1955-1959 Chevy Truck Coil-Spring Front End

Tech line: 1-855-693-1259

www.totalcostinvolved.com

Read and understand these instructions before starting any work!

USE THE PARTS LIST BELOW TO MAKE SURE YOUR KIT IS COMPLETE BEFORE INSTALLATION.
IF ANY PIECES ARE MISSING, PLEASE CONTACT: Total Cost Involved Engineering 855-693-1259

Front Suspension Installation Instructions

Thank you for choosing TCI Engineering's New Coil spring front suspension package. This kit features our completely new upper spring towers that allow traditional shims/washers for alignment adjustments. This design eliminates the T-bolt design that was prone to slipping and throwing your alignment out when you hit potholes. This new kit also features our new 1" anti-sway bar which is stiffer than the ¾" previously offered.

'55-'59 Original Chevy Stock Chassis

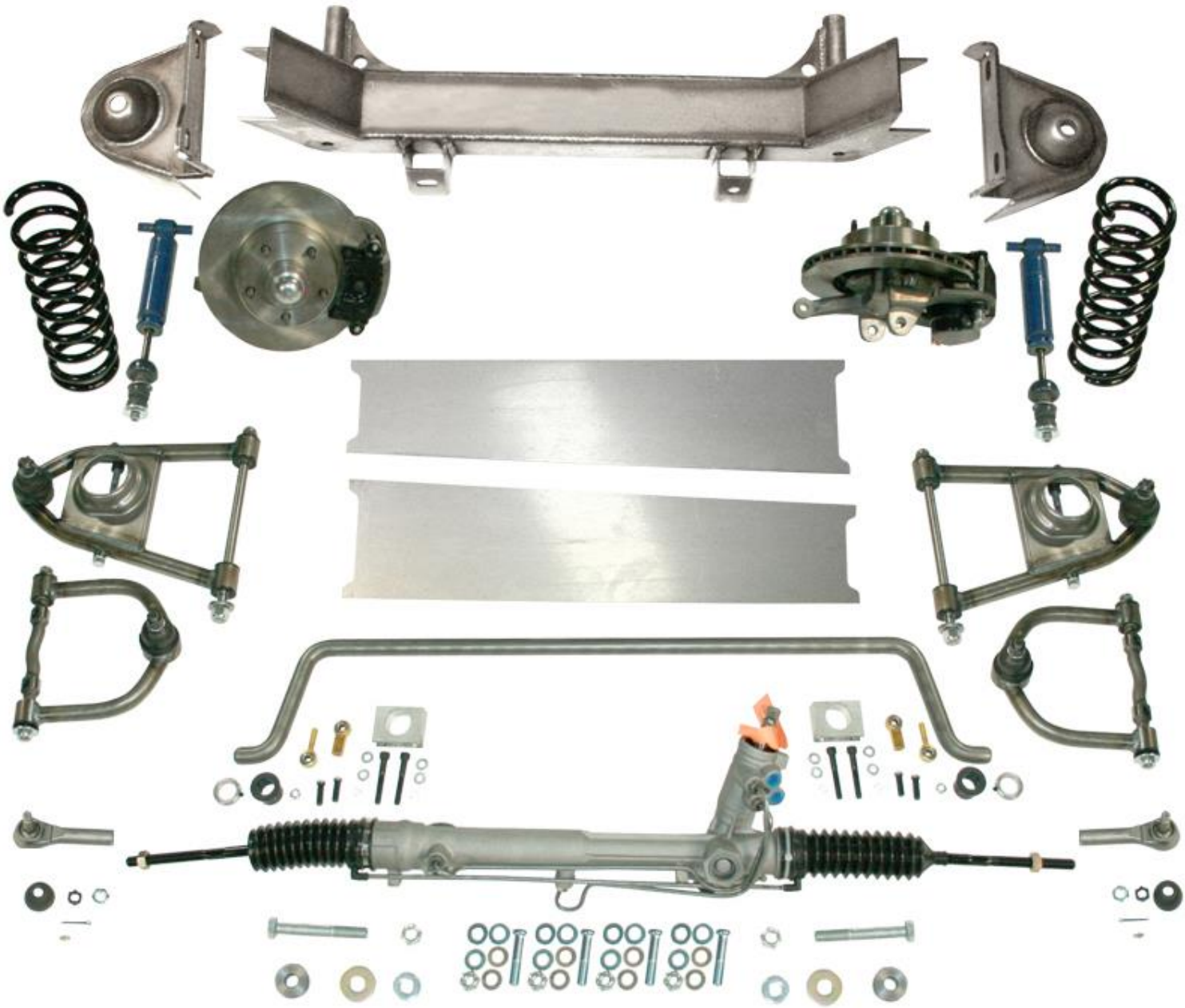
New Coil-Spring Front End on Original Stock Chassis

1955-1959 Chevy Truck Coil-Spring Front End Parts List –

Part#: * 233-2354-0cp-c3k-1ex or 233-2354-0sm-a6k-4gx – The asterisk shown is the plain and standard package

