1947-1954 Chevy Truck Coil-Spring IFS

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 pot holes. This new kit also features our new 7/8" anti-sway bar which is stiffer than the ¾" previously offered.

Original Chevy Stock Chassis

New Coil-Spring Front End on Original Stock Chassis

1947-1954 Chevy Truck Coil-Spring Front End Parts List –

Part#: * 232-2354-0cp-c3k-1ex or 232-2354-0sm-a6k-4gx – The asterisk shown is the plain and standard package

1	**Coil-Spring Cross member**	**1**	**Rack & Pinion – Only**
	• * 1947-1954 Chevy Truck Part #: 232-2256-00		• Power Rack Part #: 304-3215-00
	•		• Manual Rack Part #: 304-3205-00
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-f09-pln or chr
	• Part #: 200-2257-05 – Coil-Spring - Polished		• Part #: swaybar-f09-pln or pol
	• Part #: 200-2457-00 – Air Bag – Plain		• Part #: swy-bar-mnt-03-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#: spring600b for coil over or springm300b for regular coil spring

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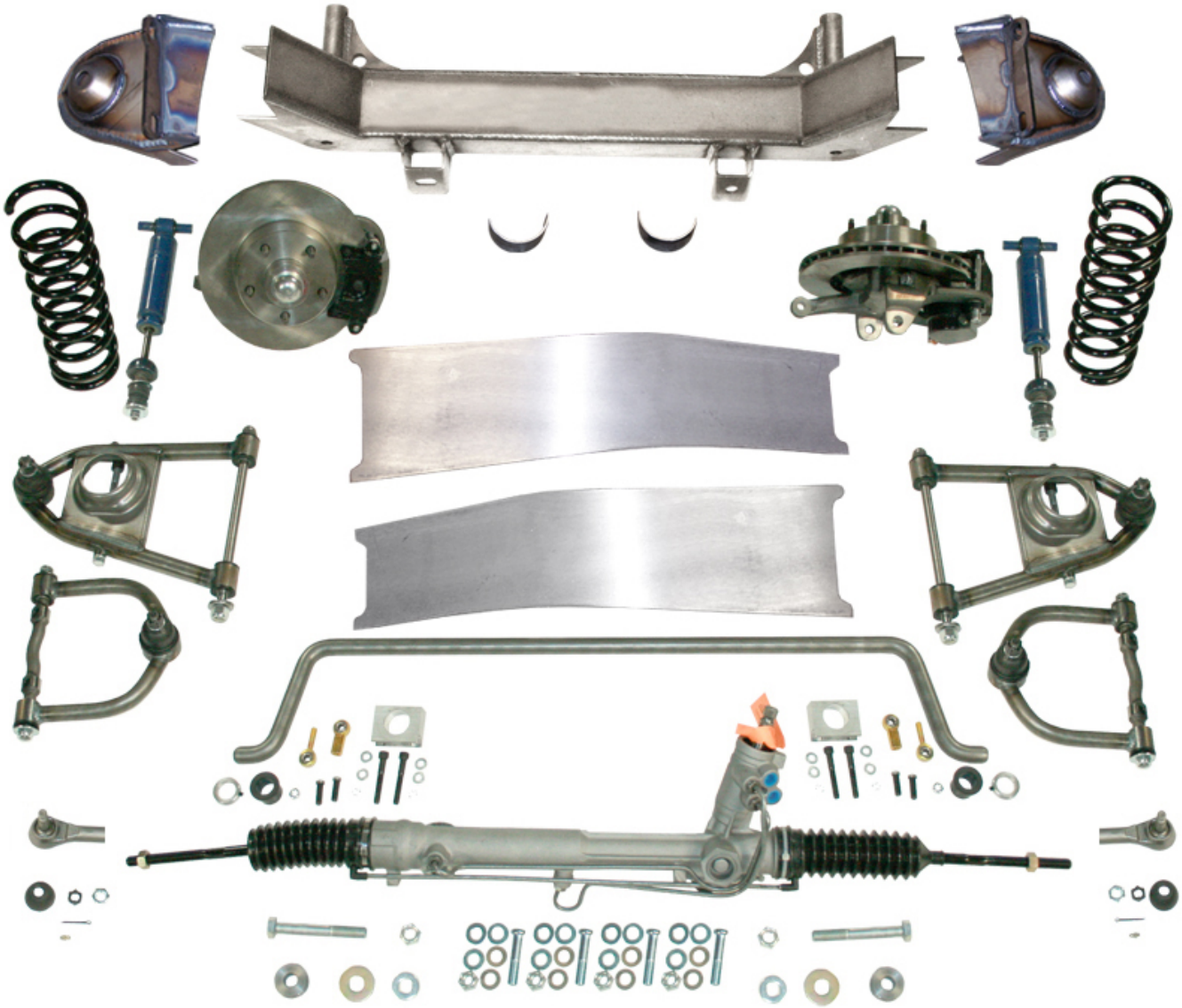
~ New Coil-Spring Front End ~



