

AIR SUSPENSION KIT

Universal Application*

Use the most advanced air springs on the market to eliminate your vehicle's sag, sway and bottoming out. This heavy duty air suspension kit levels your truck's stance while providing added support for an overall smooth and safe ride.

Thank you and congratulations on the purchase of an Air Suspension kit. Please read the entire manual prior to starting the installation to ensure you can complete it once started.

IMPORTANT

This air suspension kit will not increase the GVWR (*Gross Vehicle Weight Rating*), as the GVWR is determined by the vehicle manufacturer. **Do not exceed the maximum capacity listed by the vehicle manufacturer.**

For safe and proper operation of the vehicle, never exceed a maximum of 100PSI in the air springs. Staying under the pressure limit will ensure maximum air spring life. **Failure in doing so may result in damage to your vehicle and/or a void warranty.**

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SAFETY WARNINGS!

! Please read and abide the instructions found in this manual, paying close attention to the helpful, cautionary or dangerous warning icons highlighting important safety recommendations and maintenance suggestions throughout this manual.



- !** Serious personal injury or death may result from an air spring failure or accident due to improper installation or air spring pressure operation or maintenance.
- !** Inflating an unsecured air spring is dangerous. If it bursts, it could be hurled into the air with explosive force resulting in serious personal injury or death. Never inflate an air spring unless it is secured to the vehicle.
- !** Removing and replacing air springs can be dangerous. This is only a job for a qualified service professional. Never perform air spring service procedures without proper training, tools, and equipment.
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BEFORE STARTING THE INSTALLATION

- Ensure the application information is correct for the make, model and year of the vehicle you are installing the kit on.
- Some vehicles are equipped with a rear wheel brake proportioning valve. Check with the manufacturer before installing the air spring kit, as it may affect braking performance.
- Check the vehicle to see if it is equipped with a 5th Wheel Hitch. Some 5th wheel hitches require brackets to be mounted to the frame in the same locations as the air spring brackets (if this is the case, modifications of the 5th wheel hitch brackets may be required to mount this kit). **Please contact your point of purchase if you have questions**
- Check the clearance between the outside of the frame and the inside of the tire, a minimum of 8" is required for air spring clearance.
- Some vehicles are equipped with a rear wheel brake proportioning valve. Check with the manufacturer before installing the air spring kit, as it may affect braking performance.
- It is recommended to use a good quality anti-seize on all fasteners. This will reduce the chance of corrosion on the fasteners and will help facilitate removal, if required at a later date.

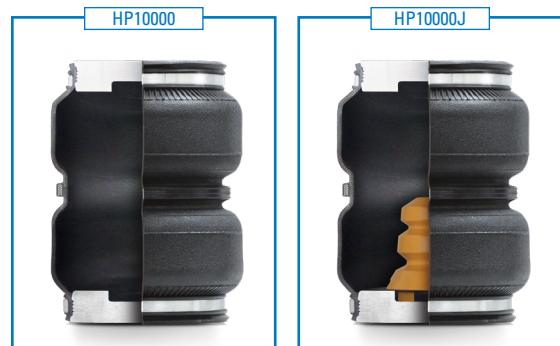
! **PLEASE NOTE:** This kit contains push-to-connect fittings; using scissors or wire cutters to cut the nylon air line will distort the line and cause the connection to leak. The air line must be cut off squarely with the hose cutter provided in this kit, or a sharp utility knife. **Failure to do so may void the warranty.**

KIT CONTENTS

Please confirm the items below are provided in your kit before starting the installation.

| HEAVY DUTY KITS | QTY | PART # |
|----------------------------|------------|---------------|
| A Double Convoluted Spring | 2 | HP10000 |

| HEAVY DUTY JOUNCE BUMPER KITS | QTY | PART # |
|---|------------|---------------|
| A Double Convoluted Spring w/ Jounce Bumper | 2 | HP10000J |



