



Part # 11530203 - 1963-1979 C2/C3 Corvette Level 2 CoilOver System

Recommended Tools

Front Components:

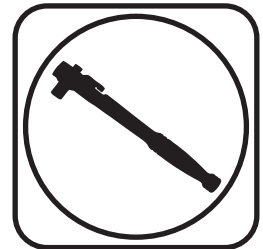
- 11539598 Front TruTurn Package Instructions
- 11533510 Front HQ Series CoilOver Instructions
- 11539101 Front Sway Bar

Rear Components:

- 11527199 Rear StrongArm System
- 11536510 Rear HQ Series Coilover Instructions

Miscellaneous Components:

- 85000000 Spanner Wrench



1963-1979 C2/C3 Corvette Coilover System Installation Instructions

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- Pages 20-24 Front CoilOvers
- Pages 25-30 Front Sway Bar
- Pages 31-38..... Rear StrongArm Kit
- Pages 39-44..... Rear CoilOvers

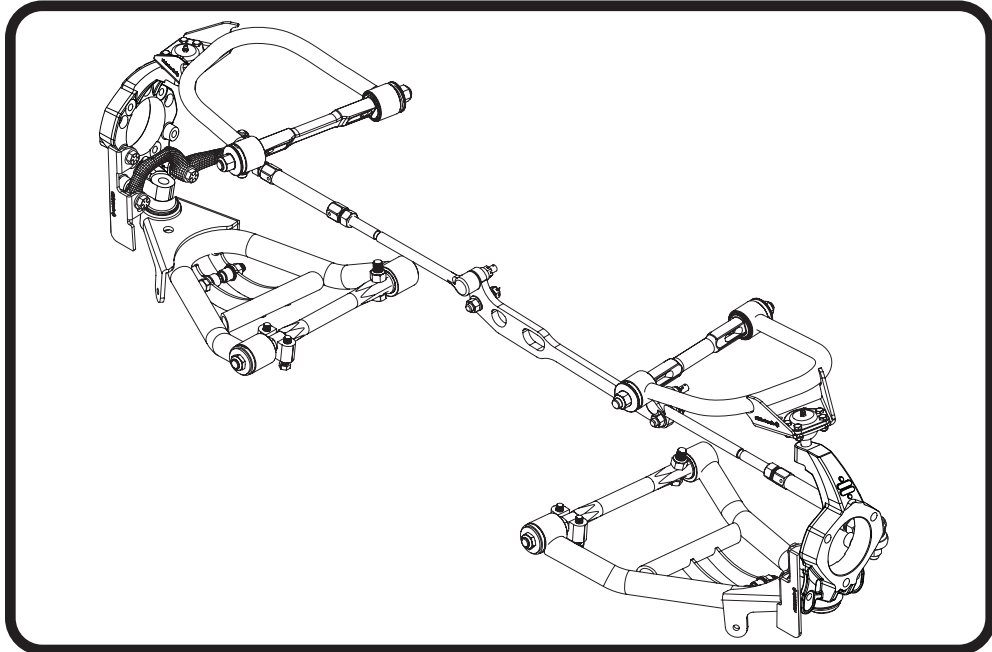
The OEM Front Brakes will not work with this kit.
(See Page 8 for details)



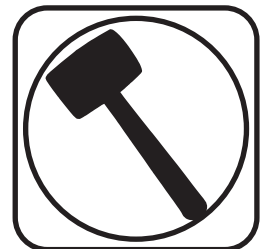
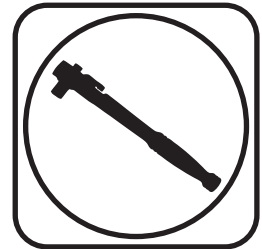


Part # 11539598

1963-1967/1968-1981 C2/C3 Corvette Front TruTurn System



Recommended Tools



C2/C3 Corvette Front TruTurn System

Installation Instructions

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The OEM Front Brakes will not work with this kit.
(See Page 7 for details)



Major Components AssembledIn the box



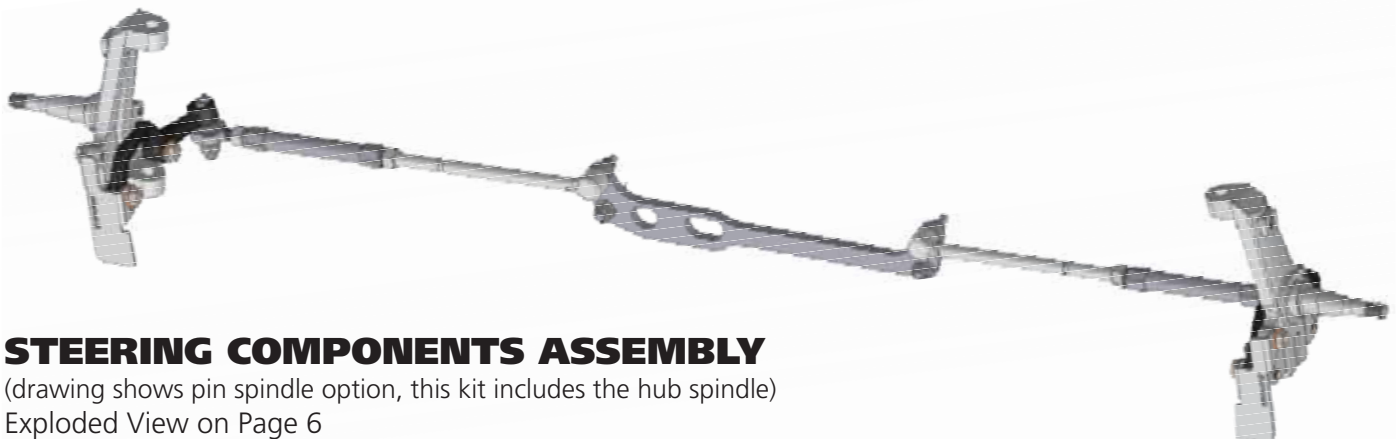
DRIVER UPPER CONTROL ARM ASSEMBLY

Exploded View on Page 4



DRIVER LOWER CONTROL ARM ASSEMBLY

Exploded View on Page 5



STEERING COMPONENTS ASSEMBLY

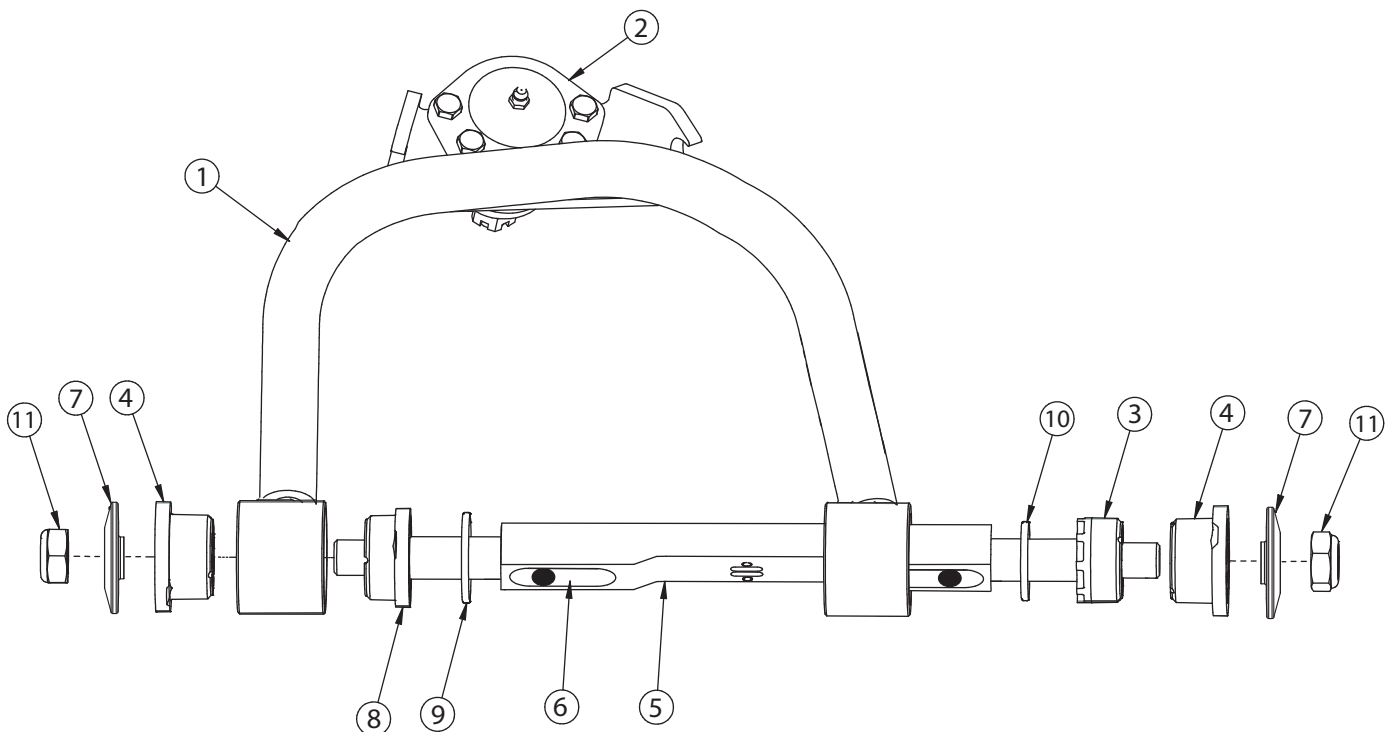
(drawing shows pin spindle option, this kit includes the hub spindle)
Exploded View on Page 6



Upper Control Arm ComponentsIn the box

Item #	Part Number	Description	QTY
1	90002161	Driver Upper Control Arm (Shown)	1
1	90002162	Passenger Upper Control Arm	1
2	90000908 Kit	Upper Ball joint Assembly - Proforged # 101-10015	2
3	70010826	Inner Delrin Bushing - No Ledge	2
4	70010759	Outer Delrin Bushing	4
5	90003375	Caster Adjustable Upper Control Arm Shaft	2
6	70011955	Caster Slug	4
7	90002737	T-Washer	4
8	70010827	Inner Delrin Bushing - with Ledge	2
9	99753007	3/4" x 1 3/4" Flat Washer	2
10	99753005	3/4" SAE Flat Washer	2
11	99622005	5/8 - 18 Thin Locknut	4

Driver Side Shown



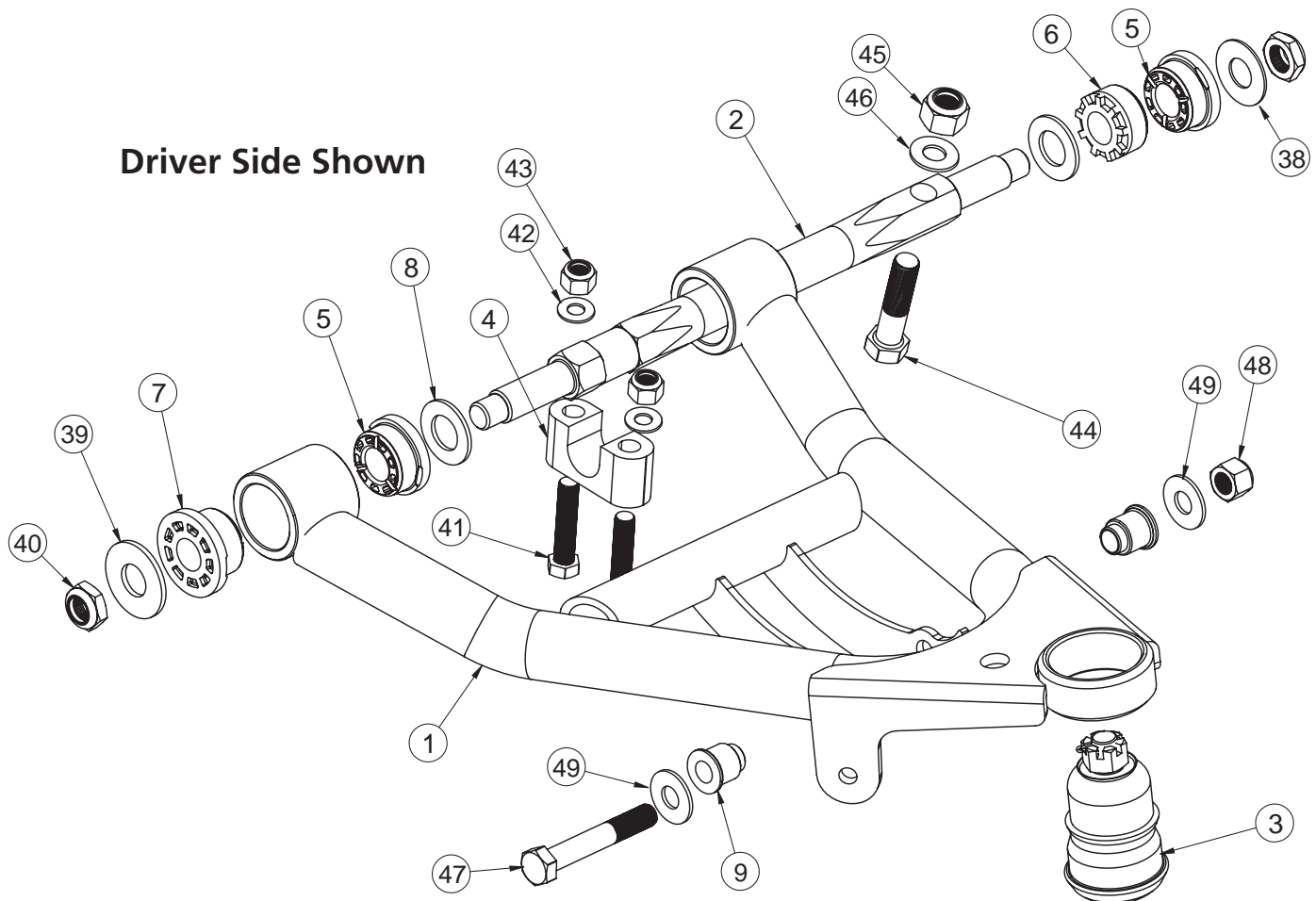
HARDWARE LISTED ON PAGE 8



Lower Control Arm ComponentsIn the box

Item #	Part Number	Description	QTY
10	90002159	Driver Lower Control Arm (Shown)	1
10	90002160	Passenger Lower Control Arm	1
11	90002179	Lower Control Arm Cross Shaft	2
12	90000898	Lower Ball joint Assembly - Proforged # 101-10013	2
13	90000677	Lower Cross Shaft Clamp	2
14	70010827	Delrin Bushing - with 1 3/4" Diameter Ledge	4
15	70010826	Delrin Bushing - no Ledge	2
16	70010759	Delrin Bushing - with 2" Diameter Ledge	2
17	99753005	Flat Washer	4
18	90002062	CoilOver Spacers	4

