



# 1967-1969 Chevy Camaro/Firebird and '68-74 Nova Front End Suspension Installation Instructions

1-855-693-1259 - [www.totalcostinvolved.com](http://www.totalcostinvolved.com)

**CHECK ALL PARTS INCLUDED IN THIS KIT TO THE PARTS LIST BEFORE INSTALLATION.  
IF ANY PIECES ARE MISSING, PLEASE CONTACT: TOTAL COST INVOLVED 855-693-1259**



**Thank you for choosing TCI Engineering's Chevy Camaro/Firebird/Nova front suspension package. The kit has been designed to not only allow your car to handle corners, steer, brake better and have more engine compartment room but have that low pro touring stance.**

**Read and understand these instructions before starting any work:**

**\*APPLY ANTI-SEIZE COMPOUND TO THREADS TO AVOID SEIZING AND GALLING OF THREADS**

**\*APPLY THREAD LOCKING COMPOUND TO APPLICABLE FASTENERS TO KEEP THEM FROM VIBRATING LOOSE**

**Do not paint or powder coat front clip until you test fit all the parts on the body first.**

Not all bodies are exactly the same and if adjustments need to be made, you will want to do that before you do any painting or powder coating.

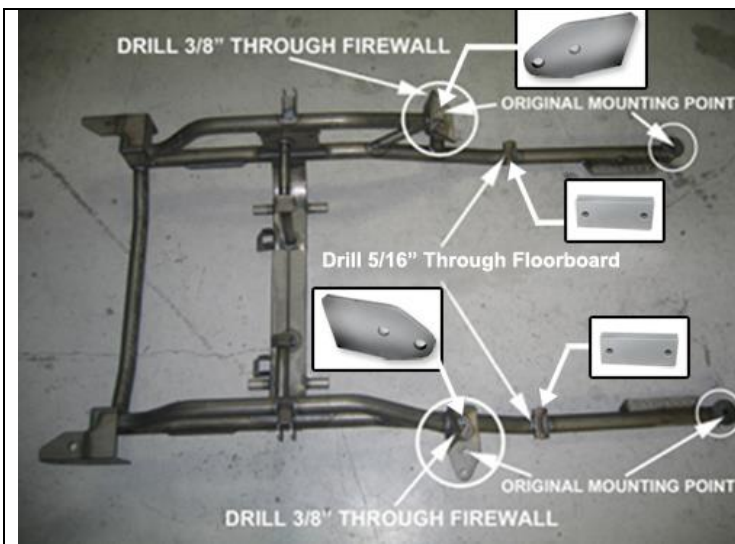
**This clip is made to be installed without the factory rubber body bushings, it bolts directly to the car without using any bushings.**

**The original core support bushings are the only bushings that will be reused.**

Begin installation by jacking the car up and supporting it on sturdy jack stands. The stands must be located just behind the firewall on the flat side. Do not support the car from the front sub-frame. It is not necessary to remove the front fenders, inner fenders and grill, this clip should fit with very little if any clearance issues. Disconnect the steering and transmission linkage and remove the radiator, engine and transmission. The factory brake lines on the front will have to be remade to fit your new clip and you should be able to reuse the rear hard lines from the cowl back. Now unbolt and remove the factory sub-frame making note to where the original sub-frame is mounted. The original steering column will not work with the TCI front clip and an *Ididit* ('67-69 Camaro application) column must be used. None of the factory steering system will be reused. You will need to purchase two universal steering joints and a steering shaft to hook your steering back up.



Prep the firewall mounting surface edge on the firewall side by grinding smooth the flange edge so that the TCI clip will be mounted flush to the firewall.



Start the installation of the new sub-frame by raising it up into the original mounting position. A floor-jack will be helpful here. Line up the holes in the firewall and the far rear mounting points and fasten it using the new supplied bolts, lock washer and flat washer (Qty. 4 5/8-11 x 2" Gr. 8 Hex Head) Using a 15/16" shallow socket. Do not tighten up the bolts at this time until all mounting bolts have been started then tighten and secure to the body.

