

---

**KT 192299**

**ASSEMBLY AND**

**USAGE GUIDE**

## **INTRODUCTION**

**ROCK RIDE** Air suspension kits are designed to replace conventional steel springs or shock absorbers of your SUV, van and trucks. **ROCK RIDE** air suspensions are heavy duty, superior quality air springs which provide safety and comfort on all types of road conditions with the purpose of saving your vehicle from damage and quick wear-down.

For maximum benefits and performance of your air spring kits, please abide by all rules and instructions necessary for proper installation, use and operation.

## **TORQUE REQUIREMENTS**

Torque the threaded fasteners using a torque wrench according to the following data range:

- |  |              |
|--|--------------|
| • Fasteners used on studs and blind holes in air springs | 10-15 ft lbs |
| • Hex nuts installed on axle straps                      | 10-15 ft lbs |
| • Hex nuts installed on 3/8" hex bolts                   | 28-32 ft lbs |
| • Hex nuts and bolts used to secure brackets to frame    | 28-32 ft lbs |
| • Hex nuts installed on U-bolts                          | 15-20 ft lbs |
| • Hex bolts securing 110/70 air spring to lower bracket  | 10-12 ft lbs |

## **LOCKING COMPOUND**

Locking compound can be applied to threads of the hex bolts used to secure the air spring to the brackets. When installing fasteners with thread locking compound follow the torque specifications listed above.

## **AIR FITTINGS**

Your air suspension kit will include push-to-connect air fittings which will either have a pre-applied locking compound on the threads or thread sealant tape in place of the thread locking compound.

- To install the air fittings with the pre-applied thread sealant, thread the air fitting into the air spring and tighten the fitting securely to engage the pre-applied thread sealant.
- To install the air fittings with the sealant tape, wrap the thread with the sealant tape **2-3** full loops, thread the air fitting into the air spring and tighten the fitting adequately.

Both types of air fittings allow easy connection between the air fitting and the air line tubing. To minimize the risk of air leakages cut the tubing as square as possible when installing the air lines into the air fittings. When removing air tubes, make sure the air pressure has been released from the air springs, push the collar towards the body of the fitting and cautiously pull the tubing out.

## **AIR SPRING ALIGNMENT**

Inspect your air springs for proper alignment after you have installed them successfully. Your air springs can function with some misalignment, however it is recommended to be mounted as vertically aligned as possible.

## **AIR SPRING DESIGN HEIGHT**

The distance between the upper bracket and lower bracket indicates the design height of the air spring. Design height for **ROCK RIDE** suspension kit **KT 192299** is between **4 ½” – 6 ½”**. Please abide by design height when installing your air suspension kit.

## **INFLATING THE AIR SPRINGS and LEVELING TIPS**

You can level your vehicle by inflating the air springs from two separate inflation valves. To level the vehicles from front-to-back add air pressure to both air springs equally. For leveling from side-to-side simply add more pressure to the air spring on the lower side of the vehicle and visually check that the vehicle is in a level state. Due to fact that the air springs require much less air volume than a tire, be careful to check the pressure frequently and add air pressure in small quantities (*Never exceed 100psi in each air spring*).

**WARNING: DO NOT EXCEED THE MAXIMUM PRESSURE AS INDICATED IN THE INSTALLATION MANUAL.**

## **PRESSURE DIFFERENTIAL BETWEEN AIR SPRINGS**

If you have a pressure differential between the air springs after the vehicle has been brought to a level condition and the vehicle is within the manufacturer's recommended gross vehicle weight, moreover, if you have not achieved a level condition after inflating the air springs to 100 psi, there may be a problem with your stock suspension .A leaf spring may be fractured or leaf springs may have become fatigued over time. There may be an obstruction in the air system not allowing the air pressure to reach the air springs.

