

# Installation Manual

**PACBRAKE®**

[www.pacbrake.com](http://www.pacbrake.com) 800.663.0096



## HP10171 KIT



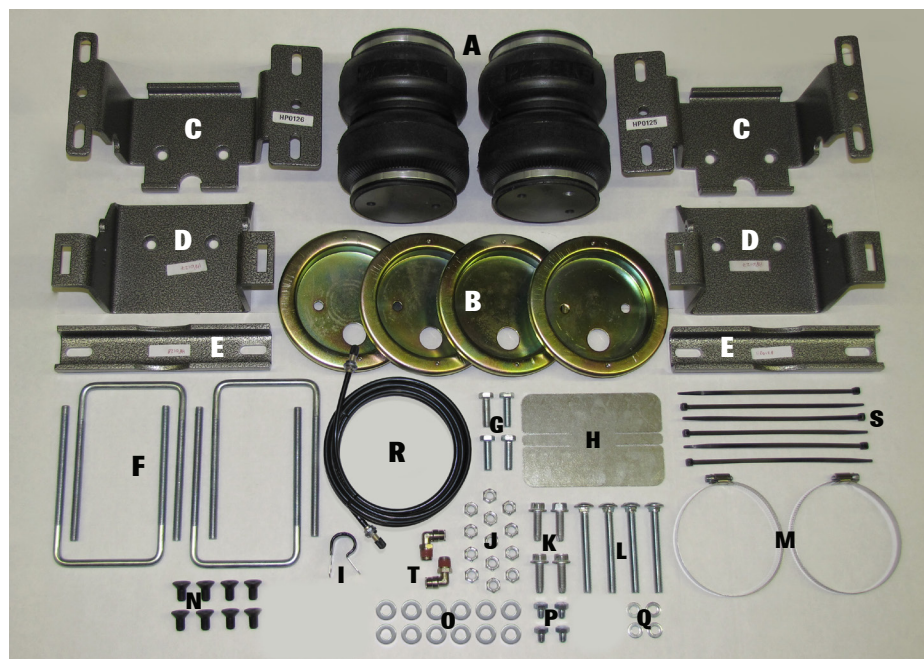
Chevy/GMC Pick-Up Trucks 2500/3500\*  
2WD/4WD with or without 5<sup>th</sup> Wheel Hitch

\* See application guide for proper fitment.

Use the strongest 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 smoother, safer ride.



## KIT CONTENTS



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

## KIT CONTENTS LEGEND

<b>A</b>	Air Springs (2)	HP10000
<b>B</b>	Roll Plates (4)	HP10054
<b>C</b>	Upper Brackets (2)	HP0125 (L) / HP0126 (R)
<b>D</b>	Lower Brackets (2)	HP0127
<b>E</b>	Axle Straps (2)	HP0128
<b>F</b>	3/8" U-Bolts (4)	HP1331
<b>G</b>	3/8" Hex Head Capscrews (4)	C10464
<b>H</b>	Heat Shield (1)	HP0012
<b>I</b>	5/8" Loop Strap (1)	HP1006
<b>J</b>	3/8" Nylon Locking Nuts (13)	HP1000
<b>K</b>	3/8" Self-Tapping Screws (4)	HP1078
<b>L</b>	3/8" Carriage Bolts (4)	HP1332
<b>M</b>	Gear Clamps (2)	HP1001
<b>N</b>	Countersunk Capscrews (8)	HP1008
<b>O</b>	3/8" Flat Washers (12)	C653
<b>P</b>	M8x1.25x10mm Capscrews (4)	HP1334
<b>Q</b>	M8 Flat Washers (4)	C10473
<b>R</b>	Air Line/Valve Assembly	HP1344
<b>S</b>	Tie Straps (6)	C11618
<b>T</b>	Air Fitting (2)	HP1100

