Greetings and welcome back to Project '63, Late Great Chevy’s 1963 Impala SS project car. In our last installment we added front disc brakes to create more “whoa, before we go.” This month we’re adding even more braking performance to the ’63 by installing P/N 563178 (rear disc brake conversion kit). This rear disc brake kit, along with the front disc brake conversion we did last month, will give project ’63 plenty of stopping power. Like the front conversion, this kit is a direct replacement for 1959-1964 drum brakes on full-size Chevrolet models (it’s a bolt-on) with no permanent modifications necessary.

Parts Layout & Inventory

Included in this kit are vented rotors, loaded single piston calipers (marked left and right to aid in the simplicity of installation), brake lines, clips, new wheel studs, brake cables and mounting hardware including brackets. An instruction sheet is also included for reference. This kit has everything you need to for installation, minus tools and shop supplies. Photo 563178 The caliper brackets are designed to bolt right to the stock flanges. Rear brake lines were specially adapted for this kit and are used in place of the original flexible lines. Once again this 100% bolt on kit eliminates any guess work.

Tools Needed:

- Brake Spring Pliers
- Side Cutters
- Slip Joint Pliers
- Axle Puller
- Large Hammer
- Basic Hand Tools, 1/2" Inch Drive
- Deep & Shallow Socket Set
- Combination Wrench Set
- Line Wrenches
- Jack & Jack Stands
- Safety Glasses
- Brake Spoon

Time Frame:

5-Hours

Parts Needed:

- 563178 Rear Disc Brake Conversion Kit
- 563026 Rear Axle Gaskets
- 521012 Rear Axle Bearing (2) (Optional)
- 520089 Rear Brake Hose (Optional)
- Brake Fluid
- Grease
- Anti-Seize
- Can Of Brake Clean

Disassembly:

We will be starting on the left rear side (driver’s side) of the car. The process is the same for the opposite side. Jack up the car and place on jack stands under the rear end. Let the jack down until the rear end contacts the stands and shake the car. Since P=F/A (Pressure is equal to force divided by area), you don't want to test this physics equation by having your pride and joy fall on you. Be sure the car is supported safely. Most of the time, I keep the jack under the car for an additional measure of safety.

Photo #1a, 1b & 1c: Next, remove the wheels and the drums from the rear axles. You might have to back off the brake shoes with an adjusting tool, like we did with the front brakes, before removal of the drums Photo #1a. Remove the brake shoes and hardware using the brake spring pliers and retainer tools, Photo # 1b. A word of caution... brake shoe linings (the friction material bonded or riveted to the brake shoes), especially old ones, contain asbestos. The use of a dust mask is a good idea when dealing with brake linings. If you have any questions or would like more information on the removal process, turn to the brake section of your shop manual; it’s an excellent source for additional step-by-step procedures and photos. I found this information referenced under section 6 in the 1963 shop manual supplement (P/N 517063) as well as the 1961 passenger car shop manual (P/N 517051) Photo #1c.
**Photo #2:** Now remove the emergency or parking brake cable end from the brake shoes, this is an easy task, by relieving tension on the retaining spring with pliers, the cable will be loose in the retaining end of the shoe. Just turn the cable so it will pass out of the interlocking tabs on the brake shoe and release the spring. With the brake shoe detached from the cable, set the shoe aside. The cable also attaches to the brake backing plate with a “finger” clip. We will not be reusing these cables, as new ones are included in the kit. Using your pliers and a screw driver, push the “fingers” inward from their spread posture and at the same time pull gently on the cable with pliers. With patience and persistence you will prevail and remove the cable.

Using side cutters, cut the brake lines near the wheel cylinders. The lines will not be reused with the disc brake kit, so you can save yourself some time by just cutting the old lines and moving them out of your way. If you have reasons to do so, you could use your line wrench set and remove the brake lines from the wheel cylinders. However, chances are quite good that the old lines will not remove easily.

**Photo #3a & #3b:** Locate the four studs and nuts holding the backing plates to the axle flange. Remove them with a 9/16” socket wrench. Once this is done, your backing plates should be loose and ready to be removed, along with the axle assembly. If you have the luxury - rent, borrow, or buy an axle puller to remove the axles from the rear end housing. If you’re not fortunate enough to obtain an axel puller; or you’re an exhausted writer trying to do a job the way most folks will, using your hammer, flog away at the inboard side of the backing plate until it and the axle comes loose. Manually grab the axle and remove it from the housing. The axle WILL be covered in a lovely mess of oily filth, wipe it off and set the axle aside.

**Photo #4a & #4b:** Remove and discard the backing plates, or you can keep them for posterity in case you decide that you don’t like the superior stopping power this kit has to offer and you want to re-install the old drum brakes. The four studs on the axle retaining plate will be replaced with new bolts to hold the caliper bracket in place. Using a hammer and socket, drive the studs out of the axle retaining flange. The top two and the bottom rear will be 1 1/4” bolts while the bottom front will be a 1” bolt.

**Photo #5:** There is a thin gasket on each axle mounting flange of the axle assembly. If this gasket is torn replace it with P/N 563026. I had access to a bead blaster so I took the liberty of cleaning up my parts with the blaster, I then painted them. A wire brush or wheel will work just as well, especially if you are not going to need new axle bearings.

