



Your Vital Air Source

QUARTER DUTY ONBOARD AIR SYSTEM

PART NO. 10002



IMPORTANT:

It is essential that you and any other operator of this product read and understand the contents of this manual before installing and using this product.

SAVE THIS MANUAL FOR FUTURE REFERENCE

MANUAL

QUARTER DUTY ONBOARD AIR SYSTEM

Thank you for purchasing this complete, self-contained onboard air system. Contained in one package, you'll find everything you'll need to install a high performance, onboard air source for your vehicle. Please follow these instructions to install your new system.

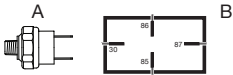
OBA Components:

- 1 - 2.0 Gallon, 5-port VIAIR Air Tank
- 1 - 275C model VIAIR compressor with leader hose and check valve

*(Check to make sure that you have **six** labeled packages in your kit. Each package contains the parts needed for specific areas of installation, and may contain smaller bags within each package for specific uses.)*

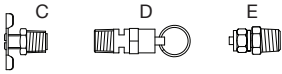
PARTS PACKAGES

Package #1 – Pressure Switch & Relay:



- A. Pressure Switch - (90 PSI on, 120 PSI off) (1pc)
- B. 40-amp relay (1pc)

Package #2 – Fittings:



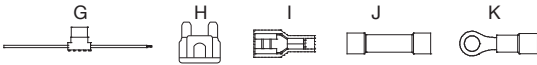
- C. 1/4" NPT Drain Cock (1pc)
- D. 1/4" NPT 145 PSI Safety Valve (1pc)
- E. 1/4" NPT Compression Fitting (1pc)

Package #3 – “Air Out” Air Line:



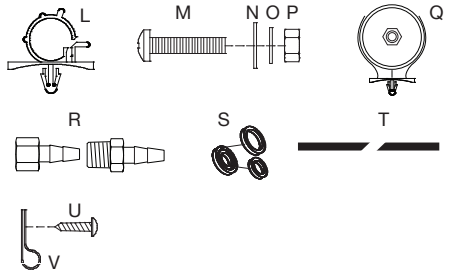
- F. Air Out Line (1pc)

Package #4 – Electrical:



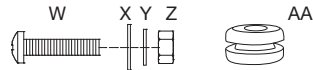
- G. Fuse Holder & 20 ft. 16 Gauge Wire (1pc)
- H. 20-amp Fuse (1pc)
- I. Push-on Female Terminals (4pcs)
- J. 16-gauge Butt Connectors (2pcs)
- K. 16-gauge Ring Terminal (2pcs)

Package #5 – Compressor Installation:



- L. Leader Hose Bracket Clip (1pc)
- M. Mounting Bolts (4pcs)
- N. Flat Washers (8pcs)
- O. Locking Washers (4pcs)
- P. Nuts (4pcs)
- Q. Air Filter Assembly (1pc)
- R. Remote Mount Air Filter Fittings for Compressor and Air Filter connection (1pc)
- S. 2-Pack of Replacement Air Filters (1pc)
- T. Air line for Remote Mounting Air Filter (1pc)
- U. Screws (3pcs)
- V. Air Line Clips (3pcs)

Package #6 – Air Tank Mounting:

