

559-734-7451 800-367-5480 FAX 559-734-7460

INSTALLATION INSTRUCTIONS

6091 Air Suspension Kit (pat. pending)

1999-2006 Tahoe, Suburban, Avalanche, Yukon

Thank you for purchasing a quality Hellwig Product.

**PLEASE READ THIS INSTRUCTION SHEET COMPLETELY BEFORE STARTING
YOUR INSTALLATION**

IMPORTANT NOTES

**IF EQUIPPED WITH FACTORY PREMIUM RIDE OR
AUTOLEVEL SUSPENSION, CONTACT HELLWIG
PRODUCTS CO. FOR FURTHER INSTRUCTIONS.**

***DO NOT INFLATE ANY AIR SPRING ASSEMBLY UNLESS IT HAS BEEN
PROPERLY INSTALLED ON VEHICLE.***

DO NOT INFLATE AIR SPRINGS OVER 100 PSI

**CHECK AIR PRESSURE IN THE SYSTEM DAILY TO ENSURE
SYSTEM PERFORMANCE AND MAINTENANCE OF
WARRANTY.**

**A MINIMUM OF 25 PSI MUST BE MAINTAINED IN AIR SPRINGS
AFTER INSTALLATION FOR WARRANTY TO BE VALID. FAILURE TO
KEEP MINIMUM PRESSURE IN AIR SPRINGS WILL VOID WARRANTY.**

**THIS UNIT IS DESIGNED TO INCREASE THE LEVEL LOAD CARRYING
CAPACITY OF YOUR VEHICLE. NEVER LOAD THE VEHICLE THIS
UNIT IS INSTALLED ON BEYOND THE MANUFACTURER'S MAXIMUM
GROSS VEHICLE WEIGHT RATING.**

**OVERINFLATION AND IMPROPER USE MAY RESULT IN PERSONAL
INJURY AND/OR DAMAGE TO YOUR VEHICLE AND PROPERTY.**



559-734-7451 800-367-5480 FAX 559-734-7460

BEFORE STARTING YOUR PROJECT

WHEN LIFTING A VEHICLE WITH A JACK, BE SURE TO SET THE PARKING BRAKE AND USE SAFETY STANDS.

ENSURE THAT THE INSTALLATION OF COMPONENTS WILL NOT CRUSH OR DAMAGE FUEL AND BRAKE LINES OR ELECTRICAL HARNESSSES.

BEFORE DRILLING ANY HOLES, ENSURE THAT ALL ELECTRICAL WIRES, FUEL LINES, BRAKE LINES, BRAKE HOSES AND ANY OTHER COMPONENTS ARE MOVED OR PROTECTED TO AVOID DAMAGE FROM DRILLING ANY HOLES .

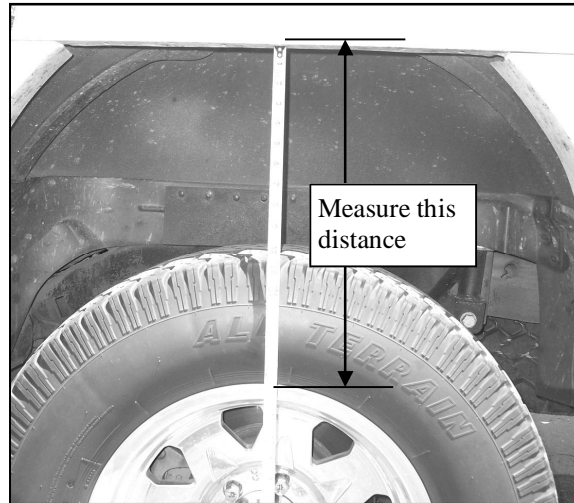
DO NOT ATTEMPT ANY MODIFICATIONS TO THE VEHICLE OTHER THAN THOSE OUTLINED IN THIS INSTRUCTION SHEET. IF ANY INTERFERENCE WITH THE GAS TANK, FUEL LINES, BRAKE LINES, EXHAUST PIPE, ETC. EXISTS, STOP YOUR INSTALLATION AND CALL HELLWIG PRODUCTS FOR TECHNICAL HELP.

