



350 S. St. Charles St. Jasper, In. 47546  
Ph. 812.482.2932 Fax 812.634.6632

[www.ridetech.com](http://www.ridetech.com)

**Part # 11310298**  
**91-96 GM "B" Body Air Suspension System**

**Front Components:**

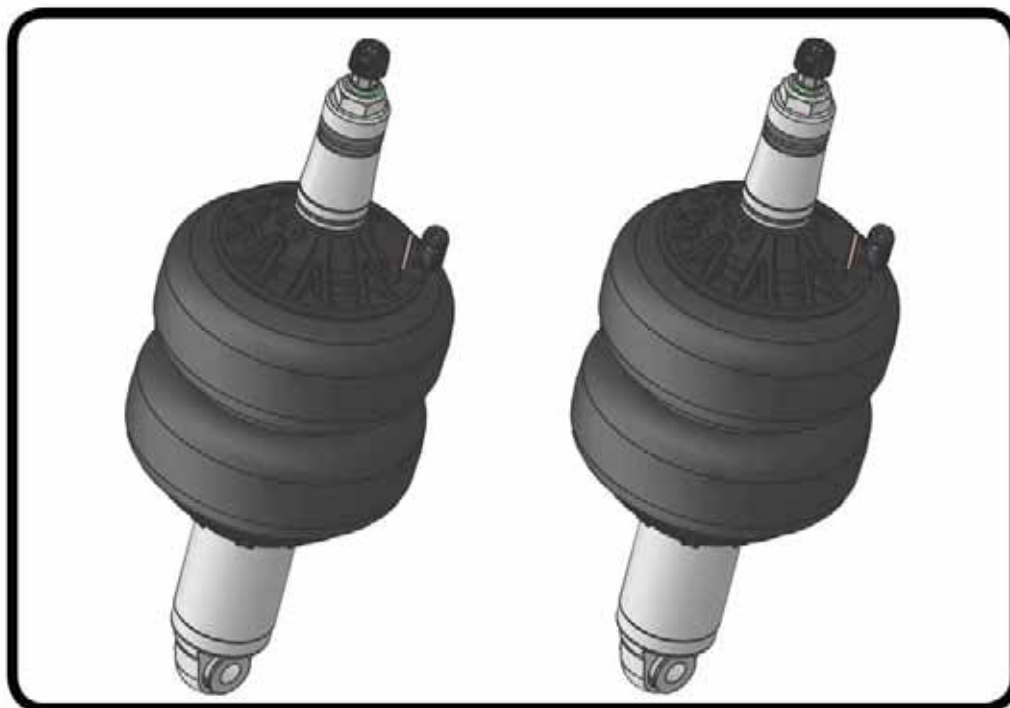
1	11172899	Lower StrongArms
1	11173699	Lower StrongArms
1	11313001	Front ShockWave Kit

**Rear Components:**

1	11324099	Rear CoolRide Kit
1	11320701	HQ Series Rear Shocks



**Part # 11173001 - 70-81 GM F-Body Front HQ Series Shockwave**



Recommended Tools



## 1000 Series Bellow, 2.75" Stud/Eye 2.9" Shock Installation Instructions

Table of contents

Page 2..... Included components

Page 3..... Notes and Care of Your Shockwave

Page 4..... Shock Adjustment

ShockWave Dimensions:

Center of bearing to Center of bearing:

Compressed: 10.35"

Ride Height: 11.75"

Extended: 12.65"

THE DELRIN BALL REQUIRES A 3/4" HOLE FOR THE FLANGE TO GO THROUGH. THIS CAN BE DRILLED WITH A UNIBIT.