## **SAFETY ISSUES**

As with all pneumatic devices, your air springs may fail as a result of improper installation, improper inflation, punctures, and impact damage. Please read the following recommendations in order to avoid any failure:

- Your air springs should not be in contact with any component of the vehicle. There must be sufficient space for the air springs to flex and expand during normal suspension operation. There must be ½” clearance between the inflated air spring and other components of the vehicle.
- Check the air springs and air line tubing to assure that they have not been damaged from heat of the exhaust system. A heat shield is recommended if the distance between the exhaust system and your air springs are less than 6”.
- Never exceed the manufacturer's recommended Gross Vehicle Weight Rating (GVWR). The manufacturer's gross vehicle weight rating (GVWR) is stated on the specification plate on the chassis; never overload your vehicle beyond that value.
- Never inflate your air springs beyond **100 psi** in each air spring.
- Do not remove any component of the air spring assembly when the air springs are inflated, doing so may result in property damage and/or severe personal injury.
- If an air spring has failed while you are on the road, reduce your speed and drive your vehicle to the nearest service station. High speeds on tough roads will severely damage your air springs which can also result in damages to other components of your vehicle.

- Never drive your vehicle in an un-leveled condition especially when your vehicle is heavily loaded. Doing so may result in excessive body roll and possible damage or injury.
- Never cut, weld, or modify the air springs or brackets.
- Air springs must be replaced in case of any holes. Do not use tire repair products or a tire patch of any kind.

## **MAINTENANCE**

It is normal for your air springs to lose some air pressure over time. Normal pressure loss should not exceed **3-4 psi** per week when the air springs are inflated to **50 psi**. If air pressure loss is greater than **3-4 psi** per week there may be a leak in the system. On each pressure check you will lose **1-3 psi**. The pressure should be checked at regular intervals. In the beginning check air pressure every week until you detect a loss in air pressure. This time period will determine how often you should check the pressure in the air springs.

Brackets should be inspected periodically for damage and loose fasteners. Ensure that air line tubing is clear of any sharp edges and routed away from the exhaust system. Brackets and air line tubing should be checked every **4-6** months. Ensure that fasteners are tightened and conformable with torque specifications listed on **Page 1**.

Accumulated mud, sand, gravel, or other road debris on the air springs or brackets should be rinsed away each time the vehicle is washed.

