

Installation Manual



10121 KIT

Dodge Ram 4500/5500 Chassis Cab (2WD/4WD)
Sterling Bullet 4500/5500 Chassis Cab (2WD/4WD)*

Use the most advanced air springs on the market to eliminate your vehicle's sag, sway and bottoming out. This heavy duty air suspension kit levels your truck's stance while providing added support for an overall smooth and safe ride.



WARNING: This product can expose you to the chemical Hexavalent Chromate, which is known to the State of California to cause cancer and birth defects or other reproductive harm. *For more information go to www.P65Warnings.ca.gov*

IMPORTANT

This air suspension kit will not increase the GVWR (*Gross Vehicle Weight Rating*), as the GVWR is determined by the vehicle manufacturer. **Do not exceed the maximum capacity listed by the vehicle manufacturer.**

Safety Warning!

Serious personal injury or death may result from an air spring failure or accident due to improper installation or air spring pressure operation or maintenance. Please read and abide the instructions, safety recommendations and maintenance suggestions throughout this manual.

Safety Warning!

Inflating an unsecured air spring is dangerous. If it bursts, it could be hurled into the air with explosive force resulting in serious personal injury or death. Never inflate an air spring unless it is secured to the vehicle.

Safety Warning!

Removing and replacing air springs can be dangerous. This is only a job for a qualified service professional. Never perform air spring service procedures without proper training, tools, and equipment.



BEFORE STARTING THE INSTALLATION:

1. Ensure the application information is correct for the make, model and year of the vehicle you are installing the kit on.
2. Some vehicles are equipped with a rear wheel brake proportioning valve. Check with the manufacturer before installing the air spring kit, as it may affect braking performance.
3. It is recommended to use a good quality anti-seize on all fasteners. This will reduce the chance of corrosion on the fasteners and will help facilitate removal, if required at a later date.

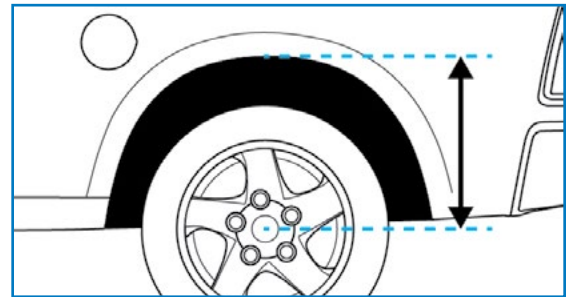
PLEASE NOTE:

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 THE NYLON HOSE CUTTER PROVIDED IN THIS KIT OR A SHARP UTILITY KNIFE.

1 MEASURE STOCK RIDE HEIGHT

Park the vehicle on a level surface. Remove any unnecessary weight from the vehicle to attain a Normal Ride Height. This is important for correct initial air spring set-up and adjustment.

Using a measuring tape, measure the distance between the center of the wheel hub and the bottom of the fender well (as shown in Figure 1) this will give you your ride height.



1

Note the ride height for all four corners.

2 REMOVE REAR WHEELS

Place wheel chocks in front of and behind both front wheels.

Raise the rear of the truck high enough to remove both wheels and attain a comfortable working height.

Place two jack stands under rear axle (shown in Figure 2).

Lower the vehicle until the axle is supported by the jack stands.

Remove rear wheels.



2

3 REMOVE JOUNCE BUMPERS

Remove the jounce bumpers on both sides of the vehicle (as shown in Figure 3).



3

4 SHOCK ABSORBER FASTENERS, SWAY BAR & E-BRAKE

Remove both lower shock absorber fasteners (as shown in Figure 4A).

Retain nuts and bolts for reuse.

Remove the 2 nuts holding the sway bar up to the axle tube bracket on both sides. Allow the sway bar to swing down towards the ground. Discard the factory sway bar bolts and retain the nuts for re-use.

The passenger side shock absorber mounting bracket has an emergency brake cable support bracket that needs to be removed (see Figure 4B for reference).

The top of the rear end housing has a bolt supporting the cable to the top of the rear end housing (see arrow in Figure 4C).

Remove the bolt and bracket and re-install the bolt.

PASSENGER SIDE ONLY - compress the shock absorber to allow the e-brake cable to be moved to the forward side of the shock absorber. (See Figure 4D for reference).