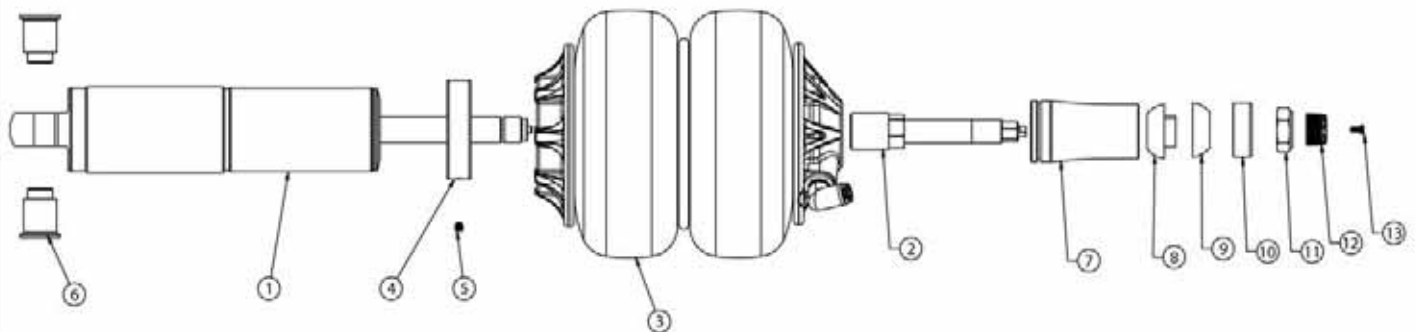
[www.ridetech.com](http://www.ridetech.com)  
812-482-2932





### Major Components .....In the box

Item #	Part #	Description	QTY
1	982-10-802	2.9" Stroke HQ Series Shock	2
2	90009989	2.75" Stud Top (Installed on Shock) - Includes Adjuster Knob & Screw	2
3	24090199	1000 Series 6.5" Double Convoluted AirSpring	2
4	234-00-153	AirSpring Locking Ring (Installed on shock)	2
5	99055000	Locking Ring Set Screw (Installed on shock)	2
6	90002062	Spacers - INCLUDED WITH STRONGARMS	4
7	90002313	2.75" Aluminum Stud Top Base	2
8	90001904	Bottom Delrin Ball	2
9	90001903	Top Delrin Ball	2
10	90001902	Delrin Ball Aluminum Top Cap	2
11	99562003	9/16"-18 Thin Nylok Nut	2
12	210-35-120-0	Adjuster Knob - (90009989 assembly)	2
13	90009969	#4-40 X 1/4" SS, 18-8 Pan Head Torx Cap - (90009989 assembly)	2
	70012161	2.75" Stud Top Metering Rod (installed in stud top)	2
	90001994	5/8" ID Bearing (installed in shock and eyelet)	4
	90001995	Bearing Snap Ring (installed in shock and eyelet)	8



**THE DELRIN BALL REQUIRES A 3/4" HOLE FOR THE FLANGE TO GO THROUGH. THIS CAN BE DRILLED WITH A UNIBIT.**

**WARNING: ATTEMPTING TO REMOVE THE AIR FITTING WILL DAMAGE IT AND VOID THE WARRANTY.**



### ShockWave Installation



1. Drill the OEM shock hole out to 3/4". This can be done with a Unibit. The Shockwave top will come in contact with the coil spring retaining fingers, they must be cut off. A die grinder works well here.