Driver Side Shown

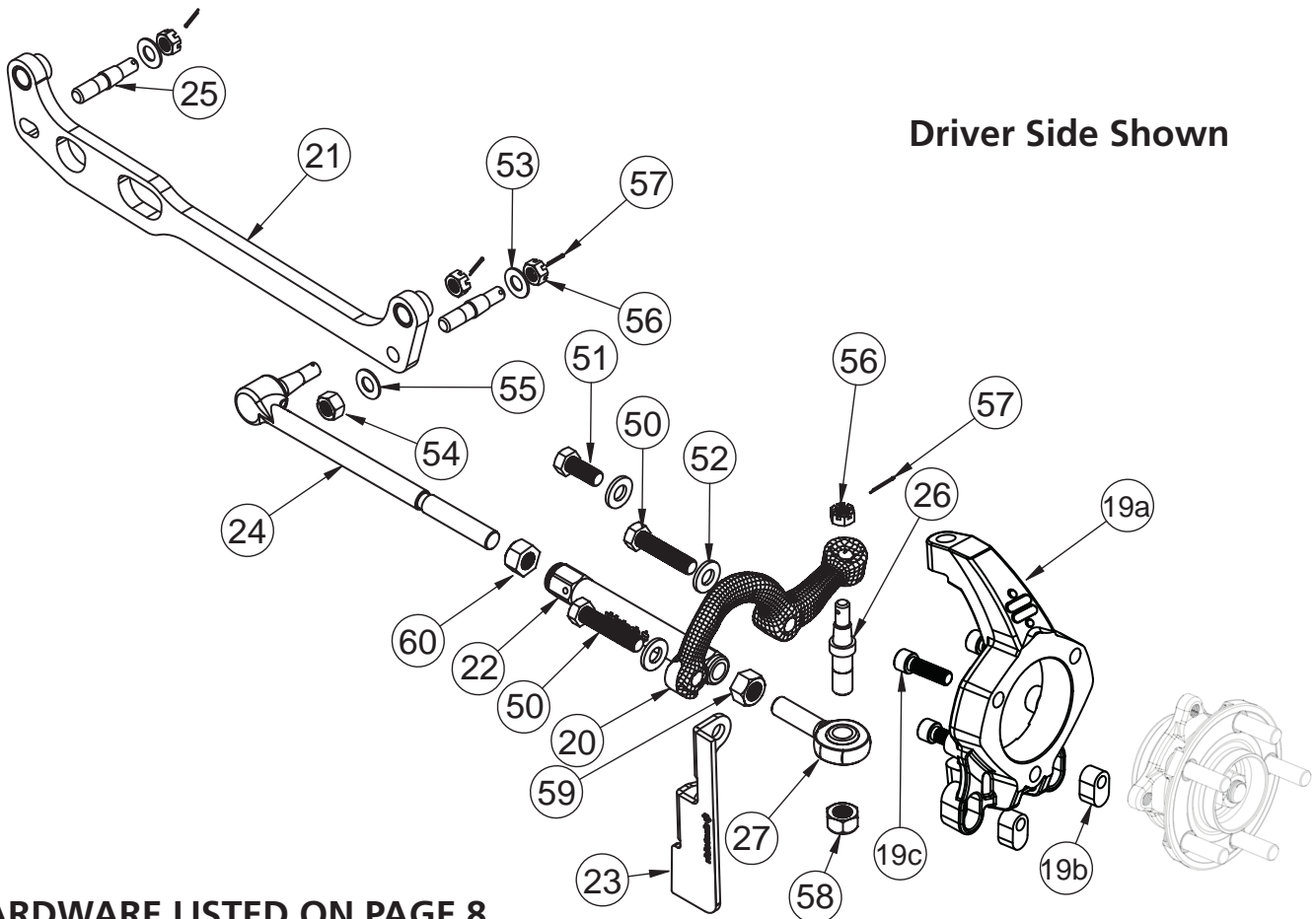


HARDWARE LISTED ON PAGE 8



TruTurn Steering ComponentsIn the box

Item #	Part Number	Description	QTY
19	11009312	Ridetech Hub Spindle Kit	1pr.
19a	70015750	Hub Spindle	2
19b	90003535	Steering Arm Threaded Insert	4
19c	99121020	M12-1.75 x 40mm SHCS	6
20	90002347	Driver Steering Arm	1
20	90002348	Passenger Steering Arm (not shown)	1
21	90002170	Draglink Adapter	1
22	90002652	Tie-Rod Adjuster	2
23	90003849	Driver Steering Stop	1
23	90003850	Passenger Steering Stop (not shown)	1
24	90003053	Inner Tie-Rod End	2
25	90009933	Draglink Adapter Stud	2
26	90009931	Outer Tie-Rod Stud	2
27	90001582	Outer Tie-Rod Heim End	2



HARDWARE LISTED ON PAGE 8



Caliper Brackets ComponentsIn the box

Item #	Part #	Description	QTY
28	90003548	Caliper Bracket - Driver	1
28	90003547	Caliper Bracket - Passenger (Not Shown)	1
29	90003549	Caliper Bracket Spacer	4

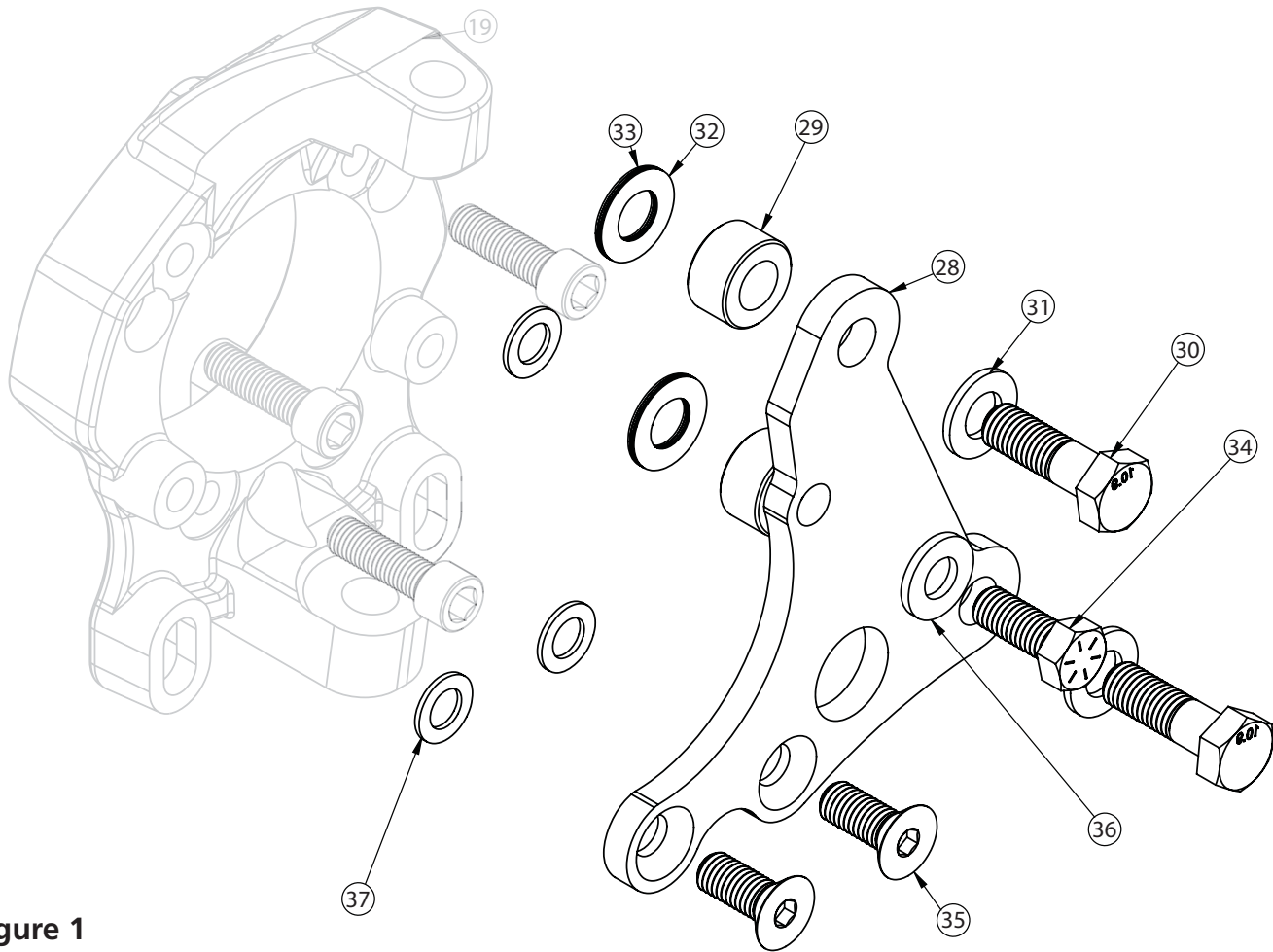


Figure 1

Hardware ListIn the box (Kit # 99010230)

Item #	Part Number	Description	QTY	Item #	Part Number	Description	QTY
BRACKET TO CALIPER				BRACKET TO SPINDLE			
30	99141007	M14-2.0 X 45mm Hex Bolt	4	34	99501062	1/2"-13 x 1 1/4" Hex Bolt	2
31	99143001	M14 Flat Washer	4	35	99501075	1/2"-13 x 1 1/4" FHSCS	4
SHIM PACK				36	99503014	1/2" SAE Flat Washer	2
32	99623005	Shim .016" thick, 5/8" ID	8	37	99503017	Shim .063" thick, 1/2" ID	12
33	99623006	Shim .032" thick, 5/8" ID	8				



Hardware Shown in DiagramsIn the box

ITEM #	Part Number	Description	QTY	ITEM #	Part Number	Description	QTY
UPPER CONTROL ARM TO FRAME				STEERING ARM TO SPINDLE			
	99432010	7/16"-14 Nylok Nut	4	50	99501026	1/2"-13 X 2 1/4" Hex Bolt	4
	99433004	7/16" USS Flat Washer	4	51	99501052	1/2"-13 x 1" Hex Bolt	2
LOWER CROSS SHAFT TO CONTROL ARM				52	99503014	1/2" SAE Flat Washer GR8	2
38	72000257	1.5" OD Flat Washer	2		90002263	Red Loctite	1
39	99163001	2.0" OD Flat Washer	2	DRAGLINK ADAPTER			
40	99622005	5/8"-18 Top Lock Nut	4	53	99433005	7/16" SAE Flat Washer	4
LOWER CROSS SHAFT TO FRAME				54	99502010	1/2"-20 Lock Nut	2
41	99431015	7/16"-20 x 2 1/4" Hex Bolt	4	55	99503001	1/2" SAE Flat Washer GR5	4
42	99433005	7/16" Flat Washer	8	56	99432005	7/16"-20 Castle Nut	2
43	99432007	7/16"-20" Nylok Nut	4	57	99952002	3/32" Cotter Pin	2
44	99561001	9/16"-18 x 2 1/2" Hex Bolt	2	STEERING LINKAGE			
45	99562001	9/16"-18 Nylok Nut	2	56	99432005	7/16"-20 Castle Nut	2
46	99566003	9/16" SAE Flat Washer	2	57	99952002	3/32" Cotter Pin	4
SHOCK TO LOWER CONTROL ARM				58	99622003	5/8"-18 Lock Nut	2
47	99501005	1/2"-13 X 3 1/2" Hex Bolt	2	59	99800003	5/8"-18 LH Jam Nut	2
48	99502009	1/2"-13 Nylok Nut	2	60	99980002	5/8"-18 RH Jam Nut	2
49	99503014	1/2" SAE Flat Washer	4				

Getting Started.....

Congratulations on your purchase of the Ridetech TruTurn System. This system has been designed to give your Corvette excellent handling along with a lifetime of enjoyment. Some key features of the TruTurn System: 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, driveability and minimal bump steer. The Delrin bushings are made from a material that is self lubricating so no grease zerks are needed. Upper caster adjustable cross shaft is designed to allow you to run maximum caster angles with minimal shims.

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.**

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.



Getting Started continued.....

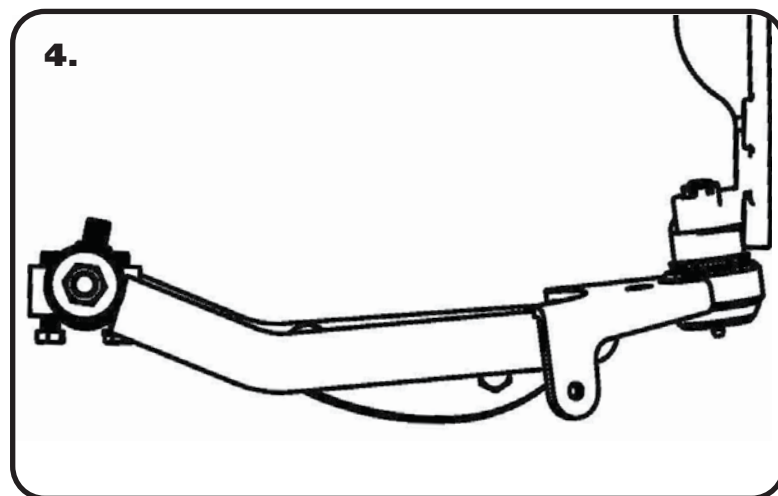
These spindles are designed around 1997-2013 Corvette (C5/C6) or 2014-2019 Corvette (C7). C5 & C6 will have wheel speed sensors built into the bearing. C7 hubs are preferred, they are stronger and more cost effective as they don't have a wheel speed sensor (Moog 513378).

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.

Lower Control Arm Installation

1. Remove the entire front suspension from the car leaving the OEM center draglink. Refer to a Factory Service Manual for the proper method. The control arms, spindles, and tie rods will all be replaced with the TruTurn package.

