

# Installation Manual



## AIR SPRING KIT

Universal Fabricators Kit\*

*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.*

\* See application guide for proper fitment.

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**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.**

**PLEASE NOTE: The air bag must have clearance between itself and the surrounding components to prevent any contact when bag is inflated or compressed. Trimming off excess bolt length is also required to ensure no contact with the bag or other suspension components can be made once installed.**

*Safety Warnings!*

- ❗ 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. Please read and abide the instructions, safety recommendations and maintenance suggestions throughout this manual.
- ❗ 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.

**IMPORTANT**

This kit is designed for the customizer/fabricator to install an air spring kit on applications which have been (or are being) modified, or where a specific air spring kit is not available:

**10086 KIT (Large Double Convolute Air Springs: HP10068\*)**

- ▶ **Universal Application** Recommended for use as a FRONT air suspension kit

*\*Use the chart below for minimum & maximum air spring height to ensure you have the correct air spring for your requirements.*

KIT #	AIR SPRING #	MINIMUM COMPRESSION	MEAN	MAXIMUM EXTENSION
HP10086	HP10068	2.900"	6.250"	9.500"

**PLEASE NOTE: The installation will require cutting & welding of thick wall tube. A good saw and welder must be available for the proper installation of this kit.**

This kit contains thick wall tube, mounting plates, air springs & mounting accessories to get you started on your custom air spring installation.

Many variations of additional brackets and fasteners to support you throughout the project can be purchased by contacting your dealer / distributor.

**10086 KIT CONTENTS**

*Please make sure all the items shown in the kit layout are provided in your kit before starting the installation.*

10086 is suggested for **FRONT** suspension



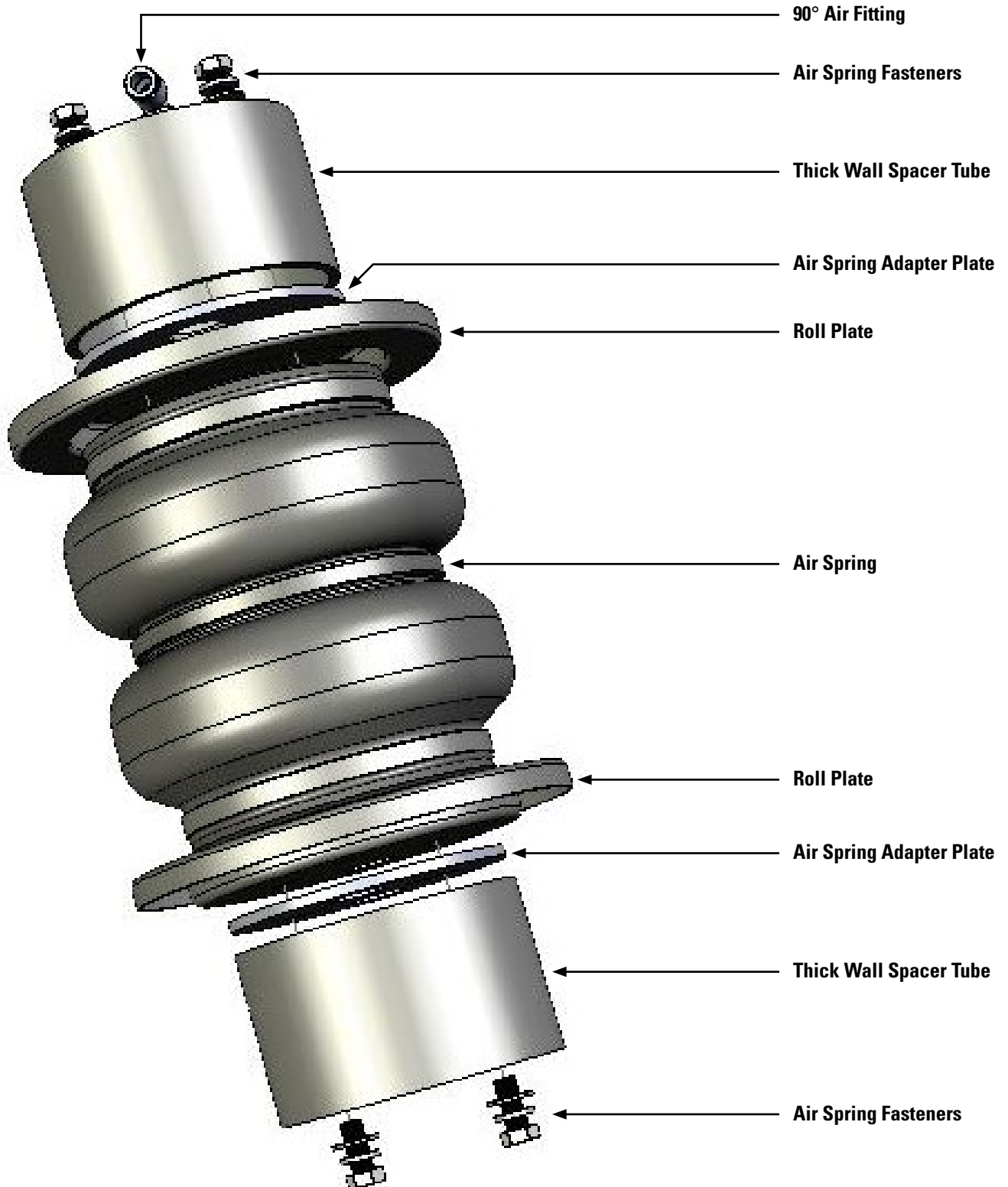
10086 KIT CONTENTS		QTY	PART #
<b>A</b>	Air Springs	2	HP10068
<b>B</b>	Spacer Tube	2	HP1257
<b>C</b>	End Cap	4	HP1166
<b>D</b>	Roll Plate	4	HP10069
<b>E</b>	3/8" NP x 7/8" Capscrew	8	HP1002
<b>F</b>	3/8" Lock Washer	8	C18007
<b>G</b>	3/8" Flat Washer	8	C653
<b>H</b>	Tie Straps	8	C11618
<b>I</b>	Air Line/Valve Assembly	1	HP1344
<b>J</b>	Air Fittings	2	HP1100

