



SYNERGY MFG. 870 INDUSTRIAL WAY, SAN LUIS OBISPO, CA (805) 242-0397

## INSTALLATION INSTRUCTIONS 8516 DODGE ADD-A-LEAF PACK

### GENERAL NOTES:

- These instructions are also available on our website at [www.synergymfg.com](http://www.synergymfg.com) Check the website for any updated instructions and additional photos for reference.
- These add a leaf packs are designed to replace the factory overload spring for an improved ride both on and off road.
- The installation of this pack will affect the truck's load carrying characteristics when the factory overload is removed. The owner will notice more "squat" in the rear when carrying heavy loads. If large loads are frequently hauled, we suggest adding some form of airbag kit in conjunction with this kit for optimum ride and load carrying characteristics.
- This is a bolt on installation and can be done with simple hand tools, some quality C-clamps, a jack and jackstands.
- The following installation is done on 2010 CTD 2500 4x4 truck. Installation on other Dodge applications will be similar.
- **\*\*NOTE\*\*** If your truck is equipped with square u-bolts which wrap around the leaf spring as shown below, you will need to re-use the existing u-bolts or purchase a PPM-3127-300 U-bolt spring plate to utilize the new U-bolts provided in the kit.



Part Number Descriptions:

- 8516-01-350 - 1994-2002 2500 4X4 trucks w/ auto trans & D70 rear end (3.5" axle tube, single center pin)
- 8516-01-400 - 1994-2002 2500 4x4 trucks w/ manual trans & D80 rear end (4.0" axle tube, single center pin)
- 8516-02-350 - 2003-Present 2500 / 3500 trucks w/ gas engines & 10.5" AAM rear end (3.5" axle tube, dual center pin)
- 8516-02-400 - 2003-Present 2500 / 3500 trucks w/ diesel engines & 11.5" AAM rear end (4.0" axle tube, dual center pin)

## PARTS LIST:

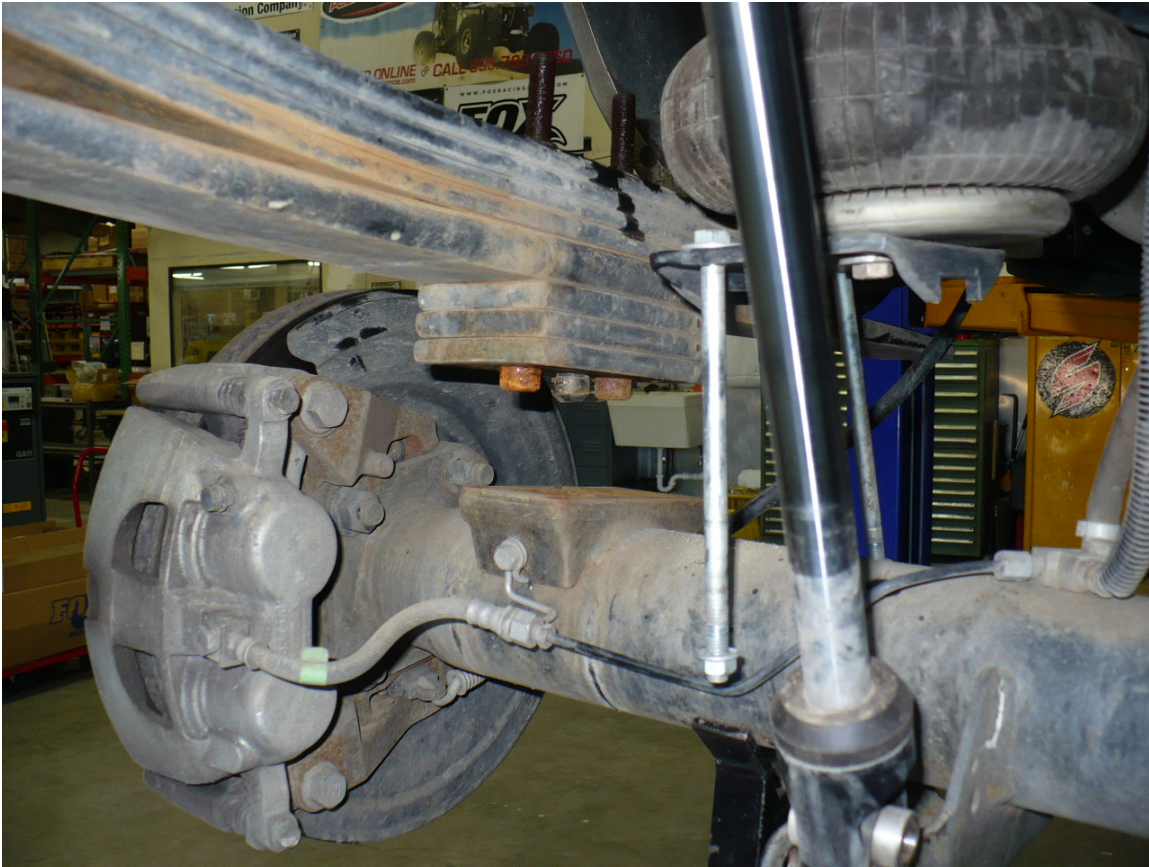
1. (2) PPM-8516 Add-a-leaf packs (Single or Dual center pin depending on part number)
2. (2 or 4) ½-20 UNF x 6.0” long replacement center pins
3. (4) 9/16-18 UNF x 4.0” or 3.50” x 9-10” long HD E-coated U-bolts (Size varies depending on part number)
4. (8) 9/16-18 UNF GR 8 tall nuts
5. (8) 9/16” ASTM F436 hard washer extra thick

