

PRODUCT SAFETY NOTICE

Congratulations. This vehicle has been equipped with a Firestone air suspension system. This suspension will enhance the vehicle's handling when loaded, however, the vehicle's performance may be altered so that the steering, braking and handling characteristics of this vehicle may differ from passenger cars and trucks not equipped with this type of suspension. A vehicle that is loaded will require more distance to stop. A load may alter the vehicle's center of gravity; therefore, extreme caution must be used to avoid abrupt maneuvers, sudden sharp turns, and other driving conditions that could result in loss of control or rollover of the vehicle. Such a loss of control or rollover could result in serious injury or death. Since the air suspension system is a modification to your vehicle's suspension, it is recommended that a professional mechanic perform the installation.

Keep in mind that your vehicle, while loaded, will exhibit different handling characteristics than when unloaded. Always exercise caution when driving, reduce your speed when noted and fasten your seatbelts. **Please keep your installation instructions and warnings with your vehicle's owner's manual for the service life of the vehicle and provide that information to any subsequent purchasers or others who may use the vehicle with the air suspension system installed.** If you need any additional decals, installation or warning materials, call 1-800-888-0650 for replacement materials.

DEALER/INSTALLER NOTICE

Enclosed with the air suspension system are two safety warning decals which must be attached to the passenger's and driver' sun visor as a supplement to the FMVSS 575.101 warnings if they are in place. The decal is a safety reminder to the operator and passengers that the vehicle has been modified with an air suspension system. It is the responsibility of the installer: (1) to affix the warning decals on the sun visors; and, (2) to provide to the end user the installation instructions and warnings that are included with the air suspension system. The installation instructions and warnings should be kept with the vehicle owner's manual in the vehicle's glove box at all times. It is a condition of the product warranty that the decals be affixed while the system is installed. If you need additional decals for the vehicle, please contact Customer Service at 1-800-888-0650 for replacement materials.



W217602518

Before beginning the installation, please read the following instructions and the drivers warning notice thoroughly. The included warning decal must be placed in the passenger compartment in clear view of all occupants.

NOTE: If any items are missing from this kit or you need assistance with installation, call 1-800-888-0650 for technical assistance. DO NOT return to your dealer.

Start with the vehicle parked on a hard (concrete or asphalt) level surface. Using a measuring tape, measure from the lip of the wheel rim to the lip of the fender directly above the wheel. Record the measurements below for reference later in the installation.

Driver's (Left) rear: _____ **Passenger's (Right) rear:** _____

NOTE: Before disassembling your vehicle, compare the parts in the box(s) with those listed in the parts list(s).

REQUIRED TOOLS:

FLOOR JACK	#2 PHILLIPS SCREW DRIVER	1/2" WRENCH & SOCKET
JACK STANDS	7/32" ALLEN WRENCH	9/16" WRENCH & SOCKET
VICE GRIPS	RATCHET	8MM WRENCH & SOCKET
MEASURING TAPE	5/16" WRENCH & SOCKET	10MM WRENCH & SOCKET
AIR LINE TUBING CUTTER	3/8" WRENCH & SOCKET	13MM WRENCH & SOCKET

PART LIST

QTY	PART #	DESCRIPTION	QTY	PART #	DESCRIPTION
1	21-3582-9378	FULL AIR MANIFOLD (2 CORNER)	2	21-3582-5707	HEIGHT SENSOR LINKAGE BRACKET
1	21-3582-9379	WIRE HARNESS W/KNEEL SWITCH	1	21-3582-9401	SEALED PRESSURE SWITCH 120/90
1	21-3582-9380	FULL AIR ECU	4	21-3582-3416	3/8 - 16 X 2.0 THREADED STUD
1	21-3582-9008	TUBING 1/4 RED 30 FT	16	21-3582-3067	3/8-16 FLANGE MAC LOCK NUT
4	21-3582-3414	BAIL CLAMP 3/8-16, 9.5 X 4.25 X 2.5	4	21-3582-3022	3/8-16 FLANGE LOCK NUT
2	A26-760-9047	140/95MM TUNABLE 369MM PLASTIC CAP	1	24-3582-3311	M8 X 1.25 X 15MM HHCS
2	21-3582-5691	DODGE 1500 TOP PLATE	1	24-3582-3314	M8 FLAT WASHER
2	21-3582-5690	DODGE 1500 UPPER MOUNT	4	24-3582-3087	10-32 X 1" MACHINE SCREW
4	21-3582-5705	AIR ACCESSORY SYSTEM FRAME BRACKET	8	24-3582-3086	3/16 FLAT WASHER
1	21-3582-5713	AIR ACCESSORY SYSTEM MOUNT PLATE	4	21-3582-3088	10-32 UNF NYLON LOCK NUT
1	21-3582-9127	AIR TANK 3 GALLON	2	21-3582-3424	1/4-20 X 3/4 BUTTON HEAD BOLT
1	24-3582-9285	AIR COMPRESSOR 280C	2	21-3582-3055	04 X 02 MALE CONNECTOR
1	WR1-760-9009	HOSE CUTTER	3	21-3582-3128	1/8 NPT SWIVEL ELBOW 1/4 TUBE
2	21-3582-5698	DODGE 1500 HEIGHT SENSOR BRACKET	1	21-3582-3031	1/4 PTC ELBOW FITTING
			1	21-3582-3269	1/4 NPT PLUG
			2	21-3582-3032	INFLATION VALVE PTC
			1	21-3582-3066	COMPRESSOR TEE FITTING
			3	21-3582-3025	1/4 PUSH TO CONNECT TEE

