



350 S. St. Charles St. Jasper, In. 47546  
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[www.ridetech.com](http://www.ridetech.com)

**Part # 12100210**  
**67-70 Mustang Complete HQ Series CoilOver Kit**

**Front Components:**

- 1 12103510 HQ Series Front CoilOvers
- 1 12102899 Lower StrongArms
- 1 12103699 Upper StrongArms

**Rear Components:**

- 1 12106510 HQ Series Rear CoilOvers
- 1 12107199 Bolt-on 4 Link

**Components:**

- 1 85000000 Spanner Wrench

**COILOver**



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**Part # 12103510**  
**67-70 Mustang Front HQ Series CoilOvers**  
For Use w/ Upper StrongArms

**Shock Assembly:**

2	24129999	2.6" Stroke HQ Series shock
2	90009988	2" threaded stud top for Adjustable shock
2	90001628	.5" I.D. bearing
4	90001995	bearing snap ring

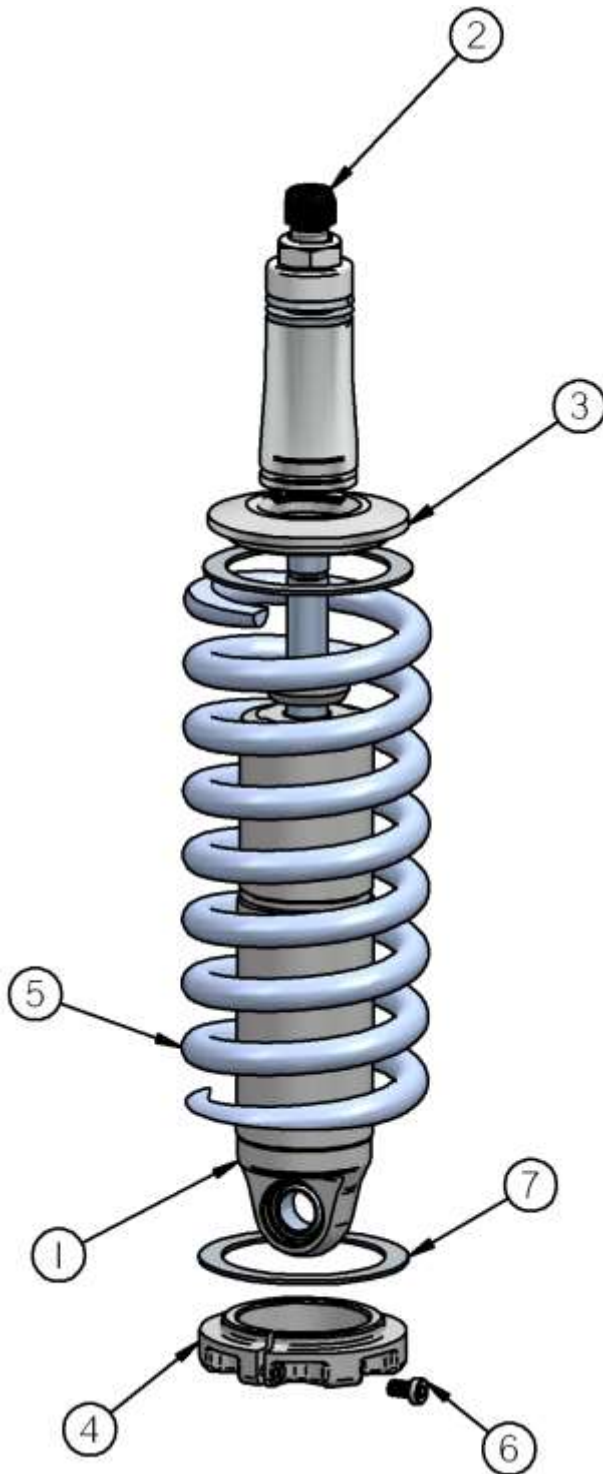
**Components:**

2	59080700	Coil spring – 8" long / 700 # rate
2	90002312	2" stud top base
2	90002222	Spring retainer kit (included upper and lower spring retainer, screw & clip)
2	90001902	Aluminum cap for Delrin ball
2	90001903	Delrin ball upper half
2	90001904	Delrin ball lower half
4	70010828	Delrin Spring Washer
2	90002356	Upper Aluminum Shockwave mount
2	90000506	Aluminum Upper plate

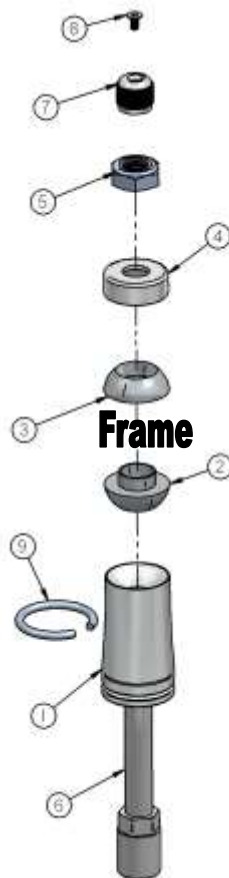
**Hardware:**

2	99562003	9/16" SAE Nylok jam nut	Stud top hardware
6	99311012	5/16" x 1" USS Flange bolts	Upper mount to strut tower

