DELCO-MORAINE AUTOMATIC ADJUSTER

Buick
Cadillac
Chevrolet
Oldsmobile
Pontiac

DESCRIPTION

Brakes are hydraulic single anchor and use Bendix type shoes. Anchor pins for brake shoes are fixed to backing plate and are non-adjustable. Automatic system is made up of a link, actuating lever, pawl and pawl spring. Pawl spring is mounted on secondary brake shoe. System uses an override pivot plate and spring to protect against binding linkage.

NOTE – *Some models use an adjuster pawl with a separate blade to contact star wheel. This system does not use the override spring.*

OPERATION

Automatic adjusters operate only when brakes are applied as car is moving in reverse. The link, which holds top of actuating lever stationary, forces lever to pivot on secondary shoe. This pivoting action forces pawl downward against tooth on adjuster screw. If the lining-to-drum clearance is correct, the downward movement will stop before adjusting screw is turned. If clearance is too wide, secondary shoe will move outward. This allows pawl to move down enough to turn adjuster screw one notch. This brings lining-to-drum clearance back to correct specifications. If adjuster screw is frozen or clearance is too great, an override device will prevent adjuster movement. This will prevent binding of automatic adjuster linkage.

ADJUSTMENT

BRAKE SHOE ADJUSTMENT

Adjustment should be required only after relining or replacing shoes, or if length of adjusting screw is changed.

Buick, Chevrolet & Pontiac – Remove adjusting hole cover. Install a tool through adjusting hole to move self-adjuster lever off of adjusting screw. Use tool to turn screw and expand brakes until wheel can just be turned by hand. Make sure drag is equal on both wheels. Back off adjusting screw 30 notches. Wheel should not drag after about 12 notches. If drag is noted at this point, check parking brake cable. If brakes still drag lightly after 30 notches, loosen 1 or 2 more notches.

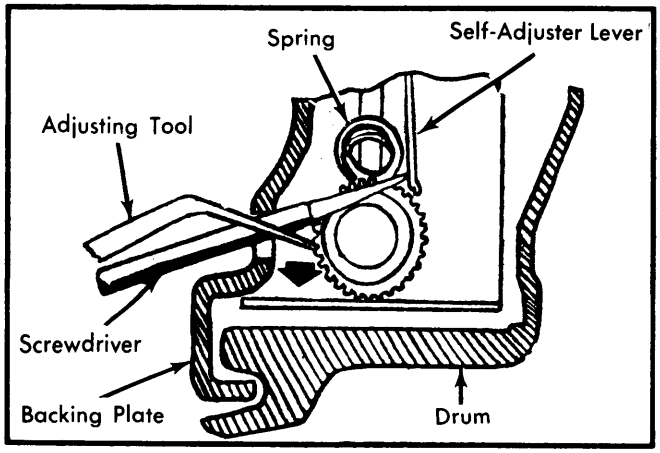

Fig. 1 Adjusting Brake Shoe Clearance (Through Backing Plate)

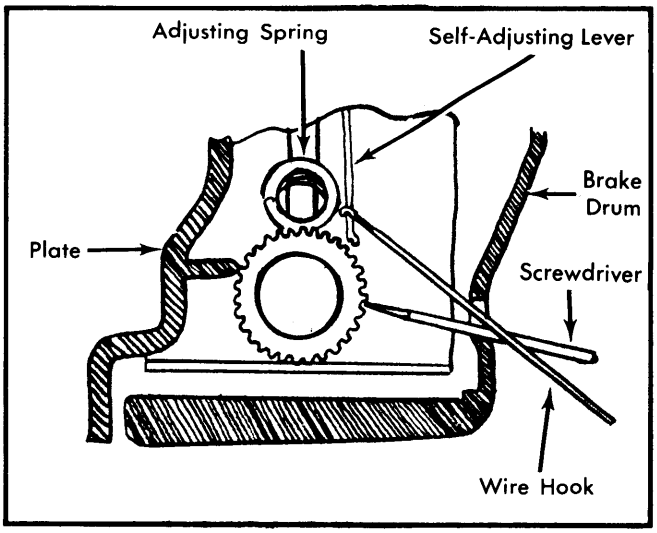

Fig. 2 Adjusting Brake Shoe Clearance (Through Drum)

Oldsmobile & Cadillac – Remove wheels and drums. Make sure parking brake cable and linkage are free. Measure drum inside diameter using suitable tool (J-21177). Adjust shoes to fit opposite side of measuring tool. See *Fig. 3*. Install drums and wheels. Drive vehicle alternately backwards and forwards, applying brakes moderately until pedal travel is adequate (about 2″).