1	**Coil-Spring Cross member**	**1**	**Rack & Pinion – Only**
			• Power Rack Part #: 304-3215-00 + 2 in.
	• 1955-1959 Chevy Truck Part #: 233-2356-00		• Manual Rack Part #: 304-3205-00 + 2 in.
2	**Plain Upper Control Arms – Hardware**	**1**	**Rack & Pinion Bolt Kit – Hardware**
	• * Part #: 200-2257-00 – Plain		• Power Rack Part #: 300-3233-00
	• Part #: 200-2257-01 – Black		• Manual Part #: 300-3231-00
	• Part #: 200-2257-02 – Polished	**1**	**Tie Rod Ends Set – Hardware**
2	**Plain Lower Control Arms – Hardware**		• Part #: 301-3238-00
	• * Plain Lower Control Arms – Hardware	**2**	Assembled: Drop Spindle w/11" Rotors and Calipers BP: 4.5 Part# spasyspb11pad-gmn or BP: 4.75 spasyrpb10daf-gmp
	• * Part #: 200-2257-00 – Coil-Spring - Plain	**2**	Sway Bar and Mount – Hardware 3/8 Bolt Kit
	• * Part #: 200-2257-02 – Coil-Spring - Black		• Part #: swaybar-f10-pln or chr
	• Part #: 200-2257-05 – Coil-Spring - Polished		• Part #: swaybar-f10-pln or pol
	• Part #: 200-2457-00 – Air Bag – Plain		• Part #: swy-bar-mnt-02-pln
	• Part #: 200-2457-02 – Air Bag - Black		• Part #: swy-bar-heims38mod - 3/8 Modified Heims:
	• Part #: 200-2457-05 – Air Bag - Polished		• Part #: swy-bar-bolt-01-pln
	• Part #: 200-2557-00 – Coil-Over – Plain	**2**	Shocks Painted Body - Part#: skbdy03-0 (coilover upgrade) or Part#: skbdy09-5(standard shock)
	• Part #: 200-2557-02 – Coil-Over – Black	**2**	Sway Bar and Mount – Hardware 3/8 Bolt Kit
	• Part #: 200-2557-05 – Coil-Over – Polished	**2**	Coil-Springs - Black Powder Coated - Part#: spring700b for coil over or springm375b for regular coil spring

~ New Coil-Spring Front End ~



NOTE

The factory cross member should remain in place until the new cross member is fully welded in:

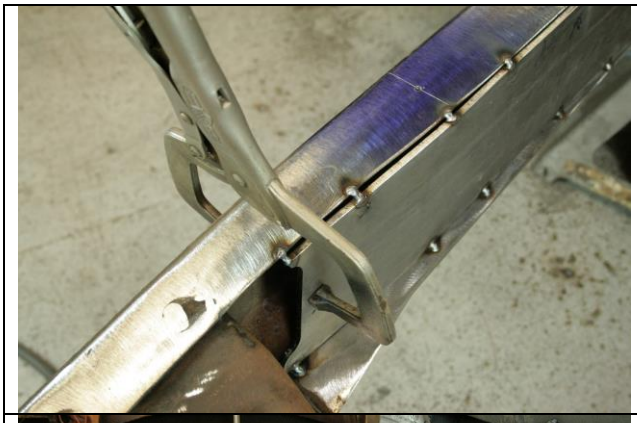
This manual assumes that your factory suspension has already been removed (minus factory crossmember as stated above). Place the vehicle on jack stands making sure it is level side to side.

Removing raised flange on the frame rail:

The raised flange on the top driver's side rail needs to be removed, flattened and reinstalled in the same place on the frame. We used a cut off wheel to remove this area. Once removed we placed the piece on the shop floor and flattened the edges with a hammer. We then welded it back on the frame in the same position. Some trimming was required to make it sit flush on the top of the rail.

Installing the boxing plates:
The boxing plate is tapered. Place the plate onto the frame within the corresponding taper/size. Lay the boxing plate onto the lower lip and push it forward up against the factory crossmember. We leave a little extra metal on the top side so you may need to trim to fit. You'll want the plate to be roughly a 1/8" shorter than the top of the frame rail. This will allow the weld to fully penetrate into the rail.

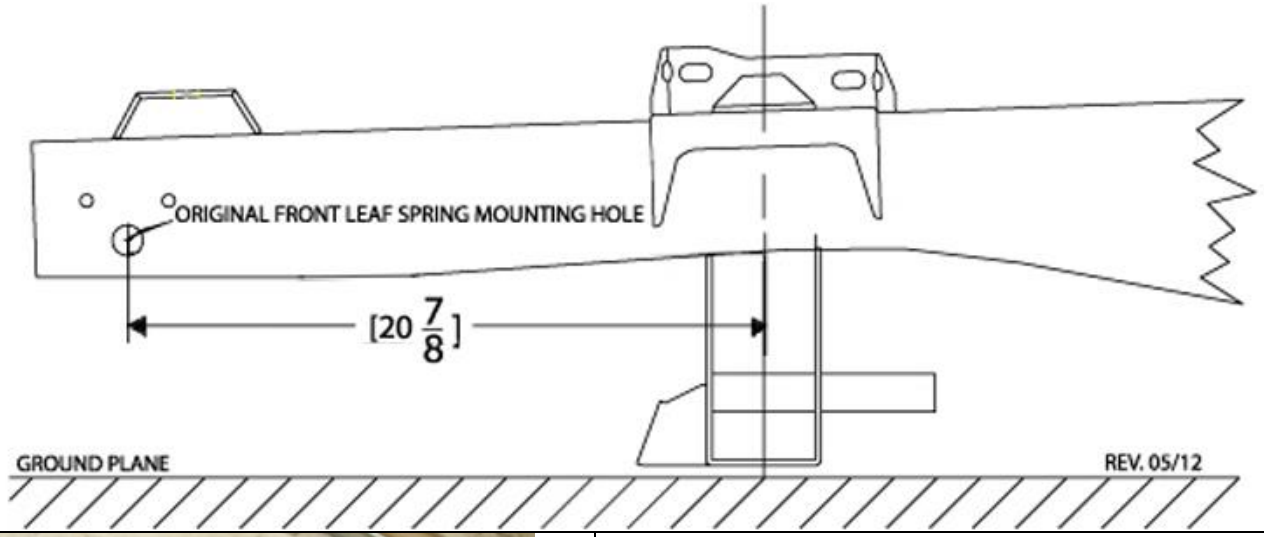
It is important that the boxing plates be positioned on the outside edge of the frame rail. This will insure there is enough weld to grind and smooth out the corners. Use a square to make sure that the plates are square to the frame. Tack weld the rear corners and the middle where the rail begins to get narrower (also falls in line with the axle centerline) and make sure they are still square.

