AIR SUSPENSION

2009 - 2018 RAM 1500

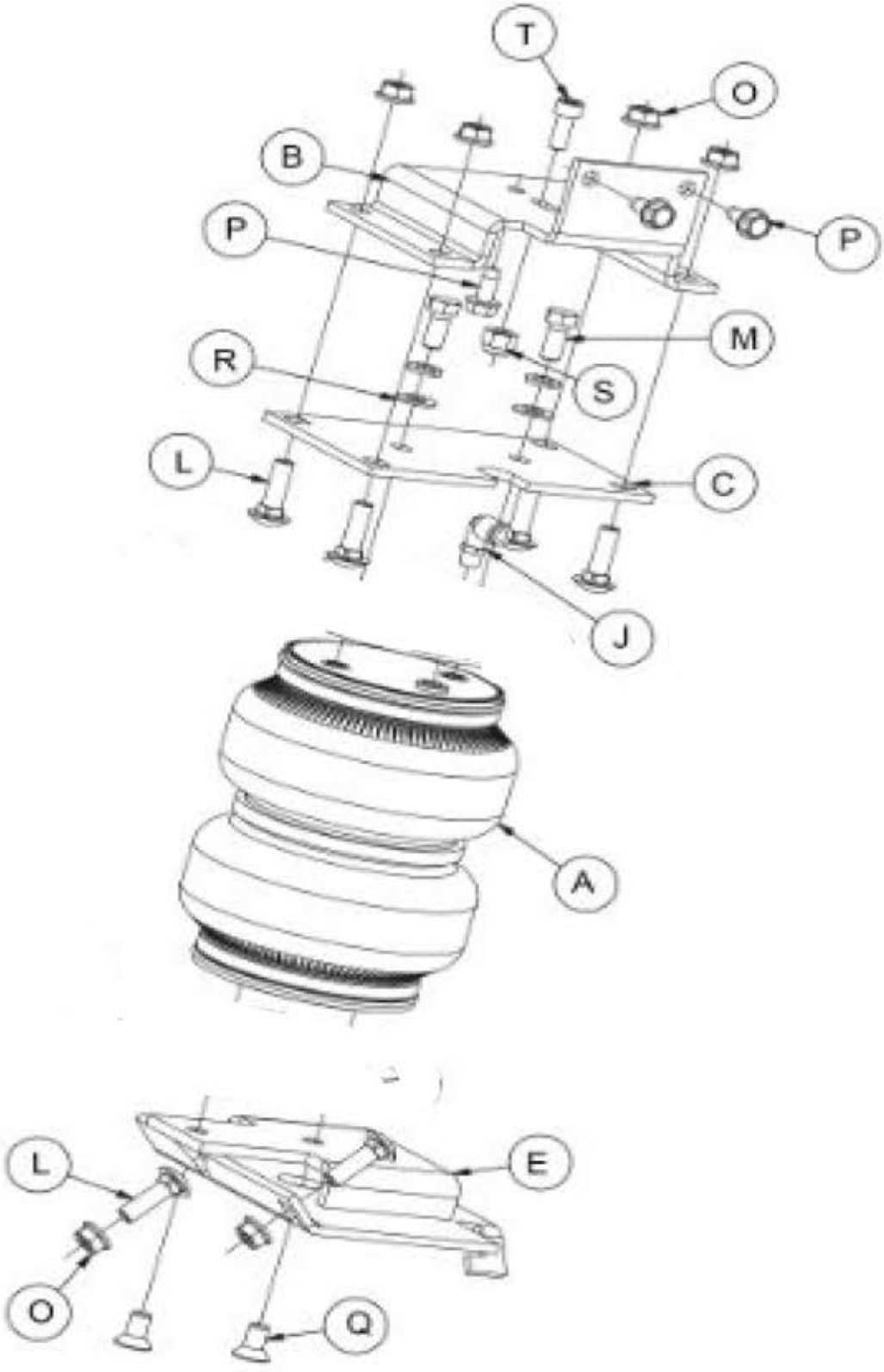
HS8030 AIR SUSPENSION

INSTALLATION MANUAL

APPLICATIONS :