2. Some trimming must also be done on the outside of the frame pocket to allow clearance for the Shockwave.



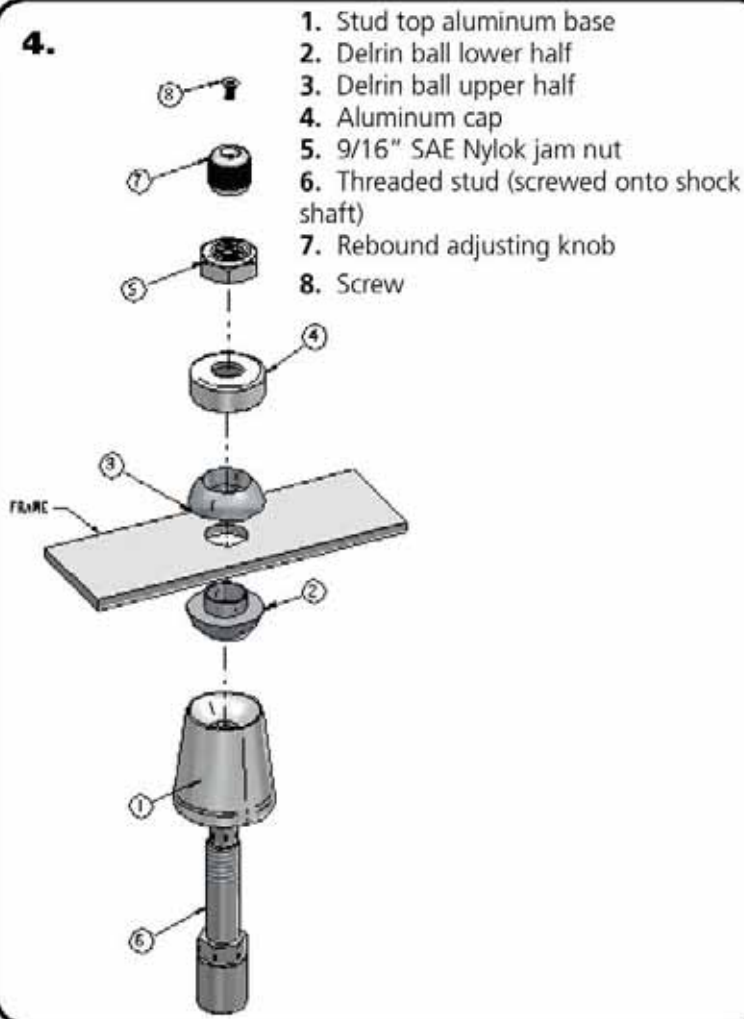
3. To allow clearance for the Shockwave, some trimming must be done on the inside of the coil spring pocket as shown by the white line in the picture. This is best done with either a cut off wheel or plasma cutter. Grind all cuts smooth when finished.

**Note:** It may be helpful to go ahead and install the lower StrongArms and Shockwaves to determine exactly what needs to be removed.



### ShockWave Installation

4.



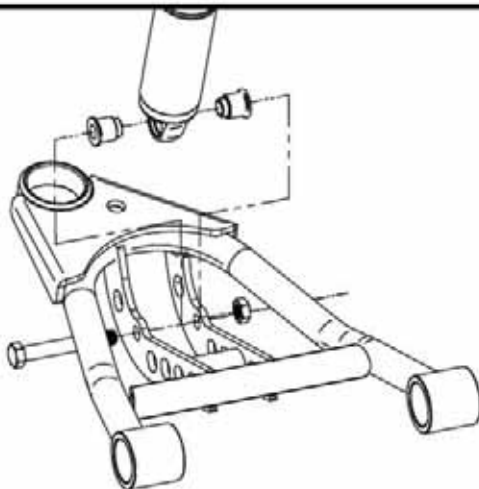
1. Stud top aluminum base
2. Delrin ball lower half
3. Delrin ball upper half
4. Aluminum cap
5. 9/16" SAE Nylok jam nut
6. Threaded stud (screwed onto shock shaft)
7. Rebound adjusting knob
8. Screw

**Note:** The airline must also be routed at this time. It can be ran through the subframe toward the rear of the vehicle.

4. Apply thread sealant to a 90 degree air fitting and screw it into the top of the Shockwave. The air fitting location can be rotated by twisting the bellow assembly separate of the shock. Place the Shockwave into the coil spring pocket with the stud sticking through the OEM shock hole. See assembly **Diagram 4**. OEM Shock hole **must** be drilled out to  $\frac{3}{4}$ "

1. Stud top aluminum base
2. Delrin ball lower half
3. Delrin ball upper half
4. Aluminum cap
5. 9/16" SAE Nylok jam nut
6. Threaded stud (screwed onto shock shaft)
7. Rebound adjusting knob
8. Screw

5.



