SMA 94 F

Firestone

Ride Rite® Helper Springs

WARNING:

Do not inflate this assembly when it is unrestricted. The assembly must be restricted by the suspension or other adequate structure. Do not inflate beyond 100 P.S.I. Improper use or over inflation may cause property damage or severe personal injury.

Firestone Industrial Products, Carmel, Indiana, USA

NOTE:

Once the air springs are installed it is recommended that the vehicle not be lifted by the frame. If the vehicle is lifted by the frame, over extension may occur, resulting in damage to the air spring. Should it become necessary to raise the vehicle by the frame, deflate both air springs completely.

INSTALLATION INSTRUCTIONS

Congratulations - your new Ride-Rite air helper springs are quality products capable of improving the handling and comfort of your vehicle. As with all products, proper installation is the key to obtaining all of the benefits your kit is capable of delivering. Please take a few minutes to read through the instructions to identify the components and learn where and how they are used. It is a good idea to start by comparing the parts in your kit with the parts list below.

The heart of the Ride-Rite kit is, of course, the Air Springs. Remember that they must flex and expand during operation, so be sure that there is enough clearance to do so without rubbing against any other part of the vehicle.

Be sure to take all applicable safety precautions during the installation of the kit. Use of a body or frame jack stand is highly recommended. The instructions listed in this brochure and the illustrations all show the right, or passenger's side of the vehicle. To install the left hand assembly simply follow the same procedures.

Your kit includes separate inflation valves and air lines for each air spring. This will allow you to level your vehicle from side to side as well as from front to back. If you would rather have a single valve inflation system, your dealer can supply the optional "T" fitting, part number 21-3025.

IMPORTANT

For your safety and to prevent possible damage to your vehicle, do not exceed the maximum load recommended by the vehicle manufacturer. Although your Ride-Rite air helper springs are rated at a maximum inflation pressure of 100 p.s.i., this pressure may allow too great of a load to be carried on some vehicles. Check your vehicle owner's manual for maximum loads listed for your vehicle.

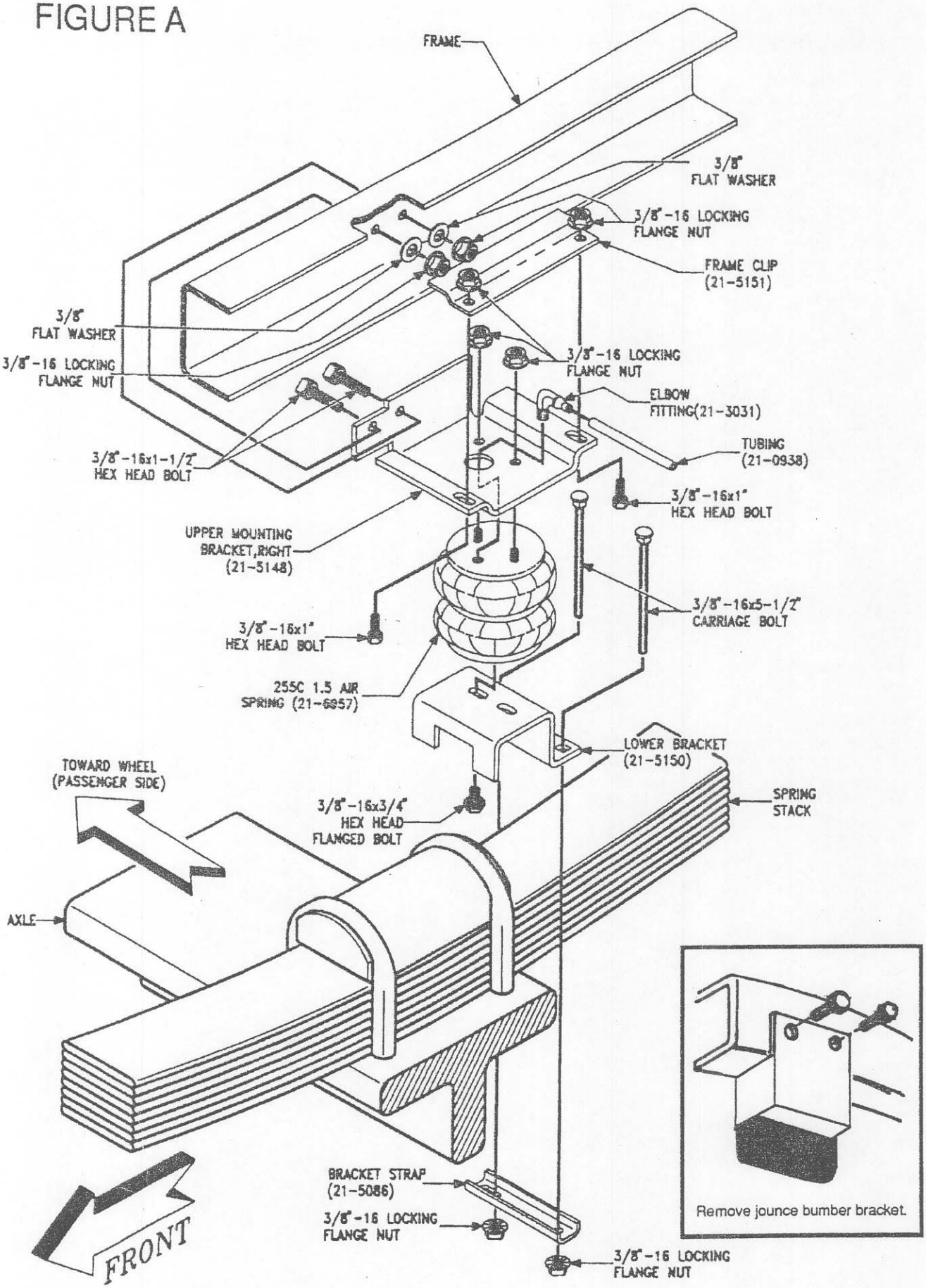
When inflating your Ride-Rite air helper springs, add air pressure in small quantities, checking pressure frequently during inflation. The air helper spring requires much less air volume than a tire and, therefore, inflates much quicker.

