1955-57 COMPLETE FRONT END SUSPENSION REBUILD - PART 1

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.

There is much more to performance than pure horsepower. Great performance also comes from great control and handling. Eckler’s Classic Chevy has the best value in front suspension kits to make your car handle like it’s on rails. Kits are available with stock height coil springs and rubber control arm bushings, with 2” lowering coil springs or with polyurethane control arm bushings. The 2” lowering coil springs have an 80 lbs higher rating than the original coil springs for a firmer ride, but not a rough ride like cut coil springs can give. We will also discuss changing the front end alignment slightly from original so you can make the car handle far better than it did when it left the factory. In this article we will completely rebuild the front suspension on our 1955 but all procedures are the same for 1955-57.

Parts Needed:
21-29 Front End Rebuild Kit With Coil Springs
21-130 Front End Rebuild Kit With Coil Springs & Factory Power Steering
21-132 Front End Rebuild Kit With Coil Springs & Urethane Bushings
49-240 Coil Spring Compressor
49-331 Detail Gray Spray Paint
49-341 Semi-Gloss Black Chassis Spray Paint
30-148 POR-15 Self Etching Primer
34-73 Control Arm Hardware Kit
21-253 Lower Control Arm Shafts
21-83 Offset Upper Control Arm Shafts
34-170 Idler Arm Bracket Hardware
53-56 Drag Link Dust Cover/Gasket Set
21-64 Drag Link Repair Kit
53-135 Manual Steering Idler Arm
53-361 Manual Steering Drag Link
53-360 Manual Steering Linkage (Drag Link, Idler Arm, Pitman Arm)
53-227 Manual Steering Pitman Arm
49-62 Front Suspension Fork Tool/Splitter Set
49-204 Pitman Arm Puller Tool
To order parts call 1-800-456-1957 or visit ClassicChevy.com

Tools Needed:
Coil Spring Compressor
Hammer
Tie Rod Splitter
Ball Joint Splitter
5/8” Wrench
3/4” Wrench
7/8” Wrench
Large Flat Blade Screwdriver
Cutters
Ratchet
9/16” Socket
5/8” Socket
3/4” Socket

Time Frame:
6-8 hours

Photo #1a & 1b & 1c: The upper and lower control arms, spindles, coil springs, shocks and all the steering linkage will be removed from the frame to be restored. First we will remove

Photo #1a: The upper and lower control arms, spindles, coil springs, shocks and all the steering linkage will be removed from the frame to be restored. First we will remove...
the outer tie rod ends from the steering arms (knuckles). First remove the cotter pin and nut from the tie rod end. Next, using a tie rod end splitter, disconnect the outer tie rod ends from the steering arms on the spindles.

Photo #2a & 2b & 2c & 2d: On the end of an original non-power steering drag (center) link, there is a large right hand thread set screw held in place with a cotter pin. This set screw holds pressure on two springs and seats on each side of the ball on the pitman arm. Remove the cotter pin and unscrew the set screw. With the set screw removed, wiggle the drag link back and forth. This will push the seats away from the ball on the pitman arm and allow the drag link to be removed from the pitman arm.

Photo #3a & 3b: The idler arm is bolted to the passenger side of the frame with two carriage bolts, lock washers and nuts. With the two bolts removed, the complete steering linkage can be removed from the frame.

Photo #4a & 4b & 4c: To remove the upper and lower control arms, the coil springs will need to be compressed to take the load off the control arms. The shock absorber must be removed to allow installation of a coil spring compressor. The top of the shock is attached to the upper control arm stand with a 3/8” nut, cupped washers and rubber grommets. The bottom of the shock is attached to the lower control arm with two 5/16” bolts. With the bolts and nut removed, the shock absorber will drop out through the lower control arm.

Photo #5a & 5b & 5c: With the tall nut and washers removed from the threaded shaft on spring compressor P/N 49-240, feed the shaft up through the hole in the lower control arm where the lower shock mounts and through the upper shock mount on the upper control arm stand on the frame. The aluminum pivot plate bolts to the bottom of the lower control arm using the supplied hardware where the lower shock mounted. Lubricate the lower pivot plate and threads with oil or light grease and install the Delron thick plastic washer, three flat washers and the tall nut.
Photo #7a & 7b & 7c: With the coil spring compressed, there is no coil spring load on the spindle, ball joints or upper control arm. Remove the cotter pins and nuts from the upper and lower ball joints and using a ball joint splitter tool remove the spindle.

Photo #8a & 8b: Using the 1-1/16” wrench, loosen the tall nut allowing the lower control arm to swing down. Once the load is off the coil spring, the compressor may be removed and the coil spring itself removed.

