

## MORE ON... FLATHEAD TED BRAKE FLOATERS/ENERGIZERS

This is a follow-up article about the Flathead Ted Brake Floaters that appeared in the last issue of the Model A Times (Volume Two, Issue Four). The first article addressed the new components, the floating brake and centering concept, and the self energizing concept. This article will address additional information about installation and adjustment.

Many comments have been received saying that after installing Flathead Ted's kit, the car could be brought to a stop, but the brakes could not be locked up. As mentioned in the first article, the installation instructions provided with the kit may be difficult to follow and lack information on critical aspects of the installation.

Our kit was installed on a 1931 S/W Town Sedan that had new cast iron brake drums and new brake shoe linings installed last year. Approximately 1500 miles have been driven since the installation. The brake shoe linings were installed by a professional brake lining company (Capital Brake & Clutch, Sacramento California) with woven linings that were bonded and riveted. Linings and drums were then turned and arched to match. I make this point because I have found that self installed brake shoe linings with the light weight brass rivets and no bonding do not fit close enough or tight enough to the shoe to provide a good arch to the drum. These shoes will lose their correct arc to the drum after a short time in use. Woven linings must be bonded and riveted with heavy duty brass rivets to maintain the arc to the drum. If shoes do not make full contact with the drum, the brakes cannot be locked up.



Initial requirements for correct operation of Flathead Ted Brake Floater/Energizers:

1. This kit will probably not improve poor brakes, but will make good brakes much better.
2. The brake drums must be turned to true round and the brake shoe linings properly installed and arched to the drum circumference.
3. The operating pin that goes through the king pin must be 7-1/4" long.
4. The brake operating lever must be set at 15° forward by using brake pills (shims) in the brake wedge dimple to raise the operating pin.

Final adjustment was found to be critical but the end results were excellent. Foot pedal pressure to bring the car to a slow motion and stop was approximately 10 foot pounds, as compared to approximately 30 foot pounds pressure for standard mechanical brakes. This is the result of the self energizing action. Full foot pressure resulted in the brakes fully locking.

The following is the procedure we followed for installation and adjustment of the Flathead Ted Brake Floater/Energizer Kit. The Model A Times experienced excellent results with the following procedures.

## FlatHead Ted Brake Floater/ Energizer Installation & Adjustment Procedures For Front Brakes

1. Remove the front wheel axle nut, wheel bearings, and drum.
2. Remove the three brake shoe springs (1 long and 2 short) and remove the brake shoes.

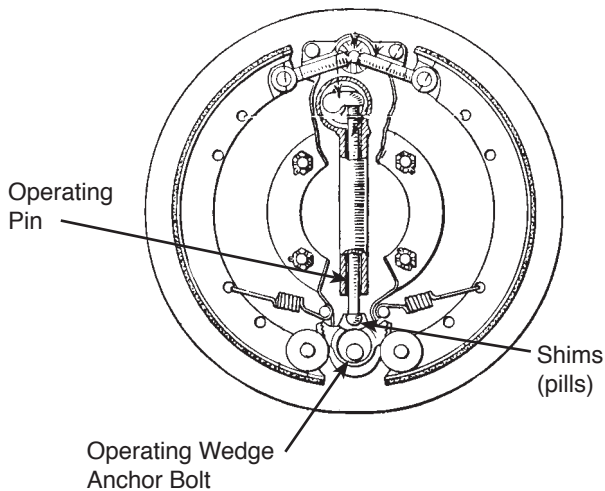
### NOTE

The brake shoe can be easily removed by pulling down on the bottom of the shoe, releasing it from the operating wedge. The springs can then be removed by hand and the shoes removed from the backing plate.

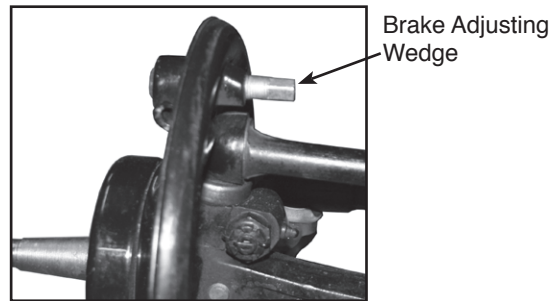
3. Remove the operating wedge anchor bolt [5/8" socket] located on the back side of the backing plate. The operating wedge stud, operating wedge and spacer can now be removed. The operating pin will then drop down out of the king pin.