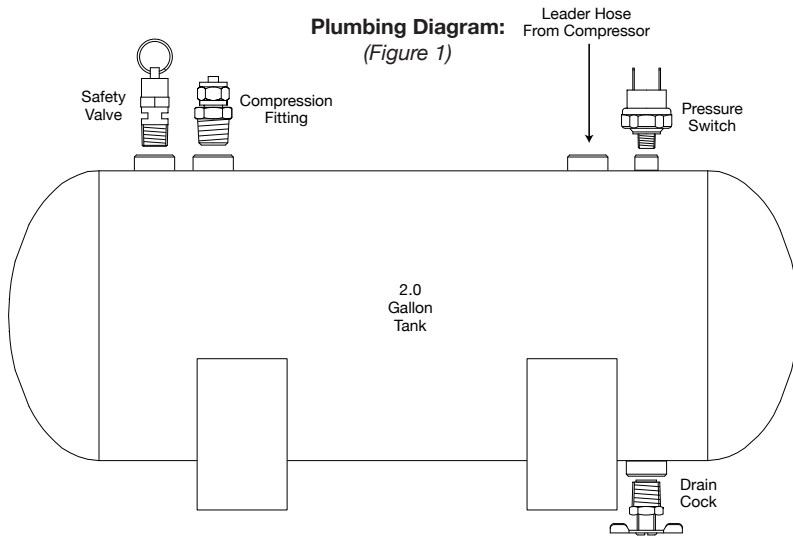


- W. Mounting Bolts (4pcs)
- X. Flat Washers (8pcs)
- Y. Locking Washers (4pcs)
- Z. Nuts (4pcs)
- AA. Rubber Tank Mount Bushings (4pcs)

QUARTER DUTY ONBOARD AIR SYSTEM

2.0 GALLON AIR TANK & PLUMBING

Your 2.0 gallon air tank comes with five 1/4" NPT port openings to allow installation in many configurations on your vehicle. To ensure safe and trouble-free use of your air tank, we strongly recommend that you install the supplied drain cock and a safety pressure relief valve. (See Figure 1)



Tank Fittings:

Install the supplied compression fittings and/or quick connect fitting for the air tank in areas where they are most appropriate for your installation using thread sealant. Make sure that the safety valve is installed in the top most position on the tank, and that the drain cock is installed in the lowest position on the tank if the tank is to be installed in any other position than upright on the tank's mounting legs. Be sure that all fittings are accessible later in the installation process since you will have to plumb air lines to each fitting as needed to utilize the air tank.

IMPORTANT:

- Tank is rated to 150 PSI maximum working pressure, however the kit is originally packaged with a 120 PSI pressure switch.
- Tank is **NOT** to be used as a breathing device.
- Bleed pressure from tank before servicing or adding attachments.
- Use only attachments or tools rated for 120 PSI working pressure or less.

CAUTION! DO NOT PRESSURIZE YOUR TANK UNTIL YOU HAVE INSTALLED ALL NECESSARY PORT FITTINGS AND ACCESSORIES.

- Apply sealant to threads of fittings prior to assembly and tighten each part with a wrench.
- Do not over tighten if your port fittings are made from brass, since brass threads can be stripped.
- Always release air from tank before servicing.

WARNING: FAILURE TO DRAIN TANK AND REMOVE CONDENSATION WILL CAUSE TANK TO RUST PREMATURELY.

- To remove accumulated condensation inside the tank, bleed pressure from tank until pressure is approximately 5-20 PSI using drain cock
- If drain cock valve is plugged, release all air pressure from tank, remove drain valve and clean, then reinstall.

IMPORTANT: Please observe air tank's Date of Manufacture (stamped on tank leg).

Replace air tank 2 to 5 years from date air tank was first used, or use the date of manufacture as reference. Adhering to air tank draining guidelines will prolong the life of your air tank.

PLEASE NOTE: RUSTED TANKS CAN FAIL CAUSING EXPLOSIONS OR FATAL INJURIES.

Discard tank immediately if tank is rusted.

SAFETY VALVE: When using a safety pressure relief valve, point the safety pressure relief valve away from your body when releasing air. Use the pull ring on the safety relief valve to vent pressure from the tank before servicing.

QUARTER DUTY ONBOARD AIR SYSTEM

275C AIR COMPRESSOR INSTALLATION

Your Onboard Air System comes complete with a 275C, 25% duty cycle compressor. Please follow the installation instructions that follow to enjoy the best use of your onboard air system.

CAUTION - To reduce risk of electrical shock or electrocution:

- Do not disassemble the compressor. Do not attempt repairs or modifications. Refer to qualified service agencies for all service and repairs.
- Do not use this product in an area where it can fall or be pulled into water or liquids.
- Do not reach for this product if it has fallen into liquid.
- Use this compressor with 12-volt DC systems only.
- This product should never be left unattended during use.