Installing the boxing plates:
Measure the width of the top and bottom of the rails. Cut or grind the longer lip back to make them both the same width. This will allow installation of the boxing plate square to the frame.

NOTE This picture is with the frame upside down.

The boxing plate is tapered. Place the plate onto the frame within the corresponding taper/size.

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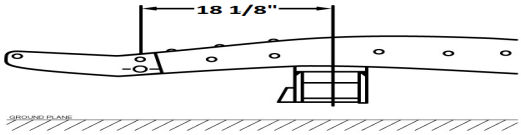
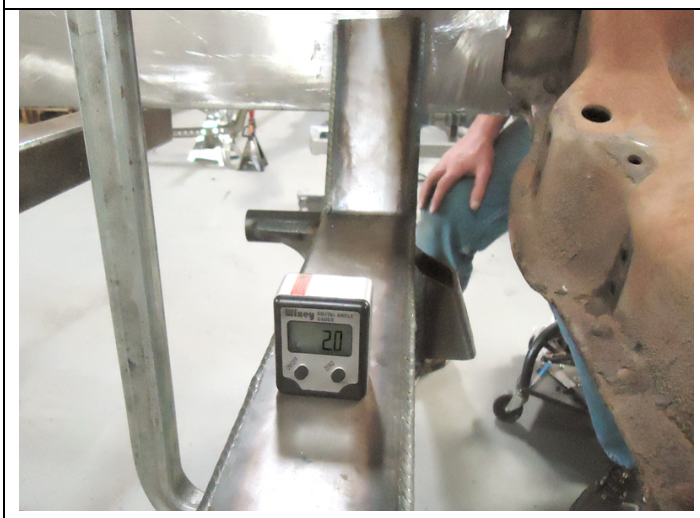
It is important that the boxing plates be positioned on the edge of the frame rail so that you can maximize weld penetration. This will insure there is enough weld to grind and smooth out the corners. Use a square to make sure that the plates are square to the frame. Tack weld all 4 corners of the plate to the rail and make sure they are still square. Once the boxing plates are confirmed square you can begin welding them in place. Weld 6” sections at a time switching from driver to passenger so heat is kept to a minimum.



Locating the axle center line:
Using the illustration to the left, find and mark the axle center line on both the passenger and driver side frame rail.



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 may be necessary.