HEIGHT SENSOR PACK

QTY	PART #	DESCRIPTION	QTY	PART #	DESCRIPTION
1	28-3582-0111	LEFT HEIGHT SENSOR 50MM ARM	4	24-3582-3266	5MM SENSOR LINKAGE
1	28-3582-0112	RIGHT HEIGHT SENSOR 50MM ARM	4	24-3582-3264	M5 X .8MM PITCH JAM NUT
2	24-3582-3310	M6 X 1.00 X 12MM HHCS	8	21-3582-3421	10-16 X 3/4 SELF TAPPING SCREW
2	24-3582-3263	M6 X 1MM PITCH NYLON LOCK NUT	4	24-3582-3262	M5 X .8MM PITCH NYLON LOCK NUT
4	24-3582-3260	M5 X 8 MACHINE SCREW	8	24-3582-3318	M5 FLAT WASHER
2	24-3582-3265	M5 X .8MM ALL THREAD			

AUTO LEVELING PACK

QTY	PART #	DESCRIPTION	QTY	PART #	DESCRIPTION
1	21-3582-5325	DODGE 1500 KNEEL SWITCH BRACKET	1	21-3582-3088	10-32 UNF NYLON LOCK NUT
1	A24-760-7543	IGN LINE FUSE CIRCUIT TAP PACK	1	24-3582-3093	10-32 X 3/4 MACHINE SCREW
1	21-3582-9361	SEALED RELAY	2	21-3582-3425	1/4-20 X 1-3/4 HEX BOLT
2	21-3582-3420	10-16 X 1/2 SELF TAPPING SCREW	2	21-3582-3407	1/4-20 UNC NYLON LOCK NUT
2	21-3582-3419	4-40 UNC-2A X 5/8 MACHINE SCREW	1	21-3582-0864	1/4 FLAT WASHER
2	21-3582-3418	4-40 NYLON INSERT HEX NUT	1	21-3582-9398	10 PSI PRESSURE RETENTION VALVE
1	24-3582-3086	3/16 FLAT WASHER			

DODGE 1500 CONVERSION PACK

QTY	PART #	DESCRIPTION	QTY	PART #	DESCRIPTION
4	21-3582-0899	THERMAL SLEEVE	1	21-3582-8395	INSTRUCTION MANUAL 2518
15	21-3582-9036	TIE STRAP NYLON- RED	1	21-3582-9372	DECAL RIDE-RITE
2	21-3582-9403	DECAL DODGE WARNING			

STEP 1: PREPARE THE VEHICLE

Place the vehicle on a flat surface. Measure and record the ride height on Page 2. The most accurate way to measure this height is to measure from the lip of the wheel rim to the fender directly above the wheel (**Figure "A"**).

Raise the vehicle, or the rear of the vehicle, to allow the suspension to relax and remove the wheels. Remove the fender liner on both sides of the vehicle.

STEP 2: REMOVE STOCK COIL SPRINGS

Support the rear axle with axle stands rated for the vehicle's weight. Remove the lower shock bolt on both sides of the vehicle. **See Figure "B"**. The shocks can be completely removed for clearance during installation, but it is not required.

Allow the axle to extend completely and remove the coil springs and upper mounts on both sides of the vehicle. **See Figure "C"**.

STEP 3: PREASSEMBLE THE AIR SPRINGS

Install the air fitting on each air spring. Tighten the fitting to engage the nylon ring, then tighten and additional 1/2 turn. Install the threaded studs to the top of the air spring. Slide the upper mount (**5690**) over the studs so the flat surface is touching the top of the air spring. Set the preassembled air springs aside.

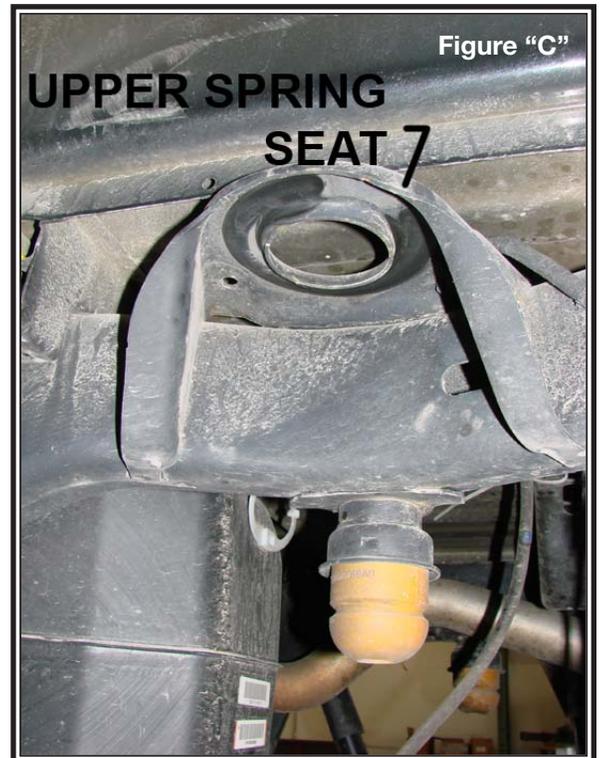
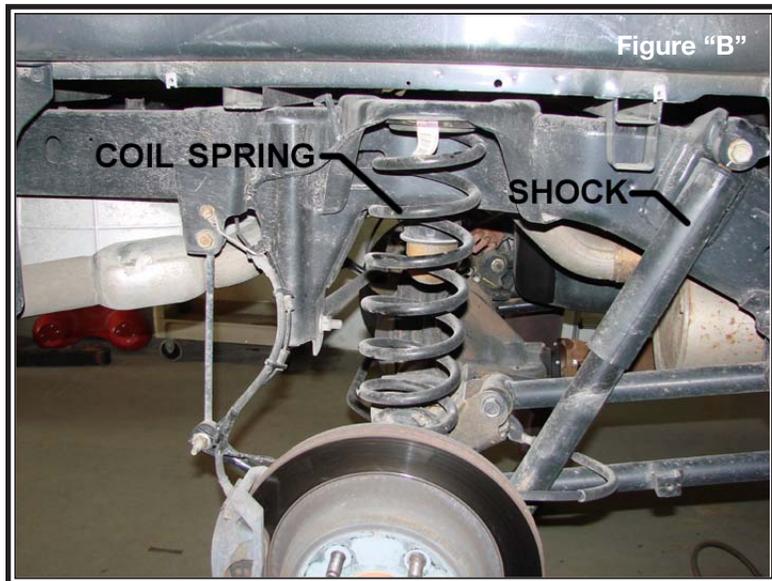
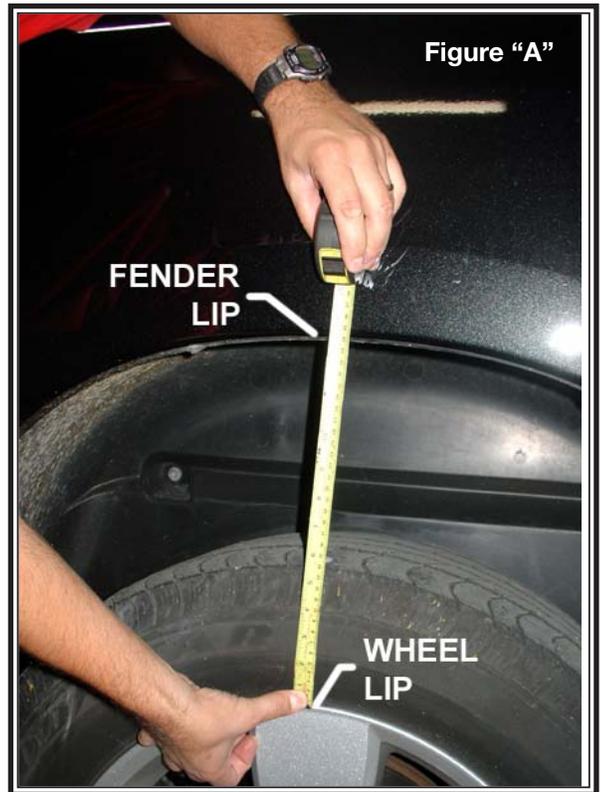
STEP 4: MOUNT THE HEIGHT SENSORS