## **INSTALLATION OF YOUR KT 192299 ROCK RIDE SUSPENSION KIT**

***-THIS KIT DOES NOT REQUIRE DRILLING INTO THE FRAME-***

## **IMPORTANT PRECAUTIONS**

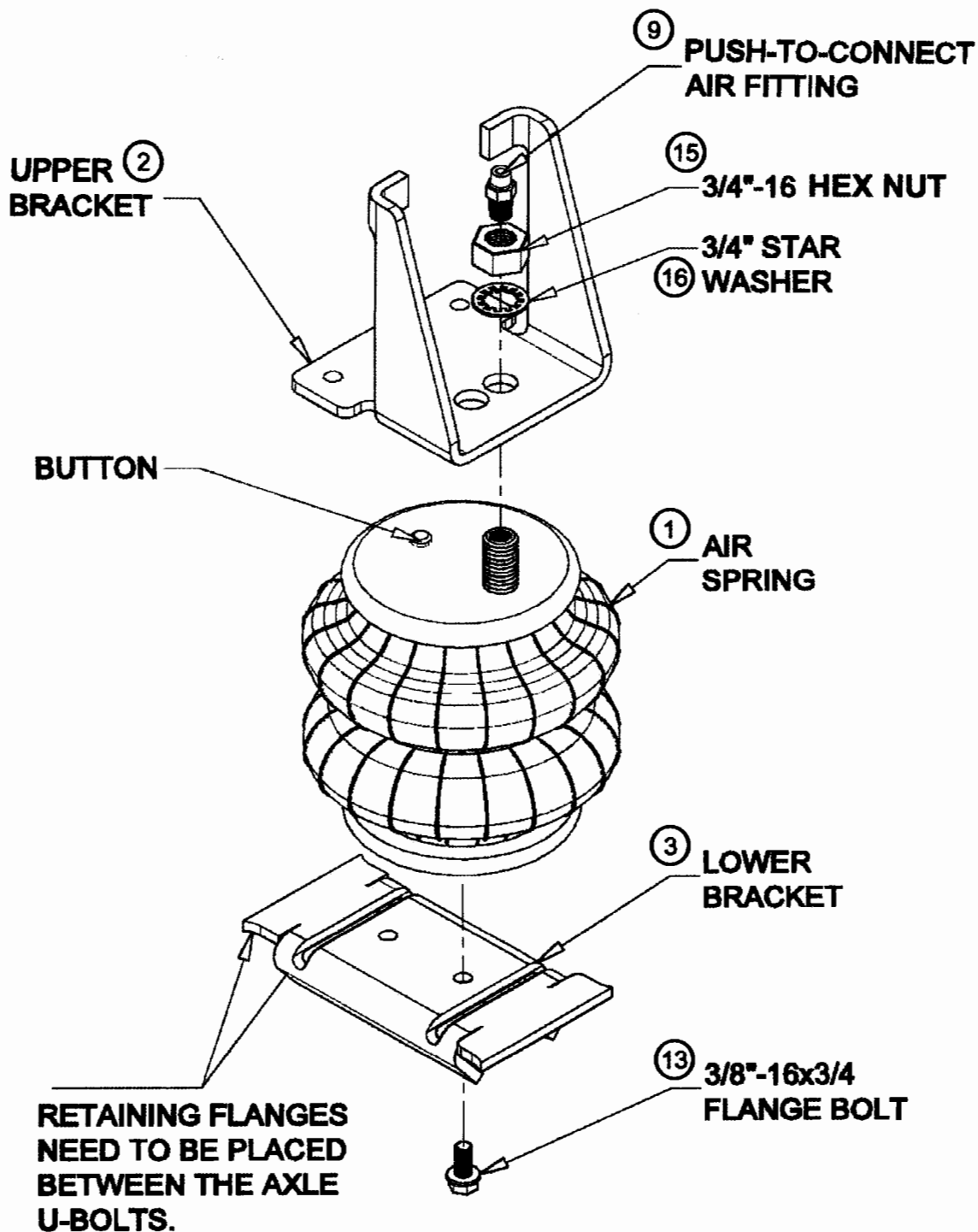
Be careful not to exceed your vehicles recommended maximum load (GVWR). Check your vehicle owner's manual or data plate on driver side door for maximum loads listed for your vehicle.

Add air pressure in small quantities when inflating your air springs. Remember that air springs require much less air volume than a tire and will inflate much quicker. Constantly check pressure while inflating.

No.	PART LIST	PART No.	QUANTITY
1	AIR SPRINGS (DC 196781)	131238	2
2	LEFT UPPER BRACKET	320005	1
3	RIGHT UPPER BRACKET	320012	1
4	LOWER BRACKET	320004	2
5	BRACKET CLAMP	320003	2
6	HEAT SHIELD	320006	1
7	BAIL CLAMP	320013	2
8	AIR LINE TUBING	SAURT0052	1