| KIT CONTENTS | QTY | PART # |
|--------------------------------|------------|------------------------------|
| A Air Springs | 2 | HP10000 |
| B Upper Brackets | 2 | HP0044 |
| C Lower Brackets | 2 | HP1577 |
| D Roll Plates | 4 | HP10054 |
| E Spacer Bracket | 4 | HP0028 |
| F 3/8" NC x 6 1/2" U-bolts | 4 | HP1018 |
| G 3/8" NC x 1 1/2" bolts | 8 | C18018 |
| H 3/8" NF x 7/8" capscrews | 8 | HP1002 |
| I 3/8" Flat Washers Large O.D. | 8 | HP1013 |
| J 3/8" Lock Washer | 8 | C18007 |
| K 3/8" Flat Washer Small O.D. | 24 | C653 |
| L 3/8" Nylock Nuts | 16 | HP1000 |
| M 3/8" Flat Washer 1/8" Thick | 8 | HP1135 |
| N Air Line/Valve Assembly | 1 | HP1344 |
| O Air Fitting | 2 | HP1100 |
| P Tie Straps | 6 | C11618 |
| Q 1/4" Fastener, inner fender | 2 | HP1069 P02190 & HP1072 |
| R Spacer Tube, inner fender | 2 | HP1070 |

**REQUIRED TOOLS**

- Hoist or Floor Jack
- Safety Stands
- Safety Glasses
- Torque Wrench
- Standard Combination Wrenches
- 7/32" Hex Allen Wrench
- Ratchet
- Metric & Standard Sockets
- Hose Cutter (included) or Sharp Utility Knife
- Pipe Thread Sealant
- Hacksaw
- "C" Clamps
- Spray Bottle with Dish Soap/Water
- Air Compressor/Compressed Air Source (to test/fill air springs)



WARNING: This product can expose you to the chemical Hexavalent Chromate, which is known to the State of California to cause cancer and birth defects or other reproductive harm. **For more information go to www.P65Warnings.ca.gov**

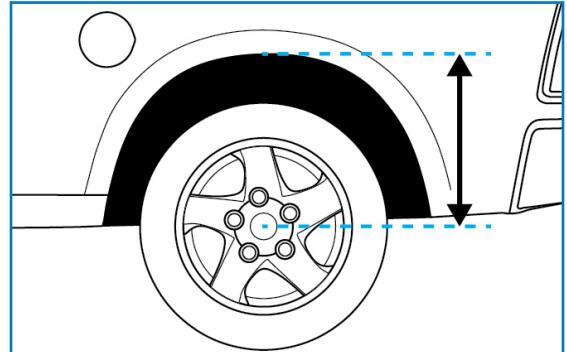
INSTALLATION INSTRUCTIONS**1 MEASURE STOCK RIDE HEIGHT**

Park the vehicle on a level surface.

Remove any unnecessary weight from the vehicle to attain a Normal Ride Height. This is important for correct initial air spring set-up and adjustment.

Using a measuring tape, measure the distance between the center of the wheel hub and the bottom of the fender well (as shown in Figure 1) this will give you your ride height.

Note the ride height for all four corners.



1

2 REMOVE REAR WHEELS

Place wheel chocks in front of and behind both front wheels.

Raise the rear of the truck high enough to remove both wheels and attain a comfortable working height.

Place two jack stands under rear axle (shown in Figure 2). Lower the vehicle until the axle is supported by the jack stands.

Remove rear wheels.



2

3 LOWER BRACKET ASSEMBLY

Locate the end of the air spring with the 1/8" NPT air port (shown with an arrow in Figure 3A), place this side down with the air port away from you.

Place the roll plate over the end of the air spring (rounded end towards the air spring), aligning the two mounting holes.

Place the lower mounting bracket, over the roll plate and air spring aligning the two mounting holes, with the flange of the bracket towards you. (See Figure 3B).

Using the two 3/8" NF x 7/8" capscrews, flat and lock washers, loosely fasten the assembly together.

Do not tighten the capscrews fully until final adjustment is performed in Step 7.

Repeat on other side.



3A



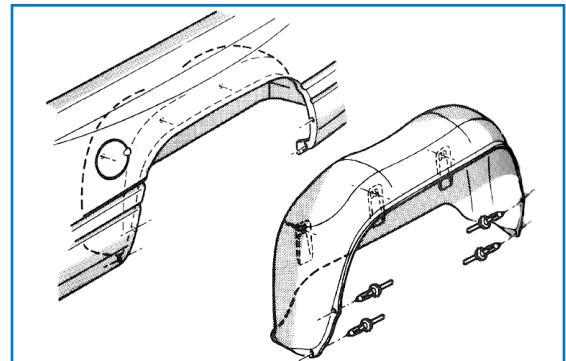
3B

- 4** **!** **1994 and newer Dodge 4X4 trucks only:** Removal of the rear wheelhouse liner is required to access the frame.

