



Installation

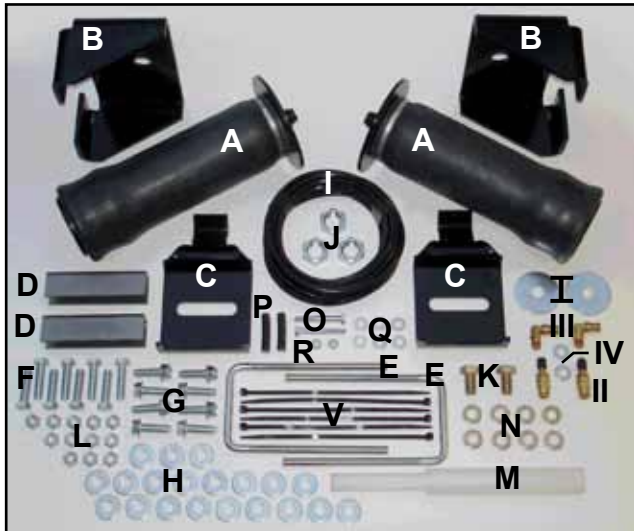
MANUAL



HP10033 AIR SUSPENSION KIT AIR SPRINGS

See next page for specific application info on this kit

KIT CONTENTS



HP10033 APPLICATIONS -

1969-1993 Dodge D-150, W-100, W-150 2WD/4WD
 1974-1993 Dodge Ram Charger 2WD/4WD
 1987-2004 Dodge Dakota 4WD
 1994-2001 Dodge Ram 1500 2WD/4WD
 2000-2001 Dodge Dakota RT 2WD
 1966-1996 Ford F-100, F-150 4WD
 1968-1996 Ford F-100, F-150 2WD
 1980-1996 Ford Bronco 4WD
 1983-1990 Ford Bronco II 4WD
 1997-2004 Ford F-150 2WD/4WD
 1969-1991 GM Jimmy, Blazer 4WD
 1973-1991 GM Jimmy, Blazer 2WD
 1973-1987 GM K-10, K-1500 4WD
 1988-1998 GM C-1500, K-1500 2WD/4WD
 1999-2007 GM Sierra, Silverado 1500 2WD/4WD
 2001-2005 GM Silverado 1500HD 2WD/4WD
 2001-2008 GM Sierra 1500HD 2WD/4WD

NOTE -

Do not apply air pressure to the air spring until advised to in step 8.

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

KIT CONTENTS

- A Air Springs (2)
- B Upper Brackets (2)
- C Lower Brackets (2)
- D Leaf Spring Clamps (2)
- E 3/8" NC x 6 1/2" 'U' bolts (2)
- F 3/8" NC x 1 1/2" bolts (8)
- G 3/8" x 1 1/2" self-tapping bolt (8)
- H 3/8" Flat Washers (20)
- I 1/2" Fender Washer (2)
- J 3/4" x 16 Jam Nut (3)
- K 1/2" - 13 x 7/8" Bolt (2)
- L 3/8" Nyloc Nuts (12)
- M Install Tool
- N 3/8" Flat Washer Bracket Spacer (8)
- O 1/4" - 20 x 2" Bolt (2)
- P 3/8" Spacer Tube (2)
- Q 1/4" Flat Washer (6)
- R 1/4" Nylok Nut (2)

AIRLINE ASSEMBLY

- I Nylon Airline (1)
- II Inflation Valves (2)
- III Air Fitting (2)
- IV 5/16" Flat Washers (2)
- V Tie Straps (6)

REQUIRED TOOLS

- 7/16", 1/2", 9/16, 1-1/8 open end or box wrenches
- Adjustable Wrench
- Torque Wrench
- Ratchet with 9/16 & 1/2 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

HP10033 INSTALLATION MANUAL - L6030

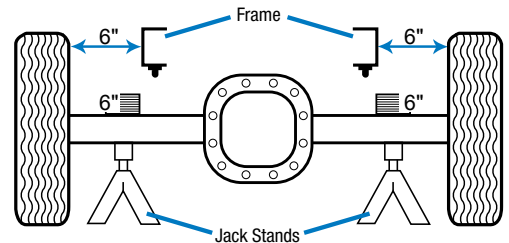
Thank you and congratulations on the purchase of a Pacbrake air suspension kit. Please read the entire installation manual prior to starting the installation to ensure you can complete the installation once started.

