

1955-57 INDEPENDENT FRONT SUSPENSION (IFS)



Randy Irwin - Technical Writer

Randy has been involved in the Chevy parts business for over 25 years. He is a wizard at creating, making and modifying custom parts for Chevys.

IFS or Independent Front Suspension: do you install one in your Tri-Five or not? Several aftermarket suspension companies offer IFS kits for 1955-57 cars amid much hype. Not to rain on their parade, but all Classics already have an IFS from the factory! So subframing or the addition of an IFS crossmember is pretty much useless and a waste of money.

An independent front suspension is a control (A) arm style front end. The Tri-Five cars are already a control-arm style front end, but with 1950's technology. If your goal is to update the front suspension on your car so that it will handle and stop more like your new car, this doesn't mean you have to cut the frame off in front of the firewall and replace it with an expensive and difficult to install aftermarket custom frame section. With the custom tubular control arms available that will allow for proper front end alignment, a heavy duty anti-sway bar to keep the front end planted on the ground, a rack and pinion steering unit to make the car feel like it's on rails and a big disc brake kit that will make the car stop on a dime; the stock Tri-Five frame is an excellent starting point for a great driving car simply with the addition of bolt-on components!

Tools Needed:

Floor Jack
Jack Stands
Coil Spring Compressor
1/2" Wrench and Socket
9/16" Wrench and Socket

5/8" Wrench and Socket
11/16" Wrench and Socket
3/4" Wrench and Socket
Ratchet



Photo #1: Here is truly a blank slate; a sand blasted and painted 1957 frame awaiting front suspension parts. A few hours with some hand tools and we will have a car that will handle like a dream.



#21-231

Parts List:

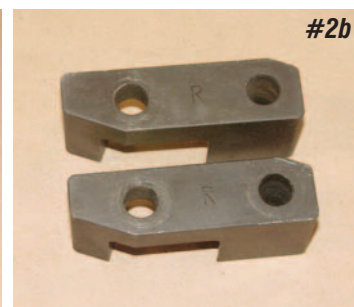
- 21-230 Independent Front Suspension Kit
w/2" Lowering Coil Springs
For Big Block Engine ▲▲
- 21-231 Independent Front Suspension Kit
w/Stock Height Coil Springs
For Small Block Engine ▲▲
- 21-232 Independent Front Suspension Kit
w/Stock Height Coil Springs
For Big Block Engine ▲▲
- 21-233 Independent Front Suspension Kit
w/2" Lowering Springs
For Small Block Engine ▲▲

Time Frame:

14 hours



#2a



#2b

Photos #2a & #2b: The lower tubular control arms are a direct replacement for the stock lower arms with no change in geometry. They include new stock ball joints, urethane bushings, cross shafts and mounting hardware. They are compatible with stock spindles as well as any brand dropped spindle.

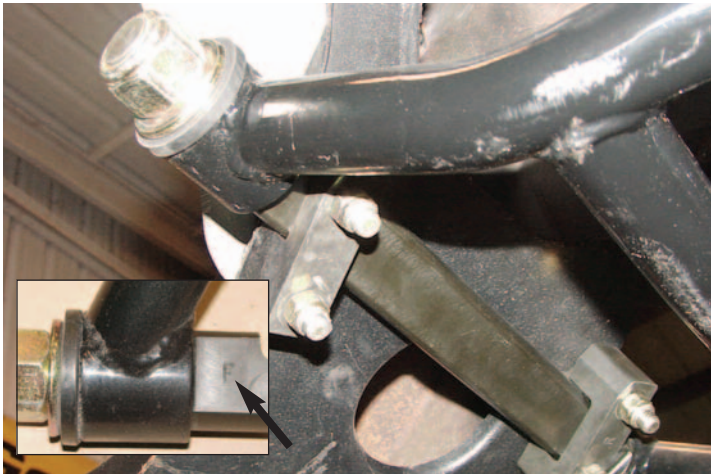


Photo #3: The lower control arm cross shafts have an "F" next to the front (forward) lower bushing, orient this to the front of the car. The cross shaft is held to the bottom of the frame with two mounting blocks and 7/16" X 3" bolts supplied with the kit.



