately injured.

Important Safety Instructions

Improper operation or maintenance of this product could result in serious injury and property damage. Read and understand all warnings and operation instructions before using this compressor.

Before Using the Air Compressor

Things You Should Know

Air compressors are utilized in a variety of air system applications. Because air compressors and other components (hoses, connectors, air tools, spray guns, etc.) make up a high-pressure pumping system, the following safety precautions should be observed at all times.

Only persons familiar with these rules of safe operation should use the air compressor.

1. Read the instruction manual carefully before attempting to assemble, disassemble, or operate your system. Be thoroughly familiar with the controls and the proper use of the equipment.
2. Review and understand all safety instructions and operating procedures in this manual.
3. Review the maintenance methods for this compressor (See **Maintenance Operations** section on **Page 19**).

Inspect Your Work Area

1. Keep work area clean.
2. Cluttered areas and benches invite accidents. Floors must not be slippery from wax or dust.

Inspect Your Compressor

1. To reduce the risk of injury from accidental starting, turn switch off and disconnect the power before checking compressor.
2. If any part is missing, bent, or broken in any way, or any electrical part does not work properly, keep the compressor off and disconnected.
3. Check hoses for weak or worn conditions before each use, making certain all connections are secure. Do not use if defect is found.



WARNING

Do not operate compressor if damaged during shipping, handling, or use. Damage may cause compressor to burst and cause injury or property damage.



DANGER

This compressor is not designed for and should not be used for breathing air applications.

Before Each Use

Inspect Your Work Area

1. Keep work area clean. Cluttered areas and benches invite accidents.
2. The floor must not be slippery from wax or dust.

Inspect Your Compressor

1. To reduce the risk of injury from accidental starting, turn the switch off and disconnect power.
2. If any part is missing, bent, or broken in any way, or any electrical part does not work properly, keep the compressor off and disconnect power. **Do not** use if defect is found.
3. Check hoses for weak or worn condition before each use, making certain all connections are secure. **Do not** use if a defect is found.
4. Pull pressure relief valve ring daily to ensure proper function and clear possible obstructions.

Plan Ahead to Protect Eyes, Hands, Face and Ears

Dress for Safety

1. Wear safety glasses meeting ANSI Z87.1 (or in Canada CSA Z94.3-99) and use hearing protection when operating the unit. Everyday glasses are not safety glasses.
2. Wear shoes to prevent shock hazards.
3. Tie back long hair.

Pay Attention to Your Hands



WARNING

Keep fingers away from running compressor. Fast moving and hot parts may cause injury and/or burns.



WARNING

Be careful when touching the exterior of compressor, pump, motor, and air lines; they may become hot enough to cause injury.



WARNING

Never operate the compressor without a belt guard. The compressor can start automatically without warning. Personal injury or property damage could occur from contact with moving parts.



CAUTION

The compressor may be hot even if the unit is stopped.



WARNING

Use of a mask or respirator per chemical manufacturers' instructions may be necessary if there is a chance of inhaling toxic fumes. Read mask and respirator instructions carefully. Consult a safety expert if you are not sure about the use of certain masks or respirator.

When Operating

1. Do not exceed the pressure rating of any component of the system. Exceeding the maximum pressure rating of tools or accessories could cause an explosion resulting in serious injury.
2. Release pressure within the system slowly to prevent flying dust and debris.
3. If the equipment starts to abnormally vibrate, STOP the compressor immediately and check for the cause.
4. Never use oxygen, carbon dioxide, or other bottled gases as a power source for air tools and never connect to an air source that is capable of exceeding 90 PSI.
5. DO NOT use inflator nozzles for dusting applications.



WARNING

Never change the safety valve or pressure switch settings. Keep safety valve free from paint and other accumulations. See machine ID label for maximum operating pressure. Do not operate with the pressure switch set higher than the maximum operating pressure.

Spraying Precautions



WARNING

Never point a nozzle or spray gun at yourself or any other person or animal. Accidental discharge may result in serious injury.

Reduce the Risk of a Dangerous Environment



WARNING

Extreme caution should be taken when spraying flammable liquids as the spark from a motor or pressure switch may cause a fire or explosion. Ample ventilation must be provided.



WARNING

Spray in a well-ventilated area to keep fumes from collecting and causing serious injury and fire hazards.

1. **Do not** spray in the vicinity of open flames or other places where a spark can cause ignition. **Do not** smoke when spraying paint, insecticides, or other flammable substances.

Be Informed About the Materials You Use

1. When spraying with solvents or toxic chemicals, follow the instructions provided by the chemical manufacturer. Consult a safety expert if unsure about the use of masks or respirators.
2. If the material you intend to spray contains trichloroethane and methylene chloride, do not use accessories that contain aluminum or galvanized materials, as these chemicals can react with galvanized components causing corrosion and weakening equipment. Use stainless steel accessories.

Glossary of Terms

Air Filter

Porous element contained within a metal or plastic housing attached to the compressor cylinder head which removes impurities from the intake air of the compressor.

Air Tank

Cylindrical component which contains the compressed air.

Check Valve

Device which prevents compressed air from flowing back from the air tank to the compressor pump.

Electric Motor

Device which provides the rotational force necessary to operate the compressor pump.

Pressure Gauge

Device which shows the tank or regulated pressure of the compressed air.

Pressure Switch

Device which automatically controls the ON/OFF cycling of the compressor. It stops the compressor when the cut-off pressure in the tank is reached and starts the compressor when the air pressure drops below the cut-in pressure.

PSI (Pounds per Square Inch)

Measurement of the pressure exerted by the force of air. The actual PSI is measured by a pressure gauge on the compressor.

Pump

Device which produces the compressed air with a reciprocating piston contained within a cylinder.

Safety Valve

Device which prevents air pressure in the air tank from rising over a predetermined limit.

Thermal Overload Switch

Device, integrated into the electric motor winding, which automatically shuts OFF the compressor if the temperature of the electric motor exceeds a predetermined limit.