# COILOver



1. Impact Forged, Monotube shock
2. Rebound adjustment knob (SA Only)
3. Upper coil spring retainer
4. Lower coil spring retainer
5. High tensile coil spring
6. Set screw
7. Delrin Spring Washer



1. Stud top base
2. Lower Delrin ball half
3. Upper Delrin ball half
4. Aluminum cap
5. 9/16" Nylok jam nut
6. Threaded stud
7. Adjustment knob (SA Only)
8. Screw
9. Snap ring

# COILOver



1. Place the upper plate on top of the strut tower. While holding the upper Shockwave mount up to the bottom of the strut tower, fasten the assembly with three 5/16" x 1" flange bolts.



2. Place the stud up through the upper mount. (See diagram)

3. Attach the bottom of the shock to the upper arm w/ the hardware supplied w/ the upper arm.



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**Part # 12102899**  
**67-70 Mustang Lower StrongArms**

**Components:**

1	90000110	Driver side lower arm
1	90000111	Passengers side lower arm
2	90000895	Lower ball joint
4	90000112	Eccentric eliminator
2	90000108	Inner bushing sleeve
4	90001086	Poly bushing half
2	90001045	Control arm pivot bearing
2	90000734	Bearing housing
2	90000109	Bearing retaining plate
2	90000733	Aluminum bearing spacer
2	90000732	Bearing stud (Set to 2- 15/16")
2	99250001	1/4-28 grease fitting – Use Lithium grease on frame bushings

**Hardware:**

2	99501025	1/2"-13 x 4 1/2" Gr.5 bolt	Lower arm to frame
2	99502001	1/2"-13 Nylok nut	Lower arm to frame
6	99371019	3/8"-16 x 1 1/2 SHCS	Bearing housing
6	99373005	3/8" lock washer	Bearing housing
2	99752004	3/4"-16 Jam nut	Stud to arm
2	99752001	3/4"-16 Lock nut	Stud to bearing
2	99753002	3/4" x 2" flat washer	Stud to bearing

## Installation Instructions

1. Raise and support vehicle at a safe, comfortable working height. Let the front suspension hang freely.
2. Remove the coil spring, shock absorber, upper shock bracket, strut rod, sway bar, upper and lower control arms. Refer to factory service manual for proper disassembly procedure.



3. Be sure to remove the outer bushing sleeve from the strut rod frame mount.

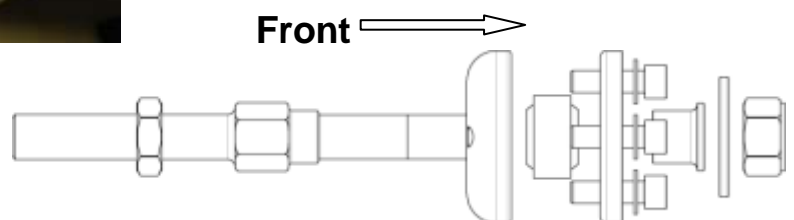
4. Remove any excess undercoating or rust.



5. Using the bushing retainer as a template, mark the holes to drill with a center punch.

6. Remove the retainer and drill the holes with a 3/8" bit.

7. Place the bearing inside the bearing housing, then clamp it to the frame with the bearing retainer and the 3/8" x 1 1/2" SHCS and lock washers.





8. The bearing stud should already be threaded into the lower arm, factory set at 2-15/16" (measuring from the end of the arm to the bearing).

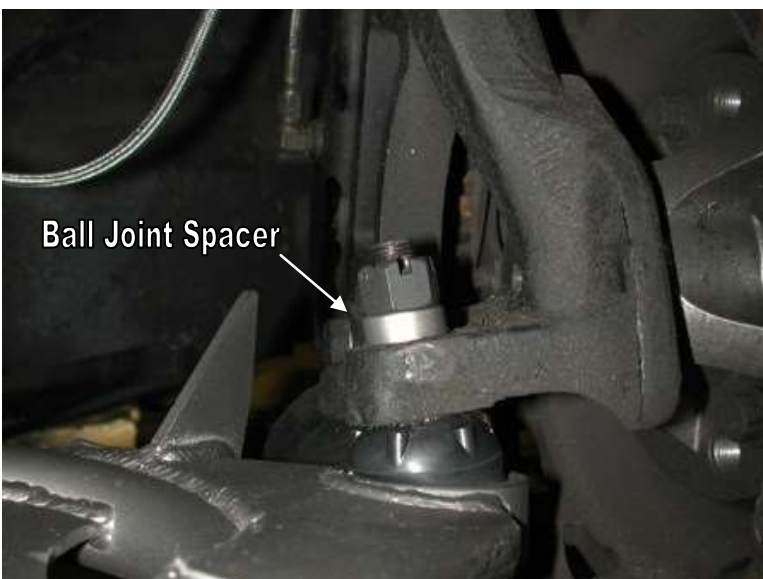
9. Slide the stud through the bearing, then slide the aluminum spacer over the stud with the larger end toward the front of the car. Secure the assembly with a 3/4" Nylok Nut and flat washer.