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.

NOTE: Some vehicles's are equipped with a rear brake proportioning valve, check with the manufacture before installing an air spring kit as it may effect braking performance.

BEFORE STARTING:

- 1 Ensure the application information is correct for the make, model and year of the vehicle you are installing it on.
- 2 Check the vehicle to see if it is equipped with a 5th Wheel Hitch. Some 5th wheel hitches require brackets to be mounted to the frame in the same locations as the air spring brackets (if this is the case, you may need another Air Spring Kit. Please contact Pacbrake at 800.663.0096)
- 3 Check the clearance between the outside of the frame and the inside of the tire, a minimum of 6" is required for air spring clearance.
- 4 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.



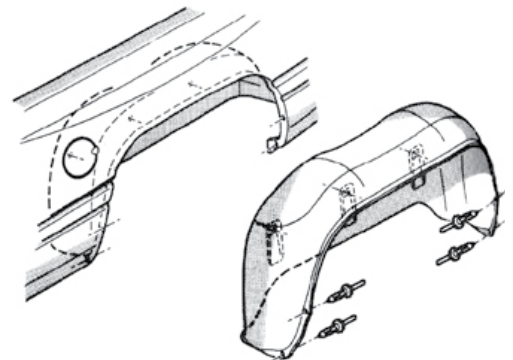
VEHICLE PREPARATION

- 1 Remove any unnecessary weight from the vehicle to attain normal ride height. This is important for correct initial air spring set-up and adjustment. Park the vehicle on a level concrete surface.
Record the vehicle's "normal ride height", this is the distance between the center of the axle and the horizontal wheel well flange. Ensure both sides are the same before raising the vehicle. Raise the rear axle with a floor jack enough to remove both rear wheels and attain a comfortable working height. Place two jack stands under the axle as shown in the photo. Lower the floor jack until the vehicles axle is supported by the jack stands. Ensure the normal ride height measurement recorded earlier is the same before proceeding, adjust if necessary.



1994 and newer Dodge 4x4 trucks only.

Removal of the rear wheelhouse liner is required to access the frame. Remove the 4 plastic rivets shown in the drawing by pushing the inner pin through from the outside. Then remove the 3 capscrews securing the liner to the box. Rotate the liner towards the rear of the vehicle to remove. Save the 4 plastic rivets and 3 capscrews from each side for reassembly.



ASSEMBLY OF THE AIR SPRING BRACKETS USING THE ALIGNMENT TOOL PROVIDED

- 2** The nylon installation tool aligns the upper and lower brackets and sets the correct top bracket height. The threaded section of the installation tool is the range in which the air spring height may be set. It is advisable to set it to the maximum height possible.

Using the large fender washer and the $\frac{1}{2}$ " x 13 bolt provided, attach the installation tool to the lower bracket. Install one of the $\frac{3}{4}$ " x 16 nuts provided on to the installation tool. Place the upper bracket on to the tool and install another $\frac{3}{4}$ " x 16 nut on top of the upper bracket.



CHOOSING THE OPTIMUM MOUNTING LOCATION

- 3** Place this assembly on the leaf spring either in front or behind the axle. On 'C' channel frames, check the inside of both frame-rails for obstructions like fuel lines, brake lines, wiring harnesses and brackets that will interfere with the upper air spring mounting fasteners. The lower bracket must be positioned with the leg over the axle 'U' bolt or spring retention plate (as shown with arrow in the photo). The springs can be staggered on opposite sides of the axle, if necessary, to attain sufficient room to mount the upper bracket. It is not advisable to drill or screw into the frame rail within $\frac{1}{2}$ " of the upper and lower edge of the frame. This dimension may be different for your specific vehicle - consult your vehicle dealer for exact specifications.



NOTE: It is permissible that on some vehicles it may be necessary to mount the upper bracket with the mounting legs towards the topside.