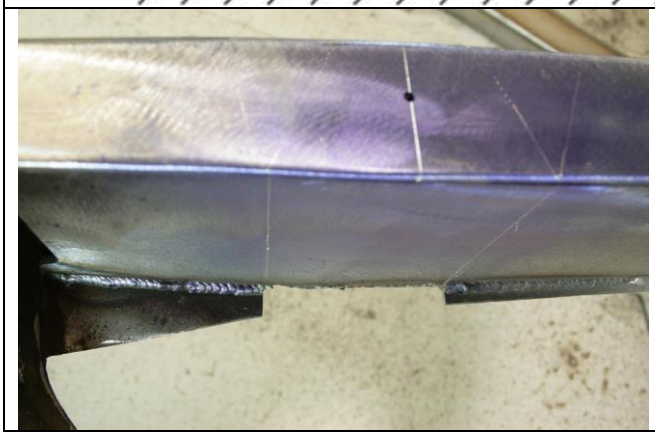


Once the boxing plates are confirmed square you can use a c-clamp to bring the leading edge up against the frame rail. Put a tack weld in a couple more areas to keep it in place.

Weld 6” sections at a time switching from driver to passenger to keep heat and warping to a minimum

1955-1959 Chevy Truck Coil-Spring





Locating the axle center line:
Using the illustration above, find and mark the axle center line on both the passenger and driver side frame rail. We drilled a small pilot hole to mark the centerline.

This mark is where the center of the crossmember will meet the frame. You will now need to trim back the lower lip of the frame rail so the crossmember can be installed.

Installing the cross member:
2 degrees frame rake (vehicle stance) is typical. The flat area on top of the cross member should be level to the ground or 0 degrees when the frame is at proper rake.
NOTE The frame pictured is sitting at 0 so the cross member is being installed @ 2 degrees.
Center the cross member on the axle center line mark made earlier. **Only tack weld the cross member into place at this time.**

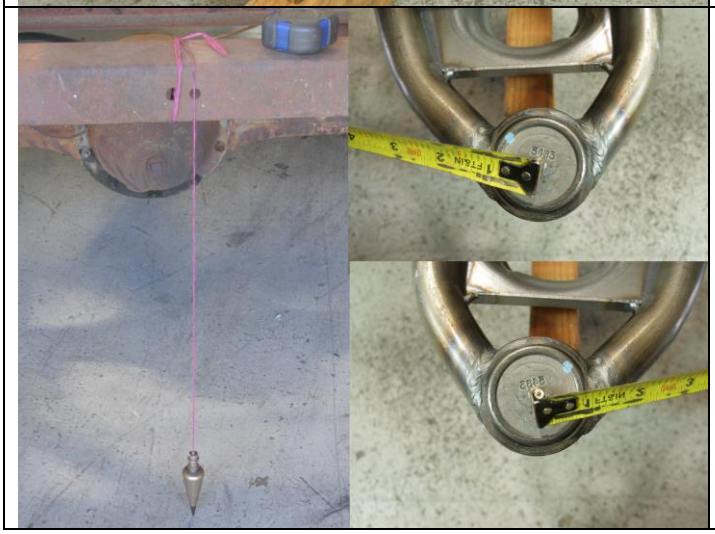
NOTE Grinding the cross member to make it fit between the rails and have proper rake may be necessary.

VERIFICATION OF SQUARENESS

Install both lower control arms **upside down** (ball joint pointing down).

passenger side shown

Install and tighten down the hardware making sure the washers are installed properly (see below). Prop up both arms so that they are parallel to the ground.



Hang a plumb bob from the rear/center of the chassis. Take a tape measure and measure from one zirc fitting on the ball joint to the plumb bob, then measure to the other zirc fitting. If the measurements are within 1/8” then proceed to the next step. If they are not within spec then you will need to break the tack welds on the crossmember loose and adjust accordingly.

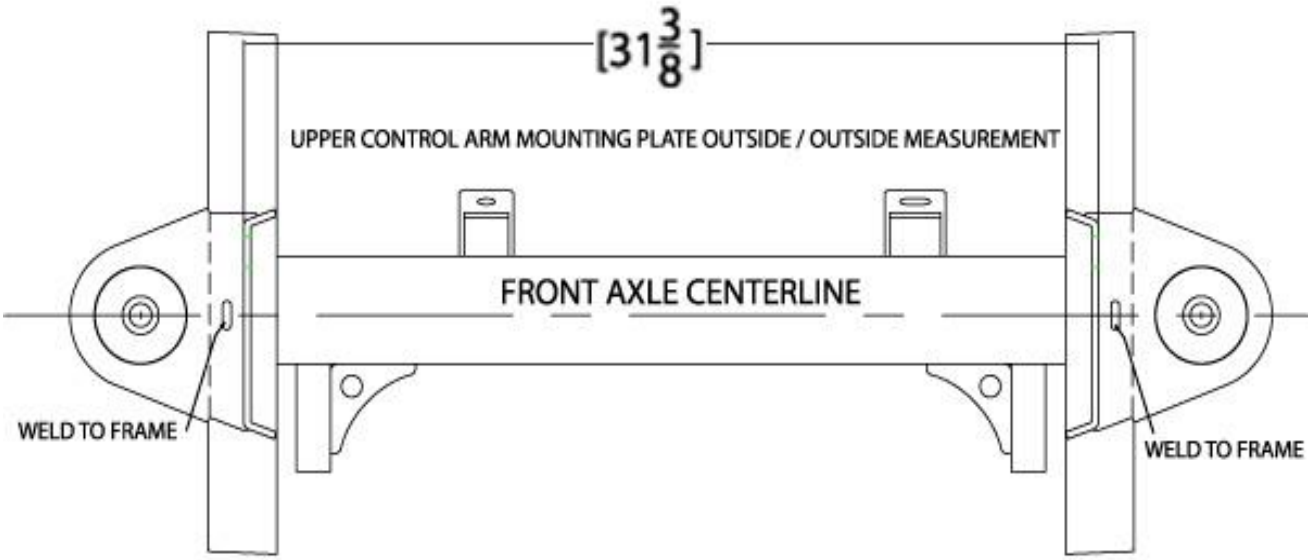
Installing the lower control arms:

NOTE The acorn side of the 5/8” shaft faces forward.