Remove the 4 plastic rivets (shown in Figure 4) by pushing the inner pin through from the outside. Then remove the 3 capscrews securing the liner to the box.

Rotate the liner towards the rear of the vehicle to remove.

Save the 4 plastic rivets for reassembly.



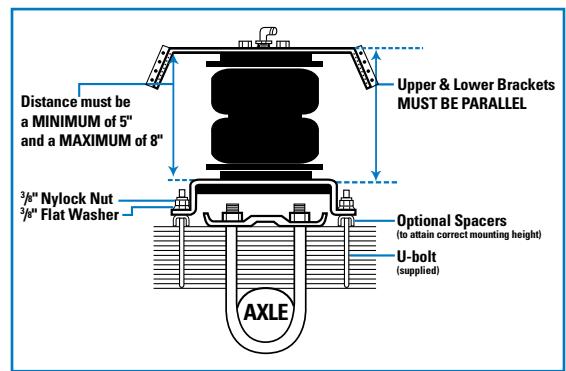
4

- 5** Place the lower air spring assembly on top of the leaf spring with the flanged side of the lower bracket facing outward.

Using Figure 5 as reference, center the lower bracket above the center of the axle tube.

Place the upper bracket on top of the air spring assembly.

Check the vehicle frame where the upper air spring bracket flanges meet, some trucks will have an impression in the frame, these vehicles require the spacers provided be installed as shims to compensate.



5

- 6** Using 2 "C" clamps, clamp the upper bracket to the frame. If necessary, install the frame to bracket spacers. Ensure the center of the brackets are centered above the axle for correct alignment (as shown in Figure 5 on previous page).

Ensure the minimum and maximum distances (from Figure 5) are achieved and the brackets are parallel to each other.

4 spacer brackets are provided to attain correct mounting height if necessary, install them between the leaf spring and the lower bracket.

- + Remove the lower air spring assembly when drilling the holes in the frame to avoid metal chips falling into the lower roll plate cavity.**

Install the 90° air supply fitting into the top of the air spring using thread sealant.



6

- 7 Once the correct position of the upper bracket is confirmed choose the 2 best mounting holes in each flange, top and bottom holes preferred.

! *Check the inside of the frame for obstructions like electrical harnesses before drilling.*

Using the bracket as a template drill 4 - 3/8" mounting holes (see Figure 7).

Fasten the bracket using the 3/8" x 11/2" fasteners, small O.D. washers under the head of the fastener and the large O.D. washers on the inside of the frame, the nylock nuts and any spacers required between the upper bracket and the frame.

Torque the fasteners to 40 ft-lbs.



7

- 8 Reinstall the lower air spring assembly.

Using the 3/8" x 7/8" capscrews, flat and lock washers loosely fasten the top of the air spring to the upper bracket.

Install the "U" bolts around the leaf spring and through the two holes in the lower bracket. If the vehicle has overload springs, install "U" bolts as shown in Figure 8A. Otherwise, install "U" bolts around the entire leaf pack.

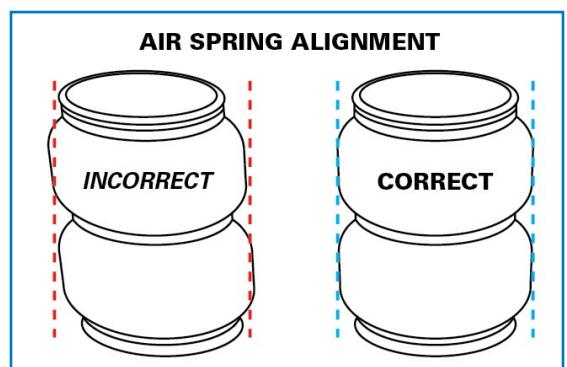
Adjust the air spring on their brackets to achieve correct alignment (see Figure 8B). Once the correct alignment is achieved, tighten the upper and lower brackets to the air spring. Torque to 20 ft-lbs.

