

RideCONTROL
by AIR LIFT®

Kit 59530

Toyota Tundra

2 & 4 WD

IMPORTANT: This kit does not fit 2000-2006 Toyota Tundra 2 & 4WD pickups if equipped with the TRD Package sporting 275/65-18 wheels and tires.



INSTALLATION GUIDE

For maximum effectiveness and safety, please read these instructions completely before proceeding with installation.

Failure to read these instructions can result in an incorrect installation.

Introduction

The purpose of this publication is to assist with the installation, maintenance and troubleshooting of the RideControl air spring kit. RideControl utilizes sturdy, reinforced, commercial grade single or double, depending on the kit, convolute bellows. The bellows are manufactured like a tire with layers of rubber and cords that control growth. RideControl kits are recommended for most $\frac{3}{4}$ and 1 ton pickups and SUVs with leaf springs and provide up to 5,000 lbs of load leveling support with air adjustability from 5-100 PSI. The kits are also used in motorhome rear kits and some motorhome fronts where leaf springs are used.

It is important to read and understand the entire installation guide before beginning installation or performing any maintenance, service or repair. The information here includes a hardware list, tool list, step-by-step installation information, maintenance tips, safety information and a troubleshooting guide.

IMPORTANT SAFETY NOTICE

The installation of this kit does not alter the Gross Vehicle Weight Rating (GVWR) or payload of the vehicle. Check your vehicle's owner's manual and do not exceed the maximum load listed for your vehicle.

Gross Vehicle Weight Rating: The maximum allowable weight of the fully loaded vehicle (including passengers and cargo). This number — along with other weight limits, as well as tire, rim size and inflation pressure data — is shown on the vehicle's Safety Compliance Certification Label.

Payload: The combined, maximum allowable weight of cargo and passengers that the truck is designed to carry. Payload is GVWR minus the Base Curb Weight.

NOTATION EXPLANATION

Hazard notations appear in various locations in this publication. Information which is highlighted by one of these notations must be observed to help minimize risk of personal injury or possible improper installation which may render the vehicle unsafe. Notes are used to help emphasize areas of procedural importance and provide helpful suggestions. The following definitions explain the use of these notations as they appear throughout this guide.



INDICATES IMMEDIATE HAZARDS WHICH WILL RESULT IN SEVERE PERSONAL INJURY OR DEATH.



INDICATES HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.



INDICATES HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN DAMAGE TO THE MACHINE OR MINOR PERSONAL INJURY.

HARDWARE LIST

Item	Part #	Description.....Qty	Air Line Assembly Parts List		
A		Air Sleeve2	Item	Description	Quantity
B		Upper Bracket.....2	AA	Air Line Assembly	1
C		Lower Bracket.....2	BB	Tie Strap	6
D		U-Bolt2	CC	Valve Caps	2
E		Lower Clamp Bar.....2	DD	5/16 " Flat Washer	2
F		3/8" x 1.5" Frame Bolt.....6	EE	Rubber Washer	2
G		3/8" Nyloc Nut.....10	FF	Small Star Washer	2
H		3/8" Flat Washer.....4			
I		3/8" Large Flat Washer.....6			
J		1/2" x 3/4" Flat Head Screw.....2			
K		3/4" - 16 Nyloc Jam Nut.....2			
L		1/8" Straight Fitting2			

TOOLS LIST

Description.....Qty	Description.....Qty
1/2", 9/16", and 3/4" open-end or box wrenches 1	5/16" and 3/8" drill bits (very sharp)..... 1
Crescent wrench..... 1	Heavy duty drill 1
Safety glasses 1	Torque wrench..... 1
Ratchet with 3/8", 9/16" and 1/2" deep well sockets..... 1	

Installing RideControl

GETTING STARTED

Your vehicle may be equipped with a rear brake proportioning valve. Any type of load assist product could affect brake performance. We recommend that you check with your dealer before installing this type of product. If your vehicle DOES NOT have a rear brake proportioning valve or is equipped with an anti-lock type brake system, installation of a load assist product will have NO EFFECT ON BRAKE SYSTEM PERFORMANCE.

