

# Installation Manual

VERSION  
FRANÇAISE



## AIR SUSPENSION KIT

Dodge RAM 2500 4WD\*

Dodge RAM 3500 4WD\*

RAM Mega Cab 1500, 2500 & 3500 4WD\*

RAM 3500 Chassis Cab, 2WD/4WD\*†

*† Installations on these vehicles require an additional kit (10136 or 10349) for vehicles that have a round axle tube with the breather located approximately 7" from the spring pack.*

Dodge RAM 2500 2WD\*

Dodge RAM 3500 2WD\*

RAM Mega Cab 1500, 2500 & 3500 2WD\*

\* 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.**

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.**

## 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.

**+** **HELPFUL INSTALL TIP**  
Additional information that could potentially make the job a little easier.

**!** **PLEASE USE CAUTION**  
Unsafe practices could result in damage to you or your vehicle, or others.

**!** **DANGER WARNING**  
Hazards which could result in severe personal injury or death.

**!** 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.

## 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.
  - \* If installing on a RAM 3500 Chassis Cab 4WD truck, install the appropriate Breather Relocation Kit (10136 for 2007-2018, 10349 for 2019+) BEFORE installing the air springs. Follow the instructions provided within the 10136/10349 to do so.
 

**Installing the 10136/10349 Breather Relocation Kit is only required for 3500 Chassis Cab 4WD vehicles with round axle tubes having the breather located approximately 7" from the drivers side leaf spring pack.**
- 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.**

**!** **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](http://www.P65Warnings.ca.gov)**

**KIT CONTENTS**

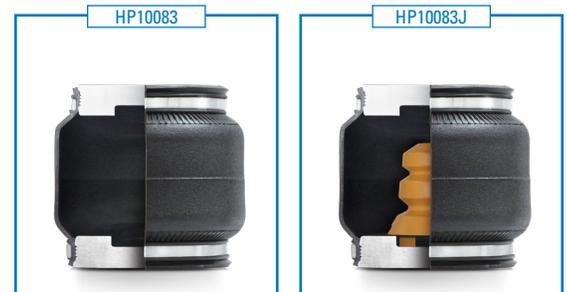
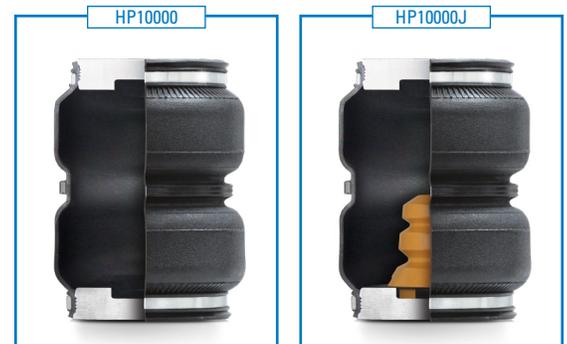
Please confirm the items below are provided in your kit before starting the installation.

4WD HEAVY DUTY KITS		QTY	PART #
<b>A</b>	Double Convoluted Spring	2	HP10000

4WD HEAVY DUTY JOUNCE BUMPER KITS		QTY	PART #
<b>A</b>	Double Convoluted Spring w/ Jounce Bumper	2	HP10000J

2WD HEAVY DUTY KITS		QTY	PART #
<b>A</b>	Single Convoluted Spring	2	HP10083

2WD HEAVY DUTY JOUNCE BUMPER KITS		QTY	PART #
<b>A</b>	Single Convoluted Spring w/ Jounce Bumper	2	HP10083J



KIT CONTENTS		QTY	PART #
<b>B</b>	Lower Bracket	2	HP0022
<b>C</b>	Upper Frame Bracket	2	HP1147
<b>D</b>	Upper Air Spring Bracket	2	HP1148
<b>E</b>	90° Fitting	2	HP1100
<b>F</b>	Heat Shield	1	HP0012
<b>G</b>	3/8 Nylock Nut	12	HP1000
<b>H</b>	3/8 Flat Washer	12	C653
<b>I</b>	3/8 Lock Washer	4	C18007
<b>J</b>	Gear Clamp #48-102	2	HP1001
<b>K</b>	3/8 NF x 7/8 Capscrews (Upper Spring)	4	HP1002
<b>L</b>	4 Axle Strap	4	HP0021
<b>M</b>	3/8 -16 x 3 Carriage Bolt	8	HP1003
<b>N</b>	Roll Plate	4	HP10054
<b>O</b>	M10 x 35 Capscrews	4	HP1134
<b>P</b>	3/8 - 16 x 1 1/4" Carriage Bolt	4	HP1149
<b>Q</b>	Clamp	1	HP1006
<b>R</b>	Lower Air Spring Support Bracket	2	HP0093
<b>S</b>	3/8" NF x 1" Capscrews (Lower Spring)	4	HP1183
<b>T</b>	Air Line/Valve Assembly	1	HP1344
<b>U</b>	Tie Strap	6	C11618