#4a



#4b

Photos #4a & #4b: The tubular upper control arms are where the geometry change takes place, substantially improving steering and handling. Two degrees more camber and five degrees more caster are built into the arms. This will allow the alignment shop to achieve any alignment specs that could possibly be required. The upper arms include ball joints, the cross shafts and urethane bushings.



#5a

Photos #5a & #5b: The original upper control arms were held to the frame with 7/16" copper colored tall nuts. To give our car a more custom

look, we are using the P/N 34-298 lock nut kit. These nuts are crimped head and silver zinc coated; very custom and very strong! With the upper and lower arms installed, we are ready for the coil springs.



#5b



Photo #6: We are installing kit P/N 21-233 for a small block engine with 2" dropped coil springs. A 2" dropped coil spring measures 2-1/4" shorter than a stock coil spring and can be used with a small block or big block engine.

Photo #7: When installing front coil springs ALWAYS use a coil spring compressor. Using the spring compressor, collapse the coil spring about 2-1/2".



#8a



#8b

Photos #8a & #8b: The top end of the coil spring will seat into the upper coil spring pocket in the frame.

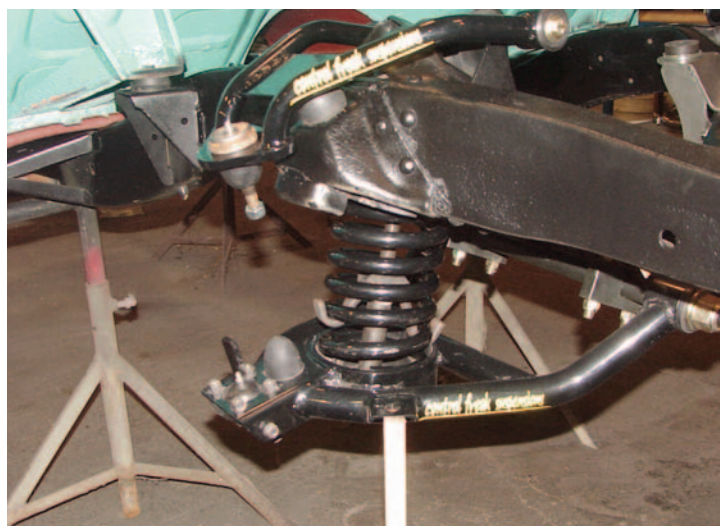
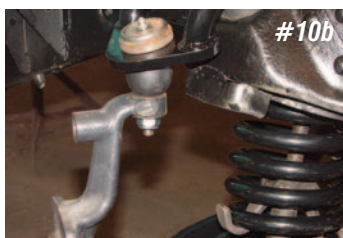


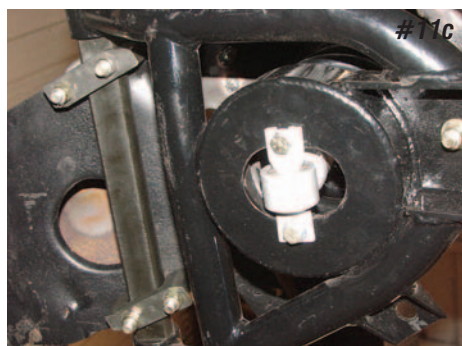
Photo #9: Install the coil spring into the upper spring pocket and raise the lower control arm with a floor jack.

YOU CAN DO IT EASY UPGRADES



Photos #10a, #10b & #10c: With the control arms in place, install the spindle and tighten the lower ball joint nut and install the cotter pin. The upper ball joint uses a lock nut so a cotter pin is not

necessary. Once the ball joint nuts are tight the coil spring compressor can be removed.



Photos #11a, #11b & #11c: The independent front suspension kit includes KYB GT series gas charged shock absorbers. The shocks attach to the lower control arms with two supplied 5/16" X 1" grade-8 bolts and lock nuts. The top of the shock attaches to the frame in the stock location with two cupped washers, two rubber grommets, a 9/16" regular nut and a jam nut.