5. Raise the lower arm up to the Shockwave and bolt them together using the  $\frac{1}{2}$ " x  $\frac{3}{4}$ " bolt and Nylok supplied w/ the lower arms. An aluminum spacer will be on each side of the bearing. Torque to 75 ftbs.

6. Raise the lower control arm to full compression and double-check to make sure the Shockwave does not rub on anything at any-time. Allowing the Shockwave to rub on anything will cause failure and is not a warrantable situation.

7. The best ride quality will occur around 50-60% suspension travel; depending on vehicle weight this typically occurs around 85-100 psi.



### Notes and Care of your Shockwaves

#### NOTES:

**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.

You can clock the airfitting location on the ShockWave by turning the AirSpring assembly of the shock.

When cutting the airline, use a razor blade. The cut needs to be a clean cut and square for the airline to seal properly.

The Locking ring on the shock is **NOT** adjustable. These rings are set at the factory to optimize the AirSpring stroke with the shock stroke.

---

## The care and feeding of your new ShockWaves

1. Although the ShockWave has an internal bumpstop, **DO NOT DRIVE THE VEHICLE DEFLATED RESTING ON THIS BUMPSTOP. DAMAGE WILL RESULT.** The internal bumpstop will be damaged, the shock bushings will be damaged, and the vehicle shock mounting points may be damaged to the point of failure. This is a non warrantable situation.
2. Do not drive the vehicle overinflated or "topped out". Over a period of time the shock valving will be damaged, possibly to the point of failure. This is a non warrantable situation! If you need to raise your vehicle higher that the ShockWave allows, you will need a longer unit.
3. The ShockWave is designed to give a great ride quality and to raise and lower the vehicle. **IT IS NOT MADE TO HOP OR JUMP!** If you want to hop or jump, hydraulics are a better choice. This abuse will result in bent piston rods, broken shock mounts, and destroyed bushings. This is a non warrantable situation.
4. Do not let the ShockWave bellows rub on anything. Failure will result. This is a non warrantable situation.
5. The ShockWave product has been field tested on numerous vehicles as well as subjected to many different stress tests to ensure that there are no leakage or durability problems. Failures have been nearly nonexistent unless abused as described above. If the Shockwave units are installed properly and are not abused, they will last many, many years. ShockWave units that are returned with broken mounts, bent piston rods, destroyed bumpstops or bushings, or abrasions on the bellows will not be warrantied.



### Shock Adjustment

#### 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 rebound 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. **CONTINUE ON NEXT PAGE.**

##### 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.

### STILL HAVE QUESTIONS?

#### Tech line hours

Monday - Friday

8AM - 6PM (EST) ..... 812-482-2932



350 S. St. Charles St. Jasper, In. 47546  
Ph. 812.482.2932 Fax 812.634.6632

[www.ridetech.com](http://www.ridetech.com)

**Part # 11172899**  
**70-81 GM "F" Body Lower StrongArms**  
For Use w/ Shockwaves or CoilOvers

**Components:**

1	90000589	Driver side arm
1	90000590	Passenger side arm
2	90000896	Ball joint (includes boot, grease fitting, castle nut & cotter pin)
8	70010759	Delrin bushing half
4	90000516	1/2" I.D. Inner bushing sleeve <b>installed in arms</b> ('70-'74)
4	90000517	9/16" I.D. Inner bushing sleeve ('75-'81)
4	90002062	Aluminum bearing spacer

**Hardware:**

6	99501005	1/2"-13 x 3 1/2" bolt	Shockwave to lower arm & Lower arm to frame ('70 - 74)
6	99502009	1/2"-13 Nylok nut	Shockwave to lower arm & Lower arm to frame ('70 - '74)
2	99503014	1/2"-13 Sae Flat washer	Shockwave to lower arm & Lower arm to frame ('74 -'74)
4	99561010	9/16"-12 x 3 1/2" bolt	Lower arm to frame ('75 - '81)
4	99562006	9/16"-12 Nylok Nut	Lower arm to frame ('75 - '81)
4	99563003	9/16" Flat Washer	Lower arm to frame ('75 - '81)