**Note:** The caster setting should set at around 3.5 degrees positive. Vehicle must be aligned before driving.



10. Attach the other end of the lower control arm to the factory frame mount using a 1/2" x 4 1/2" bolt and Hex nut.

11. Eccentric eliminator plates are included and one must be installed on each side of the frame. Start out with it in the center, make sure both plates are in the same position.



12. Slide the ball joint boot over the ball joint, then place the spindle over the ball joint stud. A ball joint spacer will be necessary to align the castle nut with the cotter pin hole. Grease ball joint

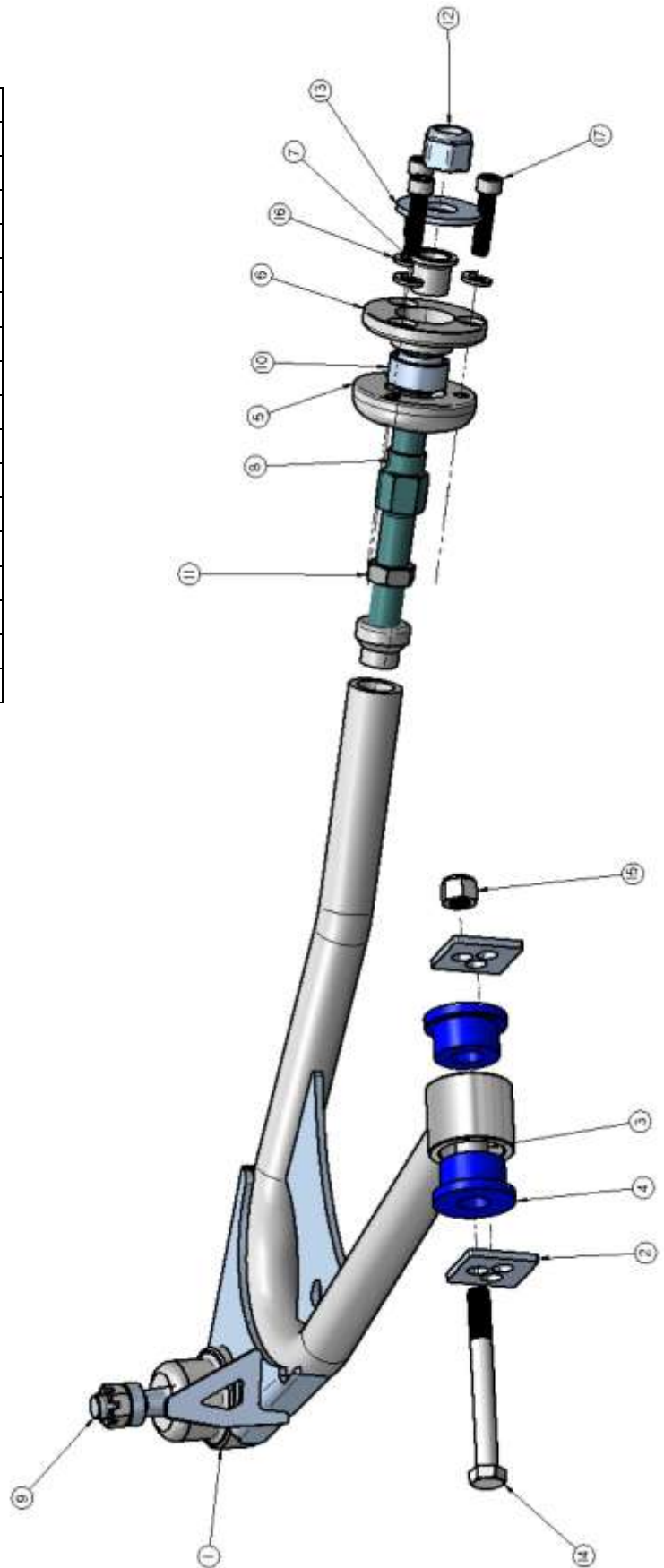
**Note:** Before installing the spindle, turn the ball joint stud so that the cotter pin hole faces front to back. This will make it easier to install/remove the cotter pin.