### NOTE

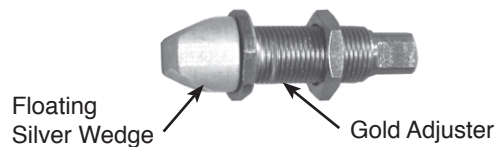
Be sure to retain any operating pin shims (pill) that may be in the operating wedge dimple.



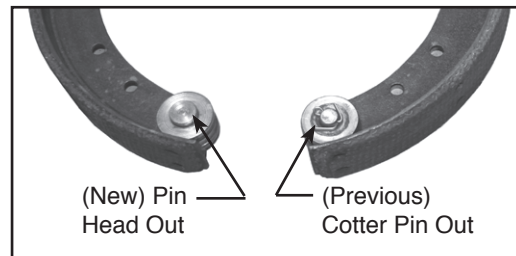
4. On the back side of the backing plate, screw the brake adjusting wedge (brake adjuster) all the way in. Then tap the square end, pushing the dust cap off, and removing the adjusting wedge through the front side of the backing plate. Clean thoroughly all old grease and dirt from the adjusting wedge hole and threads.
5. Re-tap the adjusting wedge threads with a thread tap (5/8-18). Apply clean grease to all threads and inside the wedge housing.



6. Screw the new Gold Adjuster into the top adjuster hole in the backing plate with the flat head of the Gold Adjuster facing out. Attach the Silver Wedge to the head of the Gold Adjuster with a film of grease.



7. Remove the roller pins and brake shoe rollers from the brake shoes. Inspect the rollers for wear. Rollers should be replaced if flat spots or wear is detected. Reverse the roller pins and reinstall the rollers on the shoes so the pin head is facing out and the cotter pin is on the back side. Bend cotter pin around roller pin shaft as shown below.



**Reverse the Pins on Both Shoes**

## BRAKE FLOATERS

- By reversing the roller pin, the pin head no longer sits on the roller track. Brake shoe centering is no longer dependent on the old roller track.
- Place the operating wedge on the new Floater Anchor Bolt. Then position the new centering spacer plate on the anchor bolt with the straight edge of the centering plate facing up. Place the operating pin up through the king pin and hold in place while attaching the Anchor Bolt to the backing plate with the nut on the back side, finger tight only. The operating wedge should move vertically freely with no interference.

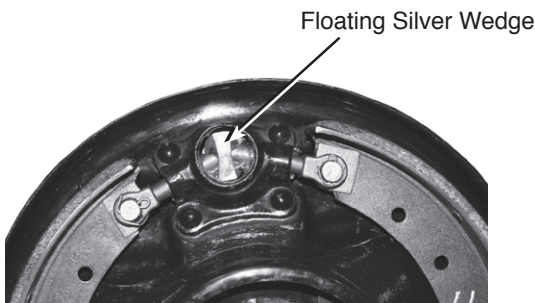


New Floating Anchor Bolt



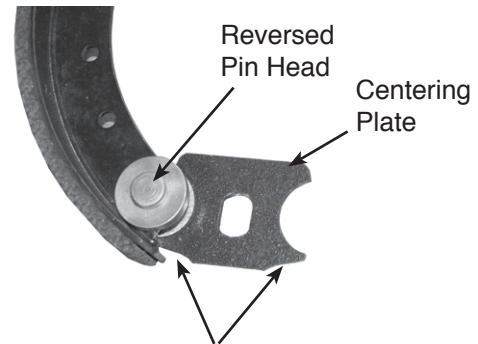
New Centering Spacer Plate

- Rotate the upper silver wedge in the vertical position and insert the top pins of both brake shoes into the backing plate adjusting hole. See figure below.