Attach the height sensor extension arm to the height sensor using a M6-1.0 X 12mm bolt and M6 nylock. Attach one M5 sensor linkage with the ball towards the outside and in the hole farthest from the height sensor. Use a M5 nylock to secure to the arm. **See Figure "F"**.

On the passenger side, use the provided M8-1.25 X 15MM bolt and M8 washer to mount the lower linkage bracket to the vehicle's lower suspension linkage. There is an unused weld nut on the lower arm forward of the axle. The bracket should point up once installed. Attach one M5 sensor linkage to the other hole in the bracket so the ball faces inboard. Secure with a M5 nylock nut. **See Figure "F"**.

On the driver side, remove the M8 bolt that holds the emergency brake cable bracket. The bracket should be installed between the weld nut and the brake cable bracket. Install the lower linkage bracket and reinstall. Attach an M5 sensor linkage and secure with an M5 nylock nut. **See Figure "G"**.

The height sensors are marked L (left) and R (right). When mounted, the electrical plug should face up and the arm should rotate towards the rear of the vehicle. Brackets should have the open end facing towards the rear of the vehicle and



be parallel with the ground. The bracket will angle the height sensor arm inboard to allow the arm to swing freely throughout the suspension travel. Ensure the extension arm does not interfere with the shock.

FOR CREW CAB: The height sensor brackets should be installed just behind the bed mount brackets approximately halfway up the frame. This should be above the front vehicle suspension mount.

FOR QUAD CAB/REGULAR CAB: The height sensor brackets should be installed above the front vehicle suspension mount, approximately halfway up the frame. This is about 10 inches back from the bed mount bracket.

While holding the height sensor bracket in place, use (2) 10-16 x 3/4 self tapping screws to attach the height sensor bracket to the vehicle on each side. NOTE: 7/32" holes and machine screws (not provided) can be used in place of the self tapping screws.

Attach the height sensor to the installed bracket using (2) M5-0.8 X 8mm machine screws on each side. **See Figure "D".**

STEP 5: INSTALL THE AIR SPRINGS

The bottom of the air spring assembly has a threaded hole that must face the rear of the vehicle and the air fitting on the top should face the front of the vehicle. Place the air spring assembly on the lower axle mount. Using the 1/4"-20 x 3/4" button head screws provided, secure the bottom of the air spring assembly to the lower mount. **See Figure "H".**

Place the top plate on the top side of the upper mount. Unroll the air spring, by pushing the top of the air spring up, until the air spring assembly reaches the upper mount on the vehicle. Place the top plate above the vehicle's upper spring seat by aligning the top plate to accept the threaded studs from the air spring assembly. Hand tighten the 3/8"-16 nuts (serrated face) to the top plate. **DO NOT ALLOW THE AIR SPRING SLEEVE TO TWIST.** Once the air fitting is correctly aligned towards the front of the vehicle and you have ensured the sleeve is not twisted, tighten the 3/8"-16 nuts **See Figure "H".**