# STRONGARMS

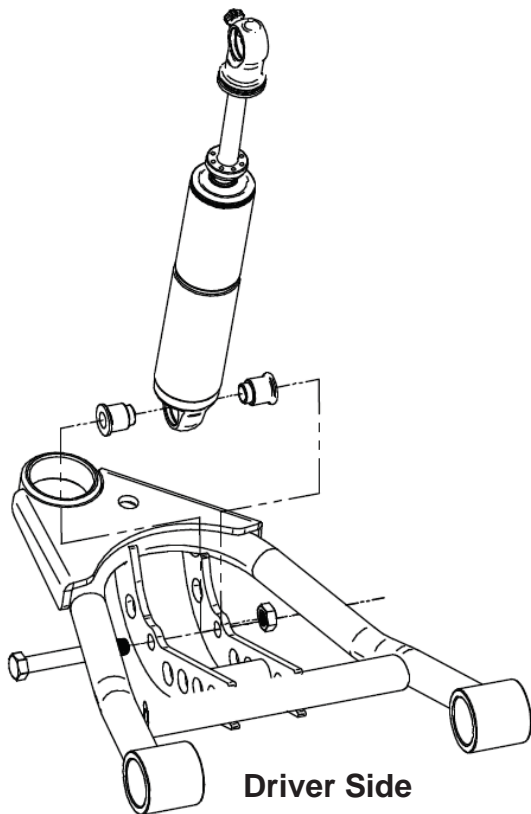
## Installation Instructions



1. After removing the factory lower control arm, clean the bushing mounting surfaces on the frame and lubricate with Lithium grease.

2. Fasten the lower arm to the frame with the hardware supplied. There are two different size bushing sleeves supplied 1/2" and 9/16". '70 - '74 model years will use 1/2". '75-'81 will use 9/16".

**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.



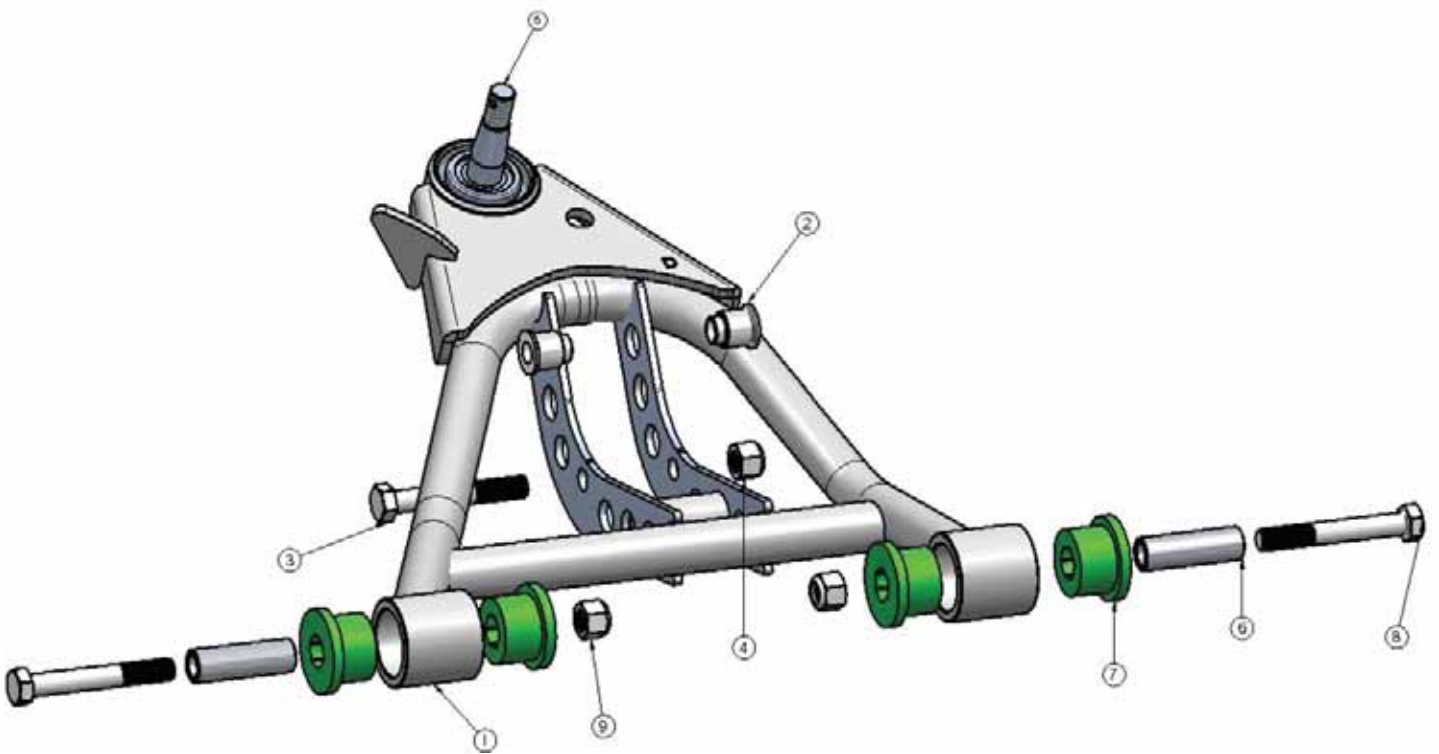
3. Swing the lower StrongArm up to the Shockwave or CoilOver and secure with the 1/2" x 3 1/4" bolt, flat washer, and Nylok nut. An aluminum spacer must be installed on each side of the bearing.