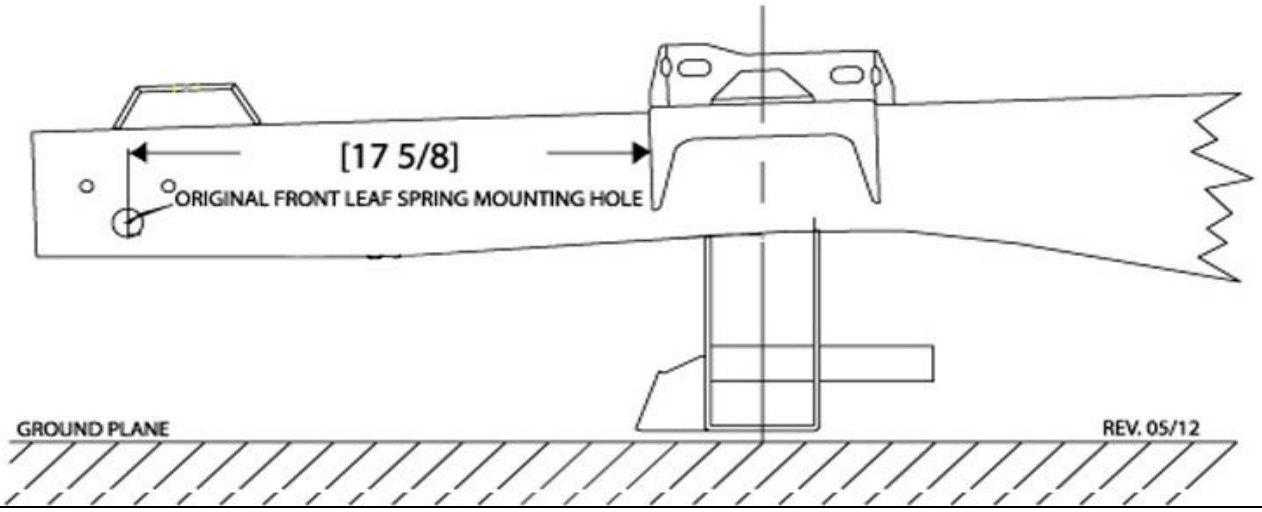
The arrows in the picture denote where the washers are used. There is no washer placed against the front side of the cross member. There are only 3 washers used per side of the vehicle. Install the 5/8” full nylock nut on the back side of the shaft and torque to 75 ft. lbs.

NOTE Driver side control arm is pictured. Easy way to tell if you have the proper arm is the ball joint will line up with the wheel centerline.

1955-1959 Chevy Truck Coil-Spring



1955-1959 Chevy Truck Coil-Spring

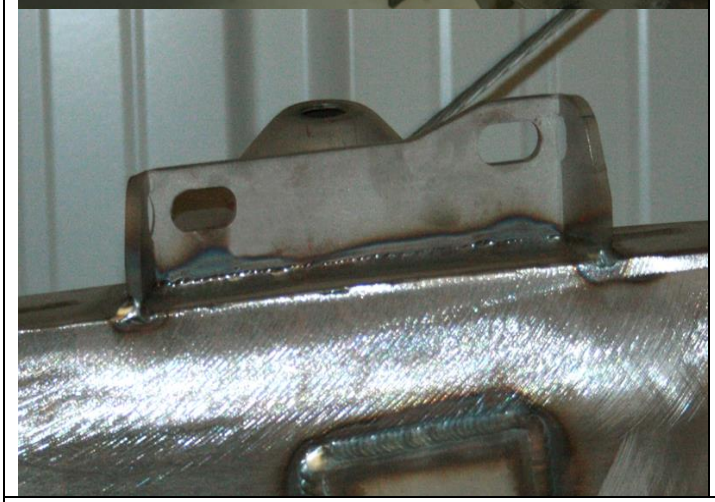


Installing the spring towers:
The tall part of the control arm mount goes towards the front of the truck. Follow the measurements in the illustration above for exact placement of the towers side to side & front to back. The top edge of the tower where it meets the frame should be used for placement to the measurement above. It will be critical that the towers are installed square and parallel to each other at 31 3/8” apart outside to outside of arm mount faces. Also, the arm mount face must be vertical +/- .5 degrees. This will insure proper alignment. It may be necessary to grind some material off the towers where they come up against the side of the frame to achieve the proper measurement.

Once proper placement is confirmed a couple tack welds can be placed at the top and the side of the tower/frame.

Double check all measurements.

Now you can weld the spring towers and cross member into place. The slot on the top of the tower over the middle of the frame needs to be rosette welded in to add strength.