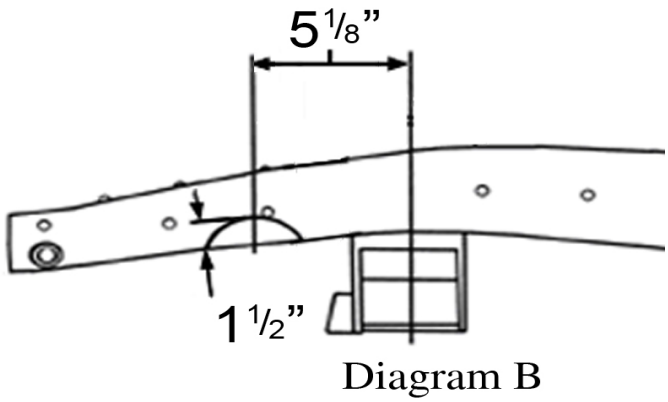


Diagram B

Installing the C-notches:
Once the wheelbase is marked on the frame you can now properly install the c-notches. Using the diagram on the left measure 5 1/8” forward of the wheel centerline. This will be the center of the c-notch. Now measure up the rail 1.5” and mark it. Use the c-notch as a template on the frame using the mark on the frame as the center/top of the c-notch. Cut the frame to match the c-notch.

NOTE Make sure not to cut too much of the frame.

Place c-notches into the frame and weld in place.

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Modifying the factory radiator cross member:

In order for the rack & pinion to fit into the chassis you will have to remove part of the radiator cross member. You can use the rack & pinion as a template. Skip forward to page 10 of the manual for the rack installation instructions.

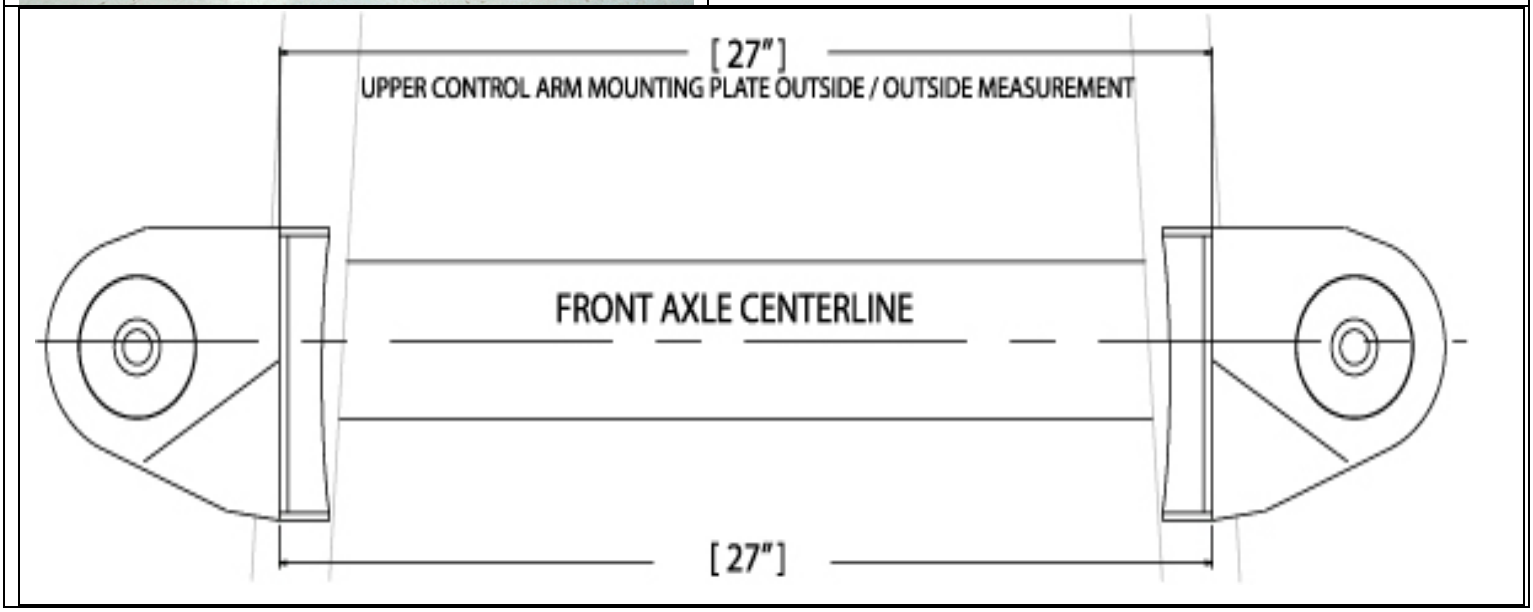
Trim the crossmember back so the rack & pinion has at least ½" clearance.