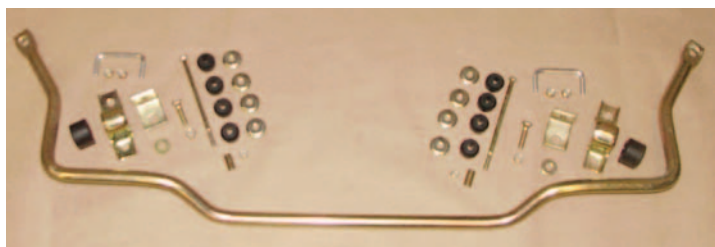
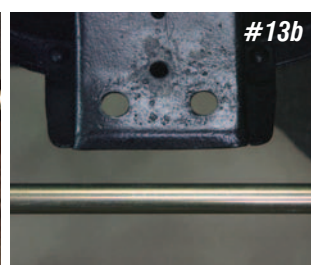
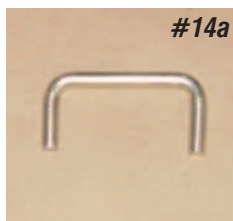


Photo #12: The lower control arms have tabs welded in place for the front anti-sway bar. The 7/8" heavy duty front anti-sway bar included in the kit will really keep the front end level and on the road during hard corners. The anti-sway bar and hardware are zinc plated and include urethane bushings.



Photos #13a & #13b: The anti-sway bar mounts to the bottom of the frame forward of the control arms. With the holes in the end of the sway bar lined up directly over the sway bar brackets on the lower control arms, the center of the anti-sway bar will be 3/4" forward of the lower radiator mount.



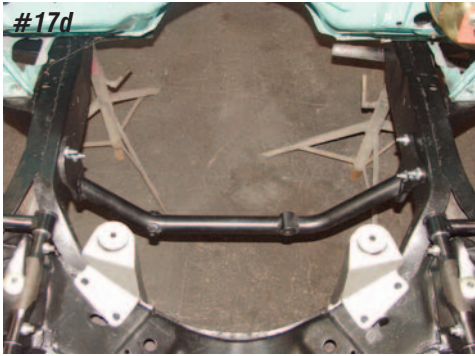
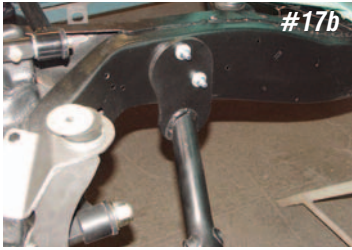
Photos #14a & #14b: The anti-sway bar is held to the bottom of the frame with 3/8" U-bolts. With the bar in place and the front suspension compressed at ride height, mark the frame and drill two 7/16" holes for the U-bolts.



Photos #15a & #15b: The U-bolts and 9/16" lock nuts will hold the lower anti-sway bar bracket to the bottom of the frame. A urethane bushing surrounds the anti-sway bar at the frame. Using the 9/16" nuts, bolt the anti-sway bar into place.



Photo #16: Next install the end links that connect the ends of the anti-sway bar to the lower control arms. The end links consists of a 5" long bolt with cupped washers, urethane bushings, a spacer and locking nut. Tighten the nut so that there is a slight squeeze on the urethane bushings.

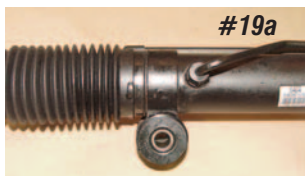


Photos #17a, #17b, #17c & #17d: The IFS kit includes the rack and pinion steering system. The rack and pinion unit is held in place with a tubular crossmember that bolts to the frame using the two holes

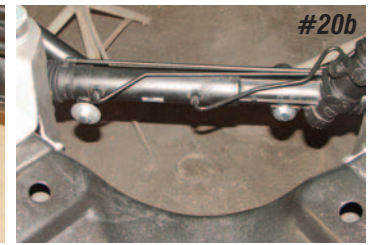
on the passenger side of the car where the idler arm once bolted and the three holes on the driver's side of the car where the steering box once bolted.



Photo #18: The rack and pinion unit is a power steering unit that originally fit a 1982 to 1990 Celebrity. This rebuilt and guaranteed unit is remanufactured just for CCI to accept the original 1955-57 outer tie rod ends and sleeves.



Photos #19a, #19b & #19c: The rack and pinion unit mounts to the crossmember with two 1/2" bolts. On the passenger side of the rack and pinion unit there is a sleeve with two bushings. A cupped washer is placed on the front side of the bushing and a flat washer on the back side.



Photos #20a & #20b: On the driver's side of the rack and pinion unit there is a cast ear. A flat washer is used on the front and rear of the ear.