**REQUIRED TOOLS**

- Hoist or Floor Jack
- Safety Stands
- Safety Glasses
- Torque Wrench
- Standard Combination Wrenches
- 7/32" Hex Allen Wrench
- 1-1/8" Wrench or Deep Socket
- Ratchet
- Metric & Standard Sockets
- Pipe Thread Sealant
- Hose Cutter (included) or Sharp Utility Knife
- Spray Bottle with Dish Soap/Water
- Air Compressor/Compressed Air Source (to test/fill air springs)

*Please make sure all the items shown in this diagram are provided in your kit before starting the installation.*

**ASSEMBLY EXAMPLE SHOWN BELOW:**



**BEFORE STARTING THE INSTALLATION:**

1. Ensure the kit you are installing will fit your vehicle before proceeding with the install.
2. 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.
3. 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 airline will distort the line and cause the connection to leak. THE AIRLINE MUST BE CUT OFF SQUARELY WITH THE NYLON HOSE CUTTER PROVIDED IN THIS KIT OR A SHARP UTILITY KNIFE.*

**IMPORTANT POINTS TO NOTE WHEN DESIGNING AND FABRICATING CUSTOM AIR SPRING BRACKETS**

- ▶ Do not use air springs as a replacement to a lift kit. To achieve a higher vehicle ride height using air springs, high air pressure must be applied to the air springs which will cause poor ride quality without weight in the vehicle.
- ▶ For an optimum ride, the ride height should remain the same with the air springs inflated to the minimum pressure of 15 PSI. Never exceed the maximum pressure of 100 PSI.
- ▶ Driveline angles: Measure the yoke angles prior to the air spring installation and maintain them within an acceptable margin.
- ▶ Clearance around the air spring assembly: Ensure surrounding components will not contact the air spring during extended and compressed axle travel.
- ▶ Ball joint travel must not be exceeded. Incorrect installation may cause the ball joint to limit suspension travel. If this occurs ball joint failure will result.
- ▶ Ensure the air spring brackets allow enough movement to perform a wheel alignment.
- ▶ Cut the thick wall spacer tube on the correct angles to ensure the air spring compresses evenly in all directions once installed.

**1 MEASURE STOCK RIDE HEIGHT**

On a flat level concrete floor, with the vehicle resting on the tires (or jack stands under the axles), measure and record front and rear vehicle ride height.

**2 MEASURE & CUT THICK WALL TUBE**

Measure the overall distance between the upper and lower air spring mounting locations.

**PLEASE NOTE:** Consider the thickness of the upper and lower brackets, mounting and roll plates in this dimension, then subtract the MEAN dimension of the air spring used in your kit to determine the length to cut the thick wall tube.

### 3 TEST FIT & WELD

Once the thick wall tube is cut to length and the correct compression angles are confirmed, tack weld the assembly together.

Then, install the air springs and test fit. Adjust as necessary.