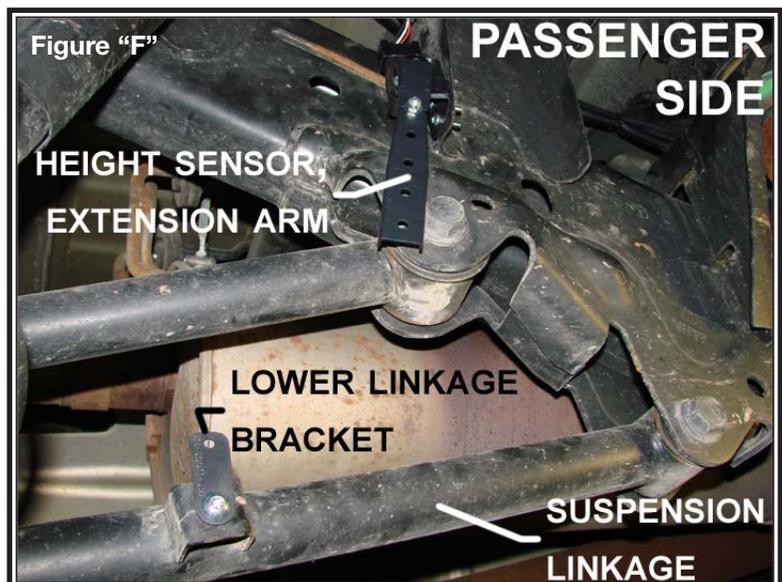
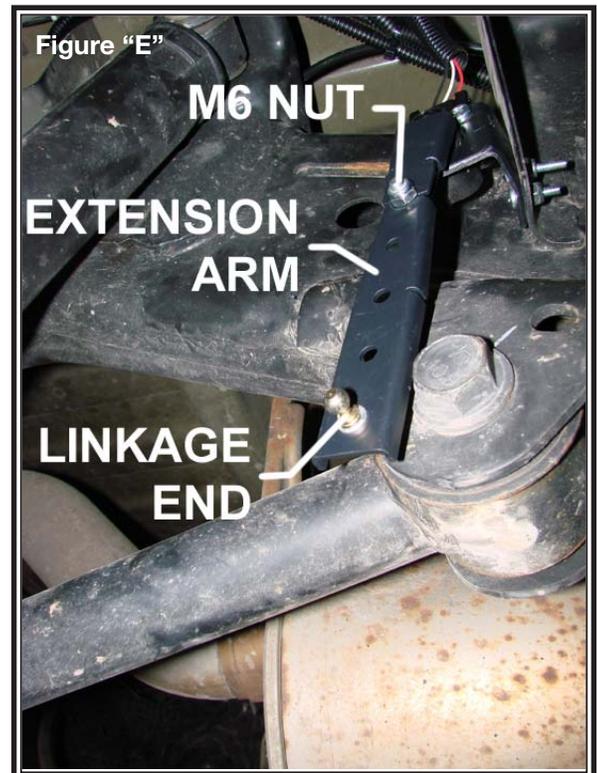
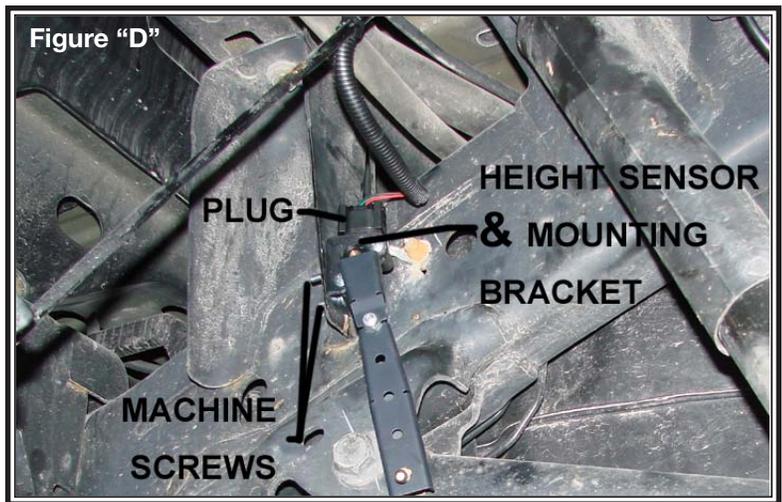
Reinstall the shocks on both sides of the vehicle.

STEP 6: PREASSEMBLE THE COMPRESSOR, VALVE BLOCK, AND ECU MOUNT

See Figure "U" for bracket layout. The mounting plate for the compressor, valve block, and ECU has predrilled holes to accept each component. **All components that are mounted to the plate should have the head of the bolts on the back side of the plate for clearance.**

The compressor mounts in the lower left side with the intake pointing left. Use four 10-32 X 1" machine screws with washers and nylock nuts to mount to the plate. Attach the compressor tee fitting to the check valve on the output side of the compressor. Attach the pressure switch to the compressor tee. **See Figure "I".** The ECU mounts directly above the compressor with two, 4-40 X 5/8" machine screws and nylock nuts. **See Figure "I".**

Before mounting the block, install the 1/8 NPT straight air fittings into the ports labeled 'LR' and 'RR'. Tighten to engage the orange thread sealant. Install the 1/8 NPT elbow into the port marked 'IN'. Hand-tighten, then turn an additional 1/2 turn with a wrench. The valve block should be oriented so that the exhaust port points to the right and the inlet is down. Use the 1/4"-20 X 1-3/4" bolts with washers and nylock nuts to secure the block in place. **See Figure "J".**



Attach the relay to the plate where it will be accessible in the future. Secure using one 10-32 X 3/4" machine screw and nylock nut.

STEP 7: MOUNT THE SYSTEM PLATE AND TANK TO THE VEHICLE

Select the air tank from the kit and install the 1/4 NPT plug into one end and the 1/4 NPT elbow fitting into the other end. Tighten the fittings to engage the orange thread sealant. Mount the tank to two frame brackets using four, 3/8"-16 flange nuts. **See Figure "K".**

Mount the tank assembly to the passenger side frame rail using two bail clamps and four 3/8"-16 flange nuts. It should be located on the outside of the frame rail just forward of the fender well. **See Figure "K".**

Mount the preassembled system plate to two frame brackets using four 3/8"-16 flange nuts. Mount the system plate assembly to the frame using two bail clamps and four 3/8"-16 flange nuts. The plate should be on the outside of the frame rail, just forward of the tank assembly. **See Figure "I" & "J".**

NOTE: It is important that the system plate assembly is located on the passenger side frame rail.