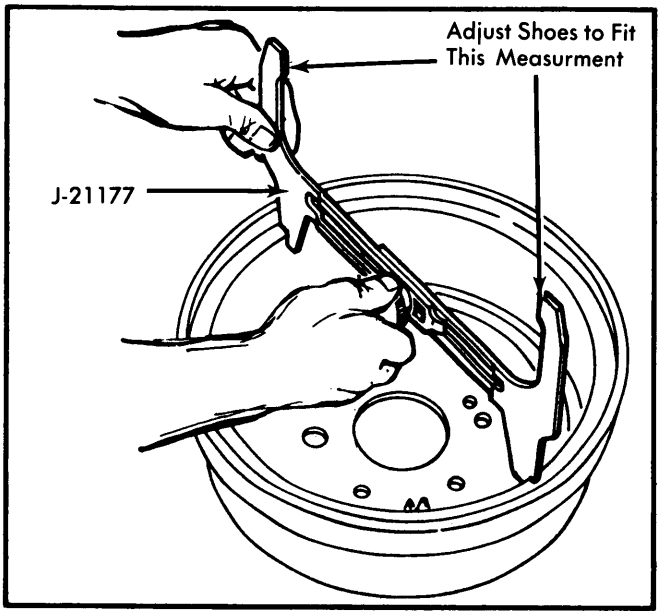

Fig. 3 Measuring Drum Inside Diameter for Brake Shoe Clearance

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PARKING BRAKE ADJUSTMENT

NOTE – *Always check parking brake adjustment after adjusting rear brakes.*

Monza, Skyhawk, Starfire & Sunbird – Apply parking brake one notch (3 on Monza), raise and support vehicle. Remove drive shaft to gain access to equalizer lock nut. Loosen lock nut then tighten adjusting nut until a slight drag is felt while rotating rear wheels. With parking brake fully released, no drag should be felt when rotating rear wheels. Tighten lock nut and replace drive shaft.

Cadillac – Lubricate parking brake linkage at equalizer and cable stud, and ensure free movement of cables. Depress parking brake pedal to approximately 1½" from fully released position. Raise rear wheels. Hold brake cable stud from turning, and tighten equalizer nut, one turn at a time (checking for brake drag after each turn), until light drag is felt on either wheel (turning forward). Release parking brake. No drag should be present at either wheel. After adjustment, parking brake pedal should travel 5.25-6.75" with a pedal force of 125 lbs.

All Other Models – Apply parking brake pedal one notch on Impala and Caprice models, three notches on LeMans and Grand Prix models. On all other models, apply brake two notches. Raise and support vehicle. Tighten the adjusting nut on parking brake cable equalizer until left rear wheel can just be rotated rearward. Wheel should not rotate forward. Release parking brake and check that no drag is felt on either side. Lubricate parking brake cable if adjustment does not remove drag.

SERVICING

SHOE & LINING REPLACEMENT

NOTE – *Mark position of springs and star adjusters as they are removed, for installation in original position.*

Removal – Release parking brake and loosen parking brake cable at equalizer. If necessary, back off brake adjustment before removing brake drums. Unhook return springs. Remove brake shoe hold down springs and cups. Lift parking brake actuator and unhook actuating link from anchor pin. Separate brake shoes from wheel cylinder connecting links. Remove