Starting the Compressor

Prior to actually running the compressor, check the following items:

Crankcase oil - Check oil level at sight glass. Oil level should be 1/2 full (or slightly higher) in the oil sight glass.

Make sure all rags, tools, oil, etc. are away from the unit.

Open the air system to free it of any pressure.

Switch the compressor on for a few revolutions to make sure the rotation is correct. Correct rotation is clockwise when facing the sight glass on the pump.

Operate the compressor for a few minutes unloaded (air system open) then allow the compressor to pump up. Make sure the electrical pressure switch properly switches off the compressor when the air pressure reaches the PSI indicated below:



CAUTION

Make sure the pressure in the tank does not exceed its rating. If the pressure gauge indicates a pressure that is higher than the maximum pressure, shut off compressor immediately and call your distributor.

Draining the Tank

Oil and moisture residue must be drained from the air receiver daily or after each use. Accumulations of oil residue in the receiver can be ignited by embers of carbon created by the heat of compression—causing an explosion, damage to property, and injury to personnel.



WARNING

Do not open a manual tank drain valve on any air tank containing more than 30 PSI of air pressure!



WARNING

Never attempt to relieve an air tank by removing a pipe plug or any other system component!

Manually Draining Air Tank:

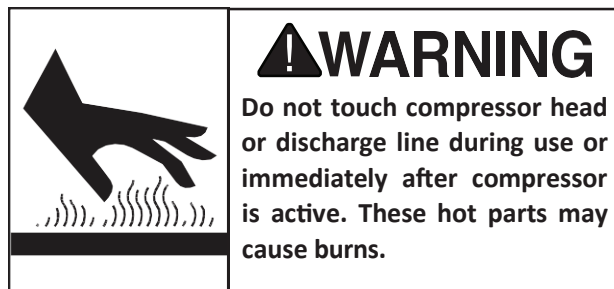
Disconnect & lockout the compressor from the power source.

Tank(s) subjected to freezing temperatures may contain ice. Store the compressor in a heated area before attempting to drain moisture from the tank(s). Reduce the air pressure in the tank to 30 PSI by pulling the pressure relief valve ring.

Operation Overview

The purpose of this overview is to provide the novice machine operator with a basic understanding of how the machine is used during operation, so the machine controls/components discussed later in this manual are easier to understand.

Due to the generic nature of this overview, it is not intended to be an instructional guide. To learn more about specific operations, read this entire manual, seek additional training



from experienced machine operators, and do additional research outside of this manual by reading "how-to" books, trade magazines, or websites.

To complete a typical operation, operator should do the following:

1. Wear safety glasses
2. Pull safety valve ring to test valve and clear any obstructions.

3. Turn regulator knob all the way counter-clockwise.
4. Use any additional personal protective equipment required by operation and the attached tool(s).
5. Connect machine to power and turns it ON.
6. Allow machine to run until cut-out pressure has been reached and receiver tank is full
7. Turn regulator knob clockwise until line pressure gauge displays pressure lower than or equal to air tool rating.
8. Connect air hose to quick-connect coupler.
9. Connect air tool to air hose.
10. Avoid creating a tripping hazard with hose, during operation.
11. Turn machine OFF and disconnect it from power.
12. Use safety relief valve to reduce tank pressure to less than 10 PSI.
13. Disconnect attached tool from hose.
14. Disconnect hose from compressor.
15. Open drain valve near bottom of tank to drain any residual condensation.
16. Close drain valve after draining water.

NOTICE

If you are not experienced with this type of machine, WE STRONGLY RECOMMEND that you seek additional training outside of this manual. Read books/magazines or get formal training before beginning any projects. Regardless of the content in this section, Vanair will not be held liable for accidents caused by lack of training.

CHOOSING AIR HOSE

There are many options when it comes to hoses. The most important aspects for an air compressor are going to be length, diameter, and fittings. The material of the hose is also an important consideration, but this will depend more on your application and preference.

LENGTH

Consider your applications before deciding on a hose length. Longer hoses, or hose connections to extend hose length, can increase your mobility, but will probably result in some pressure loss.

If your work area will be small, you may be able to use a shorter hose without having to move the compressor or stretch the hose. Never pull the hose to move the compressor or put any unnecessary stress on the hose, valves, fittings, or tanks.

An air compressor becomes very hot during operation, and the pressure switch and motor often produce sparks. Some applications, like spraying or sanding, involve flammable material that create a fire or combustion hazard when they are performed too close to a compressor. The hose length must allow for the air compressor to remain at least 20 feet away from the operation.

DIAMETER

A larger inner diameter will allow for higher airflow delivery. Refer to Airflow Delivery (CFM) on Page 14 for more information. The higher CFM a tool requires, the larger the inner diameter of the hose will need to be (see Figure 13).

Airflow Delivery	Required ID
0–3 CFM	1/4" (3mm)
3.1–5.9 CFM	1/4"–3/8" (3mm–10mm)
6+ CFM	3/8"+ (10mm+)

Figure 13. Recommended hose inner diameters.

FITTINGS

Many hoses come with fittings installed. The simplest option is to find a hose with two fittings: one that matches the compressor output port, and one that matches your intended attachment tool. If the hose does not match the port, a coupler may be needed.

You will need to determine the size of the fittings and whether they are male or female (see Figure 14). A male fitting can only attach to a female fitting, and vice versa. There are also a number of coupler/plug styles on the market, so be sure the two match or you will likely not have an airtight connection.

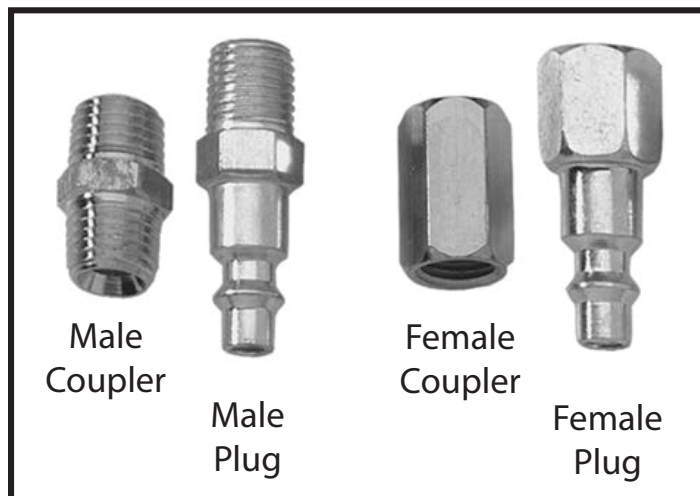


Figure 14. Example of male and female fittings.