STEP 8: INSTALL THE WIRE HARNESS

Uncoil the wire harness and locate the 16-pin ECU connector. Route the portion of the harness with the two height sensor connectors (6-pin) along the frame rail towards the rear of the vehicle. Route the driver side height sensor connector through the hollow cross-member under the bed to the other side of the vehicle. Once the connections have been made at the height sensors, peel back the wire loom to expose the LED for each side. Ensure the LED is easily visible. **See Figure "L".**

Make the connection at the relay. Ground the compressor lug to a suitable location on the chassis. Attach the red wire (male spade) from the relay to the red wire (female spade) on the compressor. Attach the blue wire from the relay to one side of the pressure switch. Attach the black wire (female spade) in the harness to the other side of the pressure switch. **NOTE: DO NOT INSTALL THE 8-PIN PLUG FOR THE VALVE BLOCK AT THIS TIME.**

Route the remaining wire harness forward along the frame rail and into the engine compartment, staying as far away as possible from potential heat sources. Run the wire across the back of the engine compartment, securing the loom to firewall. **See Figure "M".**

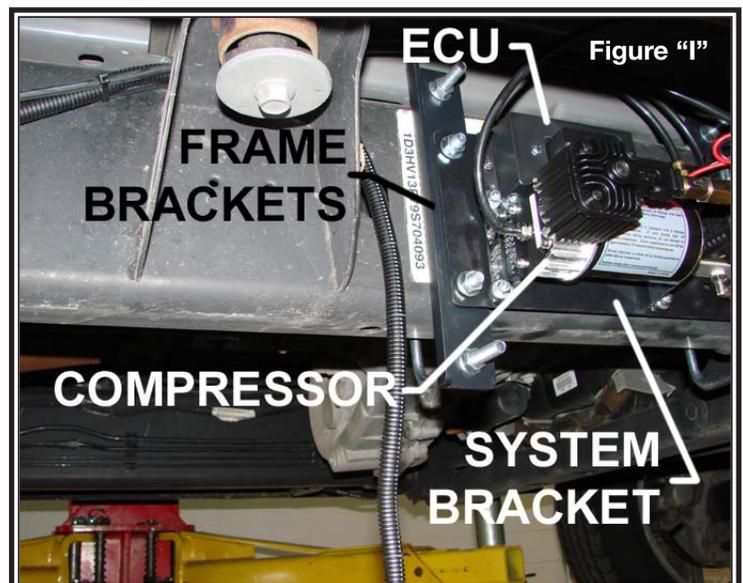
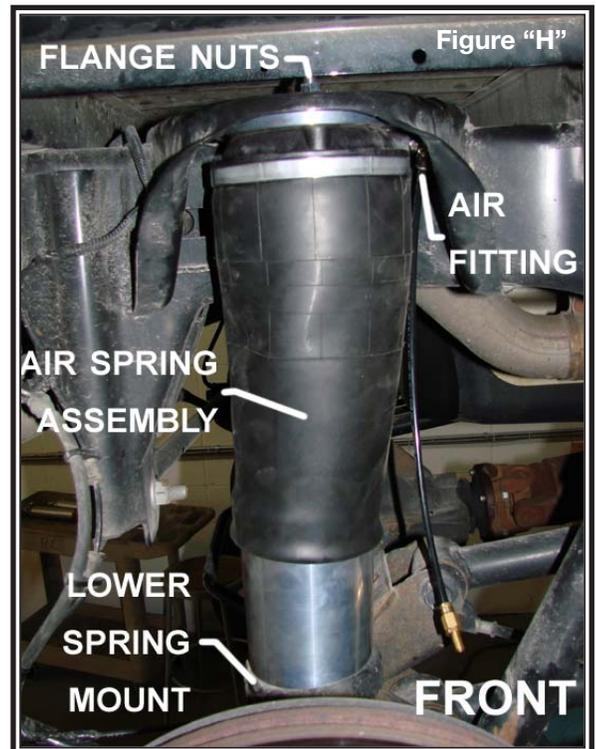
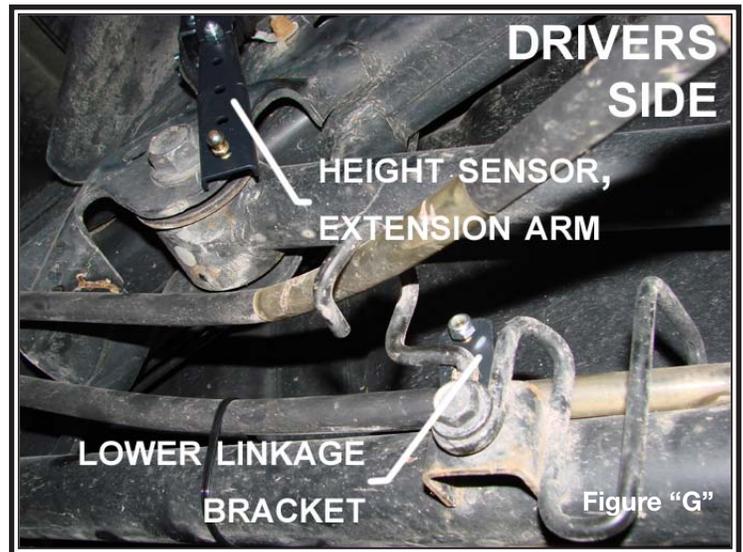
Once the harness is on the driver's side by the fuse box and battery, route the three wires for the kneel switch through the firewall. Crimp the provided fuse tap to the yellow wire.

NOTE: DO NOT COMPLETE THE CONNECTION TO THE FUSE BOX OR THE BATTERY AT THIS TIME.

In the cabin, route the three wires and loom to the final location of the kneel switch. The location of the switch should be easily seen, but not accidentally hit. The switch will glow red when the vehicle is kneeled. During normal operation, the switch will not be illuminated. A bracket and self-tapping screws, 10-16 X 1/2, have been provided to mount the switch, but they do not need to be used. **NOTE: A 20MM hole will need to be drilled for the switch if the bracket is not used.** After the switch is mounted, connect the wires to the male spade terminals on the back of the kneel switch. See Figure "O".

