"THIS ARTICLE IS INTENDED FOR YOUR REFERENCE ONLY. ACTUAL PARTS, YEARS AND BODY STYLES CONTAINED IN THIS ARTICLE MAY DIFFER SLIGHTLY FROM YOUR APPLICATION. " 
SELF-ADJUSTING BRAKES

by Harold Louisiana and Denny Williams

If you have drum brakes and drive your Classic Chevy on a daily basis, you may want to consider installing self-adjusting brakes. If you are already considering doing a brake job, why not add self-adjusting brakes? Just think about it, you will no longer have to jack up the car and adjust the brakes several times in between changing brake shoes.

General Motors started installing self-adjusting brakes in the 1963 models. The self-adjusting part of the system basically takes place when you stop the car (with the brakes) while going backwards. An actuating lever turns the adjusting screw star wheel so that the brake shoes are adjusted outward. The self-adjusting system is designed so that once the shoes are adjusted outward the correct amount, that further adjustment outward does not occur until the shoes wear a small amount.

The procedure for installing self-adjusting brakes, is straightforward and the whole job should not take you more than a couple of hours. The self-adjusting system for a 1953-1957 Chevy will use original brake shoes and drums. The only special tool that we recommend is a tool for removing and installing the "pull-back springs." The self-adjusting kit contains all of the hardware and the actuators required to install self-adjusting brakes all the way around the car. The self-adjusting kit is Part #20-77 and sells for $59. (See Photo #1.) This price is less than what most auto parts stores can buy most of these items. While installing the self-adjusting brakes, check some of the other related items such as: drum wear, brake shoe wear, wheel cylinder linkage, brake hose condition, rear axle bearings and seals condition. Listed below are Classic Chevy's part numbers for some of these items.

Front Brake Shoes #20-24
Rear Brake Shoes #20-25
Drum #20-27 (Four required per car.)
Front Right Wheel Cylinder #20-47
Front Left Wheel Cylinder #20-48
Rear Right Wheel Cylinder #20-49
Rear Left Wheel Cylinder #20-50
Front Brake Hose #20-51 (Two required per car.)
Rear Brake Hose #20-50 (One required per car.)
Drum Gaskets #3-31
Emergency Brake Cable Assembly #20-11
Brake Shoe Anchor Pin #20-16 (Four required per car.)
Self-adjusting Brakes Kit #20-77

All of the pictures in this article show the left-side of the car.

1. Remove each of the hub caps and loosen each of the lug nuts. Carefully raise the Classic and place it on some jack stands. After removing each of the lug nuts, remove the wheels and tires.

2. Remove each of the brake drums. If the front brake drums are riveted to the hubs, you must remove the hubs along with the brake drum. For this procedure refer to the "Front Wheel Bearings — Adjust" part of the Front Suspension Section of the Shop Manual. You may have to retract the adjustment screw by backing off the adjusting screw star wheel. You may also have trouble removing the rear wheel drums from the axles. Sometimes some Liqui-Moly or some heat are required to remove the rear brake drums. The rest of the procedure will be explained for one wheel. The procedure should be repeated for each of the other wheels.

3. Using the special brake tool, unhook the two brake shoe pull-back springs from the anchor pin. Remove the guide plate. Using a pair of needle-nosed pliers, remove each of the hold-down pins and springs. These are the pins and springs which secure the shoes to the backing plate.

4. Spread the brake shoes to clear the wheel cylinder connecting rods and then remove the shoes from the backing plate. Separate the brake shoes by removing the adjusting screw assembly and spring.

Photos by Denny Williams
5. If you are working on the rear brake shoes, compress the parking brake retaining spring on the parking brake cable and remove the cable from parking brake lever. (The tension on this spring can be alleviated by loosening the hex nuts which secure the forward part of the parking brake cable to the parking brake idler lever assembly. Refer to the Assembly Manual — Section 5, Sheet 5.00 (55), Sheet 6.00 (56), Sheet 4.00 (57).)

6. Clean the dirt out of the brake drum and from the backing plate assembly. If the wheel bearings are exposed, try to avoid getting any dirt into the bearings. Inspect the drum for roughness, scoring, or out-of-round. If required, recondition the drum by having it turned or replace it with a new drum.

7. While you have everything torn down, inspect each of the wheel bearings and seals. If it appears that there has been leakage, replace the seal. Carefully inspect the wheel cylinder for any excessive leakage. It is common for the wheel cylinder to be moist, but there should not be leakage of brake fluid on the backing plate assembly.

8. Check the anchor bolt to make sure that it is tight. Clean away any rust or dirt on the anchor bolt and backing plate.

9. We suggest that you bead blast and then clear coat the following parts: the guide plate, the parking brake lever, the parking brake lever hardware, and the parking brake strut which goes between the parking brake lever and the primary shoe. (See Photo #2.)

10. Check each of the brake shoes for any nicks or burrs, not only on the shoe surface, but on the metal surface of the shoe which will come in contact with the backing plate. As you are working with the shoes, make sure that you do not allow any oil or grease to come in contact with the shoe linings.
11. If you are working on the rear wheel, do this step. Using some lithium grease, lubricate the contacting surfaces of the secondary (rear) shoe and the parking brake lever. Remember that the rear shoe of any particular shoe set will be referred to as the secondary shoe; and the length of the secondary lining will always be longer than the lining on the primary shoe (forward shoe). Lubricate the "shoulder" of the bolt which secures the parking brake lever. Install the spring washer against the head of the parking lever bolt. Install the bolt and spring through the parking brake lever and then through the upper hole in the secondary (rear) brake shoe. (See Photo #3.) Secure with the Marsden nut. (See Photo #4.) Make sure that the parking brake lever moves freely.