IMPORTANT: Failure to maintain correct minimum pressure (or pressure proportional to load), bottoming out, overextension, or rubbing against another component will void the warranty.



COMPRESSED AIR CAN CAUSE INJURY AND DAMAGE TO THE VEHICLE AND PARTS IF IT IS NOT HANDLED PROPERLY. FOR YOUR SAFETY, DO NOT TRY TO INFLATE THE AIR SPRINGS UNTIL THEY HAVE BEEN PROPERLY SECURED TO THE VEHICLE.

1. Determine the Normal Ride Height. The Normal Ride Height is the distance between the bottom edge of the wheel-well and the center of the hub with the vehicle in the "as delivered" condition. In some cases, Normal Ride Height is not perfectly level.

- a. Remove unusual loads and examine your vehicle from the side to ensure it is on a level surface (Figure 1).


fig. 1

- b. If necessary (in cases where your leaf springs are sagging badly), use a jack to raise the rear end so that the vehicle achieves the original “as delivered” ride height.
2. Measure the distance between the center of the hub and the bottom edge of the wheel well (Figure 2). This is the Normal Ride Height. Enter the measurement below:

NORMAL

RIDE HEIGHT: _____ inches


fig. 2

ASSEMBLING THE AIR SPRING UNIT

NOTE

This kit does not fit 2000-2006 Toyota Tundra 2 & 4WD pickups if equipped with the TRD Package sporting 275/65-18 wheels and tires.

1. Install the air fitting (L) to the top of the air sleeve (A). Tighten 1 and 1/2 turns (Figure 3).
2. Attach the lower bracket (C) to the bottom of the air sleeve (A) using the small flat head screw (J). Tighten securely (Figure 4).
3. Install the upper bracket (B) onto the top of the air sleeve, being sure to thread the air fitting through the hole on the bracket (Figure 5).
4. Install the nylon nut (K) to the top of the upper bracket by feeding it through the swivel fitting. Leave loose at this time for later adjustment (Figure 5).

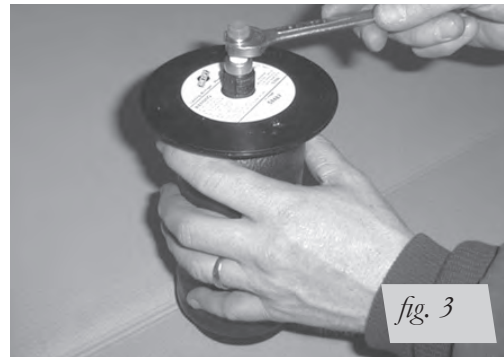


fig. 3



fig. 4



fig. 5

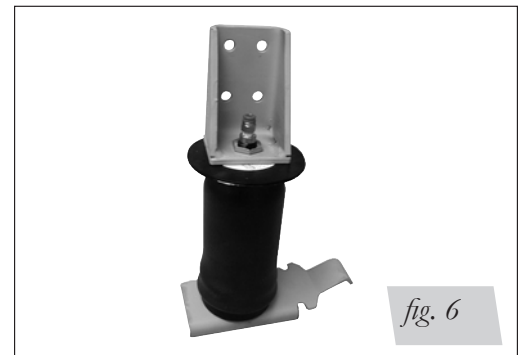


fig. 6

5. See Figure 6 for finished sleeve assembly.
6. Repeat assembly for other sleeve.

INSTALLING THE SLEEVE ASSEMBLY

1. Remove the tires. This kit should be mounted at normal ride height recorded on page 2.
2. Set the assembly on the leaf spring, forward of the axle. The tab on the lower bracket should hook over the forward leaf spring U-Bolt (Figure 7).
3. Attach the lower bracket to the leaf spring using U-Bolt (D) and clamp bar (E). Secure with flat washers (H) and lock nuts (G). Refer to Figure 7. Torque to 16 ft-lbs.
4. Ensure that there is at least 1/4" clearance between the roll plate and the closest part of the frame (Figure 8). The closer space will be forward of the sleeve assembly.