4A



4B

5 ABS SENSOR & HARNESS

Locate the ABS sensor and harness on the topside front of the rear end housing. This harness is supported on a stud with a white plastic fastener (as shown with an arrow in Figure 5A on the following page).

Remove the fastener.

Install the e-brake cable bracket to this stud (as shown in Figure 5B on the following page). A 5/16" nut is provided to secure the bracket.

Re-install the plastic fastener on the stud.



4C

6 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 - see Figure 6 on the following page for reference).

Apply thread sealant or Teflon tape to the threads of the 90° air fitting provided and install into the air inlet port.



4D

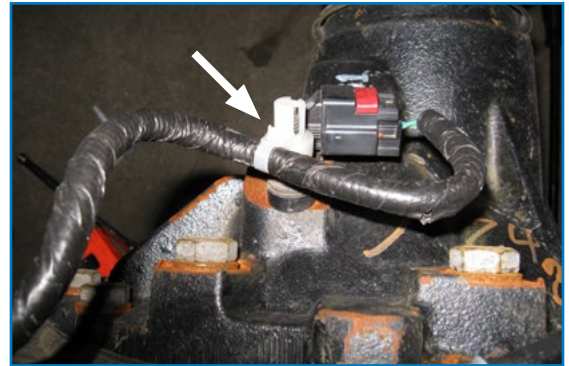
7 UPPER BRACKET

Place the upper air spring mounting bracket on top of the air spring and roll plate (as shown in Figure 7).

Note: 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.



5A

8 LOWER PLATE & BRACKET

Insert the two 5" long carriage bolts provided into the two elongated holes in the lower bracket.

Place the roll plate on the air spring with the rolled side towards the air spring.

Place the lower bracket on the air spring with the two carriage bolts on the opposite side to the air port.

Install the two 3/8" NF capscrews lock and small flat washers, do not tighten fully.

Ensure the air fitting is on the opposite side of the two carriage bolts.

Repeat steps 6 - 8 on the other air spring

The lower bracket mounting holes are slotted and need to be adjusted on the air spring before tightening the 3/8" NF fasteners.

Using Figure 8 on the following page, position one air spring assembly with the carriage bolts to your left. PULL the lower bracket towards you to the end of the slotted holes. Tighten the capscrews to 20 ft-lbs, 27 N•m. **This will now become the passenger side air spring.**

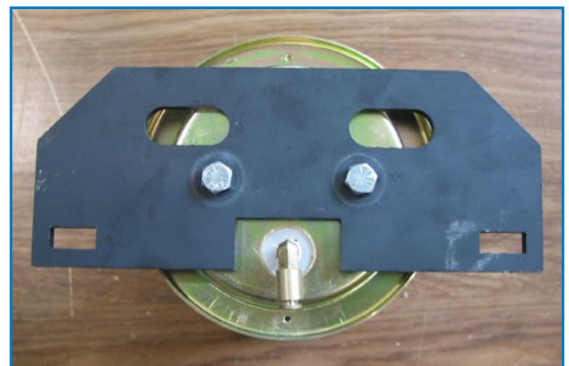
Position the other air spring assembly with the carriage bolts to your left. PUSH the lower bracket away from you to the end of the slotted holes. Tighten the capscrews to 20 ft-lbs, 27 N•m. **This will now become the driver side air spring.**



5B



6



7

9 ATTACH THE UPPER BRACKET

Using the M10 x 35 capscrews provided, fasten the upper air spring mounting bracket to the frame (as shown in Figure 9). 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.

10 INSTALLING THE AIR SPRING

Insert the air spring between the jounce bumper mounting plate and the axle tube (as shown in Figure 10). 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 and 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 1¼" long carriage bolts up from the bottom through both the upper mounting plates. Install the large flat washers and nylock nuts provided.

Loosely install the axle straps to the carriage bolts using the large flat washers and nylock nuts provided.

11 SUPPORT BRACKETS

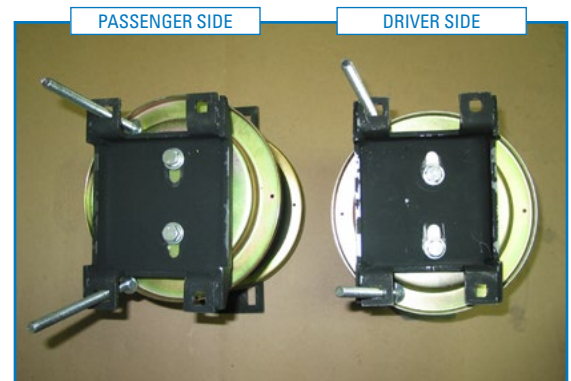
Using the M10 x 35 capscrews provided, insert one capscrew into each of the lower support brackets (as shown in Figure 11).