- 9 Tighten the front and rear "U" bolts around the leaf spring pack. Use the nylock nuts and small O.D. flat washers, torque to 16 ft-lbs.

Cut off the threaded portion of the "U" bolt above the nyloc nut.



8A

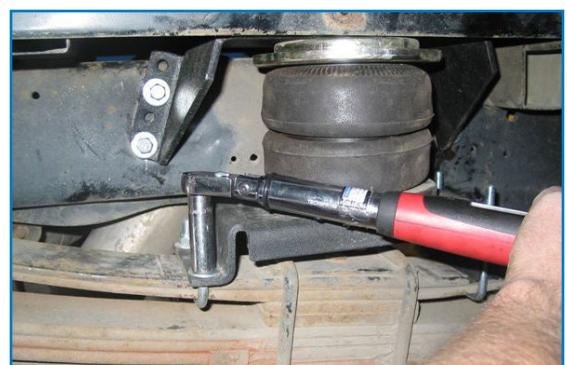


8B

REPEAT STEPS 4-9 on the other side of the vehicle

Reinstall the inner fender liner if removed. A spacer and 1/4" fastener is provided to replace the center capscrew and space the liner away from the air spring.

Installation continues on the following page.



9

INSTALL AIR LINE

Two fill valves are provided in this kit. The most common place to install them is in place of the license plate fasteners. Alternatively, two 5/16" holes can be drilled in a location of your choosing.

Cut the air line assembly into two equal lengths with the hose cutter provided in this kit or a sharp utility knife.

! PLEASE NOTE: This kit contains push-to-connect fittings; using scissors or wire cutters to cut the nylon air line will distort the line and cause the connection to leak. The air line must be cut off squarely with a hose cutter or a sharp utility knife.

Install one air line at a time starting at the fill valve location. Place a 5/16" nut on the air valve. Leave enough of the inflation valve in front of the nut to extend through the hole, install a flat washer, and 5/16" nut and cap (reference Figure A for assembly). There should be enough valve exposed after installation – approximately $\frac{1}{2}$ " – to easily apply a pressure gauge or an air chuck.

Route the air line back to the NPT fitting on the air spring, then cut the hose to length. Moisten the end of the air line prior to inserting it into the fitting and push it in until it stops.

Repeat with the other fill valve.

Secure the air lines using the provided tie-straps, away from any moving items and heat sources.

CHECK SYSTEM FOR LEAKS

Inflate both air springs to 90 psi and then use a mixture of dish soap and water on all air line connections to detect any air leaks. Large, expanding bubbles indicate a leak (as shown in Figure B).

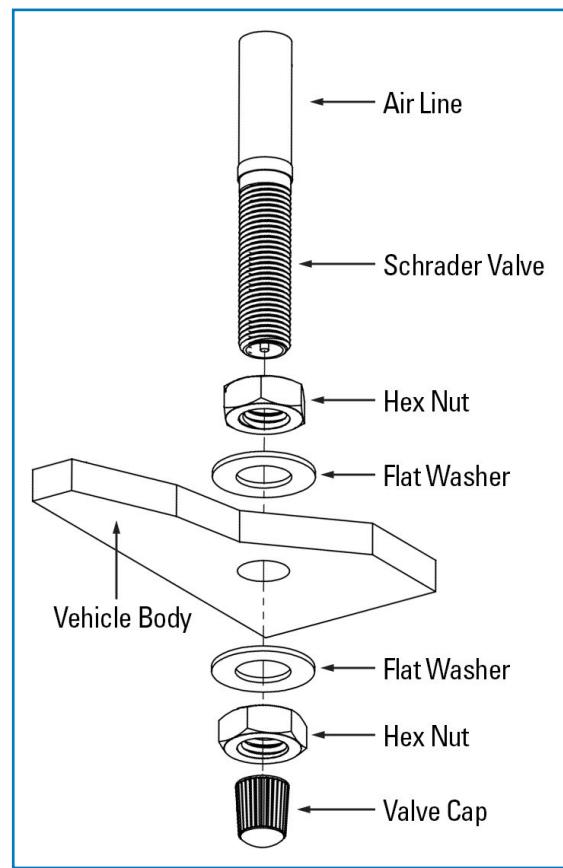
Repair as necessary and retest.

