

as used on  
**1929 HUDSON AND ESSEX CARS**

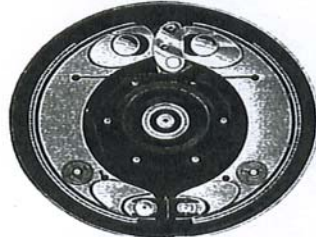
**T**HE shoes of the new Bendix two-shoe internal mechanical brake are identical in every respect and are therefore interchangeable. They are linked together at the bottom by a right and left hand screw, through articulating pins in such a manner that the shoes will align themselves with the brake drum, the right and left hand screw serving as an adjustment. At the upper or toe-end of the shoes are two anchor pins, one serving as the anchor for braking in the forward position and the other as an anchor when braking in the reverse direction. The shoes are expanded against the drums by means of a balanced cam which does not change its angularity during the life of the brake lining. Two trunion blocks bear on the curved ends of the shoe webs and provide compensation for movement of the shoes and for unequal wear.

In the forward rotation of the wheel, the forward shoe assumes the position of the primary shoe and the other the secondary shoe. In the reverse direction the rear shoe becomes the primary shoe and the forward shoe the secondary. This arrangement provides "servo" action in both directions. Before adjusting Bendix two-shoe internal mechanical brakes all linkages must be lubricated so that all parts of the brake hook-up operate freely and return to their stops when the brakes are in the released position. Wheel bearings must be in good condition and the backing plates securely attached to the axles. Also all spring clips must be tight.

If the cross shaft is not firm in its roller bearings, care should be taken to adjust bearing so that shaft will be free of play. The center of the ball on the front control lever should be 1/4 to 5/16 in. back of the center line of the king pin when the brake hook-up is in the off position and there should be a very slight amount of play between the ball and the lever. There should be a similar amount of play in the rear control levers.

Never change the setting of the nut on the end of the pull rod, or change the hook-up in any way in an attempt to adjust for wear. Inaccuracies in pull rod length, to give the slight amount of play between the ball and the cam lever, may be corrected only after the brakes have been properly adjusted with the notched wheel of the adjusting screw and the eccentric. by changing the clevis on the pull rods.

Shoe clearances may be checked with feeler gages when the brake drums are provided with feeler gage inspection holes or with a dummy drum. With correct adjustments the feeler gage check should show approximately twice as much clearance between the drum and the brake lining at the screw adjusting end of the shoes as at the anchor end of the shoes. A check showing about .008 in. clearance at the anchor end and about .014 in. clearance at screw adjusting end is correct.



The two brake shoes are identical and interchangeable on the Bendix Duo-Servo brake

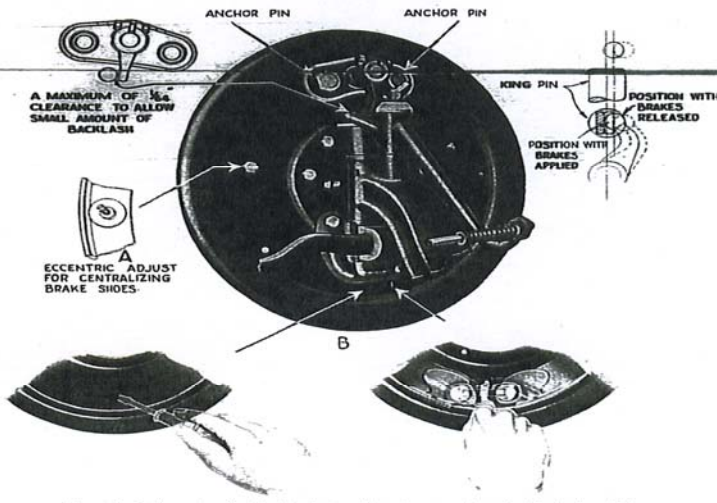
The balanced cam and right and left hand thread adjustment screw are clearly shown