STEP 9: AIR LINE INSTALLATION

DO NOT FOLD OR KINK THE TUBING. The tubing should have square cuts using the supplied tubing cutter. **DO NOT**



use a PVC cutter, side cuts, scissors, or anything that will crush or squeeze the line while cutting. When installing the tubing into a fitting, push the tubing into the fitting until it bottoms out. Avoid sharp bends in the tubing as they may buckle over time.

From the compressor, cut a length of tubing about 3-4 inches long. Attach one end to the compressor tee fitting and the other to a tee fitting. Route one branch to the tank and the other to the valve block inlet. See **Figure "O"**.

Route tubing that runs from the valve block to each air spring, individually. Attach the tubing to the air spring. Cut the line between the valve block and each air spring and install a tee fitting. Use the open branch of the tee to run airline to a location where an inflation valve can be mounted, protected and accessed easily with an air chuck. The rear bumper near the license plate provides a good location for a secure mounting location. Drill a 5/16" hole to accept the inflation valve if needed. Attach the inflation valve and complete the air line connection. See **Figure "O"**.

STEP 10: PLACING THE VEHICLE BACK ON THE GROUND

Using the manual inflation valves, slowly inflate the air springs to 15-20 psi. Ensure the sleeves are rolling over the pistons and are not bound or twisted. See **Figure "P", "Q", & "R"**.

Reinstall the wheels but leave the fender liner off. Slowly lower the vehicle to the ground, checking frequently to make sure the sleeves continue to roll over the pistons. See **Figure "P", "Q", & "R"**.

Once the vehicle is on the ground, increase the pressure in the air springs so that the measurement from the lip of the wheel to the lip of the fender is exactly the same as the recorded measurement from the beginning of this installation. **NOTE: THE AIR SPRINGS MAY HAVE DIFFERENT PRESSURES AT THE CORRECT RIDE HEIGHT.** See **Figure "A"**.

STEP 11: SETTING RIDE HEIGHT

Find a fuse that is active at +12VDC when the ignition is on (M49 position). Insert the fuse tap into the fuse box and secure.

Attach the red wire with the in-line fuse from the harness to the positive terminal of the battery. Attach the black wire from the harness to the negative terminal of the battery.

Turn the ignition to the vehicle 'on' position. The compressor will start running to fill the air tank to 120 psi. Once complete, the height sensor linkages can be installed. See **Figure "S"**.

Hand tighten one sensor linkage to each end of the two M5 threaded rods. The openings should be facing in opposite directions after being tightened. Using pliers, carefully snap the socket of the sensor linkage onto the ball of the height sensor brackets. It is very important that the height sensor arm is parallel with the ground and the LED is illuminated. If the LED is not illuminated, adjust the length of the threaded rod until the LED is glowing. Reinstall the fender liners.

Finally, plug the 8-pin connector from the wire harness into the valve block. See **Figure "T"**.

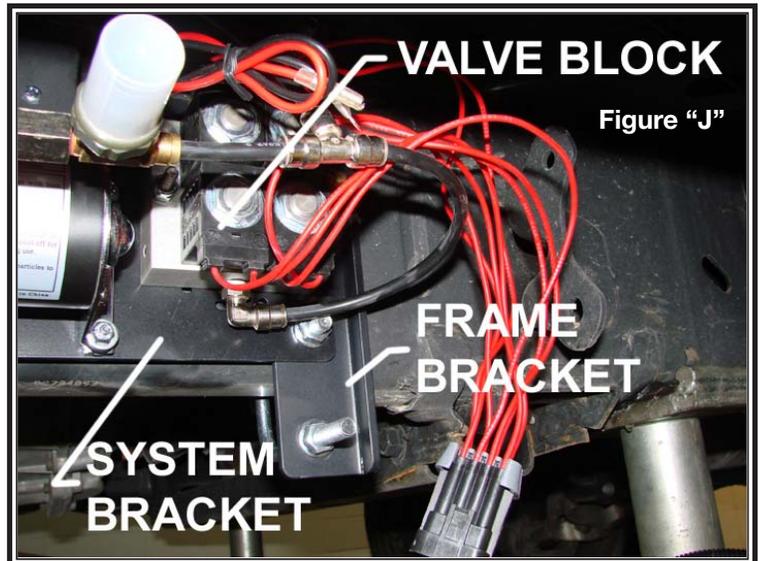


Figure "J"

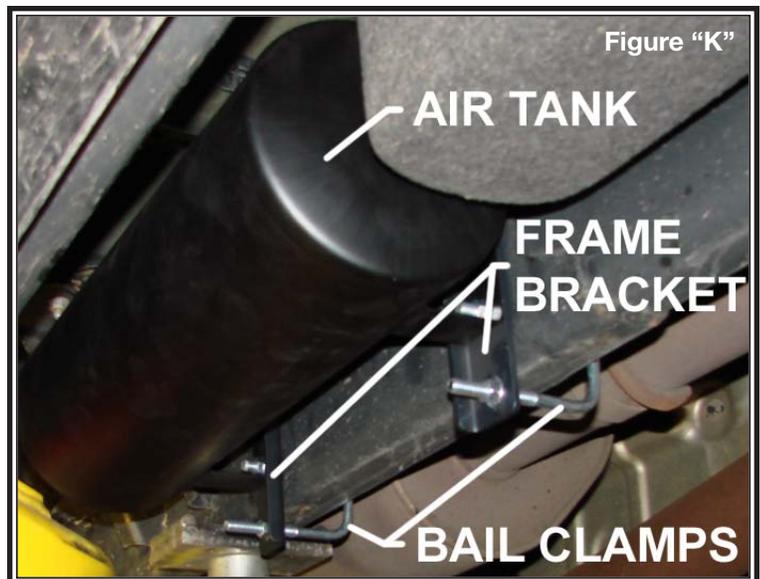


Figure "K"