The 2 air outlet ports on the AIR5 are 1/4" NPT female quick-couplers (see Figure 15), so you will need a 1/4" NPT male plug attached to the hose for each port.



Figure 15. Location of quick-coupler outlet ports.

CONNECTING AIR TOOL

There are various air tools that can be connected to your air compressor by means of an air hose, and the setup will vary little across tools, but there are a couple things to keep in mind before connecting a tool or hose.

AIRFLOW DELIVERY (CFM)

The first consideration when choosing an air tool is whether or not the air delivery is compatible with your compressor. Smaller compressors, capable of less than 5 CFM, only supply enough pressure for smaller air tools like nailers, staplers, chippers, chisels, grinders, sanders, tire inflators, and paint sprayers. Air hammers, impact wrenches, impact hammers, and blow guns will probably require a larger compressor capable of 10-110 CFM.

DUTY CYCLE

The duty cycle of your compressor will also have an effect on how efficient the airflow delivery is. Refer to **Figure 16** for some common duty cycles and what they mean.

50/50	Compressor can be used for up to half of its cycle. Same amount of time at rest, as it does working.
60/40	Compressor can be used for up to 60% of its cycle; spends up to 40% of its time resting.
75/25	Compressor can be used for up to 75% of its cycle; spends up to 25% of its time resting.
85/15	Compressor can be used for up to 85% of its cycle; spends up to 15% of its time resting.
100	Compressor does not need to rest. Engine/motor has a cooling component allowing for constant air delivery.

Figure 16. Common duty cycles.

OPERATING PRESSURE (LBS / INCH²)


Your second consideration should be the recommended or required operating pressure of your tool. An air tool recommended for 70 PSI should never be connected to a hose or system set to higher than that operating pressure, as the tool or valves could burst. A regulator allows tools with a lower rating than the system to still be attached, because the line can be adjusted to a safe level.

The Compressor has a regulator and pressure gauge for controlling and observing line pressure.

CONNECTING AIR TOOL

Use the following steps as a guide for attaching an air tool. As there are a wide variety of tool and hose options, your connections may differ slightly from this simple outline.

Items Needed	Qty
Air Tool (Rated for 90 PSI or Less).....	1
Air Hose.....	1
Additional Connection Fittings.....	As Needed

	<p>! WARNING</p> <p>Eye injury hazard! Always wear safety glasses when using this machine.</p>
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<p>! WARNING</p> <p>Always wear personal protective equipment required by the air tool you are using. Pneumatic grinders, sanders, paint sprayers, etc., require a respirator to protect against long-term respiratory damage. Prolonged exposure to tools with high sound ratings can result in hearing loss without the use of hearing protection.</p>

<p>Compressing air produces a lot of heat, so the pump and motor require some resting time in order to cool down. The "cycle" of an air compressor refers to how long it takes for the compressor to be used and subsequently cooled. The duty cycle dictates what percentage of the cycle you can spend using air before it must rest.</p>



WARNING

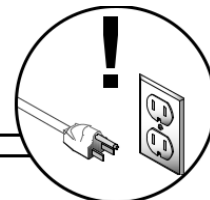
Never attempt to relieve air pressure from a tank by removing a pipe plug or any other system component!

MANUALLY DRAINING THE AIR TANK

1. Disconnect and lockout the compressor from the power source.
2. Tank subjected to freezing temperatures may contain ice. Move the tank to a warm area long enough to thaw and moisture within the tank before attempting to drain moisture from the tank.
3. Put on safety glasses to protect eyes from any air or debris that may be propelled from the tank.
4. Reduce the pressure in the tank to 30 PSI by pulling the ring on the pressure relief valve.
5. Slowly open the drain valve and allow the moisture and air mixture to drain from the tank.
6. Once the moisture has been completely drained, close the drain valve.
7. It is recommended to visually inspect tanks yearly, and hydro-statically inspected at least every 10 years.
8. Adhere to federal, state, provincial or local codes in your area for mandatory air tank maintenance information.

Review the troubleshooting procedures in this section if a problem develops with your machine. If you need replacement parts or additional help with a procedure, call our Technical Support. **Note:** Please gather the serial number and manufacture date of your machine before calling.

Troubleshooting



Motor & Electrical

Symptom	Possible Cause	Possible Solution
Machine does not start, or power supply breaker immediately trips after startup.	<ol style="list-style-type: none"> 1. Tank already pressurized. 2. Internal overload tripped. 3. Incorrect power supply voltage or circuit size. 4. Pressure switch cut-in/cut-out settings have been adjusted incorrectly. 5. Power supply circuit breaker tripped or fuse blown. 6. Tripped thermal overload in motor, compressor is exceeding its duty cycle. 7. Wiring broken, disconnected, or corroded. 8. Check valve components are dirty/damaged. 9. Pressure switch at fault. 10. Internal overload at fault. 11. Motor or motor bearings at fault. 	<ol style="list-style-type: none"> 1. Motor will not start if tank is fully pressurized. 2. Disconnect machine from power, allow pump to cool, then resume operations. 3. Ensure correct power supply and circuit size (Page 11). 4. Adjust settings (Page 30). Do not exceed cut-in/cut-out pressures listed on data sheet (Page 6) or inside pressure switch. 5. Ensure circuit is free of shorts. Reset circuit breaker or replace fuse. 6. Reduce load on compressor and allow longer cool down periods. 7. Fix broken wires or disconnected/corroded connections. 8. Clean/replace check valve components (Page 29). 9. Turn compressor OFF, disconnect from power, and empty tank. DO NOT USE until switch is replaced. 10. Replace pump. 11. Replace motor.
Machine stalls or is under-powered.	<ol style="list-style-type: none"> 1. Air filter(s) dirty/clogged. 2. Pump/motor have restricted airflow. 3. Pressure switch cut-in/cut-out settings have been adjusted incorrectly. 4. Motor overheated, tripping internal overload; compressor is exceeding its duty cycle. 5. Run capacitor at fault. 6. Extension cord too long. 7. Check valve components are dirty or damaged. 8. Motor or motor bearings at fault. 9. Worn valves or rings/compressor pump at fault. 	<ol style="list-style-type: none"> 1. Replace air filter(s) (Page 23). 2. Clean cylinder fins, motor fan, and vent area. 3. Adjust settings (Page 30). Do not exceed cut-in/cut-out pressures listed on data sheet (Page 6) or inside pressure switch. 4. Reduce load on compressor and allow longer cool down periods. Clean motor, let cool, and reduce workload. Reset breaker. 5. Test/repair/replace. 6. Move machine closer to power supply; use shorter extension cord. 7. Clean/replace check valve components (Page 29). 8. Replace motor. 9. Rebuild/replace.

