

BRAKE SERVICE

Guide

for

Plymouth

Dodge

DeSoto

Chrysler

Imperial

CENTER-PLANE BRAKE

CENTER-PLANE BRAKE

Used on the 1956 Imperial, Chrysler New Yorker, DeSoto and some Dodge cars and on all of the Chrysler products in 1957.

In 1957 the Center-Plane Brake, also called Total Contact Brake, was adopted for all Dodge and Plymouth cars although the brakes vary in size depending upon the weight of the vehicle in which they are used. All are similar in design and are serviced in the same manner.

Center-Plane is defined by the manufacturer as meaning that the wheel cylinders and brake shoe return springs are mounted in line with the Center-Plane Rib of the brake shoe. So, the forces that apply and release the brake shoe all work in a single plane. Adjustable anchor pins have been eliminated, resulting in a floating brake shoe that pivots around non-adjustable anchor pins at the heel end of the shoe. The brake shoe webs are guided by an inner and outer support plate, plus a spring guide for each brake shoe (see Figs. 1 & 2). The inner and outer support plates and the spring guide prevents the brake shoes from tilting or cocking when the brakes are applied.

It is most important that the spring guides have enough tension against the web of the brake shoes to keep the brake shoes rigid, otherwise a brake squeal may occur. You can increase this tension by bending the spring guide.

The linings are bonded and the same type wheel cylinder arrangements as in the past are used (two cylinders per front wheel, one cylinder per rear wheel). (See Figs. 1 & 2 below.)

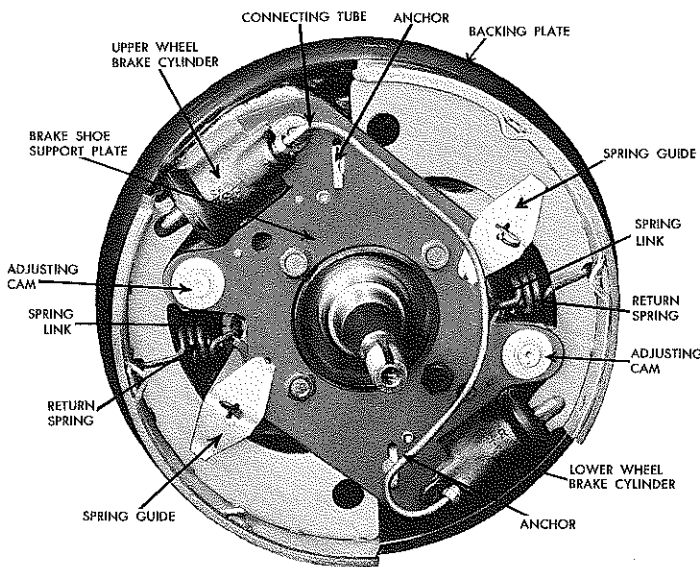


Fig. 1

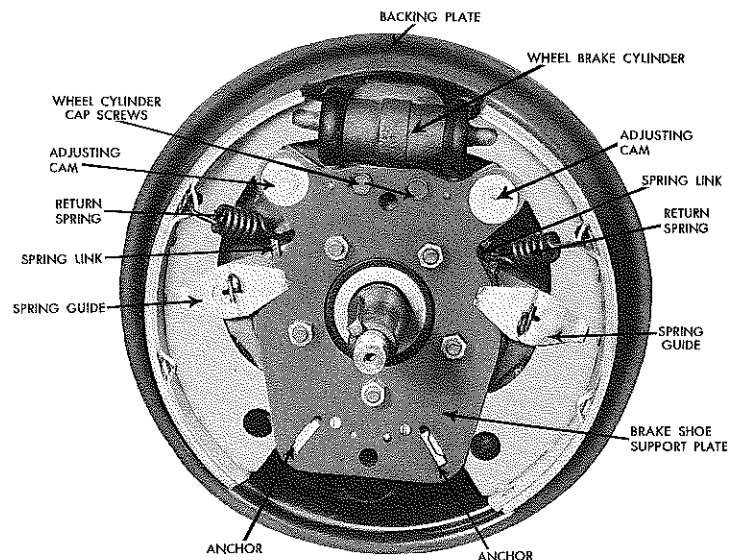


Fig. 2

OPERATION OF THE CENTER-PLANE BRAKE

Briefly, when the brake is applied, the wheel cylinder push rod forces the toe end of the shoe out against the rotating drum, which tends to carry the shoe

with it. Thus, the heel of the self-energized shoe is forced against the brake drum, giving greater braking effort. We now have full lining to drum contact.

NO MAJOR ADJUSTMENT REQUIRED DUE TO NON-ADJUSTABLE ANCHORS

The Center-Plane Brake requires only minor adjustments. When adjusting the front brakes, turn both adjusting cams located on the backing plate in the same direction of forward wheel rotation. Turn one cam at a time until the brake shoe locks the wheel. Then turn the adjusting cam in the opposite direction until the wheel is free of any drag.