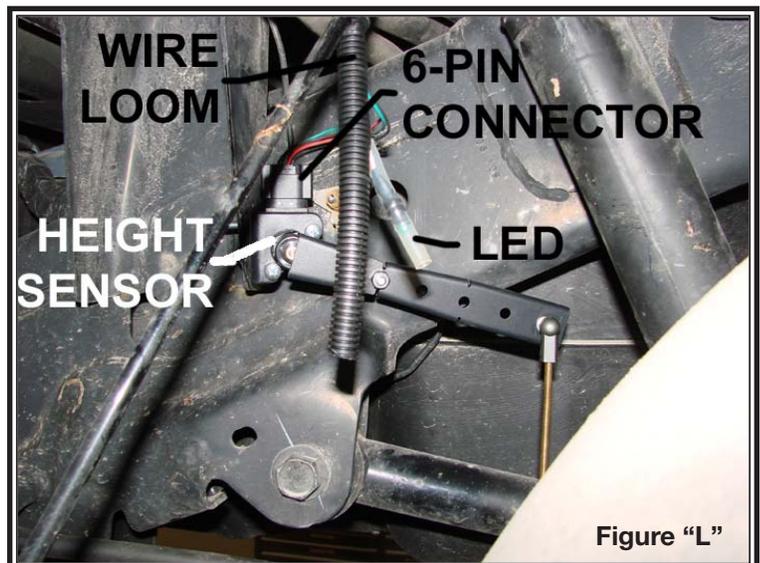
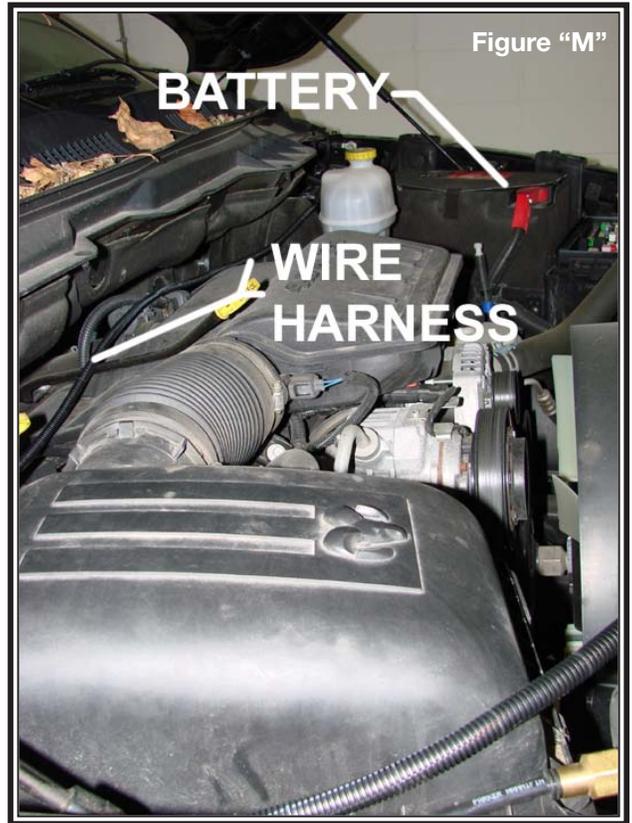


Figure "L"

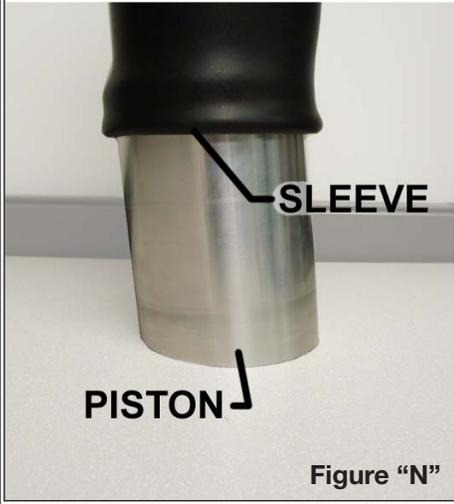
STEP 12: LEAK CHECK AND SECURE

Check all wire and air lines to ensure they are away from direct heat and sharp edges. Secure items to the vehicle with zip-ties. With the system at ride height, check all pneumatic connections with a solution of mild soap and water. If leaks are found at the threads, tighten the connection to engage more of the orange thread sealant. If the leak is located where the air line pushes into the fitting, push the line into the fitting further. If the connection continues to leak, exhaust all of the air from the system. Next, remove the air line by pressing the collar into the body of the fitting and pulling on the air line. Cut approximately 1/4" off of the end of the air line using the air line cutter, making sure the cut is square. Insert the line into the fitting as far as possible, pressurize the system, and recheck for leaks.

NOTE: The rear of the vehicle will drop 6"-8" in the kneeled position. DO NOT deflate the system while you or someone else is under the vehicle. This could result in serious injury or death.