Symptom	Possible Cause	Possible Solution
Machine has vibration or noisy operation	<ol style="list-style-type: none"> 1. Motor or component loose. 2. Wheels or machine feet loose. 3. Motor fan rubbing on fan cover. 4. Motor bearings at fault. 5. Compressor pump at fault. 	<ol style="list-style-type: none"> 1. Replace damaged or missing bolts/nuts or tighten if loose. 2. Tighten fasteners. 3. Fix/replace fan cover; replace loose/damaged fan. 4. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement. 5. Compressor piston rod/bearings/crankshaft is worn. Rebuild or replace pump.
Motor runs continuously	<ol style="list-style-type: none"> 1. Machine is undersized. 2. Regulator needs to be adjusted for lower airflow delivery. 3. Air leak in tank or delivery pipes. 4. Pressure switch at fault. 	<ol style="list-style-type: none"> 1. Use a smaller attachment tool or a larger air compressor. 2. Turn regulator knob counterclockwise to decrease line PSI. 3. Check air tank, pipes, and all connections for leaks (Page 25). Do not attempt to repair leaking/damaged tank, only replace. 4. Turn compressor OFF, disconnect from power, and empty tank. DO NOT USE until switch is replaced.
Pressure relief valve stays open and motor will not stop running.	<ol style="list-style-type: none"> 1. Pressure switch cut-in/cut-out settings have been adjusted incorrectly. 2. Pressure switch at fault, unit is trying to over pressurize tank. 3. Pressure relief valve at fault/relieving pressure too early. 	<ol style="list-style-type: none"> 1. Adjust settings (Page 30). Do not exceed cut-in/cut-out pressures listed on data sheet (Page 6) or inside pressure switch. 2. Turn compressor OFF, disconnect from power, and empty tank. DO NOT USE until switch is replaced. 3. Replace.

Motor & Electrical (cont.)

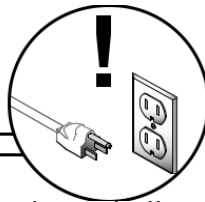
Operation

Symptom	Possible Cause	Possible Solution
Air leaks from pressure switch	<ol style="list-style-type: none"> 1. Check valve components are dirty/damaged. 2. Pressure switch is faulty. 	<ol style="list-style-type: none"> 1. Clean/replace check valve components (Page 29). 2. Turn compressor OFF, disconnect from power, and empty tank. DO NOT USE until switch is replaced.
Low pressure in tank, or tank pressure drops after compressor is turned OFF	<ol style="list-style-type: none"> 1. Drain valve is open. 2. Air filter(s) dirty/clogged. 3. Regulator needs to be adjusted for lower air flow delivery. 4. Pressure switch cut-in/cut-out settings have been adjusted incorrectly. 5. Air leak in tank or delivery pipes. 6. Check valve components dirty/damaged. 7. Pressure relief valve releases below 150 PSI 8. Gasket leaking. 9. Worn pump piston rings. 	<ol style="list-style-type: none"> 1. Close drain valve. 2. Replace air filter(s) (Page 23). 3. Turn regulator <u>Counter Clockwise</u> to decrease line PSI. 4. Adjust setting (Page 30). Do not exceed pressures listed on data sheet or inside pressure switch. 5. Check air tank, pipes, and connections for leaks (Page 25). If tank is damaged - REPLACE only. 6. Clean/replace check valve components (Page 29). 7. Replace pressure relief valve. 8. Check cylinder head gaskets. Repair or replace. 9. Inspect and replace pump piston rings.
Compressor knocking.	<ol style="list-style-type: none"> 1. Air filter dirty/clogged. 2. Piston assembly is loose. 	<ol style="list-style-type: none"> 1. Replace air filter(s) (Page 23). 2. Inspect and repair piston and connecting rod.

Operation (cont.)