When adjusting the rear brakes, turn the forward shoe cam adjustment in the same direction of forward wheel rotation until the brake shoe locks the wheel. Then turn the adjusting cam in the opposite direction until the wheel is free of any drag. Turn the reverse shoe cam adjustment in reverse of wheel rotation until the shoe locks the drum and then turn the cam in the opposite direction until the wheel is free of any drag. Don't forget: After making a brake adjustment, depress the brake pedal a few times. Then spin wheels to make sure they are free of any brake drag.

See Fig. 3 for proper direction of adjusting cams when adjusting all Center-Plane brake shoes.

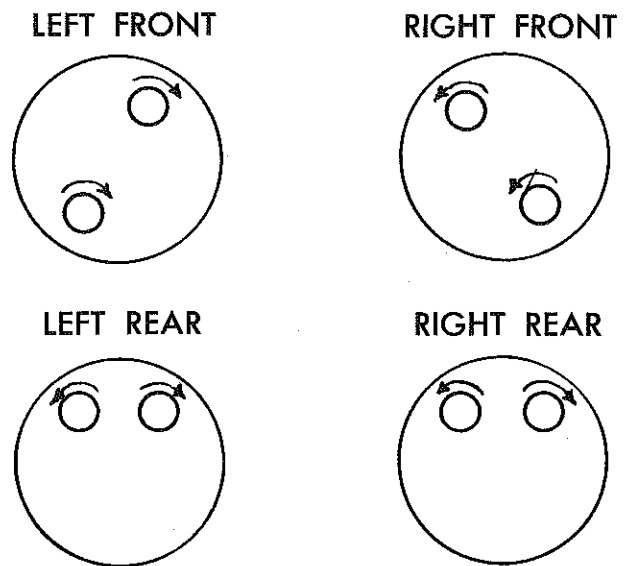


Fig. 3
Arrows indicate brake adjustment directions from backing plate side.

REMOVING THE BRAKE SHOES FROM THE BACKING PLATE

First, back off on brake shoe adjusting cams. Then remove wheel and drums. Next, remove brake shoe return springs using a special tool. *(See Fig. 4) This special tool was designed to keep from stretching or damaging brake shoe return springs. Damage to these springs may easily result in improper brake performance. Next, remove the spring guides by turning the guide spring retainer pin 1/4 turn. Now slide the brake shoes off the support plate assembly.

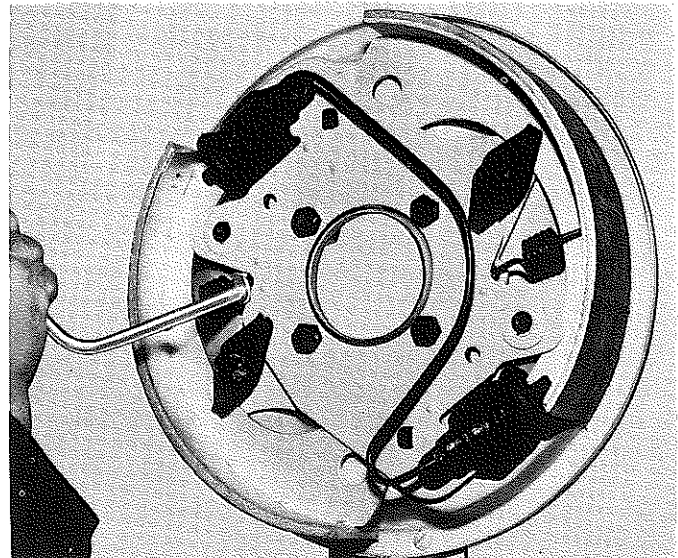


Fig. 4

*Contact your Raybestos Distributor for more information regarding the special tools needed to properly service Center-Plane Brakes.

PREPARING THE BACKING PLATE ASSEMBLY PRIOR TO INSTALLING BRAKE SHOES

Blow off any dust or foreign matter. Wipe or wash off any grease or brake fluid. Replace or overhaul wheel cylinders if necessary. Inspect grease seals and replace if necessary. Next, tighten all wheel cylinder cap screws 20 ft. lbs. and backing plate bolts 35 ft. lbs. Make sure brake shoe adjusting cams are free to turn in the event that they were not moved prior to removing the wheel and drum. Make sure the wheel cylinder bleeder valves are in good condition. Check the non-adjustable anchors for looseness. If they are loose, squealing and erratic brake performance will occur. These anchors are staked to the inner and outer plates and can be restaked or tightened by removing the inner and outer plate assembly from the backing plate (See Fig. 5).