13. Lubricate control arm bushing with Lithium grease.

# STRONG ARMS™

by Air Ride Technologies

Item #	Description	Qty.
1.	Driver side arm	1
2.	Eccentric eliminator plate	2
3.	Inner bushing sleeve	1
4.	Poly bushing half	2
5.	Bearing housing	1
6.	Bearing retaining plate	1
7.	Aluminum bearing spacer	1
8.	Bearing stud (Set to 2- 15/16")	1
9.	Ball Joint	1
10.	Control arm pivot bearing	1
11.	3/4"-16 Jam nut	1
12.	3/4"-16 Lock nut	1
13.	3/4" x 2" flat washer	1
14.	1/2"-13 x 4 1/2" Gr.5 bolt	1
15.	1/2"-13 Nylok nut	1
16.	3/8" lock washer	3
17.	3/8"-16 x 1 1/2 SHCS	3







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**Part # 12103699**  
**67-70 Mustang Upper StrongArms**  
For Use w/ Shockwaves or CoilOvers

**Components:**

2	90000115	Upper StrongArm
2	90000930	Upper ball joint
2	90000931	Billet Aluminum drop cross shaft
4	90001589	Heim ends – 3/4"-16 thread x 5/8" I.D.
2	90000113	Alignment shim

**Hardware:**

4	99621002	5/8"-18 x 1 3/4" Gr.8 bolt	Rod end to cross shaft
4	99623001	5/8" SAE Gr. 8 Flat washer	Rod end to cross shaft
4	99623002	5/8" Gr. 8 Lock washer	Rod end to cross shaft
4	99501003	1/2"-13 x 2 1/2" Gr.5 bolt	Cross shaft to body
4	99502006	1/2"-13 nut	Cross shaft to body
8	99503001	1/2" SAE flat washer	Cross shaft to body
4	99503002	1/2" lock washer	Cross shaft to body
2	99501026	1/2"-13 x 2 1/4" Gr.5 bolt	Shockwave/CoilOver to upper arm
2	99502001	1/2"-13 Nylok nut	Shockwave/CoilOver to upper arm
4	99752004	3/4"-16 jam nut	Heim ends

# STRONG ARMS™

by Air Ride Technologies



1. Bolt the upper StrongArm to the body using  $\frac{1}{2}$ " x  $2 \frac{1}{2}$ " bolts, flat washers and lock washers. A shim is supplied and may need to be installed between the body and the arms to achieve proper alignment.

2. The arms are preset at the factory so the alignment should be close, but the vehicle must be aligned before driving.

**Note:** The upper arm mounting holes on many cars have been redrilled 1" lower. This is done to improve the handling. Our cross shaft has the drop built into it, **make sure to use the factory mounting holes.**



3. Bolt the upper arm to the spindle using the hardware and cotter pin supplied.

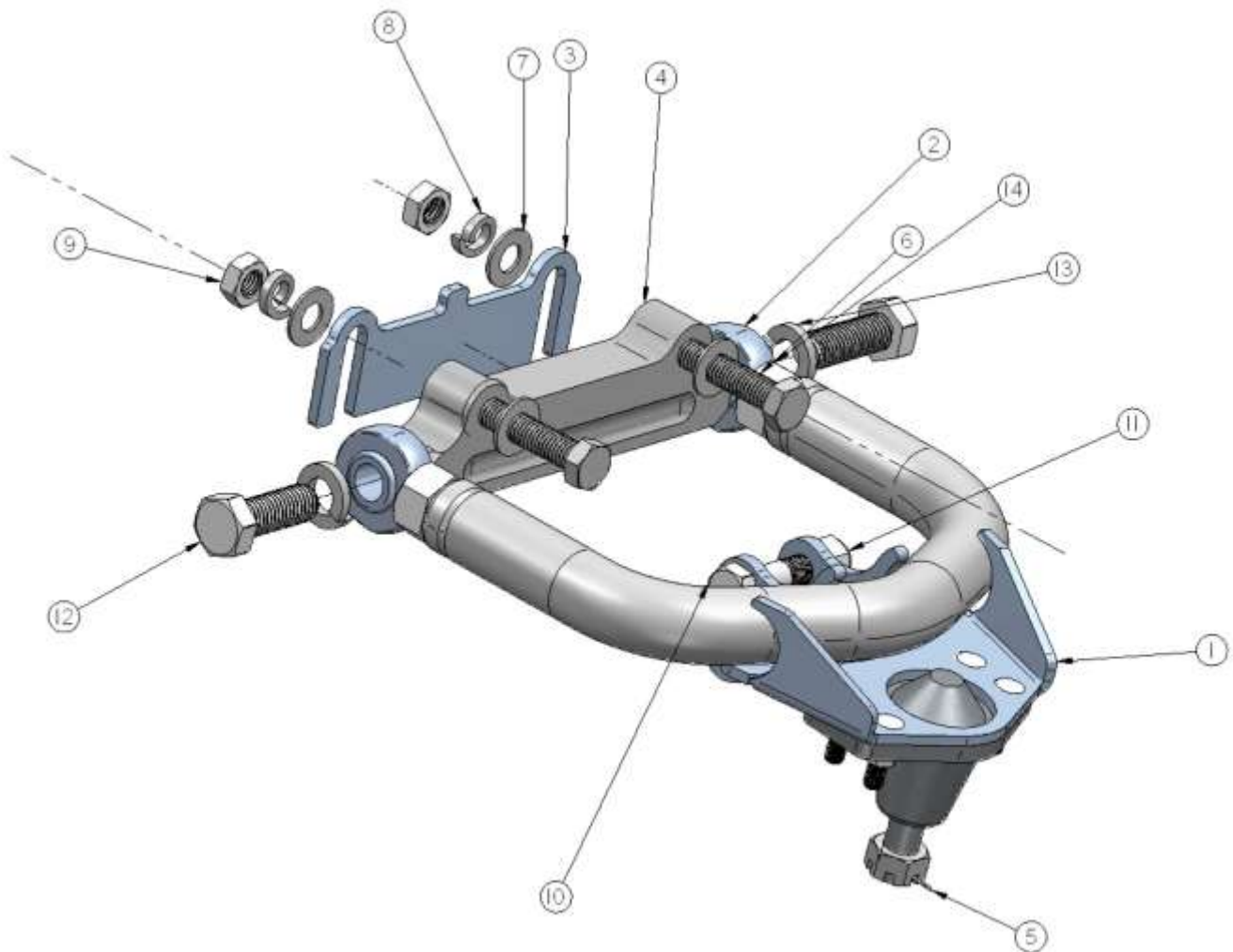
4. Attach the Shockwave to the upper StrongArm using a  $\frac{1}{2}$ " x  $2 \frac{1}{4}$ " bolt and Nylok nut.