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



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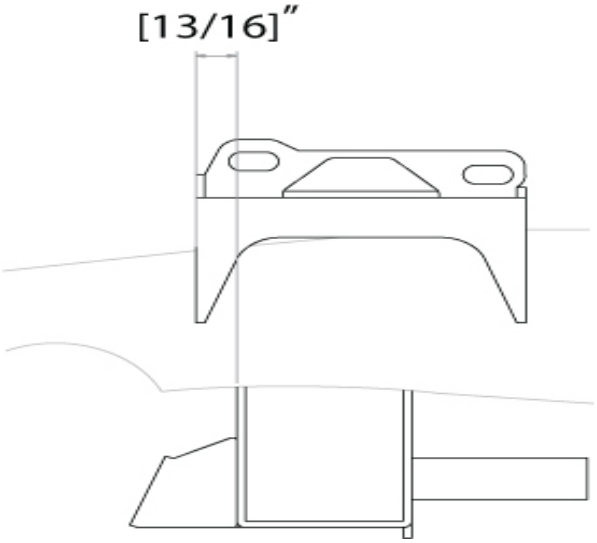
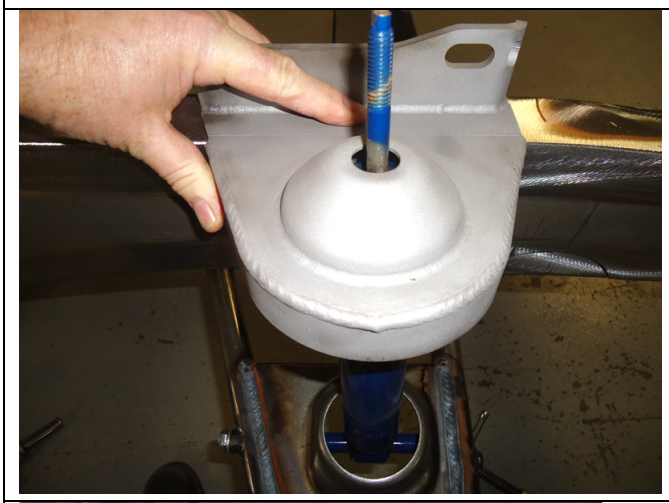


Installing the spring towers:

The tall part of the control arm mount goes towards the front of the truck. This is the built-in anti-dive. Follow the measurements in the illustration above for exact placement of the towers side to side & front to back. It will be critical that the towers are installed square and parallel to each other at 27" +/- 1/16" apart outside to outside of arm mount faces. Also, the arm mount face must be vertical +/- 2 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.



As a reference, install the shock onto the lower control arm and pull the shock shaft through the upper spring tower hole. The shock shaft should line up directly with the hole in the cone when everything is correct.

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.