Photo #9a & 9b: With the coil spring removed, the upper and lower control arm may be removed from the frame. The upper control arm is held to the frame with two 7/16” nuts and the lower control arm shaft is bolted to the frame with four 7/16” bolts with lock washers and tall nuts. With the control arms and steering linkage removed, we are ready to start on the restoration of the front end steering components.

Photo #10a & 10b: The original upper and lower ball joints were riveted to the control arms. Using a sharp chisel and hammer cut the heads of rivets off. Than using a punch, drive the shaft of the rivet out. If your ball joints have been replaced previously, simply remove the bolts that secure them to the control arms.

Photo #11a & 11b & 11c: The upper control arm bushings and shaft are held in place with a large cupped washer, a 3/8” bolt and lock washer. Remove the bolt, lock
Photo #12a & 12b: The lower ball joints in our 55 had been replaced so they were bolted to the control arms and not riveted.

Photo #13a & 13b & 13c: The lower control arm bushings are held in place with a large cupped washer, 7/16” bolt and lock washer. Like the upper control arms use a hammer and chisel or air hammer and chisel and remove the control arm bushings. The left and right lower control shafts ARE different from side to side so make sure to keep the left shaft with the left control arm and the right shaft with the right control arm.

Photo #14a & 14b: We sent the control arms and shafts out to be blasted and painted. The parts were first primed with POR-15 Etching primer P/N 30-148 and then the control arms were painted with Eastwood Semi Gloss black P/N 49-341 and the shafts were painted Eastwood Detail Gray P/N 49-331.

Look for Part II of our Suspension article in next month’s magazine where we assemble all our new parts. Good luck!
1955-57 COMPLETE FRONT END SUSPENSION REBUILD - PART 2

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### Parts Needed:

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<thead>
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<td></td>
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<td>21-130</td>
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<td>Drag Link Repair Kit</td>
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### Tools Needed:

- Coil Spring Compressor
- Tie Rod Splitter
- Ball Joint Splitter
- 5/8” Wrench
- 3/4” Wrench
- 7/8” Wrench
- Large Flat Blade Screwdriver
- Cutters
- Ratchet
- 9/16” Socket
- 5/8” Socket
- 3/4” Socket

### Time Frame:

6-8 hours

Photo #15a & 15b: The left and right upper control arm shafts are the same from side to side. There is a casting on the outer side of the shaft that when installed faces right side up.
Photo #16a & 16b: The best way to install new control arm bushings is with a hydraulic press and control arm bushing tool. We had a local front end shop install the bushings in the upper and lower control arms. The front suspension bolt kit P/N 34-73 includes all the hardware for the upper and lower control arms. We have installed new cupped washers, lock washers and bolts in the upper control arm shafts. Leave the bolts loose at this time.

Photo #19a & 19b: The lower control arm shafts are different from side to side and have a front and rear. The new lower shafts P/N 21-253 include a left and right shaft, new bushings, cupped washers and bolts. Using a press, install the new lower control arm bushings. Kit P/N 21-73 includes the cupped washers, bolts and lock washers for the lower bushings. Leave the bolt loose at this time.

Photo #20a & 20b & 20c: The lower ball joint is bolted to the bottom lower control arm with six 5/16” X 3/4” bolts, lock washers and nuts. Torque the bolts to 10-12 ft/lbs.

Photo #17 & Diagram: “Camber” is the term used to describe how much the front wheel is leaning inward or outward at the top. After many years of hard use, the frame on a Tri-Five will sag or rotate inward and you may no longer be able to achieve the proper amount of positive camber. Installing aftermarket tubular control arms or offset shafts will cure this problem. The Eckler’s Classic Chevy tubular upper control arms P/N 21-185 provide 2-degrees more positive camber and 5-degrees more caster. The positive caster is only necessary when installing an aftermarket power steering box or a rack and pinion unit. To retain the stock upper control arms but gain more positive camber, offset upper control arm shafts can be used in place of the original control arm shafts. The offset shafts P/N 21-83 move the upper control arm bushings outward 2-degrees to give you more positive camber adjustment than you will ever need.

Photo #18a & 18b & 18c: The upper ball joint is installed from the top side of the upper control arm. Remove the dust boot from the ball joint using a large flat blade screwdriver and bolt in place. Bolt the ball joint to the control using the supplied 5/16” X 3/4” bolts, nuts and lock washers and torque the bolts to 10-12 ft/lbs. The dust boot will now install from the bottom of the control arm. A small amount of grease on the lip of the boot will help the boot slide into place.
Photo #21a & 21b: Kit P/N 21-73 also includes new 7/16” bolts, tall nuts and lock washers to bolt the lower control arms to the frame. Torque these bolts to 45 ft/lbs.

