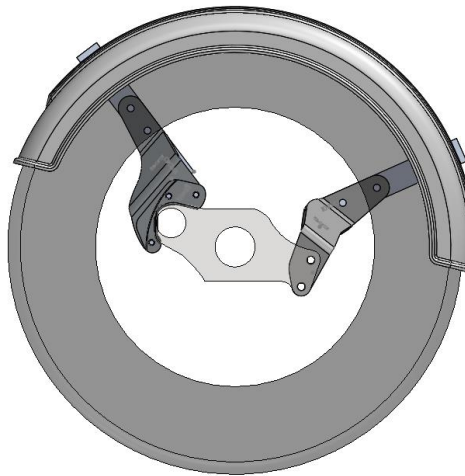




101439

**STEERABLE LIFT AXLE FENDER BRACKET KIT
INSTALLATION INSTRUCTIONS
FOR HENDRICKSON SC20 AXLE WITH WELDED BRAKE CAM TUBE**



DESIGNED FOR USE WITH MINIMIZER MODEL 2221 FENDERS

Fender Installation Steps

1. Remove the wheel from the axle on the right side of the vehicle
2. Remove the brake drum from the hub.
3. Remove the two-piece metal shield (if equipped) that is attached to the inside of the spindle backbone assembly as shown in Figure 1.
4. At the right front corner of the axle, fit bracket 100443 around the brake cam tube on the spindle backbone assembly as shown in Figure 2. The 100443 has a machined step that fits over the profile of the backbone. Clamp the 100443 in place and confirm that the machined groove of 100443 fits flush against the backbone. For proper fit it may be necessary to grind down the edge of the weld bead (around the brake cam tube and the backbone) slightly on the inboard side of the backbone. See Figure 3 below for an example. Paint will also need to be removed in the area where weld beads are placed.



Figure 1 - View of top shield



Figure 2 – Positioning bracket 100443



Figure 3 - Weld bead around brake cam tube

5. With 100443 clamped in position tack weld the bracket to the backbone in two places
6. Install the brake drum on the wheel hub and confirm that there is no interference between the drum, brake shoe, and the 100443 bracket. Once the clearance is confirmed, remove the drum.

7. Remove the brake shoe mechanism. Begin by removing the outer and inner retainer springs from the brake shoes. See figures 4 and 5 for details.

8. Support the lower brake shoe assembly and remove the return spring. Set parts aside and remove the upper brake shoe. See Figure 6.

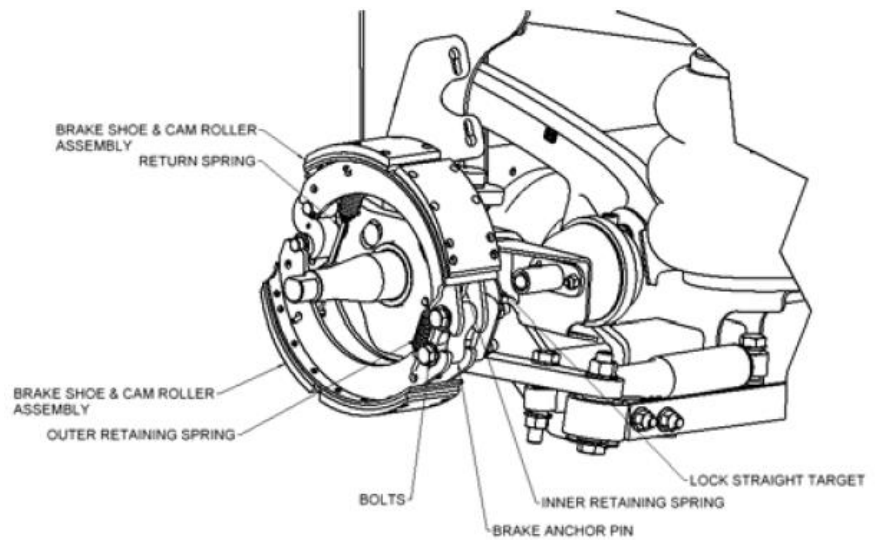


Figure 4 - Brake mechanism diagram



Figure 5 - Remove retainer springs



Figure 6 - Remove return spring and upper shoe

9. Remove the brake anchor pin bolts as shown in Figure 7.



Figure 7 - Remove anchor bolts

10. Three $\frac{1}{4}$ " x $\frac{3}{4}$ " weld beads are required (see Figure 7) to attach bracket 100443 to the backbone on the outboard side. Weld with an E7018 electrode or E70XX flux core wire. The camshaft washer may be rotated for ease of welding. Rotate it back to original position when finished.

