Please read these instructions completely before proceeding with installation.

NOTE: It will be necessary to purchase a DJM A-arm (kit #CA3098L-4 and #CA3098U) to be used in conjunction with this product. See special instructions on spindle modifications in SB-183 that are necessary to perform before going any further with the installation.

### Hardware

<table>
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<tr>
<th>Item</th>
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<th>Description</th>
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<th>Item</th>
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</table>
IMPORTANT: Always keep safety in mind when working on your vehicle.

NOTE: It will be necessary to purchase a DJM A-arm (kit #CA3098L-4 and #CA3098U) to be used in conjunction with this product. See special instructions (SB-183) on spindle modifications that are necessary to perform before going any further with the installation.

I. Preparing the Vehicle
   1. Elevate the truck and place the frame securely on jack stands.
   2. Remove the wheels.
   3. Disconnect and remove the sway bar. The sway bar will not be reused.
   4. Remove the shock absorbers.

II. Removing the Spindle

IMPORTANT: Work on one side at a time.

1. Put a jack securely under the passenger side A-arm.
2. Elevate the A-arm so that the spring is compressed.
3. In order to gain access to the spring and frame, the spindle will need to be completely removed. Do this by:
   a. Removing the steering rod from the spindle.
   b. Remove the brake caliper from the spindle and completely remove from the work area. NOTE: It should not be necessary to disconnect the brake line.
   c. Remove the cotter pins on the upper and lower ball joints. CAUTION: It is highly recommended that a spring compressor is used in order to contain and remove the spring.
      NOTE: Use extreme caution. Follow directions and safety guidelines.
   d. If a spring compressor is used, tighten the spring compressor, as necessary, to create enough free play for removal.
   e. Tie a strap around the spring to keep it from falling out of the vehicle during removal.
   f. Loosen top and bottom ball joint nuts. Leave them on the stud, flush to the top. Using a pickle fork or hammer, tap the side of the spindle. Loosen the spindle from the ball joints.
   g. Remove the nuts and spindle with the spring still compressed by the jack under the A-arm.

III. Removing the Coil

CAUTION: Please follow basic safety guidelines during this step. Use a spring compressor if possible.

1. Drop A-arm all the way down until it hangs free.
2. If a spring compressor is used, unstrap and pull spring from the pocket.
3. If a spring compressor was not used, then lightly pry spring from the A-arm pocket with the strap still intact.
4. Remove the strap and coil spring when free from the pocket.
5. Remove the upper and lower control arms.
IV. Installing the Upper Shock Bracket

1. Starting on the passenger side, hold the passenger side shock bracket (B) up against the frame rail.

2. Position the bracket over the jounce bumper strike plate, just above the weld (Figure 1).

3. Align the shock bracket bottom corners with the jounce bumper plate upper corners.

4. Mark and drill two ½" holes in the frame and secure the bracket to the frame using bolt (U), two washers (W), and a nylock nut (X) in both holes. Tighten securely.

V. Removing the Frame Section

1. Prep the frame for trimming by cleaning the frame area around the coil spring pocket, including the underside of the frame.

2. Mark the frame for cutting using a marker or scribe.

3. Measure up from the back, bottom of the frame just in front of the jounce bumper bracket 1 ¾" (Figure 2).

4. Draw a horizontal line straight forward 8 ½" to 9". From this point, measure up 1" and draw a line from these two points.

5. Where the shock bracket corner and the jounce bumper corner meet, strike a straight line down and inside under the frame (Figure 3).

6. Mark around the pocket on the inside of the weld. This section will be cut out of the vehicle.

7. Use a grinder with a cutoff wheel or a plasma cutter to remove the section (Figure 4). NOTE: If a plasma cutter is used, cover the diaphragm boot on the steering A-arm.
8. Cut the section out, including the jounce bumper corner (Figures 5 and 6).

9. Use a grinder to smooth out the edges. Remove all sharp corners and blend in the edges of the cut out area.

10. On the inside edge of the frame, note that removing this section has cut the welded portion of the frame, creating a gap between the two sections (Figure 7).

11. It will be necessary to weld these two sections back together (Figure 8). NOTE: It is important to cover the steering arm diaphragm.

12. Clean and paint the exposed area.
VI. Assembling the Air Springs
1. Set the roll plates (H) on the top and bottom of the air springs (G). Refer to Figure 9.

2. Install the 90° elbow fitting (DD) to the bellow. Tighten finger-tight plus 1 1/2 turns.

3. Attach the upper bracket (E or F) to the air spring using two bolts (K), two lock washers (L), and two flat washers (M). Tighten securely. NOTE: While installing the upper bracket, point the air fitting to the opening in the upper bracket (Figure 10).

4. Attach the lower bracket (J) to the air spring using two bolts (K), two lock washers (L), and two flat washers (M). Tighten securely (Figure 10). NOTE: The slot on the lower bracket must face inboard.