The highlighted pictures show the 5/8" thick spacers that are for the 68-74 Chevy Nova only. They will be placed between the sub-frame and the body during install for correct sub-frame to body height.



Drill 3/8 holes through the firewall using the mounting bracket as a guide.

Make sure that all four of major mounting bolts are tight first.



Then fasten it with the supplied 3/8" Button Head Bolts



Next, drill 2 holes (per side) through the floorboard located between the firewall mounting point and the rear-most mounting point using a 5/16" drill bit.

**Note:** The 68-74 Nova use an included 5/8" spacer at this location.



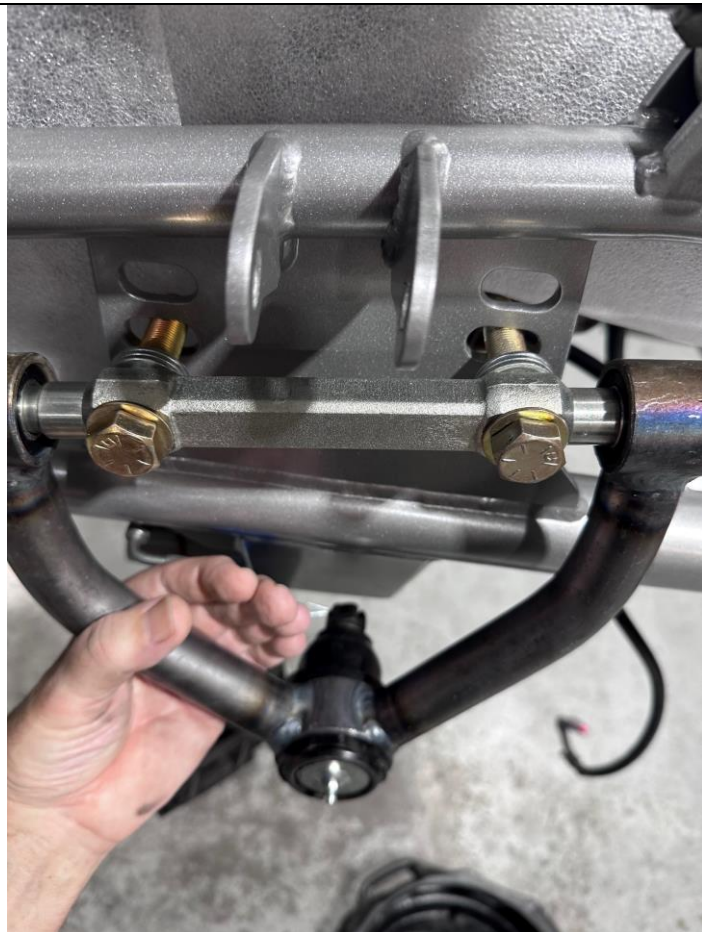
Fasten by using a 5/16" Button Head Bolts with the head of the bolt inside the car.



Continue with the front suspension component installation. First, install the lower control a-arm shaft with acorn nut towards the front of the car into lower A-arm (shock mounting tabs facing up) and though the cross-member, the washers go on each side of the bushings.



After inserting the control arm bolt from the front to the rear, place the supplied flat washers between each side of the polyurethane bushing. Complete assembly by tightening the 5/8" full Nyloc nut.



Install the upper control arm into position.

Install the upper control arm into position using the supplied 9/16-18 x 2 1/2" bolts. Space out the upper A-arm using the supplied 9/16" flat washers between control arm and the clip. Use 3 flat washers on each bolt, this should be a good start to get to the alignment shop.