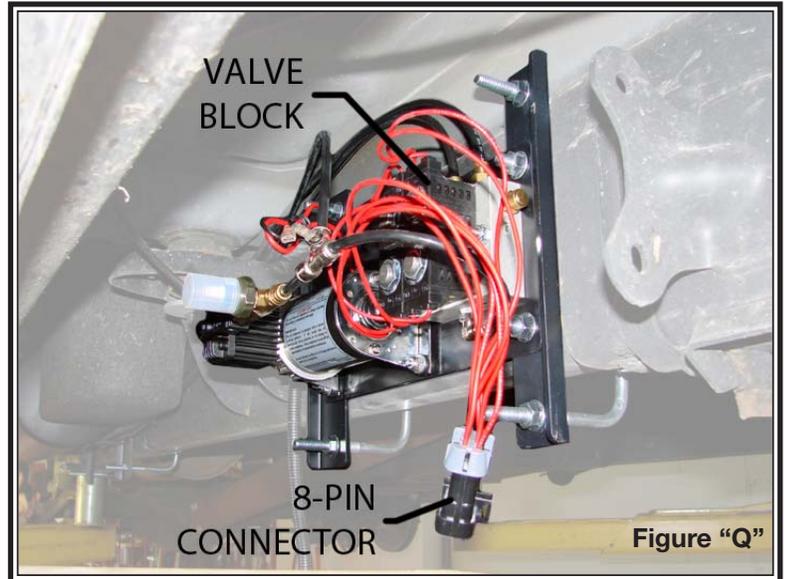
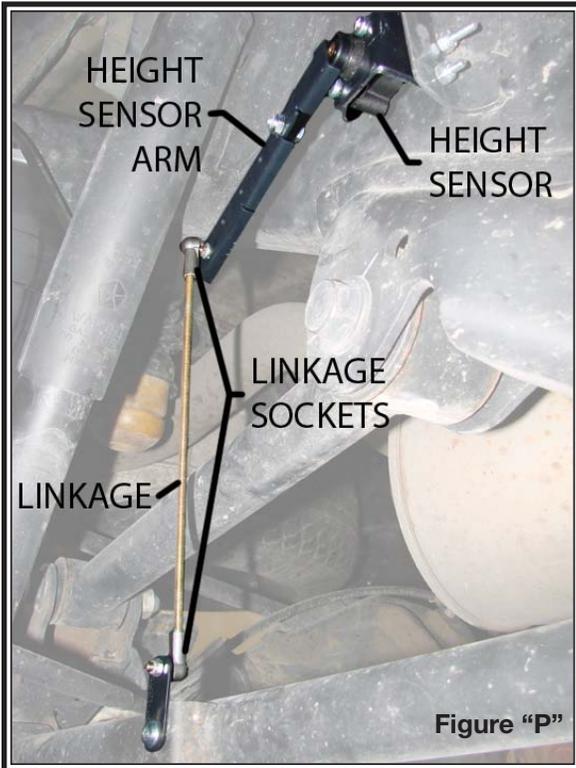
CORRECT



INCORRECT



INCORRECT



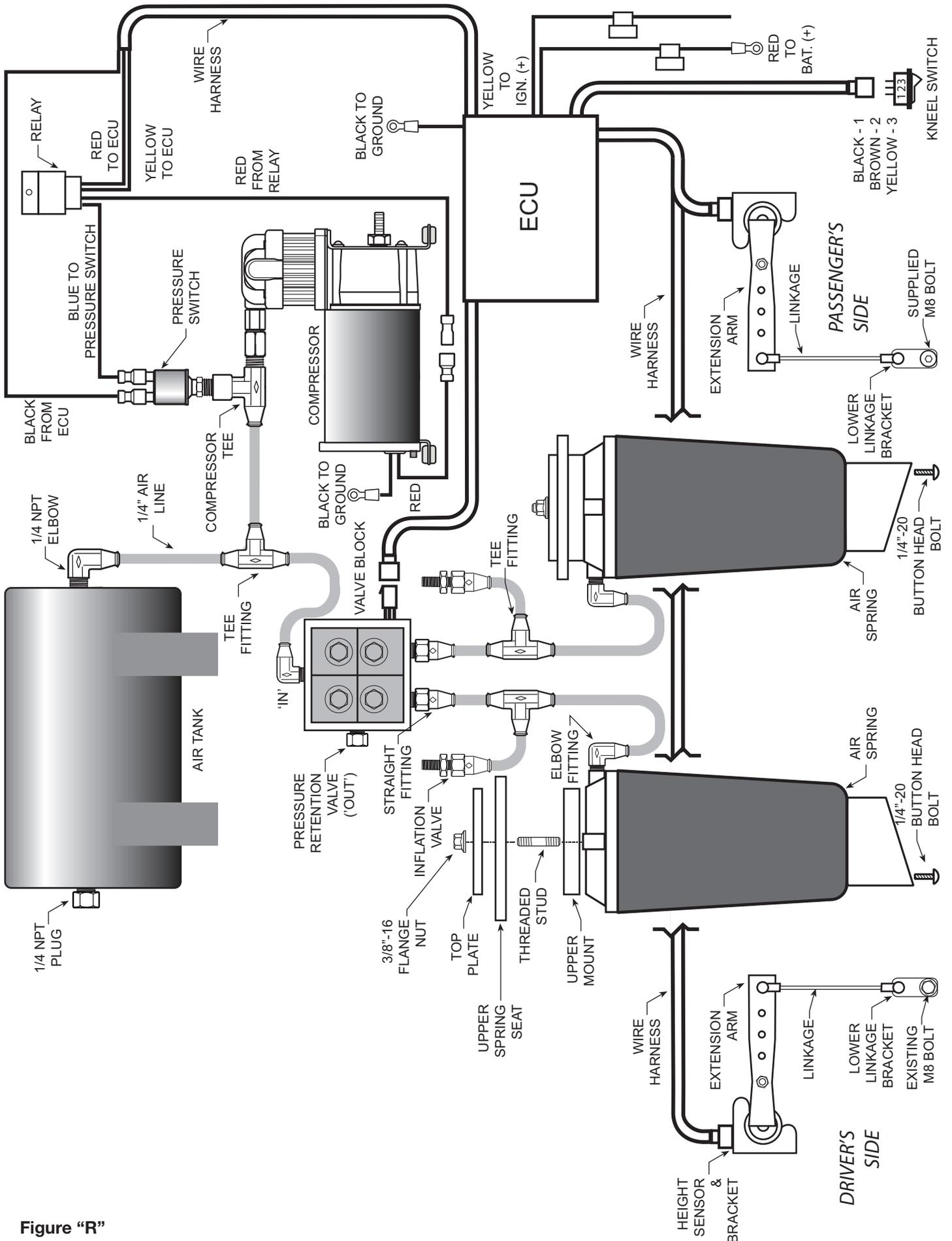


Figure "R"

Figure "S"