2. Drill the factory upper shock mounting hole to 3/4". This can be done easily with a Unibit.



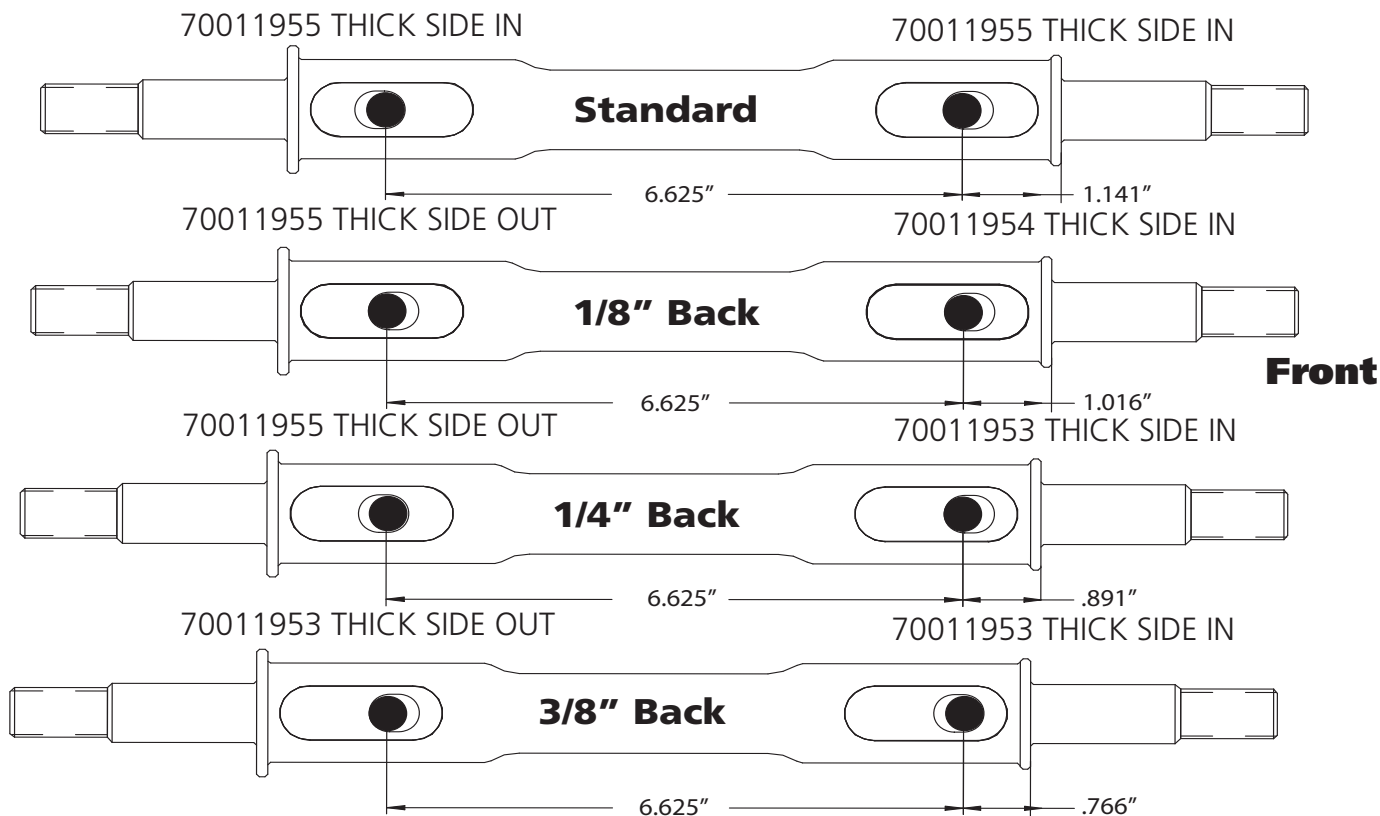
3. Your new lower control arms utilize a clamp for the front 2 mounting holes. The clamp will slide into the machined groove in the cross shaft. Attach the Lower Control Arms to the frame using (1) 9/16" x 2 1/2" Hex Bolt, (1) 9/16" Nylok Nut, (2) 7/16"x 2 1/4" Hex Bolt, and (2) 7/16" Flat washer. Tighten the cross shaft mounting fasteners. Install the cross shaft washers and 5/8" Thin Lock Nuts on the cross shaft. The front cross shaft thread uses (1) 2" OD Flat Washer and (1) 5/8" Thin Lock Nut. The rear cross shaft thread uses (1) 1 1/2" OD washer and (1) 5/8" Thin Lock Nut. Tighten the cross shaft nuts enough to create drag on the Delrin bushings. The arm should still move up and down by hand.

4. The control arms are marked "D" for Driver and "P" for Passenger. The ball joint pin points up and the sway bar mount is on the front side of the arm.

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



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. The diagram above will help you determine what caster slug you may need if trying to achieve more caster. It will also show you how to position the caster slug.

- STANDARD INCLUDED IN KIT = 70011955
- 1/8" = (2) 70011954
- 1/4" = (2) 70011953
- 3/8" = (4) 70011953

Caster Explained:

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

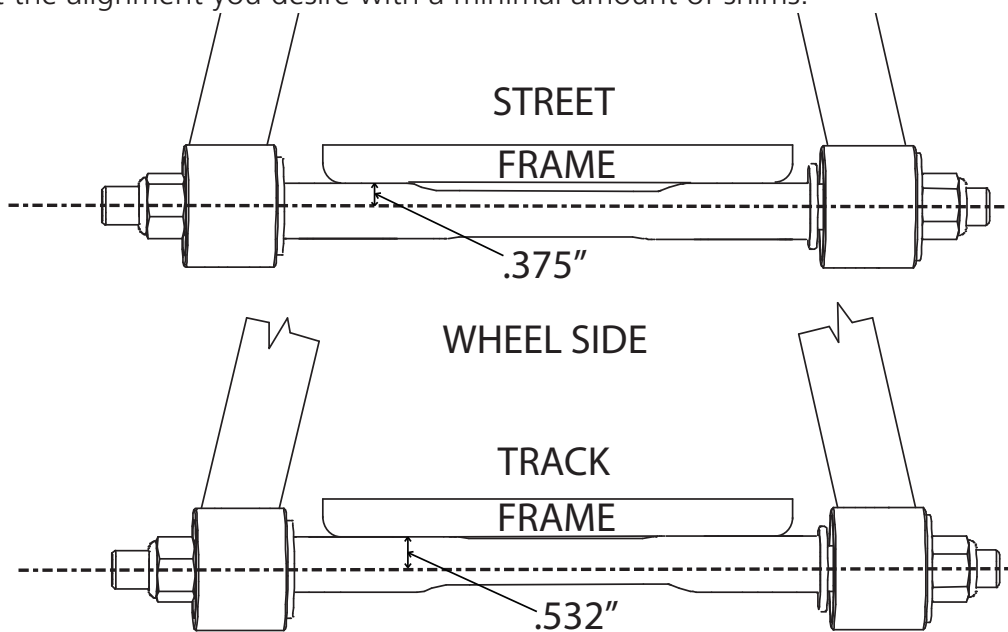
Caster is measured in degrees by using a caster gauge. If the imaginary line described above tilts towards the back of the vehicle at the top, then you have positive caster. If the imaginary line tilts forward then you have negative caster.

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



Camber Adjustment

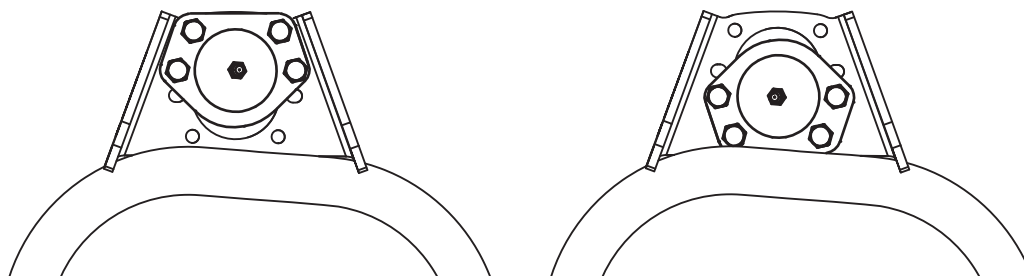
The upper control arms in this kit has 2 separate adjustments to help you get the camber setting you desire for your application. The upper cross shaft is offset and can be mounted in 2 different positions. Also, the upper ball joint can be bolted to the control arm in 2 different positions. The combination of the 2 will allow you to get the alignment you desire with a minimal amount of shims.



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.



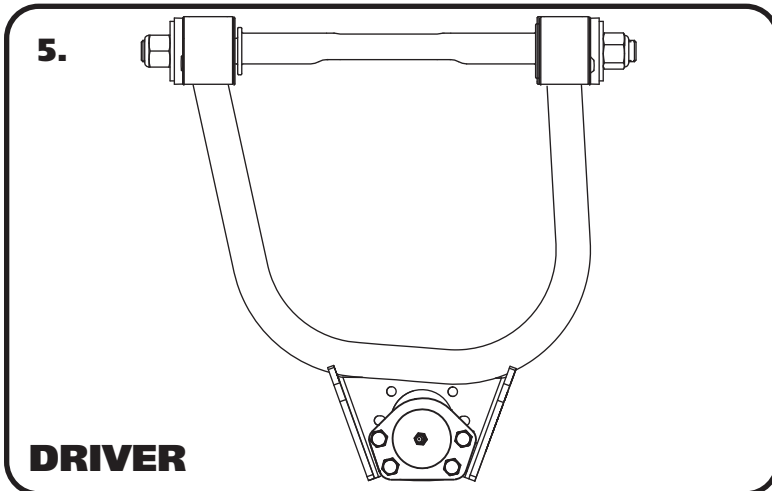
The ball joint can be bolted to the upper control arm in 2 different positions.

If you are after a **Street Alignment** bolt the ball joint to the control arm in the outer position.

If you are planning to run a lot of negative camber for **Track or Autocross**, bolt the ball joint to the control arm in the inner position.



Installing Upper Control Arm & Spindle

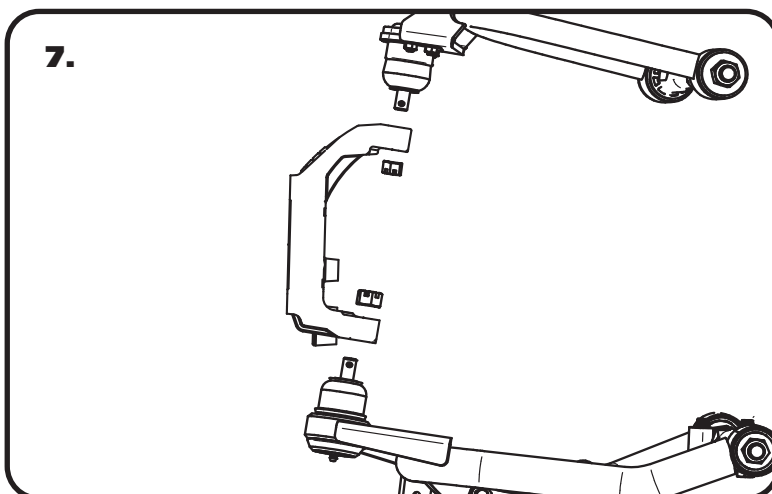


5. Install the ball joints into the upper control arm with the hardware supplied with the ball joint. Use the information on the previous page to help you determine which position will be the best for the alignment you desire. The upper ball joint goes in from the top side of the control arm. The gussets on the ball joint plate point up. Torque the hardware to 10 ftlbs. The Upper Control Arm is attached to the factory mount using factory hardware. The driver side arm is shown in Figure "5". The arrow on the cross shaft points to the front of the car. Pages 8 & 9 have information about caster and the caster slugs.



6. Bolt the upper control arm to the car using the previous pages to assist you with cross shaft orientation and caster slug location. Install (2) T-Washers and (2) 5/8" Thin Lock Nuts on each Cross shaft. Install the T-Washers with the SMALL RING TOWARD THE BUSHING. Tighten the cross shaft nuts enough to create drag on the delrin bushings. The arm should still move up and down by hand.

Note: The kit comes standard with centered Caster Slugs.



7. Attach the spindle to the control arms. The spindle is the same for driver and passenger.

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.



Hub Bearing 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.

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.



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



Caliper Bracket Installation



10. 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.



11. 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.



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



Caliper Bracket Installation



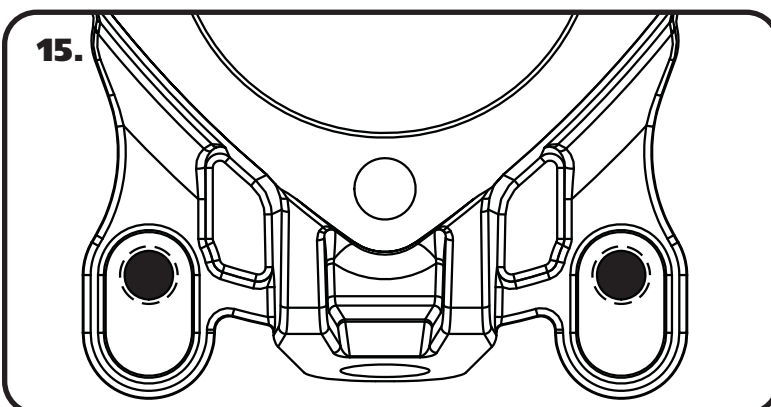
13. The kit includes spacers that will be installed between the caliper bracket and caliper mount. Install a M14 flat washer on each of (2) M14-2.0 x 45mm hex bolts. Insert the bolts through the caliper bracket, installing a spacer on each bolt. Line the caliper mount up with the hardware and thread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



14. 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



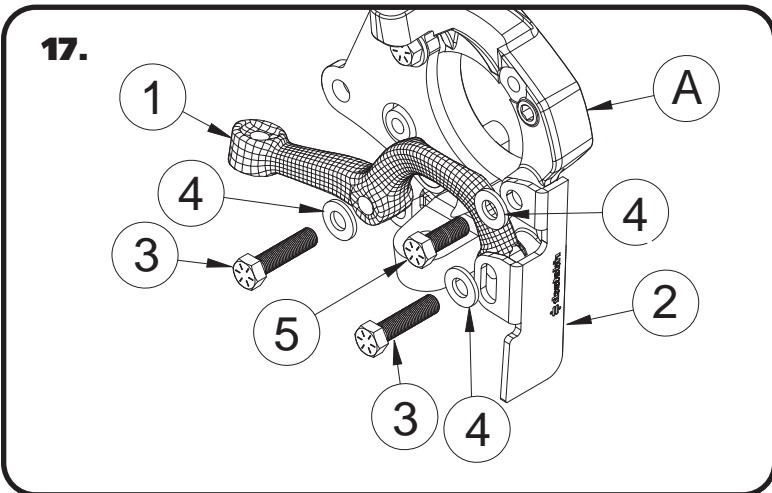
15. The threaded steering arm inserts can be mounted in 2 different positions. **Image 15** illustrates the correct position for the installation on your vehicle. This position is what we determined to be the best with Ridetech suspension.



Steering Arm Installation



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



17. Attach Steering Arm(1) and Steering Stop(2) to Spindle(A). The Steering Arm and Stop are attached to the spindle using [2] 1/2"-13 x 2 1/4"(3) & [1] 1/2"-13 x 1"(5) hex bolts and [3] 1/2" SAE Flat Washers(4). The Steering Arm is positioned with the Tie Rod End pointing to the rear of the car and toward the engine. The Steering Stop is attached to the front mounting bolt of the steering arm and also attaches to the inner surface of the spindle in the top hole. Use the 1/2"-13 x 2 1/4" bolts with a flat washer in the steering arm. The 1/2"-13 x 1" bolt with a washer, attaches the top of the steering stop to the inner surface of the spindle. Use Red Loctite (Supplied in the Kit) on the bolts and torque to 80 ftlbs. Verify that the bolts are sticking through the slugs.

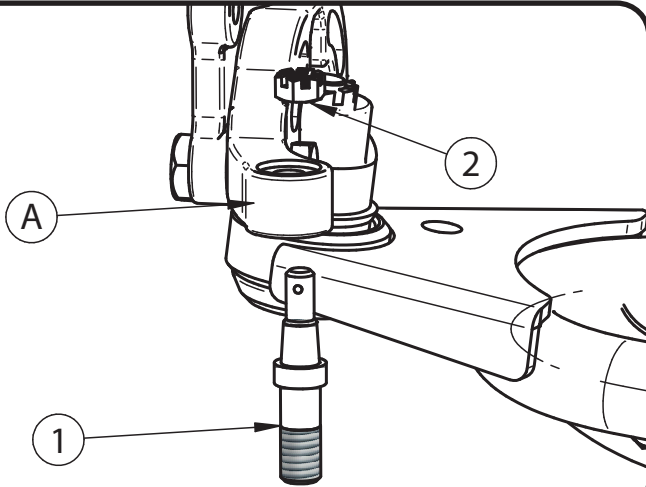


18. Install the brake pads and caliper.



Installing TruTurn System

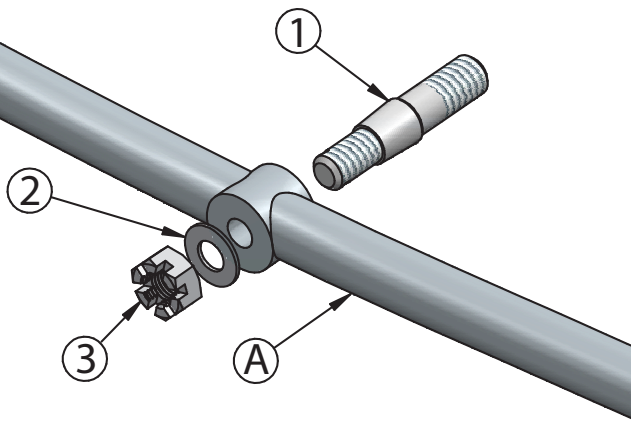
19.