2009-2018 Ram 1500 2WD/4WD

INSTALLATION DIAGRAM：



KIT CONTENT:

A	Air Spring	2 pcs
B	Frame Upper Bracket	2 pcs
C	Air Spring Upper Bracket	2 pcs
D	Lower Bracket, Passenger Side	1 pcs
E	Lower Bracket, Driver Side	1 pcs
H	Air Valve and Hose	1 pcs
J	Air Fitting	2 pcs
K	Tie Strap	6 pcs
L	M10 Carriage Bolt	12 pcs
M	M10 Cap Screw	4 pcs
N	M10 Lock Washer	4 pcs
O	M10 Serrated Nut	12 pcs
P	M8 Self Tapping Screw	6 pcs
Q	M10 Flat Head Cap Screw	4 pcs
R	M10 Flat Washer	12 pcs
S	M8 Nylon Lock Nut	1 pcs
T	M8 Socket Head Cap Screw	1 pcs

REQUIRED TOOLS

- ✓ M6, M8, M10, 3/8" Open End or Box Wrench
- ✓ Adjustable Wrench
- ✓ Torque Wrench
- ✓ Allen Wrench
- ✓ Heavy Duty Drill
- ✓ Ø8, Ø10 Drill Bits
- ✓ Pipe Thread Sealant
- ✓ Hammer
- ✓ Hose Cutter or Sharp Knife
- ✓ Air Compressor / Compressed Air Source
- ✓ Hoist or Floor Jack
- ✓ Safety Stands
- ✓ Safety Glasses
- ✓ Center Punch
- ✓ Spray Bottle with Dish Soap

Before Installation

1. Ensure the application is correct for the maker, model and years of the vehicle you installing it on;

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

3. 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;

   Gross Vehicle Weight Rating: The maximum allowable weight of the fully loaded vehicle(including passengers and cargo). This number is shown on the vehicle's Safety Compliance Certification Label.

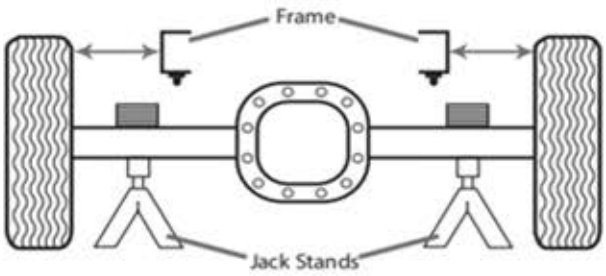
4. We recommend using a good quality anti-seize on all the fasteners, this will reduce the chances of corrosion of the fasteners, and help facilitate removal if required at a later date;

5. "Push to connect" air fittings provided require the end of airline to be round, square and cleanly cut to ensure the internal seal will not leak. It means that the airline must only be cut with a sharp razor knife or hose cutter.

⚠ DANGER

COMPRESSED AIR CAN CAUSE INJURY AND DAMAGE TO THE VEHICLE AND PARTS, IF IT IS NOT HANDLED PROPERLY. FOR YOUR SAFETY, DO NOT TRY TO INFLATE THE AIR SPRINGS UNTIL THEY HAVE BEEN PROPERLY SECURED TO THE VEHICLE.

STEP1: RAISE THE REAR AXLE



1, Remove any unnecessary weight from the vehicle to attain normal ride height. This is important for correct initial air spring setup and adjustment.
2, Park the vehicle on a level surface.
3, Record the vehicle's normal ride height, which 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.