IF WHEELS ARE REMOVED FOR INSTALLATION OF KIT, CHECK MANUFACTURERS SPECIFICATIONS FOR PROPER LUG NUT TORQUE BEFORE REINSTALLING WHEELS.

WHEN CUTTING AIR BRAKE TUBING, A SQUARE CUT IS REQUIRED AND THE HOSE END MUST NOT BE DEFORMED OR LEAKAGE MAY RESULT. IF DEFORMATION OF THE HOSE END OCCURS, THE HOSE END MUST BE REWORKED SO THAT IT IS ROUND.

ENGAGEMENT OF THE SEALING O-RING WILL BE FELT WHEN THE AIR LINE HAS BEEN INSERTED PROPERLY INTO THE FITTING. FITTINGS MAY BE DISCONNECTED IF REQUIRED BY PUSHING DOWN ON THE OUTER RING WHILE PULLING FIRMLY ON THE AIR LINE.

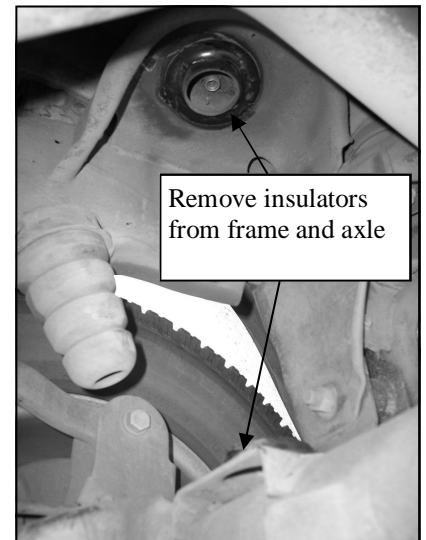
ROUTE AIR LINES AWAY FROM EXHAUST PIPES OR ANY OTHER SOURCES OF HEAT AND ENSURE THAT THE AIR LINES ARE PROTECTED FROM SHARP EDGES.

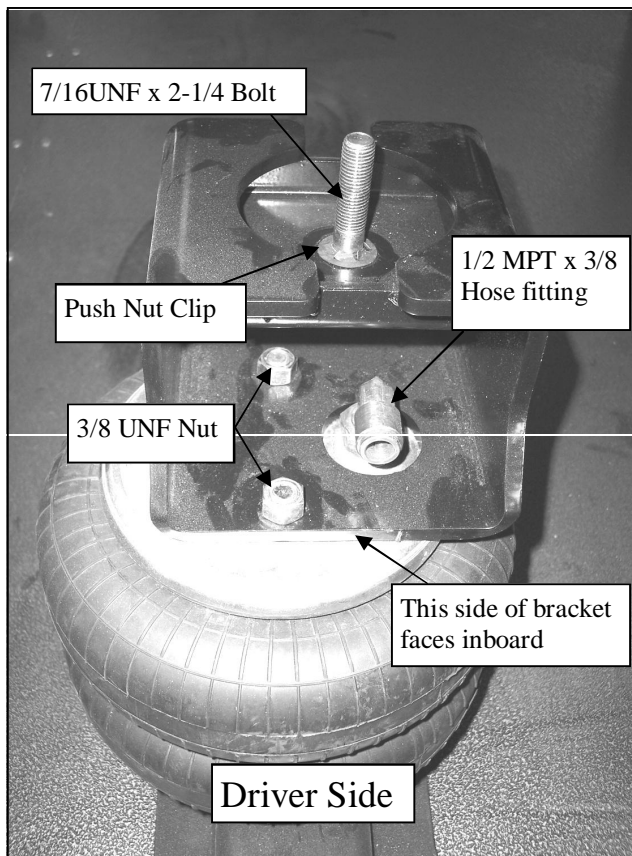


1. Prepare vehicle for installation by chocking front tires and setting emergency brake. Before starting installation, measure the distance from the top of rear wheel to fender lip as shown. This is the original ride height of the vehicle. Write this measurement down as this will be used to set the height of the air springs later in the installation.