Photo #22: Kit P/N 21-73 also includes new upper control arm cross shaft mounting studs that are driven into the upper control arms stands on the frame as well as nuts and lock washers. Mount the upper control arms to the frame with no alignment shims at this time. The alignment shop will add what is necessary when the front end is aligned. Torque these nuts to 45 ft/lbs.

Photo #23: Before installing the coil spring and spindle, make sure to install the upper control arm bumper. The bumper simply snaps into a hole in the top of the frame under the upper control arm.

Photo #24a & 24b & 24c: Place the top of the coil spring in the spring pocket on the frame and the bottom of the spring in the pocket on the lower control arm. Use the coil spring compressor, P/N 49-240, in the same manner you did to remove the old springs. By using this style of coil spring compressor and not the old hook type, the coil spring will not get scratched up during installation. Install the nuts on the ball joints after capturing the spindle and torque to 45 ft/lbs and install the cotter pins. With the ball joints bolted to the spindles the coil spring compressor can be removed.

Photo #25: Now we will move on to restoring the steering linkage. The steering linkage consists of the drag link, idler arm and inner and outer tie rod ends. If you do not wish to restore your original drag link, pitman arm and idler arm, a full set is available as P/N 53-360.

Photo #24a & 26a & 26c & 26d: The idler arm has one bushing that is pressed in from the bottom. Using a hammer and chisel or an air hammer and chisel drive the bushing out. After cleaning...
and painting the arm with Detail Gray we used a hydraulic press to press the new bushing into the arm from the bottom flush with the top of the idler arm. The idler arm frame bracket is held to the idler arm with a nut and cotter pin. If you wish to simply replace the idler arm assembly with a new one, use P/N 53-145.

Photo #27a & 27b & 27c: On the passenger side of the drag link there is a bushing where it attaches to the idler arm. We have removed the bushing and cleaned and painted the drag link Detail Gray. Using a hydraulic press, install the new bushing into the drag link from the bottom until flush with the top of the drag link. The drag link is held to the idler arm with a nut and cotter pin.

Photo #28: With the idler arm and drag link restored bolt the idler arm bracket to the frame. If the original idler arm carriage bolts are bad, new hardware P/N 34-170 is available.

Photo #29a & 29b & 29c: On the driver’s side the drag link attaches to the ball on the pitman arm. There are two spacers, two springs, two seats and an end cap. If the seats and springs are worn, replace them with kit P/N 21-64. The seats fit on each side of the pitman arm ball and the springs and spacers keep pressure on the seats holding the drag link to the pitman arm. Install one spacer, spring and seat in the end of the drag link. Be sure to lubricate all parts with a multi-purpose grease.

Photo #30a & 30b: Next install the center link to pitman arm dust cover P/N 53-56 over the end of the drag link and place the drag link onto the pitman arm ball.

Photo #31a & 31b: Now install the second seat, spring and spacer into the outer end of the drag link. The end cap screws into the end of the drag link until flush and is held in place with a 1/8” cotter pin.
Photo #32a & 32b & 32c: The inner and outer tie rod ends and sleeves are the same left and right on a non-power steering car. The outer tie rod end is the shorter tie rod and has left hand threads. The inner tie rod end is the longer tie rod end and has right hand threads. The adjustment sleeve connects the two tie rod ends together to form a complete tie rod. The outer tie rod ends attach to the steering arms (knuckles) on the spindles and the inner tie rod ends attach to the holes in the drag link with castellated nuts and cotter pins. The toe-in adjustment is set by turning the adjusting sleeve which will lengthen or shorten the overall length of the tie rod assembly.

<table>
<thead>
<tr>
<th>Stock Steering Box</th>
<th>Caster</th>
<th>Camber</th>
<th>Toe In</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock Steering Box</td>
<td>+1/2° to +1°</td>
<td>0° to -1°</td>
<td>1/8” to 3/16”</td>
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<tr>
<td>605 Power Steering</td>
<td>+2/3° to +3/5°</td>
<td>0° driver side</td>
<td>1/8” to 3/16”</td>
</tr>
<tr>
<td>Box or Rack &amp; Pinion Unit</td>
<td>-1/4° passenger side</td>
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With the front suspension together, mount the wheels and set the car on the ground. Bounce the front end a few times allowing the front end to settle and then tighten the upper and lower control arm bushing bolts. The bolts for the upper control arms torque to 35-40 ft/lbs and the bolts for the lower control arms torque to 45-55 ft/lbs. The car must completely together, engine and transmission installed, body and front sheet metal installed, all glass and interior. The upper and lower control arm bushing bolts must be tightened with the suspension in the ride height position.

Good Luck.