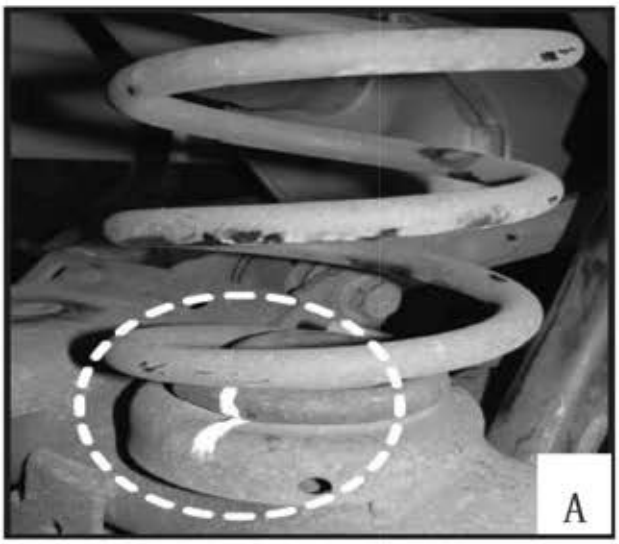
4, Raise the rear axle high enough to remove both rear wheels and attain a comfortable working height.
5, Place two jack stands under the axle, as shown in figure.
6, Lower the floor jack until the vehicle axle is supported by the jack stands.
7, Ensure the normal ride height measurement recorded earlier is the same. Adjust if necessary before proceeding.
8, Once the rear axle is raised correctly, remove the rear wheels.

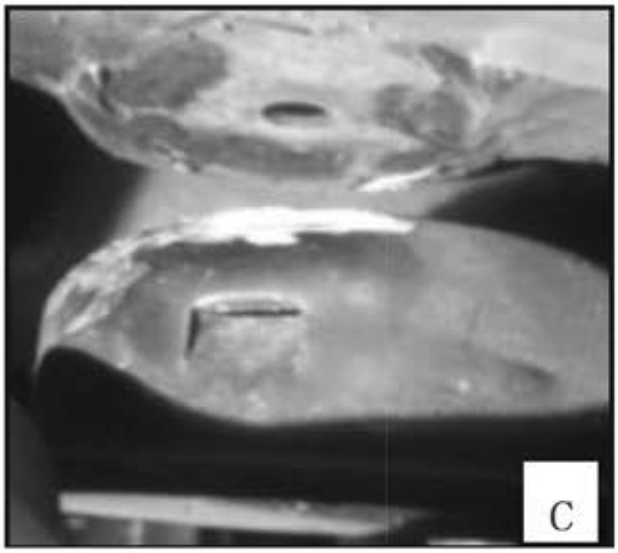
STEP 2: REMOVE COIL SPRINGS AND JOUNCE BUMPERS

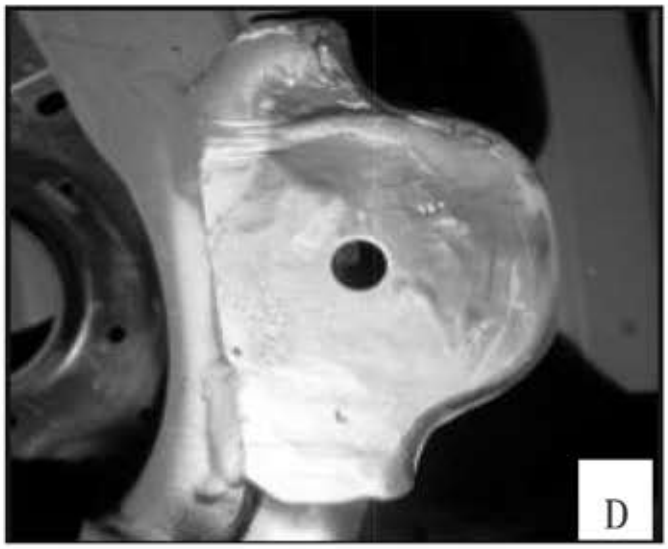
1, The bottom of the coil spring and the spring perch have to be marked before removal to ensure proper spring alignment for reinstallation, (photo A).
2, The lower shock bolts then have to be removed in order to lower the axle enough to gain clearance for removing the coil springs.
3, Now, simply pull out the jounce bumpers from the cups they sit in, (photo B).
4, Remove the jounce bumper cups by grinding the welds off as shown in photo C. Make sure that there are no excess weld material on the surface as the upper bracket has to sit flush on it.