Symptom	Possible Cause	Possible Solution
Compressor does not build air pressure, or does not reach full pressure.	<ol style="list-style-type: none"> 1. Drain valve is open. 2. Tank needs to be drained. 3. Air filter(s) dirty/clogged. 4. Air leak in tank or delivery pipes. 5. Check valve components are dirty/damaged. 6. Reed valve(s) not sealing. 7. Head gasket or valve body gasket leaking. 8. Worn pump piston rings. 9. Broken crankshaft or connecting rod. 	<ol style="list-style-type: none"> 1. Close drain valve. 2. Open drain valve to drain water, then close. 3. Replace air filter(s) (Page 23). 4. Check air tank, pipes, and all connections for leaks (Page 25). Do not attempt to repair leaking/damaged tank, only replace. 5. Clean/replace check valve components (Page 29). 6. Remove cylinder head and replace reed valve(s). 7. Remove cylinder head and replace gasket(s). 8. Inspect and replace pump piston rings. 9. Replace or rebuild compressor pump.
Air leaks from air filter(s)	<ol style="list-style-type: none"> 1. Check valve components are dirty/damaged. 2. Reed valve(s) not sealing. 	<ol style="list-style-type: none"> 1. Clean/replace check valve components (Page 29). 2. Remove cylinder head and replace reed valve(s).
Air tools have oily discharge.	<ol style="list-style-type: none"> 1. Tank needs to be drained. 2. In-line oiler is out of adjustment (if used). 3. In-line filter damaged or missing (if used). 4. Compressor pump is faulty. 	<ol style="list-style-type: none"> 1. Open drain valve to drain water. 2. Adjust in-line oiler drip ratio or use correct oil viscosity. 3. Replace filter or in-line assembly. 4. Worn compressor piston rings, or valves. Rebuild or replace pump.
Air tools have watery discharge, get cold or freezing up.	<ol style="list-style-type: none"> 1. Tank needs to be drained. 2. In-line water separator is full (if used). 3. Ambient environment is too humid. 	<ol style="list-style-type: none"> 1. Open drain valve to allow water to drain out. 2. Drain water separator. 3. Install in-line air dryer and water separator.
Air tool has low supply pressure but compressor has sufficient air pressure.	<ol style="list-style-type: none"> 1. Air hose is too long. 2. Regulator needs to be adjusted for higher air flow delivery. 3. Machine is undersized. 4. In-line filter damaged or clogged (if used). 5. In-line water separator is full (if used). 6. Pressure switch cut-in/cut-out settings have been adjusted incorrectly. 7. Air leaks in the hose. 8. Regulator at fault. 9. Pressure gauge(s) faulty. 	<ol style="list-style-type: none"> 1. Use shorter hose. 2. Turn regulator knob <u>Clockwise</u> to increase line PSI. DO NOT exceed pressure rating of attached tool. 3. Use a smaller attachment tool or larger air compressor. 4. Replace filter or in-line filter assembly. 5. Drain water separator. 6. Adjust settings (Page 30). Do not exceed cut-in/cut-out pressures listed on data sheet (Page6) or inside pressure switch. 7. Check air hoses and connectors for leaks (Page 25). 8. Inspect regulator for leaks. Replace if faulty. 9. Replace pressure gauge(s).
Safety relief valve leaks.	<ol style="list-style-type: none"> 1. Pressure switch cut-in/cut-out settings are adjusted incorrectly. 2. Safety relief valve is faulty. 3. Pressure switch is faulty. 	<ol style="list-style-type: none"> 1. Adjust settings (Page 30). Do not exceed cut-in/cut-out pressures listed on data sheet (Page6) or inside pressure switch. 2. Test/replace. 3. Turn compressor OFF, disconnect from power and empty tank. DO NOT USE until switch is replaced.
Compressed air is too wet or is dirty.	<ol style="list-style-type: none"> 1. Tank needs to be drained. 2. Delivery pipes are dirty (if used). 	<ol style="list-style-type: none"> 1. Open drain valve to drain water. 2. Remove delivery pipes, clean and replace.

Inspecting Check Valve



The check valve pushes compressed air into the tank and prevents it from flowing back toward the pump. The diaphragm in the check valve can become damaged, twisted, or dirty and cause the valve to leak or prevent the compressor from pressurizing.

Tool Needed	Qty
Wrench or Socket 19mm	1

	<p>⚠ WARNING</p> <p>Eye injury hazard! Always wear safety glasses when using this machine.</p>
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To inspect check valve:

1. DISCONNECT MACHINE FROM POWER!

<p>⚠ CAUTION</p> <p>Releasing air through the relief valve can be extremely loud. Protect hearing with ANSI-Approved hearing protection while performing following step.</p>

2. Use safety relief valve to reduce tank pressure to less than 10 PSI.
3. Open drain valve located below front of tank to release any remaining air (see **Figure 27**).

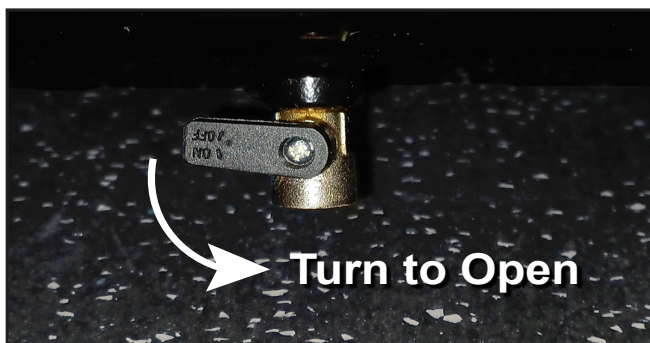


Figure 27. Drain valve handle

4. Remove cap, shown in **Figure 28**, from check valve. Located on back of tank beneath frame.

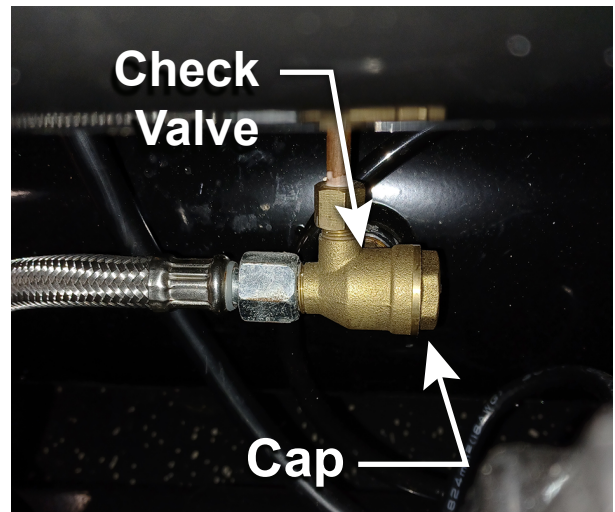


Figure 28. Location of check valve cap.