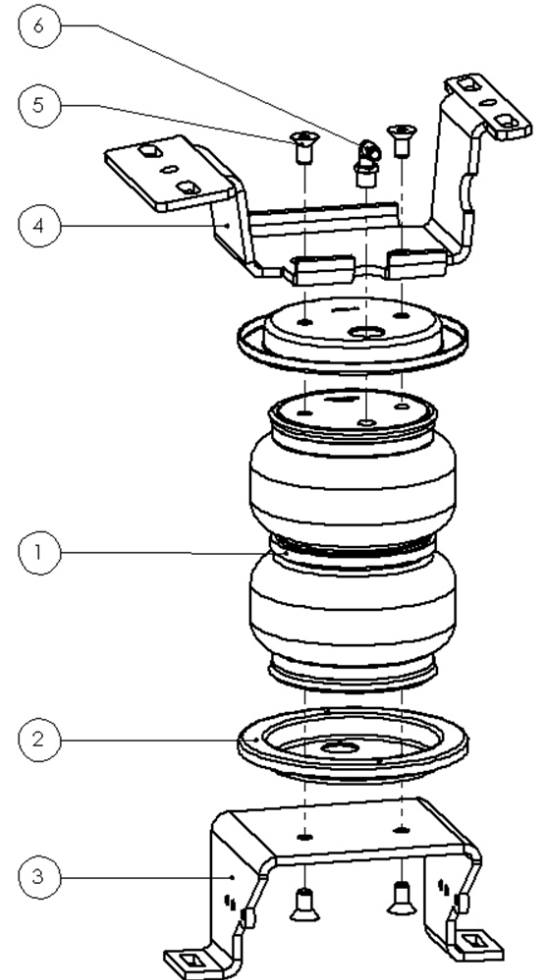
## REQUIRED TOOLS

- 1/2" and 9/16" Open End or Box Wrenches
- Adjustable Wrench
- Torque Wrench
- 7/32" Allen Wrench
- 9/16" Deep Well Sockets
- Heavy Duty Drill
- 3/8" and 5/16" Drill Bits (very sharp)
- Pipe Thread Sealant
- Hose Cutter, Razor Blade or Sharp Knife
- Air Compressor/Compressed Air Source
- Hoist or Floor Jack
- Safety Stands
- Safety Glasses
- Spray Bottle with Dish Soap/Water
- Hammer
- Center Punch

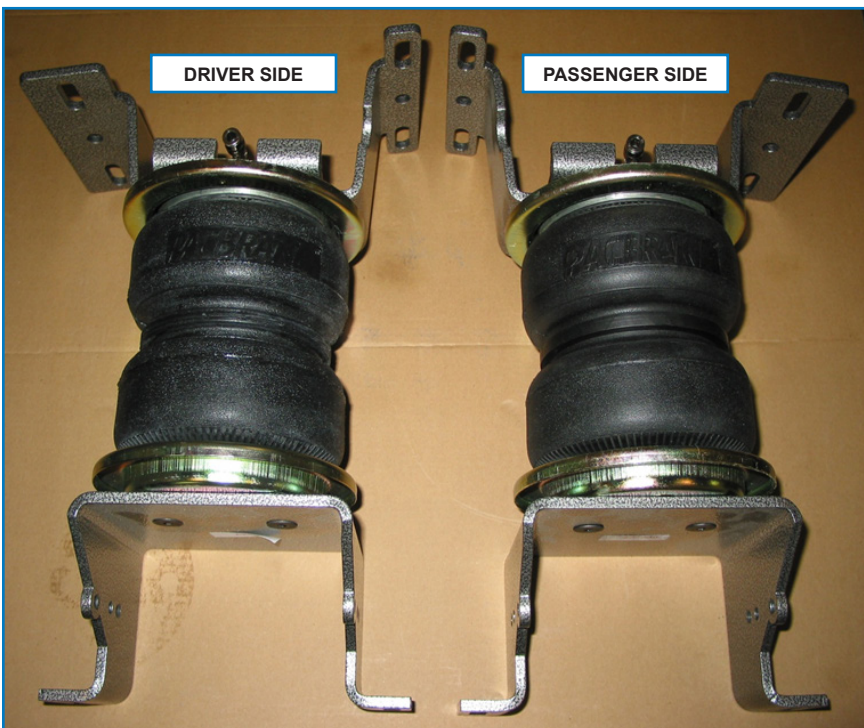
## PRE ASSEMBLY OF THE AIR SPRINGS

Refer to **Figure 1**, and use the following steps to preassemble the air springs