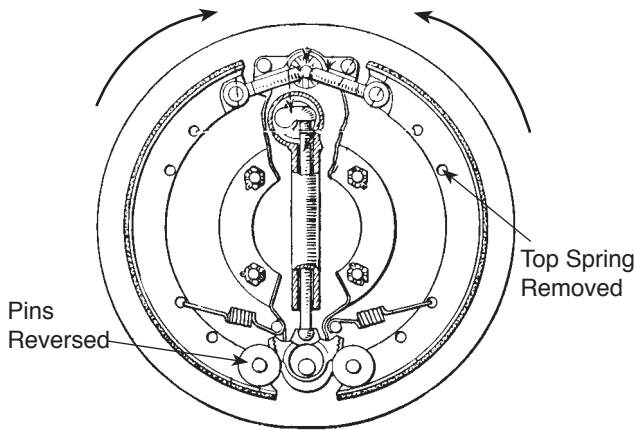
- Attach the brake shoes with the two lower springs only. Replace the springs if stretched. Do not attach the upper long spring.
- Screw the gold adjuster all the way out to allow the brake shoe upper pins to fit all the way into the adjuster holes.
- Check to see that the back brake shoe rollers are resting fully into the centering plate half moon cutout. If the brake shoe does not sit

fully into the centering plate half moon circle, it may be necessary to grind away some of the lower edge of the centering plate to allow the lower edge of the brake shoe to slip under the edge of the centering plate. See figure below.



- Observe the centering plate from below and make sure it is centered both vertically and horizontally between the two shoes. The plate can be moved slightly by loosening the anchor bolt nut. Adjust the plate so that the inside roller on both shoes fully sit in the half moon circle in the plate. Tighten the anchor bolt nut slightly more than finger tight.
- Make sure the brake shoe rollers are straddling the wedge track on both sides of the wedge and that the rollers are touching the wedge.
- Check the cotter pin end of the roller pin to make sure that the pin is not too long, causing it to hold the shoe out by rubbing on the backing plate. To correct this a small amount can be ground off the end of the roller pin.
- Disconnect the brake rod from the brake actuating lever. Pull back on the actuating lever to remove all free play, just before the operating pin pushes the wedge down to spread the shoes. At this position the actuating lever must be at 15° forward with all free play removed. Add another brake pill shim in the wedge dimple to raise the operation pin. Check again that the actuating lever is at 15° when lever is pulled back to remove all free play. This is a **MUST** adjustment to get proper braking action.

18. Pull the actuating lever back to ensure that the wedge moves down freely and that both shoes fully expand and there is no binding.
19. Grab the top of both brake shoes and push the shoe pins in and out of the adjusting hole from both directions to ensure free movement at the upper silver floating wedge. The floating wedge should move approximately 1/8" horizontally in either direction. This ensures there will be self energizing action of the shoes.



20. Install the drum with bearings on the spindle. Tighten the axle nut finger tight. Spin the wheel and tighten the gold adjusting bolt until the brakes fully lock up and the wheel can not be turned. Tighten the lower anchor bolt nut to 40 foot pounds. Insert cotter pin. This establishes shoe to drum clearance at the bottom.
21. Loosen the top adjuster and remove the drum. Pull the top shoe pins out of the adjuster hole and release to see that they return freely to their seating position. Grab the top of both brake shoes and push the shoe pins in and out of the adjusting hole from both directions to ensure free movement at the upper silver floating wedge. Replace the dust cap over the adjusting wedge hole.
22. Pull back on the brake actuating lever to ensure free operation of the wedge and spreading of the shoes at the bottom.
23. Repeat steps 1 through step 20 to install the kit on the other front wheel.

