Installation Manual

PACBRAKE®

HP10002/HP10089 KIT

AMP AIR MANAGEMENT by Pacbrake

HP10002: *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 (HP10136) for vehicles that have a round axle tube with the breather located approximately 7" from the spring pack.

HP10089: *Dodge RAM 2500 2WD**
*Dodge RAM 3500 2WD**
*RAM Mega Cab 1500, 2500 & 3500 2WD**

* See application guide for proper fitment.

HP10002 & HP10089 AMP AIR SUSPENSION KITS

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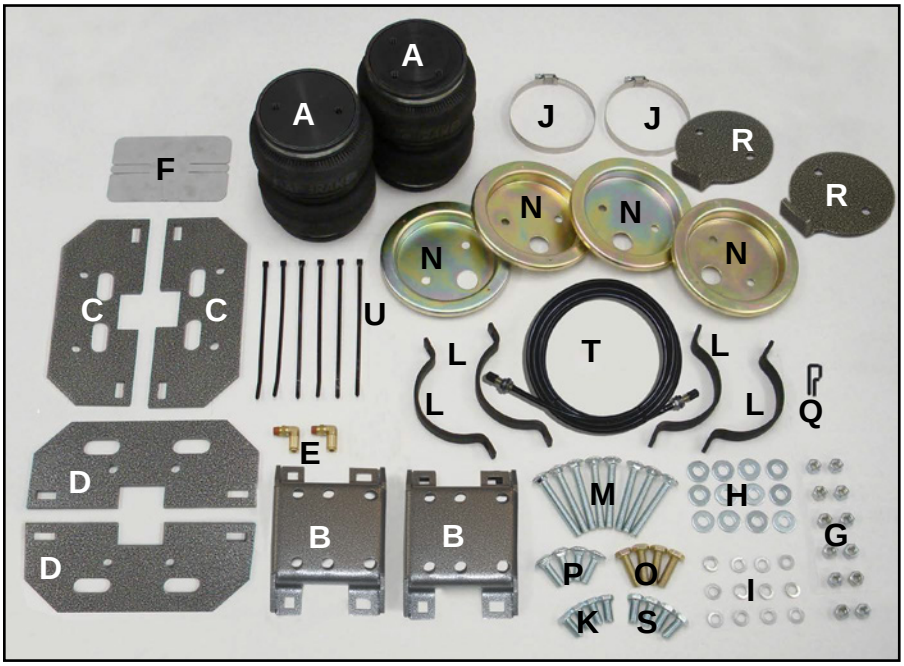

CAUTION:

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

A	Air Springs (2)	HP10000 (HP10002 kits) HP10083 (HP10089 kits)
B	Lower Bracket (2)	HP0022
C	Upper Frame Bracket (2)	HP1147
D	Upper Air Spring Bracket (2)	HP1148
E	90° Fitting (2)	HP1100
F	Heat Shield (1)	HP0012
G	3/8 Nylock Nut (12)	HP1000
H	3/8 Flat Washer (12)	C653
I	3/8 Lock Washer (4)	C18007
J	Gear Clamp #48-102 (2)	HP1001
K	3/8 NF x 7/8 Capscrews (Upper Spring) (4)	HP1002
L	4 Axle Strap (4)	HP0021
M	3/8-16 x 3 Carriage Bolt (8)	HP1003
N	Roll Plate (4)	HP10054
O	M10 x 35 Capscrews (4)	HP1134
P	3/8 - 16 x 1 1/4" Carriage Bolt (4)	HP1149
Q	Clamp (1)	HP1006
R	Lower Air Spring Support Bracket (2)	HP0093
S	3/8" NF x 1" Capscrews (Lower Spring) (4)	HP1183
T	Air Line/Valve Assembly (1)	HP1344
U	Tie Strap (6)	C11618

REQUIRED TOOLS

- 7/16, 1/2", 9/16 open end or box wrenches
- 17mm open end wrench
- Adjustable Wrench
- Torque Wrench
- 3/8, 9/16, 1/2 deep well sockets
- Heavy Duty Drill
- 3/8 and 5/16 drill bits (very sharp)
- 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