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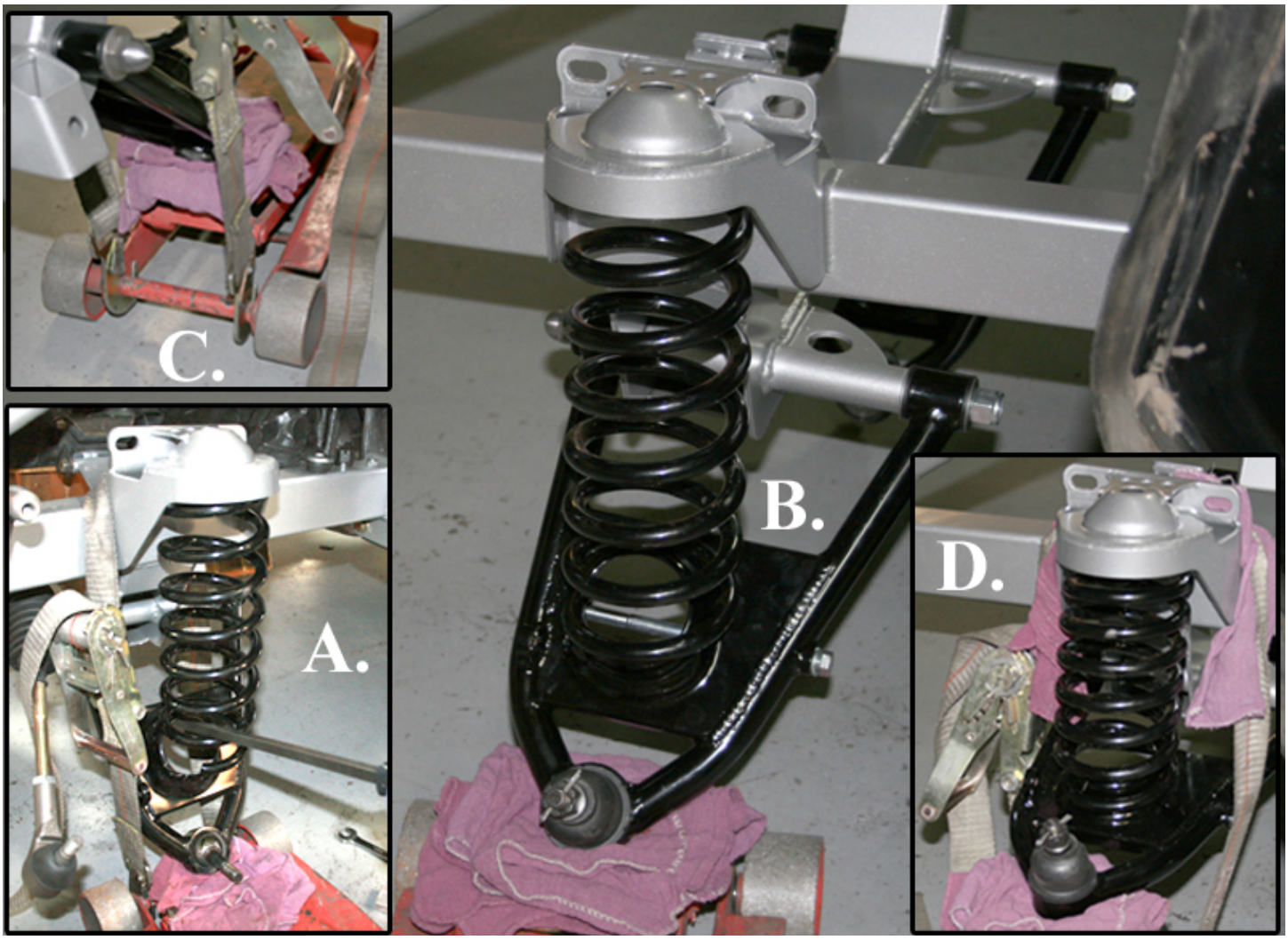
Coil Spring Installation

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	**Additional Components Needed:**
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 affective way to install your coil springs.**	Very strong ratcheting tie downs with hooks Floor Jacks Clean Towel