fig. 7



fig. 8

5. Align the upper bracket so that it is parallel and perpendicular with the lower bracket (Figure 9).

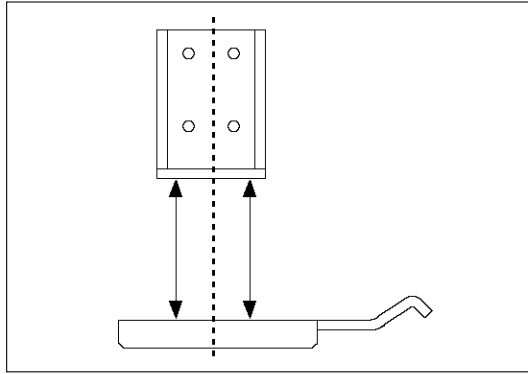

fig. 9

Figure 9

6. Using the upper bracket as a template, mark one of the holes on the upper bracket (Figure 10).


fig. 10

CAUTION

BEFORE DRILLING, CHECK THE BACK SIDE OF THE FRAME TO SEE IF THE BRAKE LINES, GAS LINES, OR ANY OTHER LINES OR WIRES NEED TO BE MOVED BEFORE DRILLING THE UPPER BRACKET HOLES.

8. Flip the air spring down away from the frame. Center punch the previously marked upper hole
9. With the air spring still flipped down, drill the center punched hole location with a $\frac{3}{8}$ " drill bit (Figure 11).


fig. 11

10. Attach the upper bracket to the frame with the frame bolt (F), oversized flat washer (I), and nylock nut (G). See Figure 12.

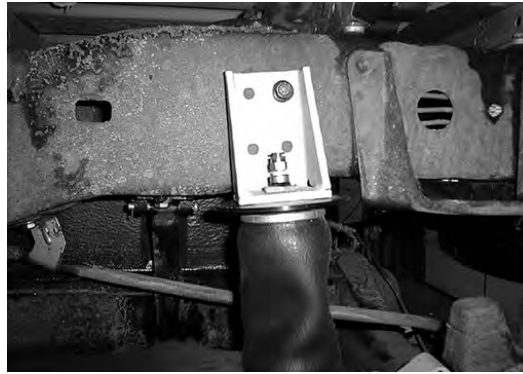


fig. 12

11. **IMPORTANT:** Be sure to cover the air fitting with piece of tape to prevent metal shavings from getting into the fitting or sleeve.
12. Check alignment, adjust if needed, then center punch and drill the two lower holes in the upper bracket.
13. Torque upper bracket mounting bolts to 20 ft-lbs (Figure 13).



fig. 13

14. Continue the installation by following the air line installation instructions.

INSTALLING THE AIR LINES

1. Choose a convenient location for mounting the inflation valves. Popular locations for the inflation valve are:
 - a. The wheel well flanges.
 - b. License plate recess in bumper.
 - c. Under the gas cap access door.
 - d. Through license plate itself.

NOTE

What ever the chosen location is, make sure there is enough clearance around the inflation valves for an air chuck.

2. Drill a $\frac{5}{16}$ " hole to install the inflation valves.
3. Cut the air line assembly (AA) in two equal lengths (Figure 14).



fig. 14

CAUTION

WHEN CUTTING OR TRIMMING THE AIR LINE, USE A HOSE CUTTER (AIR LIFT P/N 10530), A RAZZOR BLADE OR SHARP KNIFE. A CLEAN, SQUARE CUT WILL ENSURE AGAINST LEAKS (FIG. 15). DO NOT USE WIRE CUTTERS OR SCISSORS TO CUT THE AIR LINE. THESE TOOLS MAY FLATTEN OR CRIMP THE AIR LINE, CAUSING IT TO LEAK AROUND THE O-RING SEAL INSIDE THE ELBOW FITTING (FIG. 15).