12. Using some lithium grease, lubricate the threads of the star adjuster assembly and the contacting surfaces of the star adjuster cap and the star wheel. Using some lithium grease, lubricate the contacting knobs of the backing plate. These are the six areas of the backing plate that will come in contact with the shoes. (See Photo #5.) Using some lithium grease, lubricate the ends of the cylinder rods and install them into the wheel cylinder.

13. Adjust the star adjuster so that it is just about as short as possible. The star adjuster will be oriented so that the star adjuster is closest to the secondary (rear) shoe. Make sure that you use the correct adjuster screw on the correct side of the car. On the end of each adjuster screw is stamped an R or an L for the right or left-hand side of the car. The green spring that holds the lower part of the brake shoes together should be oriented as seen in Photo #6A. If you are working on the rear wheel, install the end of the parking brake cable into the parking brake lever which is attached to the secondary (rear) shoe. (See Photo #6B.)

14. With the primary and secondary shoe being held together at the bottom with the green spring and with the star adjuster in position, position the shoes onto the backing plate. Remember that the rear shoe of any particular shoe set will be referred to as the secondary shoe; and the length of the secondary lining will always be longer than the lining on the primary (forward) shoe. Position the shoes into the ends of the cylinder rods.

15. Make sure that the green spring is oriented so that it does not interfere with the star wheel. Secure the primary (forward) shoe to the backing plate by installing the hold-down pin from the backside of the backing plate. Position the small flat washer, which is included in the hardware kit, over the pin and against the brake shoe. (See arrow in Photo #6A.) Position the small end of the light blue spring against the flat washer. (The difference between the blue springs on the primary and secondary shoes is the following: one end of the primary shoe spring has a small end whereas both ends are identical on the blue spring for the secondary shoe. Install the "shallow" retainer over the end of the hold-down pin and turn the retainer 90-degrees so that everything is held in place. (See Photo #7.)

16. The parking brake strut and tension spring must be installed. The tension spring goes on the end of the strut with the retaining "shoulders." The end of the spring with the small loop goes against the "shoulders." Position the strut and spring into the wheel assembly with the "bow" of the strut going away from the backing plate. The spring-end of the strut goes into the primary (forward) shoe, and the other end of the strut goes into the parking brake lever. (See Photo #8.)
17. Make sure that you use the correct actuator assembly for the side of the car that you are working on. Position the upper part of the actuator assembly into the main actuator and then install the silver pull-back spring into position as seen in Photo #9. Hold the actuator in a vice, and install the override spring with the brake tool. It is easier to assemble the self-adjusting brake by assembling this actuator assembly, and then installing this assembly onto the secondary (rear) shoe.

18. Position the actuator assembly onto the secondary (rear) shoe, and then position the pivot sleeve through the actuator and the brake shoe. (See Photo #10.) On a few of the secondary (rear) brake shoes, the hole in the brake shoe for this sleeve is not large enough and so you must drill a 3/8-inch hole.

19. Position the hold-down pin through the backside of the backing plate, through the secondary (rear) shoe, through the actuator sleeve and actuator. Position the blue coil spring and then install the “deep” retainer over the hold-down pin and turn it 90-degrees into the “locking” position.
20. After positioning the shoes, the parking brake lever strut, and the cylinder rods; install the guide plate over the anchor pin. (See Photo #11.) Install the wire link onto the actuator pivot and then while holding the lower portion of the actuator as high as possible, slip the end of the wire link over the anchor pin. (See Photo #12.) (The wire link on the left side of the car is black, and the wire link on the right side of the car is white.)

21. After positioning the end of the gray spring into the primary (forward) shoe, use the brake tool to install the end of the gray spring over the anchor pin. (See Photo #13.) Install the small red return spring between the secondary shoe and the actuator lever. (See Photo #14.)

22. Install the black pull-back spring into the correct hole in the secondary (rear) shoe. Using the brake tool, install the black pull-back spring into the upper end of the wire link. (See Photo #15.)

23. After completing the installation, use a large flat bladed screwdriver to hand operate the actuator lever. (See Photo #16.) Make sure that the lever turns the star adjuster as it goes up-and-down. The completed wheel should look like Photo #17.

24. Hand adjust the star adjuster so that the brake shoes are pushed outward until the brake drum can be installed and pulled off with a small amount of drag. Use a marker to mark the star adjuster; and then back off the star adjuster 1 1/4 turns. Reposition the brake drum. Repeat Steps 3 through 24 for all four wheel assemblies.

25. Reinstall the wheels. If the front hubs are not installed onto the car, follow the procedure described in the Shop Manual to install the hubs and wheel bearings. After putting the car back on the ground, tighten the lug nuts and then carefully test the brakes. Make sure you have sufficient pedal before even moving the car. By driving the car backward and stopping the rearward motion of the car with the brakes, you will bring the adjustment of the shoes into place. In fact, when you start the procedure, you may have a bit of a low pedal; but after several times of going backwards and putting on the brakes, the pedal should come up somewhat. It is normal to hear a slight “clunk” when putting on the brakes when going backwards. The sound is a result of all four actuators working at the same time.