HP10002 & HP10089 AMP AIR SUSPENSION KITS

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

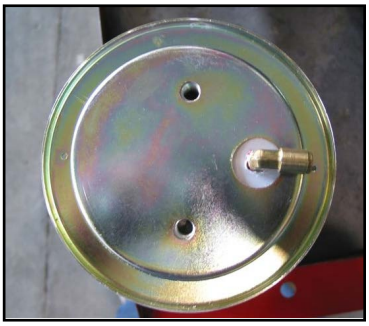
IMPORTANT: The air suspension kit will not increase the GVWR (gross vehicle weight rating), as this is determined by the axle rating. Do not exceed the maximum capacity listed by the vehicle manufacturer.

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 Dodge Ram 3500 Chassis Cab truck, 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.

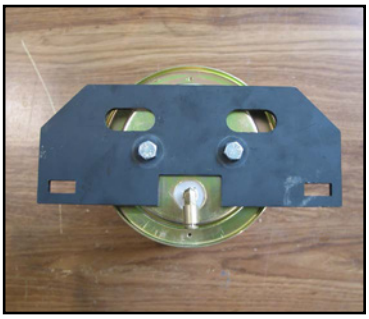
STEP 1



THE UPPER ROLL PLATE

1 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.

STEP 2



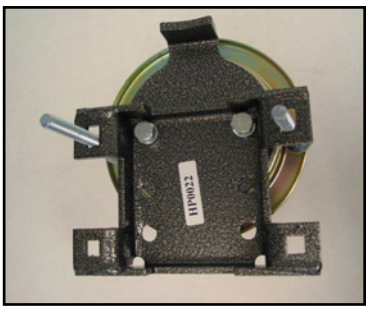
THE UPPER ROLL PLATE

2 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.

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 20 ft-lbs, 27 N•m.

STEP 3



THE LOWER PLATE & BRACKET

3 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 arriage 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 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

INSTALLATION ON THE VEHICLE

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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.

STEP 4

ATTACH THE UPPER BRACKET

5 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.

STEP 5

INSTALLING THE AIR SPRING

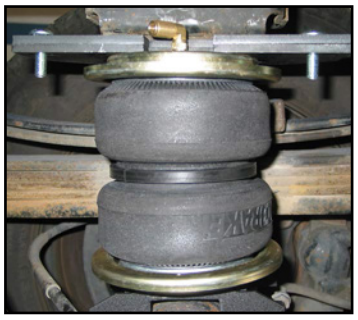
6 Insert the air spring between the jounce bumper mounting plate and the axle tube. Some vehicles may require the frame to be jacked up slightly to attain clearance.

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.*

Passenger's 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

STEP 6

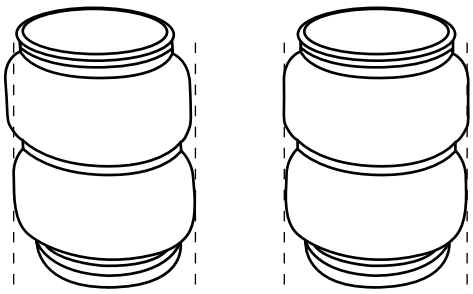


ADJUSTING THE AIR SPRING

7 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 *Air Spring Alignment* diagram below:

STEP 7

AIR SPRING ALIGNMENT



INCORRECT CORRECT

DOUBLE CONVOLUTED 4 WHEEL DRIVE AIR SPRINGS SHOWN HERE

CHECK THE CLEARENCE

8 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 1¼ 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 1¼ carriage bolt.*

STEP 8

INSTALL THE HEAT SHIELD

9 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 Provided in the basic air spring kit are two fill valves, the most common place t install them is to replace the license plate fasteners with the fill valves. Alternatively, two holes can be drilled in 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-strap 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.*

Moisten the end of the airline prior to inserting it into the fitting and push it in until it stops.

STEP 10

IMPORTANT! Double check all the fasteners are torqued to specification.

LEAK CHECK

11 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.

STEP 11

SPECIAL NOTE:

Retorque 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 then 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.