NOTE: *Before grinding off the welds for the jounce bumper cup on the driver's side, make sure to plug the fuel tank vent with a piece of wet cloth.*

5, Paint the bare, newly ground surface to protect it from rust.(photo D)







STEP 3: ATTACH THE UPPER FRAME BRACKETS

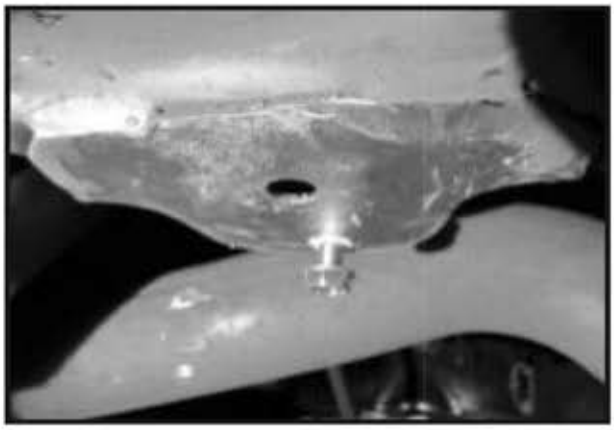
1, Take the supplied M8 socket head bolt and put it through the slot in one of the upper brackets (photo A). Fasten it with the supplied M8 nut (photo B), leaving it just loose enough to be able to slide on the slot (this will be removed and used on the other bracket).
2, Put the bracket up against the frame with the head of the M8 bolt lined up inside the existing hole on the frame and mark it with a paint pen, from the hole next to the slot where the M8 bolt is (photo C).
3, Center punch the frame where the mark is, drill a 6.3mm(1⁄4") hole, and thread in one of the provided M8 self-tapping screws (photo D). Once the hole has been tapped, remove the screw.
4, Remove the M8 bolt from the upper bracket replace the bracket on the chassis and bolt it in using the M8 self-tapping screw.

5, With the bracket sitting flush with the frame, center punch and drill two 6.3mm holes through the frame (photo E).
F) After drilling both 6.3mm holes, thread in two more M8 self-tapping screws through the frame and torque to 15 ft-lbs (photo F).