The rear axle bearings in Project ’63 were shot (now is a great time to check your bearings for any sign of grind, wear, or any sign of extra play in them before reassembling the components). DO NOT use a bead blaster on new or reusable bearings. This WILL destroy them! Because the axle bearings on Project ’63 were worn we sent the axles to a machine shop and had new bearings P/N 521012 installed.

**Photo #6a & #6b:** This kit comes with new wheel studs to facilitate the difference in thickness between the rotors and the old brake drum. You will find two different size studs in this kit - P/N 610-259 are used on 1958-60 cars and P/N 610-156 are used on 1961-64 cars. Using a hammer and socket drive the original studs out of the axle flange. The new studs can be pulled in using the stock lug nut turned upside down. Add a little lube when installing the new studs. Photo 6b.
Installing the Brackets:

**Photo #7a & 7b:** The brackets should be positioned so the bushings face to the inside of the car, away from the wheel. Mount the bracket so the “C” opening faces to the rear of the car. Install the bolts from the flange side before you push the axle back into position.

Installing the Calipers:

**Photo #10a, 10b, 10c & 10d:** Unlike the caliper designed for front Project ‘63, these rear calipers come with provisions for emergency, or (parking brake cables), Photo10a. Just like the calipers we installed on the front of Project ‘63, these calipers come loaded with everything needed for installation. This kit includes a brake lever arm, return spring, banjo bolt and washers, pads with shims and sliders or anchor pins. The pads are shimmed so the use of disc brake quiet is not necessary, Photo10b. Each caliper is marked left or right. Take the appropriate caliper, remove the sliders by pulling outward on them, apply a bit of anti-seize compound to the threads and mount them onto your newly installed brackets. Photos #10c & 10d.

Be sure not to contaminate your brake pads, if you do, just wipe them down with a clean cloth and thinner. Use a 3/8” hex socket wrench and tighten down to approximately 40 foot pounds. If your torque wrench is out to lunch, use a hex wrench and tighten by hand… like you really don’t want it to come loose!

Installing the Rotors:

**Photo #9:** Clean the rotors with lacquer thinner or a solvent to remove a coating known as Cosmoline; Cosmoline is a waxy protective coating used in the shipping and storage of brake rotors and drums. You must remove all of this protective coating before the rotors can be used. The rotors are interchangeable; slide the rotors over the studs as shown. The rotors will have two sets of five holes drilled in them; use the smaller diameter holes for this application, Photo #9.

**Photo #8a, 8b & 8c:** Once in position, it will be virtually impossible to install the bolts past the wheel flange so put all four in place, then push the axle in and position it in the rear housing as shown Photo 8a. The heads should be facing out toward the wheel flange and the threaded end inward to the center of the car. Use a block of wood and a hammer to drive the axle into place Photo 8a. A lock washer and nut are used on each bolt to hold the brackets in place. Once in place, move the flat washers, which also serve as spacers, so they sit as flat as possible. With the axle in proper position, torque to 45 foot pounds, Photo 8c.

**Photo #11a & 11b:** Once mounted, make sure that one copper washer is on each side of the ‘Banjo’ block, Photo #11a. The Banjo bolt allows brake fluid to enter the caliper. Do not tighten the Banjo bolt at this time. It's now time to install the opposite side, brackets and caliper - do it just like you did on this side. We’ll then proceed to the brake line installation, Photo #11b.
Installing the Brake Cables:

Photo #14a, 14b, 14c, 14d & 14e:
The new shrouded cables have a ball connector on one end and barrel connectors on the other. Connect the ball side to the emergency brake lever and slide the cable end in as shown, Photo #14a & 14b. The barrel side goes through the stock bracket on the frame, Photo #14c. Using the connectors provided, attach one to each shrouded cable. Remove the existing brake cable and attach the new cable to the original yoke, Photo #14e.

Installing the Brake Lines:

Photo #12a, 12b, 12c & 12d:
Install the brake lines as shown. The longer one goes on the left and the shorter one goes on the right side. To make this task easier, remove the clip holding the block onto the rear axle housing assembly, Photo #12a. Thread everything together, place your lines in the factory clips welded to the axle housing using a 9/16” socket to tighten the banjo bolts and a 3/8” - 7/16” line wrench to tighten the line nuts. Photos #12b, 12c & 12d

Photo #13:
Now that the lines are in… (here’s an important step), remove the return spring from the back of the emergency brake lever on each caliper. Use pliers to rotate the lever forward five times, Photo #13. You will notice different levels of resistance and travel as you do this. This brake lever is connected to an eccentric in the center of the caliper piston. When you move this lever forward repeatedly, it pushes the piston out and sets the adjustment for the emergency brake to function properly. Failure to comply with this step will prevent your new disc brakes from operating properly. Re-install the springs so the new brake cables can be installed.

Photo #15:
Using the emergency brake cable for 1959-1964 full size Chevrolets, adjust the nut in the center of the “C” loop until your emergency brake pedal gets nice and tight with about 1/2” travel, Photo #15. When this is achieved, your brake cable is properly adjusted. Now is a good time to evaluate your rear brake hose condition and replace if necessary. Ask for rear brake hose P/N 520089.

Photo #16:
So there you have it! The rear disc brake conversion is complete in the comfort of your own garage, car port or driveway. Next up, we’ll plumb the entire front and rear disc brake system and we’ll install a power brake booster, master cylinder and proportioning valve. Stay tuned.