5. This control arm is designed to work with our MuscleBar sway bar. The end link will attach to the **rear** mounting tab on the upper arm.

# STRONG ARMS™

by Air Ride Technologies

Item #	Description	Qty.
1.	Control arm	1
2.	Heim ends – 3/4"-16 thread x 5/8" I.D.	2
3.	Alignment shim	1
4.	Cross shaft	1
5.	Ball joint	1
6.	1/2"-13 x 2 1/2" Gr.5 bolt	2
7.	1/2" SAE flat washer	4
8.	1/2" lock washer	2
9.	1/2"-13 nut	2
10.	1/2"-13 x 2 1/4" Gr.5 bolt	1
11.	1/2"-13 Nylok nut	1
12.	5/8"-18 x 1 3/4" Gr.8 bolt	2
13.	5/8" lock washer	2
14.	5/8" flat washer	2





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**Part # 12106510**  
**67-70 Mustang HQ Series Rear CoilOvers**  
For Use w/ RideTech 4 Link

**Shock Assembly:**

2	24159999	5" stroke HQ Series shock
2	90002024	1.7" eyelet – w/adjustment knob
4	90001994	.625" I.D. bearing
8	90001995	Bearing snap ring

**Components:**

2	59120175	Coil spring – 12" long / 175 # rate
2	90002222	Spring retainer kit
8	90002043	Aluminum spacer for bearings
4	70010828	Delrin Spring Washer



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## Part # 12087199 64-70 Mustang Rear AirBar

### Components:

1	90000513	Lower Shockwave mount
1	90000514	Lower Shockwave mount
2	90000144	Axle tabs
2	90000155	Axle tabs
2	90000515	Lower axle mount
1	90000518	Upper cradle assembly
2	90000511	"T" bolt plate
2	90001001	Upper bars – TW 7.375" (C-C length 9.50")
2	90001025	Lower bars – WW 21.75"
2	99250001	¼"-28 straight grease fitting
2	90001589	Threaded Kevlar lined Heim end
2	99752004	¾"-16 jam nut – for rod end
4	90000552	Aluminum spacer for Heim end
4	90001085	Poly bushing for lower bar
2	90000519	Lower bar bushing sleeve
4	90001942	Rubber bushings pressed into bars
1	90000129	Pinion snubber reinforcement plate
4	99566001	U-bolt 9/16" x 3" w/nuts and washers
2	90002285	Square corner U bolts - Upper cradle to car
2	70010694	Jig brackets for upper bar installation

### Hardware Kit: (Part # 99010016)

6	5/8"-11 x 2 ¾" Gr.5 bolt	Bars to cradle and brackets
6	5/8"-11 Nylok jam nut	Bars to cradle and brackets
4	3/8"-16 Nylok nut	Upper cradle to car
4	3/8" SAE flat washer	Upper cradle to car
4	1/2"-13 x 2 ¼" Gr.5 bolt	Shockwaves to mounts
4	1/2"-13 Nylok jam nut	Shockwaves to mounts
4	1/2"-13 x 1 ½" Gr. 5 bolt	Shockwave brackets to axle brackets
6	1/2"-13 Nylok nut	Shockwaves to mounts
2	1/2"-13 x 6" Gr. 5 bolt	Lower bar to leaf spring mount (64-67 cars)
2	1/2"-13 x 4 ½" Gr. 5 bolt	Lower bar to leaf spring mount (64-67 cars)
2	5/8"-18 Nylok nut	"T" Bolt
2	5/8" SAE flat washer	"T" Bolt
2	5/16"-18 x 1" Gr.5 bolt	Upper cradle to pinion snubber mount
2	5/16" SAE flat washer	Upper cradle to pinion snubber mount
2	5/16" lock washer	Upper cradle to pinion snubber mount
2	7/16"-14 x 1 ¼" Gr.5 bolt	Upper cradle to floor pan
2	7/16"-14 Nylok nut	Upper cradle to floor pan
4	7/16" SAE flat washer	Upper cradle to floor pan
2	3/8"-16 x ¾" Gr. 5 bolt	Upper bar installation jig
2	3/8"-16 nut	Upper bar installation jig

