

# Installation Manual

**/// PACBRAKE®**



## HP10321 KIT

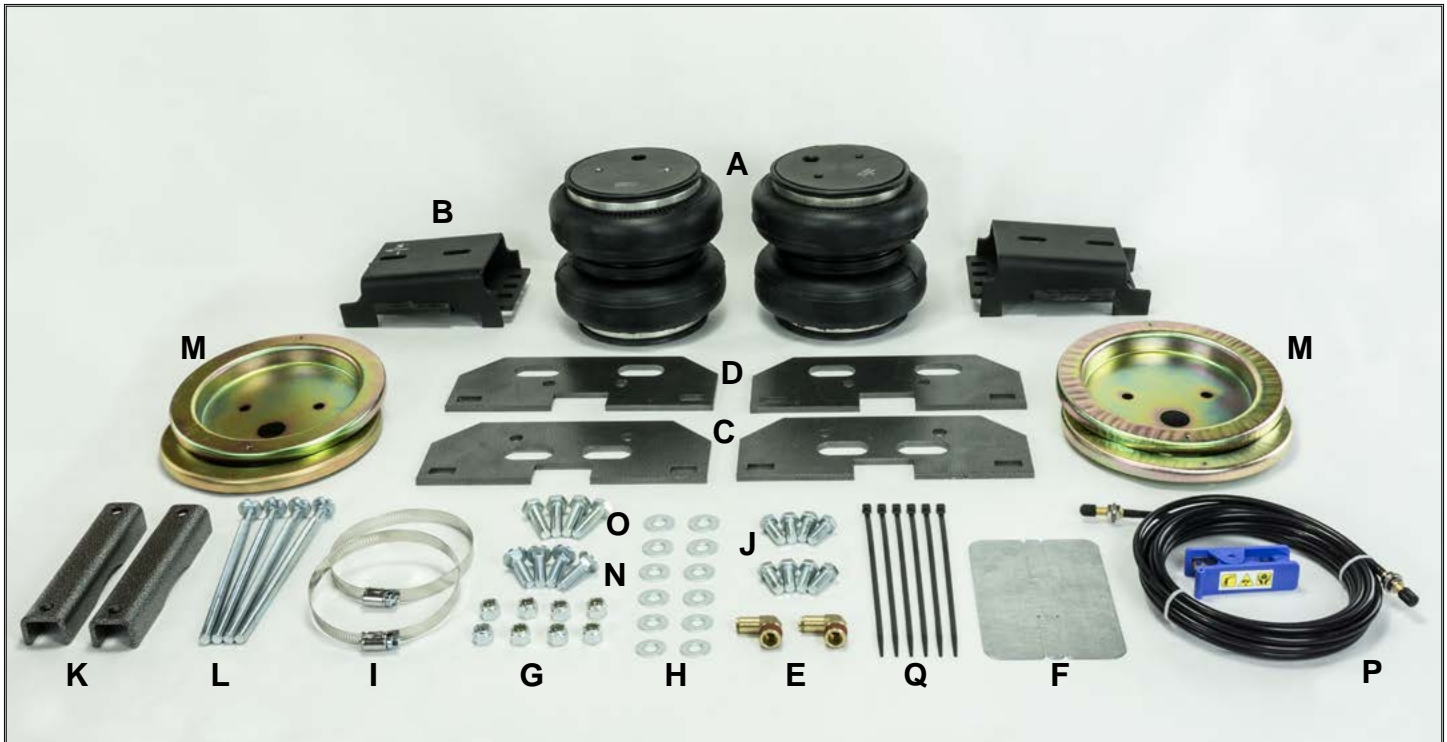
Dodge Ram 4500 / 5500  
Chassis Cab 2WD / 4WD

\* See application guide for proper fitment.

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



## KIT CONTENT



**CAUTION:** This kit includes “push to connect OR barbed” airline fittings. They require the end of the airline to be round, square and cleanly cut to ensure the internal seal will not leak. The airline must only be cut with a sharp razor knife or hose cutter.

### KIT CONTENTS

<b>A</b>	Air Springs (2)	HP10068
<b>B</b>	Lower Bracket (2)	HP1520
<b>C</b>	Upper Frame Bracket (2)	HP1147
<b>D</b>	Upper Air Spring Bracket (2)	HP1148
<b>E</b>	90° Fitting (2)	HP1245
<b>F</b>	Heat Shield (1)	HP0012
<b>G</b>	3/8" Nylock Nut (8)	HP1000
<b>H</b>	3/8" Large Flat Washer (12)	C18006
<b>I</b>	Gear Clamp #48-102 (2)	HP1001
<b>J</b>	3/8" NF x 7/8" Capscrews (8)	HP1002
<b>K</b>	Axle Strap (2)	HP1383
<b>L</b>	3/8"-16 x 7 Carriage Bolt (4)	HP1409
<b>M</b>	Roll Plate (4)	HP10069
<b>N</b>	3/8" - 16 x 1 1/4" Carriage Bolt (4)	HP1149
<b>O</b>	M10 X 1.5 X 35mm Cap Screws (4)	HP1134
<b>P</b>	Air Line/Valve Assembly	HP1344
<b>Q</b>	Tie Strap (6)	C11618