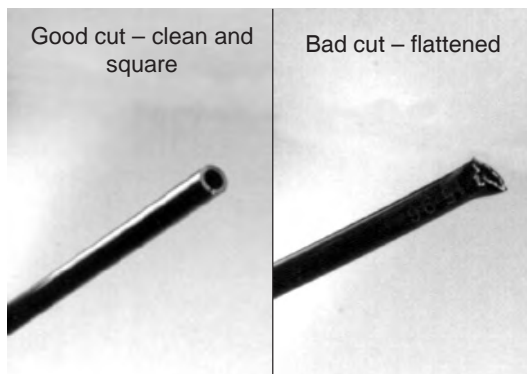


fig. 15

- Place a $\frac{5}{16}$ " nut (GG) and a star washer (FF) on the air valve. Leave enough of the inflation valve in front of the nut to extend through the hole and have room for the rubber washer (EE), flat washer (DD), and $\frac{5}{16}$ " nut (GG) and cap (CC). There should be enough valve exposed after installation - approximately $\frac{1}{2}$ " - to easily apply a pressure gauge or an air chuck (Figure 16).



fig. 16

- Push the inflation valve through the hole and use the rubber washer (EE), flat washer (DD), and another $\frac{5}{16}$ " nut (GG) to secure it in place. Tighten the nuts to secure the assembly in place (fig. 17). the assembly in place (Figure 17).

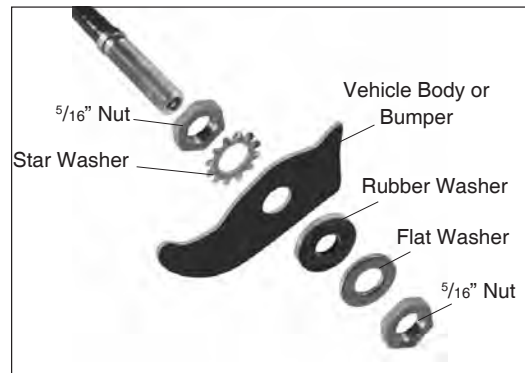


fig. 17

6. Route the air line along the frame to the air fitting on the air spring. Keep at least 6" of clearance between the air line and heat sources, such as the exhaust pipes, muffler, or catalytic converter. Avoid sharp bends and edges. Use the plastic tie straps (BB) to secure the air line to fixed, non-moving points along the chassis. Be sure that the tie straps are tight, but do not pinch the air line. Leave at least 2" of slack to allow for any movement that might pull on the air line (Figure 18).



fig. 18

7. Cut off air line leaving approximately 12" of extra air line. A clean square cut will ensure against leaks.
8. To properly install the airline, measure $\frac{9}{16}$ " from the cut end and mark with tape. Lubricate (i.e. soap solution, silicone spray, saliva) the end of the air line and insert it into the fitting. This is a push to connect fitting. A click can be heard/felt when the air line is seated, also, the front edge of the tape band should be flush with the fitting. The air line is now installed.