Guidelines for Selecting Mounting Location:

The selection of proper mounting location for your air compressor will help ensure a long and trouble free compressor service life. Please pay close attention to the following:

- Select a **FLAT, UPRIGHT & SECURE LOCATION** where the compressor can be mounted.
- To maximize air compressor performance, locate compressor as **CLOSE TO THE BATTERY** as possible so that length of positive lead wire required is at a minimum.
- Choose mounting location that is as cool as possible and away from heat sources.
- This compressor is moisture & dust resistant, but **NOT WATERPROOF** or **DUSTPROOF**. Do not mount compressor in locations where the unit is likely to come in contact with water or excessive dirt.
- For compressor with remote filter mounting, select compressor's mounting location where air line can be routed from compressor air inlet to remote inlet air filter. Make sure that the remote inlet air filter is located in a dry location, away from water.
- You will also want to select a compressor mounting location where the leader hose bracket can be mounted to secure the 2 ft. leader hose.
- If it is necessary to mount the air compressor further from the battery, such as inside your vehicle or in the bed of your pickup, use a minimum 8 AWG positive lead wire for remote installation.
- Do not mount compressor near areas where flammable liquids are stored.
- Use thread sealant for proper fitting installation. Thread tape is not recommended. Properly sealed, recommended torque for 1/4" and 3/8" is 12~15 ft. lbs. Recommended torque for 1/8" is 10~11 ft. lbs.

275C Compressor Wiring: (See Figure 3 on back of manual)

1. Disconnect ground cable from vehicle's battery.
2. Temporarily position the air compressor in the location where it will be mounted.
3. Route ground wire to the negative post of the battery or to an appropriate grounding point and cut ground wire to length as needed.
4. Mount the air compressor with the four sets of 13/64" (5 mm) bolts, nuts, washers, and locking washers provided. Use of thread locker is recommended.
5. NOTE: For Air Filter Installation, refer to Air Filter Installations Instruction included in the Air Filter Pack.
6. This air compressor comes with a heavy duty heat-resistant stainless steel braided leader hose. This leader hose is designed to prolong the life of your compressor, and air lines. Do not remove this leader hose from air compressor.
7. IMPORTANT: Please note; the leader hose that came with your compressor has a built-in inline check valve pre-installed. Do not remove inline check valve.
8. Select a proper location to mount leader hose with hose bracket provided. Avoid locations where leader hose may become tangled with wires and other hoses.
9. To mount hose bracket, drill holes with 3/16" drill bit and push self-anchoring hose bracket pin into hole. Route leader hose through hose bracket and secure hose by pressing bracket clamp into locked position.
10. To remove hose from the hose bracket, simply press down on the hose clamp release tab to release bracket clamp.
11. Connect compressor's positive lead wire to one of the leads of your pressure switch.
12. Make sure that your compressor setup is properly fused. The 275C pulls 20 amps of power maximum.
13. Always locate fuse as close as possible to power source (battery).
14. Before connecting to power source, check that all connections are made properly.
15. Connect and test compressor system by running the compressor for a short time to build up pressure in the air tank.
16. Once air pressure reaches preset cut out pressure of your pressure switch, the compressor will shut off. Inspect all air line connections for leaks with soap and water solution. If a leak is detected, make connections again as necessary (air line may not be cut squarely).

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275C OPERATING INSTRUCTIONS

IMPORTANT: The 275C has a maximum working pressure of 150. Always operate the compressor at or below the MAXIMUM PRESSURE RATING of the compressor. Exceeding maximum pressure ratings and duty cycle may damage air compressor.

1. Your air compressor is equipped with an AUTOMATIC THERMAL OVERLOAD PROTECTOR. This feature will protect the air compressor from overheating and causing permanent damage to your air compressor. The thermal overload protector will automatically cut off power to your air compressor should the internal operating temperature of the air compressor rise above safe levels during excessive use.
2. Should your air compressor automatically shut off during use, turn power to the system off. The automatic thermal overload protector will automatically reset when internal temperature of the air compressor drops below safe levels. After allowing air compressor to cool off for about 30 minutes, you can safely resume use of the air compressor by turning on the system.
3. To prevent discharge of your battery and to provide peak performance, it is recommended that you keep the engine running while the air compressor is in use.
4. ONLY OPERATE THE AIR COMPRESSOR IN WELL-VENTILATED AREAS.

