



# SLOWING DOWN

## STAINLESS STEEL BRAKES DELIVERS WITH AN AWESOME MID-YEAR NOVA BRAKE KIT

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Photography by the author

**F**or those looking for the ultimate heart-pounding enjoyment, strap yourself into an early or mid-year Nova and try stopping the car at 60 miles-per-hour. Your knuckles will be sore from holding the steering wheel tight, and your right foot will be mashed into the floorboard. These factory

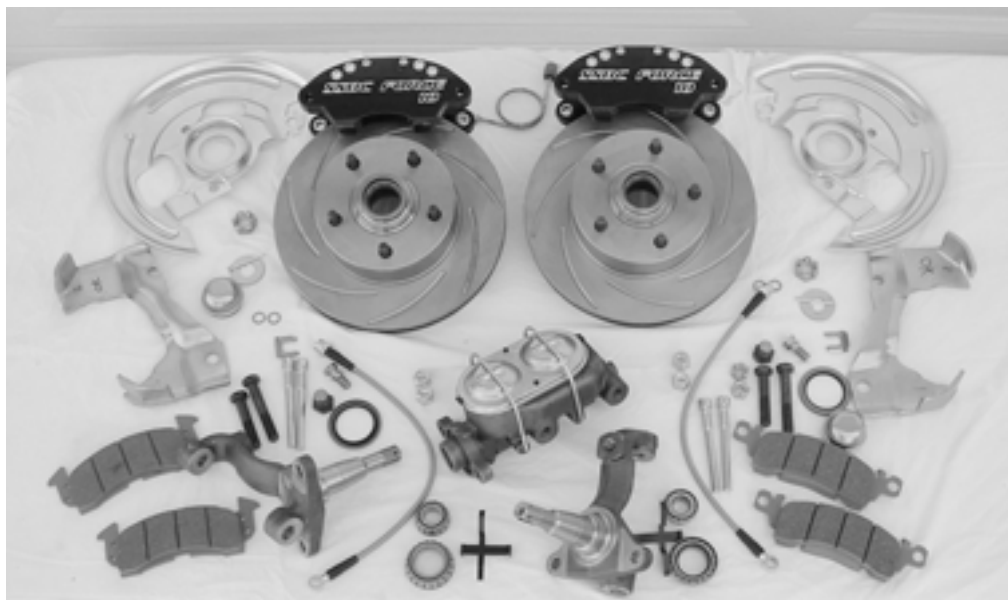
drum/drum brake set-ups were barely adequate even by 1967 standards and have no place in today's four-wheel disc ABS environment. So out with the old and in with the new!

After giving up my panic stopping, thrill-seeking adventures cold turkey and focusing on the golden rule of "safety first," I traded in this archaic form of "stopping" for a more reasonable approach. There are many aftermar-

ket providers of front and rear disc setup for early and mid-year Novas, but we wanted a true bolt-on application that would not require special machining, could be installed by a weekend enthusiast, and would look awesome. Stainless Steel Brakes set us up with the latest in stopping power for early- and mid-year Novas. They also provide kits for many popular muscle cars or street rods.

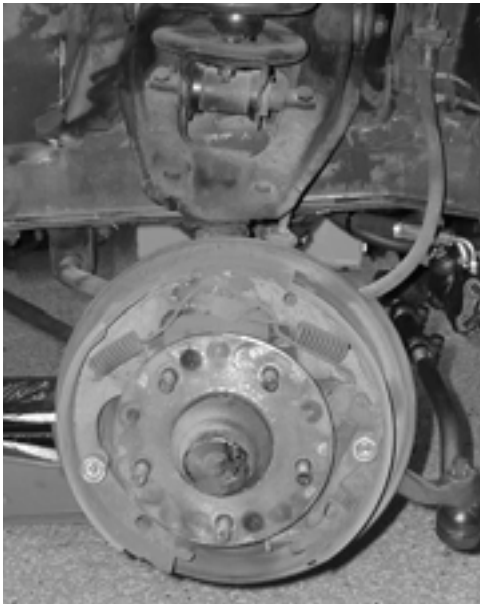
Calipers can also be ordered with a clear anodized finish. One item you may need is a master cylinder booster. Although many kits, including ours, could have been ordered with the booster, our camshaft valve overlap did not allow for enough vacuum. In our test car, we were pulling 10-12 inches of vacuum and would not be able to utilize the booster since it requires 14-15 inches of vacuum in order to allow the booster to operate correctly. In addition to the calipers and rotors, all specialty hardware components including spindles, caliper bolts, adjustable proportioning valve, flex hoses, and brake line fittings were included.

