

Preventive Maintenance

Drain the moisture from all air reservoirs during each pre-trip/safety inspection.

- Compressor power switch should be turned OFF when trailer is not in use to avoid damage to the vehicle air system.
- Check battery(ies) on a regular basis. The battery should remain at full charge (12.6 volts) at all times.
- Periodically check all electrical and air-fitting connections. Clean and tighten as needed.
- Replace air filter element at least once per year. Replace at least once a month if used frequently in a dusty environment.
- Regularly clean dust/dirt from cooling fins and motor housing.
- Check all compressor/accessory mounting bolts. Tighten as needed.

Refer to these American Trucking Association's Technology & Maintenance Council (TMC) publications on air system maintenance:

- RP 617-Air-System Contaminant Elimination
- RP 619-Air-System Inspection Procedure
- RP 634-Ride Height Adjustment Procedures for Truck/Tractor Air Ride Suspensions
- RP 643-Air-Ride Maintenance Guidelines

**Air Compressor/Air Control Kit
Installation and Service Manual**



Air Compressor Kit – Vehicle Mounting Guide

Location

Mount the compressor in a flat, secure location away from heat sources and protected from the elements. The location should provide enough air flow to cool the compressor.

Supply at least two holes when mounting the compressor inside an enclosure. One hole in the side facing the vehicle front and one hole in the rear-facing side should provide enough air flow from vehicle movement to cool the compressor.

Make sure the air line run lengths provide enough slack to allow for vehicle movement. Use a cutting tool instead of a knife or scissors for a clean, straight cut.

CAUTION Exhaust all pressure from the air system and wear proper eye protection at all times when working on a vehicle air system. Never touch the air compressor or connected fittings with bare hands during or immediately after use. If necessary, wear heat resistant gloves to handle the fittings, air lines, and leader hose.

Wiring

Electrical wiring should be sized according to the voltage; the maximum amperage draw of the system components; and the total wire length. There are several wire gauge calculators online that can help determine the appropriate wire size.

The installer is responsible for making sure air system requirements comply with all federal and state regulations such as "Federal Motor Vehicle Safety Standards (FMVSS) 121 for Air Brake Systems."

Install near the battery

Locate the air compressor close to the battery to reduce the length of positive lead wire required.

Install a larger gauge positive lead wire all the way through the run when mounting the compressor away from the battery - inside the vehicle, for example.

Refer to manufacturer's specifications for the proper fuse size. Locate the fuse as close as possible to power source.

Plumb the system

Connections must be airtight to get the proper system performance. Use liquid thread sealant on all threaded air fittings. Torque fittings to 10-12 ft lbs.

Mount and plumb remote inlet air filters, if used, in a clean and dry location away from water sources. Replace the filter media when dirty.

The air tank drain should point down when mounted. The air line from the air compressor to the air tank should slope downward so that water condensation collects in the tank. Drain air tank(s) daily.

NOTE: Kinks in air lines or an upward-running air line can cause water to pool/freeze inside the lines.

Test for leaks

Connect and test the system by running the air compressor to build up pressure in the air tank. The compressor will stop when the pressure reaches the "cut-out" pressure of the pressure switch.

NOTE: Air-ride suspension system air compressors are controlled/limited by a pressure switch. The switch monitors the air tank pressure between a preset maximum and minimum.

The air compressor turns off when the pressure reaches the "cut-out level" (120-130 PSI). The compressor turns on when the air tank pressure drops to the "cut-in level" (90-100 PSI).

Inspect all air line connections for leaks with soap and water solution. An air line that is not cut squarely or not pushed all the way into the fitting are the most common causes of leaks. Fix or replace as needed.

Notes and Cautions

The instructions use two types of service notes:

"NOTE":
Provides additional instructions or procedures to complete tasks and make sure the equipment functions properly.