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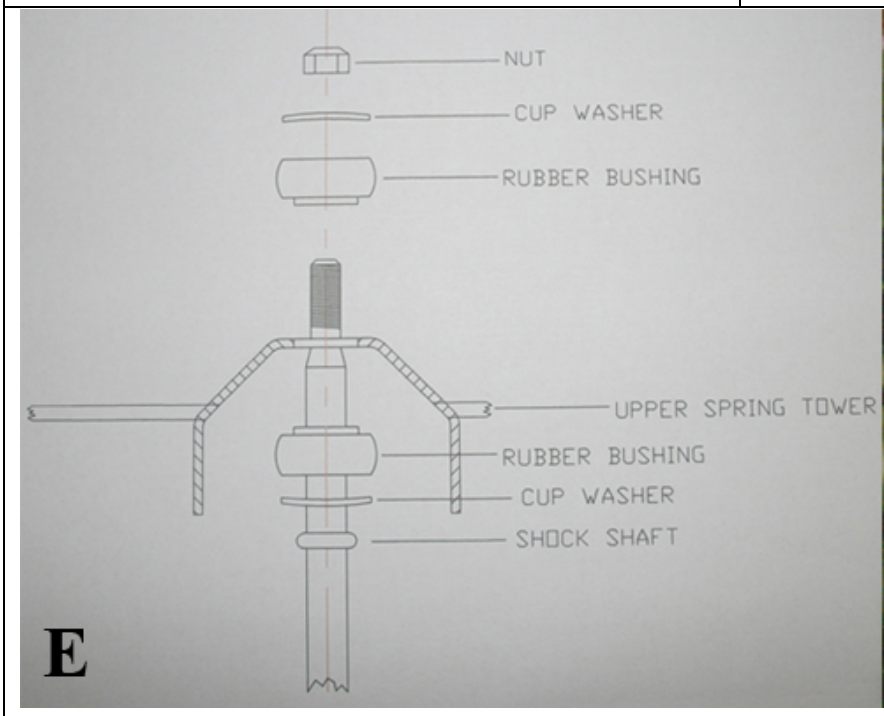
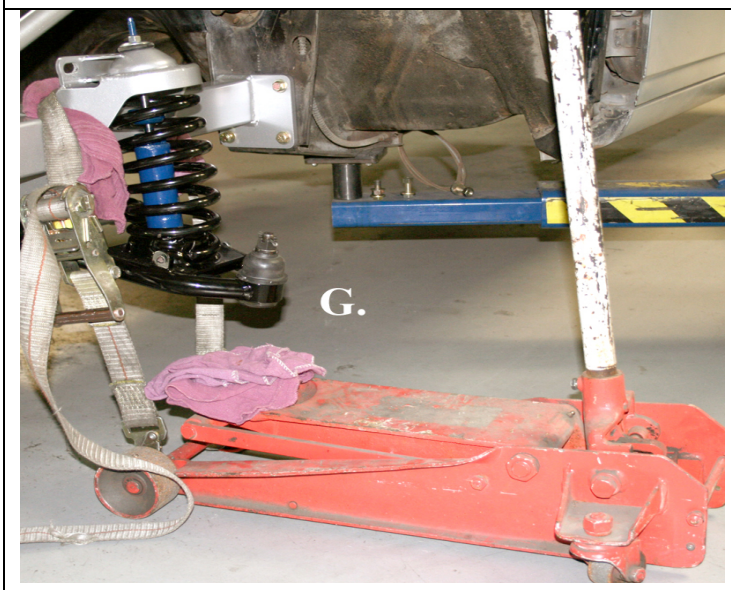
1. **(Image A)** With the vehicle securely positioned on jack stands remove the grease fitting on the lower ball joint. Install the coil spring with the flat ground side up in the spring pocket and the pig tail end inserted onto the notched portion on the lower a-arm. Use a long screwdriver or flat bar 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 300 lb. per inch rate and is identified with a green dot on the flat end.