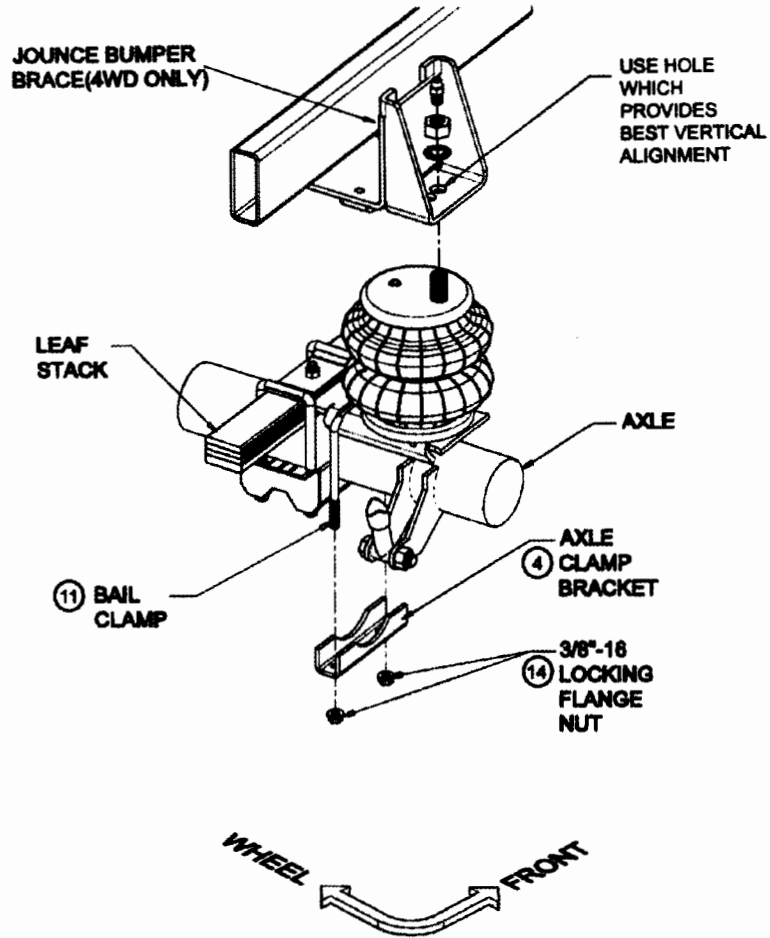
No.	COMPONENT PACK (151002)	Part No.	QUANTITY
9	INFLATIONVALVE	240601	2
10	ELBOW FITTING	240536	2
11	3/8"-16x1-1/2" HEX BOLT	810028	4
12	3/8"-16 FLANGE NUT	240534	16
13	3/8"-16x5/8" FLAT HEAD BOLT	810030	2
14	3/8"-16x3/4" FLANGE BOLT	810025	2
15	3/8"-16x4" CARRIAGE BOLT	810026	4
16	3/8"-16x3-1/2" CARRIAGE BOLT	810027	1
17	3/8" FLAT WASHER	810515	4
18	5/16" FLAT WASHER	810513	4
19	THERMAL SLEEVE	SAURT0053	2
20	NYLON TIE WRAP	SAPKT0225	7

PICTURE "A"

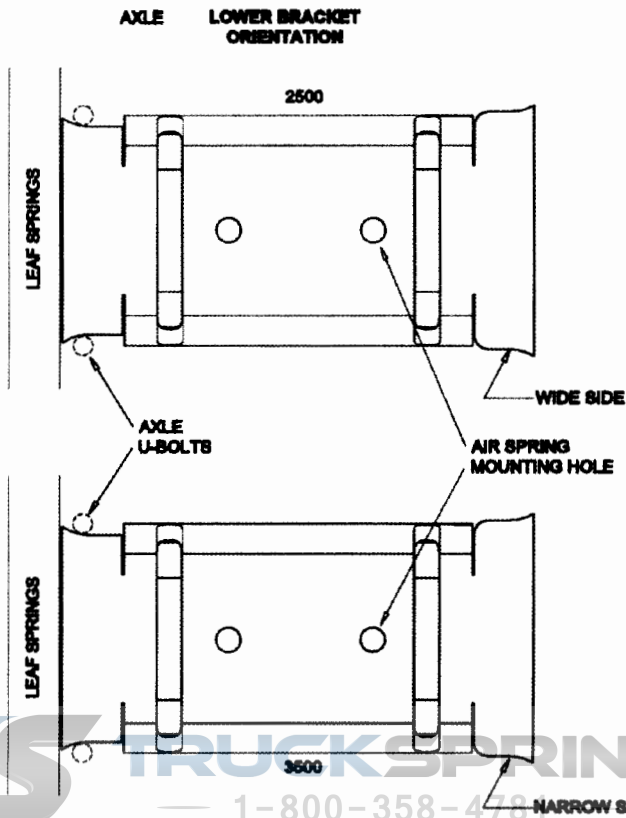


*NOTE: Illustration is of the left / drivers side of the truck  
Please see Parts and Components list for part/component details*