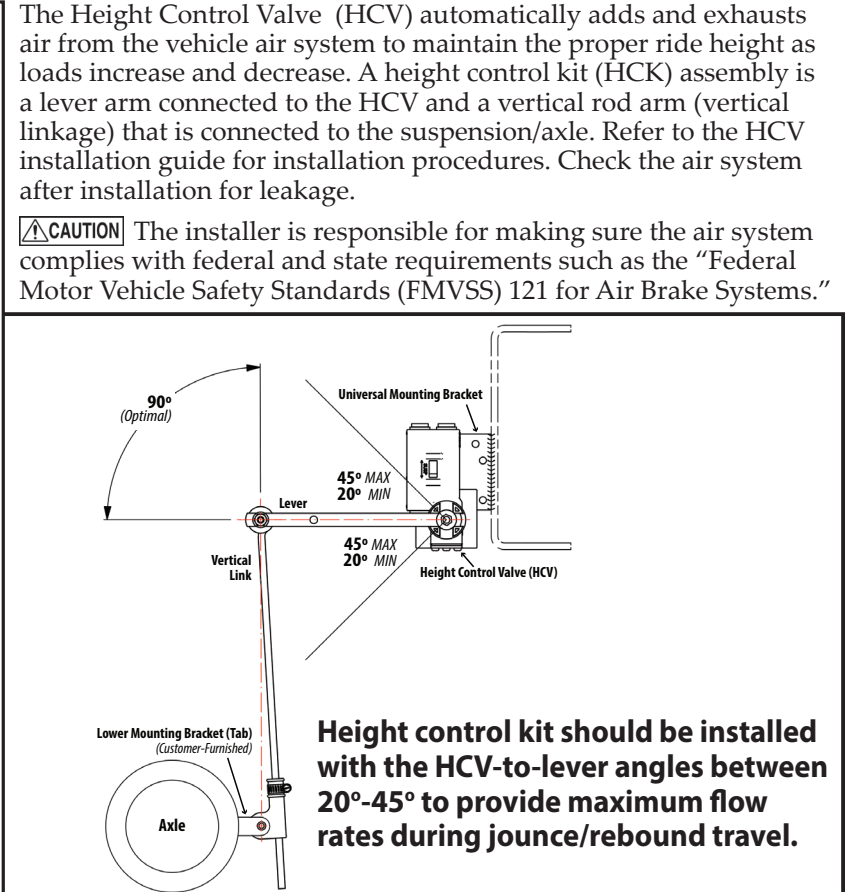
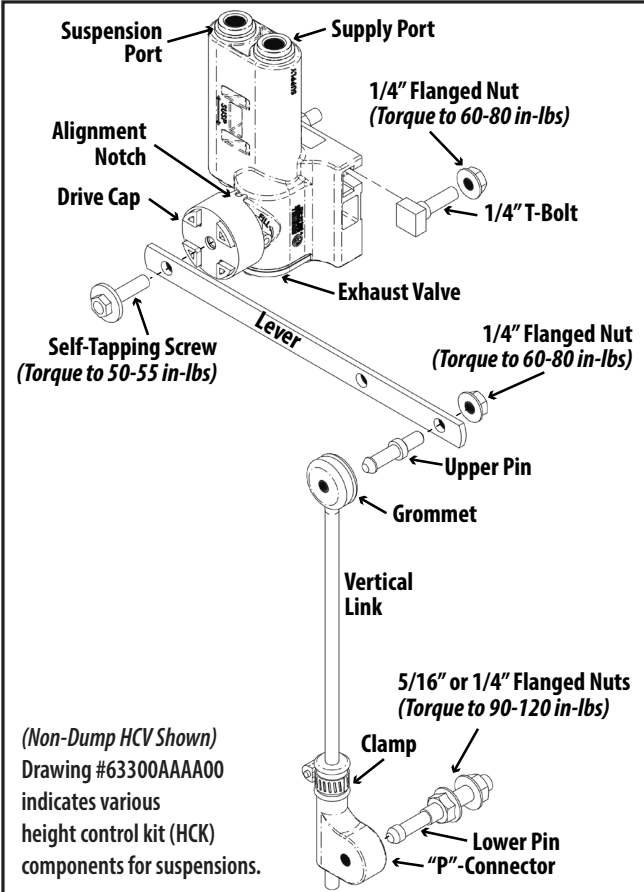
CAUTION

Indicates a hazardous situation or unsafe practice that, if not avoided, could result in equipment damage and serious injury.