5. Inspect seal ring and diaphragm (see **Figure 29**) for damage or dirt.

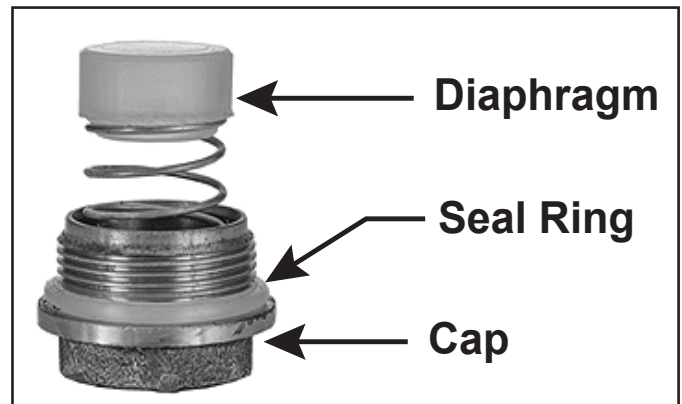


Figure 29. Check valve components.

6. Replace any damaged parts and clean any dirt from diaphragm and seal ring.
7. Re-install check valve/cap.

IMPORTANT: Make sure diaphragm presses squarely against discharge line and exhaust tube opening.

Note: Do not add thread sealant or thread sealing tape to cap threads. Seal ring provides sufficient sealing.

Adjusting Cut-in / Cut-out Settings

The pressure switch ensures the compressor will turn ON when the tank pressure drops to approximately 120 PSI (the cut-in pressure), and will turn OFF when the tank pressure reaches 150 PSI (the cut-out pressure). Should the pressure switch fail to turn OFF the machine, the safety relief valve will open shortly after the pressure exceeds 150 PSI and prevent over-pressurization.

Tools Needed	Qty
Phillips Head Screwdriver #2	1
Flat Head Screwdriver 1/4"	1

Safety

! WARNING

Cut-in and cut-out settings have been factory set at the proper PSI range. Only adjust pressure switch settings if compressor is cutting in or out at incorrect pressures. Tank could burst if filled with more pressure than it is designed for.



! WARNING

Eye injury hazard! Always wear safety glasses when using this machine.

Adjusting Cut-In/Cut-Out Settings

If the minimum and maximum tank pressure set-tings both have to be raised or lowered at the same time, then follow these steps.

To adjust cut-in/cut-out settings:

1. Operate compressor and record cut-in and cut-out pressures.
2. DISCONNECT MACHINE FROM POWER!

! CAUTION

Releasing air through the relief valve can be extremely loud. Protect hearing with ANSI-Approved hearing protection while performing following step.

3. Use safety relief valve to reduce tank pressure to less than 10 PSI.
4. Remove Phillips head screw shown in **Figure 30**, to remove pressure switch cover.

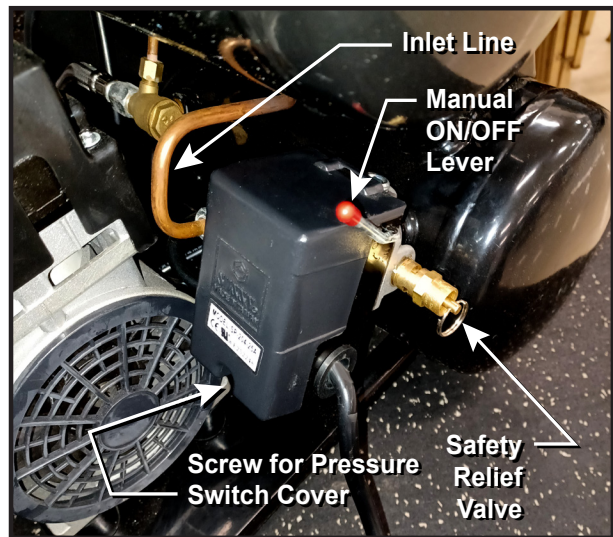


Figure 30. Cut-in/cut-out adjustment screw location.

5. Adjust screw shown in **Figure 31** to change minimum and maximum tank pressure settings.

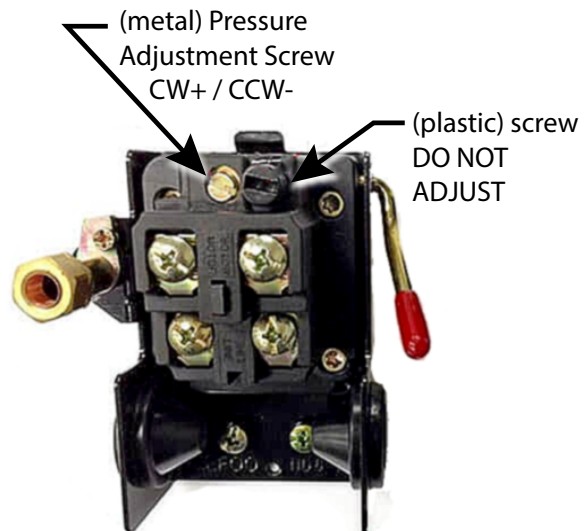


Figure 31. Location of cut-in/cut-out adjustment screw.

- Turn screw half turn clockwise to increase both settings.
- Turn screw half turn counterclockwise to decrease both settings.

6. Replace pressure switch cover.

7. Connect machine to power, start compressor, and cycle compressor through cut-in/ cut-out pressures. If compressor does not automatically turn OFF at 150 PSI, turn machine OFF before pressure reaches 155 PSI. Adjust pressure switch settings until cut-out pressure is 150 PSI or lower.

Adjusting Only Cut-Out Setting

If only the maximum tank pressure setting needs to be adjusted, then follow these steps. Keep in mind that the allowable pressure differential between cut-in pressure and cut-out pressure must be kept between 30–40 PSI. Exceeding this range can cause the compressor to overheat.

CAUTION: Adjusting tank pressure setting higher than the tank rating can cause the tank to burst during use!

To adjust only cut-out setting:

1. Operate compressor and record cut-in and cut-out pressures.

⚠ CAUTION

Releasing air through the relief valve can be extremely loud. Protect hearing with ANSI-Approved hearing protection while performing following step.

2. DISCONNECT MACHINE FROM POWER!
3. Use safety relief valve to reduce tank pressure to less than 10 PSI. Adjust screw shown in **Figure 33** to change the maximum tank pressure setting.