**REQUIRED TOOLS**

- Hoist or Floor Jack
- Safety Glasses
- Pipe Thread Sealant
- Standard Combination Wrenches
- 7/32" Hex Allen Wrench
- Metric & Standard Sockets
- Hose Cutter (included) or Sharp Utility Knife
- Spray Bottle with Dish Soap/Water
- Air Compressor/Compressed Air Source (to test/fill air springs)
- Heavy Duty Drill
- 3/8 & 5/16 drill bits (very sharp)
- 3/8 Nut Driver
- Safety Stands
- Torque Wrench
- Ratchet

## INSTALLATION INSTRUCTIONS

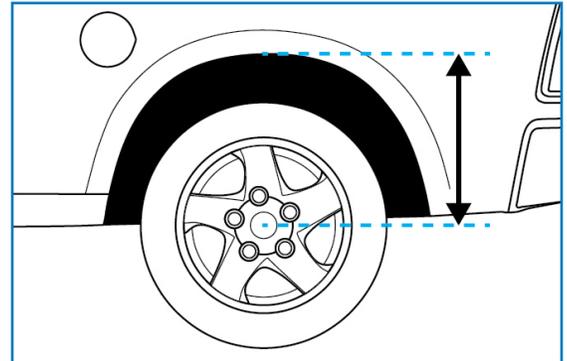
### 1 MEASURE STOCK RIDE HEIGHT

Park the vehicle on a level surface and remove any unnecessary weight from the vehicle to attain a "Normal Ride Height".

Using a measuring tape, measure the distance between the center of the wheel hub and the bottom of the fender well (see Figure 1 for reference) this will give you your stock Normal Ride Height.

Note the ride height for all four tires.

Check the clearance between the outside of the frame and the inside of the rear tires (as shown in red in Figure 1B), a minimum of 5" is required for adequate air spring clearance.



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### 2 REMOVE REAR WHEELS

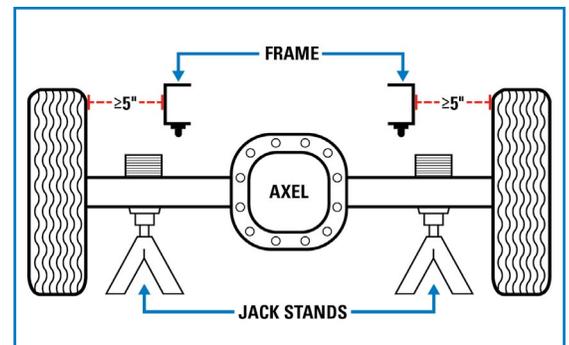
Place wheel chocks in front of and behind both front wheels.

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 (as shown in Figure 1B).

Lower the vehicle until the axle is supported by the jack stands.

Remove rear wheels.



1B

### 3 REMOVE JOUNCE BUMPERS

Remove the jounce bumpers from both sides of the vehicle.

### 4 UPPER ROLL PLATE

Place the upper roll plate (with the rounded side towards the air spring) on the top of the air spring (top being the end with the air inlet port - see Figure 4 for reference). Install the air fitting supplied, use thread sealant to prevent air leaks.

**Repeat on the other air spring.**



4

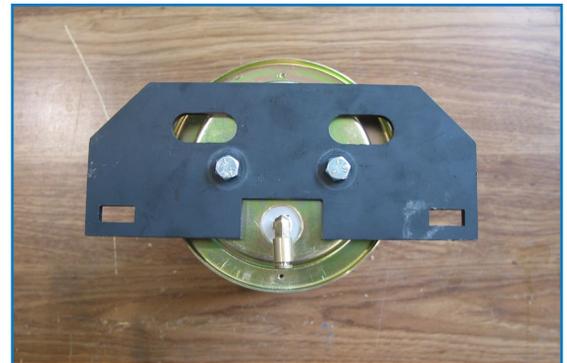
## 5 UPPER ROLL PLATE BRACKET

**⚠ PLEASE NOTE:** This kit contains 4 pieces of a 3/8" NF x 7/8" capscrews (upper bracket), and 4 pieces of a 3/8" NF x 1" capscrews (lower bracket). It is imperative that these capscrews be identified before proceeding. Installing the incorrect capscrew WILL cause the air spring to leak (and this will NOT be covered under warranty).