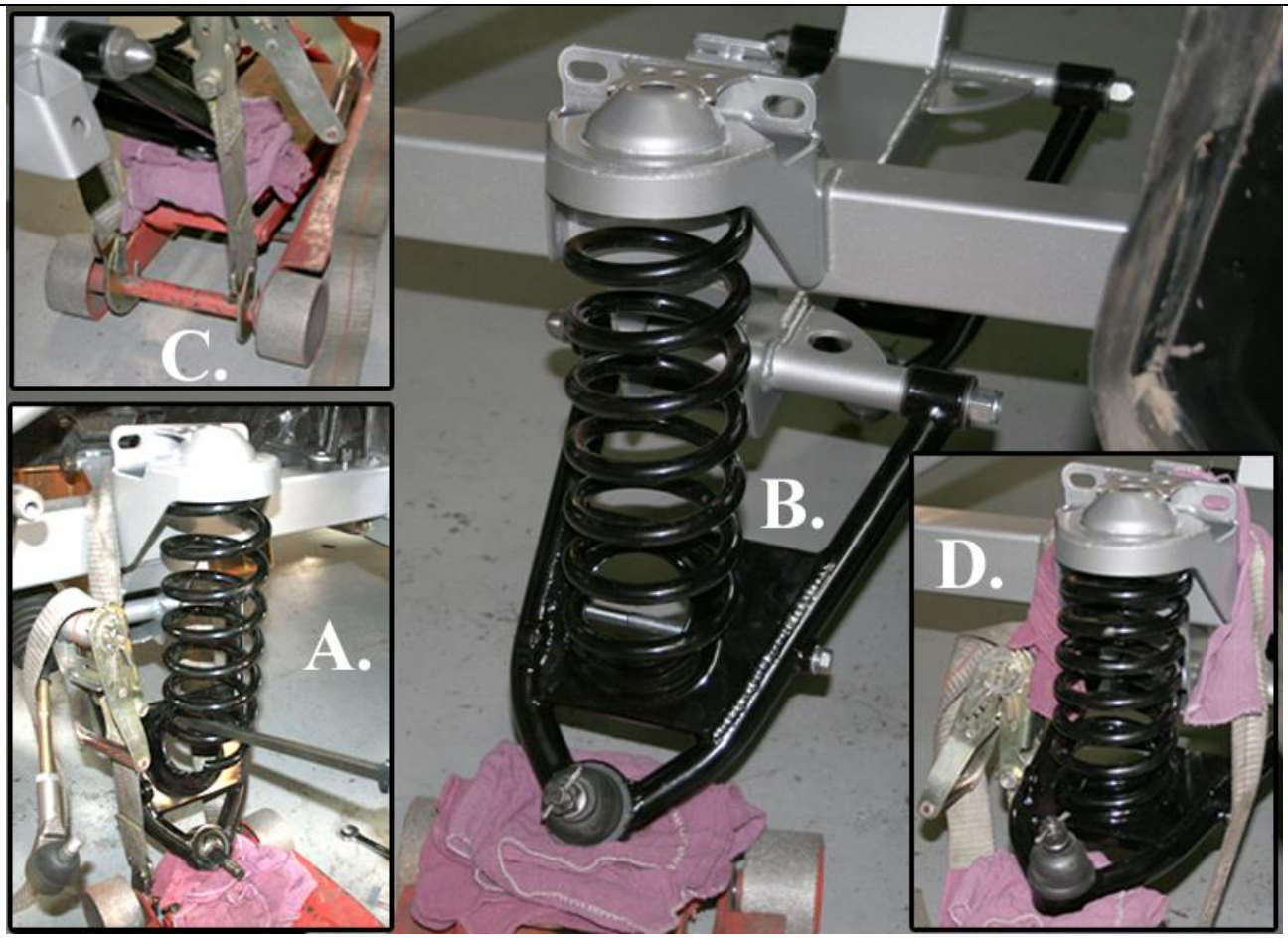
Weld the back side of the control arm uprights.

NOTE The factory cross member can now be removed.

Coil Spring Installation

Helpful Hints For Installing Springs

We suggest that you wait until final vehicle assembly (vehicle at full weight) to install the coil springs because it will put undue stress on the ball joints and could cause the boots to tear. Another option is to remove the upper and lower ball joint boots and then cover the ball joints to keep dirt out until you’re ready to drive the vehicle.



For Proper Installation of Coil Springs A Spring Compressor is needed

Here are some helpful hints for installing the springs without a spring compressor.

Installing the coil springs onto the front end

Before you Start:

***NOTE* It is best to use a spring compressor for this process. If you do not have a spring compressor this is an effective way to install your coil springs.**

Additional Components Needed:

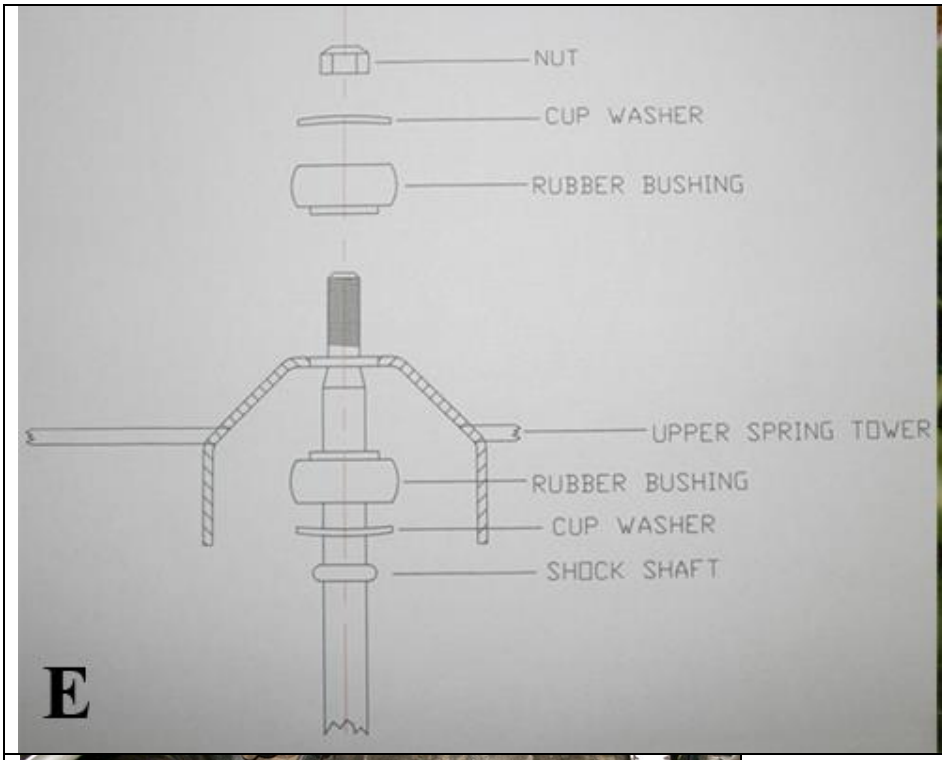
Very strong ratcheting tie downs with hooks
Floor Jacks
Clean Towel