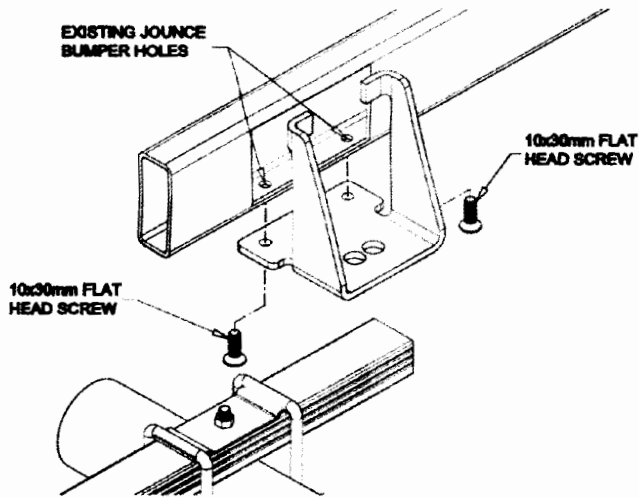
PICTURE "B"



Lower Bracket Orientation



## PICTURE "C"



**NOTE:** A heat shield is required on the exhaust side of the vehicle as noted in **Step 4**. If your truck has an aftermarket dual exhaust system, you may have to order an extra heat shield.

### STEP 1 - PREPARE THE VEHICLE

With the vehicle on a solid, level surface chock the front wheels. Remove the positive battery cable. Your vehicle is equipped with rubber jounce bumpers. The jounce bumpers are bolted to the frame above the axle. Remove the jounce bumpers from the vehicle.

### STEP 2 - PRE-ASSEMBLE THE KIT

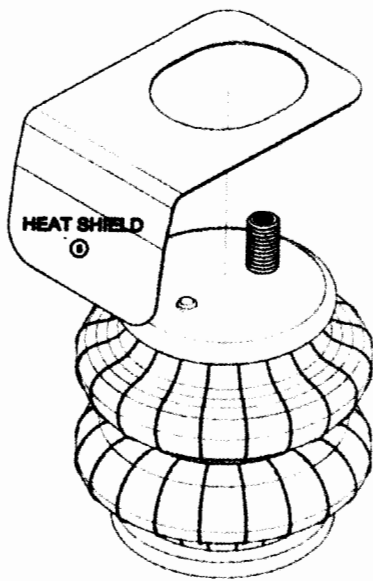
Select a lower bracket from your kit and determine which side of the bracket fits most neatly between the axle U-bolts as shown in **Picture "A&B"**. **NOTE:** The two different widths on the ends of the bracket. It will be necessary to tilt the bracket to properly slide the brackets retaining flange between the U-bolts and the leaf-stack. Remove the bracket from the axle and mark which side fit between the U-bolts. Select one air spring from the kit and install the air spring to the lower bracket with one **3/8-16 X 3/4"** flange head bolt finger tight, **see Picture "A&B"**. Next, install the male fitting into the air inlet in the combo stud of the air spring. Tighten the air fitting securely to engage the thread sealant.