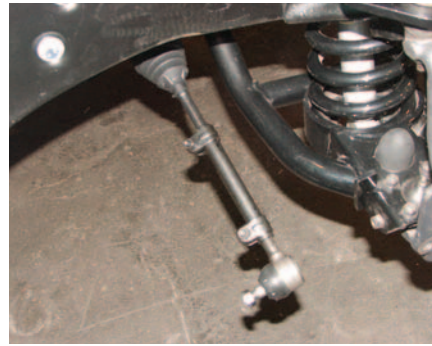
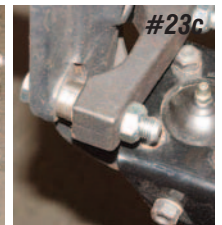
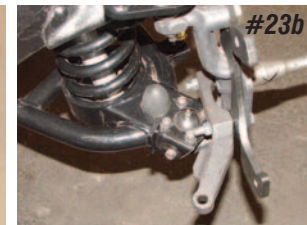
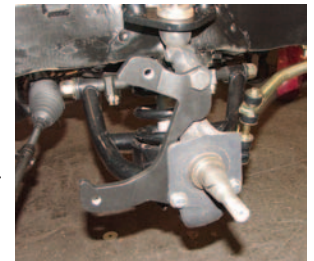


Photo #21: The rack and pinion system uses the original outer tie rod ends and adjusting sleeves. The inner tie rod ends on the rack and pinion are right hand threads and the outer tie rod ends are left hand threads.

Photo #22: The IFS kit also includes a disc brake conversion for the stock spindles. The caliper brackets bolt to the spindle at the top where the original wheel cylinder anchor bolt was located and to the bottom rear of the spindle where the steering arm bolts on.



Photos #23a, #23b & #23c: New steering arms are supplied with the suspension kit.

These arms are shorter than the original steering arms in order to keep the steering radius correct with the new rack and pinion system. The steering arms bolt to inside of the spindle with a 3/8" spacer at the front to compensate for the disc brake bracket at the rear.



Photo #24: With the steering arms in place the outer tie rod ends can be installed. Tighten the tie rod end nuts and install the cotter pins.

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Photos #25a, #25b & #25c: The disc brake kit uses large 11" vented GM rotors and calipers. Pack the inner and outer bearings then install the inner bearing and seal. Next, install the rotor onto the spindle, install the outer bearing, spindle washer and nut. Torque the spindle nut to 30 ft/lbs and install the cotter pin and dust cap.

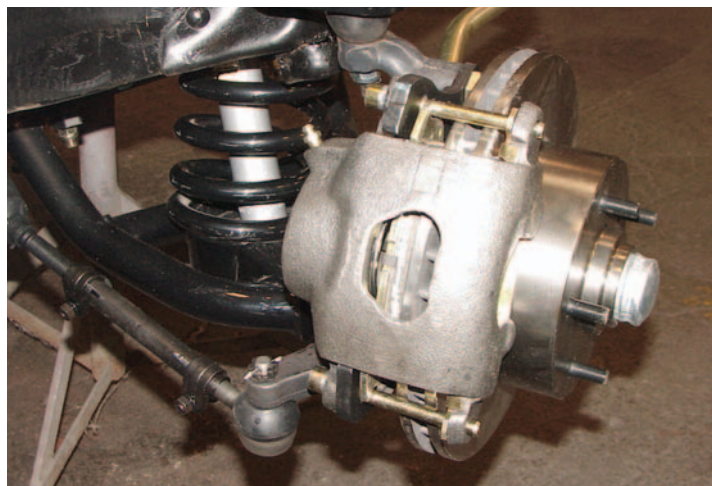


Photo #26: The caliper fits over the rotor and is held to the caliper bracket with two 3/8" anchor pins per side.



Photos #27a, #27b & #27c: The brake hose attaches to the caliper with a banjo bolt and copper washers on each side of the banjo block. At the frame end, the hose attaches to the original brake hose bracket.