19. Install Outer Tie Rod Stud into Steering Arm using a 7/16" Castle Nut and 3/32" Cotter Pin. Insert the Tapered end of the Tie Rod Stud into the Taper of the arm. Thread the 7/16" Castle nut on the stud. Torque to 35 ftlbs and then tighten to align Cotter Pin hole with slot on Castle Nut. Install Cotter Pin.

Note: The Outer Tie Rod Stud is the LARGER of the tapered studs in the kit.

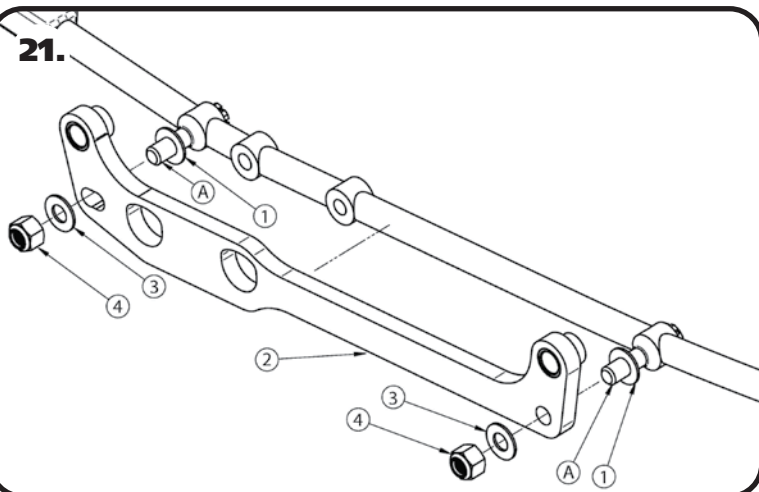
20.



20. Install a Tapered Draglink Stud (1) into the OEM Inner Tie-Rod Hole on the OEM Draglink (A). Install a 7/16" Flat washer(2) onto the threads. Thread a 7/16" Castle Nut (3) onto the threads to hold it in place. **Do Not Tighten Nut Yet.** It will be tightened after the Draglink Adapter is installed on the studs. Install driver and passenger studs.

Note: Due to variances in thickness of the OEM draglink, it may be necessary to install another 7/16" Flat Washer under the Castle Nut to engage to Cotter Pin into the Castle Nut properly.

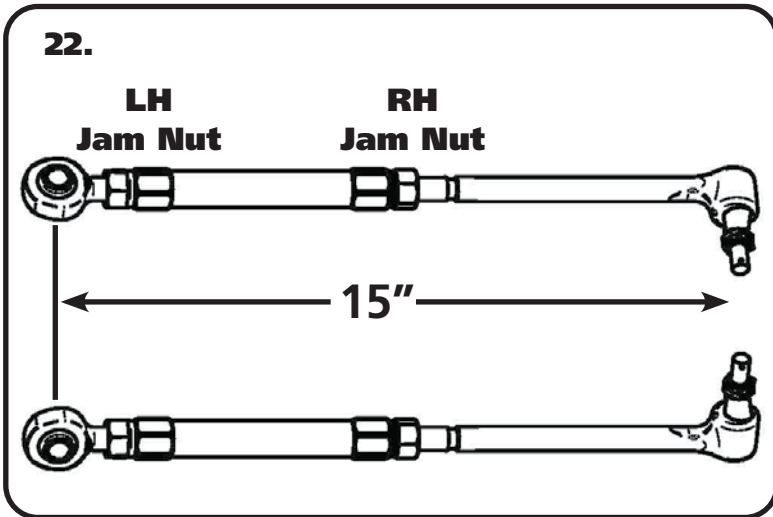
21.



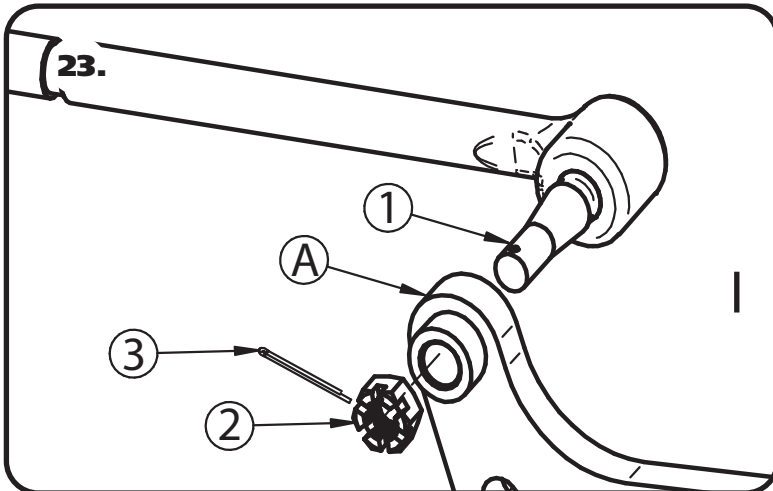
21. Slide a 1/2" Washer(1) onto the Draglink Studs(A). Next, slide the Draglink Adapter(2) onto the Studs(A). The Adapter is positioned with the 2 clearance holes to the Passenger side and the Inner Tie-Rod Mounting holes upward. Tighten the "2" 7/16" Castle Nuts to 35 ftlbs and then tighten to align the cotter pin hole. Install Cotter pin. Install the 1/2" Flat washer(3) and 1/2" Mechanical Locking Nuts(4) onto the Studs and Torque to 50 ftlbs.



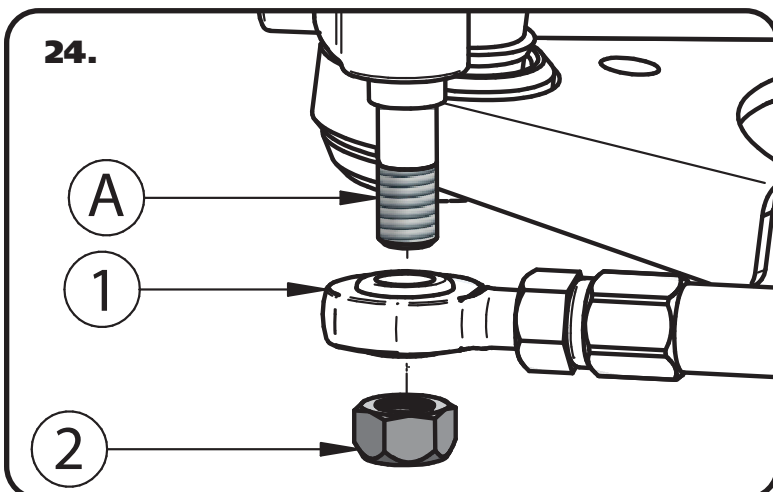
Installing TruTurn System



22. Assemble the Tie-Rod to a center to center length of 15" to start with, having equal amount of thread engagement on both ends. These aluminum adjusters have a left hand thread on one end and a right hand thread on the other. THERE IS A GROOVE CUT INTO THE END THAT HAS THE LEFT HAND THREADS. THE HEIM END IS LEFT HAND THREAD. Use anti-seize on the threads of the Tie Rod and Heim end before threading them into the adjuster. **FOR YOUR SAFETY, THE TIE ROD & HEIM NEED A MINIMUM 15/16" OF THREAD ENGAGEMENT INTO THE TIE ROD ADJUSTER.**



23. Insert the Inner Tie-Rod End(1) into the Draglink Adapter(A). Install the Castle Nut(2) supplied with the Tie-Rod End onto the threads. Torque Castle Nut to 35 ftlbs and tighten to align Cotter Pin hole. Install Cotter Pin(3).



24. Slide the Heim End(1) onto the Tie-Rod Stud(A). Next, thread the 5/8"-18 Mechanical Locking Nut(2) onto the Tie-Rod Stud. Torque nut to 100 ftlbs.



Final Steps

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

26. **FINISH PLUMBING THE BRAKE SYSTEM AND BLEED THE SYSTEM.**

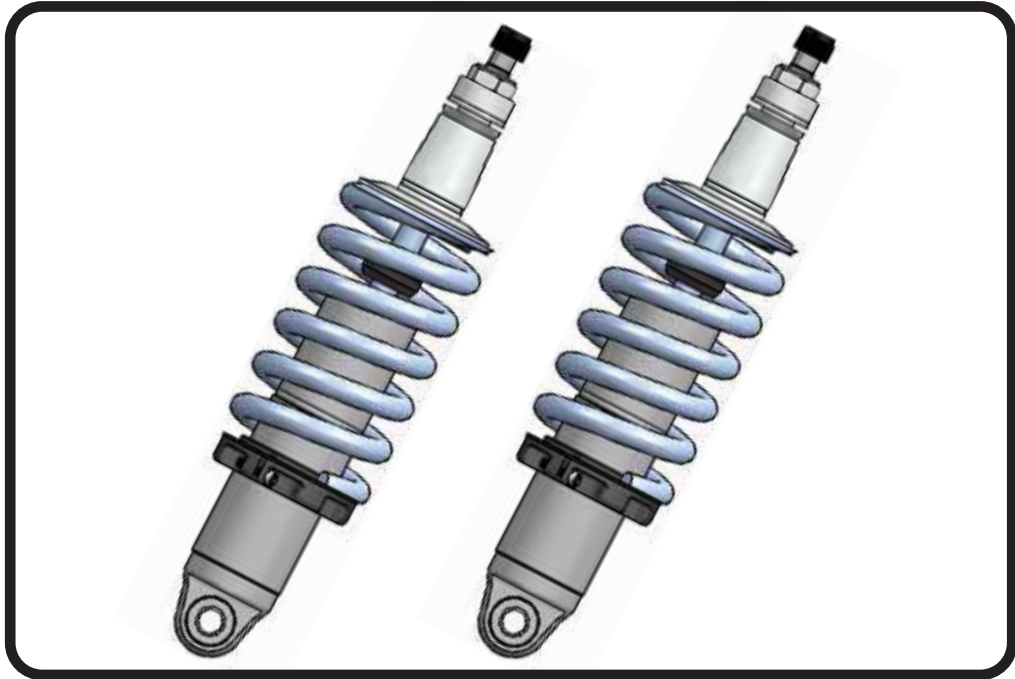
When assembling the control arms, tighten the cross shaft nuts enough to create drag on the delrin bushings. The arm should still move through its travel by hand.

Suggested Alignment Specs:

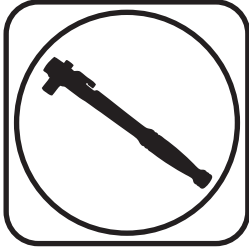
Camber: Street: -.5 degrees
Caster: Street: +3.0 to + 5.0 degrees
Toe: Street: 1/16" to 1/8" toe in



Part # 11533510 - 1963-1982 C2/C3 HQ Front CoilOvers



Recommended Tools



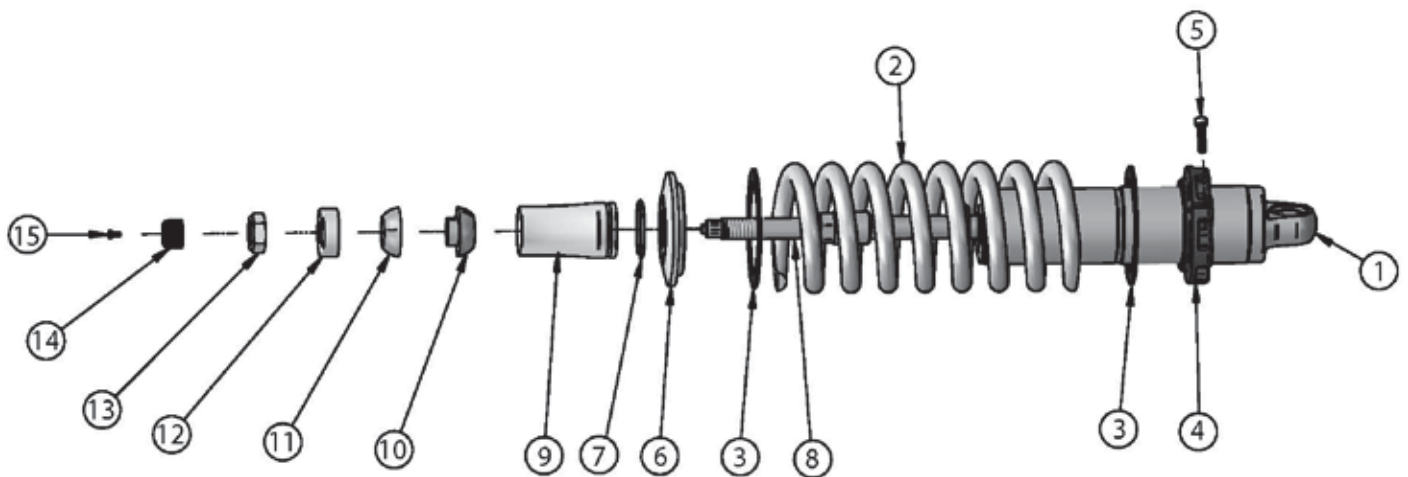
1963-1982 C2/C3 HQ Series Front CoilOvers Installation Instructions