- 1** Place roll plates (2) on the ends of each air spring (1). The air spring ends will nest inside of the roll plate, and the rounded outer edges of the roll plate will face the air spring. Align the clearance holes in the roll plates with the threaded holes of the air springs.
- 2** Align the holes of the top and bottom brackets (3, 4) with the threaded holes in the air spring. Install the four  $\frac{3}{8}$ " flat head cap screws (5) using a  $\frac{7}{32}$ " hex drive. Tighten the screws to 27 N\*m (20 lbf\*ft).
- 3** Install the  $\frac{1}{4}$ " NPT threaded fittings (6) in the fill opening of the air springs. Use of thread sealant is recommended (*not provided*).



**Figure 1: Air Spring Pre assembly**

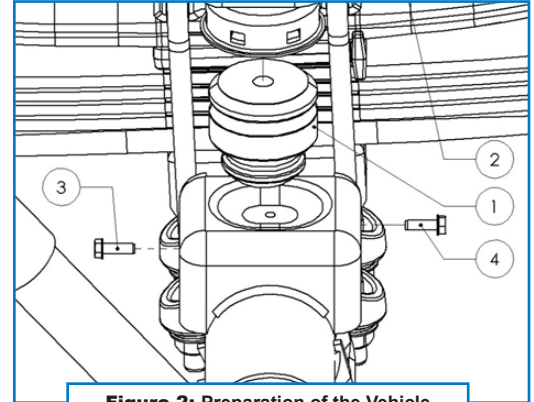




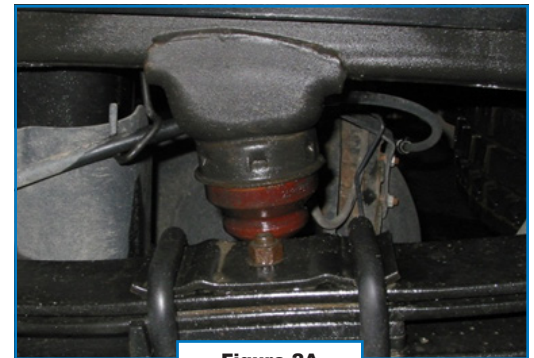
## PRE ASSEMBLY OF THE AIR SPRINGS

Refer to **Figure 2**, and use the following steps to prepare the vehicle

- 4** Park the vehicle on a level surface and remove any unnecessary weight, such that normal ride height is achieved.
- 5** Raise the rear axle, and lower it onto jack stands, such that the rear wheels are removable and a comfortable working height is achieved.
- 6** Remove the rear wheels.
- 7** Remove the two jounce bumpers (**Figure 2A**) by prying them out of the retaining cup. A pry bar or large screwdriver is typically required.
- 8** Remove the M8 hex cap screw (**Figure 2B**) retaining the emergency brake cable bracket located fore of the jounce bumper on the driver's side of the vehicle. Discard the bracket and screw.



**Figure 2: Preparation of the Vehicle**



**Figure 2A**



**Figure 2B**

- 9** Remove the M8 hex cap screws (**Figure 2C**) retaining the brake line to the jounce bumper stops. Discard the screws.

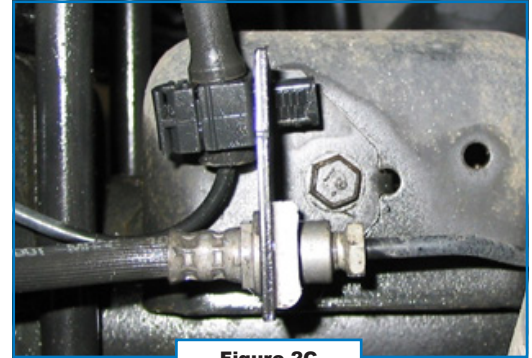


Figure 2C

- 10** Remove the hex cap screw (**Figure 2D**) retaining the emergency brake cable to the jounce bumper stop on the passenger side of the vehicle. Discard the screw.



Figure 2D

## INSTALLATION OF THE AIR SPRING IN THE VEHICLE (NO FIFTH WHEEL)

Refer to **Figure 3** (Page 6) and use the following steps to install the air spring assembly. If the vehicle has a fifth wheel hitch along the side of the frame, skip to the next section.