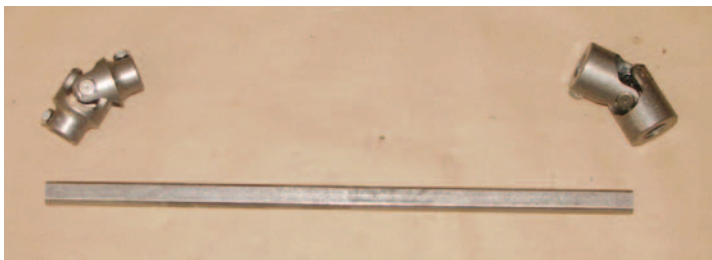
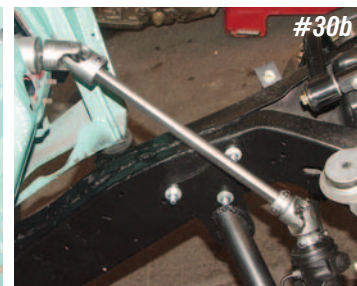
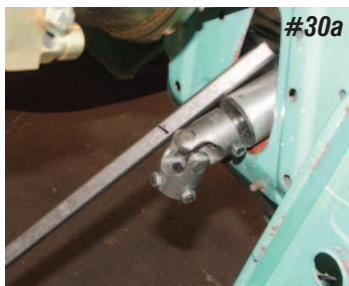


Photo #28: The rack and pinion is coupled to the steering column with two U-joints and a 3/4" double-D shaft.



Photo #29: The lower U-joint is 17mm on one end and 3/4" double-D on the other. The 17mm end fits on the rack and pinion. The U-joint is held to the rack and pinion with set screws. Next, install the 3/4" double-D shaft to the top side of the U-joint which is held to the joint with set screws.



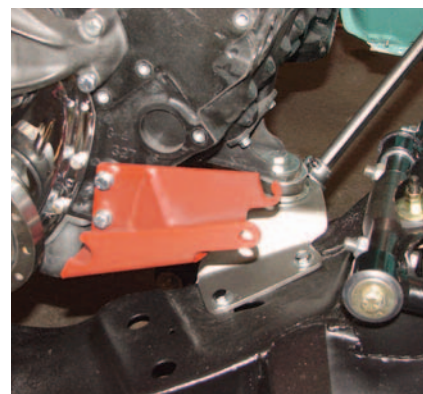
Photos #30a & #30b: The bottom of the upper U-joint is 3/4" double-D and will connect to the 3/4" double-D shaft from the lower U-joint. If a stock column or column shift tilt column is going to be used, the top of the upper U-joint will be 3/4"-36 spline. If a floor shift tilt column is going to be used, the top of the upper U-joint will be 1" double-D. The U-joint is held to the steering column shaft with a setscrew. With the upper U-joint attached to the column, place the steering shaft next to the U-joint and mark and cut the shaft to length. Next, install the shaft into the bottom of the upper U-joint and lock the set screws down.

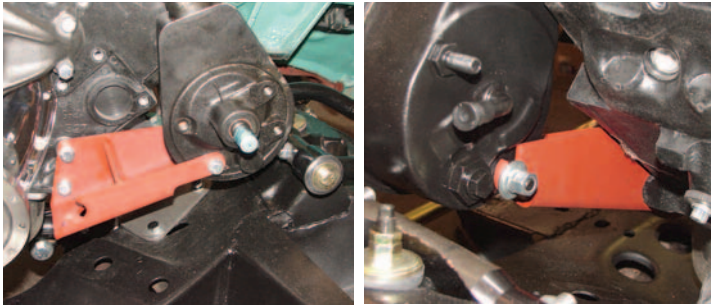


Photo #31: The rack and pinion unit has two female hydraulic ports. The larger 18mm O-ring port is for the pressure hose. The smaller 16mm port is for the return hose.

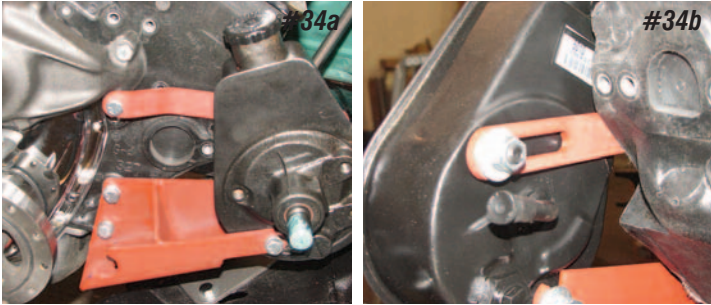
Photo #32: All of our IFS conversions use the early model Saginaw power steering pump.

The pump bracket mounts on the front left lower part of the engine. The bracket for the small block can also be used as the front engine mount if the stock front engine mounts are still used.