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Major ComponentsIn the box

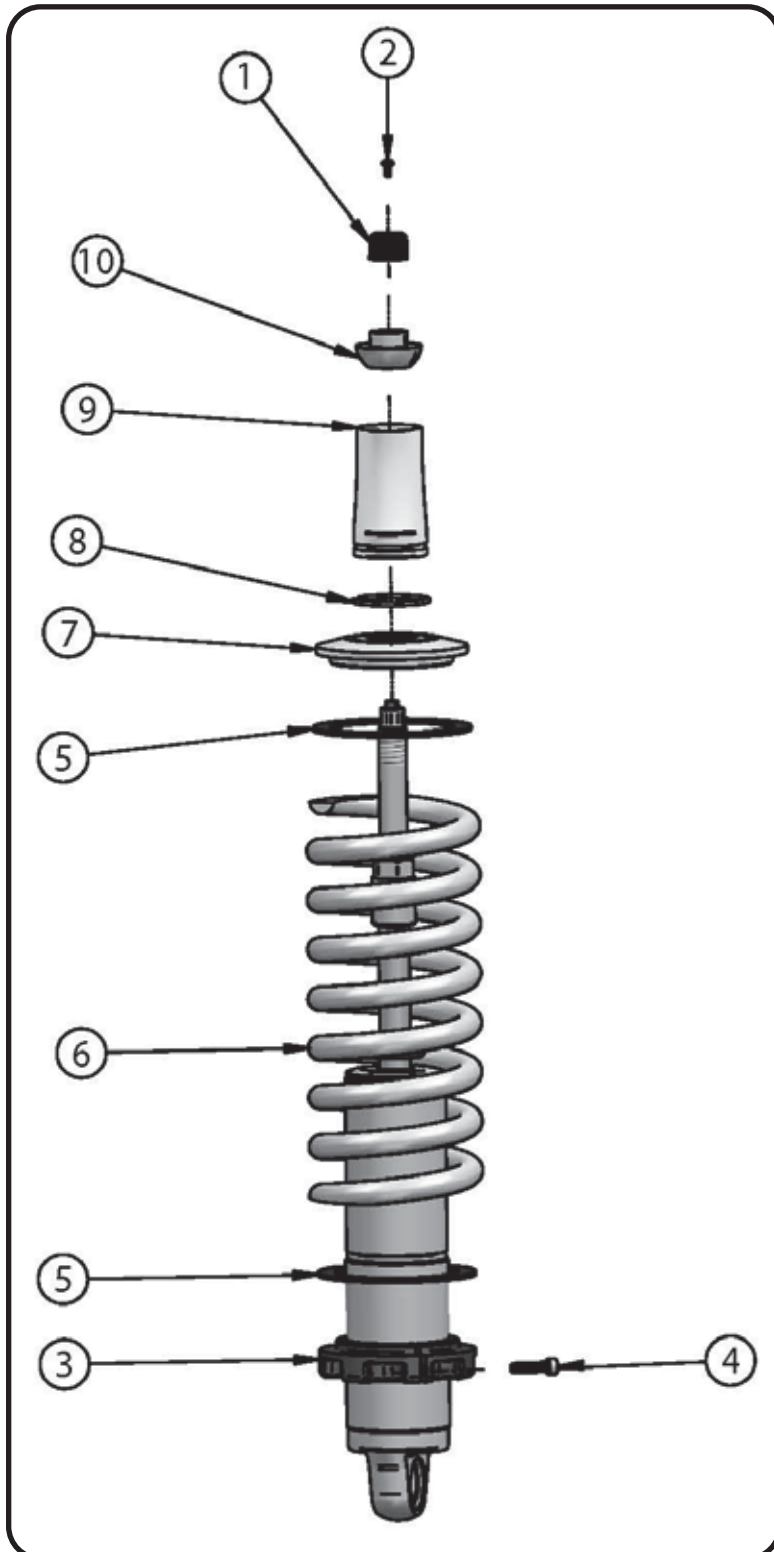
Item #	Part #	Description	QTY
1	982-10-803	3.6" Stroke HQ Series Shock	2
2	59080575	CoilSpring 8" 575lb	2
3	70010828	Delrin Spring Washer	4
4	803-00-199(kit)	Lower Spring Adjuster Nut (803-00-199 kit)	2
5	803-00-199(kit)	Adjuster Nut Locking Screw (803-00-199 kit)	2
6	803-00-199(kit)	Upper CoilSpring Retaining Plate (803-00-199 kit)	2
7	803-00-199(kit)	CoilSpring Plate Retaining Ring (803-00-199 kit)	2
8	90009983(kit)	3.75" Stud Adjuster Assembly	2
9	90002314	3.75" 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 CONTROL ARMS



CoilOver Assembly



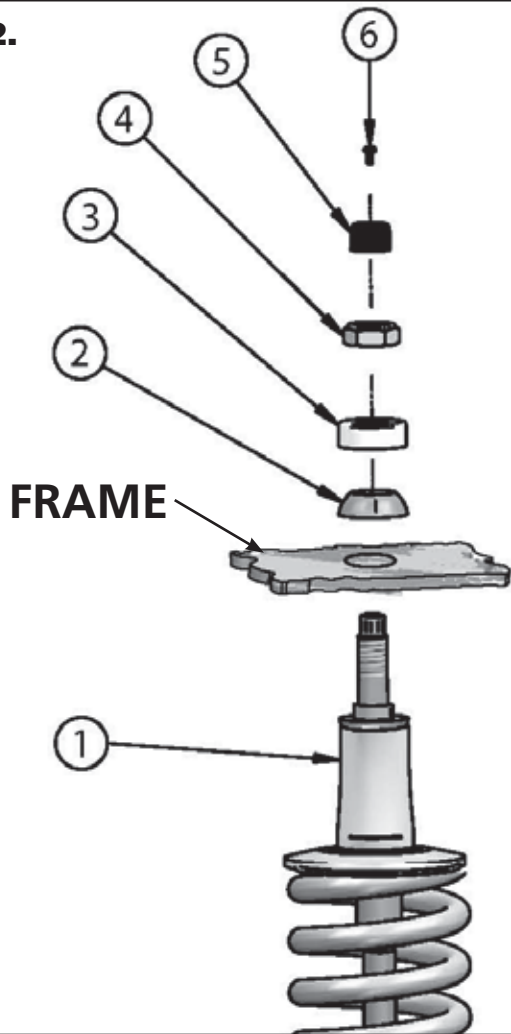
1. To Assemble the CoilOver you need to:
 - a. Remove Screw (2) from center of Adjustment Knob (1) and remove Adjustment Knob.
 - b. Remove Nylok Nut, Delrin Upper Cap, Delrin Upper and Lower Balls, along with the base from the Coliover stud.
 - c. Thread Adjuster Nut (3) onto the CoilOver body. Once 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.



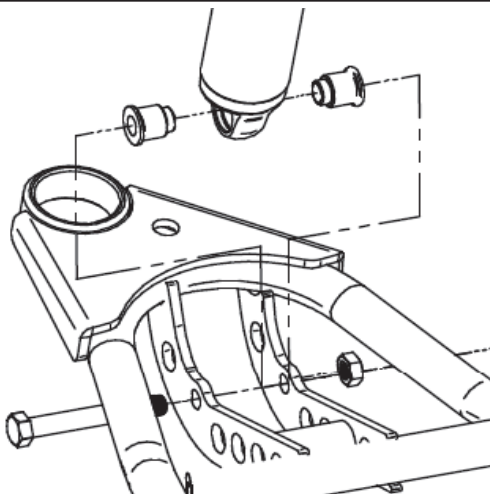
CoilOver Installation

2.



2. 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 to 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. The 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.

3.



3. Install a spacer on each side of the lower Coilover. Slide the shock with the spacers installed into the lower control arm. Raise the arm up to line up the holes in the bushing with the 1/2" hole in the control arm straps and hold it in place while you install the 1/2" x 3 1/4" bolt and 1/2" Nylok nut. Tighten the upper and lower shock bolts.



CoilSpring Adjusting

Ride Height

We have designed most cars to have a ride height of about 1 1/2" 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.

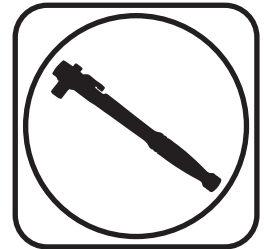


Part # 11539101

1963-1967/1968-1982 C2/C3 Corvette Front Sway Bar



Recommended Tools



1963-1982 C2/C3 Front Sway Bar Installation Instructions

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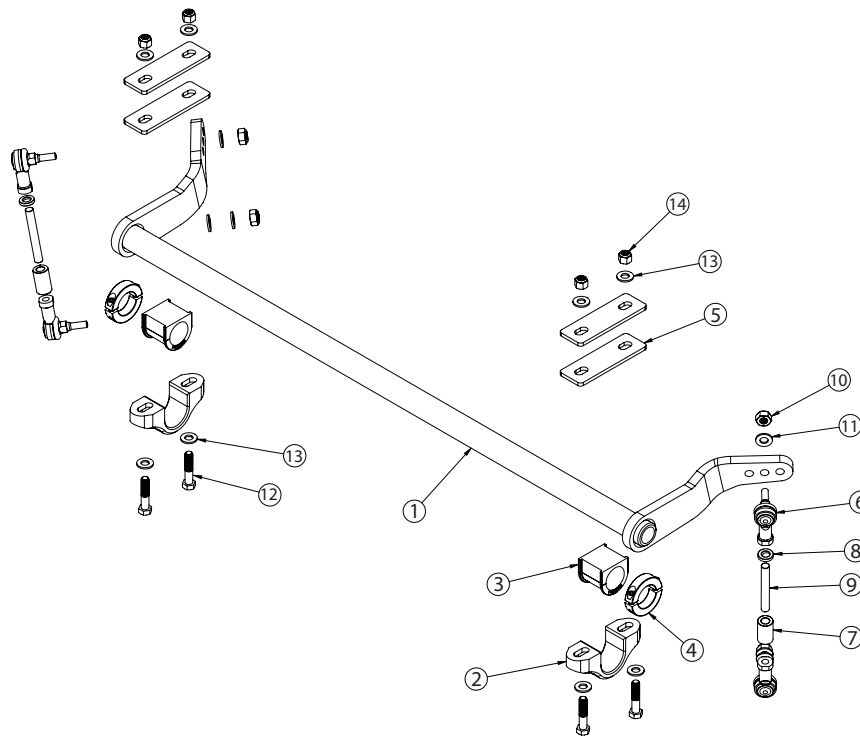
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Major ComponentsIn the box

Item #	Part #	Description	QTY
1	90003544	Sway Bar Assembly	1
2	90001343	Billet Bushing Strap	2
3	70015014	Lined Bushing	2
4	70014722	Locking Ring	2
5	90002177	Frame Bushing Spacer	4
6	90003842	10mm 90 degree elbow (Preassembled Posilink)	4
7	90002342	Posilink Spacer (Preassembled Posilink)	2
8	90002275	Crush Washer (Preassembled Posilink)	2
9	99115008	M10-1.5 75mm stud (Preassembled Posilink)	2



Hardware ListIn the box (Kit # 99010232)

Item #	Part Number	Description	QTY
END LINK			
10	99112002	M10-1.5 Nylok Nut	4
11	99373003	3/8" SAE Flatwasher	6
C3 BILLET MOUNT			
12	99311045	5/16"-18 x 2" Hex Bolt	4
13	99313001	5/16" SAE Flatwasher	4

Item #	Part Number	Description	QTY
C3 BILLET MOUNT			
12	99371024	3/8"-16 x 1 3/4" Hex Bolt	4
13	99373002	3/8" SAE Flatwasher	8
14	99372001	3/8"-16 Nylok Nut	4



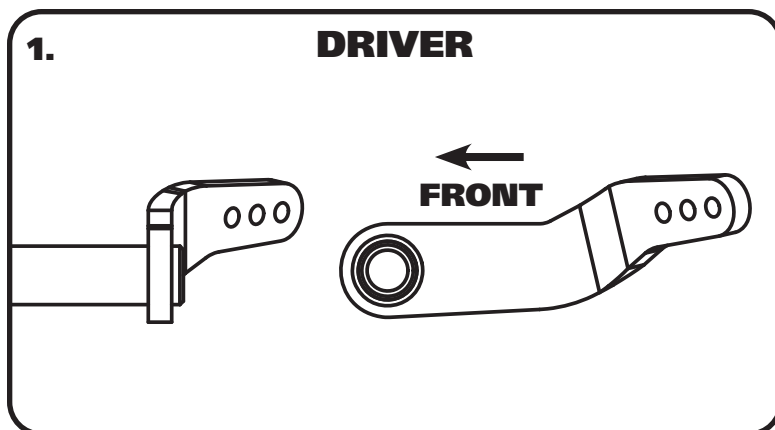
Getting Started.....

Congratulations on your purchase of the Ridetech Front Sway Bar. This kit has been designed to give your Corvette excellent handling along with a lifetime of enjoyment. Some of the key features of this Sway Bar: Posilinks - The Posilink makes the reaction of the swaybar instantaneous, tunability - this sway bar has 3 positions to aid in the tuning of the handling of your Corvette.

Note: This sway bar is designed to be used with the Ridetech StrongArms.

This sway bar kit utilizes an 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.

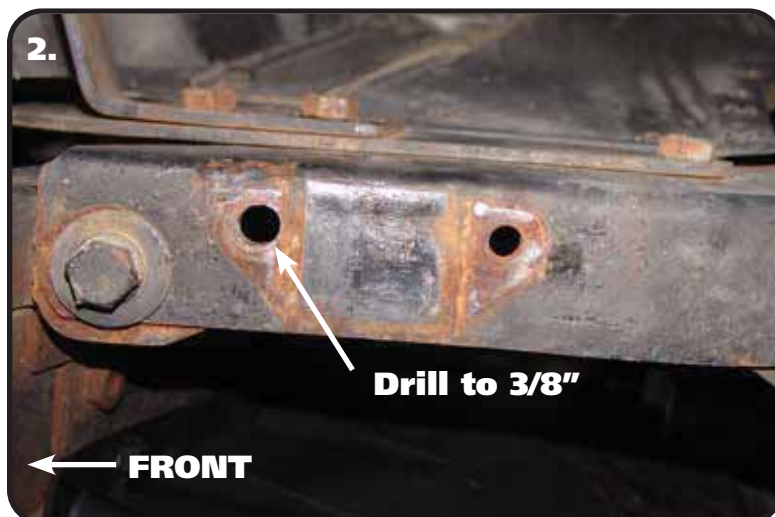
Sway Bar Orientation



1. **Diagram 1** shows the driver's side sway bar arm. This shows a side view and front view to help you with the orientation of the sway bar in the car.

STEPS 1 - 3 ARE FOR C2 CORVETTE ONLY, IF INSTALLING ON C3 SKIP TO STEP 4

C2 Frame Bushing Mounting



2. Drill out the forward ORIGINAL sway bar mounting hole to 3/8". The original rear hole will not be used. A new mounting hole for the rear bolt will be drilled in **Step #4**.



C2 Frame Bushing Mounting



3. Insert the sway bar into position by sliding it between the bumper support and the frame rail. See **Step 1** for correct orientation. With the sway bar slid in place, install the mount bushing onto each end of the sway bar followed by the mounting strap.

NOTE: Approximately 1 3/8" of the bar end will be sticking out of the bushings.

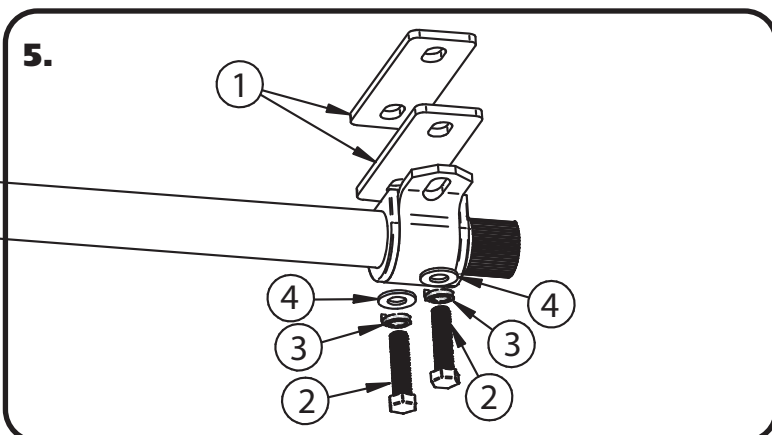


4. Insert a 3/8"-16 x 1 3/4" bolt and flat washer through the front mounting strap hole and hole that was drilled out in step #2. Install a 3/8" flat washer and nylok nut on the bolt and lightly tighten making sure the bolt stays in the center of the slot. With the bolt and nut lightly tighten clamp the loose end of the strap to the frame. With the strap clamped in place, drill a 3/8" hole in the center of the slot in the mounting strap. Repeat on other side. Install 3/8" x 1 3/4" bolt, flat washers, and nylok nut in drilled hole. **DO NOT TIGHTEN.**

AFTER COMPLETION SKIP TO STEP 6

C3 Sway Bar Installation

STEPS 5 - 6 ARE FOR C3 CORVETTE ONLY.