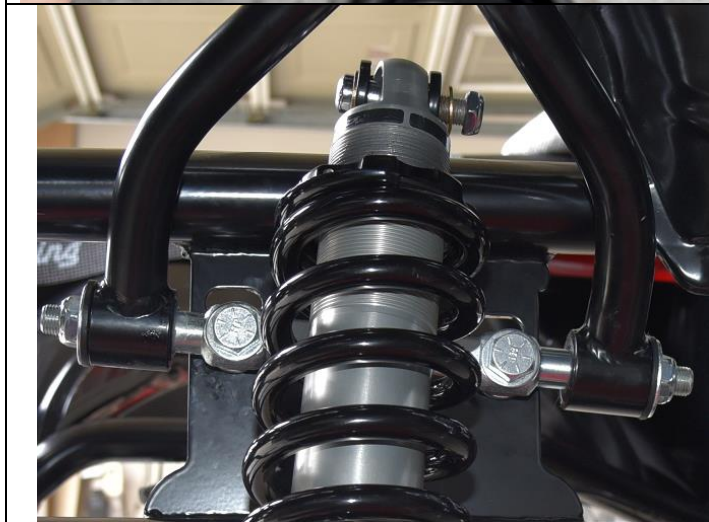
\*NOTE\* There are 2 sets of a-arm holes.

Normal street driving

Top holes: .6 degrees camber gain @ 1" bump.

Autocross or Road Course

Bottom holes: 1.2 degrees camber gain @ 1" bump.