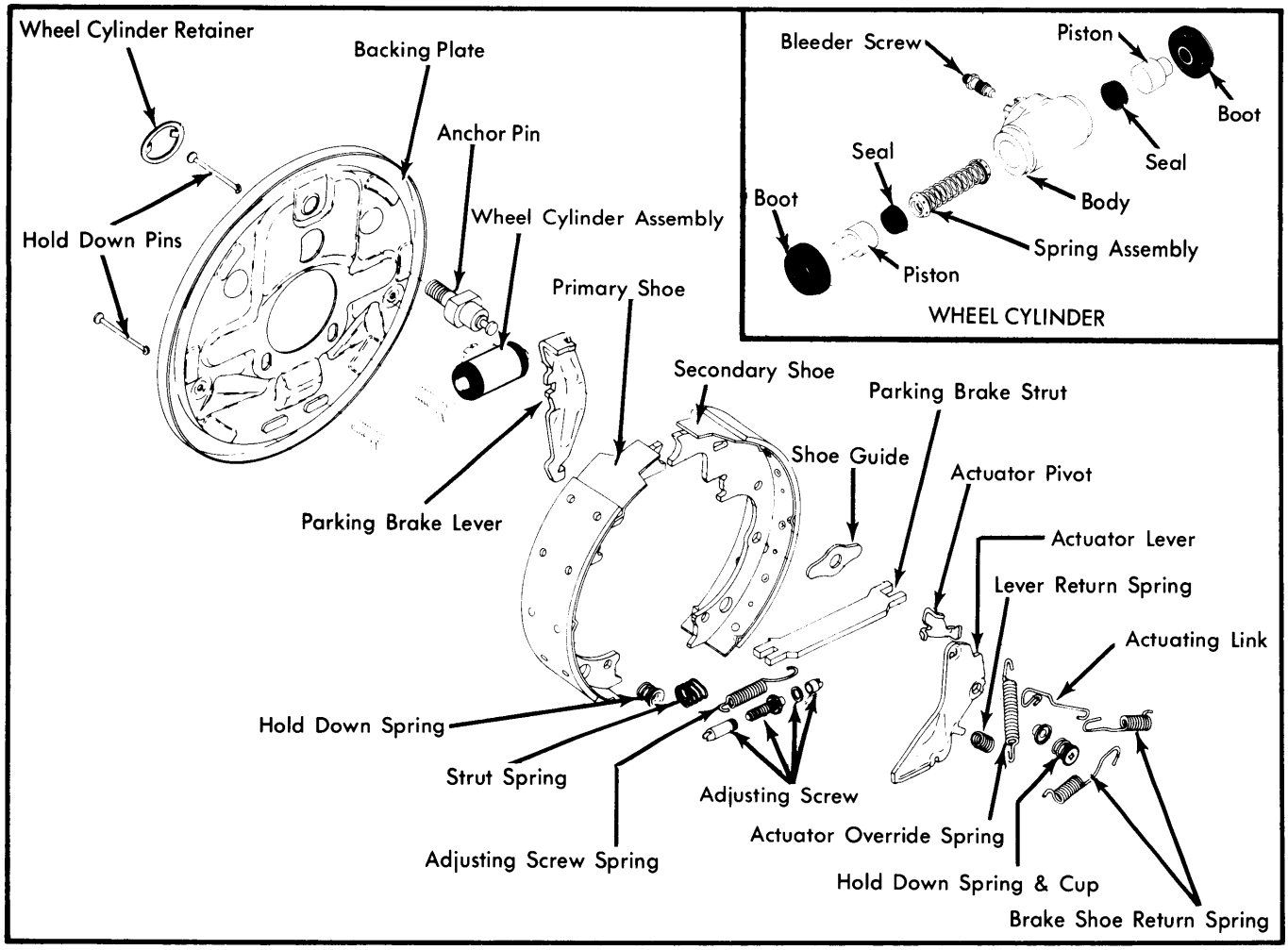

Fig. 4 Exploded View of Rear Drum Brake Assembly & Wheel Assembly (Century, Malibu, Monte Carlo, El Camino, LeMans, Grand Prix & Cutlass)

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parking brake strut and spring, disconnect cable from parking brake lever, and remove brake shoes. Detach adjuster screw and spring from brake shoes. Remove parking brake lever.

Installation – Lubricate fulcrum end of parking brake lever and attach to secondary shoe. Connect adjusting screw spring, then place screw in position. Ensure that star is aligned with adjusting hole. Lubricate surfaces where shoe and parking brake cable contact backing plate. Position shoes and insert into wheel cylinder links. Connect cable to parking brake strut and spring, between lever and primary shoe. Install actuator, actuator return spring and actuating link. Replace brake shoe hold down springs and return springs. Adjust brake shoe clearance as previously described. Replace brake drums and wheels. Adjust parking brake cable at equalizer nut and check for proper operation of brakes before moving vehicle.

TIGHTENING SPECIFICATIONS

WHEEL LUG NUTS

Application	Ft. Lbs.
Buick	
Riviera	100
Skylark	103
½" Studs	100
Century Aluminum Wheels	90
All Others	80
Cadillac	100
Chevrolet	
Chevette	70
Citation	103
Monza & Camaro Aluminum Wheels	90
Impala & Caprice Wagon	100
All Others	80
Oldsmobile	
Cutlass Aluminum Wheels	90
88 Wagon, 98 & Toronado	100
Omega	103
All Others	80
Pontiac	
Phoenix	103
Aluminum Wheels	90
All Others	80

BLEEDING SYSTEM

See Hydraulic Brake Bleeding in this section.