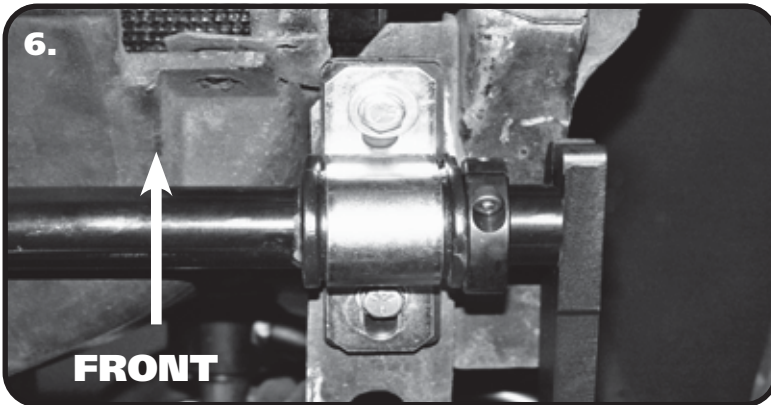


5. The sway bar on the C3 is bolted into the OEM sway bar position. The C3 uses spacers(1) to position the bar correctly on the chassis. These spacers are installed in between the bushing assembly and the frame. Insert a 5/16"x 2" bolt(2), 9/16" lock washer(3), and 5/16" flat washer(4) through each slot in the bushing mount. Install the 2 spacers(1) on the bolt before threading it into the factory sway bar mounting hole in the frame. **DO NOT TIGHTEN.**



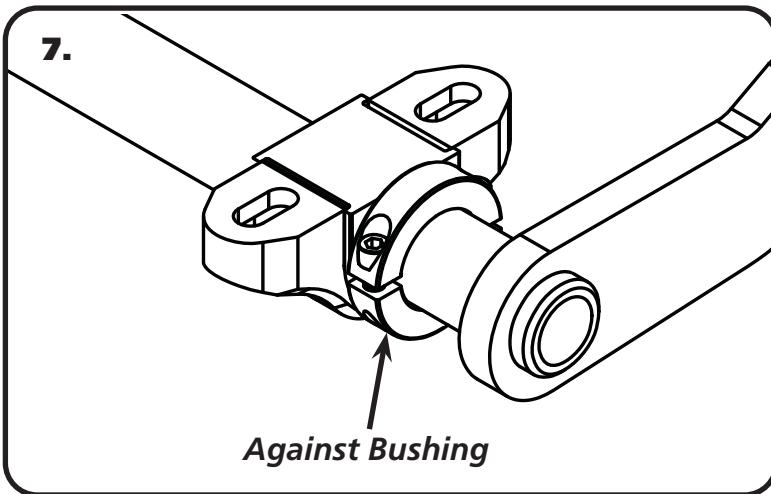
C3 Sway Bar Installation

STEPS 5-6 ARE FOR C3 CORVETTE ONLY.

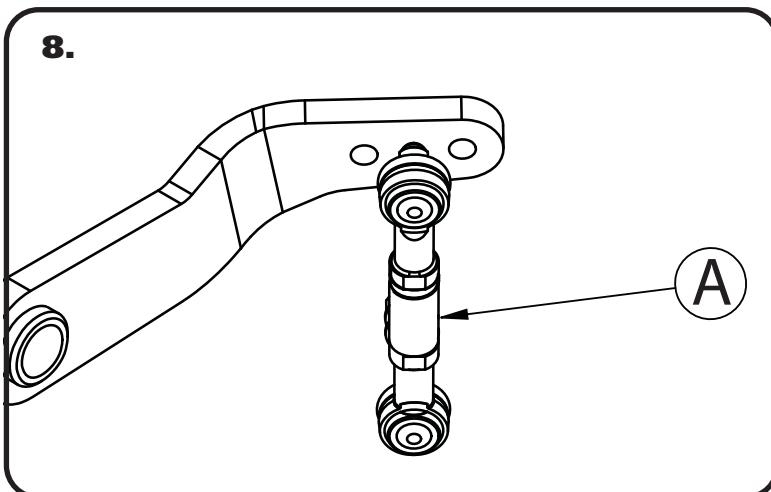


6. The sway bar will be slid to the rear of the car when doing final tightening of the bushing mounts.

ALL CORVETTES Sway Bar Installation



7. Install locking ring onto sway bar. **DO NOT TIGHTEN.** With all 4 bolts installed, center the sway bar in the bushings. There should be approximately (1 3/8" - C2) (1 9/16" - C3) sticking out of the bushing on each side. With the sway bar centered, slide the locking rings up against the bushings and tighten them down. Tighten the bushings mounting hardware. Torque C2 (3/8") hardware to 35 ft-lbs. Torque C3 (5/16") hardware to 17 ft-lbs.

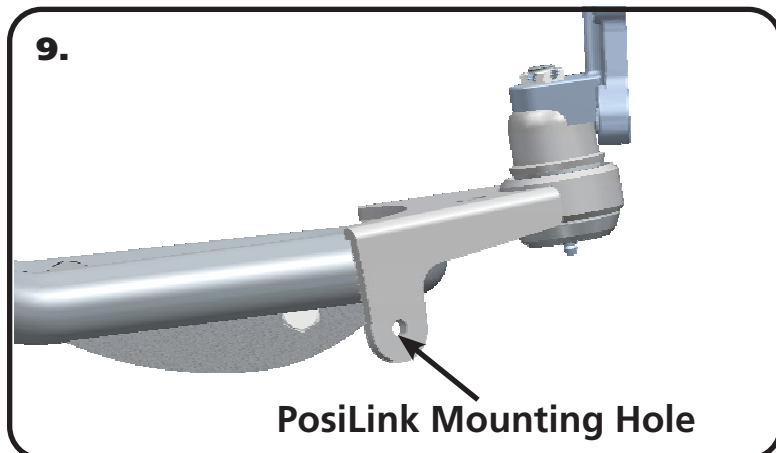


8. Install the Posilink (A) into the center hole on the sway bar arm using **Diagram #8** as a reference. Tighten using a 3/8" flat washer on each side of the arm and a 10mm Nylok nut. Torque the 10mm nut to 37 ft-lbs.

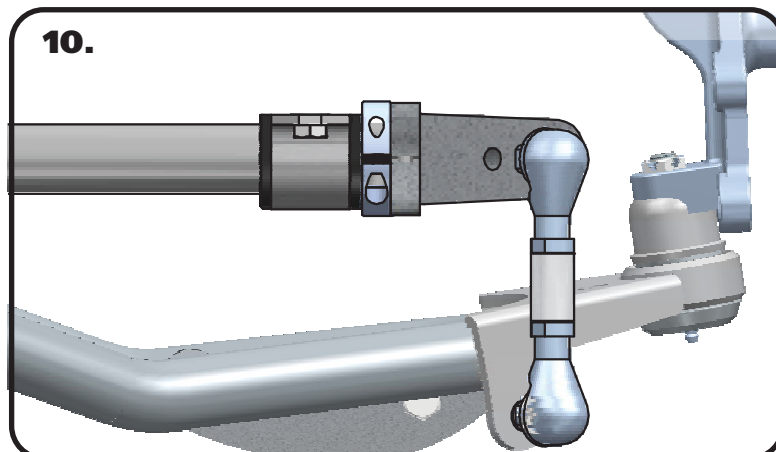
NOTE: Driver and Passenger are installed in the same orientation. For the Passenger side, you will simply spin the Posilink over 180 degrees.



Sway Bar Installation



9. Image 9 shows the PosiLink mounting hole on the lower StrongArm.



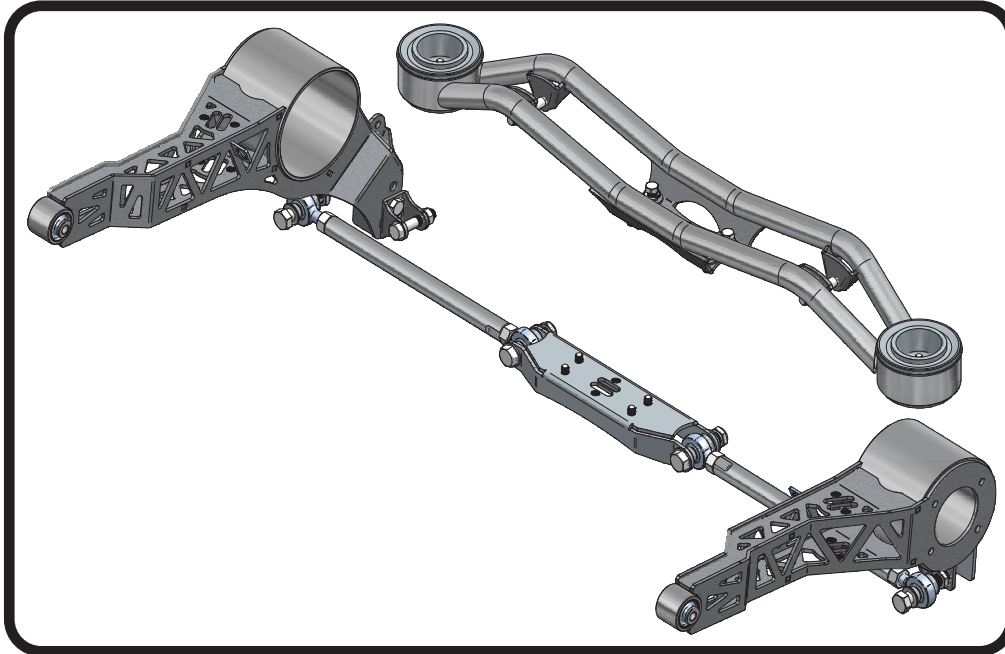
10. With the arms installed on the sway bar, install a 3/8" flat washer on each side of the tab along with a 10mm nylok nut onto the PosiLink. Torque the 10mm nut to 37 ft-lbs.

11. Double check all hardware to make sure its tight.

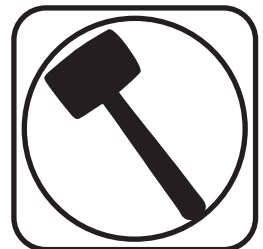
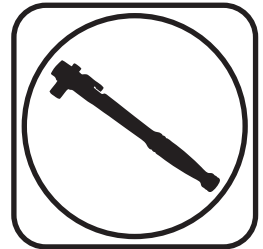
The sway bar has 3 positions to aid in the tuning of your Corvette's handling. We start in the center position and tune from there. The position to the front of the car shortens the arm and will make the sway bar stiffer. The position to the rear of the car lengthens the arm and will make the sway bar softer.



Part # 11527199 - 1963-1979 C2/C3 Rear StrongArms



Recommended Tools



1963-1979 C2/C3 Rear StrongArms Installation Instructions

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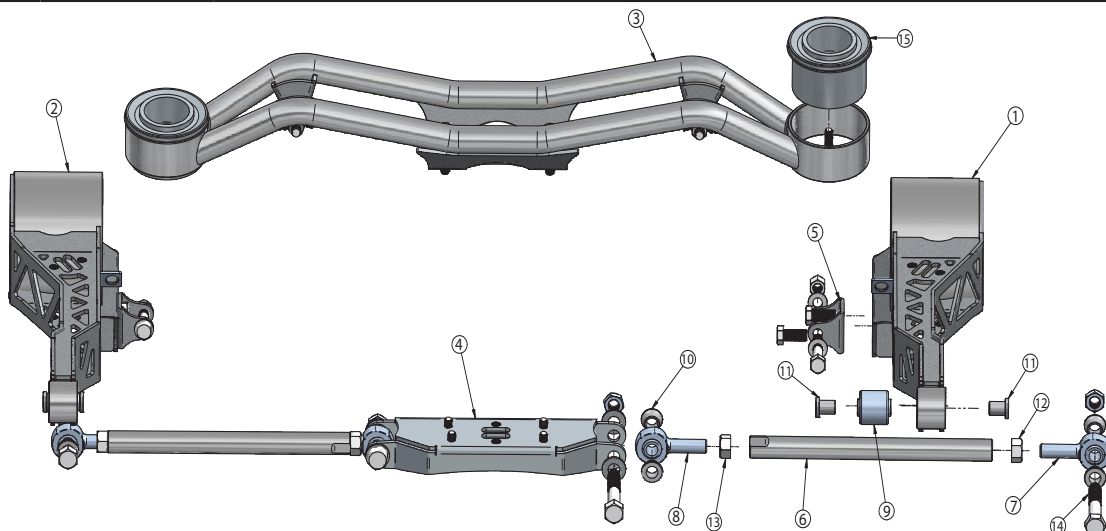
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Page 35.....	Strut Rod Bracket and Trailing Arm Installation
Page 36.....	Trailing Arm & Strut Rod Installation
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Page 38.....	Finishing





Major ComponentsIn the box

Item #	Part #	Description	QTY
1	90002163	Driver Trailing Arm	1
2	90002164	Passenger Trailing Arm	1
3	90002165	Upper Crossmember	1
4	90002166	Strut Rod Mount	1
5	90002158	CoilOver Lower Mounting Bracket	2
6	90002847	Threaded Strut Rod (Set at 16 5/16" Center to Center)	2
7	70013364	Strut Rod R-Joint Housing End 3/4"-16 RH Thread (Pre installed in Strut Rod)	2
8	70013564	Strut Rod R-Joint Housing End 3/4"-16 LH Thread (Pre installed in Strut Rod)	2
9	70011856	Trailing Arm Bearing (Pre installed in Trailing Arms with (4) 72000259)	2
10	70013545	Strut Rod R-Joint Spacers - 5/8" ID x .563" Thick	8
11	90002169	Trailing Arm Bearing T-bushings - 7/16" ID	4
12	99752004	3/4"-16 SAE RH Thread Jam Nut	2
13	99752006	3/4"-16 SAE LH Thread Jam Nut	2
14	90002175	5/8"-18 Flat Machine Bolt	2
15	70011824	Upper Crossmember Bushing (Pre installed in Crossmember)	2
	70013977	Crossmember Bushing Retainer Isolator Ring	2
	90003087	Aluminum Crossmember Bushing Retainer	2
	90002191	Trailing Arm Bushing Shim Kit (Not Shown)	1
	99375010	Trailing Arm Bearing Housing Studs- 3/8"-24	8
R-Joint Components - (Installed in Trailing Arms and Strut Rod Ends)			
	70013279	Retaining Ring	4
	70013280	Wavo Wave Spring	4
	70013275	Center Pivot Ball	4
	70013276	Composite Cage	4





Hardware ListIn the box (Kit# 99010053)

QTY	Part Number	Description	QTY	Part Number	Description
TRAILING ARM HARDWARE			STRUT RODS TO MOUNTS		
2	99431014	7/16" x 4 1/2" SAE Bolt	2	99621003	5/8"x 2 3/4" Gr. 8 Bolt
2	99432002	7/16" SAE Nylok Nut	4	99622006	5/8" SAE Nylok Jam Nut
8	99372005	3/8" SAE Nylok Nut	4	99623001	5/8" SAE Flatwasher
STRUT ROD MOUNT TO CENTER SECTION			CROSSMEMBER HARDWARE		
4	99371003	3/8" x 1" USS Bolt	6	99431002	7/16" x 1 1/4" USS Bolt
4	99373005	3/8" Split Lock washer	10	99433002	7/16" SAE Flatwasher
4	99373003	3/8" SAE Flatwasher	8	99433003	7/16" Split Lock washer
SHOCK MOUNTING HARDWARE			2	99432011	7/16"-14 GR 8 Nut
4	99501003	1/2" x 2 1/2" USS Bolt	2	99432010	7/16"-14 GR8 Nylok Nut
4	99501019	1/2" x 1 1/4" USS Bolt	4	99433005	7/16" SAE GR8 Flat Washer
4	99503001	1/2" SAE Flatwasher	2	99435008	7/16"-14 x 3" Stud
8	99502001	1/2" USS Nylok Nut			

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.