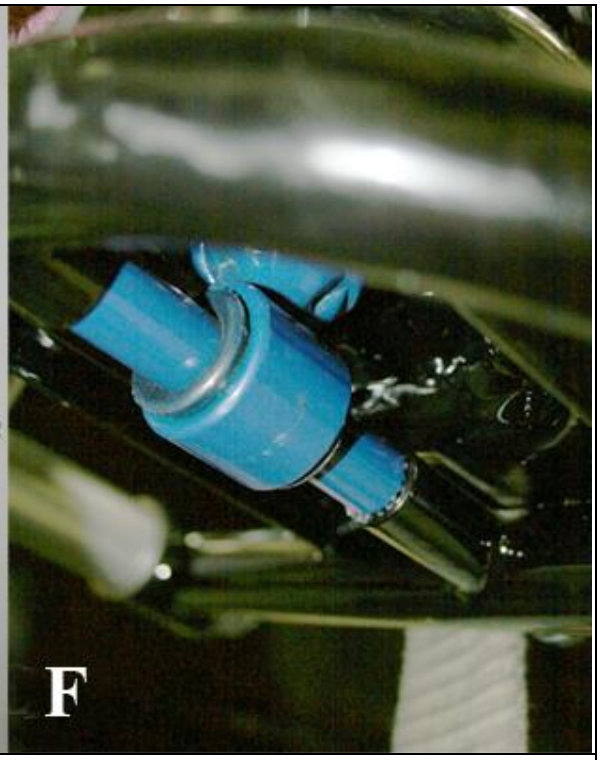
1. **(Image A)** With the vehicle securely positioned on jack stands remove the grease fitting on the lower ball joint. Install the coil spring with the flat ground side up in the spring pocket and the pig tail end inserted onto the notched portion on the lower a-arm. Use a long screwdriver or flat bar inserted above the last coil and hooked through the coil pocket to hold the spring from coming out as you jack up the a-arm.

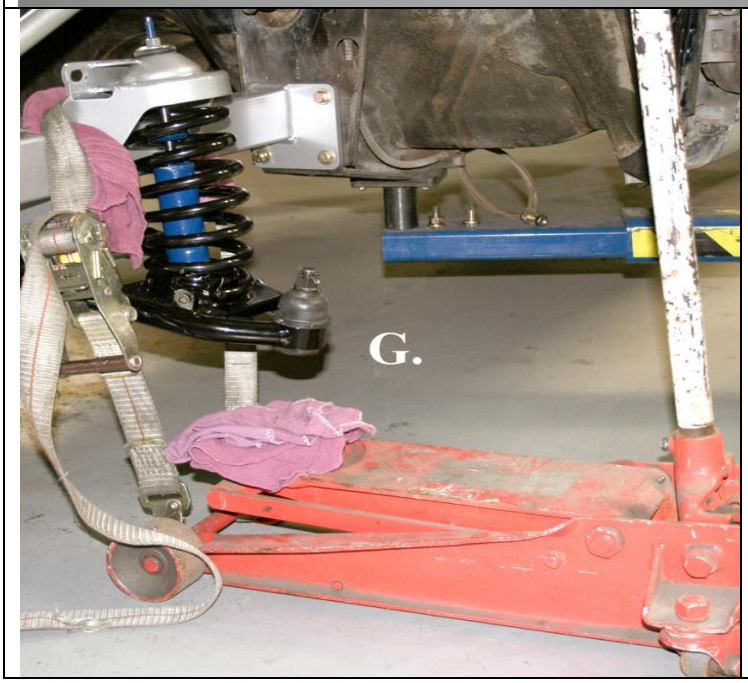
2. **(Image B)** Position the floor jack under the lower a-arm as shown with a clean towel protecting the finish.

3. **(Image C)** Hook the ratcheting tie down to the front of the floor jack cross bar, then go up and over the upper a-arm mounting bracket. With the other end of the tie down hooked to the other side of the jack's crossbar. This keeps the frame from going up as you raise the a-arm.

4. **(Image D)** Slowly raise the jack until it is safe to remove the large screwdriver holding the spring in place. Keep raising the jack until the lower a-arm is high enough to fit the shock absorber into place.







5. **(Image F)** Install the shock through the bottom of the lower a-arm with the shock stem going through the mounting hole in the upper hat. Align the lower shock sleeve with the shock bosses on the lower a-arm and install the 7/16” shock bolt and tighten

Note: If you have difficulty with the sleeve fitting between the bosses lightly sand the ends of the sleeve.

6. **(Image E)** Install the cup washers, bushings and nut on top of the shock stem and tighten. Carefully lower the jack and remove the ratchet tie down. Re-install your ball joint grease fittings. **(Image G)** This is what your installed spring will look like.

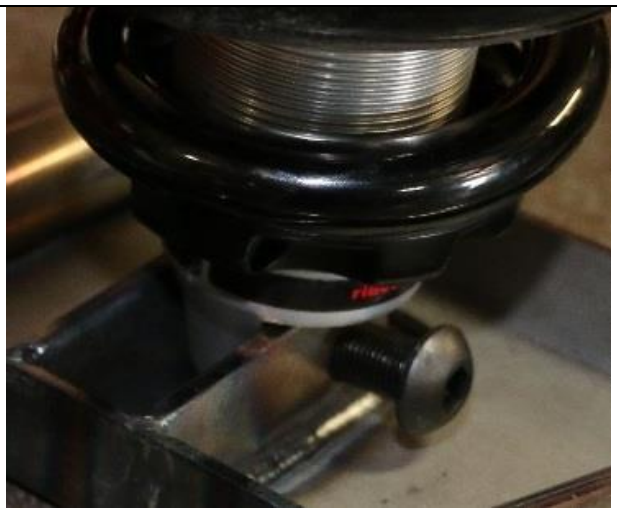
The spring that comes with the kit is a 375 lb. per inch rate and is identified with a red dot on the flat end.