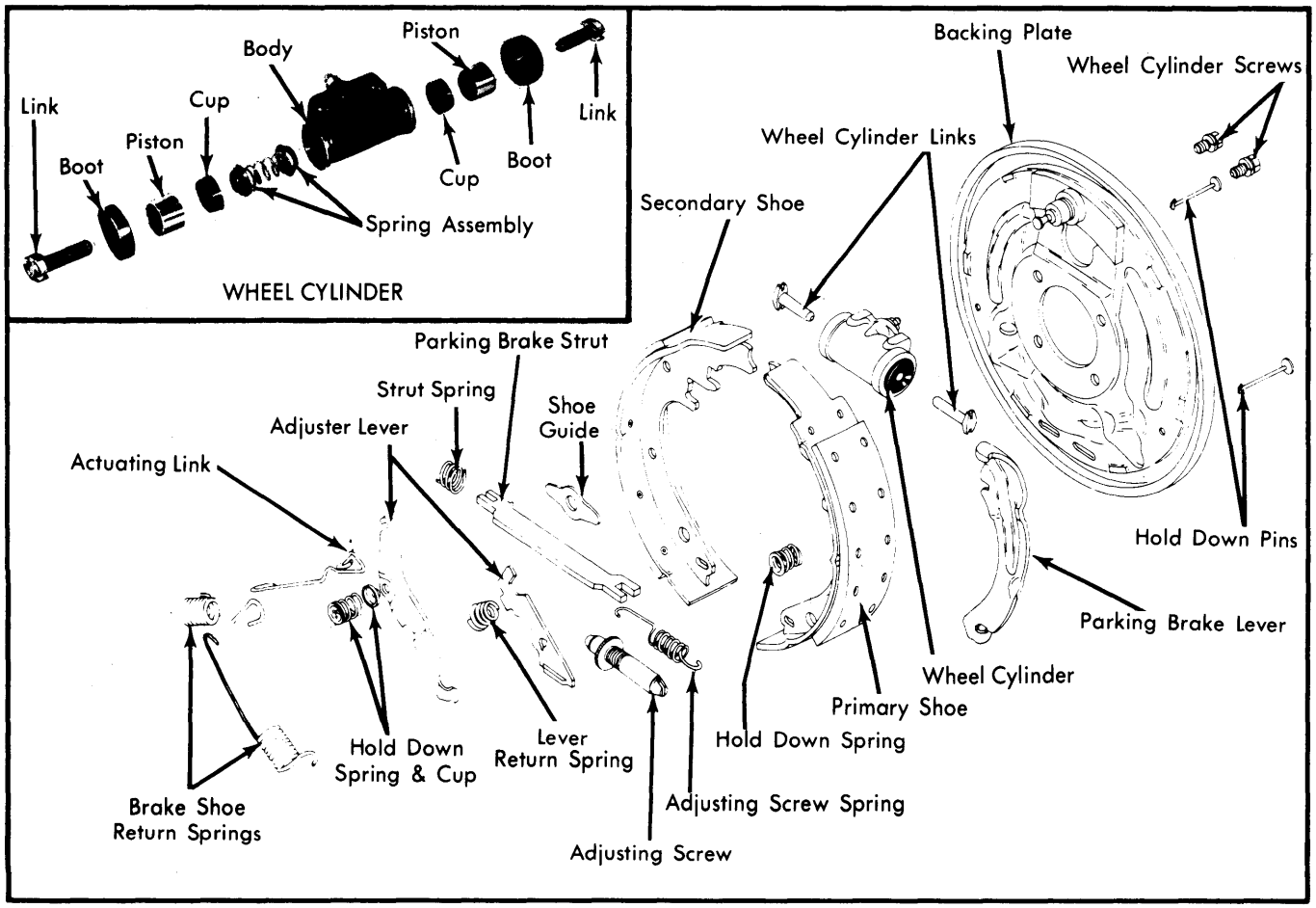

Fig. 5 Exploded View of Rear Drum Brake Assembly & Wheel Assembly (All Other General Motors Models Shown)