275C Compressor Maintenance & Repairs:

1. Periodically check all electrical and fitting connections. Clean and tighten as needed.
2. Periodically check all mounting screws. Tighten as needed.
3. Replace air filter element periodically. Replacement frequency depends on operating frequency and operating environment. For frequent use in dusty environment, you should replace air filter element more often.
4. Regularly clean dust and dirt from compressor.
5. Your air compressor is equipped with permanently lubricated, maintenance-free motor.
Never lubricate compressor.
6. Repairs should be performed by Manufacturer or Manufacturer's Authorized Service Agencies only.

CAUTION: Never touch the air compressor or fittings connected to the air compressor with bare hands during or immediately after use. Leader hose and fittings will become very HOT during and after use.

275C Compressor Installation Tips:

1. Always use the remote intake filter option when possible. This will extend the service life of your compressor.
2. If noise reduction from vibration is desired, using the remote mount option for the inlet filter can reduce operation noise by up to 25%.
3. Always mount the compressor at a point higher than the inlet port of the tank.
This will keep moisture from being able to seep back to the tank.
4. When mounting the compressor, use a paint pen on the rubber isolators and cover the side to go against the chassis or mounting location. Then, simply stamp the compressor against the chassis to make an imprint of exactly where to drill the mounting holes for the compressor.

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PRESSURE SWITCH WITH RELAY INSTALLATION

Your Onboard Air System comes complete with a pressure switch with relay that will turn on the compressor at 90 PSI, and off at 120 PSI. The pressure switch has a 1/8" NPT inlet at the bottom that will fit in one of the top ports of the tank using thread sealant. *(For Relay installation, see Relay Wiring Schematic contained in Figure 2.)*

Pressure Switch with Relay Installation Tips:

1. Never install your pressure switch in direct line from the inlet port coming from the compressor. Tank pressure can be misread by the pressure switch. Mount the pressure switch on the tank where it receives reading from deflected air.
2. Never use a pressure switch that is rated beyond your compressor's rated maximum working pressure (150 PSI).
3. Replace with P/N 90100 should the pressure switch need replacement.

Installation Tips:

- When cutting air line tubing, always cut as squarely as possible. Use a hose cutter or razor blade.
- When routing air line tubing, always remember to avoid sharp edges, heat sources and tight bends. (Air line must be routed at least 12 inches from exhaust systems & other heat sources.)

IMPORTANT - Drilling through firewall:

Always be sure of what is on the other side of the firewall before drilling. Take care not to damage your vehicle's electronic systems or components.

Wiring an ON/OFF Switch:

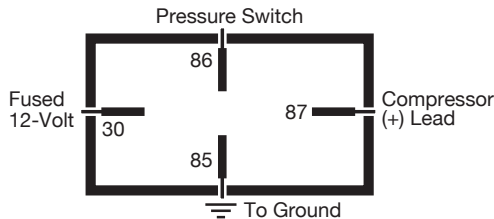
Using a relay: Run a wire to a simple two position switch that can be mounted on your dash or to your ignition switch. This switch will turn off power to the whole system by shutting off power to the pressure switch via the relay. The wire should be fused between the battery and your on/off switch.

Test Your System:

Installation is now complete. Run the compressor to build pressure in the air tank. When air pressure reaches the pressure switch cut out pressure, the compressor will shut off. Spray all air line connections with soap and water solution to check for leaks. If leaks are detected, air line may not be cut squarely or pushed all the way in. Fix connections as needed. Periodically check your system's fitting in this manner should your compressor turn on more often than normal without frequent air use.