Inflate air springs to a predetermined value and on following day recheck pressure. If one or both of air springs have lost pressure, an air leak is present.

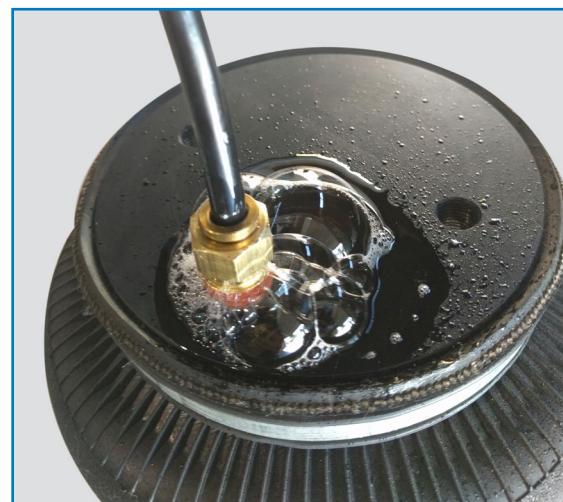
! Leak must be repaired, and then retested until no leaks exist.

CONGRATULATIONS! You have completed the install

After Installation continues on the following page.



A



*Air Spring & NPT Air Fitting may differ between kits

B

Thank you again, and congratulations on the installation of your Air Suspension kit.

AFTER COMPLETING THE INSTALLATION

- The air spring must have clearance between itself and the surrounding components to prevent any contact when spring is inflated or compressed. Trimming off excess bolt length may also be required to ensure no contact with the spring or other suspension components can be made once installed.
 - If removed, re-install the wheels and torque fasteners to the manufacturer's specifications. Re-torque all fasteners after the first 500 miles of driving.
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OPERATING YOUR VEHICLE WITH AIR SUSPENSION

Air springs have minimum and maximum recommended pressure requirements:

| PART # | SPRING STYLE | SPRING TYPE | MIN PSI | MAX PSI |
|----------|------------------------|---------------------------------|----------------|---------|
| HP10189 | In-Coil | STANDARD DUTY | 5 PSI | 70 PSI |
| HP10560 | | STANDARD DUTY | | |
| HP10001 | Sleeve Style | STANDARD DUTY | 10 PSI | 100 PSI |
| HP10173 | | STANDARD DUTY | | |
| HP10199 | | STANDARD DUTY | | |
| HP10083 | Single Convolute | HEAVY DUTY | 5 PSI | 100 PSI |
| HP10083J | | HEAVY DUTY with JOUNCE BUMPER | 0 PSI* / 5 PSI | 100 PSI |
| HP10000 | Double Convolute | HEAVY DUTY | 5 PSI | 100 PSI |
| HP10000J | | HEAVY DUTY with JOUNCE BUMPER | 0 PSI* / 5 PSI | 100 PSI |
| HP10068 | Large Double Convolute | HEAVY DUTY | 5 PSI | 100 PSI |
| HP10438 | Double Convolute | EXTREME DUTY | 5 PSI | 100 PSI |
| HP10438J | | EXTREME DUTY with JOUNCE BUMPER | 0 PSI* / 5 PSI | 100 PSI |

* Springs with a jounce bumper can be run at zero PSI when vehicle is unloaded only

For safe and proper operation, never operate the vehicle over the maximum listed PSI in the air springs. Staying under the pressure limit will ensure maximum air spring life. **Failure in doing so may result in damage to your vehicle and/or a void warranty.**

! *It is recommended to check the air pressure in your air springs daily for first couple of days to ensure a leak has not developed.*

Air springs are designed to maintain the vehicle's stock ride height with a load. Do not use the air springs as a means to lift vehicle with no load. This will result in a harsh ride.

SERVICING YOUR VEHICLE WITH AIR SUSPENSION

When lifting the vehicle with a floor jack or hoist on the frame, never allow the air spring to limit the travel of the axle. Try to always jack the vehicle on the axle. Suspending the axle with the air spring limiting the axle travel will damage the air spring and void the air spring warranty.

WARRANTY

See additional warranty included with this kit for details.

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