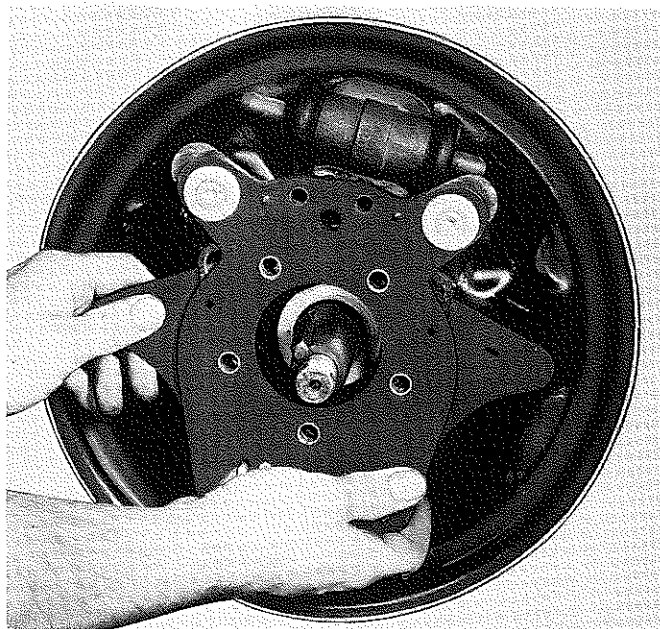


Fig. 5

Use a staking tool to retighten loose anchors.

RECONDITIONING OF BRAKE DRUMS

Never use a scored brake drum when relining brakes. Reface scored drums, drums more than .004" out-of-round and bell-mouthed drums. A newly turned drum will give better lining to drum contact, thus helping to eliminate brake squeals. Many brake drums on today's cars that have a smooth surface may be out-of-round or bell-mouthed, causing many brake problems. It is also important to replace drums that are more than .070" oversize in order to obtain the best brake performance. It is very important to use drum springs on all brake drums.

Always lay new brake shoes against the drum surface to check for good lining to drum fit. If too much belly contact is noticed, a spongy brake pedal will result. If heavy toe or heel contact appears, squealing brakes will be experienced. Properly ground shoes should have .005" to .010" clearance at both toe and heel ends.

LUBRICATE BACKING PLATE ASSEMBLY AND BRAKE SHOES

Use a high temperature lubricant at all points where the brake shoe contacts the inner and outer plate assembly and also at the edge of the heel end of shoe that contacts the anchor. This allows free movement of the brake shoes when the shoes are applied and released.

INSTALLING BRAKE SHOES

Please Note:

Raybestos Division will furnish the proper hardened brake shoes for all Center-Plane Brakes. It is very important that Center-Plane brake shoes be rehardened at the anchor end of the brake shoe web after they are debonded. If this is not done, this part will wear flat causing erratic performance of the brake (See Fig. 6, 7, 8).

Position brake shoes in between the two support plates. Make sure wheel cylinder push rods properly engage toe end of shoes and that shoes are in alignment. Install brake shoe return springs hooking long end of return springs to the brake shoes. If erratic brakes have been experienced, check tension of springs. It should be 70 pounds plus or minus 5 pounds installed length. This can be checked by hooking a pull scale at the toe end of the brake shoe and pulling the toe away from the wheel cylinder. The scale should now read 35 to 45 pounds before contact is broken between web of shoe and wheel cylinder push rod. Use the special tool for hooking the return springs into the spring link.

Next, install the brake shoe guide springs. Make sure positioning lip of guide spring (See Fig. 4) engages the hole in the support plate. This guide spring should have good tension against the web of the brake shoe as explained in the early part of this article. Next, install brake drums and wheels and adjust the brake shoes as described earlier.

Always bleed the hydraulic system after the brakes are relined, regardless of whether the cylinders were replaced or not. If the car is equipped with a power brake unit, bleed the power brake unit first. Always bleed the highest bleeder valve on the power unit first if it has more than one bleeder valve. Then bleed the wheel cylinder that is farthest away from the master cylinder or power brake unit, followed by the next shortest distance until all wheel cylinders are bled. When bleeding the front wheel cylinders, always bleed the top wheel cylinder first and then the bottom wheel cylinder.

BRAKE SHOE AND BACKING PLATE CHANGES MADE IN CENTER-PLANE BRAKES

The original Center-Plane brake shoe in 1956 did not have any loops in the rim of the shoe. (See Fig. 6).

During 1956, Chrysler Corporation added two loops to the shoe rim (See Fig. 7) and used this type shoe on both front and rear brakes for the remainder of 1956 production. Raybestos shoes BS-1257 have these two loops.

In 1957 all Center-Plane brake shoes have 4 loops in the rim of the shoe. (See Fig. 8).