PARTS LIST

255C 1.5 AIR SPRING	6957	2
TUBING	0938	1
UPPER BRACKET RT	5148	1
UPPER BRACKET LT	5149	1
LOWER BRACKET	5150	2
BRACKET STRAP	5086	4
FRAME CLIP	5151	2
3/8" - 16 X 5-1/2" CARRIAGE BOLT		4
3/8"-16 LOCKING FLANGE NUTS		16

3/8"-16 X 1-1/2" HEX BOLTS		4
3/8"-16 X 1" HEX BOLTS		4
3/8"-16 x3/4" FLANGE BOLTS		2
3/8" FLAT WASHERS		4
ELBOW FITTINGS	3031	2
INFLATION VALVES	3032	2
5/16" FLAT WASHERS		4
NYLON TIE		6
THERMAL SLEEVE	0899	2

FIGURE A


FRAME
3/8" FLAT WASHER
3/8"-16 LOCKING FLANGE NUT
FRAME CLIP (21-5151)
3/8" FLAT WASHER
3/8"-16 LOCKING FLANGE NUT
3/8"-16 LOCKING FLANGE NUT
ELBOW FITTING(21-3031)
TUBING (21-0938)
3/8"-16x1-1/2" HEX HEAD BOLT
3/8"-16x1" HEX HEAD BOLT
UPPER MOUNTING BRACKET,RIGHT (21-5148)
3/8"-16x5-1/2" CARRIAGE BOLT
3/8"-16x1" HEX HEAD BOLT
255C 1.5 AIR SPRING (21-6957)
LOWER BRACKET (21-5150)
TOWARD WHEEL (PASSENGER SIDE)
3/8"-16x3/4" HEX HEAD FLANGED BOLT
SPRING STACK
AXLE
BRACKET STRAP (21-5086)
3/8"-16 LOCKING FLANGE NUT
3/8"-16 LOCKING FLANGE NUT
FRONT
Remove jounce bumber bracket.