# AirBAR<sup>®</sup>

by Air Ride Technologies

1. Raise the vehicle to a safe and comfortable working height. Use jack stands to support the vehicle with the suspension hanging freely.

2. Support the axle and remove the leaf springs, shocks and tail pipes. Refer to the factory service manual for proper disassemble procedures. Hang on to the front leaf spring bolts, they will be reused.

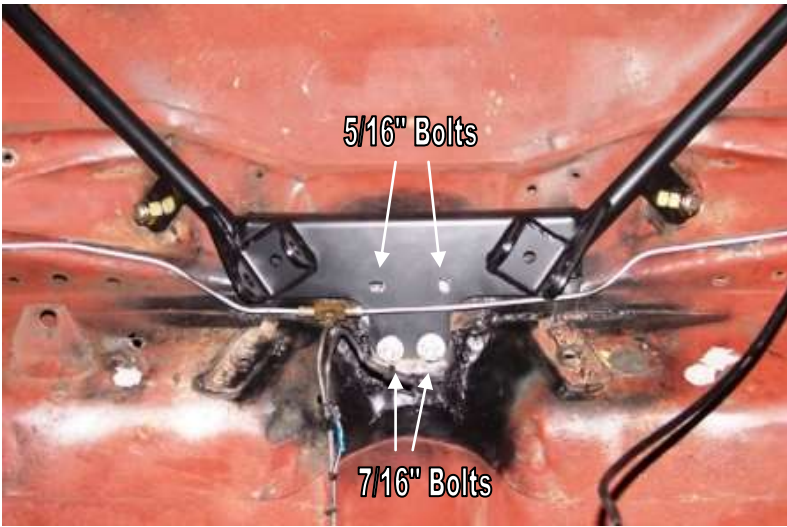


3. The square U-bolts hold the upper cradle in place and will slide through two existing holes. Some cars may not have these holes. In this case use the cradle as a template.

**Note:** You may need to open the holes up a bit to turn the bolt into place.



4. Lower the axle and slide the cradle assembly into place. The cradle will be held in place with two 3/8 nylocs and flat washers. Do not tighten these until all the bolts in the cradle have been started.



5. The front of the cradle locates off of the pinion snubber mount. A reinforcement plate is supplied and is installed on the inside of the car **with the bolt threads pointing up**. It is held in place by two 5/16" bolts with lock washers and flat washers. Two additional 7/16" holes must be drilled through the floor pan. 7/16" x 1 1/4" bolts, Nyloks and flat washers are supplied

**Note:** Inspect the factory welds holding the pinion snubber mount to the floor pan, re-weld if necessary.



6. This T bolt will be inserted from the inside of the vehicle down through the factory shock hole. A 5/8" nyloc and flat washer will hold the cradle up tight to the bottom of the car.

**Note:** Cars equipped with the "Drag Pack" option will have staggered shocks. You will have to remove the plate covering the original shock hole.

7. Tighten all the upper cradle bolts.



8. The lower axle mount will bolt to the leaf spring pad via the supplied U bolts.

**Note:** To ease the rest of the install; leave all bolts loose until the lower bars are in place.



9. The large end of the lower bar (the longer one) will bolt into the front stock leaf spring mount using the stock hardware with the grease zerker down.

10. This bushing in polyurethane and is lubricated at the factory with lithium grease. Future lubrication can be done with any non-petroleum based lubricant. The rubber bushings don't require lubrication.

11. Swing the bar up to the axle mount and insert  $5/8" \times 2 3/4"$  bolt and thin nyloc. Do not tighten just yet.

12. Bolt the lower Shockwave mount to the bottom two holes of the lower axle mount using two  $1/2" \times 1 1/2"$  bolts with Nylok nuts. The U shaped bracket will point towards the inside of the car.