Insert the lower end of the support brackets with bolts into the axle tube sway bar brackets. Lift the sway bar up and loosely install the original nuts.

12 AXLE STRAPS

Loosely install the 3/8 - 16 x 1 ¾" bolts with large flat washers and nylock nut into each of the lower air spring brackets to the support brackets (as shown in Figure 12 on the following page).

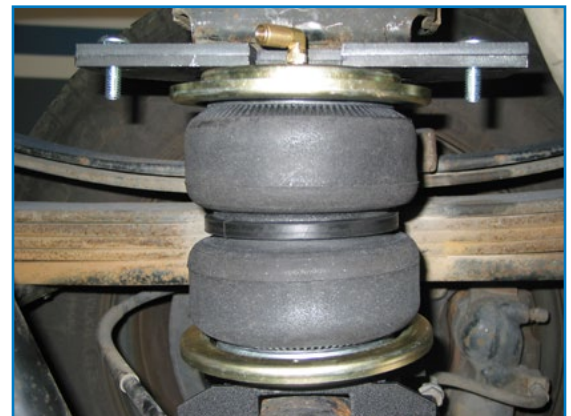
Install the axle straps onto the 5" long carriage bolts. Loosely install the large flat washers and nylock nuts provided.



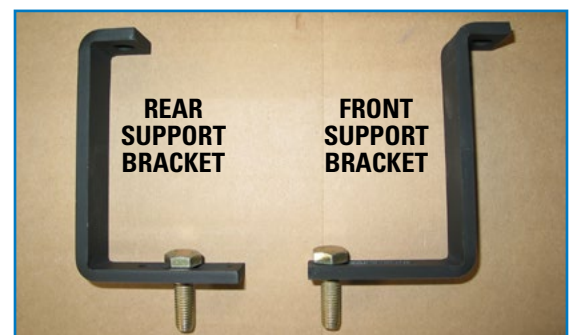
8



9



10



11

13 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 Figure 13).

14 CHECK THE CLEARANCE

Ensure adequate clearance exists between the brake lines and the carriage bolts. The brake line must not touch the carriage bolts (as shown in Figure 14). Adjust to attain clearance if necessary.

Once correct alignment of the air spring is attained:

Tighten the four sway bar bolts to 45 ft-lbs, 61 N•m.

Tighten the two 1¼" carriage bolts of the top brackets to 20 ft-lbs, 27 N•m.

Tighten the two axle strap carriage nuts to 20 ft-lbs, 27 N•m.

Tighten the two support bracket to upper bracket fasteners to 20 ft-lbs, 27 N•m.

Repeat on the other air spring.

Re-install and tighten both lower shock absorber fasteners. Torque to 100 ft-lbs, 135 N•m.

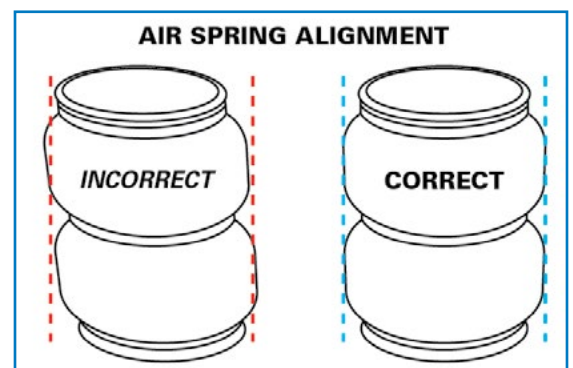
15 INSTALL HEAT SHIELD

Bend tabs on the heat shield so the required ½" of dead space exists between the heat shield and exhaust when attached.

Attach the heat shield to the exhaust pipe on passenger side using two ring clamps (shown in Figure 15). Each hose clamp holds a tab against exhaust pipe.