A

B

C



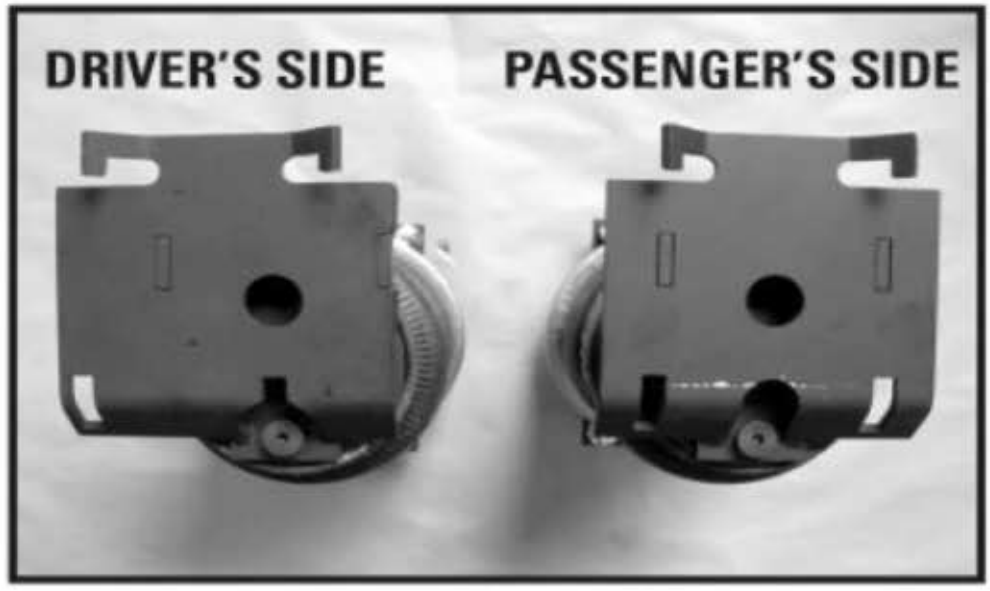
D

E

F

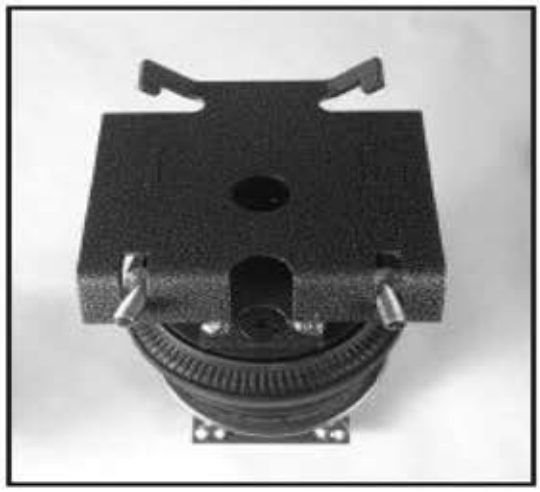
STEP 4: ASSEMBLY THE AIR SPRING

1, Put a roll plate on top of the air spring, making sure that each holes line up.
2, Attach a 90° air fitting on the air spring finger tight then tighten an additional one and a half turns.
3, Take both upper air spring brackets, insert a carriage bolt on each corner hole, and install a bracket on each air spring using two M10 hex head cap screws, two M10 lock washers, and two M10 flat washers. Torque to 20 ft-lbs (27 N•m) .
4, Put both air springs upside down, with the air fittings facing out and opposite of each other.
5, Set the remaining two roll plates on the air springs and attach the lower brackets with two of the supplied M10 flat head screws each as shown in photo. Torque to 20 ft-lbs (27N•m).



STEP 5: INSTALL THE ASSEMBLIES

1, Set the assemblies on the jounce bumper strike plate on the axle as shown in photo B and C. The pre-inserted carriage bolt on the driver side lower bracket has to go in the corresponding hole on the jounce bumper strike plate.
2, Insert the M10 carriage bolts into the slots on the lower bracket and through the holes in the jounce bumper strike plate. Fasten with the supplied M10 serrated flange nuts and torque to 31 ft-lbs (42 N•m).
3, Raise the axle up enough for the carriage bolts on the top of the air spring assemblies to go through the holes on the upper frame bracket. Fasten with the remaining M10 serrated flange nuts and torque to 31 ft-lbs (42 N•m) (photo D).



A

B

C

D

STEP 6: AIR LINE INSTALLATION

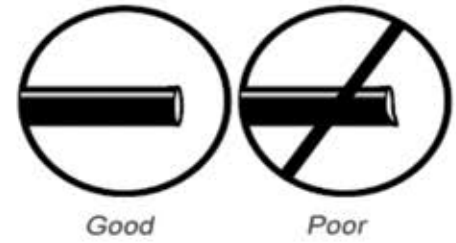
1, Choose a convenient location for mounting the inflation valves. Popular locations for the inflation valve are:

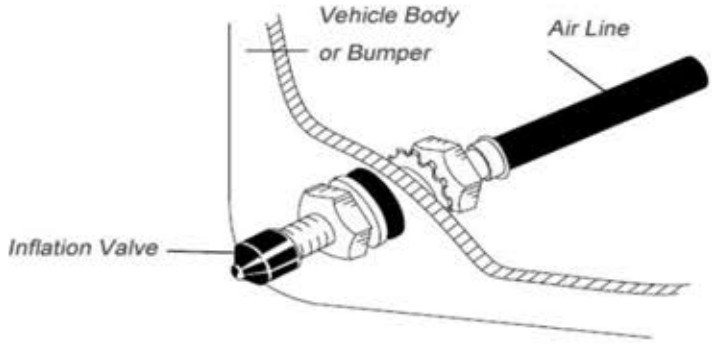
a. The wheel well flanges
b. The license plate recess in bumper
c. Under the gas cap access door
d. Through the license plate

2, Drill two 5/16" holes to install the inflation valves.

3, Cut the air line assembly into two equal lengths, insert one end of the air line into the air fitting and mounting the inflation valve to the drilled holes.

Caution: When cutting or trimming the air line assembly, require the end of airline to be round, square and cleanly cut to ensure the internal seal will not leak. It means that the airline must only be cut with a sharp razor knife or hose cutter





STEP 8: CHECK SYSTEM FOR LEAK

Inflate both the air springs to 90 PSI, use dish soap and water mixture on all airline connections to detect air leaks. Repair as necessary and retest. Inflate your air springs to 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.

Maintenance and Servicing

1， Pressure Rang： 10 PSI ~ 100 PSI

⚠ WARNING Failure to maintain correct minimum pressure or pressure proportional to load, bottoming out, over-extension or rubbing against another component will avoid the warranty.

2. 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, otherwise a rough ride will result;

3. Check the air pressure weekly;

4. When lifting the vehicle with a floor jack or hoist on the frame, never allow the air springs 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;

5. If it is must to raise the vehicle by the frame, make sure the air springs are at minimum pressure(10 PSI) to reduce the tension on the suspension/brake components. Use of onboard leveling systems do not require deflation or disconnection;

6. Tuning the air pressure： Pressure determination comes down to three things— level vehicle, ride comfort, and stability.

1） **Level vehicle**

If the vehicle’ s headlights are shining into the trees or the vehicle is leaning to one side, then it is not level (fig. 22). Raise the air pressure to correct either of these problemsand level the vehicle.

Bad headlight aim

2） **Ride comfort**

If the vehicle has a rough or harsh ride it may be due to either too much pressure or not enough. Try different pressures to determine the best ride comfort.

Rough ride

3） **Stability**

Stability translates into safety and should be the priority, meaning the driver may need to sacrifice a perfectly level and comfortable ride. Stability issues include roll control, bounce, dive during braking and sponginess. Tuning out these problems usually requires an increase in pressure.

Sway and Body roll

Frequently Asked Questions

Question #1: Will installing air springs increase the weight ratings of a vehicle?

No. Adding air springs will not change the weight ratings (GAWR, GCWR and/or GVWR) of a vehicle. Exceeding the GWVR is dangerous and voids the warranty;

Question #2: Is it necessary to keep air in the air springs at all times and how much pressure will they need?

The minimum air pressure should be maintained at all times. The minimum air pressure keeps the air spring in shape, ensuring that it will move throughout its travel without rubbing or wearing on itself.

Question #3：Is it necessary to add a compressor system to the air springs?

No. Air pressure can be adjusted with any type of compressor as long as it can produce sufficient pressure to service the springs. Even a bicycle tire pump can be used, but it’s a lot of work.

Question #4：How long should air springs last?

If the air springs are properly installed and maintained they can last indefinitely.

Question #5：Will raising the vehicle on a hoist for service work damage the air springs?
No. The vehicle can be lifted on a hoist for short-term service work such as tire rotation or oil changes. However, if the vehicle will be on the hoist for a prolonged period of time, Support the axle with jack stands in order to take the tension off of the air springs.