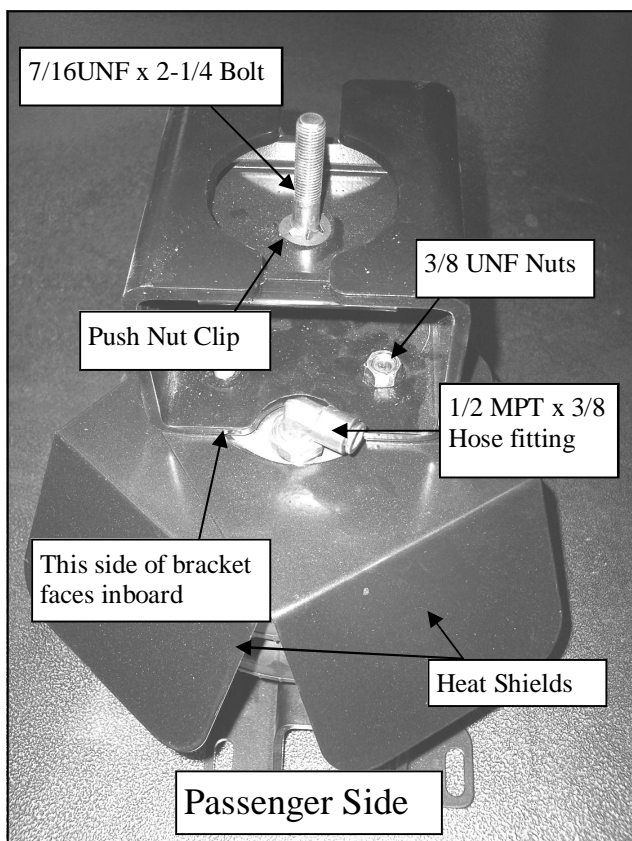


2. For ease of installation, position the rear wheels on automotive ramps. Ensure vehicle is secure and disconnect shock absorbers from rear axle. Raise vehicle frame until coil springs are unloaded. Support frame with jack stands and remove coil springs and insulators from vehicle. Do not remove bump stops from frame.

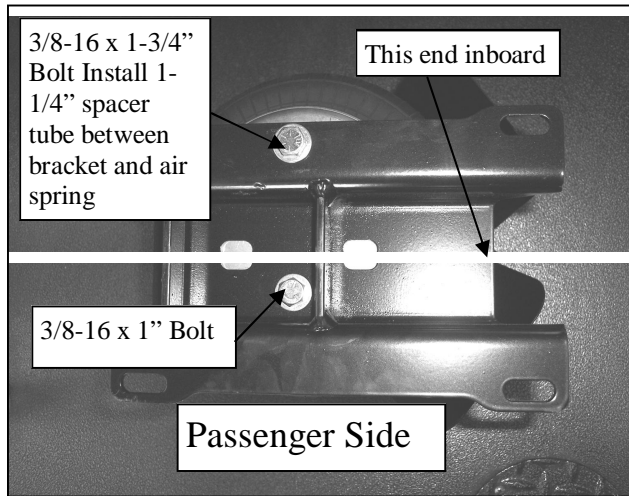
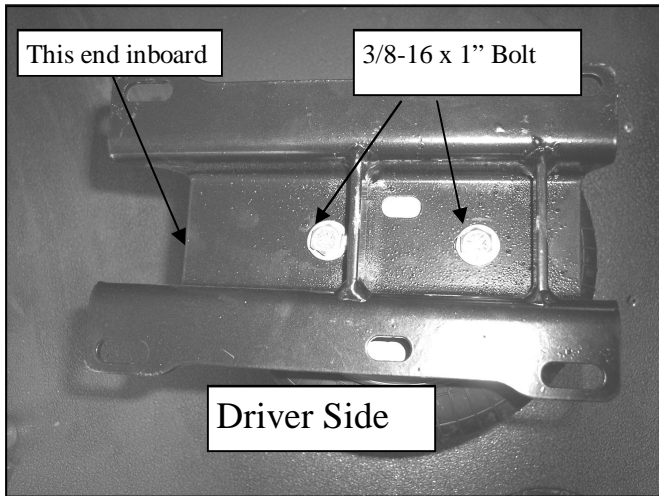