5. Install the stud (O) into the upper bracket (Figure 11).

VII. Attaching the DJM Control Arms
Install the DJM upper and lower control arms to the vehicle using the manufacturer's installation instructions.

VIII. Installing the Air Springs
1. Cut the air line assembly (NN) into two equal lengths. CAUTION: When cutting or trimming the air line, use a hose cutter (Air Lift P/N 10530), a razor blade or a sharp knife. A clean, square cut will ensure against leaks. Do not use wire cutters or scissors to cut the air line. These tools may flatten or crimp the air line, causing it to leak around the O-ring seal inside the elbow fitting.

2. Insert the hose into the fitting. Make sure that the hose goes in all the way. A definite click can be heard or felt when seated. The hose should be in approximately 9/16”.

3. Insert the hose into the frame facing forward while positioning the assembly into the spring pocket. NOTE: The hose will be routed through the frame hole in front behind the bumper.

4. Insert the stud, previously installed, into the hole in the upper spring seat. Loosely secure the stud with a flat washer (Q), and nut (S). See Figure 12.

5. Check the clearance around the air spring. If the frame interferes, then remove the spring and trim the area. Tighten the nut on the stud securely when sufficient clearance is provided.
IX. Reattaching the Components

1. Raise the DJM lower control arm up while aligning the lower bracket into the spring pocket. NOTE: Be sure that the lower bracket seats properly.

2. Attach the modified spindle back onto the new upper and lower control arm.

3. Attach the brake caliper.

X. Attaching the Lower Shock Bracket

1. Using the shock bolts provided (T), bolt the upper shock to the upper mount (Figure 13). NOTE: Do not use the spacer.

2. Attach the lower bracket (C or D) to the bottom of the shock using the shock bolt provided (T). See Figure 14. NOTE: Use the spacer between the shock and the bracket.

3. Clamp to the lower control arm with a welding clamp (Figure 14).

4. Install a bolt (V) and lock nut (Y) onto the lower bracket. This is the wheel stop and will need to be adjusted (Figure 15).

5. Temporarily install the wheel onto the spindle. Raise the lower control arm up and turn the wheel all the way into the lower bracket stop. Adjust the lower bracket stop so that the shock does not hit on the tire. The bolt protruding from the bracket is the stop. After adjusting the bolt, tighten the lock nut.

6. Mark and drill the mounting holes into the lower control arm. Secure the shock assembly using two bolts (Z), flat washers (BB), and nylock nuts (AA). NOTE: Be very careful when positioning the bracket holes because of the lower A-arm construction under the top plate.

7. If the brake line hits on the shock when steering through full travel. Carefully adjust the brake line to clear the shock.

XI. Installing the Steering Arm

1. The steering geometry will need to be compensated for from the drop in the DJM arms. Modifications per SB-183 should be done at this time.

2. Loosen the lock nut on the end of the steering arm and rotate the ball joint 180°.

3. Insert the ball joint through the bottom of the bushing. NOTE: The nut should be on the top of the spindle.

4. Tighten both the ball joint nut and the lock nut securely.

5. Return to the beginning of this manual and repeat entire installation procedures for the remaining side.
XII. Installing the Air Lines

1. Choose a convenient location for mounting the inflation valves. Popular locations for the inflation valve are: wheel well flanges, license plate recess in bumper, or through license plate itself.

2. Drill a 5/16” hole to install the inflation valves.

3. Place a 5/16” nut (HH) and a star washer (KK) on the air valve. Leave enough of the inflation valve in front of the nut to extend through the hole and have room for the rubber washer (JJ), flat washer (II), and 5/16” nut (HH) and cap (LL). There should be enough valve exposed after installation - approximately 1/2” - to easily apply a pressure gauge or an air chuck (Figure 16).

4. Push the inflation valve through the hole and use the rubber washer (JJ), flat washer (II), and another 5/16” nut (HH) to secure it in place. Tighten the nuts to secure the assembly in place (Figure 16).

5. Route the 3/8” air line coming from the bellow assembly along the frame to the reducer (FF) and into the 1/4” air line with the inflation valve. Keep at least 6” of clearance between the air line and heat sources, such as the exhaust pipes, muffler, or catalytic converter. Avoid sharp bends and edges. Use the plastic tie straps (GG) to secure the air line to fixed, non-moving points along the chassis. Be sure that the tie straps are tight, but do not pinch the air line. Leave at least 2” of slack to allow for any movement that may pull on the air line.

6. Inflate to 30 p.s.i. and spray all connections and the inflation valves with a solution of 1/5 liquid dish soap and 4/5 water to check for leaks. Leaks should be spotted easily by looking for bubbles in the soapy water. IMPORTANT: Check the air pressure again after 24 hours. A 2 to 4 p.s.i. loss after initial installation is normal. Retest for leaks if the loss is more than 5 lbs.