Photos #33a & #33b: The power steering pump is held to the pump bracket with a 3/8" x 3/4" bolt and lock washer at the front and a 3/8" nut, flat washer and lock washer at the rear.



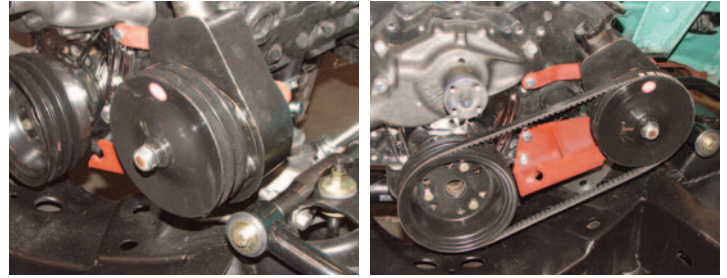
Photos #34a & #34b: The adjusting arm for the pump attaches to the lower water pump bolt and uses the upper stud on the back of the pump for belt adjustment. A 3/8" nut, flat washer and lock washer are used to hold the pump in place.



Photos #35a, #35b & #35c: A third track crankshaft pulley is supplied with the kit. This pulley will drive the power steering pump. The first groove on the crankshaft is for the generator or alternator, the second groove is for air conditioning. The third track pulley keys onto the front of a double groove crankshaft pulley P/N 51-03 (not supplied with kit).



Photo #36: The crankshaft pulleys are held to the harmonic balancer with three 3/8" x 1" bolts for small block or big block.



Photos #37a & #37b: The power steering pump pulley is double groove and is keyed to the power steering pump. The pulley is held to the pump with the supplied lock nut. The power steering belt fits in the forward groove (third track) of the crankshaft and the forward groove of the power steering pump pulley.



Photos #38a & #38b: The pressure hose has fittings on each end of the hose. The O-ring fitting connects to the larger port on the rack and pinion and the flared end connects to the steering pump. This hose will work with front mounts or side mounts.

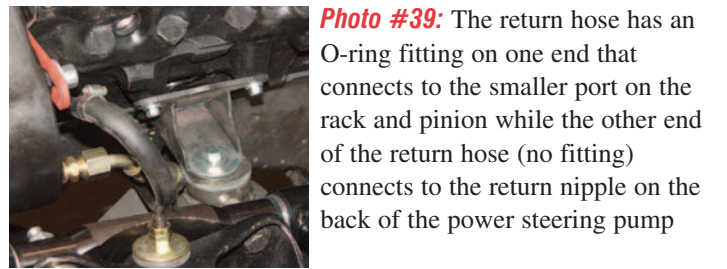


Photo #39: The return hose has an O-ring fitting on one end that connects to the smaller port on the rack and pinion while the other end of the return hose (no fitting) connects to the return nipple on the back of the power steering pump

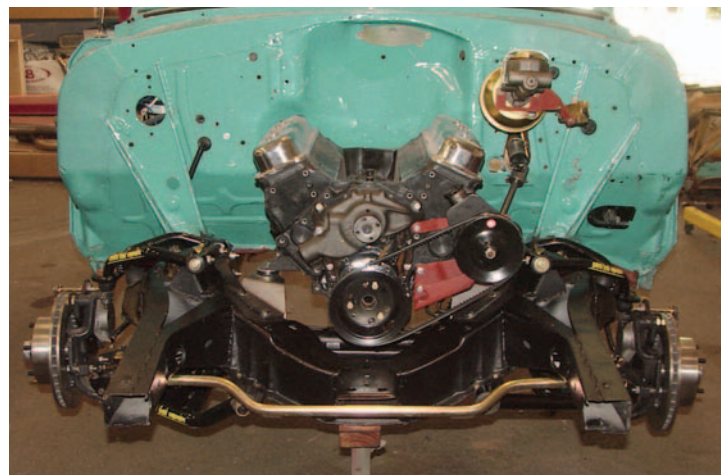


Photo #40: Now this is a real IFS front end! Tubular control arms, a 7/8" heavy duty anti-sway bar, lowering coil springs, power rack and pinion steering and big 11" disc brakes. Your car will handle like a dream and stop on a dime which is the only way to go if you are really going to enjoy driving the car. Good Luck! ▼