- 11** Position the air spring assembly (**1**) such that the lower bracket rests on the jounce bumper stop and the upper bracket nests around the jounce bumper. The air spring may need to be compressed. The air fitting will be positioned on the inboard side of the frame.



**12** Position the clamp bar (2) on the axle such that the mounting holes are aligned with the mounting holes in the lower bracket of the air spring assembly. Insert the  $\frac{3}{8}$ " carriage bolts (3) into the rectangular holes of the lower bracket, and through the oval holes in the clamp bar. Install  $\frac{3}{8}$ " flat washers (4) and nylon locking nuts (5) on the ends of the carriage bolts. Remove the slack by threading on the nuts, but do not torque the nuts.

**13** Install the  $\frac{3}{8}$ " U-bolts (6) around the frame of the vehicle, and through the mounting holes in the upper bracket. Ensure that no lines or wires are pinched between the U-bolts and the frame. Install one  $\frac{3}{8}$ " flat washer (3) and one nylon locking nut (4) on each end of the U-bolts.

**14** Align the air spring by adjusting the brackets on the frame and axle until as close to a vertical alignment of the spring's central axis as possible is achieved.

**15** Secure the emergency brake cable on the driver side of the vehicle with the adel clamp (7). Mount the adel clamp on the U-bolt, under the air bag bracket, forward of the jounce bumper on the inside of the frame.

**NOTE:** The Adel clamp, securing, the emergency brake cable is secured on to the U-bolt using a second  $\frac{3}{8}$ " Nyloc Nut.

**16** Torque all of the nyloc nuts evenly to 22 N\*m (16 Lbf-ft).

**NOTE:** one  $\frac{3}{8}$ " self-tapping screw and one  $\frac{3}{8}$ " hex cap screw will be left over at the end of installation if using this method.

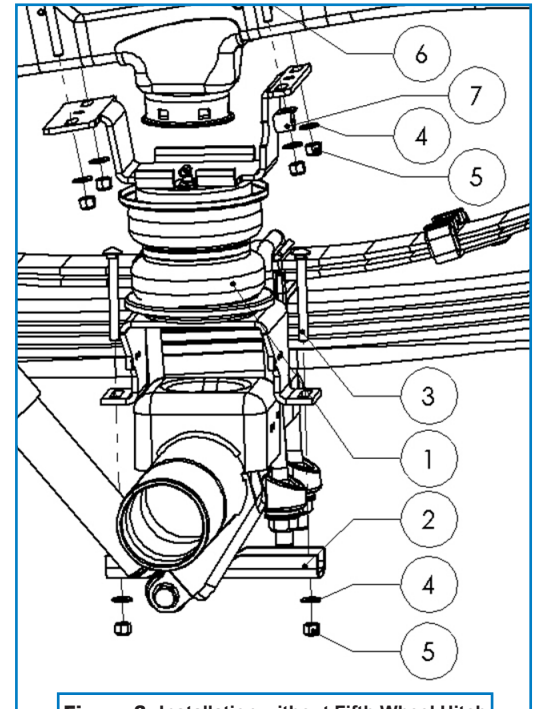


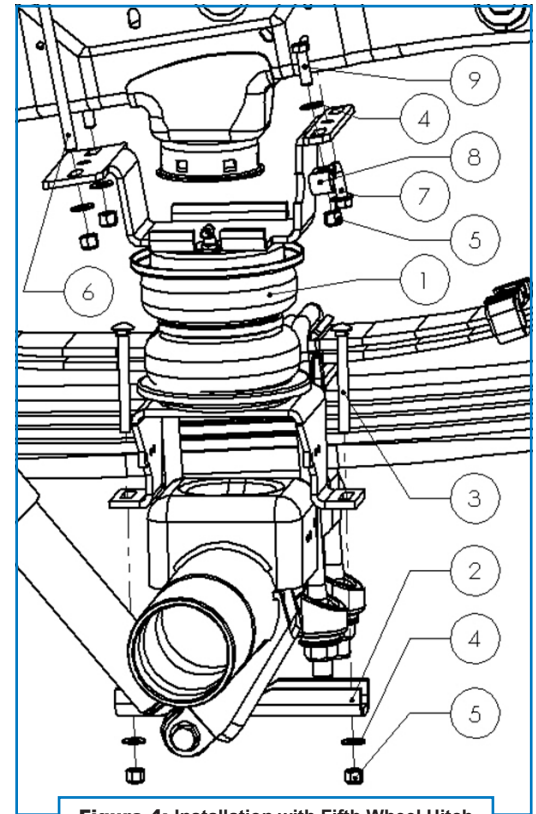
Figure 3: Installation without Fifth Wheel Hitch



## INSTALLATION OF THE AIR SPRING IN THE VEHICLE (WITH FIFTH WHEEL)

Refer to **Figure 4** and use the following steps to install the air spring assembly. If the vehicle has no fifth wheel hitch along the side of the frame, skip to the next section.

- 17** Position the air spring assembly (1) such that the lower bracket rests on the jounce bumper stop and the upper bracket nests around the jounce bumper. The air spring may need to be compressed. The air fitting will be positioned on the inboard side of the frame.
- 18** Position the clamp bar (2) on the axle such that the mounting holes are aligned with the mounting holes in the lower bracket of the air spring assembly. Insert the  $\frac{3}{8}$ " carriage bolts (3) into the rectangular holes of the lower bracket, and through the oval holes in the clamp bar. Install  $\frac{3}{8}$ " flat washers (4) and nylon locking nuts (5) on the ends of the carriage bolts. Remove the slack by threading the nuts, but do not torque the nuts.
- 19** Install the  $\frac{3}{8}$ " U-bolt (6) around the frame of the vehicle, and through the mounting holes in the upper bracket. This is only possible on the rear of the bracket, as the 5th wheel hitch will interfere in the front. Ensure that no lines or wires are pinched between the U-Bolt and the frame. Install one  $\frac{3}{8}$ " flat washer (3) and one nylon locking nut (4) on each end of the U-Bolt.
- 20** Align the air spring by adjusting the brackets on the frame until as close to a vertical alignment of the spring's central axis as possible is achieved.
- 21** Torque all of the nyloc nuts evenly to 22 N\*m (16Lbf-ft).
- 22** Using the hole in the center of the upper bracket as a guide, drill a  $\frac{5}{16}$ " hole in the frame of the vehicle.



**Figure 4:** Installation with Fifth Wheel Hitch



**23** Install the  $\frac{3}{8}$ " self-tapping screw (7) through the bracket and into the frame. Torque to 22 N\*m (16 Lbf-ft).

**24** On the driver side of the vehicle secure the emergency brake cable with the adel clamp (8). Mount the adel clamp to the air bag bracket (inboard slot where U-bolt would have been) using a  $\frac{3}{8}$ " hex cap screw (9),  $\frac{3}{8}$ " washer (5), and  $\frac{3}{8}$ " nylon lock nut (4). Torque the nut to 22 N\*m (16 Lbf-ft).



## REINSTALLING THE BRAKE LINES

Use the following steps to reinstall the brake lines and emergency brake cables

**25** Using the M8 cap screws, attach the brake line bracket to the lower bracket (rear) of the air bag assembly on both sides of the vehicle. Torque these screws to 16 N\*m (12 Lbf-ft).



Drivers side rear. Installation of brake line.



Passenger side rear. Installation of brake line.



- 26** Using the M8 cap screws, attach the emergency brake cable bracket to the lower bracket of the air bag assembly on the passenger side of the vehicle.

Torque this screw to 16 N\*m (12 Lbf-ft).



Passenger side front. Installation of E-brake line.

## 27 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 predetermined 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.

**NOTE: Re-torque all the fasteners after 500 miles of driving.**



## 28 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.



## OPTIONAL ACCESSORIES

Pacbrake offers an optional dual needle air gauge to monitor the pressure in each spring from the vehicle's cab.

Pacbrake offers in-cab inflation kits to adjust the air spring pressure from the comfort of the driver's seat.

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. Damage to the air springs will result.

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.

## WARRANTY

To be eligible for warranty, owner must submit their warranty card (or register online at [pacbrake.com/warranty](http://pacbrake.com/warranty)) within 30 days of purchase date.

**NOTE:** The owners warranty will be void if air springs run with less than the minimum of 10 PSI.