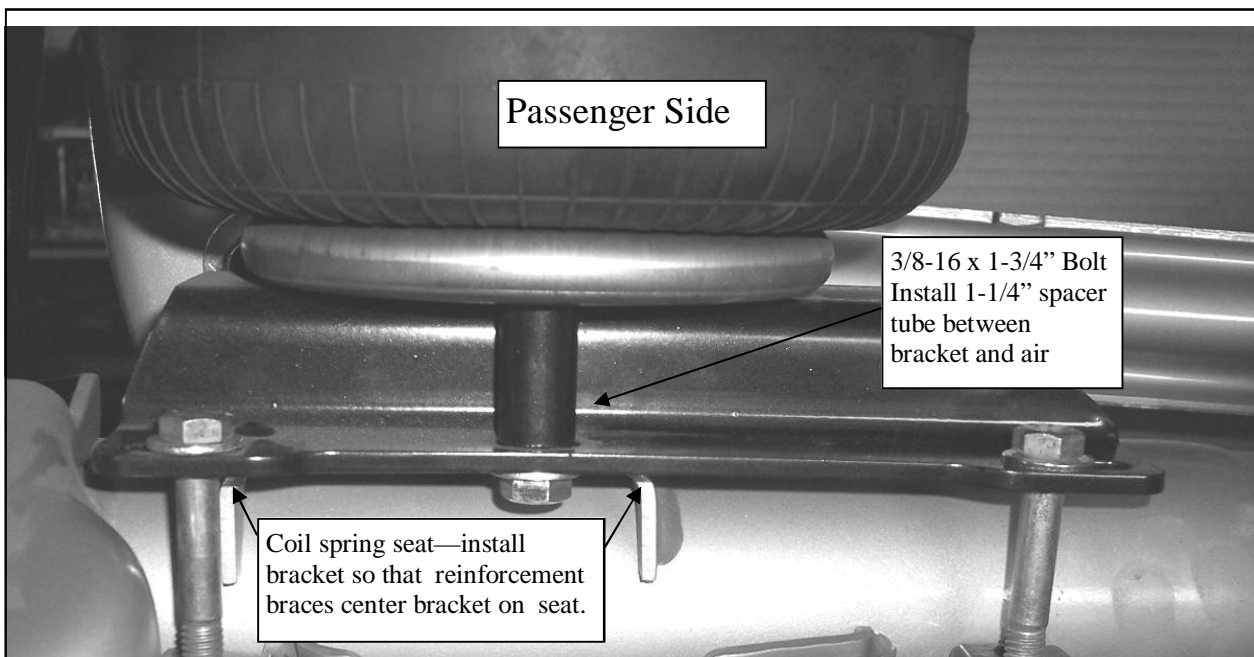
3. Prepare driver side air spring assembly by installing 1/2" MPT x 3/8 push to connect fitting into air spring. Torque to 25-30 ft-lb. The driver side frame bracket has a full circle cut out for the air fitting instead of a cut-out on the edge. Attach frame bracket to air spring with 3/8" UNF nuts. Torque to 20 ft-lb. Place 7/16-20x2-1/4" bolt through hole in frame bracket and retain with push nut clip. Push nut can be installed on bolt by pushing on clip with a deep well socket while holding head of bolt in place.

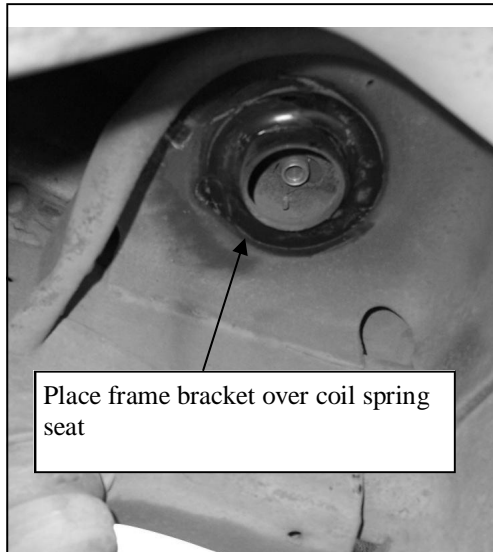


4. Prepare passenger side air spring assembly by installing 1/2" MPT x 3/8 push to connect fitting into air spring. Torque to 25-30 ft-lb. The passenger side frame bracket has a cut-out on the edge of the bracket for the air fitting. Place two (2) heat shields on top of air spring as shown and attach frame bracket to air spring with 3/8" UNF nuts. Torque to 20 ft-lb. Place 7/16-20x2-1/4" bolt through hole in frame bracket and retain with push nut clip. Push nut can be installed on bolt by pushing on clip with a deep well socket while holding head of bolt in place.