12



13



14



15

16 INSTALL AIR LINE

PLEASE 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 THE NYLON HOSE CUTTER PROVIDED IN THIS KIT OR A SHARP UTILITY KNIFE

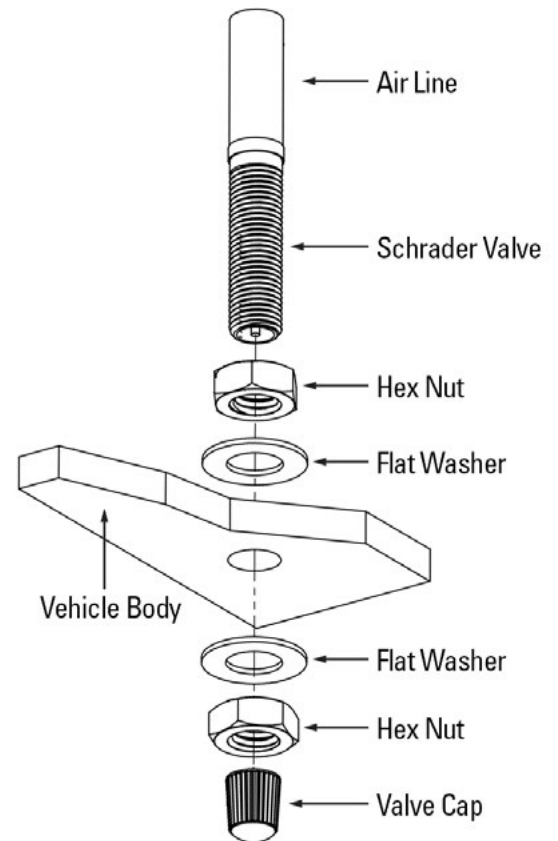
Provided in air spring kit are two fill valves. The most common place to install is in place of license plate fasteners. Alternatively, two 5/16" holes can be drilled in a convenient location.

Cut air line assembly into two equal lengths with hose cutter.

Install one air line, route the nylon air line to an air spring fitting and cut the hose. Moisten the end of the air line prior to inserting it into the fitting and push it in until it stops. Repeat with the other fill valve.

Secure airlines using the tie-straps, away from moving items and heat sources.

Place a 5/16" nut on the air valve. Leave enough of the inflation valve in front of the nut to extend through the hole, install a flat washer, and 5/16" nut and cap (reference Figure 16 for assembly). There should be enough valve exposed after installation—approximately 1/2"—to easily apply a pressure gauge or an air chuck.



16

If an in-cab inflation kit is being installed, follow the instructions provided with that kit now.

17 CHECK SYSTEM FOR LEAKS

Inflate both air springs to 90 psi and then use a mixture of dish soap and water on all air line connections to detect any air leaks. Large, expanding bubbles indicate a leak (as shown in Figure 17). Repair as necessary and retest.

Inflate air springs to a predetermined value and on following day recheck pressure. If one or both of air springs have lost pressure, an air leak is present. Leak must be repaired, and then retested until no leaks exist.



17

AFTER COMPLETING THE INSTALLATION

PLEASE REMEMBER:

Install wheels and torque fasteners to manufacturer's specifications.

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

For safe and proper operation, never operate the vehicle under minimum of 10 psi or over maximum of 100 psi in air springs. Staying within pressure limit will ensure maximum air spring life. Failure in doing so may result in a void warranty (see **Note** below).

NOTE: Do not exceed maximum vehicle payload. Failure to do so may result in failure of the air suspension kit and/or damage to your vehicle.

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Thank you again, and congratulations on the installation of the air suspension kit.

OPTIONAL ACCESSORIES

Optional dual needle air gauges are available to monitor pressure in each spring from vehicle cab, as well as a full line of air compressors, air tanks, and solenoids built to work with and control your air spring system.

OPERATING YOUR VEHICLE WITH AIR SUSPENSION

Air springs have minimum and maximum pressure requirements. Never operate your vehicle with less than 10 psi in air spring and never inflate air springs over 100 psi. Damage to air springs will result.

Check air pressure in air springs daily for first couple of days to ensure a leak has not developed. 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 vehicle with no load. This will result in a harsh ride.

SERVICING YOUR VEHICLE WITH 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, the owner must submit their warranty card or register online within 30 days of the purchase date.

NOTE: The owner's warranty will be void if air springs are run with less than the minimum of 10 psi.

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