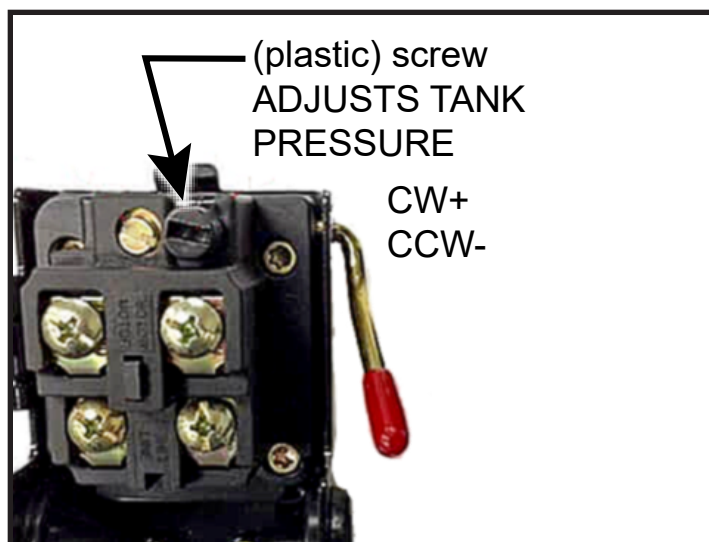


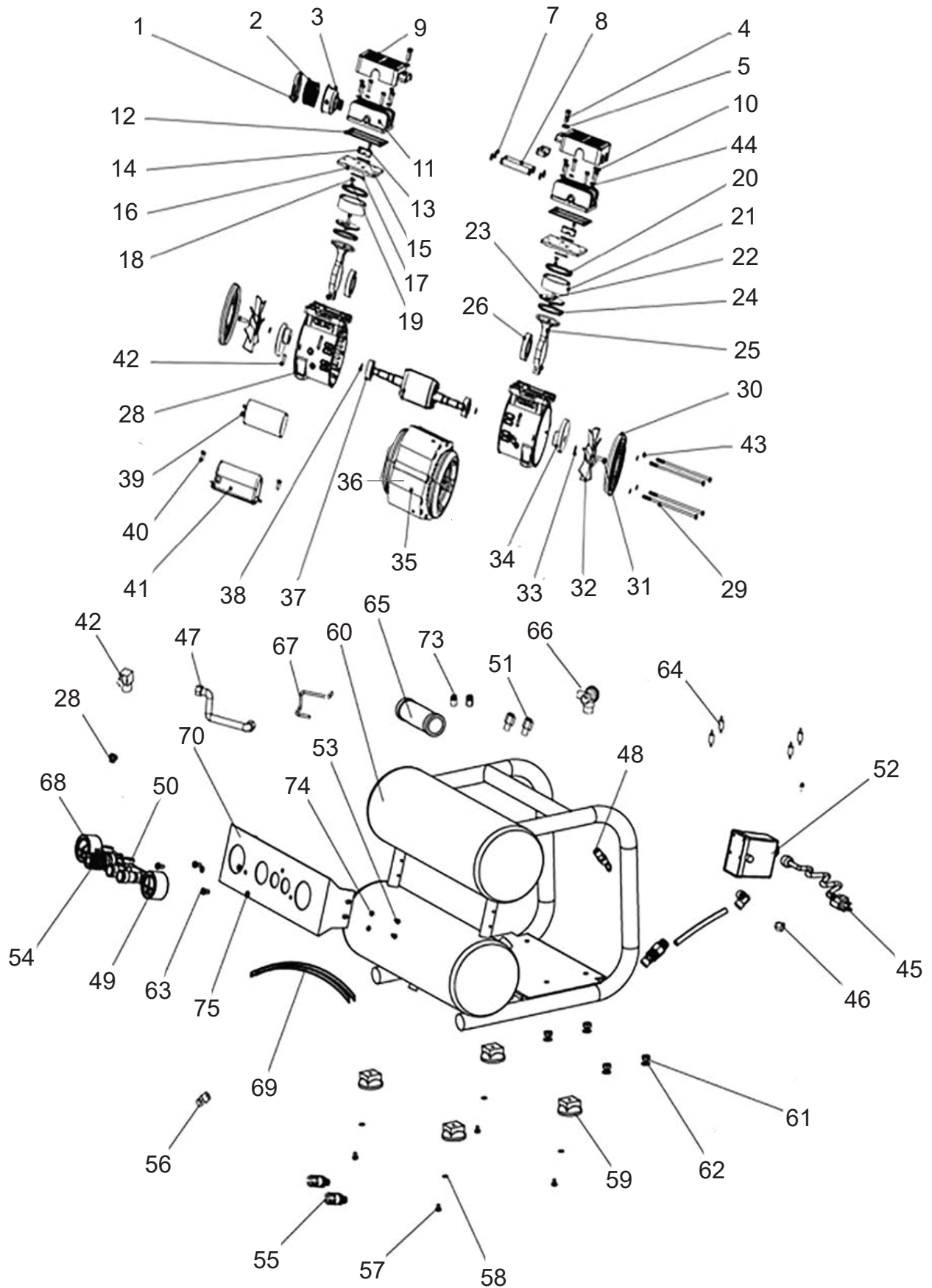
Figure 33. Location of tank pressure adjustment.

4. Remove pressure switch cover as before.
5. Turn screw half turn clockwise to INCREASE tank pressure.
6. Turn screw counterclockwise to decrease tank pressure.
7. Replace pressure switch cover.
8. Connect machine to power, start compressor and cycle through cut-in/ cut-out pressures.

If compressor does not automatically turn OFF at 150 PSI, turn machine OFF before it reaches 155 PSI. Adjust pressure switch setting until cut-out pressure is 150 PSI or below.