### STEP 3 - INSTALLING THE ASSEMBLY TO THE VEHICLE

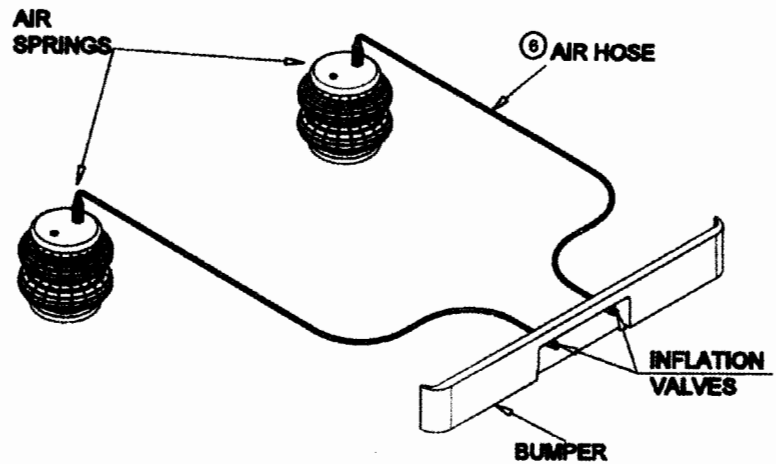
Select an upper bracket from the kit and install it in place of the jounce bumper using two **10mm X 30mm** flat head screws tightened securely, **Picture "C"**. The **2wd** and the **4 X 4** mount in the same fashion. The **2wd** will mount directly to the frame. The **4 X 4** will mount to the jounce bumper brace. Position the lower bracket and air spring assembly from **Step 2** on the axle as shown in **Picture "A&B"**. Make sure the large threaded stud and the button on the top of the air spring stick out through the holes that provide the best vertical alignment of the air spring. Tighten the **3/8"-16** flange bolt on the lower bracket from **step 2**. Fasten the lower bracket to the axle housing using the bail clamp and the axle clamp bracket and two **3/8"-16** locking flange nuts securely, **see Picture "A&B"**. The bail clamp should fit in the locating notches in the lower bracket. Attach the top of the air spring with the **3/4-16** hex nut and **3/4"** star washer.

You must maintain a minimum of **1/2"** clearance around the air spring for proper operation. Once the bracket orientation has been set, tighten the **3/8"-16x3/4"** hex head bolt in the lower bracket securely.

**PICTURE "D"**



**PICTURE "E"**



**STEP 4 - INSTALLATION OF THE PASSENGER'S SIDE ASSEMBLY**

Follow steps 1 -3 with reverse orientations for assembly and installation of the passenger's side assembly. The heat shield is mounted between the upper bracket and the top plate of the air spring; **see Picture "D"**. Position the heat shield directly between the closest heat source and the air spring. Ensure that the heat shield will not interfere with normal operation of the air spring or the vehicle's suspension. Do not position the heat shield directly above the axle, as it may contact the axle on full suspension travel.

**STEP 5 - INSTALL THE AIR LINE AND INFLATION VALVE**

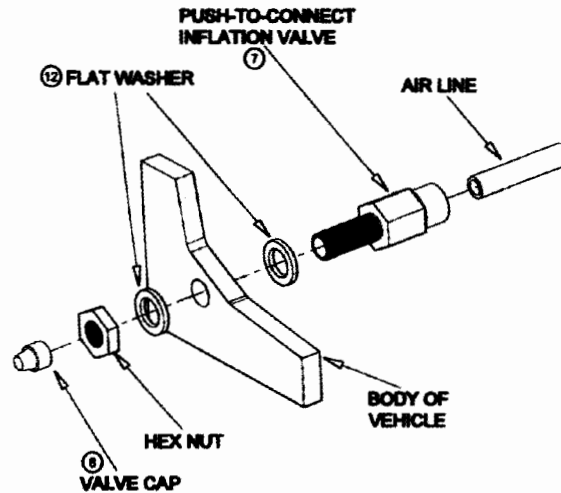
Uncoil the airline tubing and cut it into two equal lengths. Be careful not to fold or kink the airline tubing. Try to make the cut as square as possible. Insert one end of the airline tubing into the air fitting installed in the top of the air spring. Push the airline tubing into the fitting as far as possible, **see Picture "A&B"**.