## INSTRUCTIONS:

- 1) Begin by safely supporting the vehicle on jack stands to allow the rear suspension to hang free.
- 2) Remove both rear tires.
- 3) Remove the factory shocks, U-bolts and spring plates.
  - **\*\*CAUTION\*\*** Be sure to safely support the rear axle and not let it hang by the brake line, abs wiring or e-brake cable.

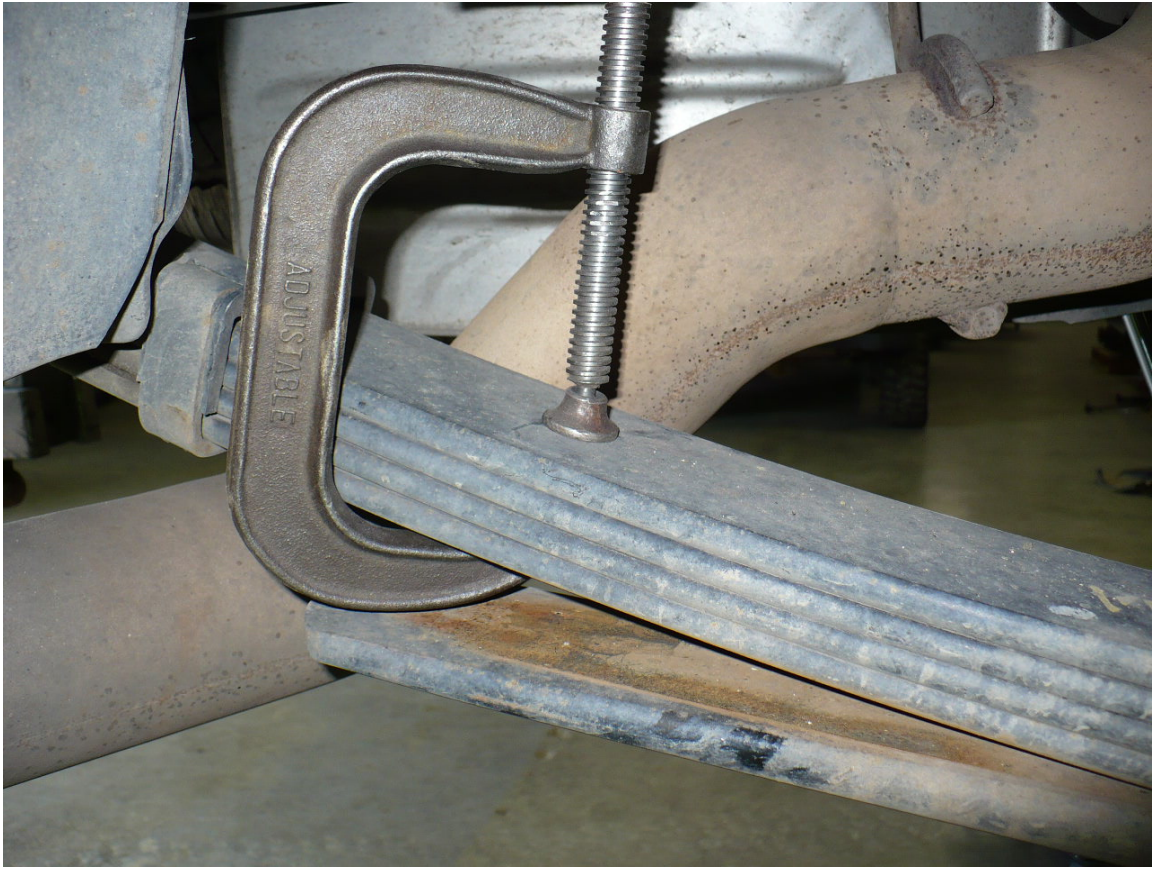


Stock rear suspension prior to tear down.

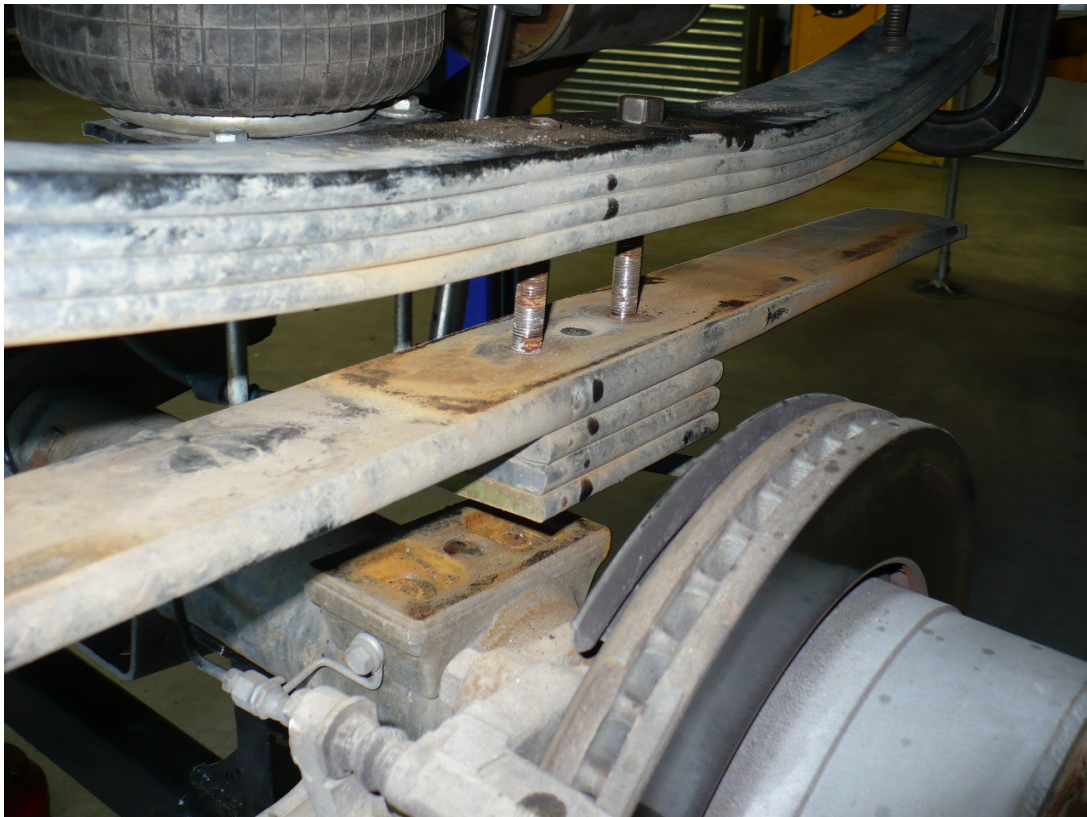


Shocks, U-bolts and spring plates disconnected.

- 4) At this time, it is a good idea to soak the center pin(s) with a quality lubricant or penetrating lube as they often rust and become difficult to remove.
  
- 5) Next, use 2 quality C-clamps at either end of the spring and clamp the main leaf pack together as to allow for easier disassembly. Do not clamp the overload spring.

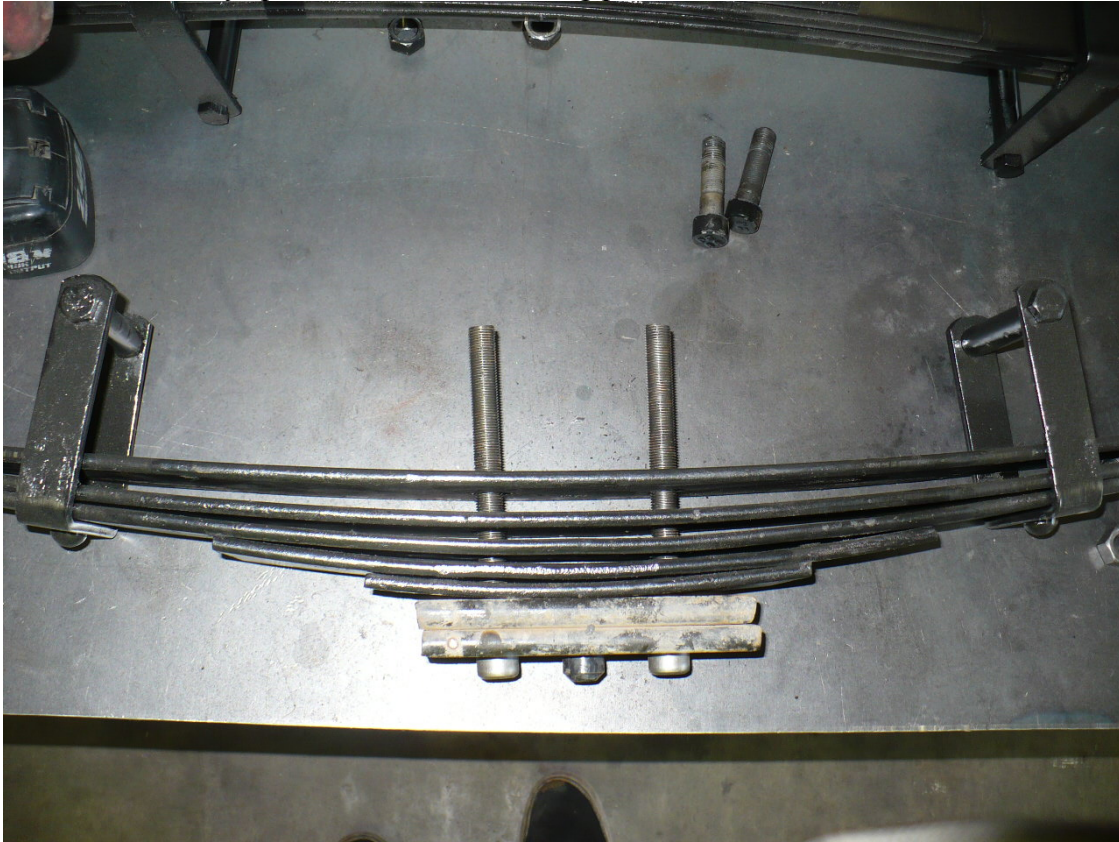


- 6) Remove the nuts on the center pin(s). You may need to hold the bottom of the center pin with a pair of vise grips to keep it from turning.



- 7) To retain approximately the same ride height, we recommend removing the overload spring and 1 factory spacer block.
- For more lift, retain all 3 factory spacer blocks
  - For less lift, remove the overload and both spacer blocks.
  - Always retain the bottom spacer block as it features an axle indexing pin.

- 8) For reassembly, begin by removing the small center pin(s) assembled in the add-a-leaf packs and replacing them with the 6" long center pin(s) as shown. Again, use some C-clamps to clamp the spring together for safety.
- 9) Be sure to use the factory spacer block with indexing pin on the bottom as shown below.



- 10) Remove the spring clamp retainer hardware.



11) Install onto the vehicle's main leaf as shown. Repositioning of the C-clamps may be necessary to get center pin hardware started.



12) Tighten center pin nut(s) to 80 ft-lbs and re-install spring clamp hardware.



13) Align center pin(s) into axle perch and raise axle into place. Install U-bolts and spring plates at this time. Snug down U-bolt hardware evenly but do not fully tighten at this time.





- 14) Reinstall shocks and tires. Torque to OEM specs.
- 15) Lower truck to ground so the suspension is sitting at ride height. Torque U-bolts to their final spec of 100 ft-lbs at this time.
- 16) Re-check U-bolt torque after 100 miles of driving.
- 17) Installation is complete.