4. Slide the ball joint boot over the stud, then push the stud up through the spindle. Secure w/ the new castle nut and cotter pin supplied.

5. Grease the ball joints.

# STRONGARMS

Item #	Description	Qty.
1.	Passenger side arm	1
1.	Driver side arm	1
2.	Aluminum bearing spacer	4
3.	1/2"-13 x 3 1/2" bolt	2
4.	1/2"-13 Nylok nut	6
5.	Ball joint	8
6.	Inner bushing sleeve	4
7.	Delrin bushing half	8
8.	1/2"-13 or 9/16"-12 x 3 1/2" bolt	4
9.	1/2"-13 or 9/16"-12 Nylok nut	4





350 S. St. Charles St. Jasper, In. 47546  
Ph. 812.482.2932 Fax 812.634.6632

[www.ridetech.com](http://www.ridetech.com)

**Part # 11173699**  
**70-81 GM "F" Body Upper StrongArms**

**Components:**

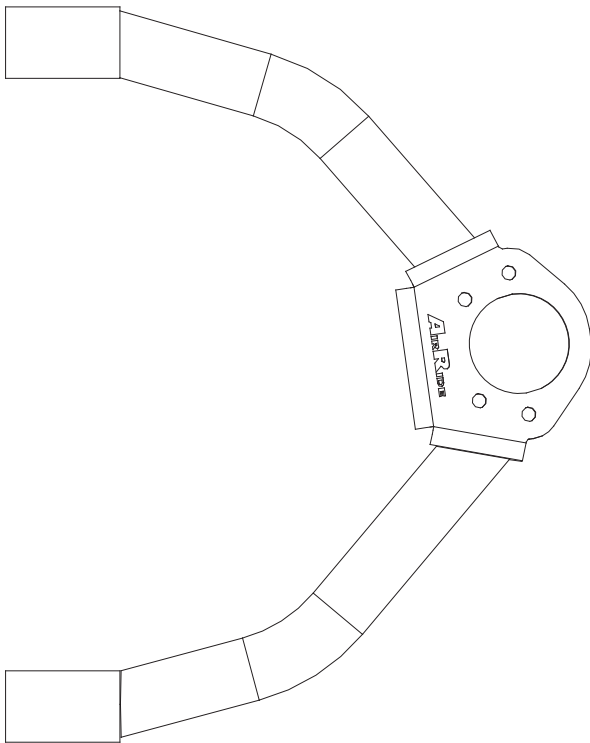
- |   |          |   |
|---|----------|---|
| 1 | 90000591 | Driver side arm   |
| 1 | 90000592 | Passenger side arm  |
| 2 | 90000899 | Upper ball joint (includes boot, grease fitting, castle nut & cotter pin)                     |
| 2 | 90000917 | Cross shaft kit w/ bushings & hardware<br>(Install serrated washer between shaft and bushing) |
| 2 | 90001083 | 1.5" tall bump stop w/ hardware   |