The best option for a vehicle that will not see use right away is to make a ride height fixture. This is basically just a 1”x.125” square tube with a 7/16” hole drilled in the bottom and a ½” bolt welded to the top. The lower control arm should be parallel to the ground to mimic what the eventual ride height will be.

****Addendum****
Ridetech Coil-Over upgrade

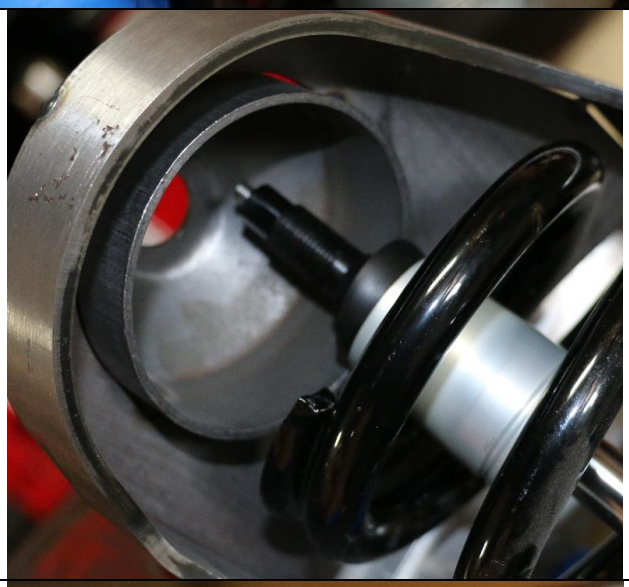
Turn the adjustment ring on the shock as far down as possible.

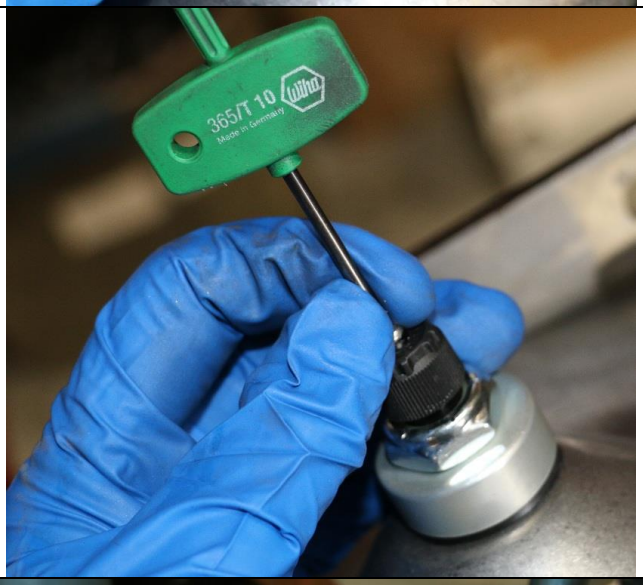
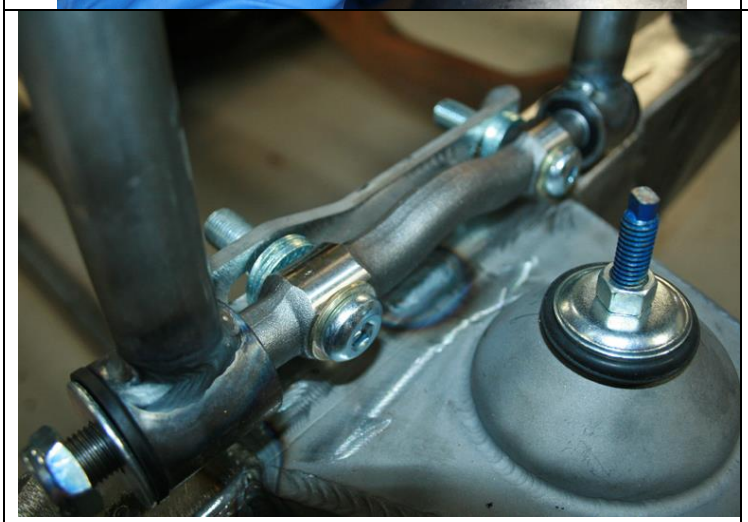
Install the spring onto the shock with the small tapered side of the spring down against the flat rubber insulator and adjuster ring.



Place the shock onto the lower control arm and install the provided ½” button head bolt.

	Install the nylock on the opposite side and tighten down
	Use a T10 Torx head to remove the screw at the top of the shock/adjuster knob.
	Remove the adjuster knob and screw and set it aside for now.

	Remove the nylock, thick washer and concave insulator and set them aside for now. *NOTE* There are two halves of the concave insulator, leave the bottom half installed on the shock.
	You can now lift the lower control arm and shock/spring combo up into the upper hat assembly. Align the shock shaft into the center hole of the upper hat. This is where making sure the adjuster ring was all the way down or not will make all the difference. If it wasn't the stud will not protrude far enough to reinstall the top end of the shock. *NOTE* Make sure the shock shaft is fully extended
	Reinstall the concave insulator and thick washer on top of the upper hat assembly

	Reinstall the nylock and tighten it down
	Using the same T10 Torx you can now reinstall the adjuster knob and screw
	**Installing the upper control arms:** Use three of the provided .090” thick washers between the tower and the control arm shaft on each bolt. The rest can be placed under the head of each bolt and under the lock nut. These spacers may need to be moved around when final alignment is performed. Once all the hardware is in place go ahead and set the bolts in the center of alignment slots and tighten down. **Note:** Bolts are now 9/16 x 3” grade 8 hex bolts. The slotted arm mount holes will make it easy to add in extra positive caster for power rack applications.