### REQUIRED TOOLS

- 7/16", 1/2", 9/16" Open end or box wrenches
- 13 mm, 15 mm, 16 mm and 21 mm open end wrenches
- Adjustable Wrench
- Torque Wrench
- 9/16", 1/2" Deep well sockets
- Heavy Duty Drill
- 5/16" Drill Bits (very sharp)
- Hose Cutter, Razor Blade or Sharp Knife
- Pipe Thread Sealant
- Air Compressor/Compressed Air Source
- Hoist or Floor Jack
- Safety Stands
- Safety Glasses
- Spray Bottle with Dish Soap/Water

Make sure all the items shown in the photo are provided in your kit before starting the installation.

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

## IMPORTANT:

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

## BEFORE YOU START:

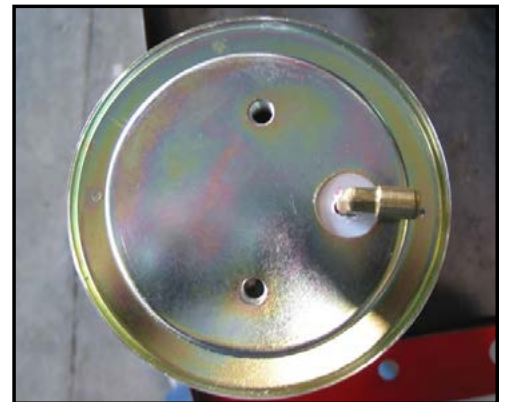
**NOTE:** Some vehicles are equipped with a rear wheel brake proportioning valve. Check with the manufacturer before installing the air spring kit, as it may affect braking performance.

1. Ensure the application information is correct for the make, model and year of the vehicle you are installing the kit on.
2. Pacbrake recommends using 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

## PRE-ASSEMBLY OF AIR SPRINGS

### 1 THE UPPER ROLL PLATE

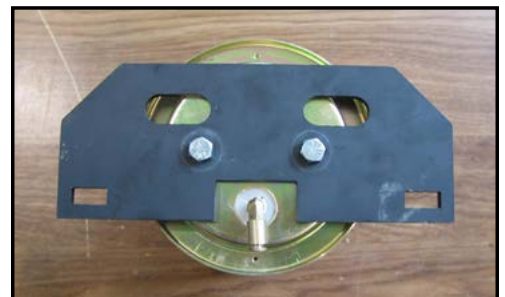
Place the upper roll plate (with the rounded side towards the air spring) on the top of the air spring (top being the end with the air inlet port). Apply thread sealant or Teflon tape to the threads of the fitting provided. Install the fitting.



1A

### 2 THE UPPER BRACKET

Place the upper air spring mounting bracket on top of the air spring and roll plate. The upper air spring mounting bracket is identified by the two  $\frac{3}{8}$ " holes next to the air fitting cut out. Using 2 -  $\frac{3}{8}$ " NF x  $\frac{7}{8}$ " capscrews provided, fasten the bracket to the air spring. Torque both capscrews to 20 ft-lbs, 27 N•m.

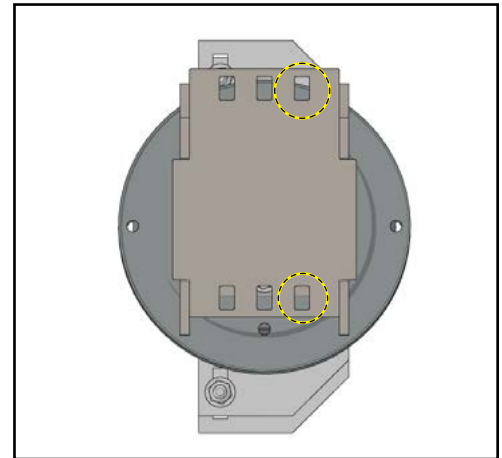


2A

### 3 THE LOWER PLATE & BRACKET

Insert two 7" long carriage bolts into the elongated holes as shown. Place the roll plate on the air spring with the rolled side down towards the air spring. Place the lower bracket on the air spring with the two carriage bolts on the opposite side of the air port as shown (passenger side assembly shown). Install the two 3/8" NF capscrews and flat washers, do not tighten fully.

**Repeat steps for the other air spring.**



View of Passenger Side 3A

### 4 INSTALLATION ON THE VEHICLE

Raise the vehicle enough for a comfortable working height with a floor jack and support the axle with jack stands.

Remove the jounce bumpers on both sides.



4A

### 5 ATTACH THE UPPER BRACKET

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

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



5A

## 6 INSTALLING THE AIR SPRING

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.