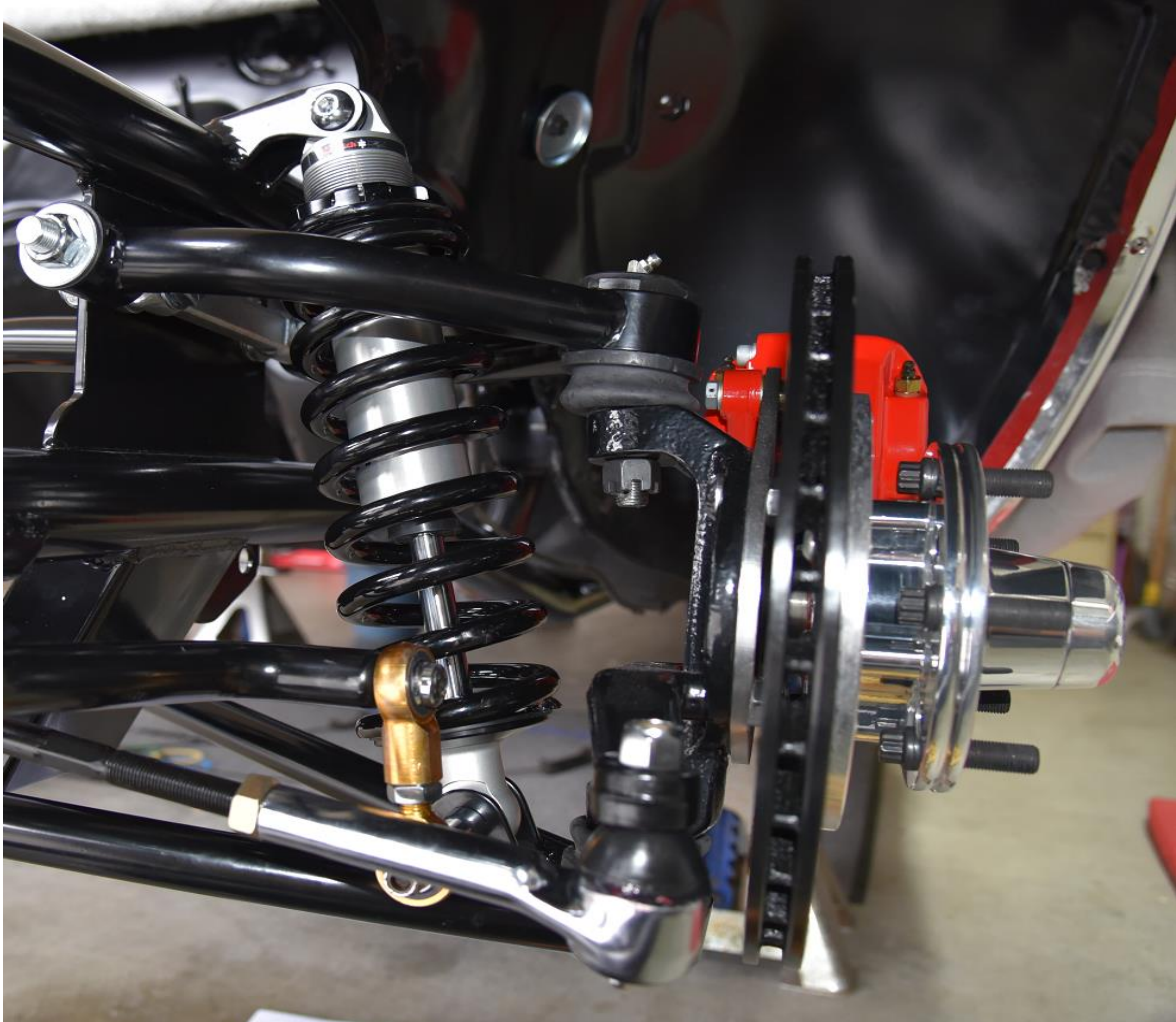


Install the shock to the upper mount using the supplied 1/2 -20 by 1 3/4 inch button head bolt and 1/2 -20 half height nut.

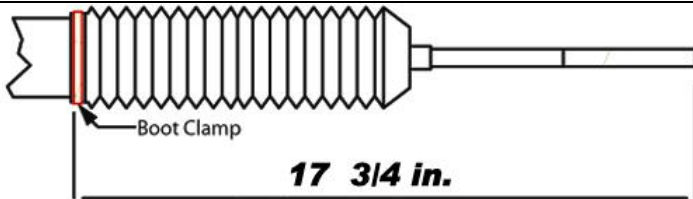
\*Note\* The Ridetech coil-overs must be installed with the threaded body at the top and the adjustment knob at the bottom.



Next, install the shock into the lower a-arm tabs. The rebound adjuster can face either, we recommend inward. Install the 3 ¾ inch shoulder bolt from the rear through the rear tab, then the shock bearing, front tab, then the spacer and last the rod end link for the sway bar. Install the washer and nut and tighten. The top rod end will be attached to the sway bar later.

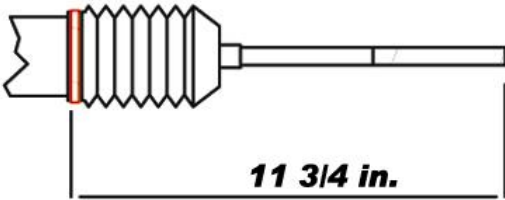


The spindle assembly is installed next. Align the ball joint shafts so the cotter pins can be installed from front to rear. This will help later. Set the spindle assembly on the lower ball joint with the steering arm facing forward and the brake caliper towards the rear. Install the washer & castle nut. Pull the upper a-arm ball joint down into the top of the spindle and install the washer & nut. nut, tighten both castle nuts and install cotter pins. Bend the pins to retain the nuts.