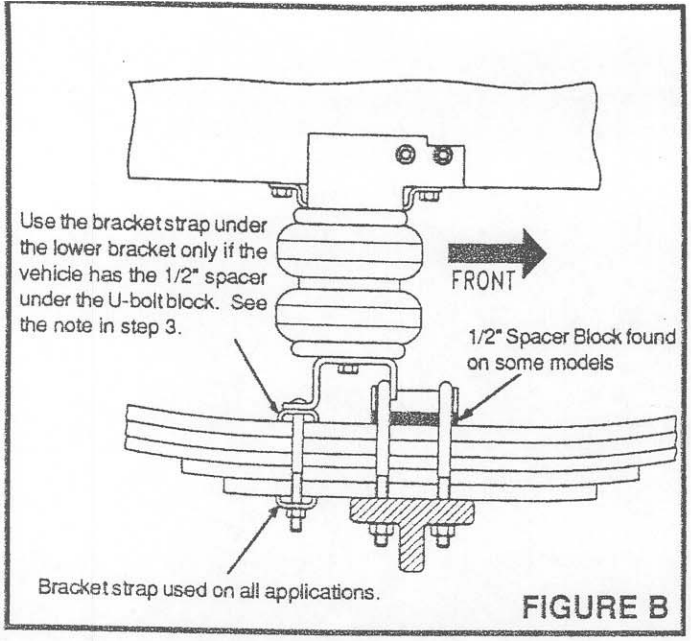


FIGURE B

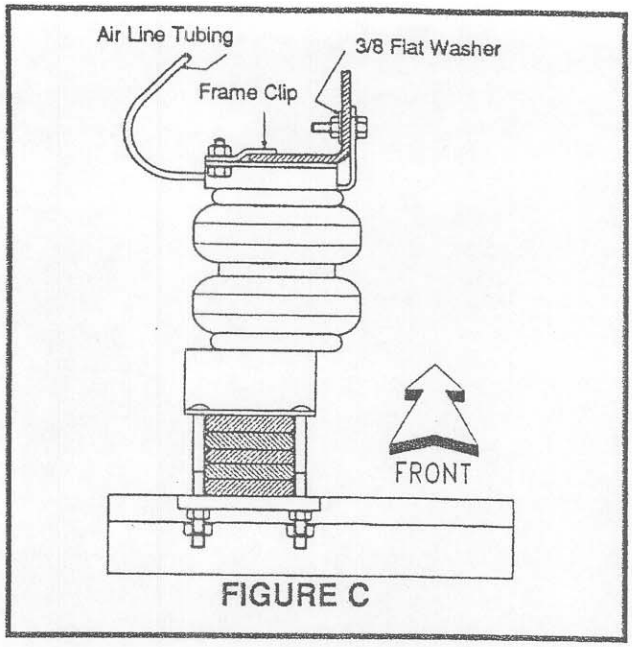


FIGURE C

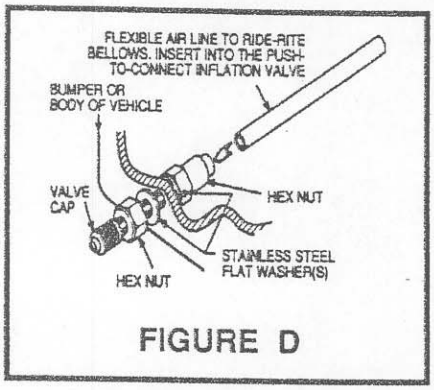


FIGURE D

STEP 1 PREPARE THE VEHICLE

This kit can be assembled to the motorhome without removing the front wheels. Chock the wheels for safety when installing this kit. Remove the two bolts securing the rubber jounce bumper bracket to the frame (see figure A). Remove the jounce bumper and bracket assembly. The jounce bumper mounting holes will be used later to secure the Ride Rite upper bracket to the frame.

STEP 2 KIT PREASSEMBLY

Select the passsenger side upper bracket as shown in figure A and one air spring from your kit. Secure the air spring to the upper bracket as shown in figure A using two of the 3/8"-16 locknuts provided in the kit. Install the elbow air fitting through the large clearance hole in the upper bracket. Be sure to tighten the fitting securely until the red thread sealant can't be seen to ensure a proper seal. Also be sure that the fitting is pointing away from the vertical bracket surface to allow proper routing of the air line (see figure A and C). Install the air spring to the lower bracket using one of the 3/8"-16 x 3/4" flange locking bolts provided (see figure A, B, and C). Mount the lower bracket to the air spring using the slot that is toward the outside of the vehicle (see figure A). This offset and slot is to provide proper air spring alignment. Once vertical alignment has been achieved tighten the 3/8"-16 x 3/4" flange lock bolt.

STEP 3 INSTALLING THE ASSEMBLY TO THE VEHICLE.

Note: Some Spartan chassis come with a 1/2" spacer plate located between the leaf stack and the leaf spring retainer block (See figure B). If your vehicle is so equipped, you will need to place a bracket strap (21-5086) under the lower bracket where the carriage bolts will pass through to ensure that the lower bracket will remain level (See figure B). Secure the upper bracket to the frame using two of the 3/8"-16 x 1 1/2" bolts, 3/8" washers and 3/8"-16 flange locknuts provided through the holes left from removing the jounce bumper bracket.

Place the assembly on the passenger's side leaf spring. Position the lower bracket against the rear "U" bolt as shown in figure B. Place carriage bolts in the lower bracket holes as shown. Next place the bracket strap under the leaf spring and fasten in place using two of the 3/8"-16 locknuts supplied.