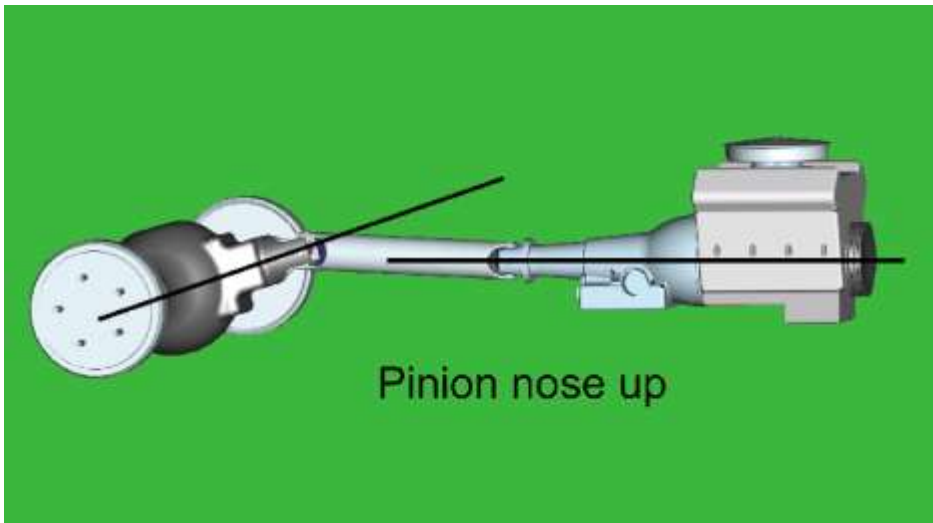
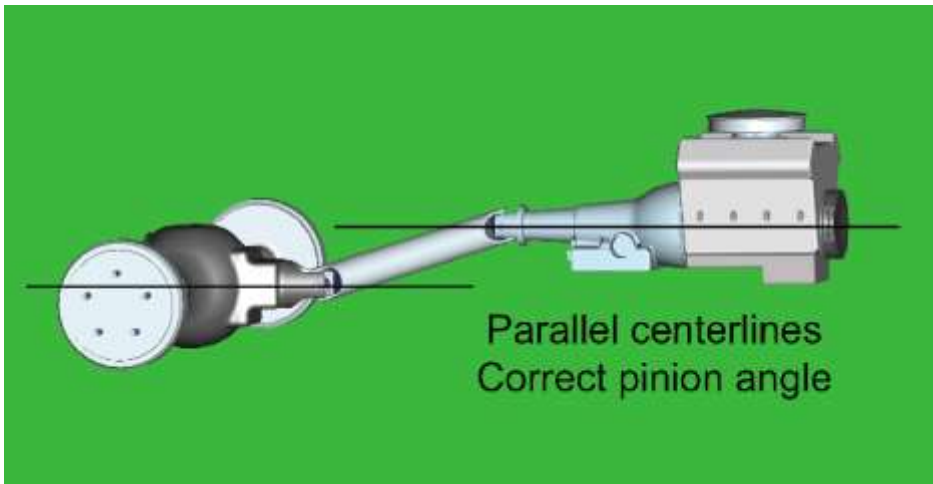
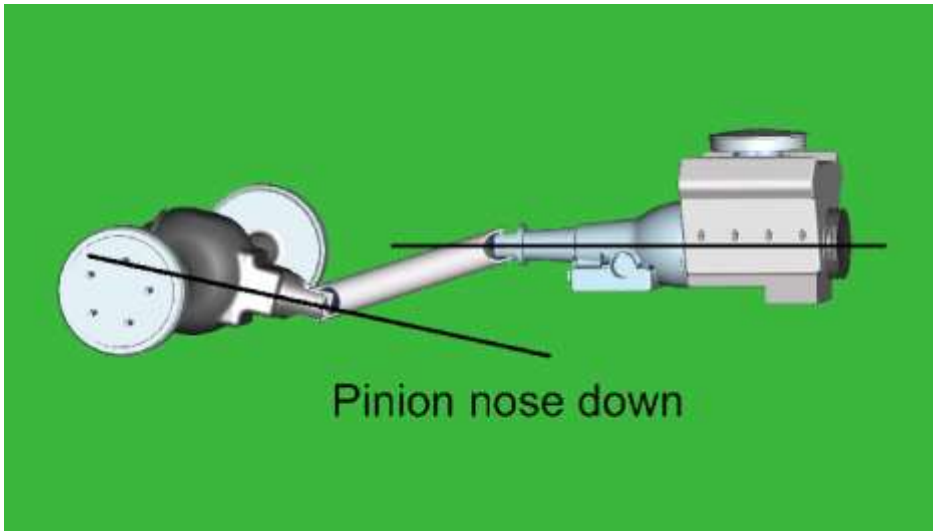
13. Raise the axle to ride height. There should be approx.  $14 1/2"$  from center eye to center eye on the Shockwave mounts.

14. Bolt the axle tabs to the upper bar using the  $5/8" \times 2 3/4"$  bolt and nyloc as shown in the picture. The upper bar should measure 9.5". Bolt the other end to the cradle.

15. For now just lay the upper tabs on the axle. Pinion angle and axle center must first be set. Centering the axle is best done by leveling the car and hanging a plum off of the quarter and measuring to the axle. Pinion angle is explained on the next page.