Relay Wiring Schematic:

(Figure 2)



QUARTER DUTY ONBOARD AIR SYSTEM

TROUBLESHOOTING GUIDE:

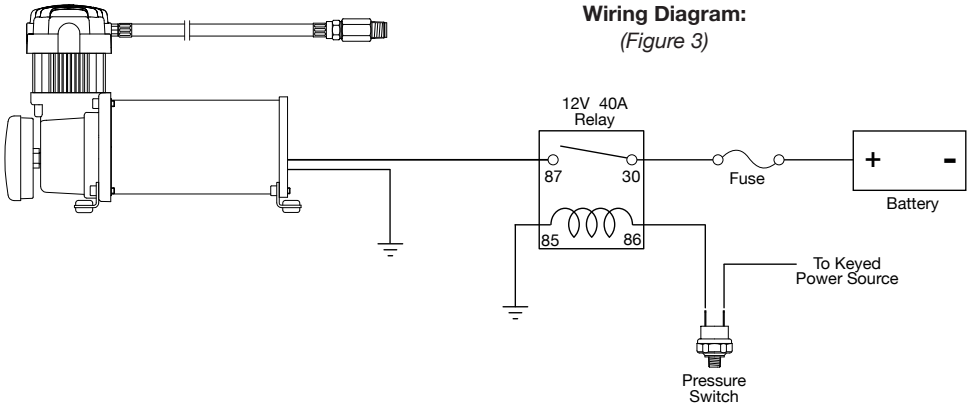
PROBLEM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Tank pressure drops when compressor (s) shut off	<ol style="list-style-type: none"> 1. Loose drain cock 2. Check valve leaking 3. Loose connections 	<ol style="list-style-type: none"> 1. Tighten drain cock 2. Replace check valve or compressor(s) 3. Check all connections with soap and water solution and tighten
Compressor runs continuously and air flow lower than normal	<ol style="list-style-type: none"> 1. Excessive air usage 2. Loose connections 3. Worn piston ring or inlet valve 4. Clogged air filter element 	<ol style="list-style-type: none"> 1. Decrease air usage 2. Check all connections with soap and water solution and tighten 3. Repair or replace compressor 4. Replace air filter element
Compressor runs continuously causing safety valve (if equipped) to open	<ol style="list-style-type: none"> 1. Bad pressure switch 2. Defective safety valve 	<ol style="list-style-type: none"> 1. Replace pressure switch 2. Replace safety valve
Excessive moisture in discharge	<ol style="list-style-type: none"> 1. Excessive water in air tank 2. High humidity 	<ol style="list-style-type: none"> 1. Drain tank, tilt tank to drain Drain tank more frequently 2. Move compressor to area with less humidity, or use air line filter
Compressor will not run	<ol style="list-style-type: none"> 1. No power, or power switch in OFF position 2. Blown fuse 3. Motor overheats 4. Faulty pressure switch 	<ol style="list-style-type: none"> 1. Make sure compressor switch is ON 2. Disconnect compressors from power source, replace fuse. (Refer to Specifications section for correct fuse amperage.) 3. Let compressors cool off for about 30 Minutes to allow thermal overload switch reset. 4. Replace pressure switch
Thermal overload protector cuts out repeatedly	<ol style="list-style-type: none"> 1. Lack of proper ventilation or ambient temperature too high 2. Compressor valves failed 	<ol style="list-style-type: none"> 1. Move compressor to well ventilated area, or area with lower ambient temperature 2. Repair or replace compressor
Excessive knocking or rattling	<ol style="list-style-type: none"> 1. Loose mounting bolts 2. Worn bearing on eccentric or motor shaft 3. Cylinder or piston ring is worn 	<ol style="list-style-type: none"> 1. Tighten mounting bolts 2. Repair or replace compressor 3. Repair or replace compressor

CAUTION: NEVER DISASSEMBLE COMPRESSOR WHILE COMPRESSOR IS PRESSURIZED.

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AMERICAN WIRE GAUGE GUIDE 12-VOLT:

Amp Draw	Length of wire from battery to compressor (in feet)			
	5	10	15	20
5	16	16	16	14
10	16	14	12	10
15	16	12	10	10
20	14	10	10	8
25	14	10	8	6
30	12	10	8	6
40	12	8	6	6
50	10	6	6	4
60	10	6	4	4



Viair provides the best in air compressors equipment.