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## Part # 104 SH

### Del-A-Lum Bushing & Shackle Kit Installation Instructions

#### Parts List:

4-Shackle halves	6 - 1/2x20-stove lock nuts
2- rear spring eye bushings with step	2 - Aluminum frame bushings
2- large diameter front eye bushings	2 - 5 1/2 x 1/2 x 20 bolts
4 -Shackle bushing inserts	2 - Ft. spring eyelet inserts with pins
2 - (.225") thick thrust washers 1/2 inch	2 - .620" thick 1/2 hole thrust washers
4 - (.150") thick thrust washers 1/2 inch hole	6 - Long grease fittings
2 - Round plates, 2 1/2"x 1/4" thick	2 - Special steel washers, .125"
2 - .100" x 3/4 hole thin thrust washers	2 - .220 with 3/4 hole thrust washers

We recommend that a competent shop install this bushing and shackle kit. Presswork and special tools are required to install this kit.

1. Remove rear springs from the vehicle. A Mitchell or Chiltons manual can be helpful, if you require assistance.
2. Remove the original rubber shackle bushings from the car's frame and thoroughly clean the frame hole, removing all rust and dirt to allow for easy installation of the new bushings.
3. The two short aluminum bushings with no step are the frame bushings. Both rear frame bushings must be installed from the outboard side of the vehicle. **Do Not** attempt installation from the inboard side, the bushings will not go in from this direction. Install the two frame bushings now; making sure that the 9/32"holes in the bushings will be located on the inboard side of the vehicle when you are finished. When installing the bushing in the frame point the grease-fitting hole towards the front of the car at about the 5 o'clock position or 7 o'clock position, depending on what side of the car you are on. **Remember the grease fittings must be located on the inboard side of the vehicle.** When the bushings are properly installed, they will be flush with the frame. Place grease in the frame hole before pressing in the bushing. For presswork we use 1/2 inch All-thread. This is threaded rod you can purchase from a hardware store and



two flat plates for installing the bushing. Cut the treaded rod about 7-1/2 inches long. Place a jam nut and plate on one end of the All-thread and slide the rest of the All-thread through the bushing and frame. Place the other plate and jam nut on the other side of the assemble. Align the grease hole in the frame correctly and start tightening down the nuts on the All-thread rod. Push the bushing in until the bushing is flush with the edge of the frame housing. After completion remove the All-thread assembly.

4. Drill a #3 hole in the frame rail housing, exactly in line with the 9/32" hole in the frame bushing. Tap the hole with a 1/4x28 threads and install the long grease fittings provided.

5. Remove the spring eyelet bushings from the leaf.

6. To insure proper spring alignment, the front eyelet bushing **must** be pressed in all the way to the bushing lip. Spacing for the rear eyelet bushings is exact as well and they must be pressed in all the way to their lip. **The grease fittings must be located on the inboard side of the vehicle.** We recommend pointing the grease fitting down and on a slight angle towards the split in the spring eye.

7. The rear leaf spring bushing presses in with the grease fitting to the inside of the car. Before pressing in the bushing, slightly screw the grease fitting in the bushing. Press the bushing into the rear spring eye so the grease fitting is towards the split (end of the roll of the spring eyelet) in the leaf. The fitting will actually be pointed down and towards the front of the car. Press the bushing in until the grease fitting just touches the leaf spring.

8. Next, install the inserts. The front inserts have a steel pin inside of them. Slide the pin out of the insert and lubricate the insert inside and out. Slide the pin back in the insert and install it in the bushing housing. Next locate in your kit 2 white thrust washers with a 3/4 ID. Install the small .100 thrust washer with the 3/4 hole next to the grease fitting in the front bushing. Install a .220 with a 3/4 hole on the other side of the front bushing. You may require a slight tap with a dead blow hammer to make the washer flush with the steel pin.

9. There are two round steel plates, 2-1/2"x1/4" thick that must be welded to the leaf spring mount. They are installed on the chassis located at the out board side of the front leaf spring eye mount. The plates are machined to index in the mount. Weld the plate to the mount on the outboard side of the bracket. Note: The plate should not protrude into the boxed portion of the frame mount. The lip of the plate should be on the outside of the frame box. We recommend TIG welding for this operation.

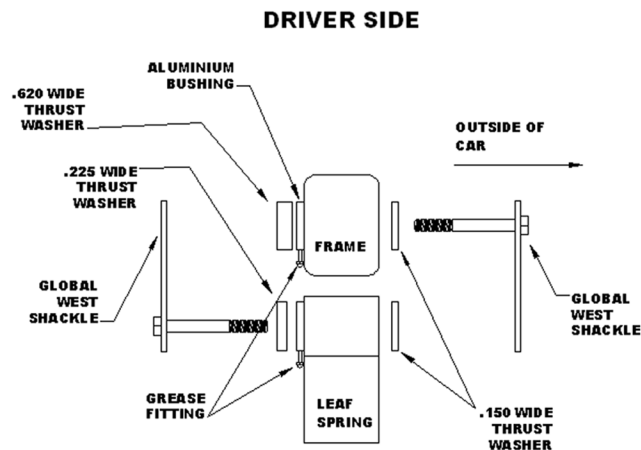
10. You will also find two convex washers that require welding. The washer (one per side) installs in the concave portion of the front spring eye located on the other side of the spring eye box you just welded. Use a 1/2 inch bolt, supplied in the kit and align the washer so it matches up with the frame. Weld the washer to the mount. When you are done you may have to buff the area flat. The concept is to make the front mount into a box so the bushings have a thrust surface.

11. The frame inserts are short compared to the rear leaf spring inserts. Lubricate the inside of the bushings (frame and rear spring eyelet) and inside of the insert. Slide the inserts into the bushing housings.

12. Next install the front spring eye mount. Slide the spring up into the mount and install the new ½ inch bolt. Make sure the white thrust washers are on the center pin, one on each side. Torque the bolt to 70 foot-pounds and then install the assembly on the car.

13. White plastic thrust washers must be installed on the shackles before installing on the car. The following chart shows the locations of the thrust washers at the shackle location.

- .620 thick washer --- top inside frame
- .150 thrust washer --- top outside frame
- .225 thick washer --- bottom (leaf) --- inside frame
- .150 thick washer ---- bottom (leaf) --- inside frame



**Note: Shackle halves are installed as follows: The bolt on the outboard shackle half goes through the frame and the bolt on the inboard shackle half goes through the spring eyelet bushing.**

Place grease on each side of the thrust washers during assembly. Slide a shackle halve through the leaf spring and one through the frame with the appropriate thrust washer installed. Swing the leaf up into position and with thrust washers installed slide the halves together. Install the locking nuts.

14. Once the shackles are installed and the leaf spring is hanging, tighten the shackle nuts down until the shackle assembly just has contact between the thrust washers, shackle halves, bushing, and leaf. There should be no air gaps. Then tighten the nut 1/8 of a turn or 1 flat on the nut. Do not torque the shackles to any number. This product acts like a bearing. Adjustment is somewhat similar to a wheel bearing. If you over tighten the shackle, the leaf spring will lock up.
15. Once both sides are completed the rear end can be re –installed and fuel tank.