Getting Started.....

Congratulations on your purchase of the Ridetech Rear StrongArm System. This system has been designed to give your Corvette excellent handling along with a lifetime of enjoyment. Some of the key features of this system: Trailing arms are designed to give more tire clearance, adjustability of ride height and ride quality, excellent handling.

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

1. Raise the vehicle to a safe and comfortable working height.
2. Disassemble the rear suspension using the factory service manual as a reference. You will need to remove the Traverse Leaf Spring, Shocks, BumpStops, Half Shafts, Trailing arms, Center Section, Upper Crossmember, and Strut Rod Bracket from the Center Section.

NOTE: Keep the shims for the Trailing Arm in order and marked from where they were removed.

NOTE: You will need to disconnect the brake lines and parking brake cables(if equipped) on the OEM Brake Setup

3. With the rear suspension disassembled, remove the OEM Hub setup from the OEM Trailing Arms.

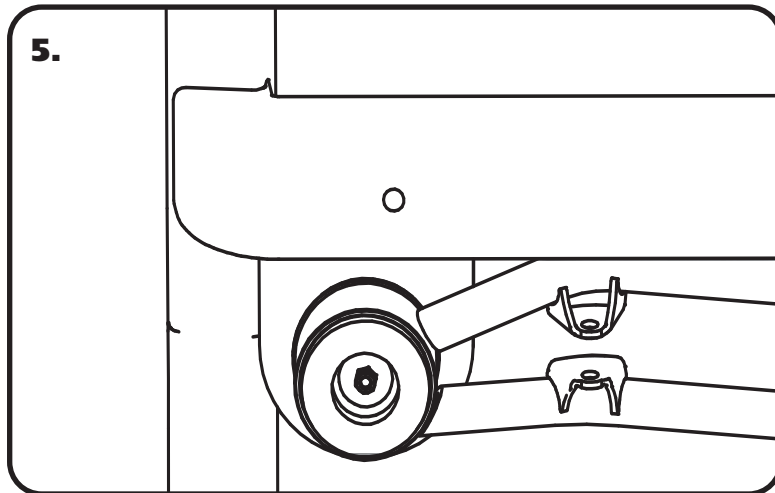
The OEM hubs will be used with the new Trailing Arms.



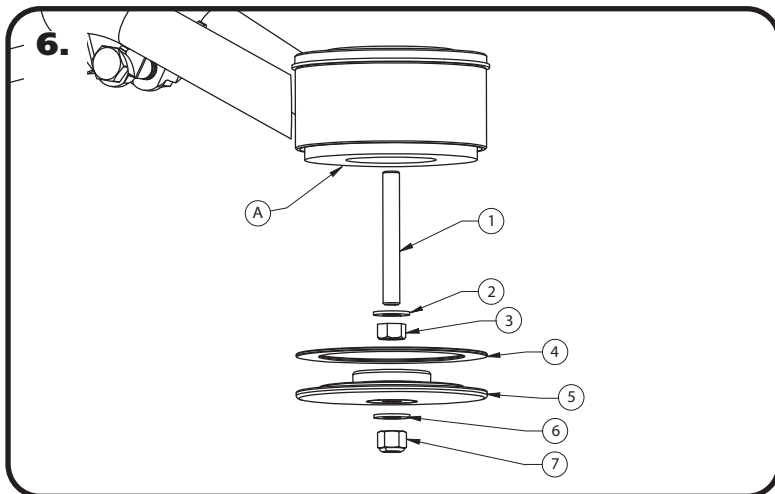
Upper Crossmember Installation



4. Attach the Upper Crossmember to the OEM Center Section using (4) 7/16" -14 x 1 1/4" Hex Bolts, (4) 7/16" Lock washers, and (4) 7/16" SAE Flat washers. The Upper Crossmember bolts in place of the OEM upper crossmember. The upper crossmember is symmetrical and will fit either direction.



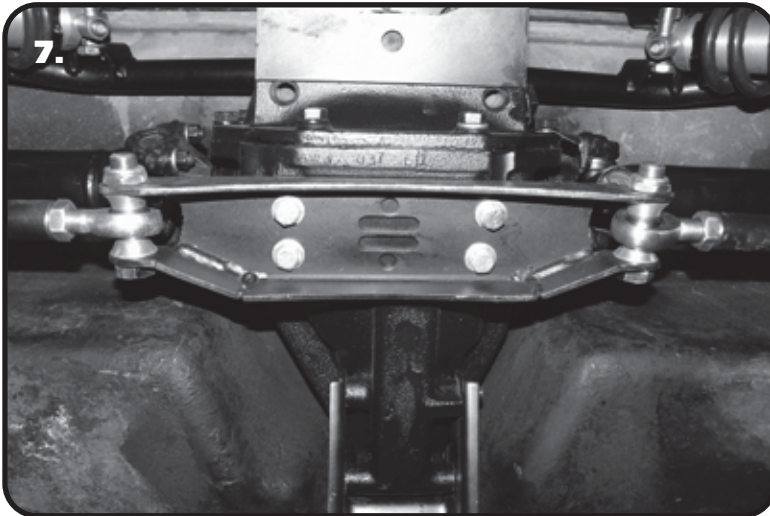
5. Refer to **Images 5 & 6** for installation of the Crossmember. Apply Loctite to the 7/16" -14 x 3" Stud(1), thread it into the frame approximately 3/4". Slide the Crossmember(A) onto the Studs, holding it in place. Install a 7/16" Grade 8 Flat Washer(2) followed by a 7/16" -14 Grade 8 Regular Nut(3). Do this for both studs. Torque the Nuts to 50ftlbs.



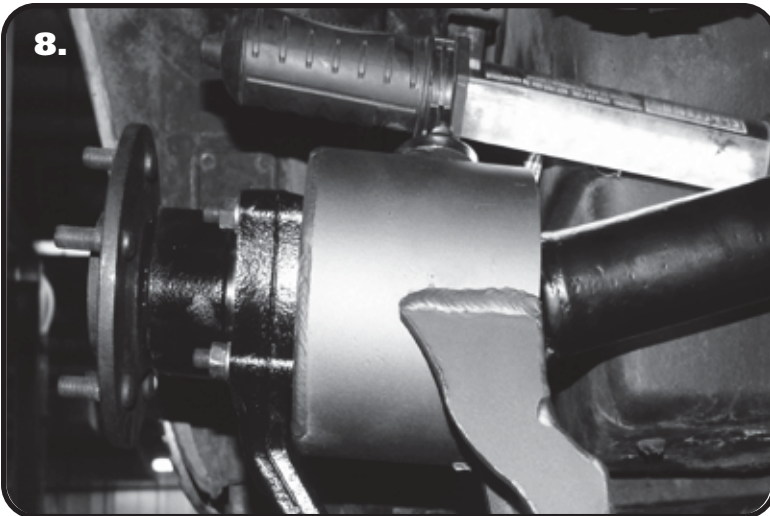
6. Install the Isolator Ring onto the Bushing Retainer. There is an area on the retainer that the isolator sits. With the Crossmember in place and the Nuts torqued, slide the Aluminum Bushing Retainer/Isolator on the Stud. Next, install a 7/16" Grade 8 Flat Washer(6) followed by a 7/16" -14 Grade 8 Nylok Nut(7). Do this for both sides. Torque the Nuts to 50ftlbs.



Strut Rod Bracket and Trailing Arm Installation

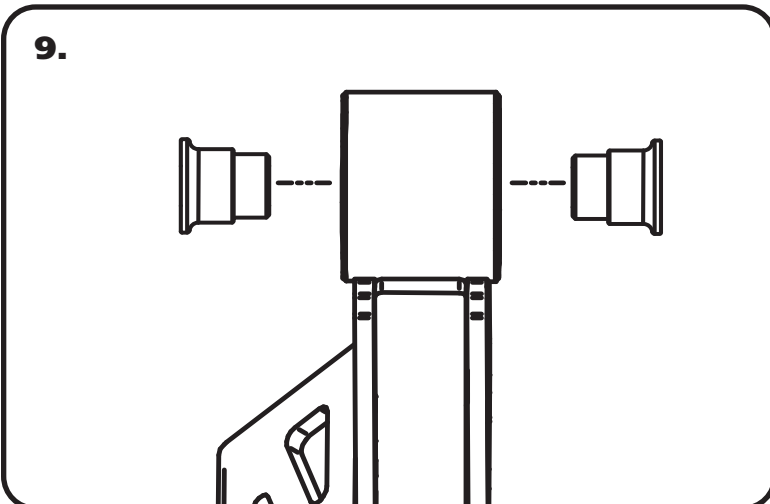


7. Install the Strut Rod Bracket onto the bottom of the OEM Center Section with the FLAT side to the rear of the car. Attach the bracket with (4) 3/8" x 1" Hex Bolts, (4) 3/8" SAE Flatwashers, and (4) 3/8" Split Lock washers.



8. Install the Knurled Studs into the Trailing Arms. Install the OEM Hub Assembly using (4) 3/8" SAE Nylok Nuts. The Drivers side Trailing Arm has the Shock Mount pointing down and facing the inside of the car. Do this for both sides.

Note: The Hub Assemblies are Driver and Passenger specific. The "D" shaped hole in the lower Strut Rod Mount faces the rear of the car.



9. Install the 7/16" I.D. T-bushings into the front Trailing Arm Bearings. Do this for both Trailing Arms.



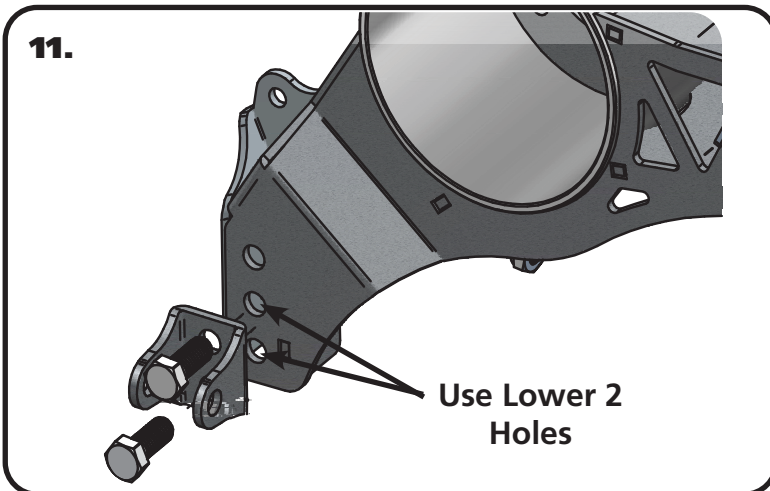
Trailing Arm & Strut Rod Installation



10. Install the Driver Trailing Arm Assembly into the stock location using (1) 7/16" x 4 1/2" Bolt, (1) 7/16" Flatwasher. Install New Shims that are supplied with the kit. The shim stacks should be the same thickness as the shim stacks that were removed from the OEM setup. Repeat for Passenger side.

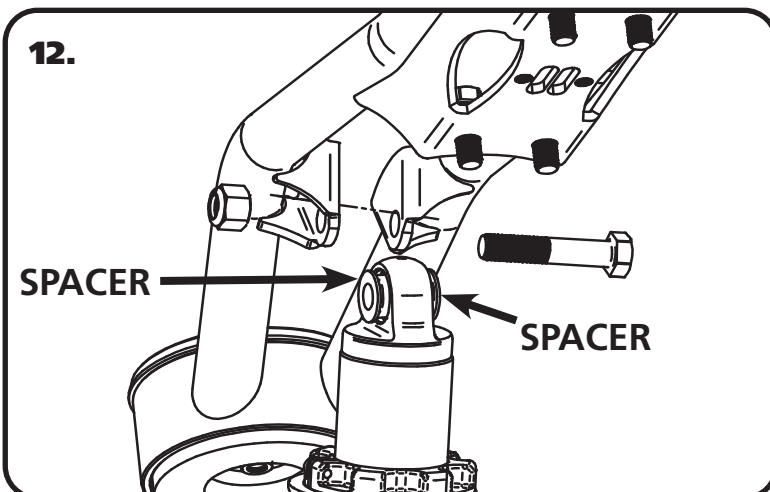
DUE TO VARIATIONS OF THE OPENINGS, CHECK CLEARANCE BETWEEN TRAILING ARMS AND FRAME. THE AREA POINTED OUT IN DIAGRAM "10" MAY NEED TO BE CLEARANCED.

Note: Driver Trailing arm is shown in Diagram "11". The shock mount will be on the bottom when the arm is installed correctly.



11. Attach the Shock Mounting Bracket to the lower to holes in the Trailing Arm. The Shock Mount is attached using (2) 1/2"-13 x 1 1/4" Bolts and (2) 1/2"-13 Nylok Nuts.

Note: The Upper 2 holes would be used if a 1" higher ride height would be desired.

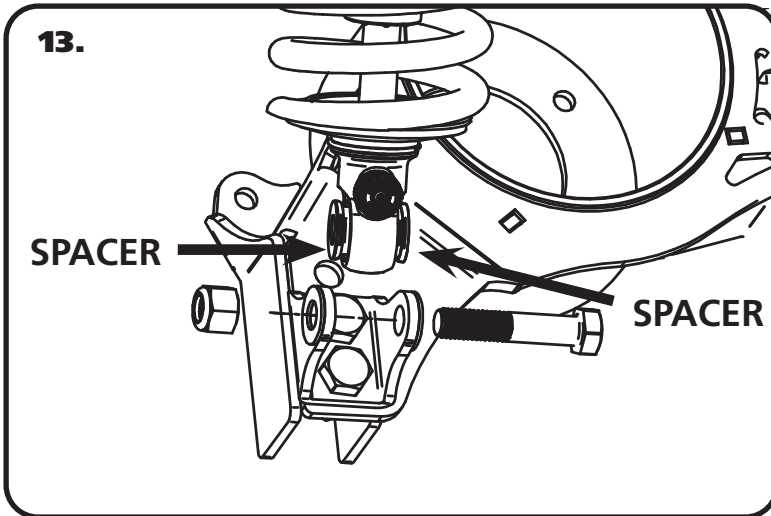


12. Install a spacer on each side of the upper Coilover. Slide the assembly into the upper crossmember from the bottom side. If your shock has an adjuster knob position it so that the knob points toward the center of the car. Line up the hole in the spacers with the hole in the upper shock bridge and insert 1/2" x 2 1/2" bolt and install 1/2" Nylok nut.