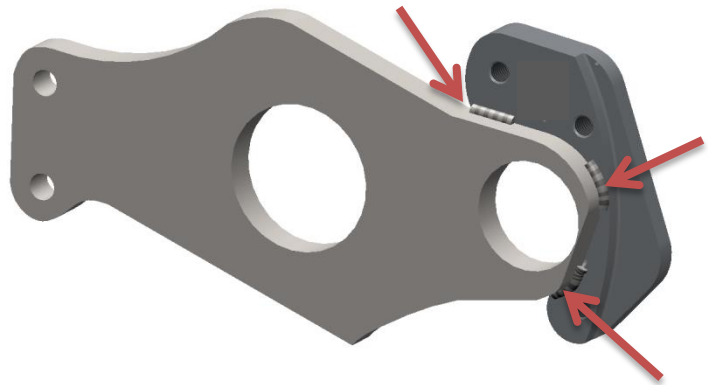


Figure 8 - Weld bead placement

11. Attach bracket 100444 onto part 100443 at the right front of the axle. Use three of the $\frac{1}{2}$ -13 X 1" flange bolts provided to attach the 100444 to the threaded holes.



Figure 9 - Part 100444 attached to axle

12. Replace the existing anchor pin bolts with longer ones. Use $\frac{5}{8}$ -11 X $5\frac{1}{2}$ " SAE Grade 8 bolts (not included). See Figure 10.

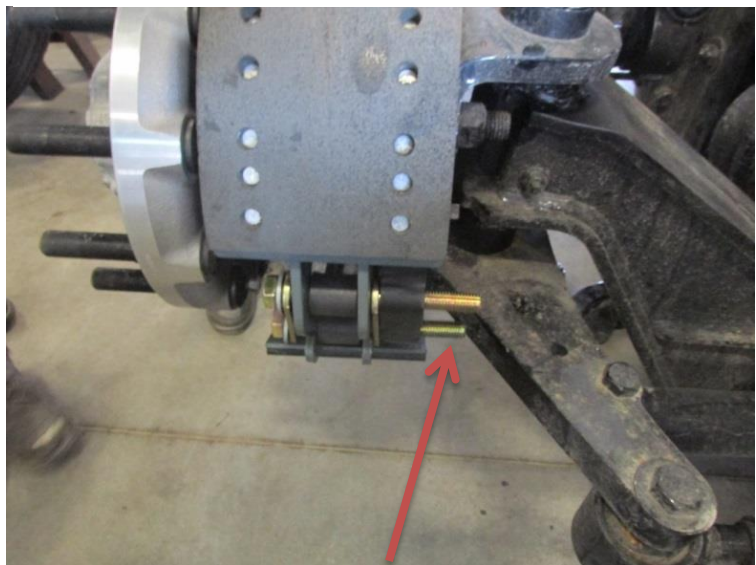


Figure 10 - Install longer anchor bolts

13. Install bracket 100445 over the anchor pin bolts that were installed in step 12. Replace the locknuts with new ones and torque the 5/8" anchor pin bolts to 220 FT-LBS.