Check and inspect all the parts in the kit to ensure nothing is missing and that all parts look correct. After checking all the cool stuff we had received, we dismantled the old drum brakes. Instructions are included and since this was my first time setting up front and rear discs, I used them to ensure I was not skipping a step.





# OUT WITH THE OLD



We raised the car on all fours and supported it with jackstands. To make smooth removal of the old brakes, we had lubed all of the spindle bolts, rearend axle flanges, and brake line fittings with liquid wrench. First, remove the old drums: A light tap with a rubber mallet might be necessary to free them. Next, remove the brake shoes, all hardware and all of the rigid brake lines to get to

the bolts supporting the spindles. Next, unbolt the spindles from the backing plates and the lower and upper bushings. Remove the spindles. Since we were installing new lower control arms, we removed the front sway bar bushings on the old control arms. It was also a good time to replace all of the front and rear brake lines.

We also removed the master cylinder, which comes off by removing the two nuts and two brake line fittings. Make sure you don't get any brake fluid onto your paint. We also removed

the backing plates that held the old drum brakes. One item, that you'll want to have handy, is an old can that you can use to catch the fluid coming from the brake lines.



Next was the rearend. We removed the old drums, shoes, and all hardware. The axles were removed in order to bolt on the new axle flanges that support the caliper mounting brackets. We removed the differential cover and drained all the fluid to access the pinion shaft lock bolt. This single 7mm bolt holds the pinion shaft lock and allows you to slide the shaft out. After sliding out the shaft, you can press the axles on each side and the C-clips should become free and slide out. Your next step is to remove the axles. When sliding out the axles, be careful not to damage the axle bearings or seals.



After removing the front and rear drums, we mocked up a front and rear set-up. Our plan called for completing the installation of the front, then the rear, then and the new master cylinder. Initially, we couldn't figure out how the front caliper would mount to the outside of the bracket that supports it. We decided to call Stainless Steel to have a technician help us out. The resolution was in our case, operator error. We had the

caliper mating to the caliper bracket from the outside when the caliper bracket should be sitting inside the caliper and not on the outside. For the rear mock-up, we actually got it right the first time.

# IN WITH THE NEW

The first step was to install the spindle, which we did with no problem. Make sure the steering arms point toward the rear of the car and torque the upper ball joints to 50 ft.-lbs., and the lower ball joints to the recommended 65 ft.-lbs. One recommendation is to keep the packaging covers over the spindle threads so they don't get damaged. The removal of coil springs and shock absorber might be required for other applications but not for ours. After installing spindles, we reattached the steering arm onto the new spindle. You will note that the two rear bolts are a longer. The tie-rod ends and castellated nuts were re-installed and torque to 35 ft.-lbs and the cotter pins secured the nuts.



**The bracket and the shield were installed with the bolts supplied and secured with the tab locks on the splash shield.**



Next, we installed the new inner and outer wheel bearings included in the kit. Pack both with high quality bearing grease and install the inner seal first. The instructions suggest the use of a large socket to tap the bearing seal that holds the inner bearing into place. We opted to use this method and the result was an easy installation of the seal.

The new rotor was installed over the spindle and the new outer bearing was installed. A new retaining washer, nut, and cotter pin is supplied to hold the outer bearing in place.

Torque specifications for the outer wheel-bearing nut is 12 ft.-lb. After this was completed, the rotor spun freely on the spindle.



