



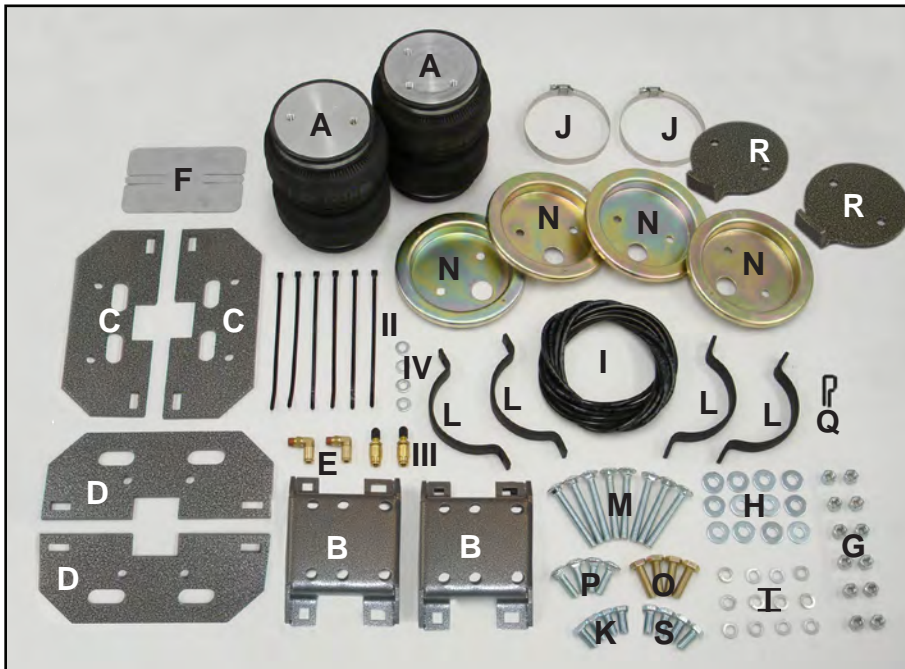
Installation MANUAL



HP10002/HP10089 AIR SUSPENSION KIT

AIR SPRINGS

APPLICATION | HP10002 DODGE RAM 2500 & 3500 4WD, 2003–2012
HP10002 DODGE RAM 3500 Cab & Chassis, 2007-2012
HP10089 DODGE RAM 2500 & 3500 2WD, 2003–2012



CAUTION: This kit includes “push to connect” 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.

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

2007 - 2012 3500 Cab & Chassis model installations require a Pacbrake HP10136 Axle Breather Relocation Kit (not shown in photo)

HP10002 contains double convoluted air springs for 4WD. HP10089 contains single convoluted air springs for 2WD

KIT CONTENTS

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| A Air Springs (2) | Airline Assembly Parts |
| B Lower Bracket (2) | I Airline (1) |
| C Upper Frame Bracket (2) | II Tie Strap (6) |
| D Upper Air Spring Bracket (2) | III Fill Valve (2) |
| E 90° Fitting (2) | IV $\frac{5}{16}$ Flat Washer (4) |
| F Heat Shield (1) | |
| G $\frac{3}{8}$ Nylock Nut (12) | |
| H $\frac{3}{8}$ Flat Washer (12) | |
| I $\frac{3}{8}$ Lock Washer (4) | |
| J Gear Clamp #48-102 (2) | |
| K $\frac{3}{8}$ NF x $\frac{7}{8}$ Capscrews (Upper Spring Fastener) (4) | |
| L 4 Axle Strap (4) | |
| M $\frac{3}{8}$ -16 x 3 Carriage Bolt (8) | |
| N Roll Plate (4) | |
| O M10 x 35 Capscrews (4) | |
| P $\frac{3}{8}$ - 16 x $1\frac{1}{4}$ " Carriage Bolt (4) | |
| Q Clamp (1) | |
| R Lower Air Spring Support Bracket (2) | |
| S $\frac{3}{8}$ " NF x 1" Capscrews (Lower Spring Fastener) (4) | |

REQUIRED TOOLS

- $\frac{7}{16}$, $\frac{1}{2}$ ", $\frac{9}{16}$ open end or box wrenches
- 17mm open end wrench
- Adjustable Wrench
- Torque Wrench
- Ratchet with $\frac{3}{8}$, $\frac{9}{16}$, $\frac{1}{2}$ deep well sockets
- Heavy Duty Drill
- $\frac{3}{8}$ and $\frac{5}{16}$ drill bits (very sharp)
- $\frac{3}{8}$ Nut Driver
- 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

Thank you and congratulations for your purchase of a Pacbrake air suspension kit.