Place the upper air spring mounting bracket on top of the air spring and roll plate (as shown in Figure 5).

The upper air spring mounting bracket is identified by the two 3/8" holes next to the air fitting cut out. Using 2 - 3/8" NF x 7/8" capscrews provided, fasten the bracket to the air spring.

Torque both capscrews to 27 N•m (20 ft-lbs).



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## 6 LOWER ROLL PLATE & BRACKET

Place the lower roll plate on the bottom of the air spring (rounded side towards the air spring). Locate the lower air spring mounting brackets and support plates.

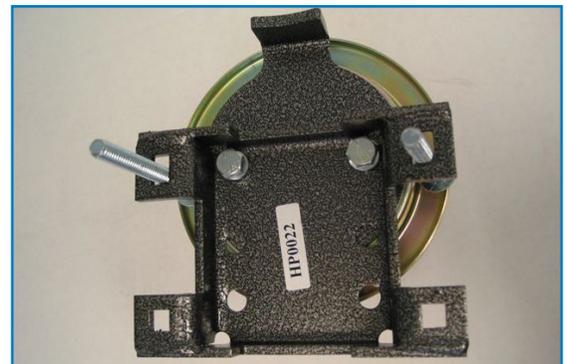
Place the lower support bracket on the roll plate with the bent leg to the same side as the air fitting in the upper end of the air spring. The bent leg of the support bracket must be pointing away from the air spring. Align the two holes in the bracket with those in the roll plate and air spring.

**⚠ PLEASE NOTE:** The lower brackets have 2 extra sets of holes to fit various applications, use only the mounting holes shown in Figure 6 for this application. When installed on the vehicle the lower bracket will be offset towards the outside of the vehicle and the air inlet fitting should be towards the inside of the vehicle.

The lower bracket is designed to be installed offset to the lower end of the air spring. The offset must be opposite the air fitting installed in Step 4.

Two 3 long carriage bolts must be installed into the two elongated holes of the lower bracket before it can be fastened to the air spring and roll plate. Using 2 - 3/8 NF x 1" long capscrews and lock washers provided, fasten the bracket to the air spring.

Torque both capscrews to 27 N•m (20 ft-lbs).



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**REPEAT STEPS 4-6 for the other air spring**

## 7 ATTACH THE UPPER BRACKET

Using the M10 x 35 capscrews provided, fasten the upper air spring mounting bracket to the frame as shown in Figure 7.

Torque the capscrews to 40 N•m (30 ft-lbs).

The upper brackets must be installed to the jounce bracket with the air inlet fitting cutout and rectangular holes in the bracket facing towards the center of the vehicle.



7

## 8 INSTALLING THE AIR SPRING

**+** Passenger side shown in Figure 8

Insert the air spring between the jounce bumper mounting plate and the axle tube. Some vehicles may require the frame to be jacked up slightly to attain clearance.

**!** **PLEASE NOTE:** Air fittings must be positioned towards the center of the vehicle. The outer rear carriage bolts may be installed now. The outboard rear carriage bolt on the passenger side must be between the brake line and the axle tube. On the driver side both rear carriage bolts must be in between the brake line and the axle tube.

Loosely install two of the 1 1/4 long carriage bolts through both upper mounting plates. Install the flat washers and nylock nuts provided. Loosely install the axle straps to the carriage bolts using the flat washers and nylock nuts provided.



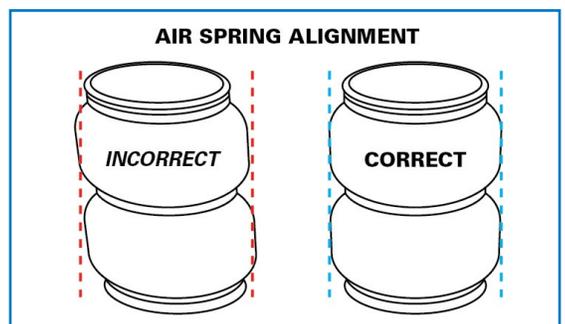
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## 9 ADJUSTING THE AIR SPRING

Adjust the air spring assembly to the upper bracket by moving the lower bracket on the axle tube to ensure the air spring is correctly aligned, as shown in Figure 9A & 9B: Air Spring Alignment diagram (4WD springs used as example).