24. Install the drums with bearings on both front spindles. Tighten the axle nuts. Install the front brake rod to the actuating arm. The brake rod clevis must be adjusted so the rod clevis connects to the actuating arm with all free movement of the actuating lever removed. With the rod connected and all free movement removed, the actuating arm should be at 15° forward.
25. Spin the front wheels and tighten the gold adjusting bolt until the brakes just start to grab the drum. Spin both front wheels to ensure they have the same amount of drag, very slight if any. Tighten the adjusting bolt locking nut.
26. Remove one end of the rear brake rods from the clevis arm. This will allow testing of the front brakes only.
27. Road test the brakes. The brakes should start to react with about 3/4" of brake pedal movement. At about 10 mph apply full brake pedal. The car may pull to one side. Drive slowly for about 5 miles and softly work the brakes. This will self center the brake shoes. If the brakes will not lock up, return to the garage and slightly tighten the adjusters, only 1/4 turn at a time. Spin the wheels to ensure there is little or no drag. Road test again with slow stops and a full pedal stop. Full lockup should occur at no more than 1/2 pedal travel. If car pulls to one side, tighten the opposite brake adjuster slightly.

It may be necessary to drive the car for ten or twenty miles while intermittently applying brake pressure. Try a few full pressure stops. With correct adjustment, the car should come to a slow stop with very light foot pedal pressure, no more than 1" of pedal travel and approximately 10 foot pounds of pedal pressure. The brakes should fully lock up (when needed) with full brake pedal pressure applied with no more than 1/2 pedal travel.

Reconnect rear brake rods. Pedal and braking action appear to be similar to Hydraulic Brakes.

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Drive the car for about 100 miles or until comfortable with the self energizing effect before installing the rear Gold Adjuster and Floating Wedge.

## ***Installation & Adjustment Procedures For Rear Brakes Gold Adjuster & Floating Wedge***

Before installing the rear Gold Adjuster and floating wedge, ensure the following conditions have been met to obtain correct brake adjustment: *The brake drums must be turned to true round and the brake shoe linings properly installed and arched to the drum circumference. The brake roller tracks must be in good condition as to keep the shoes centered. The service brake cam shaft bushing must be in good condition (not excessively worn).*

1. Remove both rear axle nuts [7/8 wrench] and remove both rear wheel drums.

### NOTE

A rear wheel hub puller may be needed to remove the drums from the axle.

2. Disconnect the rear brake rods and emergency brake rods at the rear actuating arms.
3. Remove both springs from the emergency brake band. Remove the clevis pin at the emergency brake connecting link. The emergency brake band can now be removed.
4. Remove the four (4) castle nuts inside the grease baffle [9/16 socket]. Lift the backing plate complete assembly with brake shoes off the axle housing and place on work bench for further disassembly.
5. Remove the emergency brake lever. Then remove the emergency brake band carrier plate. The emergency brake lever must be removed before the emergency brake band carrier plate can be removed.
6. Remove only the rear (long) retracting spring.
7. Check the cam shaft bushing inside the backing plate roller track. If the bushing needs

replacing, the service brake actuating arm will have to be removed from the end of the cam shaft.

8. Pull both brake shoe adjusting pins out of the adjusting wedge holes.
9. On the back side of the backing plate, screw the brake adjusting wedge (brake adjuster) all the way in. Then tap the square end, pushing the dust cap off and removing the adjusting wedge through the front side of the backing plate.
10. Re-tap the adjusting wedge threads (5/8-18). Clean all grease and dirt from inside the adjusting wedge housing and adjusting pin holes.
11. Screw the new Gold Adjuster into the adjuster hole in the backing plate with the flat head of the Gold Adjuster facing out. Attach the Silver Wedge to the head of the Gold Adjuster with a film of grease. Rotate the upper silver wedge in the vertical position and insert the top pins of both brake shoes into the backing plate adjusting hole.
12. Attach the brake shoes with the two lower short springs only. Replace the springs if stretched. Do not attach the long spring. Tap the adjusting wedge dust cap in place.
13. Install the complete backing plate assembly onto the axle housing. Install the grease baffle using four nuts and bolts to attach the backing plate to the axle housing. Install the emergency brake band carrier plate and emergency brake lever on the back side. Attach the emergency brake band and connecting link. Attach the two emergency brake band springs.
14. Connect both the emergency and service brake rods. Install the drums. Screw the gold adjuster in until the drum is locked tight. Back the adjuster out until the drum can be rotated freely. Install axle nuts.
15. Test drive to check brakes. Tighten or loosen the rear gold adjuster to allow the rear brakes to have a hard drag when the front brakes are locked, giving a 40/60 rear to front braking ratio.