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**Adjustment for Wear**

1. Jack up all four wheels.
2. Loosen locknut on eccentric adjustment A.
3. Turn the eccentric in direction wheel rotates when car is moving forward, until a very slight brake drag can be felt when turning the wheel over by hand.
4. Still holding this adjustment, tighten lock nut to hold this temporary position. This adjustment centralizes the shoes in the brake drum.
5. Make this adjustment on all four wheels.
6. Remove small cover plate at B. This discloses a small notched wheel, mounted on a shaft. One end of the shaft has a right hand thread and the other end a left hand thread. These are threaded into the ends of the brake shoes, and provide the means of spreading the shoes apart or bringing them closer together.
7. With a screw driver, or other suitable tool, turn the notched wheel of the adjusting screw toward the rim of the backing plate, until the two shoes are expanded against the brake drum sufficiently to cause enough brake drag so that the wheel can just be pulled over by one hand.
8. Make this adjustment on all four wheels, taking care that the adjustment is the same in each case.
9. Adjust the clearance of the shoes by turning back the adjusting screw, in the opposite direction which it was turned in 7, until only a slight drag remains when turning the wheel with one hand.
10. Make this adjustment on all four wheels, taking care that the adjustment is the same in each case.



Front brake layout and adjusting instructions for two-shoe Bendix brake. Left—Removing adjusting screw hole cover plate. Right—Tightening brakes—hand moving upward, point of screw driver moving downward

11. Loosen lock nut on eccentric adjustment and turn the eccentric slowly back in the opposite direction to which the wheel revolves when the car is moving forward, until the wheel is just free of brake drag.
12. Holding the eccentric firmly in this position, tighten lock nut. This completes the centralizing of the brake shoes in the drums.
13. Make this adjustment on all four wheels, taking care that the adjustment is the same in each case.
14. Depress brake pedal about two inches with a pedal depressor.
15. If brake tester is not available, try the holding effect by pulling the wheels over by hand. The two front wheels should be alike and the two rear wheels should be alike.
16. If the wheels are not alike, loosen the notched adjusting screw on the tight wheels until the brake drag is the same for both front wheels and both rear wheels.
17. Replace notched adjusting screw cover plates on all four wheels.
18. Remove pedal depressor.
19. Remove jacks.

**Major Adjustment**

(Anchor Pins)

The following procedure should be used only after fitting new lined shoes, when anchor pins are found loose or when the adjustments given under "Adjustment for wear" fail to give satisfactory results:

1. Jack up all four wheels.
2. With car jacked up at all four wheels check to insure free operation of hook-up and free return of cross shafts and pedal to their respective stops, and to be sure that there is a slight backlash in both front and rear control levers, as explained previously.
3. Loosen locknut on eccentric adjustment A.
4. Turn the eccentric in direction the wheel rotates when the car is moving forward, until a very slight drag can be felt when turning the wheel over by hand.
5. Still holding this adjustment, tighten lock nut to hold this temporary position. This adjustment centralizes the shoes in the brake drum.
6. Make this adjustment on all four wheels.
7. Loosen the two anchor nuts on each wheel, until the nuts are free of the lock washers.
8. Remove the small cover plate at B. This discloses a small notched wheel, mounted on a shaft. One end of the shaft has a right-hand thread and the other a left-hand thread. These are threaded into the ends of the brake shoes and provide the means of spreading these shoes apart or bringing them closer together.
9. With a screw driver, or other suitable tool, turn the notched wheel of the adjusting screw toward the rim of the backing plate, until the two shoes are expanded against the brake drum sufficiently to cause enough brake drag so that the wheel can just be pulled over by one hand.
10. Make this adjustment on all four wheels, taking care that the adjustment is the same in each case.
11. Turn the anchor nuts on all four wheels as tight as possible with a 16 in. wrench.
12. Adjust the clearance on all four wheels by turning back the adjustment screw, in the opposite direction which it was turned in 9, until only a slight drag remains when turning the wheel with one hand.
13. Make this adjustment on all four wheels, taking care that the adjustment is the same in each case.
14. Loosen lock nut on eccentric adjustment and turn eccentric slowly back in the opposite direction to which the wheel revolves when the car is moving forward, until the wheel is just free of wheel drag.
15. Holding the eccentric firmly in this position, tighten lock nut. This completes the centralizing of the brake shoes.
16. Make this adjustment on all four wheels, taking care that the adjustment is the same.
17. Depress brake pedal about 2 in. with a pedal depressor.
18. If brake tester is not available, try the holding effect by pulling the wheels over by hand. The two front wheels should be exactly alike and the two rear wheels should be alike.
19. If the wheels are not alike, loosen the notched adjusting screw on the tight wheels until the brake drag is the same for both front wheels and both rear wheels.
20. Replace notched adjusting screw cover plate on all four wheels.
21. Remove pedal depressor.
22. Remove jacks.