- 4** Gently tighten the lower bracket bolt to the installation tool while still allowing it to move in the slot of the lower bracket for final adjustments. Using the two nuts on the threaded portion of the installation tool, adjust the upper bracket as high as possible while maintaining the mounting bolt holes as close to the center of the frame rail as possible. Make sure you have a minimum of 1½" clearance above the top of the upper bracket for the airline fitting. Check for sufficient clearance around the air spring to vehicle components. This includes emergency brake cables, jounce bumpers, shocks and all attaching brackets. Please note the air spring will expand to 5⅝" diameter when fully inflated. It is imperative that no vehicle components come in contact with the air spring at any time. Failures as a result of this will not be covered under warranty.



- 5** Using the slot in the lower bracket, slide the installation tool and upper bracket against the frame. Once the proper adjustment of the upper bracket is achieved, mark all 4 holes of the upper bracket to the frame. Remove the lower bracket, installation tool and upper bracket as an assembly from the vehicle. Mount the assembly onto the other side of the vehicle and mark the mounting holes. Make note of the position on the frame face, of the hole locations from side to side.

A vehicle that has one side sagging will have the mounting holes marked further up on the frame rail. Vehicles with this issue should have it corrected before drilling the mounting holes.



6 READ NOTES BELOW BEFORE DRILLING THE FRAME

NOTE: Vehicles with a boxed frame will use the self tapping capscrews supplied, drill the hole to 5/16" to facilitate installation of the self tapping capscrews. Vehicles with 'C' channel frames, use a 3/8" drill bit to drill frame holes and install with supplied bolts, flat washers and nyloc nuts.

NOTE: For vehicles with 'C' channel frames, if any mounting hole is directly above a welded seam then you must use a self tapping capscrew in this location.

NOTE: Some vehicles will require temporarily relocating wiring harnesses, fuel lines and brake lines when drilling holes in the frame.



Repeat steps 3 through 6 on the other side of the vehicle

- 7 Remove the installation tool from the upper and lower brackets.

Mount the upper bracket onto the frame using the hardware provided. Torque fasteners to 30 ft-lbs, 47 N•m. Loosely attach the lower bracket to the air spring using the $\frac{1}{2}$ " x $\frac{7}{8}$ " bolt and large flat washer provided. Insert the air spring and lower bracket assembly up into the hole in the upper bracket, loosely attach with one $\frac{3}{4}$ " jam nut.

NOTE: For vehicles with 'C' channel frames, if any mounting hole is directly above a welded seam then you **MUST** use the self tapping bolt in this location. Many Dodge, Ford and GM pickup chassis have an indent in the frame rail. Use the spacers provided between the frame the upper bracket that fall into this indented area to ensure the upper bracket parallel to the outside of the frame rail. Ensure the lower bracket is positioned with the leg over the axle 'U' bolt or spring retention plate. Install the 'U' bolt provided around the leafsprings. Install the spacer with the legs facing the leaf springs and secure with the flat washers and nyloc nuts provided. Torque to 16 ft-lbs, 27 N•m.

- 8 Align the lower end of the air spring to the lower bracket. The lower bracket is slotted to allow inboard and outboard adjustment of the air spring. The lower end of the air spring must be positioned directly below the upper end of the air spring to ensure equal contact on the lower bracket. Apply 5 PSI to the air springs, adjust the lower end of the air spring **INWARD** or **OUTWARD** on the lower bracket to attain even contact of the rolled portion of the air spring on the top plate of the lower bracket. Once adjustment is complete, torque the lower capscrew to 20 ft-lbs, 27 N•m.

Cut off the threaded portion of the 'U' bolts below the nyloc nuts.

- 9 Install the 90° air line fitting provided into the top of the air springs. Use thread sealant or tape.

Repeat steps 7 through 9 on the other side of the vehicle



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. 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. If an in cab inflation kit is being installed follow 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. Moisten the end of the airline prior to inserting it into the fitting and push it in until it stops.



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.



12 Reinstall the inner wheel well liner if removed. Install the wheels torquing the fasteners to the manufactures specifications

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

Re torque all the fasteners after the first 500 miles of driving.

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.