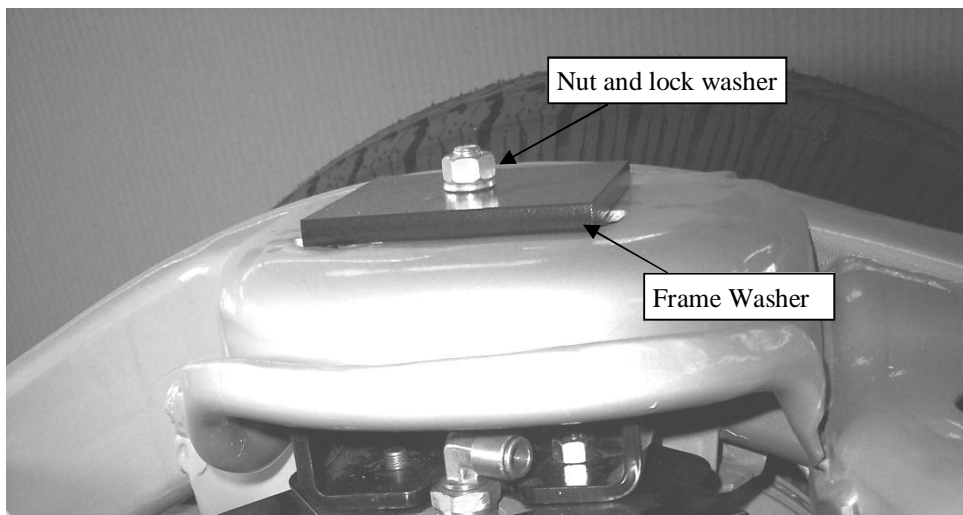


5. Attach axle bracket to air spring as shown. The reinforcement braces are to be installed over the coil seat on the axle. Note that the bracket is installed so that the braces are under the air spring. The section of the axle bracket without braces will be installed so that it faces inboard toward the center of the axle. There are differences in how the brackets attach to the air spring for the driver and passenger assemblies. On the passenger side assembly attach the 3/8-16 x 1-3/4" bolt and 1-1/4" spacer to air spring and axle bracket as shown. Then attach 3/8-16 x 1" bolt to air spring through middle hole of axle bracket as shown. Snug bolts but do not tighten to allow for adjustment. On the driver side assembly attach the axle bracket to the air spring using the slotted holes as shown using 3/8-16 x 1" bolts. Snug bolts but do not tighten to allow for adjustment.