Affix the upper bracket to the frame by lining up the two holes left from removing the jounce bumper bracket with the two holes on the Ride Rite upper bracket. Insert two of the 3/8"-16x1 1/2" bolts and flat washers then fasten using the 3/8"-16 locknuts (see figures A and C).

STEP 4 - INSTALL THE AIR LINE AND INFLATION VALVE

Uncoil the air tubing and cut it into two equal lengths. DO NOT FOLD OR KINK THE TUBING. Try to make the cut as square as possible. Insert one end of the tubing into the elbow fitting installed in the top of the air spring. Push

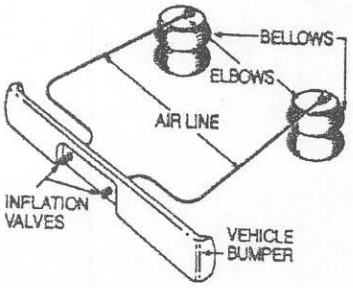


FIGURE E

the tubing into the fitting as far as possible.

Select a location on the vehicle for the air inflation valves. The locations can be on the bumper or the body of the vehicle, but be sure that it is in a protected location so the valve will not be damaged yet still be accessible for the air chuck (see figure E). Drill a 5/16" hole and install the air inflation valve using two 5/16" stainless steel flat washers per valve (see figure D). Be sure to route the tubing away from any heat source such as the engine, exhaust, and away from any sharp edges. Thermal sleeves have been provided for these conditions. Caution should be taken when routing the tubing so the outside of the tubing will not be scarred where it inserts into the inflation valve. The air line tubing should not be bent or curved sharply as it may buckle. Secure the tubing in place with the nylon ties provided. Push the end of the air line tubing into the inflation valve as illustrated (see figure D).

STEP 5 - INSTALL THE FRAME CLIP

After the air tubing has been routed, the frame clip can be installed on the upper bracket. Select a frame clip, two 3/8"-16 x 1" bolts, and two 3/8"-16 locknuts from the kit. Place the frame clip on top of the upper bracket so that the lip is on top of the frame and secure the frame clip to the upper bracket (See figure C). **BE SURE TO LEAVE THE THREADED PORTION OF THE BOLT POINTED UPWARD AND AWAY FROM THE AIR SPRING.** Tighten the bolt and nut finger tight and slide the frame clip in the slot as far toward the frame as possible. Once the clip is snug to the frame, tighten the nuts securely.

STEP 6 - INSTALL THE DRIVER'S SIDE ASSEMBLY

In order to install the driver's side assembly, simply follow steps 1 through 5.

STEP 7 - CHECK THE AIR SYSTEM

Once the inflation valves are installed, inflate the air springs to 70 p.s.i. and check the fittings for air leaks with an applied solution of soap and water. If a leak is detected at a tubing connection then check to make sure that the tube is cut as square as possible and that it is pushed completely into the fitting. The tubing can easily be removed from the fittings by pushing the collar towards the body of the fitting and then pulling out the tube. If a leak is detected where the brass elbow fitting screws into the spring, then screw the elbow into the spring one additional turn or until the leak stops. Reinflate the air springs and check for leaks as noted above. Further information on trouble-shooting can be found in the General Operation Instruction manual included with this kit.

This now completes the installation. Before proceeding, check once again to be sure you have proper clearance around the bellows. With a load on your vehicle and the air helper springs inflated, you must have at least 1/2" clearance around the bellows.

As a general rule, the Ride-Rite Helper Air Springs will support approximately 50 lbs. of load for each P.S.I. of inflation pressure (per pair). For example, 50 P.S. I. of inflation pressure will support a load of 2500 lbs. per pair of air helper springs. FOR BEST RIDE use only enough air pressure in the helper air spring to level the vehicle when viewed from the side (front to rear). This amount will vary depending on the load, location of load, condition of existing suspension and personal preference. NOTE: Too much air pressure in the helper springs will result in a firmer ride, while too little air pressure will allow the air spring to bottom out over rough conditions. Too little air pressure will also not provide the improvement in handling that is possible. TO PREVENT POSSIBLE DAMAGE MAINTAIN A MINIMUM OF 10 P.S.I. IN THE RIDE-RITE BELLOWS AT ALL TIMES.

Enclosed with this kit are Ride-Rite Operating Instructions. Please read them for proper and safe operation.

Your vehicle is now riding at its level best!

Firestone
World's Number 1 Air Spring.
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