FINISHING THE INSTALLATION

1. With the air line in the fitting, inflate to 10 p.s.i., adjust the sleeve in or out for

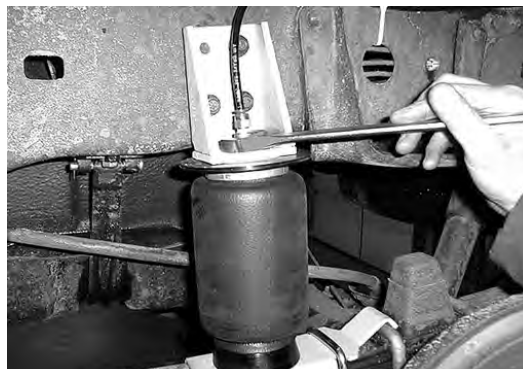


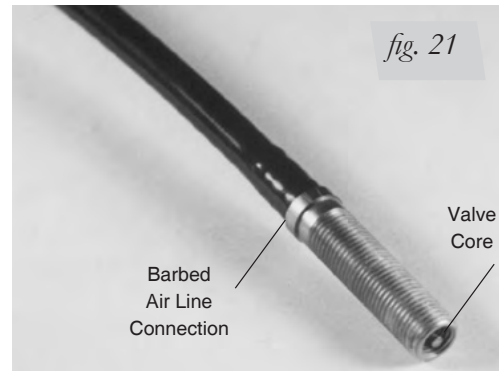
fig. 19

alignment, and secure air sleeve to upper bracket by tightening the nylon nut to 4 ft-lbs (Figure 19). Do not overtighten.

2. Repeat entire installation procedures for the remaining side.
3. After both sides are complete, continue by reading Sections VI through X.

CHECKING FOR LEAKS

1. Inflate the air spring to 30 p.s.i.
2. Spray all connections and the inflation valves with a solution of $\frac{1}{5}$ liquid dish soap and $\frac{4}{5}$ water to check for leaks (Figure 20). You should be able to spot leaks easily by looking for bubbles in the soapy water.



3. After the test, deflate the springs to the minimum pressure required to restore the Normal Ride Height, but not less than 10 p.s.i. 4. **IMPORTANT:** Check the air pressure again after 24 hours. A 2 to 4 p.s.i. loss after initial installation is normal. Retest for leaks if the loss is more than 5 lbs.

FIXING LEAKS

1. If there is a problem with the swivel fitting, then:
 - a. Check the air line connection by deflating the spring and removing the line by pulling the collar against the fitting and pulling firmly on the air line. Trim 1" off the end of the air line. Be sure the cut is clean and square. Reinsert the air line into the push-to-connect fitting.
 - b. Check the threaded connection by tightening the swivel fitting another $\frac{1}{2}$ turn. If it still leaks, deflate the air spring, remove the fitting, and re-coat the threads with thread sealant. Reinstall by hand tightening as much as possible, then use a wrench for an additional two turns.
2. If there is a problem with the inflation valve, then:
 - a. Check the valve core by tightening it with a valve core tool.
 - b. Check the air line connection (Figure 21) by removing the air line from the barbed type fitting.

CAUTION

DO NOT CUT IT OFF. AS THIS WILL USUALLY NICK THE BARB AND RENDER THE FITTING USELESS. CUT AIR LINE OFF A FEW INCHES IN FRONT OF THE FITTING AND USE A PAIR OF PLIERS OR VISE-GRIPS TO PULL/TWIST THE AIR LINE OFF THE FITTING.

Maintenance and Servicing

Minimum Air Pressure	Maximum Air Pressure
5 PSI	100 PSI
FAILURE TO MAINTAIN CORRECT MINIMUM PRESSURE (OR PRESSURE PROPORTIONAL TO LOAD), BOTTOMING OUT, OVER-EXTENSION OR RUBBING AGAINST ANOTHER COMPONENT WILL VOID THE WARRANTY.	

MAINTENANCE GUIDELINES

NOTE

By following these steps, vehicle owners will obtain the longest life and best results from their air spring.

1. Check the air pressure weekly.
2. Always maintain normal ride height. Never inflate beyond 100 PSI.
3. If you develop an air leak in the system, use a soapy water solution to check all air line connections and the inflation valve core, before deflating and removing the spring.
4. When increasing load, always adjust the air pressure to maintain normal ride height. Increase or decrease pressure from the system as necessary to attain normal ride height for optimal ride and handling. Remember that loads carried behind the axle (including tongue loads) require more leveling force (pressure) than those carried directly over the axle.


CAUTION

FOR YOUR SAFETY AND TO PREVENT DAMAGE TO YOUR VEHICLE, DO NOT EXCEED MAXIMUM GROSS VEHICLE WEIGHT RATING (GVWR), AS INDICATED BY THE VEHICLE MANUFACTURER. ALTHOUGH YOUR AIR SPRINGS ARE RATED AT A MAXIMUM INFLATION PRESSURE OF 100 PSI, THE AIR PRESSURE ACTUALLY NEEDED IS DEPENDENT ON YOUR LOAD AND GVWR.