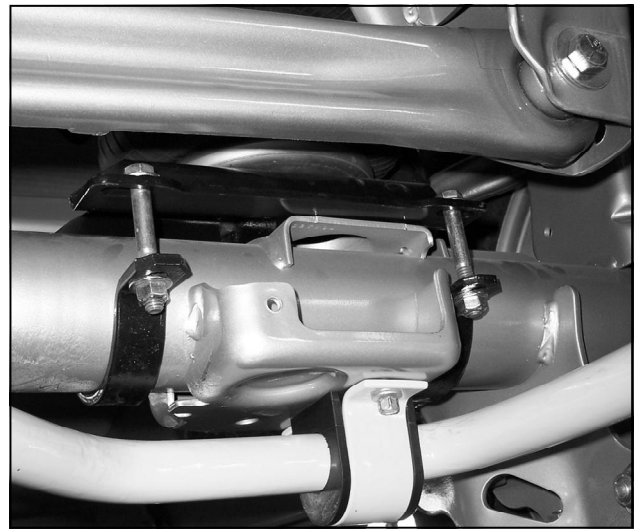
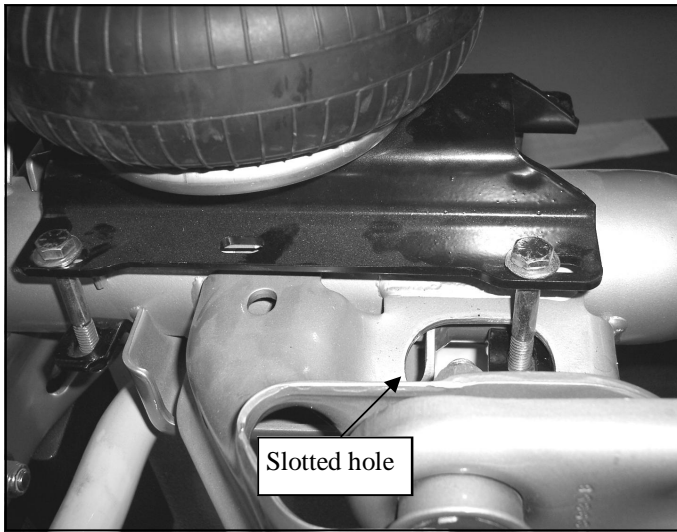
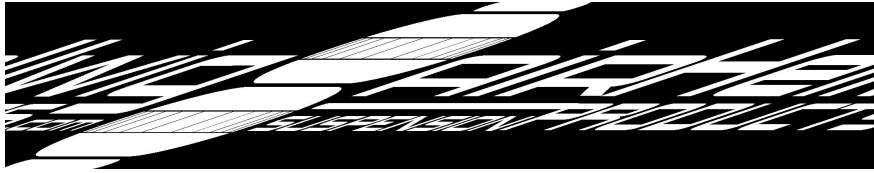




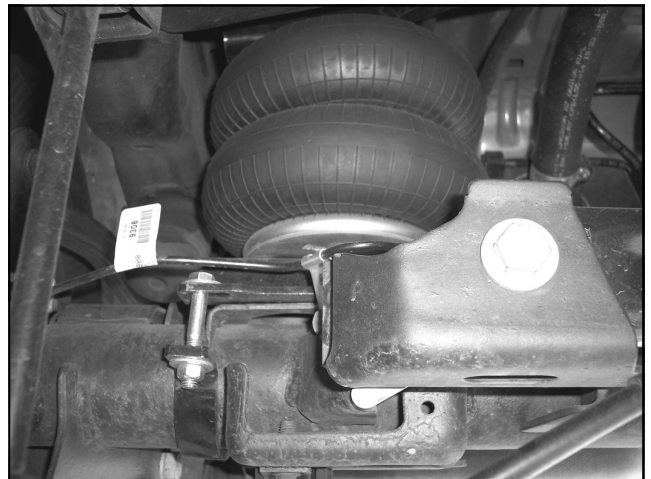
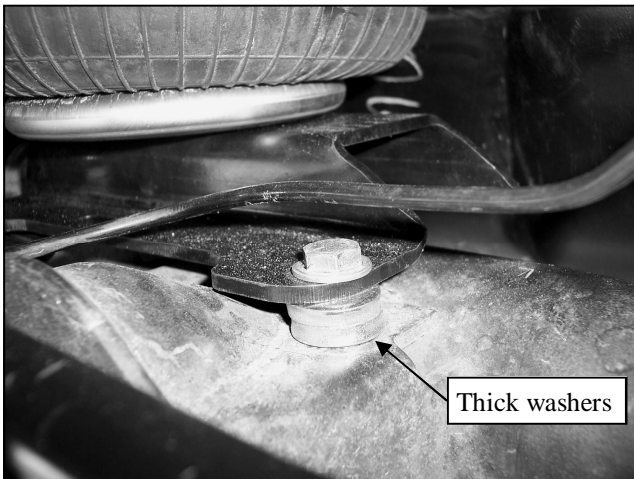
6. Compress air spring assembly and install between axle and frame. Place brackets over coil spring seats so that the cut-out in the frame bracket and the reinforcements in the axle bracket fit over the raised lip of the seat. Adjust axle brackets so that air springs sit square and tighten bolts to 20 ft-lb. Heat shields may need to be bent slightly to clear exhaust pipe.