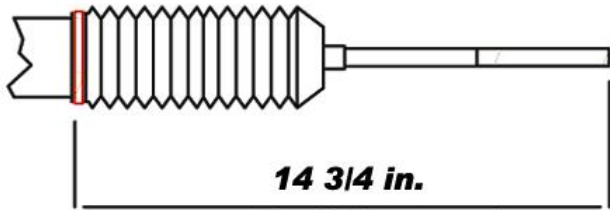
**17 3/4 in.**

**Full Extended**



**11 3/4 in.**

**Full Retracted**



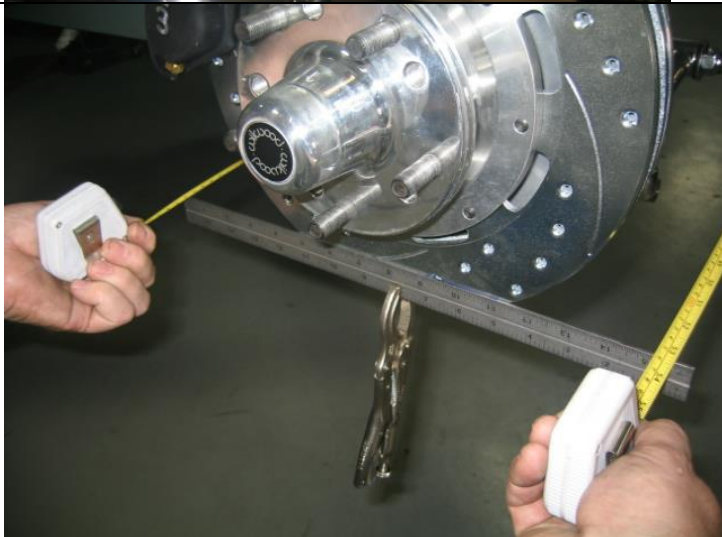
**14 3/4 in.**

**Rack Centered**

The rack assembly 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 tie rod. (This rack was 17 3/4). Turn the pinion to the opposite lock position and measure from the same point to the end of the same tie rod (11 3/4).  $17 \frac{3}{4} \text{ minus } 11 \frac{3}{4} = 6$ . Divide by 2=3 Add that number to the smallest measurement ( $11 \frac{3}{4} + 3 = 14 \frac{3}{4}$ ) and turn the pinion back till you get that measurement and your rack is centered.



Install the rack & pinion assembly using the two 5/8" in. bolts, washers and lock nuts supplied. On power rack and pinions units the 5/8 thick spacer goes between the rack brackets on the cross member and the rack. Install the tie rod ends onto the rack and into the spindle steering arms.



Clamp a straight edge to each rotor as shown then using a tape measure front and rear; set the toe-in approximately 1/8" for a starting point.

## 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.

### **\*NOTE\* Rack & Pinion output shaft:**

Manual rack = 9/16"-26 spline

Power rack = 3/4"-36 Spline through 4/2021

After 4/2021 = 3/4" Ford V

Install the front anti-roll bar into position using the supplied polyurethane and saddle mount making sure that the stepped down center section is down to clear the engine pulley. Fasten anti-roll bar saddle mount using the supplied 3/8-16 x 1 inch hex head bolt; 3/8 inch lock and flat washer.

Complete installation by fastening the upper 1/2 inch rod end of the sway bar link from the lower shock mount bolt to the end of the anti-roll bar with the 1/2-20 x 1 1/2 inch button head bolt.





The TCI Camaro/Firebird/Novclip comes with an adjustable transmission cross-member to accommodate different types of Chevy transmissions. Fasten with the supplied 3/8-16 x 1 1/4 inch Gr. 8 Hex Head Bolt and 3/8 inch full height Nyloc nut.



**\*Side View**

\*Note\* Final transmission placement will be done later.



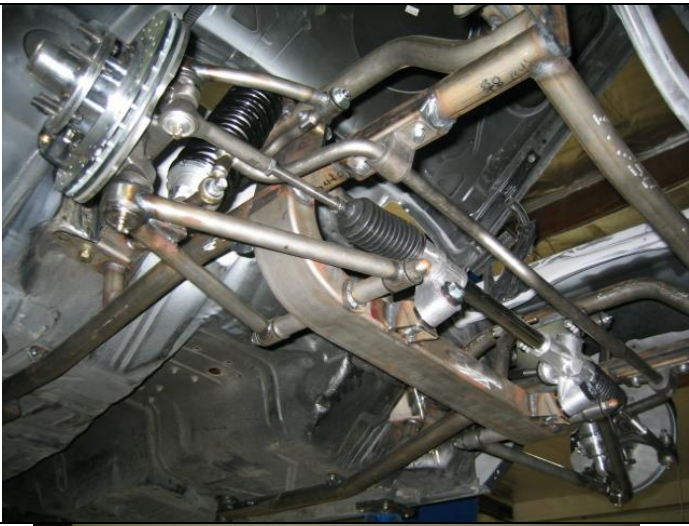
Mount the emergency brake cable bracket on the driver side with the same mounting point as the transmission cross-member.

**\*Bottom View**



Mount the emergency brake cable bracket on the driver side with the same mounting point as the transmission cross-member.