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BRAKE SYSTEM SPECIFICATIONS

Application	Drum Diam.	Wheel Cylinder Diameter		Master Cylinder Diameter
		Front	Rear	
Buick				
Skyhawk	9.5"	2.50"①	.688"	.875"
Skylark	7.87"	2.24"①	.689"	.874"
Riviera	9.5"	2.50"①	.750"	.945"
LeSabre				
231" Engine	9.5"	2.94"①	.875"	1.125"
301" Engine	11.0"	2.94"①	.938"	1.125"
Century & Regal	9.5"	2.50"①	.750"	.875"⑤
Electra & Estate Wagon	11.0"	2.94"①	.938"	1.125"
Cadillac				
Seville & Eldorado	②	2.50"②	2.125"②	1.00"
Brougham & Deville	11.0"	2.94"①	1.00"	1.125"
All Others	12.0"	2.94"①	1.00"	1.125"
Chevrolet				
Citation	7.87"	2.24"①	.689"	.874"
Chevette	7.88"	1.88"①	.690"	.750"
Monza	9.5"	2.50"①	.688"	.875"
Camaro	9.5"	2.94"①	.938"	1.00"③
Malibu & Monte Carlo	9.5"	2.50"①	.750"	.938"
Chevrolet	9.5"	2.94"①	.875"	1.125"
Chevrolet Wagon & Police	11.0"	2.94"①	.938"	.938"③
Oldsmobile				
Omega	7.87"	2.24"①	.689"	.874"
Starfire	9.5"	2.50"①	.688"	.875"
Cutlass	9.5"	2.50"①	.750"	.813"④
Toronado	9.5"	2.94"①	.938"②	1.00"
88	9.5"	2.94"①	.875"	1.125"
98 & 88 Wagon	11.0"	2.94"①	.938"	1.125"
Pontiac				
Phoenix	7.87"	2.24"①	.689"	.874"
Sunbird	9.5"	2.50"①	.688"	.875"
Firebird	9.5"	2.94"①	.938"	1.00"③
LeMans & Grand Prix	9.5"	2.50"①	.750"	.866"⑤
Catalina & Bonneville				
Coupe & Sedan	9.5"	2.94"①	.938"	1.125"
Station Wagon	11.0"	2.94"①	.938"	1.125"

① — Equipped with front disc brakes.
② — With 4 wheel disc brakes.
③ — With power brakes 1.125" master cylinder.
④ — With power brakes .875" master cylinder.
⑤ — With power brakes .945" master cylinder.

BRAKE DRUM SPECIFICATIONS

Application	Drum Diameter	Original Diameter	Maximum Refinish Diameter	Discard Diameter
General Motors				
All Models	7.87"	7.879"	7.899"	7.929"
	9.5"	9.500"	9.560"	9.590"
	11.0"	11.000"	11.060"	11.090"
	12.0"	12.000"	12.060"	12.090"

DELCO-MORAINE AUTOMATIC ADJUSTER (Cont.)

BRAKE LINING SPECIFICATIONS

Application	Drum Dia.	Width		Length		Thickness	
		Front	Rear	Primary	Secondary	Primary	Secondary
Buick							
Skyhawk	9.5"	①	2.0"	7.63"	9.91"	.20"	.20"
Skylark	7.87"	①	1.73"	6.34"	7.64"	.24"	.28"
Century, Regal & Riviera	9.5"	①	2.0"	7.51"	9.91"	.19"	.27"
LeSabre							
231" Engine	9.5"	①	2.0"	7.63"	9.91"	.21"	.28"
301" Engine	11.0"	①	2.0"	8.93"	11.58"	.23"	.28"
Electra & Est. Wagon	11.0"	①	2.0"	8.93"	11.58"	.23"	.27"
Cadillac							
Brougham & Deville	11.0"	①	2.0"	8.95"	11.59"	.25"	.29"
All Others	12.0"	①	2.0"	10.98"	12.36"	.23"	.24"
Chevrolet							
Citation	7.87"	①	1.73"	6.34"	7.64"	.24"	.28"
Chevette	7.88"	①	1.73"	6.60"	8.00"	.15"	.19"
Monza & Camaro	9.5"	①	2.0"	7.30"	9.6"	.23"	.23"②
Chevrolet Pol. & Sta. Wag.	11.0"	①	2.0"	8.86"	11.47"	.22"	.26"
All Others	9.5"	①	2.0"	9.00"	11.5"	.22"	.26"
Oldsmobile							
Omega	7.87"	①	1.73"	6.34"	7.64"	.24"	.28"
Starfire	9.5"	①	2.0"	7.63"	9.91"	.19"	.27"
98 & 88 Wagon	11.0"	①	2.0"	9.00"	11.5"	.22"	.26"
All Others	9.5"	①	2.0"	9.00"	11.5"	.22"	.26"
Pontiac							
Phoenix	7.87"	①	1.73"	6.34"	7.64"	.24"	.28"
Catalina & Bonneville							
Coupe & Sedan	9.5"	①	2.0"	7.30"	9.46"	.23"	.23"
Station Wagon	11.0"	①	2.0"	7.30"	9.46"	.23"	.27"
All Others	9.5"	①	2.0"	7.30"	9.46"	.23"	.23"②

① — Equipped with front disc brakes.
② — Monza and Sunbird .30".