To install the calipers we attached the flex lines to the caliper with the hollow bolt and two copper washers: one for the top and one for the bottom. Do not tighten the bolt — it will need to be aligned later. The inboard brake pad was installed with supplied support clips and laid flat against the piston. The outboard brake pad was installed with the ears of the pad in the clearance holes. The caliper is lined up over the rotor and the holes in the brackets. The bolts are slid in place to hold the calipers onto the bracket and tightened to 25-30 ft.-lbs. The flex line is connected to the retaining bracket on the frame and the retaining clip installed. A friend is needed to turn the assembly to the left and right to check if the flex line twists or bends improperly. The flex line should be secured with the hollow bolt and washers provided. Repeat the steps on the opposite sides.

After we completed the front, we reviewed the checklist on the instructions. You can never be too careful on something as critical as brakes.

Next was installation of the rear discs. We had the old axle backplates removed, so we bolted on the new backplates and torqued the bolts to 40 ft.-lbs. The top bracket should point to the front of the car. We installed the caliper mounting brackets onto the end of the axle shaft. A run to the hardware store solved

the problem. The caliper mounting brackets can be installed towards the front or rear of the vehicle. After installing the caliper mounting brackets, reinstall the axle and C-clips, pinion shaft, and pinion bolt. Put the cover back and add the appropriate gear oil to the rear differential.

Prior to installation of the caliper slide the rotor onto the axle shaft and temporarily secure using a couple of lugnuts. You'll ask yourself, "How can the rotor simply sit there

almost suspended by lugnuts?"

Assembly of the rear pads is done using the same procedure as the front. The calipers on all four are identical. The pads with the clips go onto the piston side of the caliper and the one with the tabs on the outside of the caliper. Slide the caliper over the rotor and have the bleeder screw pointing upwards. Install the two bolts into the ears of the caliper and torque to 30 ft.-lbs. Bend the new rear brake lines to fit onto new flex hoses.



**After the caliper is installed, the rotor will actually be secured by all five lugnuts. Make sure the inside of your wheel clears the rotor. We had a 15-inch wheels and clearance was no problem.**

The last step was installing the master cylinder. Prior to installation, you must bleed the master cylinder by using the bench bleed kit supplied. It comes with two, small, clear hoses and a clamp to hold the hose's position. Installing the cylinder is an easy process: bolt it on the two bolts coming from the firewall. You can run the hard lines and install the proportioning valve also included in the kit.

Once the front/rear discs and master cylinder are installed, review the checklist provid-

ed. We re-inspected all front disc bolts, calipers, flex hose clearances, rear end mounting brackets, and front and rear wheel clearances and bled the brakes. All the fittings and bleeder screws were tight and we topped off the master cylinder with DOT 3 fluid. Starting from the furthest wheel to the master cylinder, we bled the brakes via the "pump three times and hold down" method. Air will blow out prior to seeing the fluid bleed out. We did this several times till we felt a hard pedal. Even

after this, the system was gravity bled to ensure that all air was out of the system. Gravity bleeding involves opening the cover of the master cylinder and opening the one bleeder screw at a time and letting gravity do its work. Don't let the cylinder run dry. In our case, we checked on it every 5 minutes, and each side typically took 10 minutes. Fluid slowly dripped out so have a can to catch the fluid.

## THE RESULTS

We drove our test car for 250-plus miles to thoroughly wear-in the pad and rotor combinations on all four corners. Although we didn't find any problems, we initially drove the test car for about 20-30 city traffic miles then rechecked all brake lines, spindle nuts, brack-

ets, and calipers. It's always a good idea to recheck the system to avoid small problems becoming big headaches.

As soon as we rechecked our installation and got the test car back on the road, we could tell that the SSBC kit would perform better

than I had expected. No more pumping brakes, mashing pedals, or the typical eight-car distance between you and the car in front. After putting the initial miles for our wear-in period, we decided to perform our "after" test. The road conditions and weather for the test were pretty much the same. We clearly expected a much bigger bite on all corners. We performed four 60-to-0 tests and could not believe the results! Not only did the brakes stop on a dime, but you could feel how much more control you have over the car in a panic stop situation.

**We did not experience premature rear or front wheel-lock up at all. Our average stopping distance was 107 feet, with the rest of the distances were in the 100 to 121 foot range (compared to the 147-170 foot range with the stock drums). No doubt we had improved stopping power in a big way!**