Select a location on the vehicle for the air inflation valves. The location can be on the bumper or the body of the vehicle, as long as it is in a protected location so the valve will not be damaged, but maintain accessibility for the air chuck, **see Picture "E"**.

Drill a **5/16"** hole and install the air inflation valve using two **5/16"** flat washers per valve as supports, **see Picture "F"**. Run the airline tubing from the air spring to the valve, routing it to avoid direct heat from the engine, exhaust pipe, and away from sharp edges. Thermal sleeves have been provided for these conditions. The airline tubing should not be bent or curved sharply as it may buckle. Secure the airline tubing in place with the nylon ties provided. Push the end of the airline tubing into the inflation valve as illustrated, **see Picture "F"**.



## PICTURE "F"



### STEP 6 – TRY OUT THE AIR SYSTEM

Once the inflation valves are installed, inflate the air springs to **70 psi** and check the fittings for air leaks. Using a spray bottle, apply a mixture of water and soap to the fittings. If a leak is detected at an airline tubing connection then check to make sure that the airline tube is cut as square as possible and that it is pushed completely into the fitting. The airline tubing can easily be removed from the fittings by releasing all the pressure in the air springs and then pushing the collar towards the body of the fitting and then, with a pull, remove the airline tubing. Re-install the tubing, re-inflate the air springs and check for leaks as noted above. If a leak is detected where the air fitting screws into the spring, just tighten the air fitting into the air spring until the leak stops. This now completes the installation. Install the wheels and torque the lug nuts to the manufacturer's specification. Lower the vehicle to the ground. Re-attach the negative battery cable and remove the wheel chocks from the front wheels. Before proceeding, check once again to be sure you have proper clearance around the air springs. With a load on your vehicle and the air springs inflated, you must have at least **1/2"** clearance around the air springs. As a common rule, the air springs will support approximately **50 lbs.** of load for each psi of inflation pressure (per pair). For example, **70 psi** of inflation pressure will support a load of **3500 lbs.** per pair of air springs.

Too much air pressure in your air springs will result in a stiffer ride, while too little air pressure will cause the air spring to bottom out over tough road conditions. Too little air pressure will not provide the improvement in handling that which is possible.

**MAINTAIN A MINIMUM OF 5 psi IN THE AIR SPRINGS AT ALL TIMES IN ORDER TO PREVENT POSSIBLE DAMAGE.**

MIN PRESSURE	5 PSI
MAX PRESSURE (LOADED)	100 PSI

## TROUBLE SHOOTING GUIDE

### **Air Spring will not inflate:**

- Ensure that the air line tubing is inserted into the air fittings as far as possible.
- Clear any dirt or debris from inside the inflation valves.
- Inspect the entire length of air line tubing to ensure that it is not kinked, damaged from exhaust heat, or cut due to contact with sharp edges.

### **Air spring will not hold air:**

- Normal pressure loss is no more than **3-4** psi per week when the air spring is inflated to **50 psi**.
- Ensure that the valve core is installed securely.
- Apply a mixture of water and soap to the air fittings, air line and air springs to check for air leaks. Tighten the air fitting or re-install the tubing in the air fitting to stop the leak. Rinse the system when complete

### **The vehicle is not level:**

- Check for proper inflation of air springs on each side.
- Check for obstructions in the air system or vehicle components that may be restricting suspension operation.

### **Finding a stubborn leak:**

- If you are unable to detect a leak with the water and soap solution, deflate air springs and remove them from the vehicle.
- Re-install the air tubing and submerge into a bucket of water while inflating the air spring to maximum **20psi**.

### **Common areas of air leaks:**

- Air leaks are most common at the threaded connection between the air fittings and the air springs. Tighten the fitting to engage the pre applied thread **sealant** or to secure the sealant tape.
- The end of the air line tubing must be cut square and clean to properly seal and in order to minimize chances of air leaks when connected to the air fittings.