IMPORTANT: The air suspension kit will not increase the GVWR (gross vehicle weight rating), as this is determined by the axle rating. Do not exceed the maximum capacity listed by the vehicle manufacturer.

Before starting, ensure the application information is correct for the make, model and year of the vehicle you are installing it on. Please read the entire installation manual prior to starting the installation to ensure you can complete it once started.

If installing a HP10002 in a 2007-2008 Dodge Ram 3500 Cab and Chassis, install the Pacbrake HP10136 Breather Relocation Kit BEFORE installing the HP10002 air springs. Follow the instructions provided within the HP10136 kit to do so. Installing the HP10136 breather kit is only required for 3500 Cab & Chassis vehicles with round axle tubes having the breather located approximately 7" from the drivers side leaf spring pack.

Pacbrake recommends using a good quality anti-seize on all fasteners, this will reduce the chances of corrosion of the fasteners, and help facilitate removal if required at a later date.

PREASSEMBLY OF THE 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). Install the air fitting supplied, use thread sealant to prevent air leaks. Repeat on the other air spring.



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.

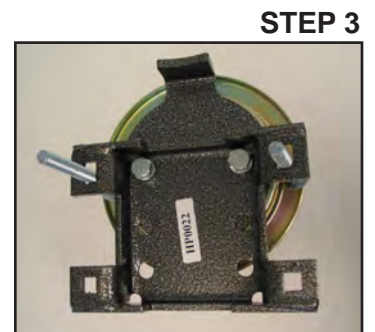


3 THE LOWER PLATE & BRACKET

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.

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 1. 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 - $\frac{3}{8}$ " NF x 1" long capscrews and lock washers provided, fasten the bracket to the air spring. Torque both capscrews to 20 ft-lbs, 27 N•m.



NOTE: The lower brackets have 2 extra sets of holes to fit various applications, use only the mounting holes shown in the photo 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.

Repeat steps 1 - 3 on the other air spring

4 INSTALLATION ON THE VEHICLE

- 1 Raise the vehicle enough for a comfortable working height with a floor jack and support the axle with jack stands.
- 2 Remove the jounce bumpers on both sides.

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.



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. The outer rear carriage bolts may be installed now. The outboard rear carriage bolt on the passengers side must be between the brake line and the axle tube. On the drivers side both rear carriage bolts must be in between the brake line and the axle tube. Passengers side is shown in photo.

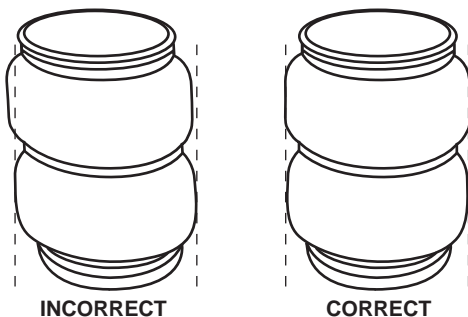
Loosely install two of the 1¹/₄ long carriage bolts through both upper mounting plates. Install the flat washers and nylock nuts provided. Loosely install the axle straps to the carriage bolts using the flat washers and nylock nuts provided.



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.

AIR SPRING ALIGNMENT



**DOUBLE CONVOLUTED
4 WHEEL DRIVE
AIR SPRINGS SHOWN HERE**



8 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 $\frac{1}{4}$ carriage bolts to 20 ft-lbs 27 N•m, and then torque the 4 axle strap carriage bolt nuts also to 20 ft-lbs 27 N•m.

Repeat on the other air spring.

NOTE: Install the clamp provided to secure the emergency brake cable to the driver side front 1 $\frac{1}{4}$ carriage bolt.

STEP 8



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.

STEP 9



10 AIRLINE INSTALLATION

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. Alternately two holes can be drilled in a convenient location. Install the airline provided from the fill valves to each air spring, secure airlines with the tie-straps provided away from moving items and heat sources.

IMPORTANT!

Double check all the fasteners are torqued to specification.

STEP 10



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 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.

SPECIAL NOTE:

Apply the decal provided with minimum and maximum air spring pressure in a spot visible to the driver.

Retorque all the fasteners after the first 500 miles of driving.

STEP 11



OPTIONAL ACCESSORIES

Pacbrake offers an optional dual needle air gauge to monitor the pressure in each air 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, 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 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.