XIII. Attaching the Lower Bracket to the A-arm

1. Center punch and drill two 5/16” holes through the bottom of the A-arm and lower bracket strap.

2. Attach the strap to the A-arm using 5/16” bolt (N), 5/16” flat washer (R), and 5/16” nut (P). Tighten securely (Figure 17).
XIV. Before Operating

1. Our BigBore control kit is highly recommended for this product. It will be necessary to install a control kit which will provide a gauge to the inside of the cab.

2. It is necessary to determine a specific ride height by adjusting the air pressure in the system. At this point, the front end will need to be aligned. You will not be able to drive the truck unless this pressure is used. CAUTION: Never drop or raise the front or rear of the vehicle while driving. Doing so will drastically change the front end alignment and may cause loss of vehicle control.

3. It may be necessary to use custom wheels and tires. Be sure to note the tire to fender, tire to fenderwell, or body to ground clearance. Space the jounce bumper for additional clearance.

4. Check tire to shock clearance by cranking the wheel side to side. If tire hits on shock, then adjust the steering stops out until tire clears shock by 1”.

5. Inflate and deflate system (do not exceed 100 p.s.i) to check for clearance or binding issues. With air springs deflated, check clearances on everything so as not to pinch brake lines, vent tubes, etc. Clear lines if necessary.

6. Tighten and visually inspect all hardware after 100 miles.

XV. Fixing Leaks

1. If there is a problem with any of the air fittings, then:
   a. Check the air line connection by deflating the spring and removing the line by pulling the collar against the fitting and pulling firmly on the air line. Trim 1” off the end of the air line. Be sure the cut is clean and square. Reinsert the air line into the push-to-connect fitting.
   b. Check the threaded connection by tightening the swivel fitting another 1/2 turn. If it still leaks, deflate the air spring, remove the fitting, and re-coat the threads with thread sealant. Reinstall by hand tightening as much as possible, then use a wrench for an additional two turns.

2. If there is a problem with the inflation valve, then:
   a. Check the valve core by tightening it with a valve core tool.
   b. Check the air line connection by removing the air line from the barbed type fitting. CAUTION: Do not cut it off. As this will usually nick the barb and render the fitting useless. Cut air line off a few inches in front of the fitting and use a pair of pliers or vise-grips to pull/twist the air line off the fitting.

3. If the preceding steps have not resolved the problem, call Air Lift Technical Service at 1-800-248-0892 for assistance.

XVI. Troubleshooting Guide

Problems maintaining air pressure, without on-board compressor.

1. Leak test the air line connections and threaded connection of the elbow into the air spring. See Section XV to repair.

2. Leak test the inflation valve for leaks at the air line connection or dirt or debris in the valve core. See Section XV for repair.

3. Inspect air lines to be sure it is not pinched. Tie straps may be too tight. Loosen or replace strap. Replace leaking components.

4. Inspect air line for holes and cracks. Replace as needed.

5. A kink or fold in the air line. Reroute as needed.

You have now tested for all of the most probable leak conditions that can be easily fixed. At this point the problem is most likely a failed air spring - either a factory defect or an operating problem. Please call Air Lift at 1-800-248-0892 for assistance or a replacement air spring.
XVII. Maintenance and Operation:

<table>
<thead>
<tr>
<th>Minimum Pressure</th>
<th>Maximum Pressure</th>
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<tbody>
<tr>
<td>10 p.s.i.</td>
<td>100 p.s.i.</td>
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</tbody>
</table>

Failure to maintain correct minimum pressure (or pressure proportional to load), bottoming out, overextension, or rubbing against another component will void the warranty.

By following these steps, vehicle owners should obtain the longest life and best results from their air springs.

1. Check the air pressure in the air springs weekly.

2. Always maintain Ride Height. Never inflate beyond 100 p.s.i.

3. If you develop an air leak in the system, use a soapy water solution to check all air line connections and the inflation valve core before deflating and removing the air spring.

4. Always adjust the air pressure to maintain Ride Height. Increase or decrease pressure from the system as necessary to attain Ride Height for optimal ride and handling.

5. **IMPORTANT:** For your safety and to prevent possible damage to your vehicle, do not exceed Maximum Gross Vehicle Weight Rating (GVWR), as indicated by the vehicle manufacturer. Although your air springs are rated at a maximum inflation pressure of 100 p.s.i. The air pressure actually needed is dependant on your load and GVWR, which may be less than 100 p.s.i. Check your vehicle owners manual and do not exceed the maximum load listed for your vehicle.

6. Always add air to springs in small quantities, checking the pressure frequently. Air springs require less air volume than a tire and inflate quickly.

7. Should it become necessary to raise the vehicle by the frame or do any service work, make sure the system is at minimum pressure (5 p.s.i.) for safety and to reduce the tension on the suspension/brake components. Check that the front lower brackets nest properly in the lower A-arm when servicing is complete. Do this before operating the vehicle.
Installation Notes: