



Part # 11160203 - 1967-1969 GM "F" Body HQ Series CoilOver System

Recommended Tools

Front Components:

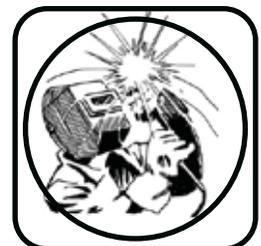
11163510	Front CoilOvers
11162899	Front Lower StrongArms
11163699	Front Upper StrongArms
11009312	Ridetech Hub Bearing Spindle
11009546	C5,C6 Caliper Bracket
11169120	Front SwayBar

Rear Components:

11167197	Rear 4Link System
11166510	Rear Coilover Instructions

Miscellaneous Components:

85000000	Spanner Wrench
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1967-1969 GM "F" Body Coilover Installation Instructions

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Pages	37-44.....	Rear 4-Link
Pages	45-46.....	Rear CoilOvers
Pages	47-48.....	CoilOver Assembly and Shock Adjustment

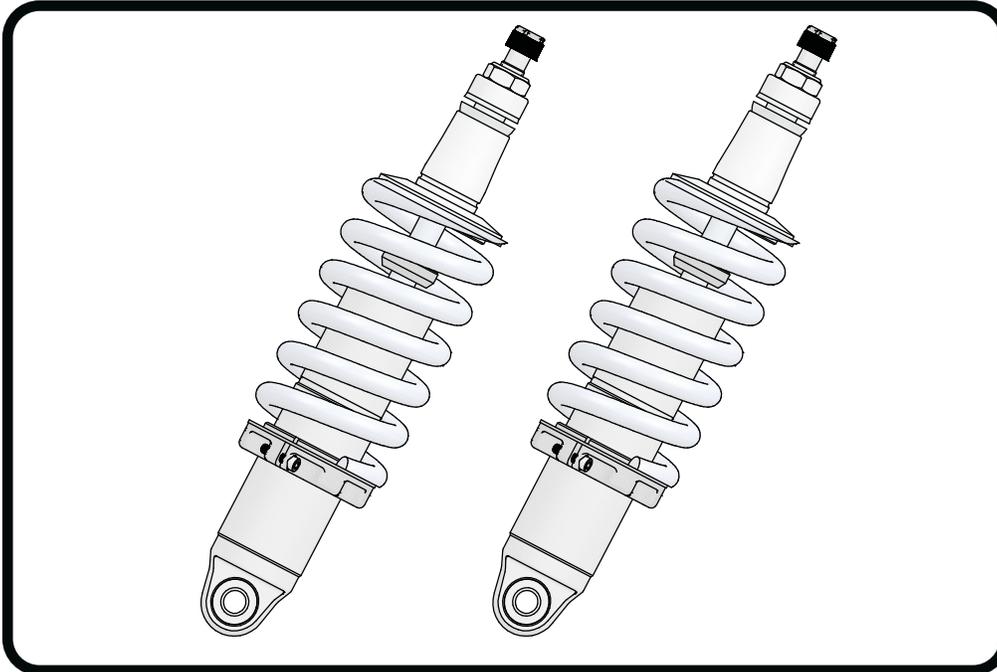




Part # 11163510

1967-1969 GM F-Body HQ Front CoilOvers

Recommended Tools



1967-1969 GM "F"Body HQ Series Front CoilOvers

Installation Instructions

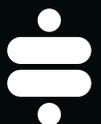
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CoilOver Dimensions:

Center of bearing to Stud Mounting Surface:

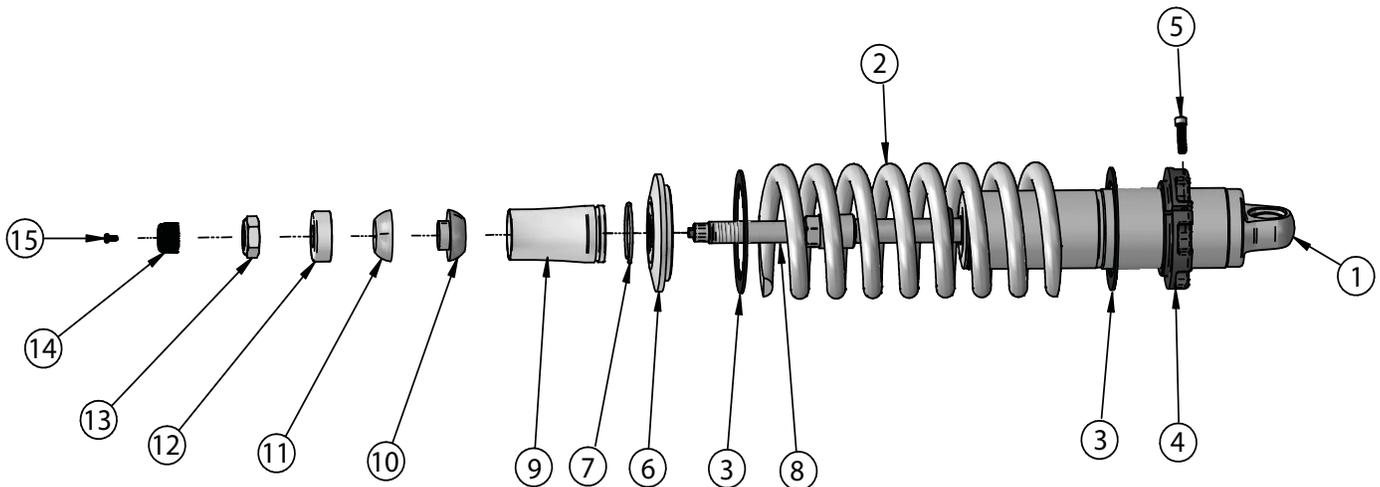
- Compressed: 10.48"
- Ride Height: 12.55"
- Extended: 14.08"





Major ComponentsIn the box

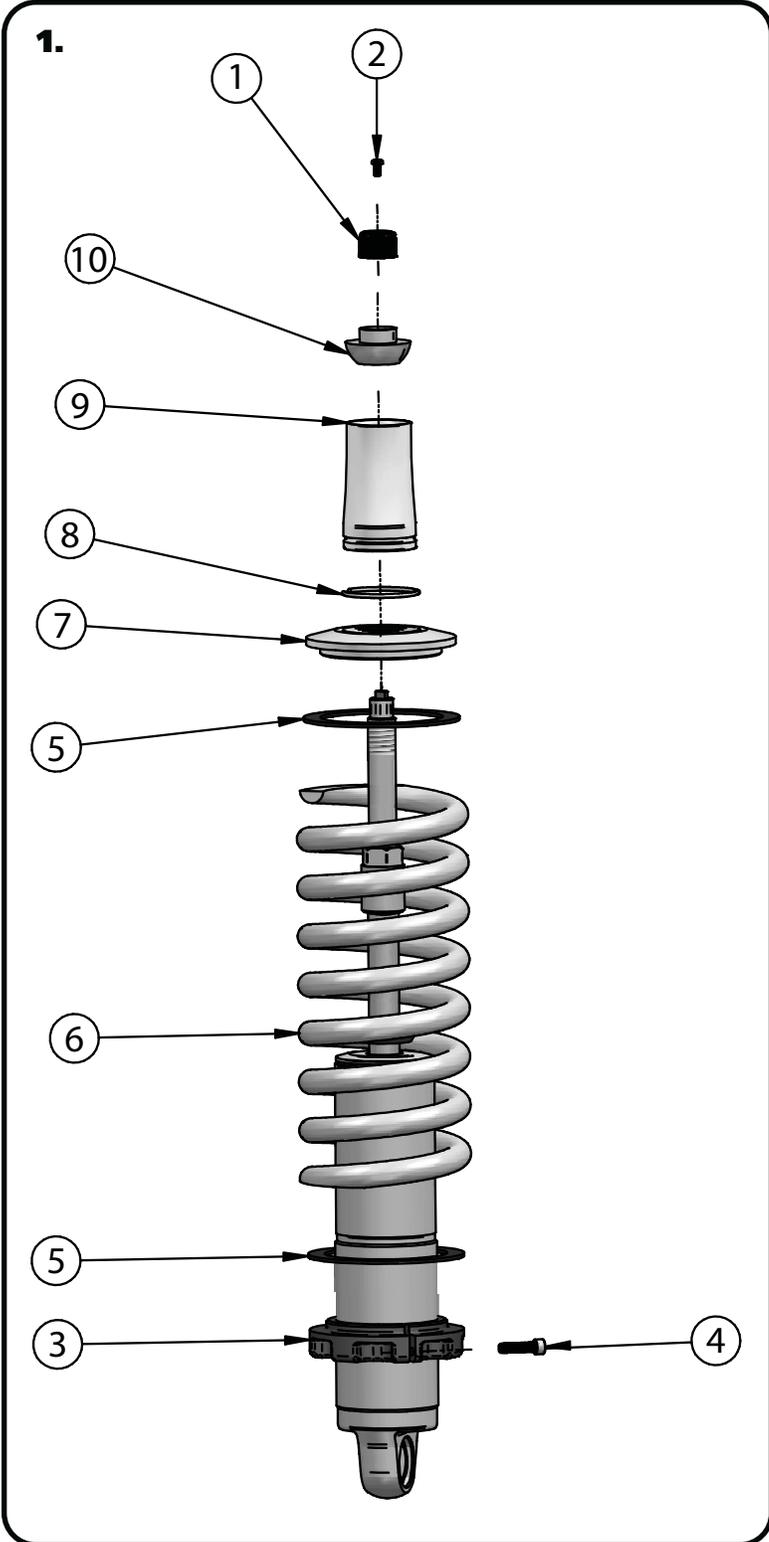
Item #	Part #	Description	QTY
1	982-10-803	3.6" Stroke HQ Series Shock	2
2	59080700	CoilSpring 8" 700lb	2
3	70010828	Delrin Spring Washer	4
4	803-00-199(kit)	Lower Spring Adjuster Nut (803-00-199 kit)	2
5	803-00-199(kit)	Adjuster Nut Locking Screw (803-00-199 kit)	2
6	803-00-199(kit)	Upper CoilSpring Retaining Plate (803-00-199 kit)	2
7	803-00-199(kit)	CoilSpring Plate Retaining Ring (803-00-199 kit)	2
8	90009989(kit)	2.75" Stud Adjuster Assembly	2
9	90002313	2.75" Stud Top Base	2
10	90001904	Delrin Ball Lower Half	2
11	90001903	Delrin Ball Top Half	2
12	90001902	Delrin Ball Upper Cap	2
13	99562003	9/16-18" Nylok Nut	2
14	210-35-120-0	Shock Adjuster Knob	2
15	90009969	Adjuster Knob Retaining Screw	2
	90001994	5/8" ID Bearing (installed in shock body)	2
	90001995	Bearing Snap Ring (installed in shock body)	4



BEARING SPACERS (90002062) ARE INCLUDED WITH THE FRONT LOWER CONTROL ARMS



CoilOver Assembly



1. To Assemble the CoilOver you need to:
 - a. Remove Screw (2) from center of Adjustment Knob (1) and remove Adjustment Knob.
 - b. Remove Nylok Nut, Delrin Upper Cap, Delrin Upper and Lower Balls, along with the base from the Coliover stud.
 - c. Thread Adjuster Nut (3) onto the CoilOver body. Once it is threaded on the shock body, lightly thread in the locking screw (4) into the Adjuster Nut.
 - d. Install a Delrin Spring Washer (5) onto the Adjuster Nut.
 - e. Slide the CoilSpring (6) onto the CoilOver.
 - f. Install another Delrin Spring Washer (5) on top of the CoilSpring.
 - g. Install the Upper CoilSpring Plate (7) onto the CoilSpring.
 - h. Install the CoilSpring Retaining Ring (8) onto the Stud Top Base (9). It fits into the groove in the base.
 - i. Slide the Stud Top Base onto the shock until it bottoms out on the stud. It may be necessary to thread the Adjuster Nut down the shock body (to lower the spring) if the base will not slide all the way down onto the stud.
 - k. Slide the Lower Delrin Ball (10) (it has the collar sticking up around the center hole) on to the Stud Top.

Repeat on second CoilOver.



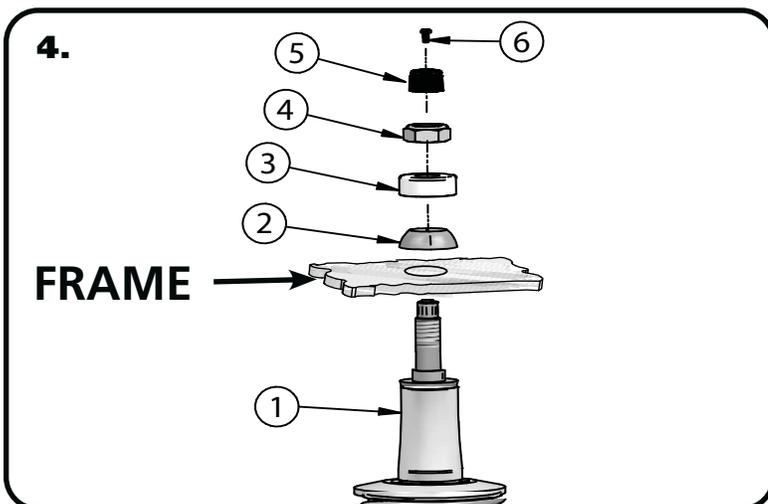
CoilOver Installation



2. Check the weld in the area pointed out. We have seen some very poor factory welds in this area. If it doesn't look adequate to support the vehicle, reweld the area.



3. Drill the OEM shock hole out to 3/4". This can be done with a Unibit. The CoilOver stud top will come in contact with the coil spring retainer, so it must be opened up towards the engine. A die grinder works well here.



4. With the CoilOver(1) assembled, it is time to bolt them into the car. **The factory shock hole will need to be drilled out to 3/4", this can best be done using a Unibit.** Insert the CoilOver Stud Top through the factory hole in the frame. Install the Upper Delrin Ball(2) onto the shock stud with the flat side facing the frame. Next, install the Delrin Ball cap (3) onto the shock stud with the Concave side facing the Upper Delrin ball. Install the Nylok Nut(3) onto the shock stud and lightly tighten. There needs to be some resistance on the ball but not tight enough that it will not rotate freely. Reinstall the adjuster knob(5) using the screw (6) that was removed during step 1.

TIGHTENING THE TOP 9/16"-18 NUT: SNUG THE NUT DOWN AGAINST THE TOP CAP. YOU NEED TO BE ABLE TO ARTICULATE THE SHOCK BY HAND. WE TORQUE THE NUT TO 80 INLBS USING A 7/8" CROWS FOOT WRENCH ON A TORQUE WRENCH.



Part # 11162899

1967-1969 GM F-Body, 1968-74 GM X-Body Front Lower StrongArms



Recommended Tools



1967-1969 GM F-Body Lower StrongArms Installation Instructions

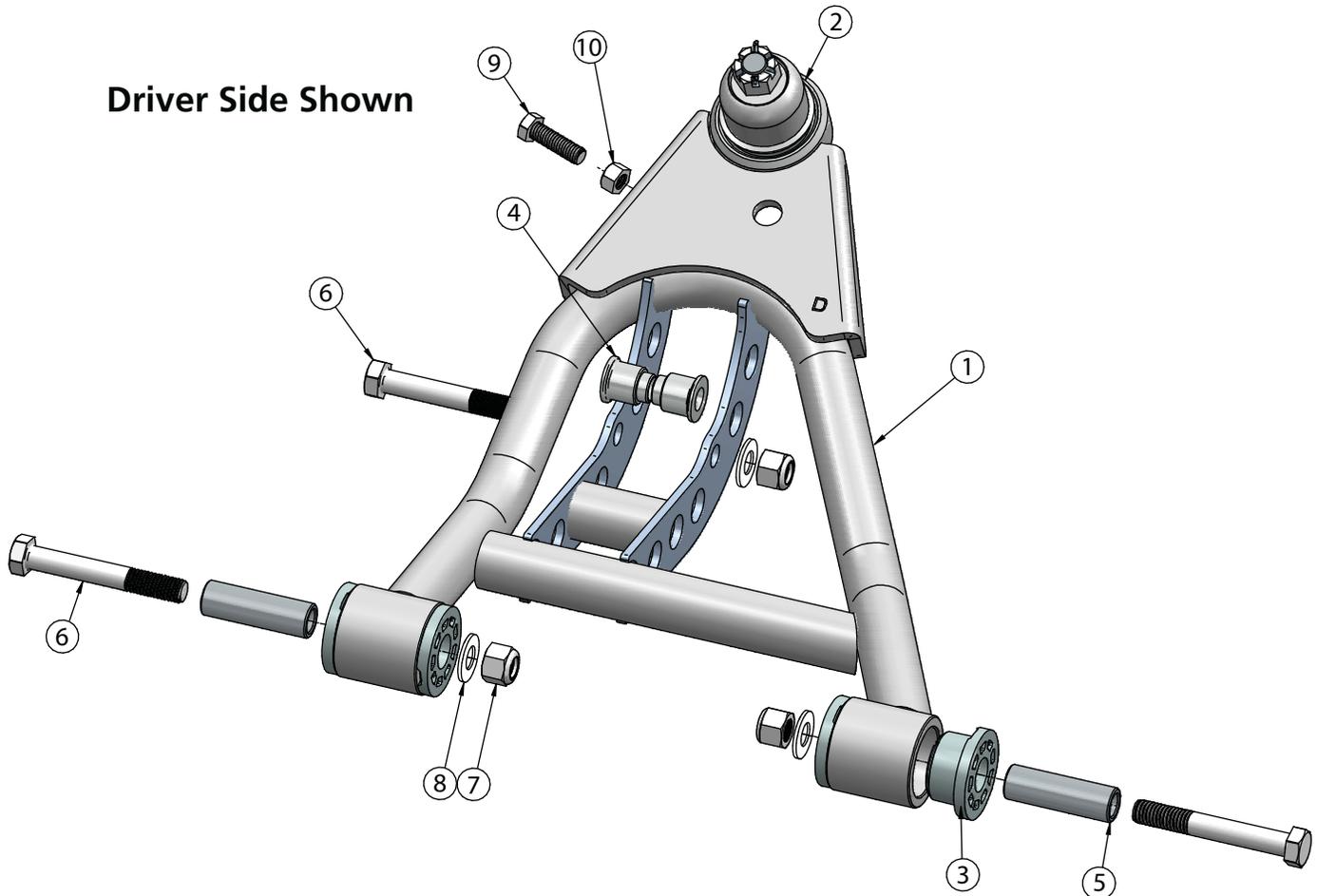
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Page 8.....	Getting Started & Installation
Page 9.....	Installing Spindles and Steering Stop



Lower Control Arm ComponentsIn the box

Item #	Part Number	Description	QTY
1	90000621	Driver Lower Control Arm (Shown)	1
1	90000622	Passenger Lower Control Arm	1
2	90000898	Lower Ball Joint Assembly - Proforged # 101-10013	2
3	70010759	Delrin Bushing - with 2" Diameter Ledge	8
4	90002062	CoilOver Bearing Spacers	4
5	90000516	1/2" ID Inner Sleeve	4
6	99501005	1/2"-13 x 3 1/2" Hex Bolt	6
7	99502009	1/2"-13 Nylok Nut	6
8	99503014	1/2" SAE Flat Washer	12
9	99371005	3/8"-16 x 1 1/4" Hex Bolt	2
10	99372012	3/8"-16 Hex Nut	2

Driver Side Shown





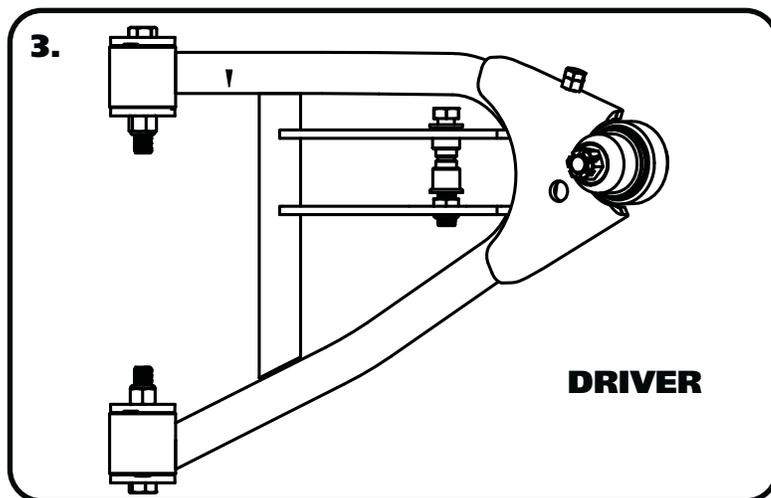
Getting Started.....

Congratulations on your purchase of the Ridetech F-Body StrongArms. These StrongArms have been designed to give your F-Body excellent handling along with a lifetime of enjoyment. Some of the key features of the StrongArms: Ball joint angles have been optimized for the lowered ride height, Delrin bushings are used to eliminate bushing deflection along with providing free suspension movement through the entire travel. The Geometry has been optimized for excellent handling, and drive ability. The Delrin bushings are made from a material that is self lubricating so no grease zerks are needed.

Note: These control arms are designed for use with the Ridetech CoilOvers and the MuscleBar swaybar. **The factory shocks and springs or the factory sway bar will not fit these arms.**

Installation

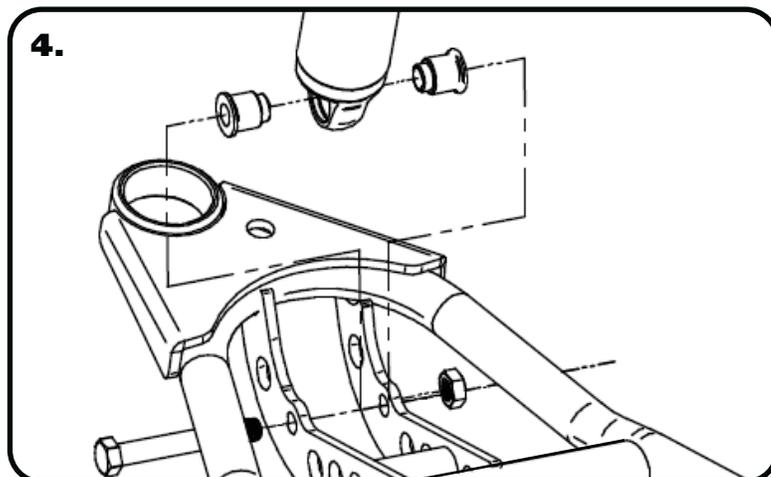
1. Remove the entire lower control arms from the car. If you are replacing the upper control arms and spindle, remove them too. Refer to a Factory Service Manual for the proper method.
2. Drill the factory upper shock mounting hole to 3/4". This can be done easily with a Unibit.



3. After removing the factory lower control arm, clean the bushing mounting surfaces on the frame. The Control Arms are marked "D" for Driver and "P" for Passenger. The Ballpoint Pin points up and the Sway bar mount is on the front side of the arm. Install a 1/2" flat washer on each of (2) 1/2"-13 x 3 1/2" bolts. Insert the bolt/washers through the mounting holes. Install a 1/2" flat washer and 1/2"-13 nylok nut. Torque to 75 ft-lbs.

Note: On some cars the frame brackets may be pinched and will need to be spread back apart to allow the bushing to slide in.

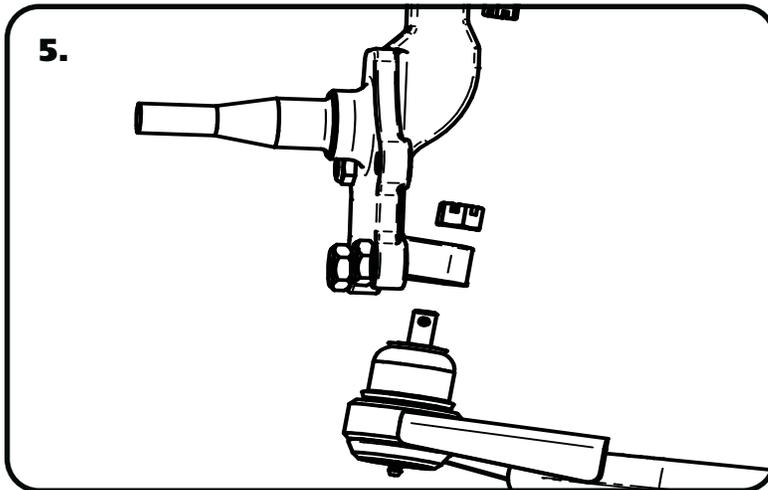
Install the CoilOvers at this time. Refer to the CoilOver instructions for Assembly.



4. Insert the Bearing Spacers into the lower shock bearing. The SMALL end goes into the bearing. Swing the Control Arm up, line up the 1/2" holes with the bearing spacers, insert 1/2"-13 x 3 1/2" bolt. Install a 1/2" flat washer and nylok nut. Torque to 75 ft-lbs. **Note:** The shock bolt will need to be installed from the rear with the threads pointing to the front of the car.



Installing Spindle & Setting Steering Stop



5. Attach the Spindle to the control arms.

Torque Specs:

Lower Ball joint - 65 ftlbs and tighten to line up cotter pin.

Install the Cotter Pin after tightening the ball joint nut.



6. Thread the 3/8"-16 nut onto the 3/8"-16 x 1 1/4" bolt. Thread it into the front hole of the ball joint plate. You will need to adjust the steering stop to suite your needs. This setting will vary depending on wheel and tire size and other suspension components. Torque to 12 ft-lbs.

NOTE: If you are running the TruTurn setup, this steering stop bolt will not be used.

7. Tighten all fasteners. If you are going to install the Ridetech MuscleBar, now is a good time to do it.

Suggested Alignment Specs:

Camber: Street: -.5 degrees
Caster: Street: +3.0 to + 5.0 degrees
Toe: Street: 1/16" to 1/8" toe in



Part # 11163699

1967-1969 GM F-Body, 1968-74 GM X-Body Front Upper StrongArms



Recommended Tools



1967-1969 GM F-Body Upper StrongArms Installation Instructions

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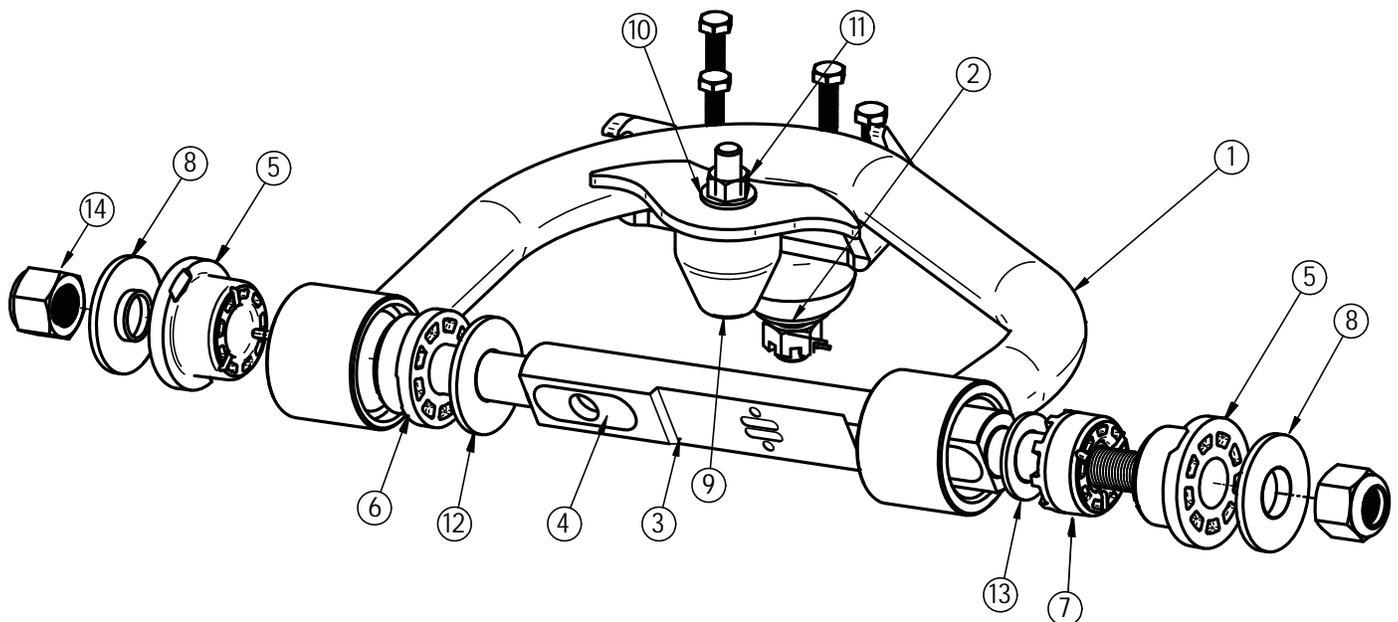
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- Page 14..... Offset Upper Control Arm Cross Shaft
- Page 15..... Installing Spindle and Alignment



Upper Control Arm ComponentsIn the box

Item #	Part Number	Description	QTY
1	90002390	Driver Upper Control Arm (Shown)	1
1	90002391	Passenger Upper Control Arm	1
2	90000908 kit	Upper Ball Joint Kit - Proforged # 101-10015	2
3	90003375	Caster Slug Cross Shaft Kit	2
4	70010883	Caster Slug	4
5	70010759	Outer Delrin Bushing with 2" Lip	4
6	70010827	Inner Delrin Bushing with 1.75" Lip	2
7	70010826	Inner Delrin Bushing with No Lip	2
8	90002737	Aluminum T-Washer	4
9	70001323	Bumpstop	2
10	99373003	3/8" SAE Flat Washer - Bumpstop	2
11	99372002	3/8"-16 Nylok Nut - Bumpstop	2
12	99753007	3/4" x 1 3/4" Flat Washer	2
13	99183002	M18 Flat Washer	2
14	99622005	5/8"-18 Jam Lock Nut - Included with 90000914 kit	4
	99433004	7/16" USS Flat Washer - Control Arm Mounting - NOT SHOWN	4

Driver Side Shown





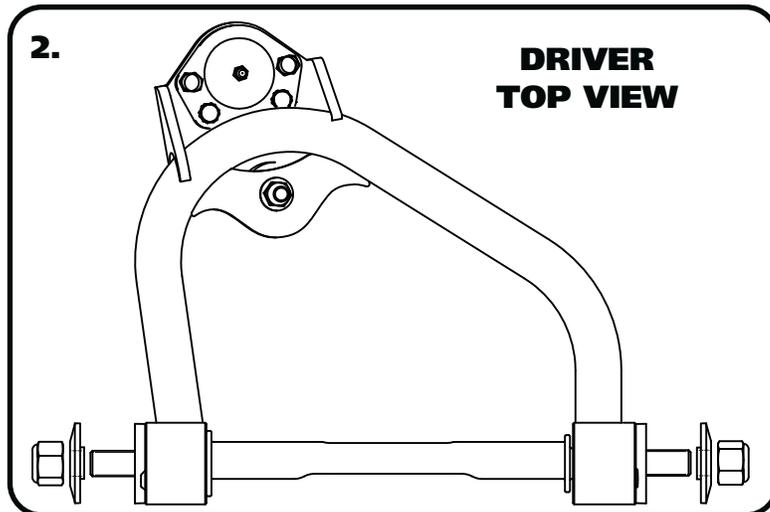
Getting Started.....

Congratulations on your purchase of the Ridetech F-Body StrongArms. These StrongArms have been designed to give your F-Body excellent handling along with a lifetime of enjoyment. Some of the key features of the StrongArms: Ball Joint angles have been optimized for the lowered ride height, Delrin bushings are used to eliminate bushing deflection along with providing free suspension movement through the entire travel. The Geometry has been optimized for excellent handling and driveability. The Delrin bushings are made from a material that is self lubricating so no grease zerks are needed.

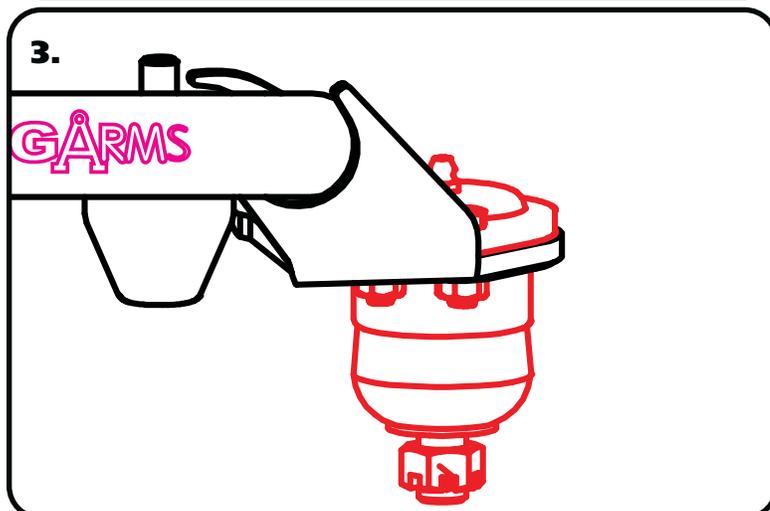
When assembling the Control Arms tighten the cross shaft nuts enough to create drag on the delrin bushings, the arm should still move through its travel by hand.

Installation

1. Remove the entire upper control arms from the car. If you are replacing the lower control arms and spindle, remove them too. Refer to a Factory Service Manual for the proper method.



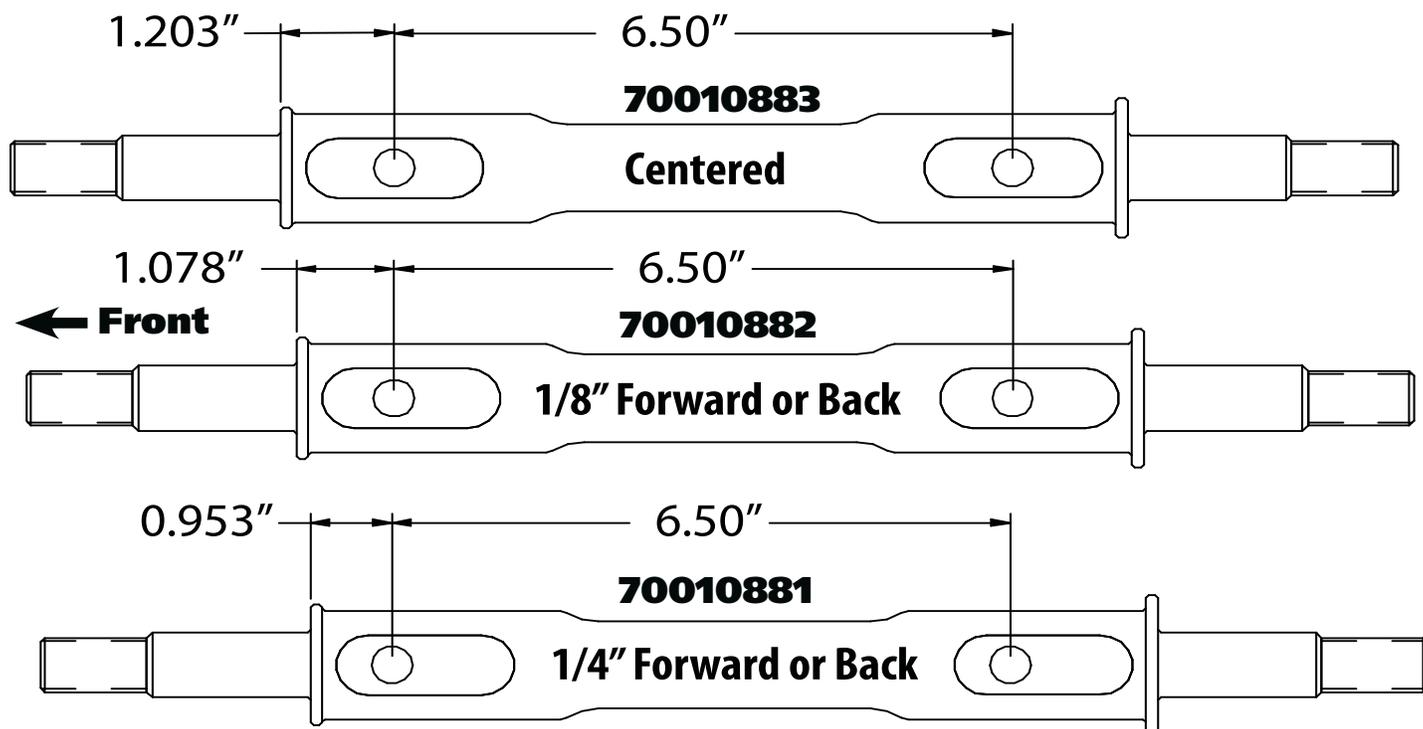
2. The Upper Control Arm is attaching the factory mount using factory hardware. The driver side arm is shown in **Figure "2"**. The Ball Joint located on the arm to the rear of the car. Install the T-Washers and 5/8"-18 Lock Nuts using **Figure "2"** as a reference. These can be tightened after installing the control arms on the car.



3. Install the Ball Joints in the control arms using **Figure "3"** as a reference. Torque the hardware to 15 ftlbs



Caster Explained



These StrongArms come equipped with a changeable caster slug setup. This allows you to add or remove caster from the front suspension, if desired. The caster slugs that come supplied in the kit are setup to be centered. The caster slugs allow you to add or remove caster without having to use a stack of shims. If more or less caster is desired, optional slugs can be purchased from Ridetech or your Ridetech dealer.

1/8" = 70010882

1/4" = 70010881

Caster Explained:

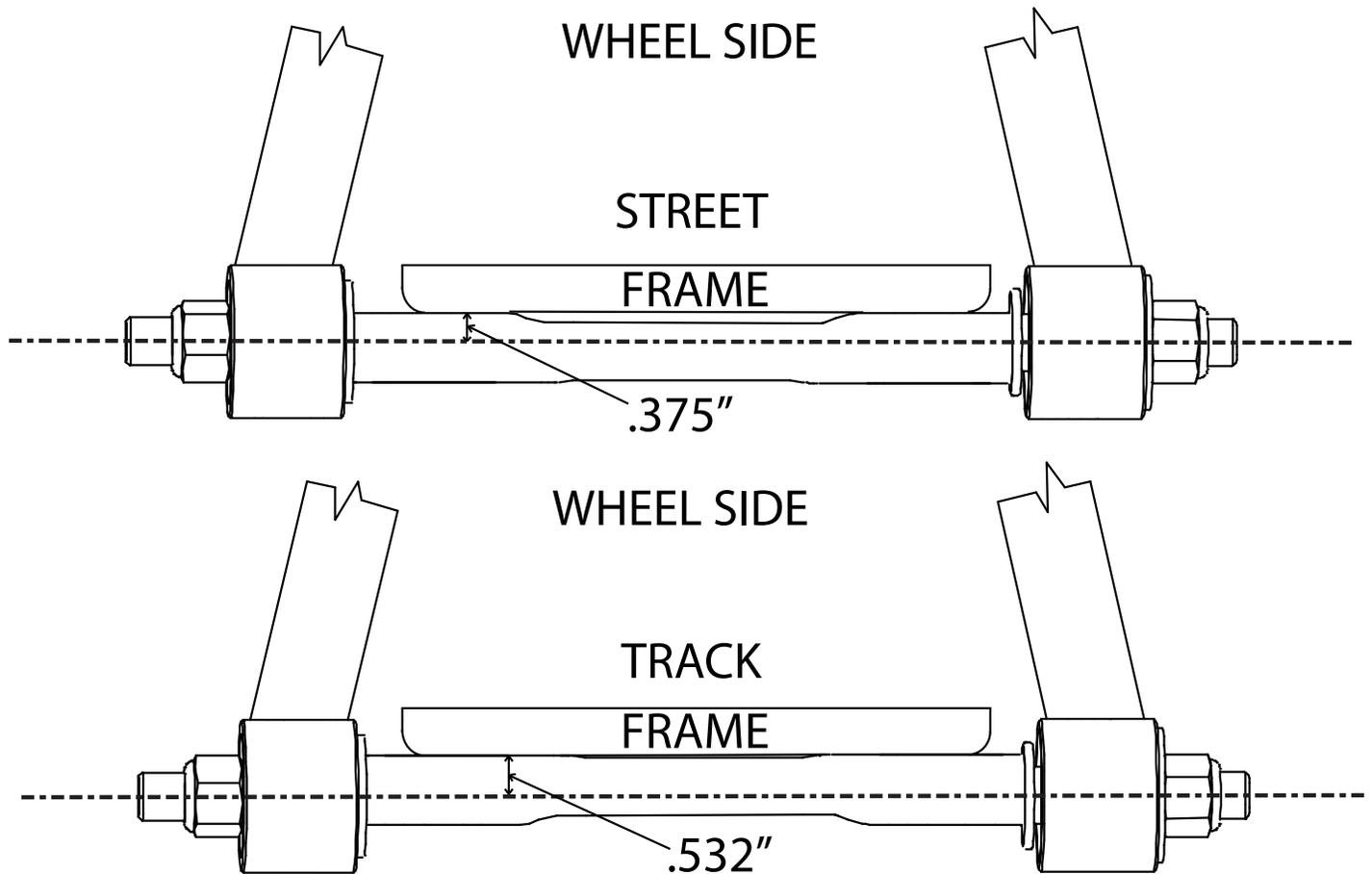
To understand caster you need to picture an imaginary line that runs through the upper balljoint and extends through the lower balljoint. From the side view the imaginary line will tilt forward or backward. The tilting of this imaginary line is defined as caster.

Caster is measured in degrees by using a caster gauge. If the imaginary line described above tilts towards the back of the vehicle at the top, then you have positive caster. If the imaginary line tilts forward then you have negative caster.

Positive caster provides the directional stability in your vehicle. Too much positive caster will make the steering effort difficult. Power steering will allow you to run more positive caster. Negative caster requires less steering effort but will cause the vehicle to wander down the highway.



Offset Upper Control Arm Shaft



The cross shaft that is used in the upper control arms is offset. The offset combined with the caster slug option allows you to achieve the alignment setting you desire with minimal shims. To change the direction the Icon faces simply spin the cross shaft in the control arm.

If you are after a **Street Alignment** bolt the upper control arm to the frame mount with the arm offset to the outside of the car. The Ridetech Icon and Caster Slugs will be facing the wheel.

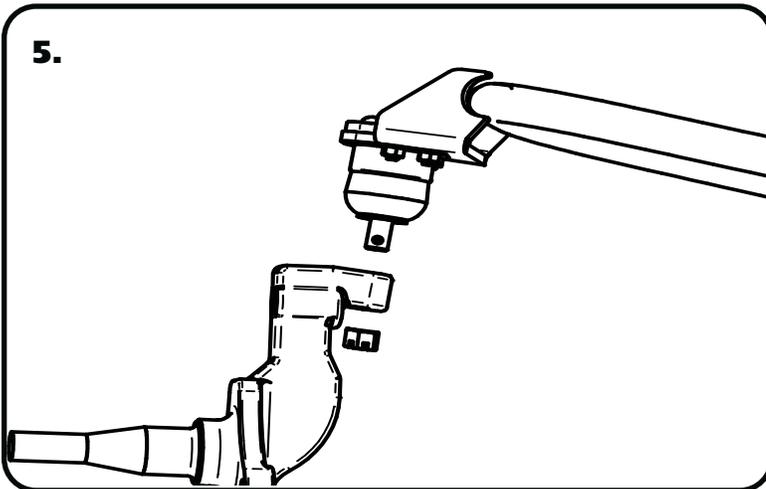
If a more aggressive **Track or Autocross** alignment is desired, bolt the control arm to the frame bracket with the arm offset to the inside of the car. The Ridetech Icon and Caster Slugs will be facing the engine.



Installing Spindle and Alignment



4. The Upper Control Arm is attaching the factory mount using factory hardware with the supplied 7/16" Flat Washer under the OEM Nut. Torque the nuts to 50 ft-lbs. The driver side arm is shown in **Figure "2"**. The Arrow on the Cross shaft points to the front of the car. **Page 4 & 5** has information about Caster and the Caster Slugs.



5. Attach the Spindle to the control arms.

Torque Specs:

Upper Ball Joint - 50 ftlbs and tighten to line up cotter pin.

Install the Cotter Pin after tightening the ball joint nut.

6. Tighten all fasteners.

When assembling the Control Arms tighten the cross shaft nuts enough to create drag on the delrin bushings, the arm should still move through its travel by hand.

Suggested Alignment Specs:

Camber: Street: -.5 degrees
Caster: Street: +3.0 to + 5.0 degrees
Toe: Street: 1/16" to 1/8" toe in



Part # 11009312 & 11009546 - GM Hub Bearing Spindle



Recommended Tools



GM Hub Spindle Kit with C5,C6 Caliper Brackets Installation Instructions

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Page 19-21.....	Caliper Bracket Installation
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Page 23.....	The Finish

THIS SPINDLE IS DESIGNED TO FIT 64-72 GM A-BODY, 67-69 GM F-BODY, AND 68-74 GM X-BODY. THIS KNUCKLE IS ALSO DESIGNED TO BE USED ON SOME RIDETECH SUSPENSION KITS. THESE SPINDLES ARE SYMMETRICAL, THEY AREN'T SIDE SPECIFIC UNTIL THE STEERING ARM AND CALIPER BRACKET ARE BOLTED ON.

THESE SPINDLES ARE DESIGNED TO USE C5, C6 CORVETTE BRAKES. THE OEM BRAKES FROM YOUR CAR WILL NOT FIT THEM.



Major ComponentsIn the box

Item #	Part #	Description	QTY
1	70015750	Spindle	2
2	90003535	Steering Arm Threaded Insert	4
3	90003548	Caliper Bracket - Driver	1
4	90003547	Caliper Bracket - Passenger (Not Shown)	1
5	90003549	Caliper Bracket Spacer	4

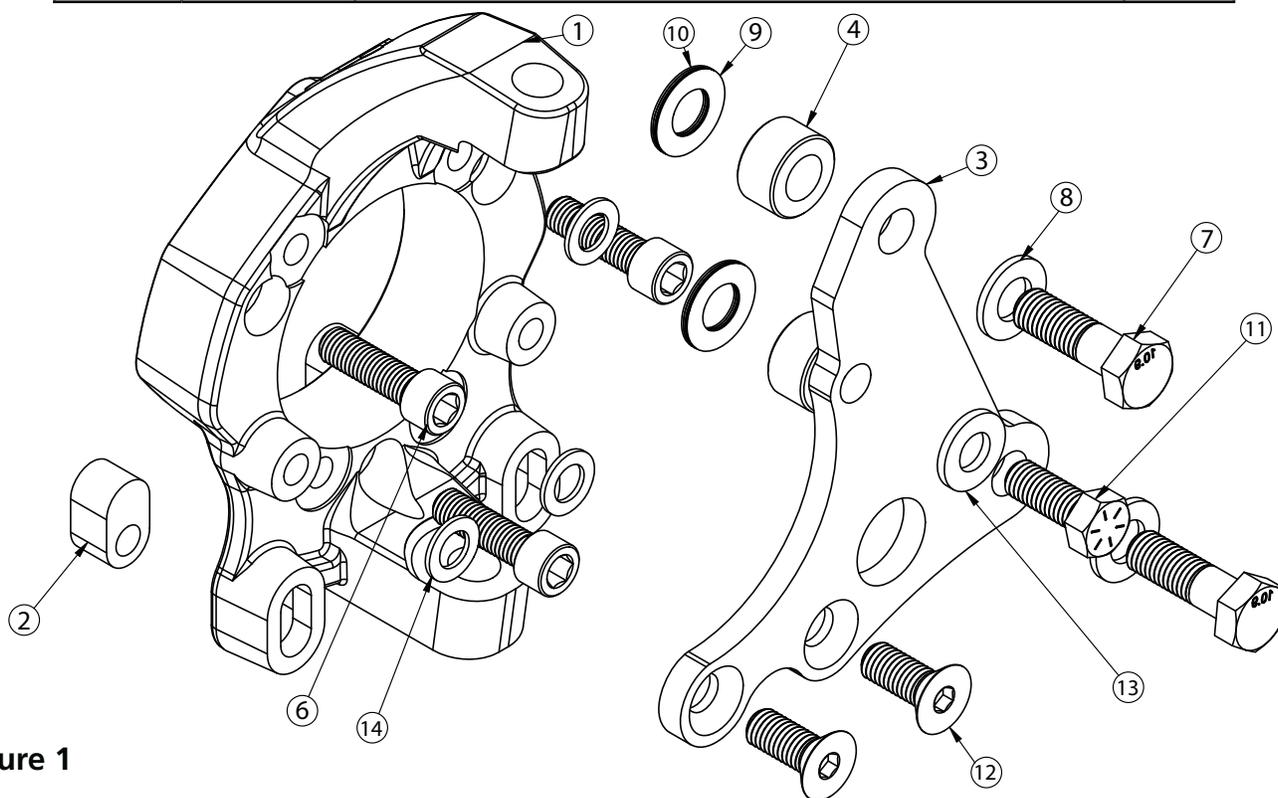


Figure 1

Hardware ListIn the box (Kit # 99010230)

Item #	Part Number	Description	QTY	Item #	Part Number	Description	QTY
SPINDLE TO HUB				BRACKET TO SPINDLE			
6	99121020	M12-1.75 X 40mm SHCS	6	11	99501062	1/2"-13 x 1 1/4" Hex Bolt	2
	90002263	Red Loctite	1	12	99501075	1/2"-13 x 1 1/4" FHSCS	4
BRACKET TO CALIPER				STEERING ARMS			
7	99141007	M14-2.0 X 45mm Hex Bolt	4	not shown	99501043	1/2"-13 x 2" Hex Bolt	2
8	99143001	M14 Flat Washer	4	not shown	99501026	1/2"-13 x 2 1/4" Hex Bolt	2
SHIM PACK				not shown	99503014	1/2" SAE Flat Washer	4
9	99623005	Shim .016" thick, 5/8" ID	8				
10	99623006	Shim .032" thick, 5/8" ID	8				



Getting Started.....

These spindles will fit '67-69 Camaro, '64-'72 Chevelle, and '68-'74 Nova. They are also designed to fit some Ridetech suspensions. They will provide a 2" drop, and are taller than stock to improve the car's cornering ability. The raised upper ball joint induces negative camber gain and positive caster gain. This helps keep the tires flat on the pavement when cornering. This camber action change also raises the roll center for less body roll, and transfer the car's center of gravity inboard in the turn as well. You will see an appreciable improvement in handling.

These spindles are designed around OEM C5, & C6 Corvette brakes. Aftermarket brakes that are designed for these cars will also fit this spindle.

These spindles have are setup with multiple positions for the steering arm to help with bumpsteer. The instructions will give you a recommendation of what position to install the steering arms based off the vehicle you are installing them on.

Disassembly

1. Set the parking brake and chock the rear wheels.
2. Raise the front of the vehicle and place floor stands under the lift points. Do not place the floor stands under the lower control arms because spring tension is needed to assist in breaking loose the ball joint studs. If you are just replacing the spindle, leave the shock in place to help prevent the coil spring from coming out.
3. Remove wheel and tire assembly.
4. Remove brake caliper. If it's a drum brake car, the drum will need to be removed to access the steering arm hardware.
! CAUTION: When the brake caliper is removed, do not allow it to hang unsupported from the brake hose. Use a piece of wire or zip tie to support the caliper to prevent damage to the brake line.
5. Remove tie rod end from knuckle.
6. Remove hub-disc assembly.
7. Remove ball joint studs from knuckle using the following procedure.
 - a. Place floor jack under the control arm spring seat and raise it until it supports the control arm.
! CAUTION: Floor jack must remain under the control arm spring seat during removal and installation of the spindle to retain the spring and control arm in position.
 - b. Remove cotter pins from upper and lower ball joint studs.
 - c. Loosen ball joint nuts two turns
 - d. Gently tap knuckle with mallet to free ball joints or use ball joint separator.
 - e. Remove ball joint nuts on upper and lower ball joints.
 - f. Raise the upper control arm by hand and disengage the ball joint stud from the spindle.
 - g. Remove the knuckle from the lower ball joint stud.
 - h. Inspect ball joint and tie rod ends for wear or damage. Replace if necessary.



Hub Bearing & Spindle Installation



8. The Hub is attached to the spindle using (3) M12-1.75 x 40 SHCS. Apply RED Loctite to each of the mounting bolts. Insert them into the correct holes and Torque to 99 ftlbs.



9. Attach the spindles to the control arms. Torque the ball joints using the torque specs below.

Torque Specs:

Lower Ball Joint - 65 ftlbs and tighten to line up cotter pin.

Upper Ball Joint -50 ftlbs and tighten to line up cotter pin.

Note: The steering arms will **NOT** get attached to the knuckle until the brakes are attached.

Caliper Bracket Installation

Caliper bracket and brake mounting will differ depending on the brake kit being used.

We recommend mocking up the brakes with clean dry threads before applying any loctite to the hardware.

The brake bracket kits include shims for mounting the caliper brackets and calipers. The caliper brackets will use 1/2" ID shims. The caliper spacers will use 5/8" ID shims.

The next steps will cover the installation of C5 OEM brakes on the Ridetech spindle. **Again, mock up the brake kits with clean dry threads before using any loctite on the hardware.** We are showing the installation of the caliper bracket with the spindle off the car so it can be shown clearly.



Caliper Bracket Installation



10. Lay a .062" thick, 1/2" ID shim on each of the caliper brackets (3) mounting holes.



11. The caliper brackets are side specific. They have a D & P stamped in them. Lay the correct side caliper bracket on top of the shims, aligning the mounting holes with the mounting holes of the bracket. The counter sunk holes should facing up.



12. Insert a 1/2"-13 x 1 1/4" flat head socket cap screw in each of the lower mounting holes. Install a 1/2" flat washer on a 1/2"-13 x 1 1/4" hex bolt and insert it in the upper mounting hole. Tighten the hardware to 75 ft-lbs.



Caliper Bracket Installation



13. Install the rotor on the hub. Thread some lug nuts on the threads of the hub to hold the rotor tight on the hub.



14. The kit includes spacers that will be installed between the caliper bracket and caliper mount. Install a M14 flat washer on each of (2) M14-2.0 x 45mm hex bolts. Insert the bolts through the caliper bracket, installing a spacer on each bolt. Line the caliper mount up with the hardware and thread in the bolts.



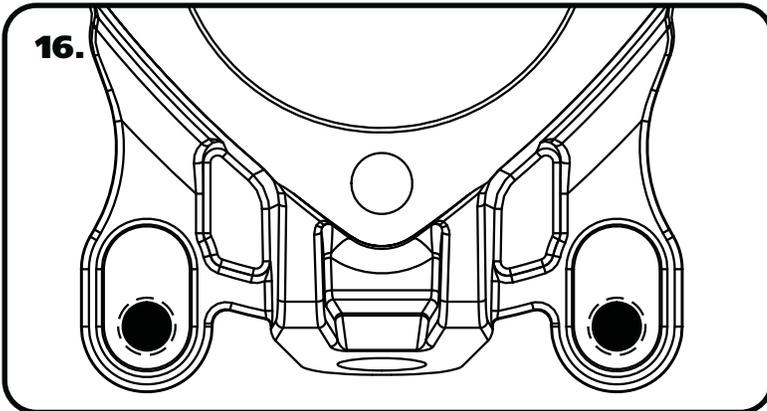
15. You can use feeler gauges to measure the distance between the caliper bracket and rotor to make sure the bracket is centered as much as possible. If the caliper mount is tighter on the back side, put shims on the caliper bracket/spindle. If the caliper bracket is tighter on the front side, put shims between the caliper bracket/caliper mount. After you are happy with the fitment, the hardware will need to red loctite and torqued. Torque the 1/2" bracket to spindle hardware to 95 ft-lbs. Torque the M14 hardware to 125 ft-lbs.

Note: If you are installing aftermarket brakes, refer to the brake kit instructions for measuring the caliper placement.

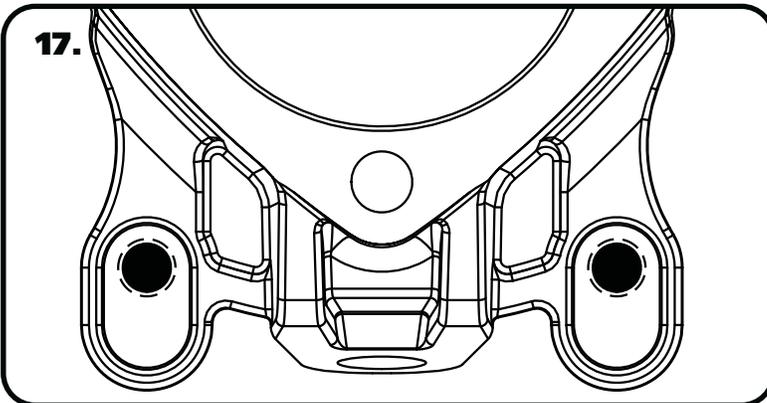


Steering Arm Installation

The threaded steering arm inserts can be mounted in 2 different positions. **Images 16 & 17** will help you determine the correct position for the installation on your vehicle. These positions are what we determined to be the best with Ridetech suspension. If you have another brand of suspension, we recommend measuring the bumpsteer on your car to help determine the best position.



16. Bottom Position:
63-81 Corvette Ridetech Kit



17. Top Position:
67-69 GM F-Body
68-74 GM X-Body
64-72 GM A-body



18. Insert the steering arm inserts into the spindle using the correct orientation from the details above.



Steering Arm & Caliper Installation



19. The steering arm will bolt to the Ridetech spindle using the supplied 1/2" hardware. The mounting bosses of the steering arm are 2 different thicknesses. The thicker boss uses a 1/2"-13 x 2 1/4" hex bolt. The thin boss will use a 1/2"-13 x 2" bolt. Install a 1/2" SAE flat washer on each bolt. Apply red loctite on the threads of the bolt and install them in the correct location. Torque the hardware to 80 ft-lbs. Verify that the bolts are sticking through the slugs.

NOTE: Some steering arms have 7/16" mounting holes, they will need to be drilled out using a 1/2" drill bit.



20. Install the brake pads and caliper.

21. Install the outer tie rod end in the steering arm.

Torque Specs:

Tie Rod End - 35 ftlbs and tighten to line up cotter pin.

22. FINISH PLUMBING THE BRAKE SYSTEM AND BLEED THE SYSTEM.

The Finish

Suggested Alignment Specs:

Camber: Street: -.5 degrees
Caster: Street: +3.0 to + 5.0 degrees
Toe: Street: 1/16" to 1/8" toe in

23. Recheck all hardware before driving.



Part # 11169120 - 1967-1969 GM F-Body Front Sway Bar



Recommended Tools



1967-1969 GM F-Body Front Sway Bar Installation Instructions

Table of contents
Page 25..... Included Components and Hardware List
Page 25-26.... Sway Bar Installation

Hardware Torque Specifications
5/16"-16..... 17 ftlbs

Major ComponentsIn the box

Part #	Description	QTY
90001234	Front Sway Bar	1
90002929	End Link Kit	2
90001344	Billet Bushing Strap	2
70015013	Lined Sway Bar Bushing	2
HARDWARE		
99311030	5/16" -18 x 1" Hex Bolt	4
99313001	5/16" SAE Flat Washer	4
99313005	5/16" Split Lock Washer	4

Getting Started.....

Note: This sway bar kit utilizes a anti-friction lining in the sway bar bushing. The lining allows the sway bar to move freely and quietly in the bushing. No lubrication is required.

1. Jack the vehicle up to a safe working height and support with jack stands. Make sure the jack stands are stable before working under the car.
2. Remove the driver front wheel/tires. It will be required to get the swaybar installed
3. Remove the stock sway bar.



4. Open the sway bar bushing at the split and slip it **OVER** the sway bar. Do this for both bushings



5. Insert the sway bar in the stock location. See below for installation tips.

Installation Tips: It is easier to install if you have the driver wheel/tire removed. Turning the steering wheel to the left also helps. It will require some twisting and turning of the bar to work it through the frame into the stock location. The swaybar needs to end up in the stock location with the ends above the lower control arms.



6.

6. Slip the bushing straps over the sway bar bushings. Line them up with the OEM mounting holes.



8.

7. Install a 5/16" lock washer & 5/16" flat washer on the 5/16" x 1" hex bolts.



8.

8. Torque the mounting hardware to 17 ftlbs.

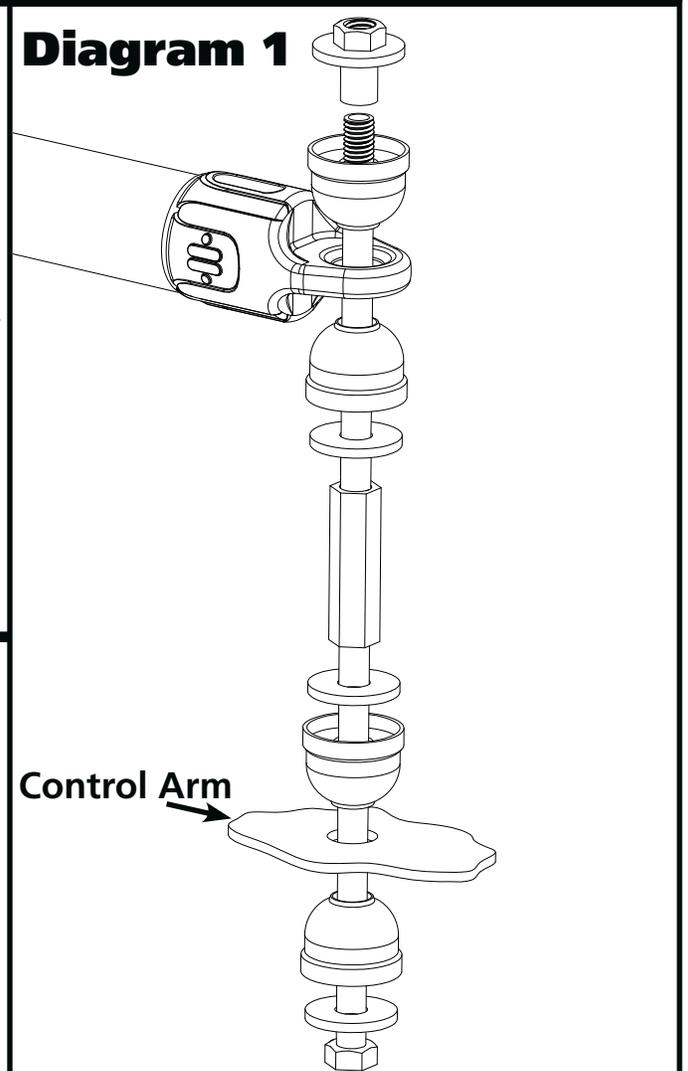


Diagram 1

Control Arm

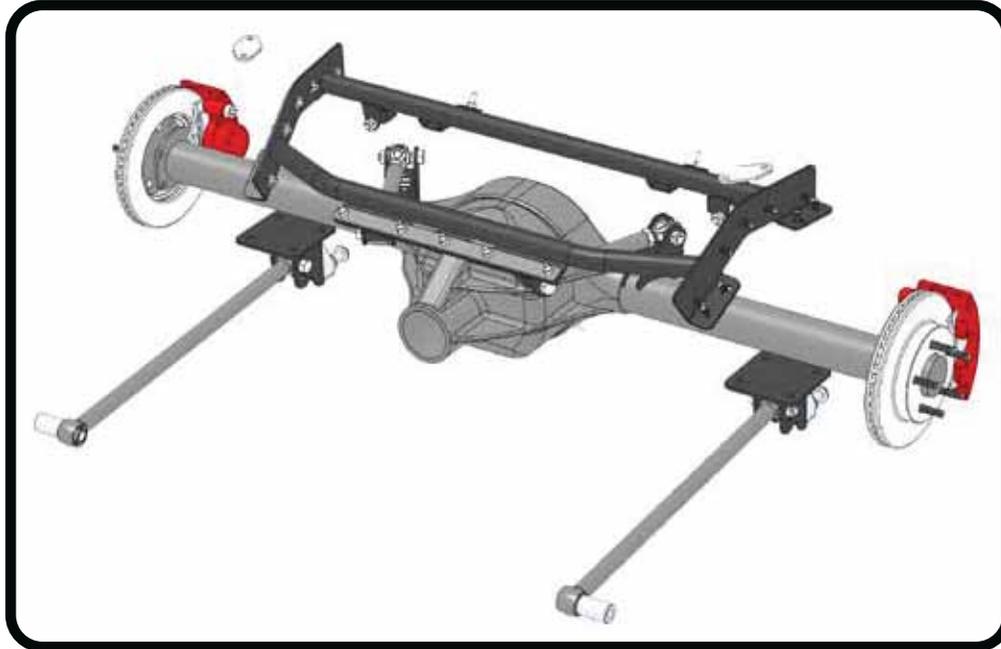


9.

9. Install the end links using **Diagram 1** as a reference. Install both end links before tightening the end link hardware. Tighten the end link barrel nut until it is flush with the end of the bolt, and then tighten it 2 more complete rounds.



Part # 11167197 -1967-1969 GM "F" Body Rear R-Joint Bolt-in 4 Link



Recommended Tools



1967-1969 GM "F" Body Rear Bolt-in 4Link Installation Instructions

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- Page 25-29..... Included Components
- Page 30..... Hardware List & Getting Started
- Page 31..... Bar Assembly
- Page 32..... OEM Variation
- Page 32-37..... Cradle Installation
- Page 37..... Lower Bar Installation
- Page 38..... Lower Bar & Shock Mount Installation
- Page 39..... Attaching Lower Shock Mount & Lower Bar
- Page 40..... Installing Lower Bar
- Page 41..... Setting Pinion Angle
- Page 42..... Upper Bar Axle Tab Installation
- Page 43..... Installing Axle Tabs
- Page 44..... Installing ShockWaves/CoilOvers & Shock Block Off





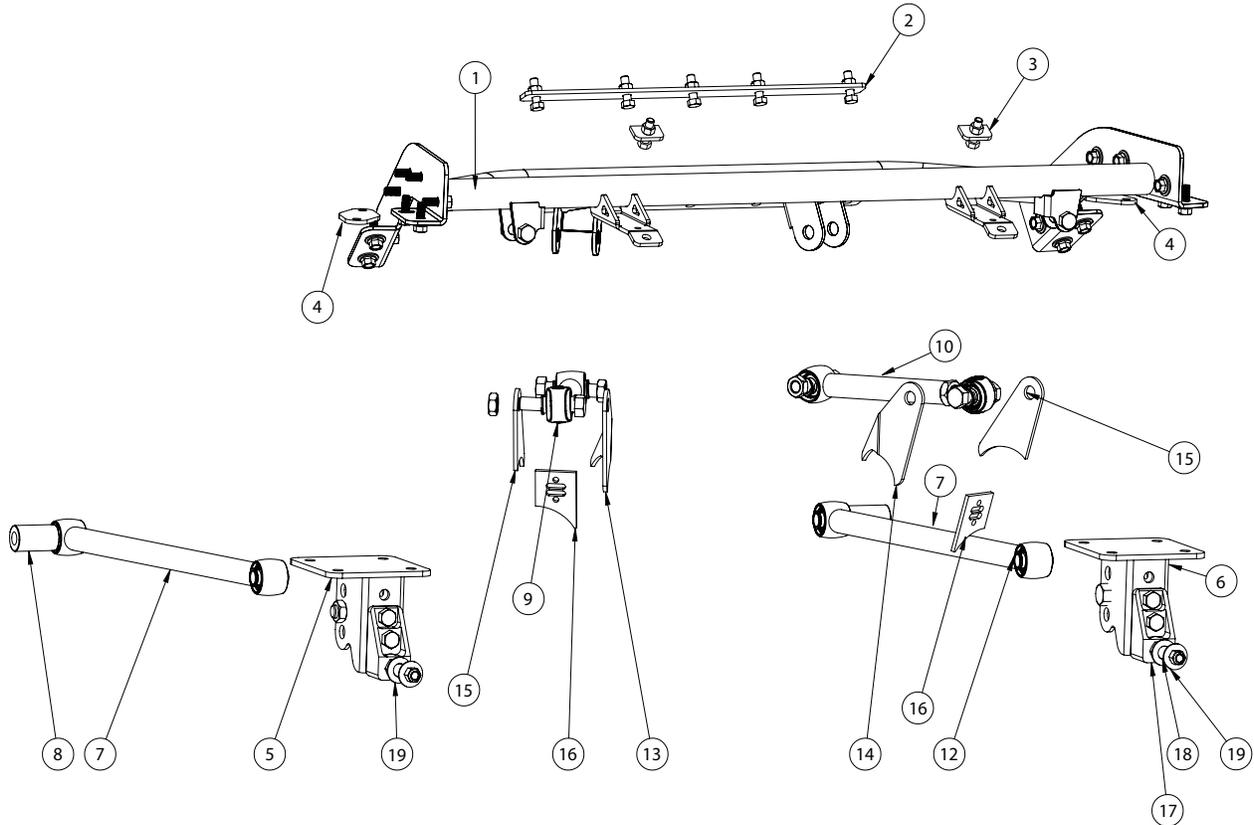
Major ComponentsIn the box

Item #	Part #	Description	QTY
1	90002722	Upper Cradle	1
2	90002723	Forward Tab Inner Brace	1
3	90001844	Trunk Reinforcement	2
4	90000523	Shock Block Off Plate	2
5	90002077	Lower Axle Mount - Driver	1
6	90002078	Lower Axle Mount - Passenger	1
7	90003096	Lower Bar Assembly - Driver - 25 1/16" center to center	2
8	70013537	Front R-Joint Spacer	2
9	90001319	LH R-Joint Rod End (installed in bars)	4
10	90003090	Upper Bar - 10.150" center to center	2
11	90001318	RH R-Joint Rod End (installed in bars)	4
12	70013334	R-Joint Spacers	14
13	70013049	Inner Upper Bar Tab - Driver	1
14	70013050	Inner Upper Bar Tab - Passenger	1
15	70013051	Outer Upper Bar Tab	2
16	70013052	Axle Tab Rear Brace	2
17	90001624	Aluminum Lower Shock Mount	2
18	70002825	Lower Shock Stud	2
19	90002067	Lower Shock Spacers	4
	70010694	Bar Tab Setting Jig (NOT SHOWN)	2
	85000008	Riv-Nut Installation Tool (NOT SHOWN)	1
	99371050	3/8"-16 x 1 1/2" Conical Body Bolt (NOT SHOWN)	6
	99372009	3/8"-16 U-Nut (NOT SHOWN)	6
R-Joint Components - (Installed in bar ends)			
	70013279	Retaining Ring	
	70013280	Wavo Wave Spring	
	70013275	R-Joint Center Ball	
	70013276	R-Joint Composite Center Ball Cage	

New R-Joints will be quite stiff (75-90 in/lbs breakaway torque) until they "break in" after a few miles of use. After the break in period they will move much more freely. Because the composite bearing race contains self lubricating ingredients, no additional lubrication is needed or desired. Any additional lubrication will only serve to attract more dirt and debris to the R-Joint and actually shorten its life.



Major ComponentsIn the box

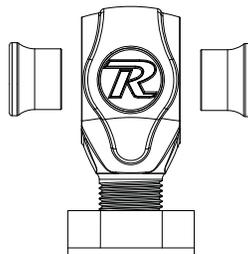
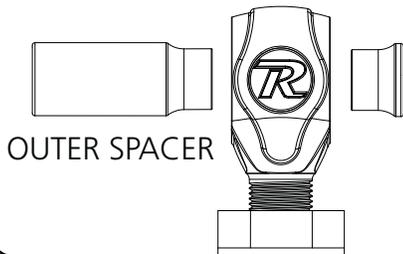


R-JOINT SPACER INSTALLATION

Install the Spacers by inserting the SMALL side of the SPACER into the Center Pivot Ball. Push them in until they bottom out and stop.

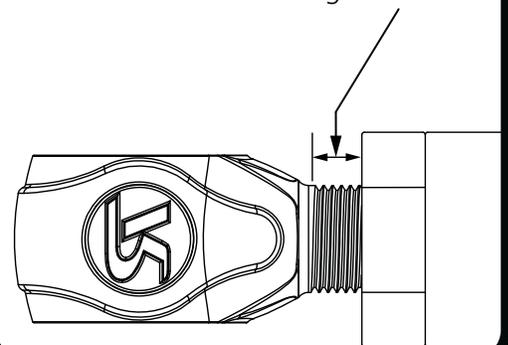
LOWER FRONT R-JOINT

ALL OTHER R-JOINTS



R-Joint Thread Engagement:

- Minimum thread showing - 0
- Nominal thread showing - 1/4"
- Maximum thread showing - 5/8"



New R-Joints will be quite stiff (75-90 in/lbs breakaway torque) until they "break in" after a few miles of use. After the break in period they will move much more freely. Because the composite bearing race contains self lubricating ingredients, no additional lubrication is needed or desired. Any additional lubrication will only serve to attract more dirt and debris to the R-Joint and actually shorten its life.



Hardware ListIn the box (Kit# 99010197)

The Hardware Kit contains bags to help aid in selecting the correct hardware for the component being installed. The hardware list shows how the hardware is bagged.

QTY	Part Number	Description	QTY	Part Number	Description
CRADLE - FRONT TAB & SWAY BAR MOUNT			4 LINK BARS		
7	99371004	3/8"-16 x 1 1/4" Hex Bolt	6	99621004	5/8"-18 x 3" Gr. 8 Bolt
7	99372002	3/8-16" Nylok Nut	6	99622006	5/8"-18 Nylok Jam Nut
12	99373003	3/8" SAE Flat washer	12	99623010	5/8" SAE Flat Washer
CRADLE MOUNTING			SHOCK MOUNT & SHOCK MOUNTING		
18	99371005	3/8"-16 x 1 1/4" Bolt	2	99501026	1/2"-13 x 2 1/4" Hex Bolt
18	99372007	3/8"-16 Riv-Nut	2	99502007	1/2"-13 Thin Nylok Jam Nut
18	99373006	3/8" Split Lock Washer	2	99501019	1/2"-13 x 1 1/4" Hex Bolt
18	99373002	3/8" SAE Flat washer	2	99501046	1/2"-13 x 1 3/4" Hex Bolt
1	85000007	17/32" Drill Bit	4	99502001	1/2"-13 Nylok Nut
LOWER BAR MOUNT TO AXLE			LOWER BAR - FRONT MOUNTING		
8	99432007	7/16"-20 Nylok Nut	2	99621007	5/8"-18 x 5" Hex Bolt
LOWER BAR - FRONT MOUNTING			2	99622006	5/8"-18 Nylok Jam Nut
2	99621007	5/8"-18 x 5" Hex Bolt	4	99623001	5/8" Flat Washer
2	99622006	5/8"-18 Nylok Jam Nut	UPPER 4 LINK TAB SETTING JIG		
4	99623001	5/8" Flat Washer	2	99371001	3/8"-16 x 3/4" Hex Bolt
SHOCK STUD			2	99372004	3/8"-16 Hex Nut
2	99432002	7/16"-20 Nylok Nut	4 LINK BAR ASSEMBLY		
2	99433002	7/16" SAE Flat Washer	4	99752004	3/4"-16 RH Jam Nut
2	99623004	5/8" SAE Flat Washer	4	99752006	3/4"-16 LH Jam Nut
			2	90002276	Anti-sieze

Getting Started.....

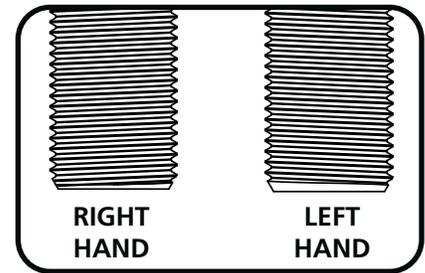
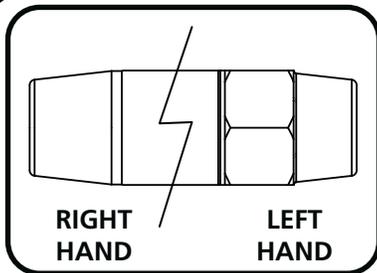
Congratulations on your purchase of the Ridetech Rear 4-link System. This system has been designed to give your Camaro excellent handling along with a lifetime of enjoyment. This kit replaces the Leaf Springs, this allows the 4-Link to locate the rearend and the CoilOvers/ShockWaves to support the car. This allows each to be optimized for the best performance.

Note: These system is designed for use with the Ridetech Shockwaves or CoilOvers and the MuscleBar swaybar. **The factory shocks and springs will not fit this setup.**

1. Raise the vehicle to a safe and comfortable working height. Use jack stands to support the vehicle with the suspension hanging freely. You will need a method of raising and lowering the differential.
2. Support the axle and remove the leaf springs, shocks, and tail pipes. Refer to the factory service manual for proper disassembly procedures. Retain the front leaf spring mounts, they will be used with the 4 link. You may need to detach the fuel line from the frame rails. The back seat of the car will also need removed for installation of the 4 link cradle.



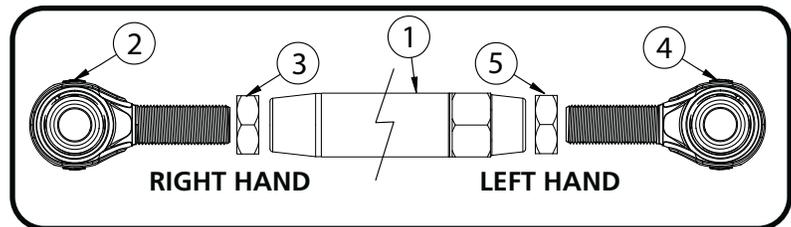
R-Joint Bar Assembly



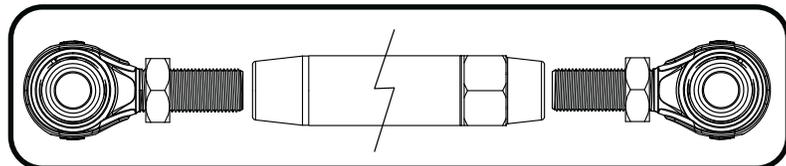
THE 4-LINK BARS, R-JOINTS, AND JAM NUTS HAVE RIGHT HAND AND LEFT HAND THREADS. THIS ALLOWS THE BAR TO BE ADJUSTED WITHOUT REMOVING IT. THE HEX END OF THE BAR IS LEFT HAND THREAD. THE LEFT HAND JAM NUT HAS AN COUNTER-CLOCKWISE ARROW STAMPED INTO IT. IMAGE 3 WILL HELP YOU DETERMINE THE THREADS OF THE R-JOINTS.

14a. Component List:

1. 4-Link Bar
2. Right Hand Thread R-joint
3. Right Hand Thread Jam Nut
4. Left Hand Thread R-Joint
5. Left Hand Thread Jam Nut



14b. Thread the jam nuts onto the threaded shank of the r-joints. Thread the nuts all the way on to the r-joint.



14c. Apply anti-seize to the threads of the r-joint. This will prevent the threads from galling.



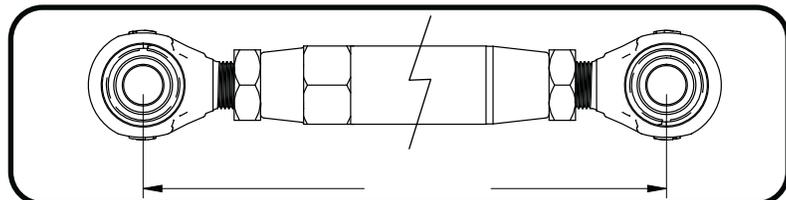
14d. Thread the r-joints into the 4-link bar. Thread them in evenly until you achieve the correct center to center length.

Upper Bar Length: 10 1/16"

Lower Bar Length: 25 1/16"

Nominal R-Joint Threads Exposed: 1/4"

Maximum R-Joint Threads Exposed: 5/8"

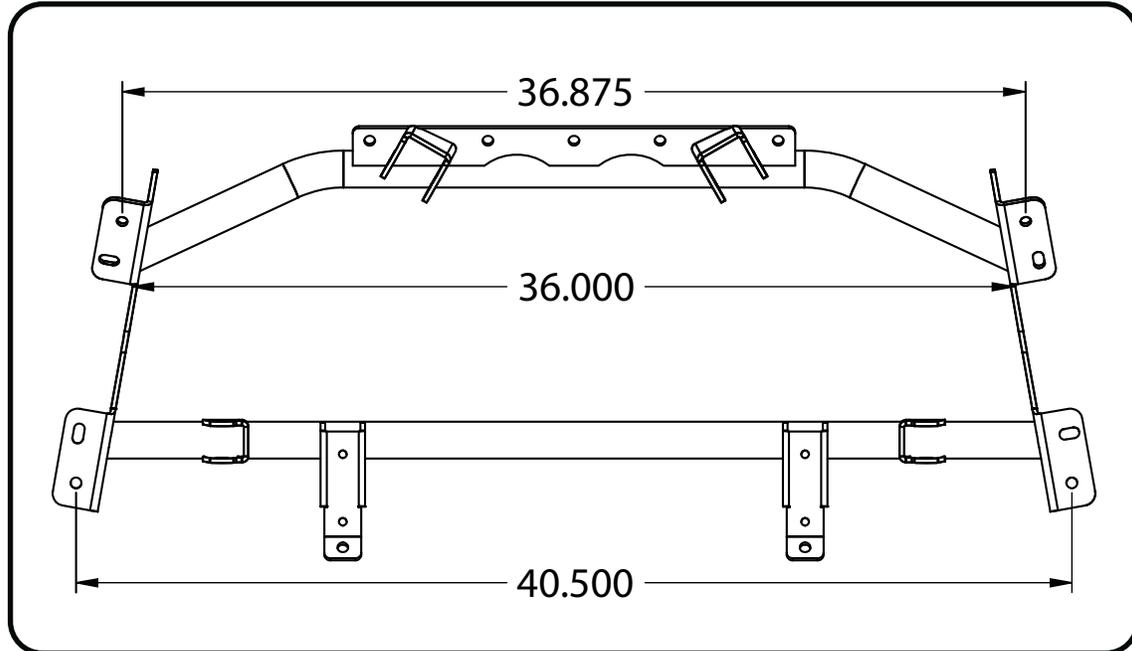


14e. After getting one bar length set, you can put a 5/8" bolt through the r-joints to simplify setting the next bar. Adjust the bar length of the 2nd bar until it will slip on and off the bolts. Torque the jam nuts 65-75 ft-lbs using an 1 1/8" crows foot on a torque wrench.





OEM Variation



Note: In rare cases, the dimension from frame rail to frame rail on your F-Body may vary from the dimension on the Ridetech Upper Cradle. **ALL** of the Ridetech Upper Cradles are jig built to the dimensions above. The variation in OEM manufacturing specs does happen and is out of our control. If your F-Body frame rails seem out of spec, feel free to contact our Tech Department at 812-482-2932 and we will try to offer some solutions.

Cradle Installation



3. Remove the factory pinion snubber and mount from the car, this is necessary for clearance of the upper cradle. We use a cut off wheel to remove the mount. Make sure the area where the ARROW is pointing has no material sticking down. The tabs that are against the body can remain. Check both sides where the snubber mount attached to the body.



Cradle Installation



4. Steps 5-14 cover mounting the cradle into the car, review all steps. Image 4 shows the cradle installed in the car.

Note: The OEM fuel line will need to be detached from the frame rails until the cradle is installed.



5. Install the cradle into the car. When the cradle is positioned properly, the front bar should be up against the body, the front tab will be up against the bottom side of the seam, and the sway bar mount tabs should be up against the bottom of the trunk pan.

THE CRADLE WILL GET TEMPORARILY BOLTED IN BY THE FRONT TAB AND REAR SWAY BAR TABS. IT WILL GET REMOVED TO DRILL AND INSTALL THE RIV-NUTS IN THE FRAME RAILS.



6. **Image 6** shows how the front tab overlaps the body seam. Multiple pieces of the car body overlap at this joint making it a strong area to attach to. Drill these 5 holes with a 3/8" drill bit using the cradle as a template.



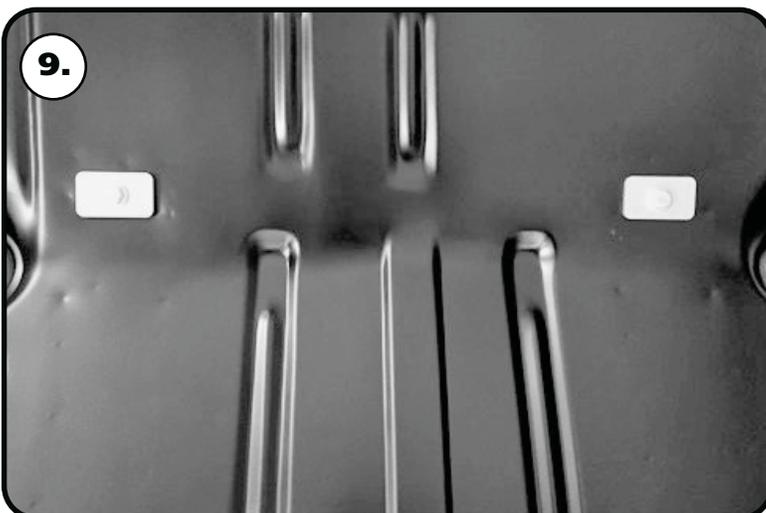
Cradle Installation



7. The kit includes a backing plate for the front tab. This backing plate is installed in the inside of the car. The rear seat will need removed for installation. Lay the backing plate on the seam, lining up the 5 holes drilled in the previous step. Install a 3/8" flat washer on each of (2) 3/8"-16 x 1 1/4" hex bolts. **Insert a bolt/washer in the 2 other holes from the BOTTOM with the threads pointing up.** Install a 3/8" flat washer followed by a 3/8"-16 nylok nut on threads of each of the bolts sticking through the backing plate.



8. Drill a 3/8" hole through the each of the sway bar mount tabs. These holes will go into the trunk so make sure nothing is in the trunk floor. If there is a mat, remove it before drilling the holes.



9. **Image 9** shows the trunk backing plates installed in the trunk. Locate the backing plates in the trunk lining up the center hole with the hole drilled in the floor. Install a 3/8" flat washer on each of (2) 3/8"-16 x 1 1/4" hex bolts. Insert the bolt/washer through the backing plate, through the trunk floor and sway bar Tab with **the threads on the Bolt pointing DOWN.** Install a 3/8" flat washer followed by a 3/8"-16 nylok nut on the threads of the bolts sticking through the sway bar tab.



Riv-nut® Installation & Specs

1. Drill hole in frame using the SUPPLIED DRILL BIT keeping the drill square with the metal.
2. We recommend installing (2) 3/8" flat washers between the bolt head and the lower anvil of the installation tool. Thread a Riv-nut® onto the supplied Tool. Thread the Riv-nut all the way onto the tool until it stops.
3. Insert the tool and Riv-nut® into the drilled hole 90° to the frame rail.
4. The tool requires (1) 9/16" & (1) 5/8" wrenches to use. A ratchet can be used on the top of the tool.

KEEP THE TOOL AND RIV-NUT 90° TO THE SURFACE WHILE TIGHTENING

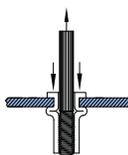
5. Put a 5/8" wrench on the lower hex of the tool. Use a wrench or ratchet on the top hex to tighten.
6. Hold the wrench in one position and turn the TOP HEX CLOCKWISE to engage the Riv-nut®. Keep turning the TOP WRENCH until you feel a positive stop and you can't turn the TOP WRENCH anymore.
7. Break the tool loose by turning the TOP HEX counterclockwise and thread the tool out of the Riv-nut®

THE DATA BELOW ILLUSTRATES THE STRENGTH OF THE RIV-NUT®

RIVNUT® Fastener Engineering Data

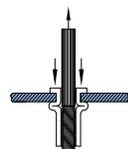
Upset Load (lbs.)		
RIVNUT * Size	Steel	
	Min. Grip	Max. Grip
3/8-16	4965	5325

Fig. 1



Ultimate thread strength (lbs.)		
RIVNUT * Size	Steel	
	Min. Grip	Max. Grip
3/8-16	11500	10450

Fig. 2



Ultimate tensile strength (lbs.)	
RIVNUT * Size	Steel
3/8-16	3900

Fig. 3

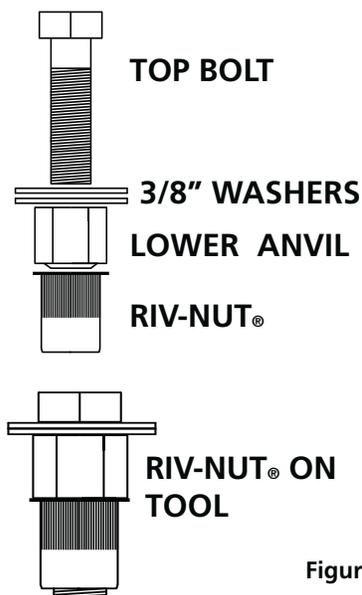
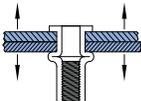


Figure 2

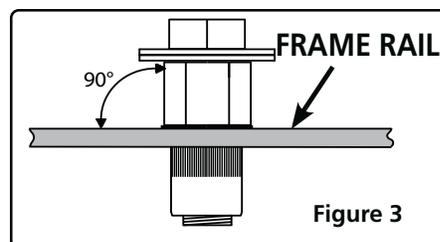


Figure 3

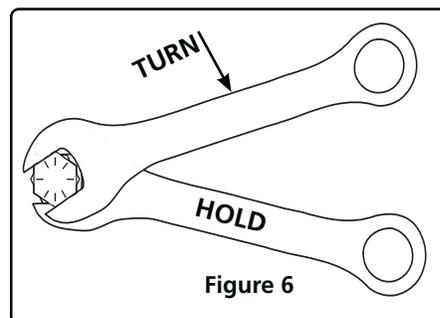


Figure 6

Single Shear Strength 3/8" Grade 5 Bolt
3,975.8 lbs



Cradle Installation



10. Mark the holes of the frame mounts. Mark the slotted holes in the center of the slot. These holes use Riv-nuts to bolt the cradle to the frame. The holes need to be centered as much as possible. Make sure to mark all (9) holes in each frame rail.



11. Remove the cradle to drill the holes and install the Riv-nuts. The holes for the Riv-nuts **NEED** to be drilled with the supplied 17/32" drill bit. We suggest drilling the holes with a smaller drill bit first to make it easier to drill with the 17/32" drill bit. Drill all (18) holes in the frame rails.



12. Install the Riv-nuts in the frame rails. **Refer to the Riv-nut installation instructions on PAGE 8 for proper Riv-nut installation.** **Image 12** illustrates a Riv-nut being installed. Install all (18) Riv-nuts in the frame rails.



Cradle Installation & Lower Bar Mount



13. After you get all the riv-nuts installed, reinstall the cradle in the car. The bolts for the front tab and sway bar mounts can be reinstalled. Leave everything loose until all the bolts are started.



14. Install a 3/8" split lock washer & 3/8" flat washer on each of the 3/8"-16 x 1 1/4" bolts supplied in the kit. Thread them into the riv-nuts. Torque to 23 ft-lbs. Torque the front tab and sway bar tab hardware to 30 ft-lbs.



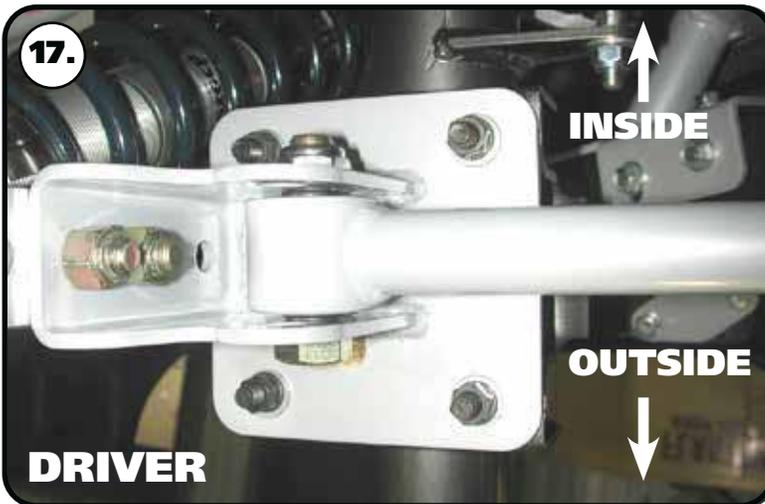
15. The R-joint setup is designed to be offset to the inside of the car. The bolt hole in the mounting bracket has to be drilled out to 5/8" and the new 5/8" x 5" bolt, washers, & 5/8" thin nylok nut are used. The wider spacer is used on the outside with a narrow spacer on the inside. This will offset the bar to the inside of the car for better wheel and tire clearance. The bolt needs to go in the bracket like seen in the picture. The threads of the bolt must be pointing to the OUTSIDE of the car. Shown in **Image 15** is the driver side bar and mount. Repeat on both sides and tighten the bolts/nuts enough to eliminate any gaps.



Lower Bar & Shock Mount Installation

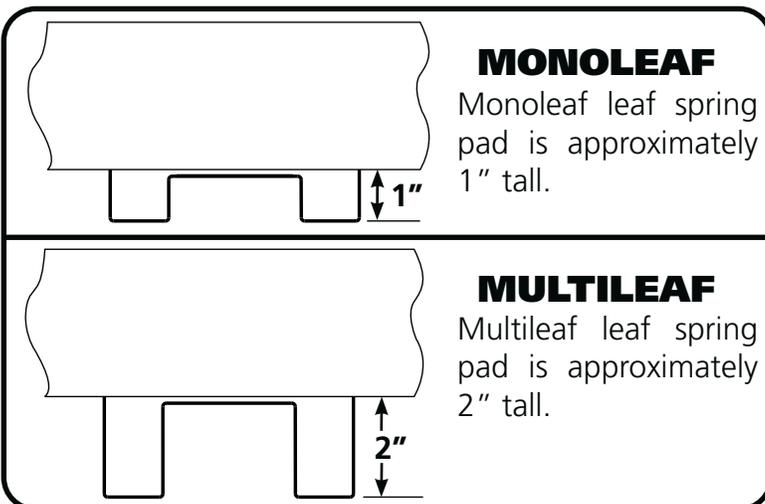


16. Attach the lower bar/mount assembly to the car. New 3/18"-16 u-nuts and 3/8-16" x 1 1/2" conical body Bolts are supplied in the kit. Install the u-nuts in place of the OEM u-nuts. Hold the assembly in place lining up the holes with the u-nuts. There is a tab bent up on the mount that indexes into a hole in the body. Make sure the tab is indexed into the alignment hole. Torque the mounting bolts to 30 ft-lbs.



17. The lower axle bracket will be fastened to the leaf spring pad using the factory T-bolts/ U-bolts. The bar mount is offset to the inside of the car to provide more wheel and tire clearance. New 7/16" nyloks are supplied. Torque the nuts to 55 ftlbs.

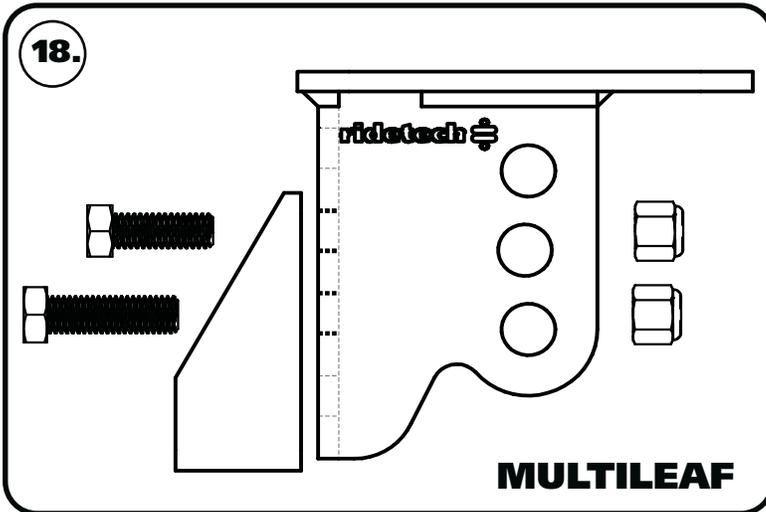
Image 17 shows the Driver side.



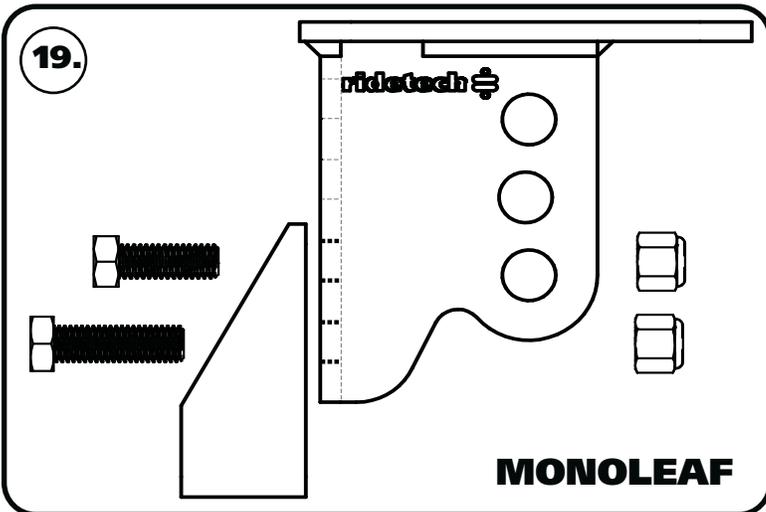
The 67-69 F-body could come with either a **Monoleaf spring** or **Multileaf spring**. We provided this guide to help you determine which leaf spring mount your car has. **Steps 18 & 19** cover bolting the lower shock mount to the axle bracket. You need to know which leaf spring mounts you have to determine how the shock mount needs bolted to the axle mount. **Image 18** shows the Multileaf, **Image 19** covers the Monoleaf. The leaf spring mount on each of the rear differentials are different heights requiring the lower shock mount be attached in different locations depending on the leaf spring mount. The lower mount attaches with (1) 1/2"-13 x 1 1/4" hex bolt, (1) 1/2"-13 x 1 3/4" Hex Bolt, & (2) 1/2"-13 nylok nut.



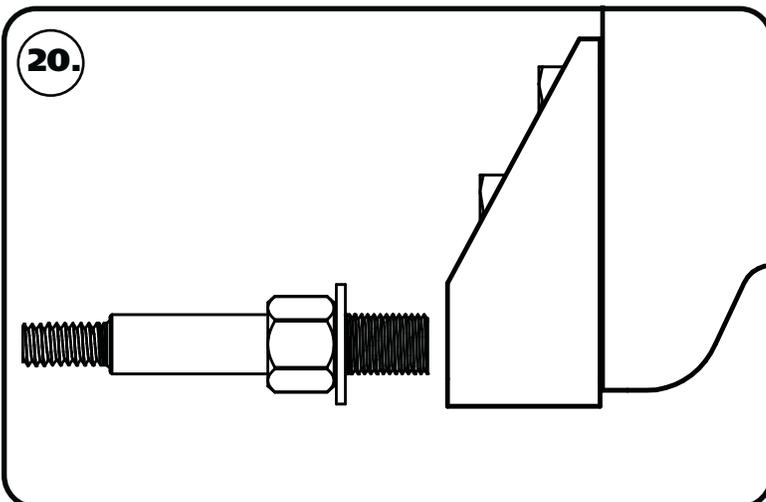
Attaching Lower Shock Mount & Lower Bar



18. MULTILEAF - The Multileaf setup uses the **MIDDLE 2 HOLES** for mounting. Insert the bolts through the aluminum shock mount with the 1 1/4" long bolt in the top bolt, 1 3/4" in the bottom hole. Insert the bolts through the axle mount and install the nylok nuts on the threads sticking through. Repeat on both sides and torque the bolts/nuts to 75 ftlbs. Skip to **Step 20**.



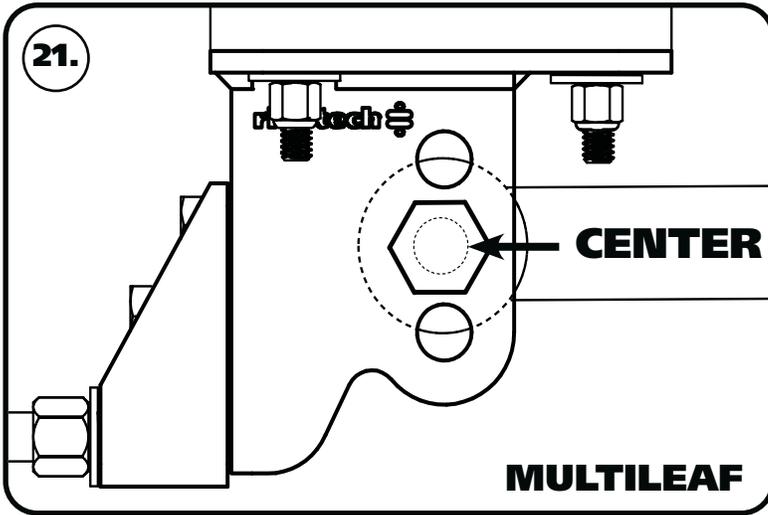
19. MONOLEAF - The Monoleaf setup uses the **BOTTOM 2 HOLES** for mounting. Insert the bolts through the aluminum shock mount with the 1 1/4" long bolt in the top bolt, 1 3/4" in the bottom hole. Insert the bolts through the axle mount and install the nylok nuts on the threads sticking through. Repeat on both sides and torque the bolts/nuts to 75 ftlbs.



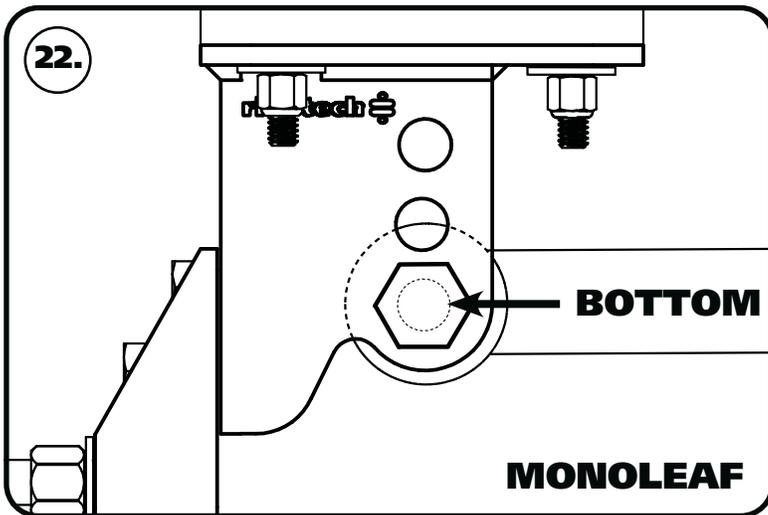
20. Installing the shock stud into the lower mount. Install a 5/8" flat washer onto the 5/8"-18 threads of the shock stud. Apply Red Loctite to the 5/8" threads of the stud. Thread the shock stud into the threaded hole of the lower mount. Repeat on both sides and torque the shock stud to 65-75 ftlbs.



Installing Lower Bar



21. Images 21-23 illustrate attaching the lower bar to the axle mount. Image 21 shows the Multileaf, Image 22 covers the Monoleaf, Image 23 shows a bottom view. The different heights of the leaf spring pads of the differentials require the lower bars to be mounted in the correct hole to optimize the geometry of the 4 link bars. A 70013334 spacer will need to be installed on each side of the R-Joint with the SMALL OD inserted into the R-joint center ball. Use **Image 23** as a reference. The lower bar attaches with (1) 5/8"-18 x 3" hex bolt, (2) 5/8" flat washers, & (1) 5/8"-18 nylok jam nut. **MULTILEAF** - The Multileaf setup uses the MIDDLE HOLES for mounting. Insert the bar into the lower mount lining the bushing sleeve up with the CENTER set of holes. Insert a 5/8"-18 x 3" bolt into the hole/sleeve. Install a 5/8"-18 nylok jam nut on the bolt threads sticking out of the bracket. Repeat on both sides and tighten the bolts/nuts enough to eliminate any gaps. Skip to **Step 23**.



22. MONOLEAF - The Monoleaf setup uses the BOTTOM HOLES for mounting. Insert the bar into the lower mount lining the bushing Sleeve up with the BOTTOM set of holes. Insert a 5/8"-18 x 3" bolt into the hole/sleeve. Install a 5/8"-18 nylok jam nut on the bolt threads sticking out of the bracket. Repeat on both sides and tighten the bolts/nuts enough to eliminate any gaps.



23. Image 23 shows a bottom view of the bar installed. Notice the spacers in each side of the R-Joint.



Setting Pinion Angle

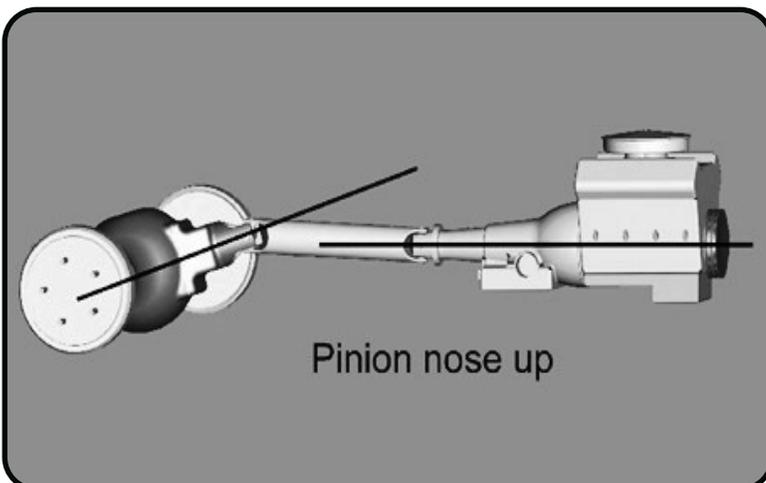
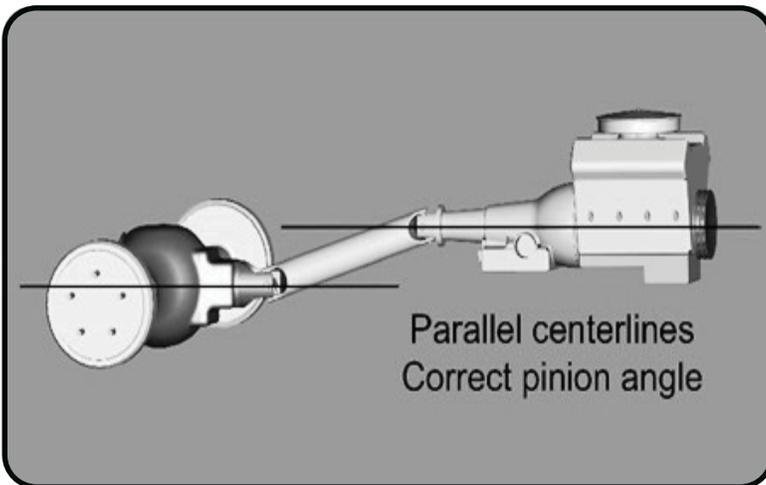
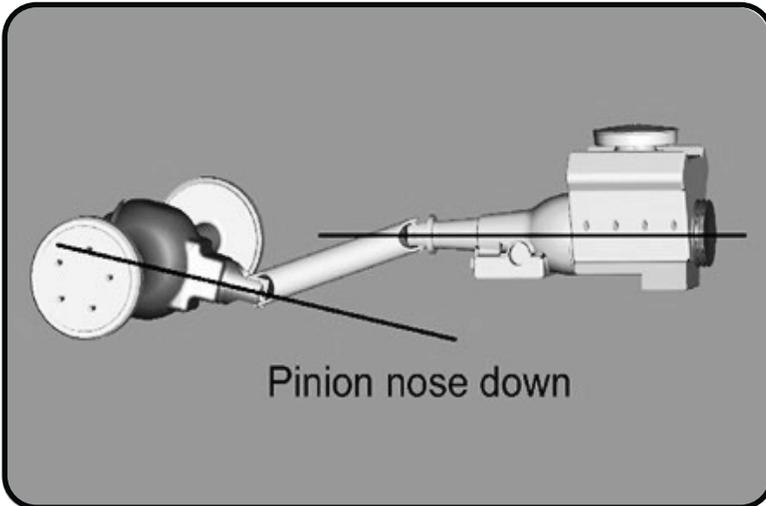
READ PAGES 41-43 ON SETTING RIDE HEIGHT, SETTING PINION ANGLES & UPPER BAR TAB JIG INSTALLATION .

How do you set the pinion angle? On a single-piece shaft you want to set it up where a line drawn through the center of the engine crankshaft or output shaft of the transmission and a line drawn through the center of the pinion are parallel to each other but not the same line.

Your transmission angle should be around 3 degrees down in the rear. If it is more or less than 3 degrees, you might want to consider changing it. Too little angle on the transmission reduces the amount of oil getting to the rear bushing. Too much transmission angle will increase the working angles of the u-joints which will increase the wear. With the transmission at 3 degrees down in the rear, you will want to set the pinion 3 degrees up in the front.

A simple way to do this is to place a digital angle finder or dial level on the front face of the lower engine pulley or harmonic balancer. This will give you a reading that is 90 degrees to the crank or output shaft unless you have real problems with your balancer. At the other end, you can place the same level or angle finder against the front face of the pinion yoke that is also at 90 degrees to the centerline. If you rotate the yoke up or down so both angles match, you have perfect alignment.

Road testing will tell you if you have it right. If you accelerate and you get or increase a vibration, then the pinion yoke is too HIGH. Rotate it downward in small increments of a degree or two until the problem goes away. If you get or increase a vibration when decelerating, then the pinion yoke is too LOW. Rotate it upward to correct it.

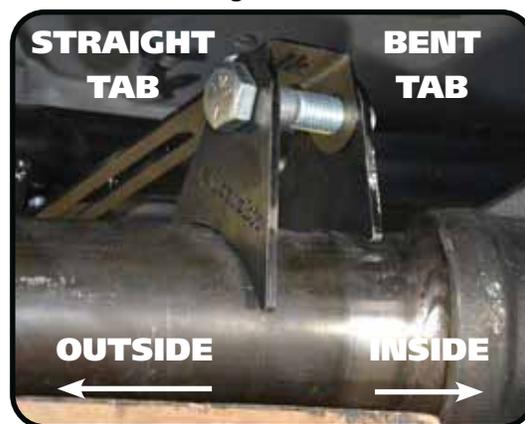
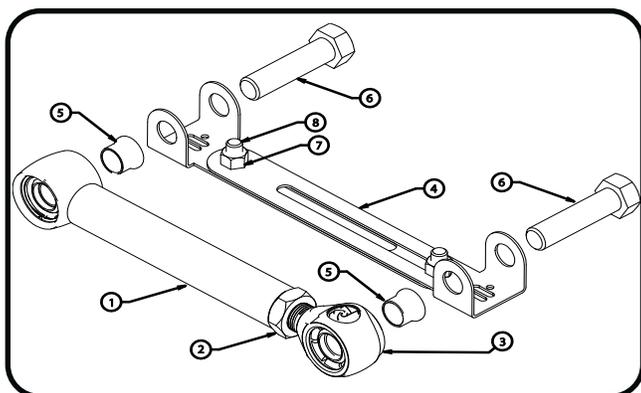




Upper Bar Tab Installation Jig

Upper Bar Installation Jig

- This jig has been supplied to aid in the installation of the upper 4 link bar. It can be temporarily used to properly align, locate and weld the tabs onto the axle. It will also ensure that the mounting bolts are parallel to the ground.
- Follow the diagram below to set the jig to the same length as the upper bar, use the 3/8" x 3/4" bolt and nuts to set the length.
- Position the axle at ride height. Center the axle left to right between the quarter panels. Set pinion angle.
- Bolt one end of the jig to the cradle using a 5/8" x 3" bolt.
- Using another 5/8" x 3" bolt, fasten the axle tabs to the other end. There is a Driver and Passenger Inner Tab. It is bent to keep the tab from hitting the center section of the rear end. It is positioned with the tab bent to the front of the car. The short tab goes to the outside of the car. The tabs must be bolted to the outside of the jig.
- Swing the bar down letting the tabs rest onto the axle. Trim the brackets as necessary to minimize the gap to be welded.
- Check pinion angle, ride height and axle center. Tack-weld the tabs in place and tack-weld the back brace in place. Refer to Images 25 & 26 for position of the back brace.
- Remove jig and install upper bar.
- Repeat this process for the other side.
- Recheck pinion angle, ride height and axle center. (Sound familiar?)
- After the tabs have been tack welded on both sides, remove the upper bars to avoid damaging the rod end. Let the axle drop down for better access to the tabs. Lay 1" welds on the inside and outside of the tabs. Skip around from one side to the other to avoid overheating the tube.



Item#	Description
1	Upper Bar
2	3/4"-16 Jam Nut
3	R-Joint End
4	Alignment Jig
5	Aluminum Spacer
6	5/8" x 2 3/4" Bolt
7	3/8"-16 Nut
8	3/8"-16 x 3/4" Bolt



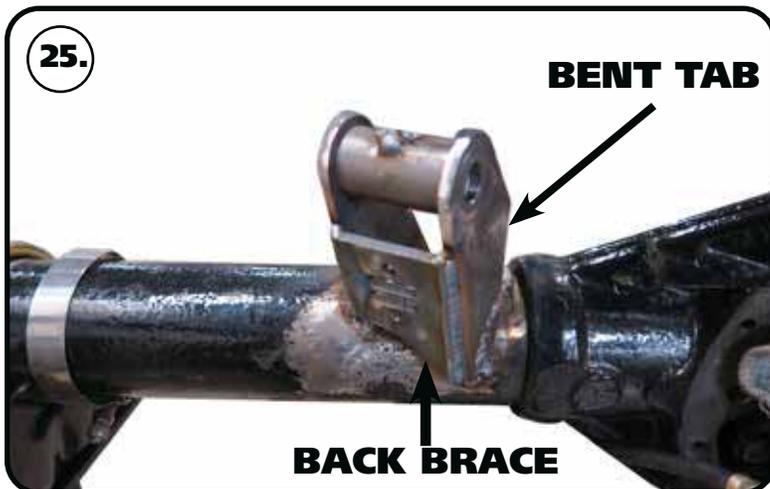


Installing Axle Tabs

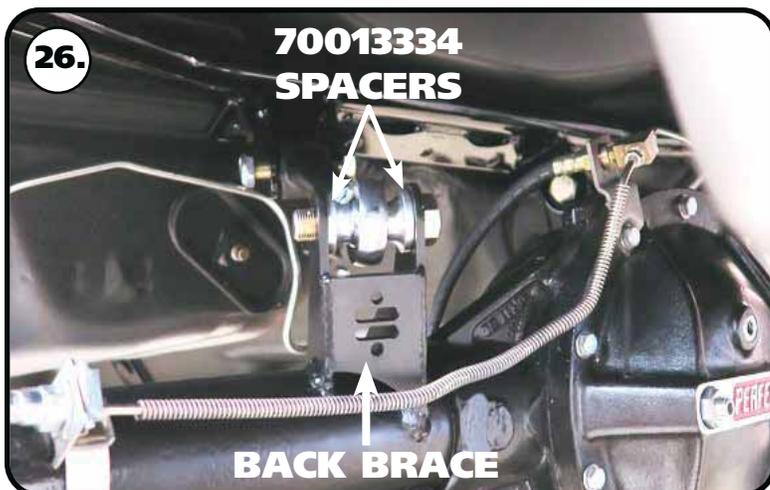


24. One helpful trick to help maintain ride height and pinion angle while adjusting is to tack weld a spacer between the axle and the outside of the frame as shown in the picture. This spacer should be 8 1/2" tall giving the Shockwave an eye-to-eye measurement of approximately 14 1/2". When measuring the axle center you can measure off of the frame rails. We also use a plum bob off the quarter panels to double check the axle center. Refer to **Page 14** on setting the pinion angle.

Note: You can tack weld the spacer in place after you get the pinion angle, and axle center set. This will ensure that nothing moves through the upper tab Installation.



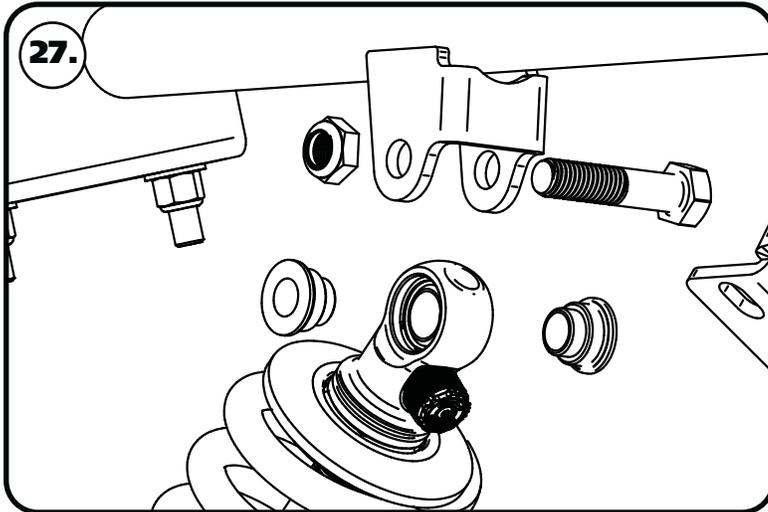
25. Check the length of the upper bar; it should be 10.150" center to center. Bolt the axle tabs to the setting jig as specified on the previous page. straight tab to the outside of the car, bent tab to the inside of the car. The bend needs to be to the front, making the front of the tab run parallel with the cast center section. If they are installed on the incorrect sides, the tab will hit the center section of the axle. Next, place the other end into the cradle. Both ends use a 5/8" x 3" and should not be fully tightened yet. For now just let axle tabs sit on the axle.



26. Check the fitment of the tabs and tack weld them to the axle. Do this for the Driver and Passenger side bars. Insert the bars into the cradle and tabs to double check fitment. Recheck axle center and pinion angle. Once satisfied with fitment weld the upper bar tabs onto the axle. Weld 1" at a time, skip around from one side to the other, and one tab to the other to avoid overheating the axle tube. When the tabs cool down, install the upper bars using (1) 5/8" x 3" bolt, (2) 5/8" flat washers, and (1) 5/8" Thin nylok nut on each end. Install a 70013334 spacer in each side of the R-joint using **Image 26** as a reference. Repeat on both sides and tighten the bolts/nuts enough to eliminate any gaps.

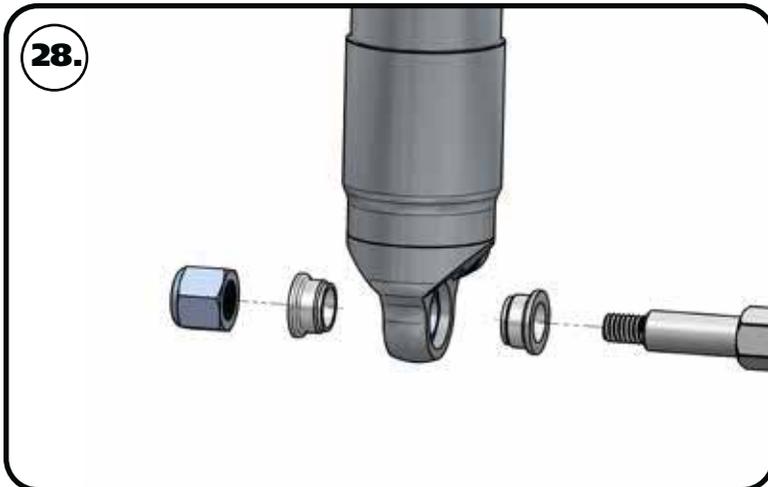


Installing Shockwaves/Coilovers & Shock Block Off



Remove the Spacer from between the Axle and Frame.

27. Install a 1/2" ID 90002043 spacer on each side of the upper Coilover/ShockWave. Slide the assembly into the upper crossmember from the bottom side. Position the adjuster knob so that the knob points toward the center of the car. Line up the hole in the spacers with the hole in the upper shock bridge and insert 1/2"-13 x 2 1/4" bolt and install 1/2"-13 Thin Nylok nut.



28. Install a 5/8" ID 90002067 spacer (**Small side towards shock body**) onto the lower Shock Stud. Slide the bottom of the Shock onto the Stud. Install a second 5/8" ID 90002067 Spacer onto the Stud (**small side towards shock**). You may need to jack the rearend up to Slide the Shock onto the Stud. Install the 7/16" Flat washer and 7/16" Nylok nut. Tighten the upper and lower shock bolts. Torque the Upper Bolt to 55 ftlbs and the Lower Nut to 40 ftlbs. The designed ride height of the CoilOver/Shockwave is 14 1/2" center to center.

Note: If installing Shockwaves and you want to locate the air fitting in a different location, the air spring assembly can be rotated on the shock by grabbing the air spring assembly by hand and spinning it on the shock.



29. Bolt the Shock Block Off Plates in place of the OEM upper shock mounts using the OEM hardware. If you are running Mini Tubs, these mounts do not exist any more.



Part # 11166510

1967-1969 GM F-Body HQ Rear CoilOvers

Recommended Tools



1967-1969 GM "F"Body HQ Series Rear CoilOvers

Installation Instructions

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Page 46..... Included Components

Page 47..... Assembly and Adjusting

Page 48..... Final Adjustment and Setting Height

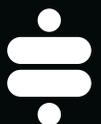
CoilOver Dimensions:

Center of bearing to Center of bearing:

Compressed: 11.23"

Ride Height: 14.50"

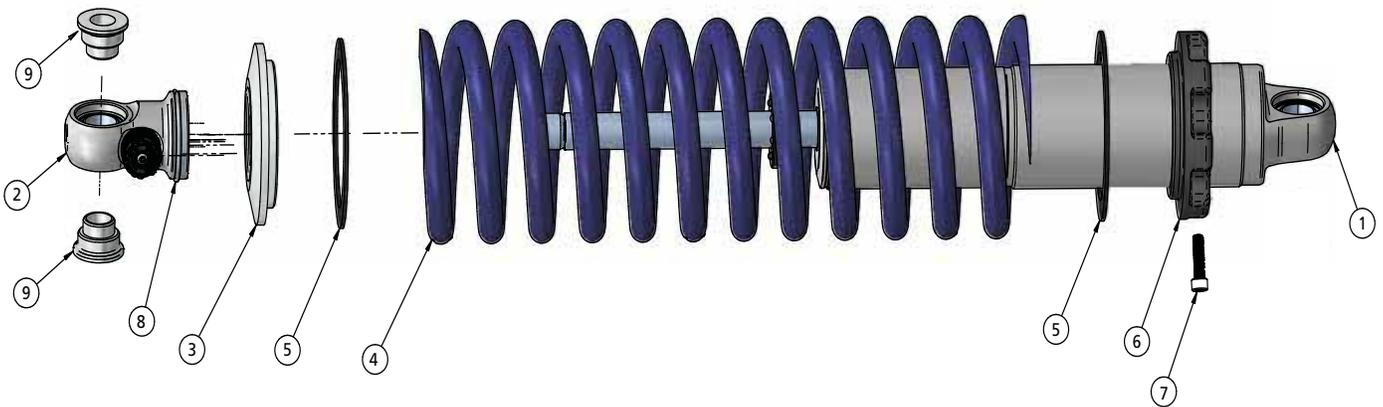
Extended: 16.43"





Major ComponentsIn the box

Item #	Part #	Description	QTY
1	982-10-805	5.2" Stroke HQ Series Shock	2
2	815-05-022-KIT	Shock Eyelet	2
3	803-00-109(kit)	Upper CoilSpring Retaining Plate (803-00-109 kit)	
4	59120200	Coilspring 12" 200lb	2
5	70010828	Delrin Spring Washer	4
6	803-00-109(kit)	Lower Spring Adjuster Nut (803-00-109 kit)	2
7	803-00-109(kit)	Adjuster Nut Locking Screw (803-00-109 kit)	2
8	803-00-109(kit)	Retaining Ring (803-00-109 kit)	2
9	90002043	1/2" ID Upper Shock Bearing Spacer Half	4
	90001994	5/8" ID Bearing (installed in shock and eyelet)	4
	90001995	Bearing Snap Ring (installed in shock and eyelet)	8



CoilOver Assembly...



1

First, using the supplied lower adjuster nut (803-00-199) thread the nut onto the shock from the bottom side as seen in figure 1. Remove the plastic pellet that is in the split of the adjuster nut.



4

Once the knob is removed slide a Delrin washer over the eyelet. Next, slide the upper spring mount (803-00-199) over eyelet as seen in figure 4.



2

Next, install a delrin washer then coil spring over the top of the shock as seen in figure 2.



5

Install upper spring mount retainer clip (803-00-199) into the groove on the upper eyelet as seen in figure 5. Then, reinstall adjuster to complete assembly.



3

Before the upper spring mount can be installed screw the adjuster knob on the upper eye mount to the firmest setting (clockwise) as seen in figure 3. Then remove the Knob by holding it while removing the center screw.

Install the locking screw in the adjuster nut before setting spring preload, but DO NOT tighten until the spring preload has been set.

NOTE: Remember to adjust the shock valving before driving, the shock is currently set to full stiff.

Shock Adjustment 101- Single Adjustable

Rebound Adjustment:

How to adjust your new shocks.

The rebound adjustment knob is located on the top of the shock absorber protruding from the eyelet. You must first begin at the ZERO setting, then set the shock to a medium setting of 12.



-Begin with the shocks adjusted to the ZERO rebound position (full stiff). Do this by rotating the rebound adjuster knob clockwise until it stops.



-Now turn the rebound adjuster knob counter clock wise 12 clicks. This sets the shock at 12. (settings 21-24 are typically too soft for street use).

Take the vehicle for a test drive.



-if you are satisfied with the ride quality, do not do anything, you are set!

-if the ride quality is too soft increase the damping effect by rotating the rebound knob clock wise 3 clicks.

Take the vehicle for another test drive.



-if the vehicle is too soft increase the damping effect by rotating the rebound knob clock wise 3 additional clicks.



-If the vehicle is too stiff rotate the rebound adjustment knob counter clock wise 2 clicks and you are set!

Take the vehicle for another test drive and repeat the above steps until the ride quality is satisfactory.

Note:

One end of the vehicle will likely reach the desired setting before the other end. If this happens stop adjusting the satisfied end and keep adjusting the unsatisfied end until the overall ride quality is satisfactory.



Final Tightening and Adjusting

Ride Height

We have designed most cars to have a ride height of about 2" lower than factory. To achieve the best ride quality & handling, the shock absorber needs to be at 40-60% overall travel when the car is at ride height. This will ensure that the shock will not bottom out or top out over even the largest bumps. Measuring the shock can be difficult, especially on some front suspensions. Measuring overall wheel travel is just as effective and can be much easier. Most cars will have 4-6" of overall wheel travel. One easy way to determine where you are at in wheel travel is to take a measurement from the fender lip (center of the wheel) to the ground. Then lift the car by the frame until the wheel is just touching the ground, re-measure. This will indicate how far you are from full extension of the shock. A minimum of 1.5" of extension travel (at the wheel) is needed to ensure that the shock does not top out. If you are more than 3" from full extension of the shock then you are in danger of bottoming out the shock absorber.

Adjusting Spring Height

When assembling the CoilOver, screw the spring retainer tight up to the spring (0 preload). After entire weight of car is on the wheels, jounce the suspension and roll the car forward and backward to alleviate suspension bind.

- If the car is too high w/ 0 preload then a smaller rate spring is required. Although threading the spring retainer down would lower the car, this could allow the spring to fall out of its seat when lifting the car by the frame.
- If the car is too low w/ 0 preload, then preload can then be added by threading the spring retainer up to achieve ride height. On 2.6" - 4" stroke shocks, up to 1.5" of preload is acceptable. On 5-7" stroke shocks, up to 2.5" of preload is acceptable. If more preload is needed to achieve ride height a stiffer spring rate is required. Too much preload may lead to coil bind, causing ride quality to suffer.