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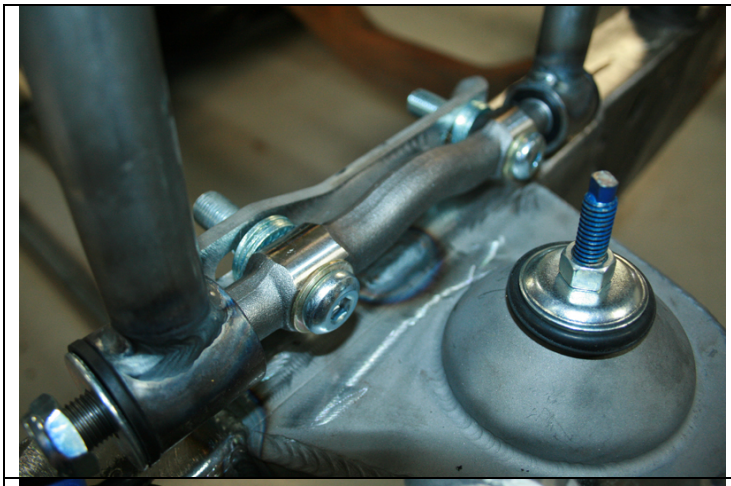
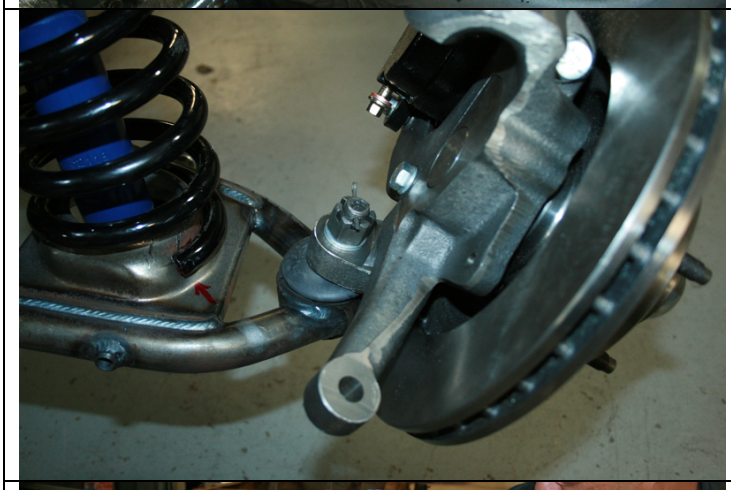


Installing the upper control arms:
Use three of the provided .090” thick washers between the tower and the control arm shaft on each bolt. The rest can be placed under the head of each bolt and under the lock nut. These spacers may need to be moved around when final alignment is performed. Once all the hardware is in place go ahead and set the bolts in the center of alignment slots and tighten down.

The slotted arm mount holes will make it easy to add in extra positive caster for power rack applications.



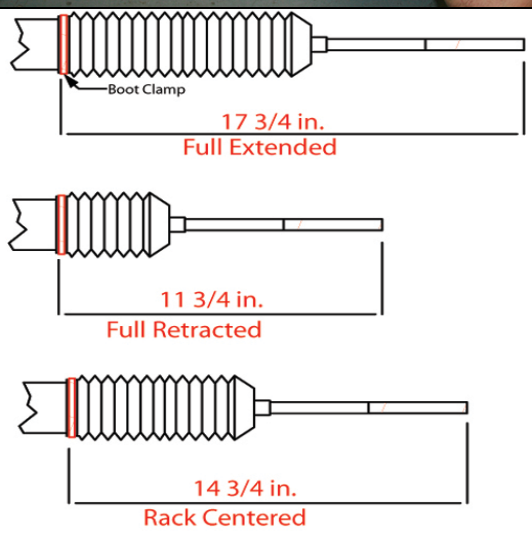
Installing the spindle assemblies:

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.