14. Finish assembling the brake shoes and springs. Follow steps seven, eight, and nine, in reverse order.

15. Install the brake drum and wheel. Torque all wheel lugs to the truck manufacturer's specification.

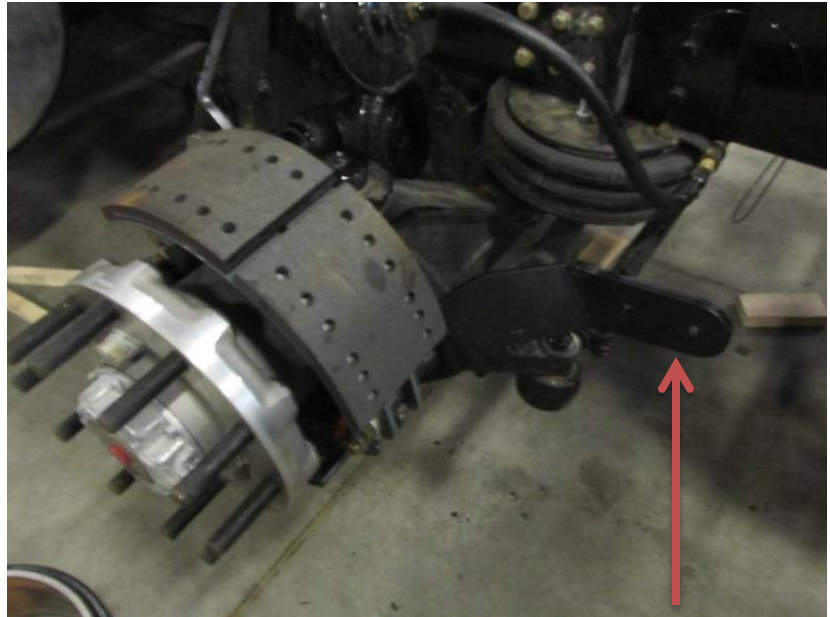


Figure 11 -View of rear bracket 100445

16. Place the Minimizer fender over the tire and use wood shims to space the fender away from the tire. The minimum clearance between the tire and fender is $\frac{3}{4}$ ". 1.5" of clearance is recommended for most applications. Place the Minimizer fender over the tire and aluminum arms so it rests on the wood block as shown in Figure 10.
- Measure the distance from the floor to the bottom edge of the fender on both ends and adjust the position of the fender until both distances are equal.
 - The aluminum arms may need to be adjusted inward or outward so they make even contact with the fender.
 - There should be at least 1.5"-2 "of clearance between the leading edge of fender and the tire to protect the fender from wind loads that may deflect the fender into the tire.
17. Clamp the 101427 aluminum arms to the inside face of the steel brackets (closest to the frame) with a vise grip. Make sure the inside end of the arm points directly toward the center of spindle. Adjust the arms so they align with 2221 fender.



Figure 12 - Model 2221 fender in position

18. With the front and rear arms clamped in place, measure and trim any excess material that extends past the bend in the mounting plate see Figure 13.

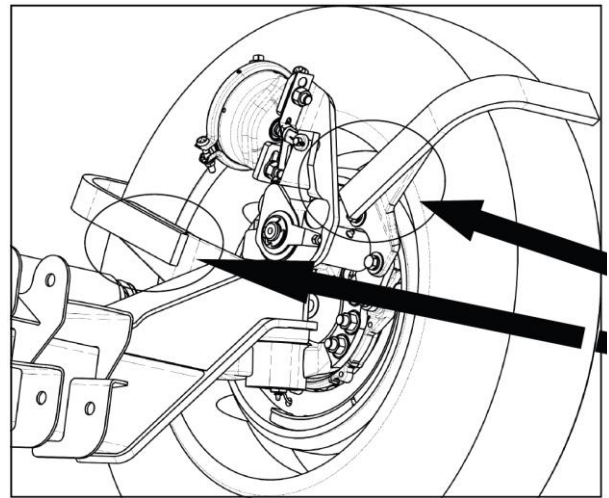
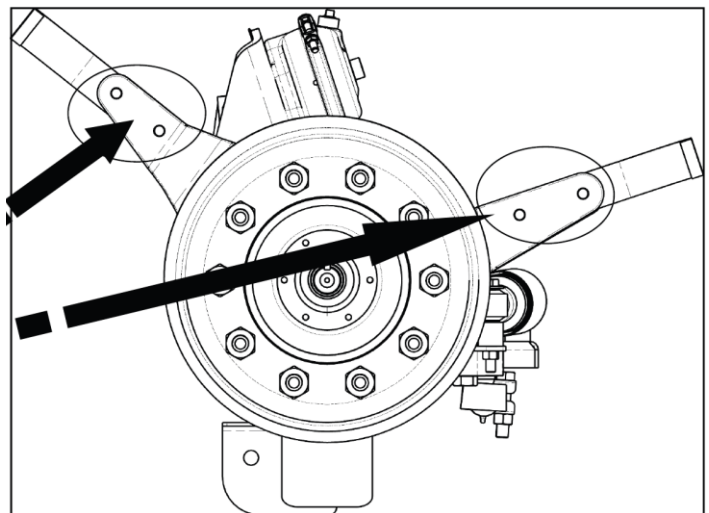


Figure 13 - Mark and trim arms

19. *Optional: Remove wheel for ease of marking the hole locations.*



20. Use the steel brackets attached to the axle as a template to mark the mounting hole locations in the aluminum arms see Figure 14.
21. Remove the aluminum arms and cut them at the marked line. Drill 9/16" diameter holes for mounting bolts.