**NOTE:** Air fittings must be positioned towards the center of the vehicle.

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

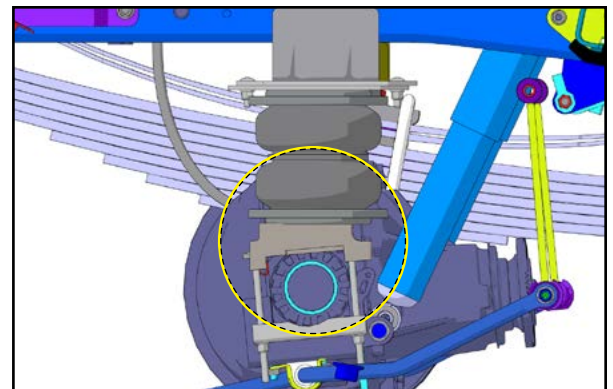
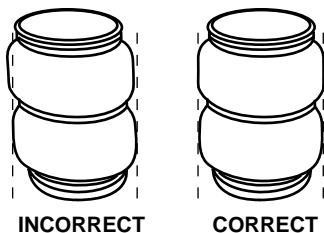
**Note:** It may be necessary to remove the brake line from the axel clip to add bracket clearance



6A

## 7 ADJUST 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 the diagram below).



View of Passenger Side

6B

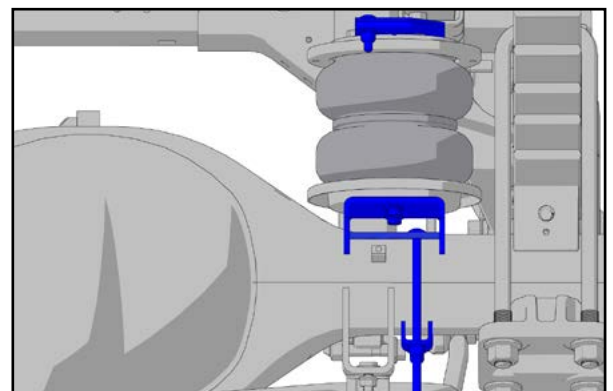
\*Take note of lower bracket orientation.

## 8 CHECK THE CLEARANCE

Ensure adequate clearance exists between the brake lines and the carriage bolts. The brake line must not touch the carriage bolts. Adjust to attain clearance if necessary. Once correct alignment of the air spring is attained:

- Tighten the two 1 1/4" carriage bolts of the top brackets to 20 ft-lbs, 27 N•m.
- Tighten the two axle strap carriage nuts to 20 ft-lbs, 27 N•m.
- Tighten the two support bracket to upper bracket fasteners to 20 ft-lbs, 27 N•m.

Repeat on the other air spring.



View of Passenger Side

7A

## 9 INSTALL THE HEAT SHIELD

Bend the two center tabs of the heat shield supplied for fastening to the exhaust pipe as shown. Attach the heat shield with the gear clamps supplied to the exhaust pipe to protect the air spring.



9A

## 10 AIRLINE INSTALLATION

Provided in the basic air spring kit are two fill valves, the most common place to install them is to replace the license plate fasteners with the fill valves. Alternatively, a convenient location. Install one airline provided, route the nylon hose to an air spring fitting, cut the hose and connect to the air spring fitting. Repeat with the other fill valve. Secure airlines with the tie-straps provided away from moving items and heat sources.

If an in cab inflation kit is being installed, follow the instructions provided with it.

**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 A SHARP RAZOR KNIFE OR THE NYLON HOSE CUTTER PROVIDED IN THE KIT.**

**IMPORTANT!** Double check all the fasteners are torques to specification



10A

## 11 LEAK CHECK

Inflate both the air springs to 90 PSI. Use a dish soap and water mixture on all airline connections to detect air leaks. Repair as necessary and retest. Inflate your air springs to a pre-determined value, then the following day recheck the pressure. If one or both the air springs have lost pressure, a leak is present. The leak must be repaired, then retest until no leaks exist.

**SPECIAL NOTE:** Retorque all the fasteners after the first 500 miles of driving.



11A



## OPTIONAL ACCESSORIES

Pacbrake offers an optional dual needle air gauge to monitor the pressure in each spring from the vehicles cab. Pacbrake offers a full line of air compressors, air tanks and solenoids to control your air spring system.

## OPERATING YOUR VEHICLE WITH PACBRAKE AIR SUSPENSION

Air springs have minimum and maximum pressure requirements. Never operate your vehicle with less than 10 PSI in the air spring and never inflate the air springs over 100 PSI. Staying within the pressure limit will ensure maximum air spring life. Failure in doing so may void the warranty. Check the air pressure in the air springs daily for the first couple of days to ensure a leak does not develop. The 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 the vehicle with no load. A rough ride will result.

## SERVICING YOUR VEHICLE WITH PACBRAKE 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.