# STRONGARMS



1. Fasten the upper arm to the frame using the factory hardware. Reinstall the current alignment shims, but **vehicle must be realigned**. This arm was designed with an extra 2 degrees of positive caster allowing the car to be aligned with up to 4 degrees of positive caster. (This will vary from car to car.)

2. Slide the bump stop stud through the 3/8" hole in the lower control arm.



**Driver Side – Top View**

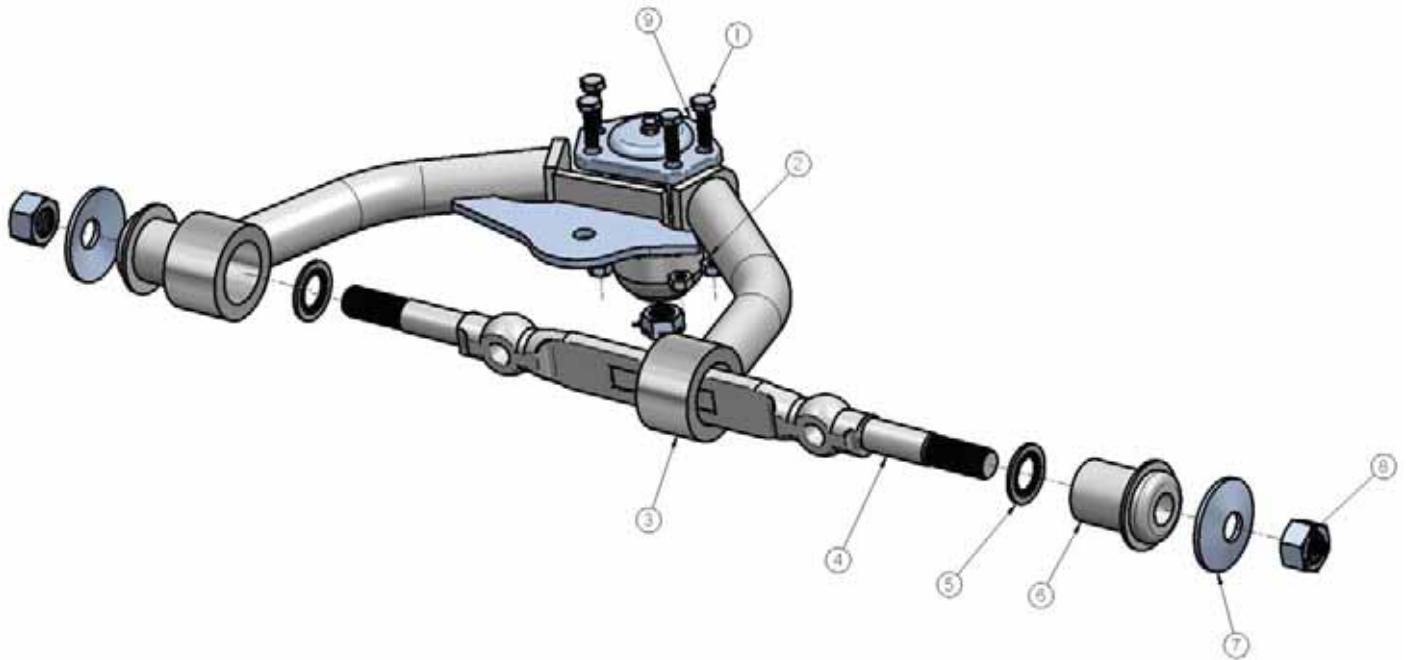
3. Drop ball joint down through upper arm. Slide ball joint boot over stud, then place boot retainer over the boot. Clamp assembly tight w/ the hardware supplied.