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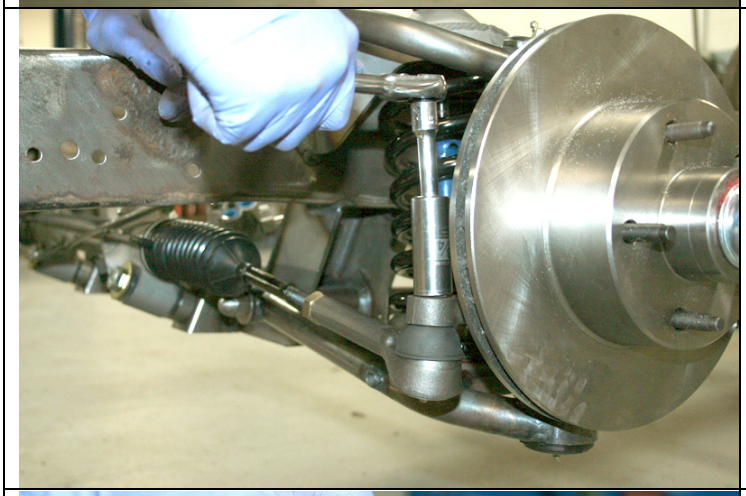
Installing the rack and pinion:
Place the rack on the cross member brackets as shown. Use the supplied 5/8” hardware to fasten it into place. The picture shows a power rack that requires a 5/8” spacer between the rack and the mounting brackets. A manual rack bolts directly to the mounting brackets not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

Torque bolts to 90 ft. lbs

***NOTE* Power Rack & Pinion fittings:**
9/16”-18 Pressure side & 5/8”-18 Return side



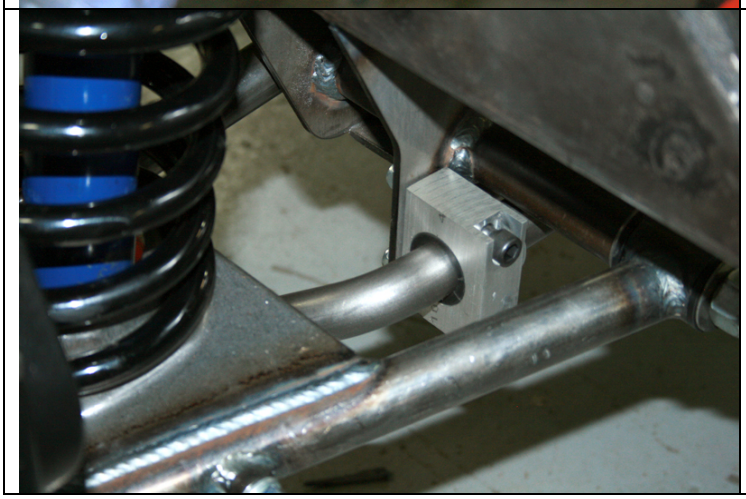
Install the jam nut and outer tie rod end onto both sides of the rack. With the rotors pointing straight ahead(0 toe) install the tie rod ends into the bottom of the steering arm.

Torque the tie rod end to 60 ft. lbs. and install the cotter pin.

***NOTE* Rack & Pinion output shaft:**
Manual rack = 9/16”-26 spline
Power rack = ¾”-36 Spline

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..

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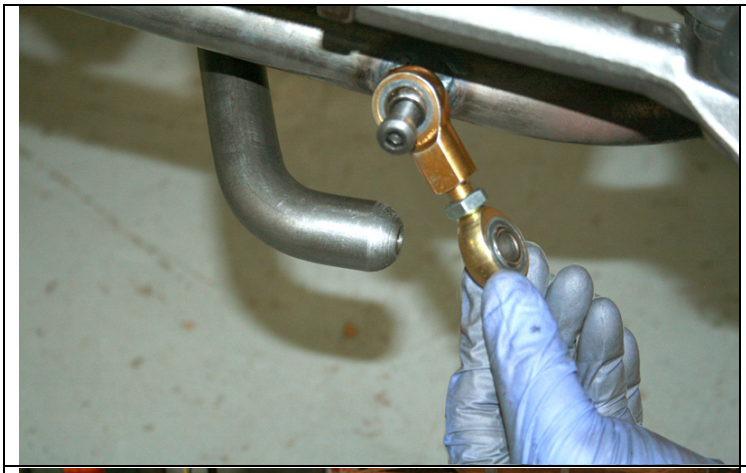

The sway bar routes from behind the cross member under the control arms and hooks up to the front of the control arms. Use the supplied hardware to install the heim joints with the male on the bottom.

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 it goes onto the anti-sway bar with zero load.

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
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.

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

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!

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