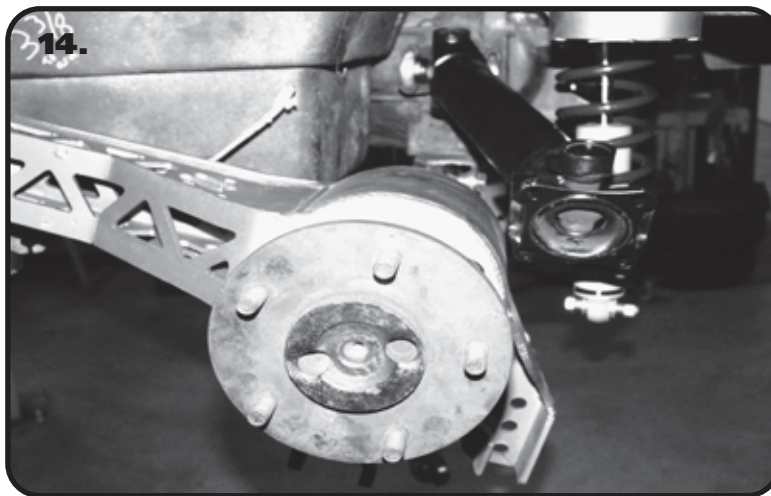
Note: If installing TQ Series CoilOvers, the hose **MUST** be to the **INSIDE** of the car.



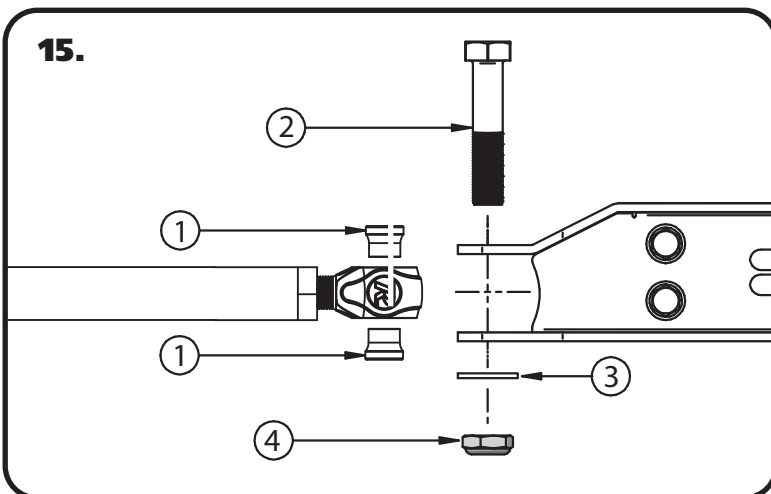
Shock Mount & CoilOver Installation



13. Install a spacer on each side of the lower Coilover. Slide the shock with the spacers installed into the mount on the lower StrongArm. You may need to jack the rearend up to line up the holes in the bushing with the 1/2" hole in the shock mounts and hold it in place while you install the 1/2" x 2 1/2" bolt and 1/2" Nylok nut. Tighten the upper and lower shock bolts.



14. Reinstall the OEM Half Shafts using the OEM hardware.



15. Install each Strut Rod using (4) 5/8" I.D. x 9/16" R-Joint spacers, (1) 5/8" x 2 3/4 Hex Bolt, (1) 5/8" x 2 3/4" Hex Bolt with Machine Flat, (2) 5/8" Flatwasher (under nut), and (2) 5/8" Thin Nylok Nuts. The Strut is installed into the new Strut Rod Bracket located on the center section of the differential and the OEM Strut Rod Bracket attached to the OEM Hub. It is installed by inserting a 9/16" thick Spacer in each side of the R-Joint. The regular 5/8" Hex Bolt is used at the differential, the 5/8" Hex bolt with Machined Flat is installed in the hub side. The Machine Bolt is install with the threads pointing to the rear of the car.



Finishing

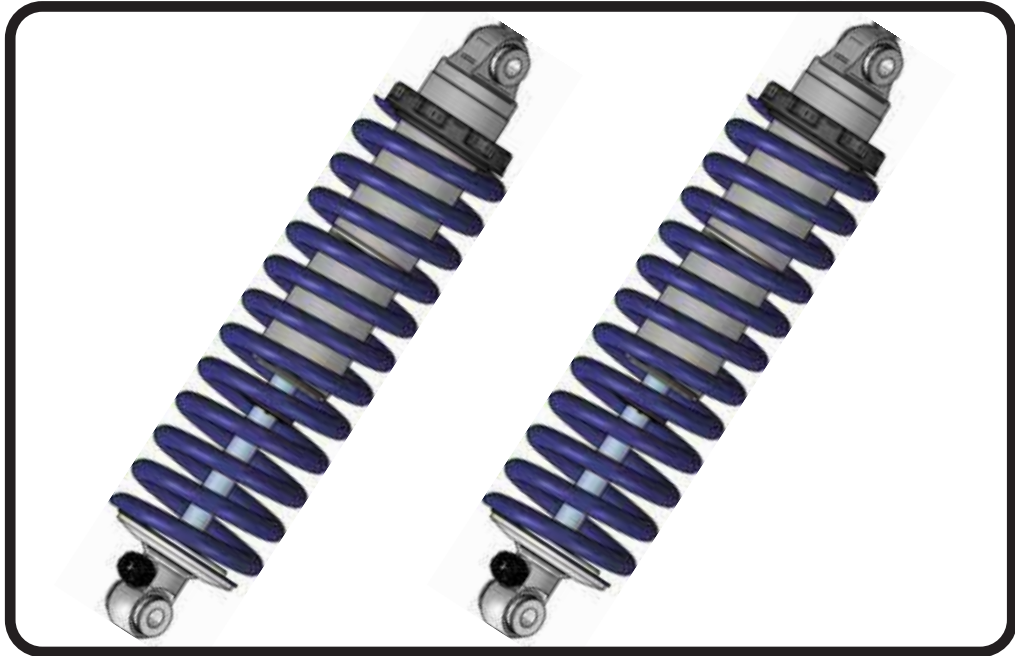
- 16.** Reattach Brake lines and Emergency Brake Cables (Depends on year). Bleed the brakes before driving car. **Make sure the Parking Brake Cable doesn't interfere with the Brake Line.**

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

- 18.** Set ride height on the Corvette. The ride height of the Coilover is approximately 13". When using Coilovers, the ride height is done by using the adjuster nut for the coil spring. The coil spring on the Coilover will have some preload in the spring to get ride height, this is normal.



Part # 11526510 - 1963-1967 C2 Rear CoilOvers



Recommended Tools



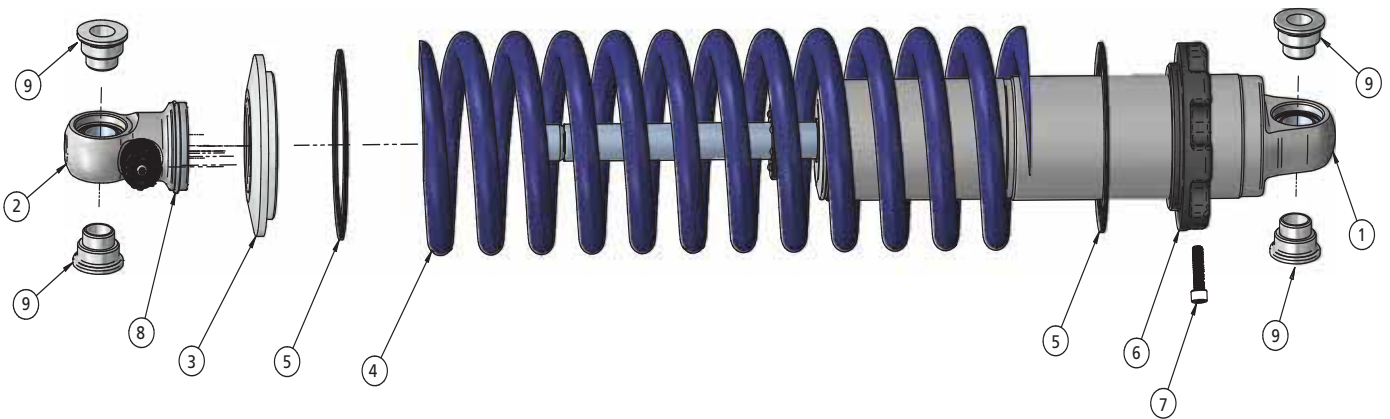
**1963-1967 C2 HQ Series Rear Coilovers
Installation Instructions**

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Page 42..... Included Components
Page 43..... Assembly and Adjusting



Major ComponentsIn the box

Item #	Part #	Description	QTY
1	982-10-804	4.1" Stroke HQ Series Shock	2
2	815-05-022-KIT	1.7" Shock Eyelet	2
3	803-00-199(kit)	Upper CoilSpring Retainer (803-00-199 kit)	2
4	59100325	CoilSpring 10" 325lb	2
5	70010828	Delrin Spring Washer	4
6	803-00-199(kit)	Lower Spring Adjuster Nut (803-00-199 kit)	2
7	803-00-199(kit)	Adjuster Nut Locking Screw (803-00-199 kit)	2
8	803-00-199(kit)	Retaining Ring (803-00-199 kit)	2
9	90002043	1/2" ID Bearing Spacer Half	8
	90001994	5/8" ID Bearing (installed in shock and eyelet)	4
	90001995	Bearing Snap Ring (installed in shock and eyelet)	8





COILOVER ASSEMBLY INSTRUCTIONS



1. Thread the preload adjustment nut onto the shock from the bottom (Figure 1). A few threads of engagement is ok for now.



Figure 1

2. The rebound adjustment knob must be removed prior to installing the upper spring mount in step 4. Turn the adjustment knob clockwise until it stops, then remove the torx screw and the knob (Figure 2).



Figure 2

3. Slide a Delrin washer over the shock and onto the adjustment nut, followed by the coil spring (Figure 3).



Figure 3

4. With the adjustment knob removed, slide a Delrin washer over the eyelet and place on top of the coil spring, followed by the upper spring mount (Figure 4).



Figure 4



COILOVER ASSEMBLY INSTRUCTIONS



5. Slide the retainer clip over the upper eyelet and into the groove at the base of the eyelet. Make sure it snaps into place and is fully seated in the groove (Figure 5).



Figure 5

6. Reinstall the adjustment knob (Figure 6).

Once you have reinstalled the knob, you may want to turn the knob about 12 clicks counterclockwise since the rebound is currently set at "full stiff".



Figure 6

7. Thread the adjustment nut up the shock body to remove the slack and secure the spring and upper mount against the eyelet. Install the locking screw in the adjustment nut, but do not tighten yet (Figure 7). This screw will be tightened after your preload has been set on the vehicle.



Figure 7

8. Your assembled coilover is ready to be installed on the vehicle.



Figure 8

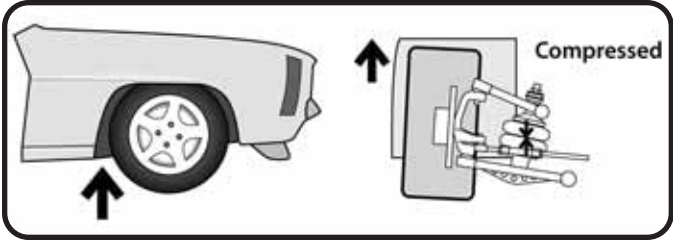


TUNING GUIDE

SINGLE-ADJUSTABLE SHOCKS

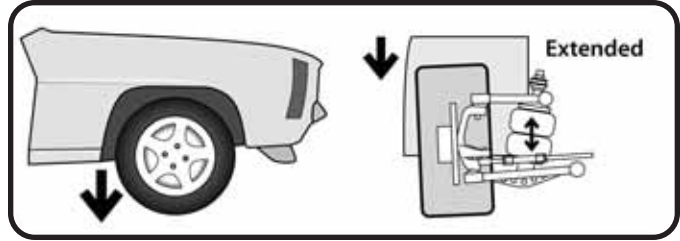


The Basics...



COMPRESSION

This typically occurs when you hit a bump in the road. The bump forces the wheel/tire/suspension assembly to "compress" or move upwards into the car.



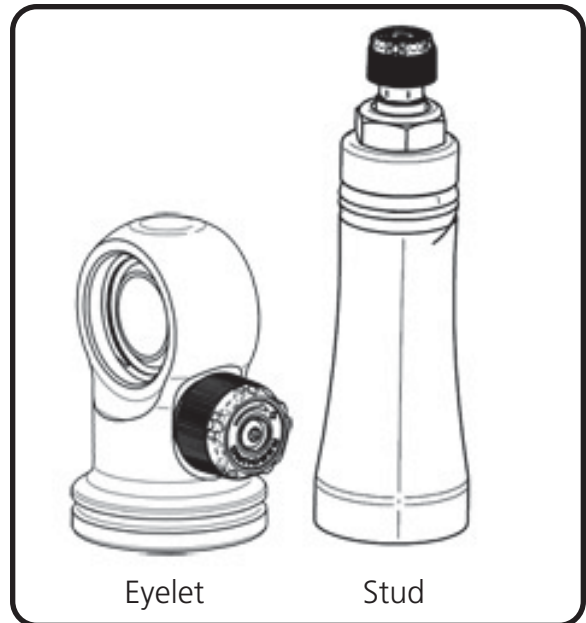
REBOUND

Rebound is the opposite of compression. This occurs when the wheel/tire/suspension assembly falls into a pothole, or simply "rebounds" from being compressed.

Where Are The Knobs?

HQ Series Shocks

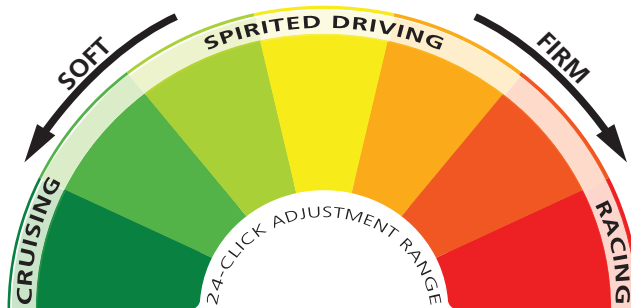
- The adjustment knob is located on the top of the shock, either protruding from the side of the eyelet, or atop the stud.
- This knob provides rebound adjustment only.



Knob Function

Counterclockwise

=
Softer



Clockwise

=
Firmer





TUNING GUIDE

SINGLE-ADJUSTABLE SHOCKS



Initial Rebound Setting

NOTE: Before jumping straight to a middle-of-the-road shock setting, we recommend you experience the full range of adjustment potential of your new shocks by first driving your vehicle at both the “full stiff” and “full soft” settings. Understanding how your shocks behave at these extremes will provide recognizable reference points as you attempt to dial in your settings.

1. Begin by setting your shocks to the “full stiff”, or minimal rebound position. You do this by turning the adjustment knob clockwise until it stops.

2. Now turn the adjustment knob counterclockwise 12 clicks. This is the approximate center of the adjustment range.

3. Take the vehicle for a test drive. Try to determine if you are experiencing any of the unwanted behaviors found at the extremes of the adjustment range. If you are satisfied with the ride quality and handling, you’re all set. Enjoy the ride!

4. If the vehicle feels too “floaty” or soft, turn the knob a few clicks clockwise to increase the damping effect.

If the ride quality is still too harsh or stiff, turn the knob a few more clicks counterclockwise to decrease the damping effect.

5. Take the vehicle for another test drive. If necessary, repeat the steps above until your desired optimal ride quality has been achieved.



General Guidelines

- The rear shocks typically have the the most influence on ride quality. This is due to your seating position being closer to the rear than the front.
- Adjustments to the front shocks will generally require 3-4 clicks in any direction to be noticeable, while adjustments to the rear shocks may only require 1-2 clicks to be felt.
- Don't be afraid to turn the knobs and experience the full adjustment range. You are not going to hurt anything and you can always go back if you adjust too far one way or the other.