16. 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.

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.



17. Once all of the angles are set, tack weld the upper tabs to the axle. To avoid frying the bushing remove the upper bar first then weld solid.

18. Install upper bars. With the vehicle at ride height snug all 4 link bar bolts.

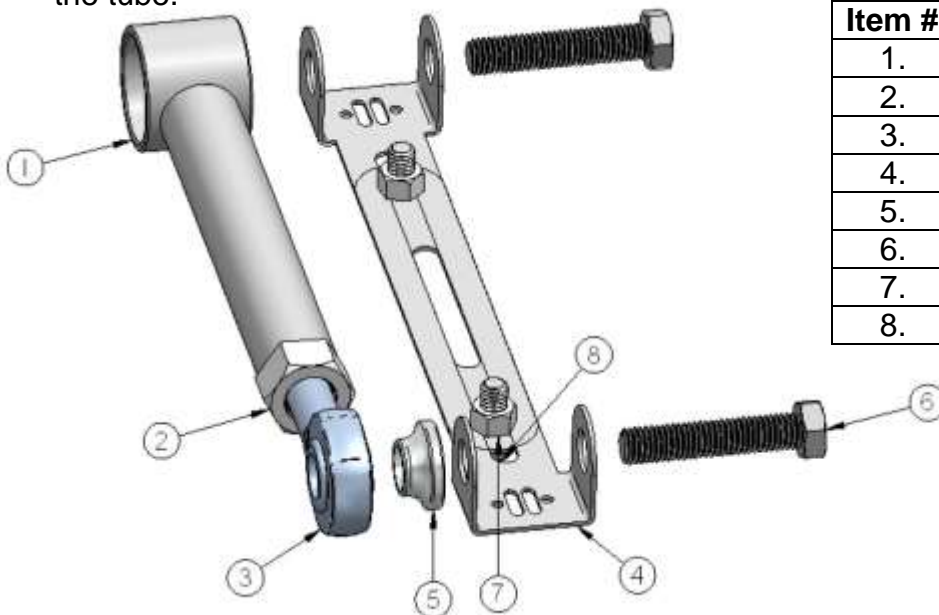
19. Apply thread sealant to the air fitting and screw it into the top of the Shockwave. Bolt the Shockwave into place using 1/2" x 2 1/4" bolts with nylocs.

20. The installation is complete but you want to check clearance of the brake lines, parking brake cables, vent tubes and exhaust. For the exhaust you can either install a turndown or reroute the exhaust under the axle.

21. Ride height air pressure should be around 75-80 psi, with about 3-4 clicks in the shocks.

## 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 2 3/4" bolt.
- Using another 5/8" x 2 3/4" bolt, fasten the axle tabs to the other end. 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.
- 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 melting the rubber bushings. 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.	Heim end
4.	Alignment jig
5.	Aluminum spacer
6.	5/8"-11 x 2 3/4" bolt
7.	3/8"-16 nut
8.	3/8"-16 x 3/4" bolt





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## Should I weld my AirBar 4 link assembly in?

Since we get this question quite often, it deserves a proper explanation.

The AirBar has been designed for bolt-in installation. We have paid special attention to interfacing with key structural areas of each vehicle, fastening bracketry in at least two planes to properly distribute load paths, and to using appropriate fasteners that roll, rather than cut, threads into the vehicle structure.

Having said that, you could potentially encounter a vehicle that has rust or collision damage in these areas. Or maybe you intend to consistently place the vehicle in severe racing applications with sticky racing slicks and high speed corners. In these cases it is perfectly acceptable to weld the AirBar components into your vehicle. Even in these severe cases we recommend that you install the entire AirBar assembly first [including the fasteners], and then use short 1" long tack welds to secure your installation. Remember that the vehicle structure metal is typically much thinner [.060"-.120" ] than the .188" thick AirBar brackets. If you burn through the vehicle sheet metal structure you may end up with an installation that is weaker than before you tried to weld it.

The other reason to weld in your AirBar assembly is...you simply want to. You're a welding kind of guy...that's the way you've always done it...you have the skills and equipment to do it. In that case...weld away with our blessing!

### 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.

## Assembly...



First using the supplied lower adjuster nut(90002222) thread the nut onto the shock from the bottom side as seen in figure 1



Next install detrin washers then coil spring over the top of the shock as seen in figure 2



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.



Slide the Derlin washer over the spring, Next slide the upper spring mount (90002222) over eyelet as seen in figure 4.



Install upper spring mount retainer clip (90002057) into the groove on the upper eyelet as seen in figure 5. Then reinstall adjuster to complete assembly.



The included set of bearing spacers (900002044) are used to adapt the coil-overs to just about any application. The supplied spacers allow the coil-overs to accept 5/8" or 1/2" bolts.

## 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 soft setting of 20.



-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 20 clicks. This sets the shock at 20. (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.