9A



9B

## 10 CHECK THE CLEARANCE

Check the clearance around the brake lines and carriage bolts. The brake line must not touch the carriage bolts, adjust if necessary.

Once alignment of the air spring is correct, tighten the two 1 1/4 carriage bolts to 27 N•m (20 ft-lbs), and then torque the 4 axle strap carriage bolt nuts also to 27 N•m (20 ft-lbs).

### Repeat on the other air spring.

Install the clamp provided to secure the emergency brake cable to the driver side front 1 1/4 carriage bolt (See Figure 10).



10

## 11 INSTALL HEAT SHIELD

Bend tabs on the heat shield so the required 1/2" of dead space exists between the heat shield and exhaust when attached.

Attach the heat shield to the exhaust pipe on passenger side using two ring clamps (shown in Figure 11). Each hose clamp holds a tab against exhaust pipe.

Installation continues on the following page.



11

## 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 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.

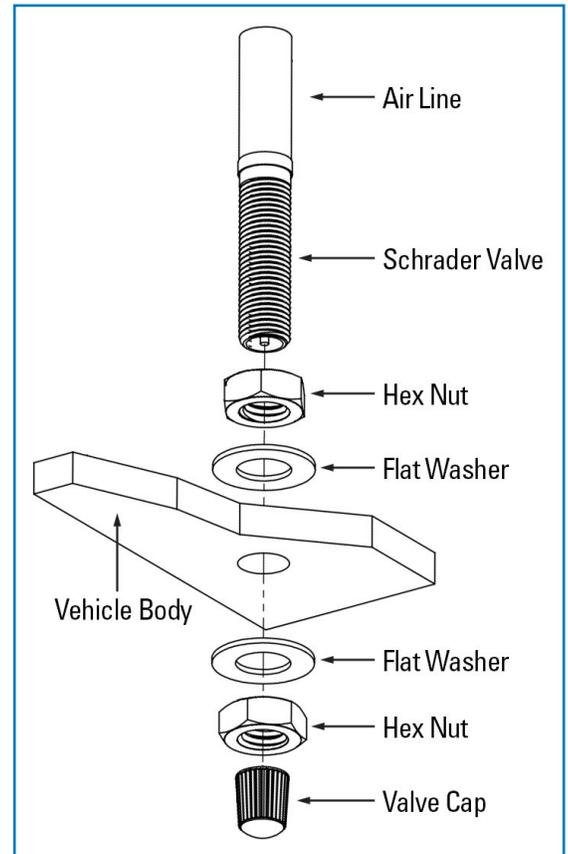
## CHECK SYSTEM FOR LEAKS

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).

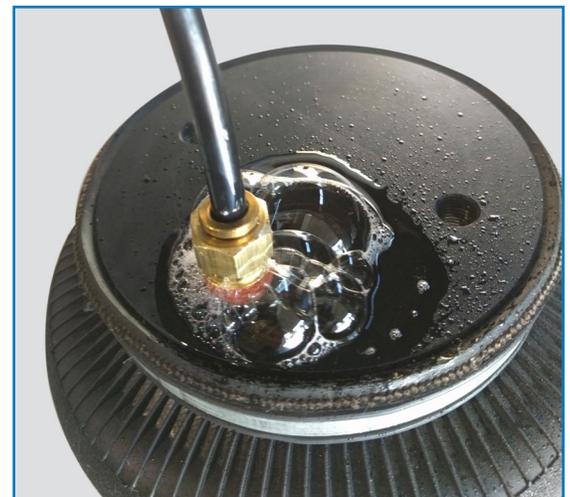
**Repair as necessary and retest.**

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.**



A



\*Air Spring & NPT Air Fitting may differ between kits

B

**CONGRATULATIONS! You have completed the install**

**After Installation continues on the following page.**

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**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.

**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 Convoluted	HEAVY DUTY	5 PSI	100 PSI
HP10083J		HEAVY DUTY with JOUNCE BUMPER	0 PSI* / 5 PSI	100 PSI
HP10000	Double Convoluted	HEAVY DUTY	5 PSI	100 PSI
HP10000J		HEAVY DUTY with JOUNCE BUMPER	0 PSI* / 5 PSI	100 PSI
HP10068	Large Double Convoluted	HEAVY DUTY	5 PSI	100 PSI
HP10438	Double Convoluted	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.**