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| Troubleshooting - Air Compressor Operation | | |
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| Problem | Possible Cause | Corrective Action |
| Compressor will not operate | — Power switch in OFF position or no power to the switch. | — Make sure battery is fully charged and compressor switch is turned to ON. Disconnect compressor from power source, check for blown fuse. Replace fuse, if necessary, and reconnect. <i>Refer to Manufacturer Specs for fuse amperage.</i> Use ohm-meter to check the continuity between power source and switch and from power switch to compressor. |
| | — Inadequate grounding. | — Check battery/CPSR grounding with voltmeter. |
| | — Motor overheated. | — Let compressor cool approximately 30 minutes to allow thermal overload switch to reset. |
| Compressor runs continuously | — Air tank pressure above the cut-in pressure point. | — Release air pressure until compressor starts. |
| | — Fuses burn out repeatedly | — Confirm fuses are proper ampere rating. — Make sure battery/CPSR are properly grounded. |
| | — Reset mechanism cuts out repeatedly; properly sized fuses burn out. | — Adjust; repair; or replace compressor. — Move compressor to well-ventilated area or area surrounded by lower temperature. Add vents to air compressor enclosure, if used. |
| Air flow lower than normal | — Leak in air system beyond standards. | — Pressurize system and spray soapy water solution onto the connections. Check for air bubbles (leaks). Re-cut/reassemble lines and tighten connections, as necessary. |
| | — Compressor does not stop running (unload) at cut-off pressure point. | — Verify air tank pressure. Check that preset cut-off pressure point has been reached (± 5 PSI). Check pressure switch connections. Repair/replace pressure switch, as necessary. |
| | — Check-valve stuck in closed position (pressure switch installed after check-valve). | — Drain tank and inspect check-valve. Clean/replace faulty parts. |
| Tank pressure drops after air compressor shuts off | — Water in air tank. | — Drain tank. |
| | — Clogged air filter element. | — Replace filter element. |
| | — Low voltage | — Verify system voltage with voltmeter. |
| Compressor runs continuously | — Leak in air system beyond the accepted standards. | — Check drain valve and tighten. Spray soapy water solution onto system. Check and repair leaks, as needed. |
| | — Pressure check-valve leaking. | — Bleed tank and disassemble check-valve assembly. Clean or replace faulty parts. |
| | — Water in air tank. | — Drain tank. |



| Troubleshooting – Height Control Valve Installation | | |
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| A “bad HCV” is a common misdiagnosis of the air system not working. Most problems are traced to other parts of the system such as pinched/damaged lines, other valves or loose component fittings. Repair problems before resuming troubleshooting. | | |
| Problem | Possible Cause | Corrective Action |
| HCV is not receiving air/HCV is not delivering air to the air springs. | — Blocked air supply line. — Air tank is not filling/reaching set pressure. — Pressure Protection Valve (PPV) not working correctly. — Pilot port is not plumbed or is plumbed incorrectly. | — Verify air lines are pressurized by removing supply line at HCV. Check for pinched lines. — Verify tank pressure with manual/in-line pressure gauge. — Check PPV operation by making sure that valve opens when system reaches the desired pressure setpoint (<i>usually greater than 70 psi</i>). — Check configuration – Non-Dump; Pressure-Dump (Normally Open); Zero-Pressure Dump (Normally Closed). Reinstall, if necessary. |
| Air springs fill but do not exhaust. | — Obstructed air line. — HCV installed backwards. — Supply line installed in SUSP port | — Disconnect linkage. Rotate actuating lever to down position (exhaust). If springs remain inflated, check for pinched/blocked lines. — Check installation. Reinstall, if necessary. — Move air supply line to HCV supply port. |
| Air system leaks down in a short period of time. | — HCV installed backwards. — Leak in air system beyond the accepted standards. | — Disconnect HCV linkage. Rotate actuating lever to the up position (fill). If air springs do not inflate, reinstall HCV. — To find leak in the HCV area, pressurize system and spray soapy water solution onto the valve and lines. Check for bubbles (leaks): No leak found – Do not remove valve, check the rest of the system for leaks. Check that tubing cuts are straight and smooth. Re-cut and reassemble if necessary. |