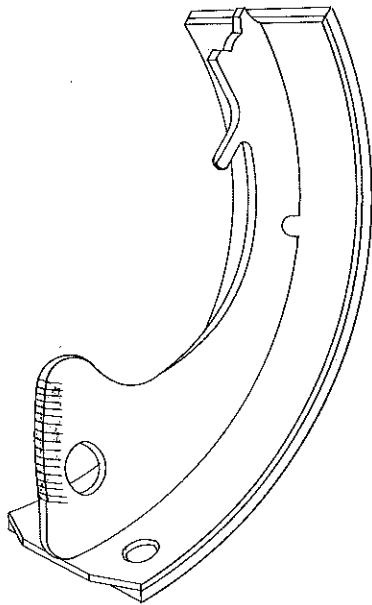


Fig. 6

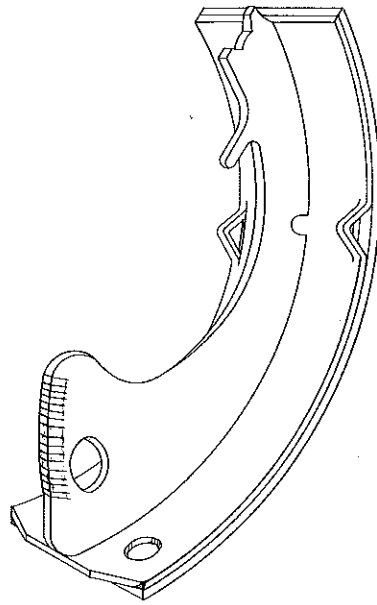


Fig. 7

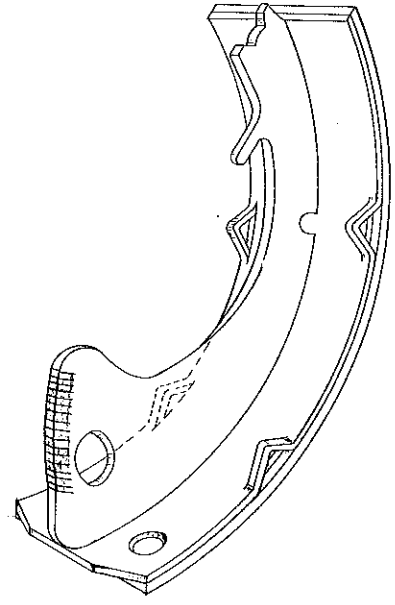


Fig. 8

The added loops are for contact against backing plate ramps or bosses which have been added to the 1957 backing plates. Now the brake shoes have a more rigid support which helps to prevent brake squeals. The 1956 backing plates did not have ramps, so the 1956 and 1957 brake shoes are not interchangeable.

Do not forget to lubricate the backing plate ramp where the brake shoe loop makes contact on all 1957 cars using the Center-Plane brake.

All of the rear brakes in 1957 use brake shoe return springs that are longer and have more coils than front return springs, because they are connected to one of the loops in the brake shoe rim, instead of the hole in the web of the shoe.

ELIMINATING BRAKE NOISE ON 1956 CHRYSLER PRODUCTS USING THE CENTER-PLANE BRAKE

When the two loop shoe (See Fig. 8) is used, brake shoe return springs on the rear brakes only are attached to the outer loop instead of to the hole in the web of the brake shoe. Now a longer (5 coil) brake shoe return spring is necessary. The Chrysler part number of longer return spring is 1409970.

CAUTION: Do not install the longer brake shoe return spring in the front brakes. Use the original brake shoe return spring, which has 4 coils in the front brakes, and connect these springs from the link to the hole in the web of the shoe.

Both 1957 Plymouth and Dodge cars use the 3 coil brake shoe return springs in the front brakes and the 6 coil springs in the rear brakes.

1. If the brake shoe anchors in the brake support plates are loose, especially on the rear brakes, noise may remain. Additional staking of the anchor or replacement of the support plate assembly may be required (As described in Fig. 6).

2. An additional brake drum dampener spring over the original dampener spring and resting against the high rib of the brake drum will also help to eliminate a brake squeal.
3. Reface all brake drums to insure a good, clean, and true surface.
4. Torque wheel cylinder cap screws to 20 ft. lbs. Torque backing plate bolts 35 ft. lbs.
5. Sometimes a .010" or .015" Vell-U-Moid gasket placed in back of all backing plate assemblies will help to eliminate brake squeals. However, you may have to remove a steel shim on the rear assemblies to control rear axle end play.
6. Make sure new brake shoes are properly contour ground to fit the brake drum diameter.
7. In some instances where squealing persists on 1956 Chrysler cars, it may be necessary to replace backing plates with the improved 1957 backing plates. When this is done it is necessary to use the four loop shoes (BS-1257A) for best results.

**All information contained
in this booklet
was prepared in the interest
of
greater BRAKE SAFETY by**

Raybestos

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