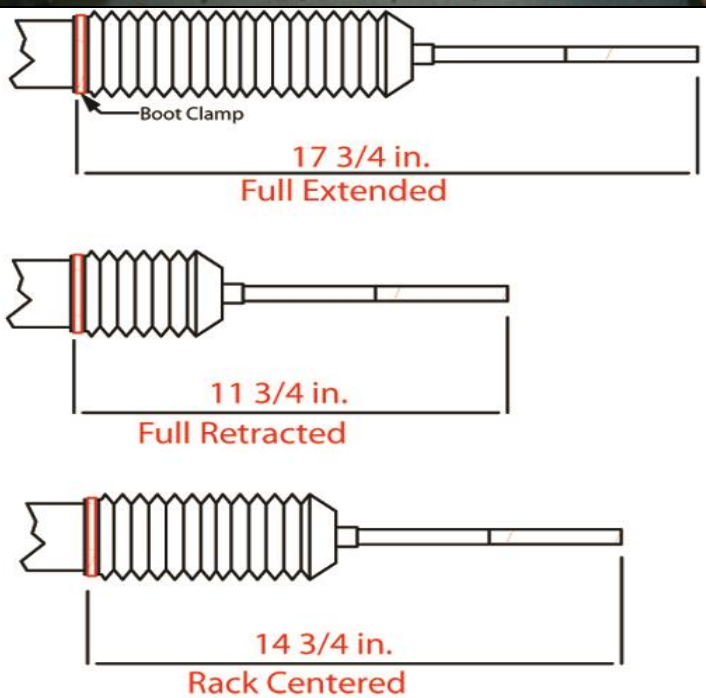
Installing the spindle assemblies:

Place the spindle onto the lower ball joint with the steering arm facing forward with the large I/D tie rod end taper facing down. (The tie rod end goes up into the spindle)

Place the ball joint washer first and then the castle nut. Torque the lower ball joint to 90 ft. lbs and install the cotter pin. The lower ball joint is a **MOOG K719**

Pull the upper control arm down onto the spindle. Place the ball joint washer first and then the castle nut. Torque the upper ball joint to 70 ft. lbs and install the cotter pin. The upper ball joint is a **MOOG K772**

NOTE
Caliper Fittings:
GM Calipers = 10mm x 1.5
Wilwood Calipers = 1/8" NPT



Centering the rack assembly:
The rack needs to be centered to allow equal steering left to right. On a bench, turn the pinion out to lock one way. Measure from a convenient point to the end of the inner tie rod. (This rack was 17 ¾). Turn the pinion of the opposite lock position and measure from the same point to the end of the same tie rod (11 ¾). 17 ¾ minus 11 ¾ = 6. Divided by 2 = 3 Add that number to the smallest measurement (11 ¾" + 3" = 14 ¾") and turn the pinion back till you get that measurement and your rack is centered.

Installing the rack and pinion:
Place the rack on the cross member brackets as shown. Use the supplied 5/8” hardware to fasten it into place. The picture shows a power rack that requires a 5/8” spacer between the rack and the mounting brackets. A manual rack bolts directly to the mounting brackets not needing these spacers.

Torque bolts to 90 ft. lbs

NOTE
Power Rack & Pinion fittings:
9/16”-18 Pressure side & 5/8”-18 Return side
Unisteer 8026070 is a recommended fitting kit.

Install the jam nut and outer tie rod end onto both sides of the rack. With the rotors pointing straight ahead (0 toe) install the tie rod ends into the bottom of the steering arm. Torque the tie rod end to 60 ft. lbs. and install the cotter pin.

***NOTE* Rack & Pinion output shaft:**
Manual rack = 9/16” x 26 spline
Power rack through 4/2021 = ¾” x 36 Spline
After 4/2021 = ¾” Ford V

Installing the anti-sway bar:

Slide the lock ring collar over the bar on each side first. The split bushings go over the bar and then the aluminum blocks slide on over the bushings.

The anti-sway bar mounts to the rear of the cross member below the lower control arm pins. Use the supplied hardware to install the aluminum blocks onto the cross member. Torque to 35 ft lbs.

Center the anti-sway bar and lock down the set screws against the bushings.

The sway bar routes from behind the cross member under the control arms and hooks up to the front of the control arms. Use the supplied hardware to install the heim joints with the male on the bottom.

NOTE You can adjust the preload (or lack thereof) once the vehicle is ready to be driven. Disconnect one heim, place driver in the driver's seat, adjust the loose heim until the bolt goes onto the anti-sway bar with zero load.

Setting up power steering

The rack ports are 9/16"-18 Pressure side & 5/8"-18 Return side
Unisteer 8026070 is a recommended fitting kit.

The recommended pump output is 800-1000psi and 2.0 gallons per minute. Exceeding this can cause the steering to feel "twitchy" and excess pressure can damage the rack.

Alignment specifications
Caster: Power rack 4-6 degrees positive
Manual rack 2-4 degrees positive
Camber: 0 Degree
Toe-in: 1/32 to 1/16 inch

Coil Spring Note: After 500-1000 miles the front springs will begin to break in. The lower control arms should be level to the ground or within a degree or two. You can now perform the final alignment. If the vehicle is still too high after 1000 miles it may be necessary to cut some of the coil off. Never cut more than a ¼ coil off at a time.

Coil over note: Adjust the Coil-overs until the lower control arms are level to the ground. You can now perform the final alignment.

AXLE STUD SIZES:
4.5" Bolt circle rotors = ½"x20('75-'80 Ford Granada)
4.75" Bolt circle 10.5" rotors = 12mmx1.5('82-'87 Camaro)
4.75" Bolt circle 11" rotors = 7/16"x20('75-'80 Granada redrilled)
ALL Wilwood hubs = 1/2"x20

Rim/Tire recommendation:
17"x8" rim, 4.75" backspace. 245/40/17 tire.

No returns or exchanges without a RMA#.
Packages must be inspected upon receipt & be reported within 10 days.
If you are missing parts from your kit, TCI Engineering will send the missing parts via FedEx or U.S. mail ground.
Returned packages are subject to inspection before replacement/refund is given. (Some items will be subject to a 15% restocking fee)

Thank you for your business!