**\*Top View**



Make sure all fasteners are tightened to the recommended torque specifications.

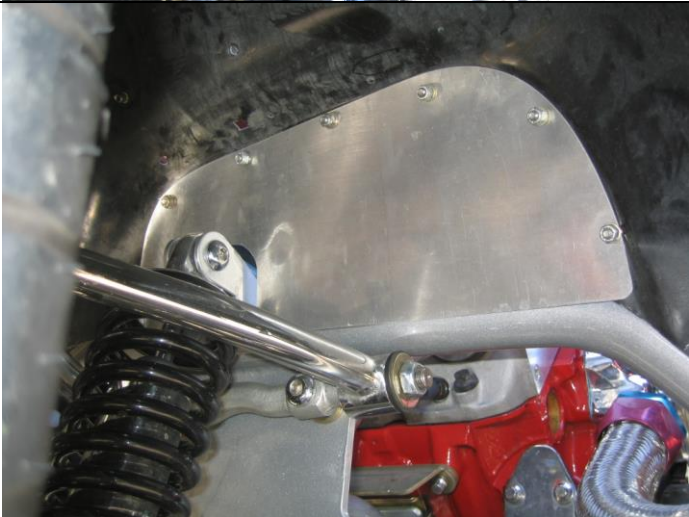


### Fender Panel Cover

The stock inner fender does not have any holes to fasten the fender panel covers so clamp panels into position fitting the notch over the upper shock mounts drill 7 holes that are spaced evenly using a 3/16" drill bit. Fasten with the supplied 8/32 bolts nuts and washer.



**View from engine compartment passenger side**



### Alignment specifications

**Caster:** Power rack 4-6 degrees positive  
Manual rack 2-3 degrees positive

**Camber:** 0 Degree (Street)

**Toe-in:** 1/32 to 1/16 inch

**\*NOTE\*** Run 1-1.5 degrees negative Camber and zero toe for Autocross

### AXLE STUD SIZES:

4.5" Bolt circle rotors = 1/2"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



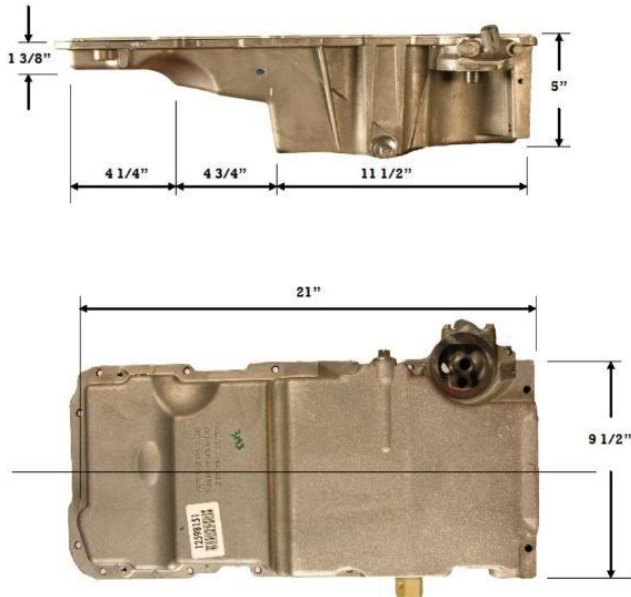
### Wheel Size & Backspacing

We run 18"x9" wheels with 5.75" Backspace on the front of our '68 Camaro. Tires are 275/35/18 Falken 615K

8" wide wheel would need 5.25" Backspace

7" wide wheel would need 4.75" Backspace

### LS ENGINE OIL PAN



If you are running an LS series engine you must use the F-Body oil pan listed below to have the proper clearance between the rack and the oil pan.

#### F-Body

Camaro / Firebird

Capacity: 5.5 qts

Oil pan: 12628771

Oil pump pickup: 12558251

Windage tray: 12558253

Dipstick tube: 12551577

Dipstick: 12551581

O-ring for Oil pump pickup: 12557752 (Same as Corvette LS1/LS6)

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!