5. Always add air to the springs in small quantities, checking the pressure frequently. Sleeves require less air volume than a tire and inflate quickly.
6. Should it become necessary to raise the vehicle by the frame, make sure the system is at a minimum pressure (5 PSI) to reduce tension on the suspension/brake components. Use of on-board leveling systems do not require deflation or disconnection.

Troubleshooting Guide

1. Leak test the air line connections, threaded connection of the elbow into the air spring, and the inflation valves. See "Fixing Leaks" on page 10 for repair.
2. Check for dirt debris in the valve core.
3. Inspect the air lines to be sure none are pinched. Tie straps may be too tight. Loosen or replace the strap and replace leaking components.
4. Inspect the air line for holes and cracks. Replace as needed.
5. Look for a kink or fold in the air line. Reroute as needed.

Product Use

FREQUENTLY ASKED QUESTIONS

Q. Will installing air springs increase the weight ratings of a vehicle?

No. Adding air springs will not change the weight ratings (GAWR, GCWR and/or GVWR) of a vehicle. Exceeding the GVWR is dangerous and voids the Air Lift warranty.

Q. Is it necessary to keep air in the air springs at all times and how much pressure will they need?

The minimum air pressure should be maintained at all times. The minimum air pressure keeps the air spring in shape, ensuring that it will move throughout its travel without rubbing or wearing on itself.

Q. Is it necessary to add a compressor system to the air springs?

No. Air pressure can be adjusted with any type of compressor as long as it can produce sufficient pressure to service the springs. Even a bicycle tire pump can be used, but it's a lot of work.

Q. How long should air springs last?

If the air springs are properly installed and maintained they can last indefinitely.

Q. Will raising the vehicle on a hoist for service work damage the air springs?

No. The vehicle can be lifted on a hoist for short-term service work such as tire rotation or oil changes. However, if the vehicle will be on the hoist for a prolonged period of time, support the axle with jack stands in order to take the tension off of the air springs.

TUNING THE AIR PRESSURE

Pressure determination comes down to three things — level vehicle, ride comfort, and stability.

1. Level vehicle

If the vehicle's headlights are shining into the trees or the vehicle is leaning to one side, then it is not level (fig. 13). Raise the air pressure to correct either of these problems and level the vehicle.

2. Ride comfort

If the vehicle has a rough or harsh ride it may be due to either too much pressure or not enough (fig. 14). Try different pressures to determine the best ride comfort.

3. Stability

Stability translates into safety and should be the priority, meaning the driver may need to sacrifice a perfectly level and comfortable ride. Stability issues include roll control, bounce, dive during braking and sponginess (fig. 15). Tuning out these problems usually requires an increase in pressure.



fig. 13



fig. 14



fig. 15

Sway and body roll

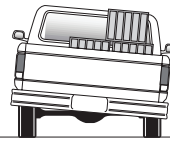
GUIDELINES FOR ADDING AIR

1. Start with the vehicle level or slightly above.
2. When in doubt, always add air.
3. For motorhomes, start with 50-100 PSI in the rear because it can be safely assumed that it is heavily loaded.
4. If the front of the vehicle dives while braking, increase the pressure in the front air bags, if equipped.
5. If it is ever suspected that the air bags have bottomed out, increase the pressure (fig. 16).
6. Adjust the pressure up and down to find the best ride.
7. If the vehicle rocks and rolls, adjust the air pressure to reduce movement.
8. It may be necessary to maintain different pressures on each side of the vehicle. Loads such as water, fuel, and appliances will cause the vehicle to be heavier on one side (fig. 17). As much as a 50 PSI difference is not uncommon.

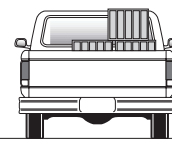


Bottoming out

fig. 16



Unlevel



Level

fig. 17