Main Parts Drawing



Main Parts List

REF	DESCRIPTION	QTY
1	FILTER COVER	1
2	FILTER ELEMENT	1
3	FILTER BASE	1
4	PHLP HD SCR M5-.8 X 25	8
5	FLAT WASHER 5MM	8
7	O-RING 8.5 X 2	4
8	CONNECTING TUBE	2
9	SHROUD	2
10	HEX BOLT M5-.8 X 50	12
11	CYLINDER HEAD	2
12	RUBBER MAT	2
13	HEX BOLT M6-1 X 16	2
14	LOCK BLOCK	2
15	UPPER VALVE PLATE	2
16	VALVE DISC	2
17	LOWER VALVE PLATE	2
18	BUMPER	2
19	HEX BOLT M4-.7 X 8	2
20	O-RING 68 X 2.5	2
21	CYLINDER	2
22	HEX BOLT M6-1 X 16	2
23	PRESSURE PLATE	2
24	PISTON RING	2
25	CONNECTING ROD	2
26	BALL BEARING 6203ZZ	2
28	CRANKCASE	2
29	HEX BOLT M5-.8 X 165	4
30	FAN COVER	2
31	TAP SCREW M3 X 12	4
32	FAN	2
33	LOCK BLOCK	2
34	ECCENTRIC BEARING	2
35	STATOR	1
36	ROTOR	1
37	BALL BEARING 6908ZZ	2
38	EXT RETAINING RING 14MM	2
39	R CAPACITOR 80M 250V 1-5/8 X 3-1/2	1

REF	DESCRIPTION	QTY
40	PHLP HD SCR M4-.7 X 10	2
41	CAPACITOR COVER	1
42	CRANK LOCK BOLT M8-1.25	4
43	LOCK WASHER 5MM	4
44	GASKET	12
45	POWER CORD 14G 3W 72" 5-15P	1
46	SEALING NUT M11	1
47	PIPE	1
48	SAFETY VALVE	1
49	LINE PRESSURE GAUGE	1
50	MANIFOLD	2
51	FLARE NUT 3/8-24	1
52	PRESS. SWITCH LEFOO LF10-4H	1
53	PHLP HD SCR M5-.8 X 12	4
54	REGULATOR	1
55	UNIVERSAL COUPLER 1/4" NPT	2
56	BALL DRAIN VALVE	1
57	PHLP HD SCR M5-.8 X 25	4
58	FLAT WASHER 5MM	4
59	RUBBER FOOT	4
60	TANK ASSEMBLY	1
61	LOCK NUT M6-1	4
62	FENDER WASHER 6MM	4
63	PHLP HD SCR M5-.8 X 35	3
64	VIBRATION DAMPENER	4
65	HANDLE GRIP	1
66	CHECK VALVE	1
67	RELEASE TUBE	1
68	TANK PRESSURE GAUGE1	1
69	DISCHARGE TUBE	1
70	CONTROL PANEL	1
71	CABLE CLIP	2
72	ELBOW FITTING	1
73	PLUG	2
74	FLAT WASHER 5MM	4
75	PHLP HD SCR M5-.8 X 12	

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For warranty claims received by Vanair® within the applicable warranty periods described below, Vanair® will repair or replace any warranted equipment, parts or components that fail due to defects in material or workmanship or refund the purchase price for the equipment, at Vanair's discretion. Vanair® is not responsible for time or labor to gain access to the machine to preform work. **WARRANTY WILL BE VOID IF GENUINE VANAIR PARTS AND FLUIDS ARE NOT USED.**

Vanair® must be notified in writing within thirty (30) days of any such defect or failure. All warranty or returns must be pre-authorized in writing prior to performing warranty work. Call Vanair® for process and forms. Vanair® will provide instructions on the warranty claim procedures to be followed.

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

1. Inverters: 1 Year Parts / 1 Year Labor
2. Converters: 1 Year Parts / 1 Year Labor
3. Chargers: 1 Year Parts / 1 Year Labor
4. Electric Motors: 1 Year Parts / 1 Year Labor
5. EPEQ™ Lithium Welder: 1 Year Parts / 1 Year Labor
6. Alternators: 1 Year Parts / 1 Year Labor
7. Compressor Air End:
 - Rotary Screw: Lifetime with Vanair® Authorized Service Kits and Lubricants : 3 Years Labor
 - Reciprocating: 3 Years Parts / 1 Year Labor
 - Scroll: 1 Year Parts / 1 Year Labor
8. Hydraulic Pumps/Motors: 2 Years Parts / 1 Year Labor
9. 1 Year Parts/Labor on the following:
 - All electronics and controls including, but not limited to:
 - (i) I/O Boards
 - (ii) Modules
 - (iii) Panel Boxes
 - (iv) Instrumentation
 - (v) Clutches
 - (vi) Solenoids
 - (vii) Running Gear/Trailers
 - (viii) Cooler Cores and Fans
 - (ix) Battery Management Systems and Controllers

This Limited Warranty shall not apply to:

1. Consumable components, such as: shaft seals, valves, belts, filters, capacitors, contactors, relays, brushes, wire or parts that fail due to normal wear and use.
2. Items furnished by Vanair®, but manufactured by others, such as engines and trade accessories (these items are covered by the manufacturer's warranty, if any).
3. Equipment that has been modified by any party other than Vanair® or equipment which has not been used and maintained in accordance with Vanair's specifications.

4. Equipment which has been improperly installed and/or improperly operated, based upon Vanair's specifications for the equipment or industry standards.

5. Equipment installed by non-authorized or third party personnel. Vanair® products are intended for purchase and use by commercial/industrial users and persons trained and experienced in the use and maintenance of industrial equipment.

In the event of a warranty claim covered by this Limited Warranty, the exclusive remedies shall be, at Vanair's sole discretion: (i) repair; or (ii) replacement; (iii) where authorized in writing by Vanair® in appropriate cases, the reasonable cost of repair or replacement at an authorized Vanair® service facility; or (iv) payment of (or credit for) the purchase price (less reasonable depreciation based upon actual use) upon return of the equipment at the warranty claimant's risk and expense. Vanair® will pay standard ground freight for any warranty item shipped to and from Vanair® or (Vanair® designated facility) within the first year of the applicable warranty period. Any additional expedited freight cost is the responsibility of the purchaser.

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