Remove the air spring to prevent damage when performing the final welding of the assembly together.

### 4 INSTALL AIR SPRINGS

Install the air spring to the mounting assembly and torque the 3/8" NF capscrews (securing the air spring to the mounting plates) to 27 N•m (20 ft-lbs).

### 5 INSTALL AIR FITTING

Install the 90° fittings into the air spring port using thread sealant.

### 6 INSTALL AIR LINE

Provided in air spring kit are two fill valves. The most common place to install is in place of license plate fasteners.

Alternatively, two 5/16" holes can be drilled in a convenient location. Cut air line assembly into two equal lengths with hose cutter.

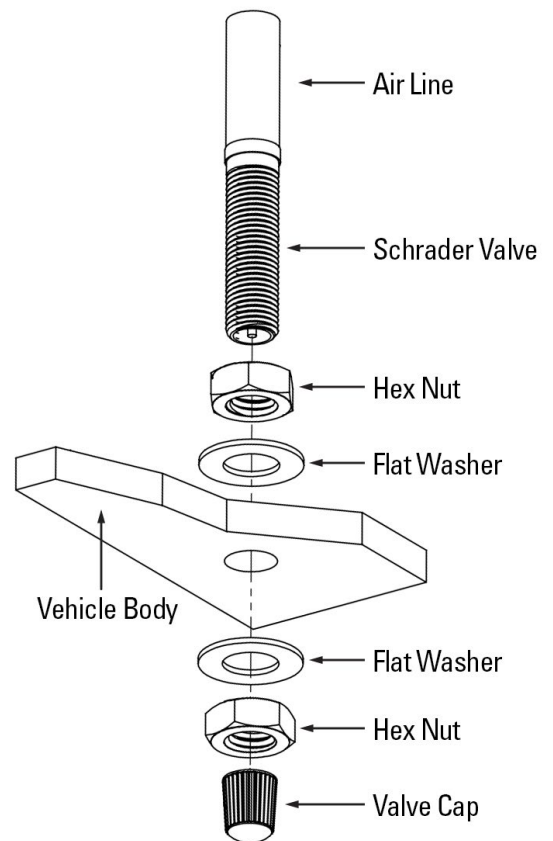
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Install one air line, route the nylon air line to an air spring fitting and cut the hose. Moisten the end of the air line prior to inserting it into the fitting and push it in until it stops. Repeat with the other fill valve.

Secure airlines using the tie-straps, away from moving items and heat sources.

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 Diagram for assembly).

There should be enough valve exposed after installation—approximately 1/2"—to easily apply a pressure gauge or an air chuck.

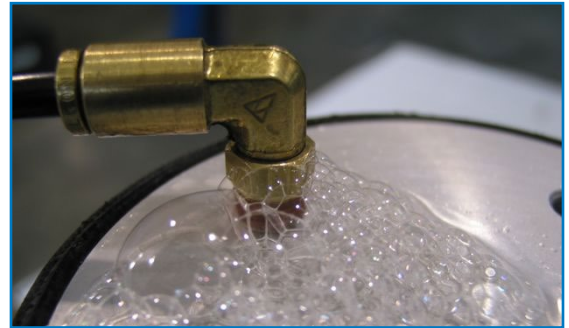


**If an in-cab inflation kit is being installed, follow the instructions provided with that kit now.**

## 7 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 Photo). 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.



## 8 AFTER COMPLETING THE INSTALLATION

### PLEASE REMEMBER:

Install wheels and torque fasteners to manufacturer’s specifications. Re-torque all fasteners after first 500 miles of driving.

For safe and proper operation, never operate the vehicle under minimum of 10 psi or over maximum of 100 psi in air springs. Staying within pressure limit will ensure maximum air spring life. Failure in doing so may result in a void warranty.

**⚠ Do not exceed maximum vehicle payload. Failure to do so may result in failure of the air suspension kit and/or damage to your vehicle.**

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## OPTIONAL ACCESSORIES

Optional dual needle air gauges are available to monitor pressure in each spring from vehicle cab, as well as a full line of air compressors, air tanks, and solenoids built to work with and control your air spring system.

## OPERATING YOUR VEHICLE WITH AIR SUSPENSION

Air springs have minimum and maximum pressure requirements. Never operate your vehicle with less than 10 psi in air spring and never inflate air springs over 100 psi. Damage to air springs will result.

Check air pressure in air springs daily for first couple of days to ensure a leak has not developed. Air springs are designed to maintain the vehicles 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

***The owner’s warranty will be void if air springs are run with less than the minimum of 10 psi. See additional warranty for details.***