Figure 14- Locate mounting holes

22. Bolt the aluminum arms to the steel fender brackets using the 1/2" x 2" flange head bolts and the 1/2" top lock flange nuts as shown in Figure 15.

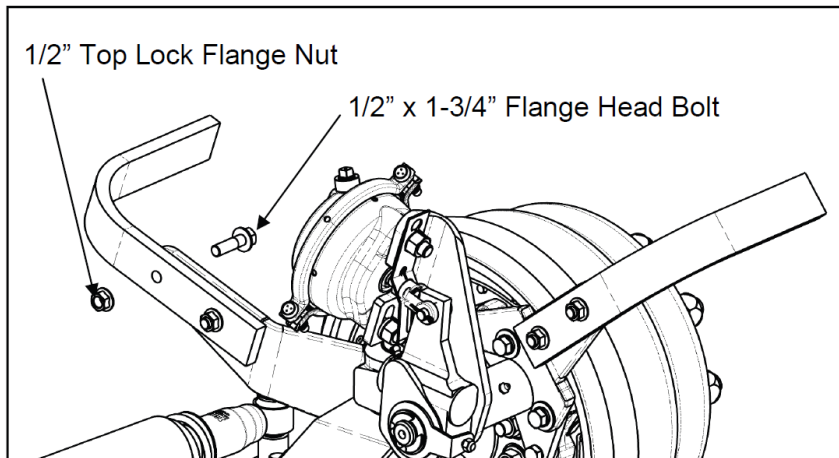


Figure 15 - Fasten aluminum arms

23. Install the fender under the aluminum arms. Make sure the fender is parallel to the tire. Drill two 11/32" diameter holes thru the fender to the arm. Use 5/16" bolts w/self-locking nuts (provided in kit).
24. Attach the fender to the aluminum arms and backing plates as shown in Figure 16.
 - a. **In order to be eligible for Minimizer warranty, the steel backing plates 100447 must be installed on the exterior surface of the fender.**

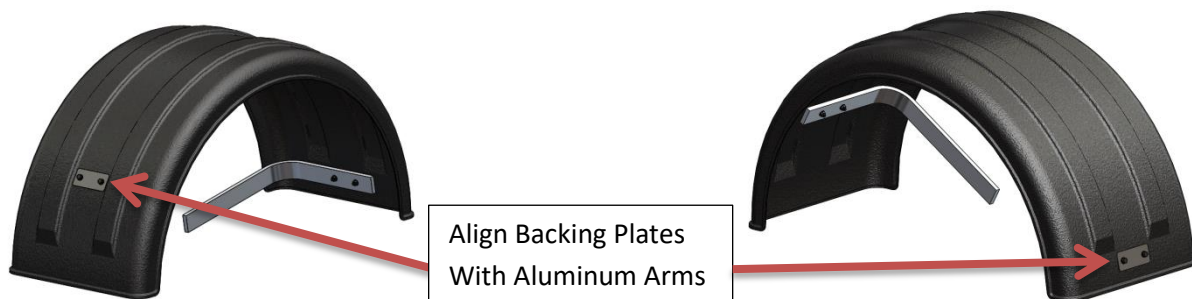


Figure 16 - Backing Plate Installation Detail

- b. Confirm that the fender is parallel to the tire.
- c. Align the backing plate 100447 so it is even (top to bottom) with the aluminum arm. Use one plate for each aluminum arm.

- d. Drill clearance holes or tap threads in the aluminum arms.
 - i. Option 1) Drill two 11/32" diameter holes thru the fender to the arm using the steel plate as a template. Use 5/16-18" bolts w/self-locking nuts (provided in kit).
 - ii. Option 2) Drill and tap 5/16"-18 threads into the aluminum arm. This option provides increased tire clearance. Shorter 5/16"-18 bolts (not included) will be required for this option
 - e. **Tighten the 5/16-18 hardware to a recommended torque of 5-7 ft.-lbs. Do not exceed the recommended torque.**
25. Repeat steps 1 thru 24 to install the brackets and fenders on the left side of the truck axle.