7. To aid assembly of brackets to frame, lower frame of vehicle slightly so that the air spring assembly holds itself in place between the axle and frame. While lowering frame, DO NOT get under vehicle or place hands between axle and frame. Place frame on jack stands before continuing work. Attach frame bracket by placing frame bracket over coil spring seat so that the cut-out in the frame bracket fits over the raised lip of the seat. Place frame washer over bolt and attach bracket with 7/16" nut and lock washer. Tighten 7/16" bolt to 35-40 ft-lb. Due to the close quarters of the body and frame it is advised to hold the nut in place with a wrench and tighten the bolt head. To gain additional clearance to tighten the nut, the plastic inner fender wells can be unbolted.



8a. **1999– early 2006 models**—Driver side panhard axle bracket has a large slotted hole to insert bolt through as shown. Place 3/8-16x2-3/4” bolts through slotted holes in axle bracket as shown and attach qty 2 axle straps per side to axle using washers and 3/8” locknuts. Tighten nuts until legs of axle straps bend slightly. Relocate brake lines so that they do not interfere with axle brackets, bolts, straps and air springs.



8b. **Late 2006 models on** - Driver side panhard axle bracket does not have a large slotted hole. Place 3/8-16x2-3/4” bolts through slotted holes in axle bracket as shown and attach qty 2 axle straps to passenger side axle bracket using washers and 3/8” locknuts. Attach 1 axle strap to outboard side of axle bracket only as shown for early models. Place qty (2) 1/4” thick washers between axle bracket and panhard axle bracket as shown. Shim axle bracket with additional flat washers until bracket is parallel with axle. Insert 3/8-16 x 1-1/2 bolt and tighten locknut to 20 ft-lb. Tighten nuts on axle straps until legs of axle straps bend slightly. Relocate brake lines so that they do not interfere with axle brackets, bolts, straps and air springs.



10. Recheck all fasteners for proper torque and ensure adequate clearance to all vehicle components – exhaust, brake hoses, brake lines, shocks, differential, etc. Make sure that passenger side panhard bolt will not contact air spring during use. A minimum of 1/2” clearance is required. If necessary, remove and re-install panhard bolt with bolt head facing air spring to provide clearance.

11. Select a location for the air inflation valves. The location can be on the bumper or body of the vehicle where an air chuck can be used to inflate the air springs. Select a location where the valve will not be damaged or interfere with the operation of other components.
12. Cut air brake lines to length and connect air lines to fittings by pushing the air line into the air fittings as far as possible. A length of heat shielding is provided to protect the air line as it exits the passenger side air spring.
13. Inflate air springs to 40 psi and check for leaks. A soapy water solution can be used to find slow leaks.
14. When satisfied with integrity of the system, adjust air pressure to desired level. The air springs can be inflated to any level between 25 and 100 psi. DO NOT run the air springs empty or warranty will be void. Failure to keep air in the air springs will void the warranty. For best RIDE use only enough air pressure as required to level the vehicle. If a firmer ride is desired, more pressure can be used.
15. **CHECK AIR PRESSURE IN THE SYSTEM DAILY TO ENSURE SYSTEM PERFORMANCE AND MAINTENANCE OF WARRANTY.** Just like tires, the air pressure in the system will vary due to temperature changes. For your air spring system to function properly it must be checked on a daily basis. Failure to maintain air pressure will result in



For Best Performance

This suspension system is designed to work with the factory supplied shocks and suspension components, however, for increased performance, Hellwig Products recommends the following suspension upgrades:

2000-06 Models

Monroe Reflex Shock Absorber p/n 911178 front* / 911166 rear*

Hellwig p/n 7633 1-5/16" front sway bar

Hellwig p/n 7650 1-1/4" rear sway bar

2007-present Models

Monroe Reflex Shock Absorber p/n 941001 front* / 911506 rear*

Hellwig p/n 7685 1-1/2" front sway bar

Hellwig p/n 7686 1-1/4" rear sway bar

*confirm part number to application as part number may change

ATTENTION INSTALLER: BE SURE THAT THE CUSTOMER RECEIVES THIS INSTRUCTION SHEET, ALL IMPORTANT NOTE CARDS AND THE WARRANTY FORM.