4. Fasten the ball joint to the spindle w/ the new castle nut and cotter pin supplied.

5. Position the suspension at mid travel and then tighten the cross shaft nuts.

# STRONGARMS

Item #	Description	Qty.
1.	1/4"-28 x 7/8" hex bolt	8
2.	1/4"-28 nut	8
3.	Driver side control arm	1
3.	Passenger side control arm	1
4.	Cross shaft	2
5.	Serrated washer	4
6.	Cross shaft bushing	4
7.	Cone washer	4
8.	5/8"-18 locking nut	4
9.	Ball joint	2





350 S. St. Charles St. Jasper, In. 47546

Ph. 812.482.2932 Fax 812.634.6632

[www.ridetech.com](http://www.ridetech.com)

**Part # 11314099**  
**91-96 Impala Rear CoolRide Kit**

**Components:**

2	90009000	Tapered sleeve air spring
2	90000059	Upper cup bracket
2	90000072	Lower cup bracket
2	90000224	Upper washer (4" diameter - may not be needed)

**Hardware:**

2	99435003	7/16" x 2" stud	Cup bracket to frame
2	99433002	7/16" flat washer	Cup bracket to frame
2	99432001	7/16" Nylok nut	Cup bracket to frame
6	99371001	3/8" x 3/4" USS bolt	Air spring mounting
6	99373003	3/8" SAE washer	Air spring mounting
6	99373005	3/8" lock washer	Air spring mounting

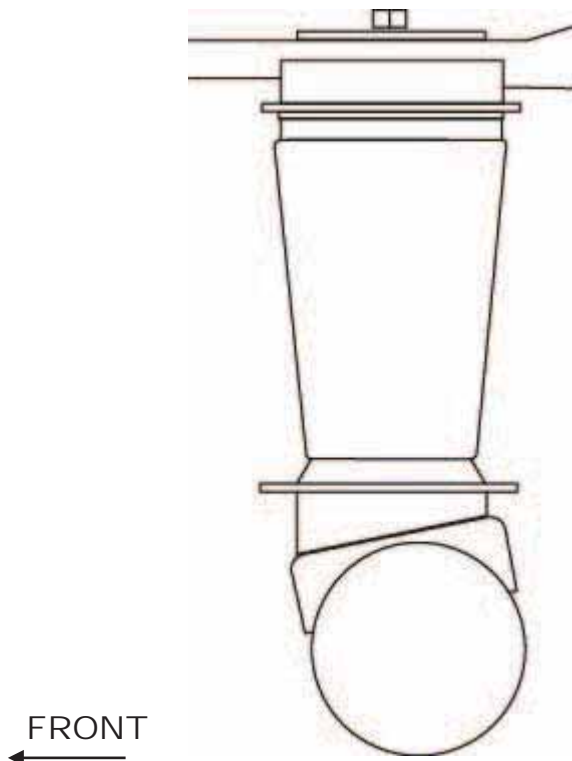
**IMPORTANT NOTE:** MAKE SURE THE AIR SPRING MOUNTING HARDWARE DOES NOT BOTTOM OUT IN THE AIR SPRING. IF THE HARDWARE IS TOO LONG, IT CAN DAMAGE THE AIR SPRING.

# COOL RiDE®

1. Jack up rear of vehicle and support with jackstand under the frame.
2. Remove lower shock absorber bolts. Doing this one side at a time prevents chasing the axle around under the car.
3. By pushing rearend down slightly, you should be able to remove the coilsprings.
4. Assemble the upper bracket and lower brackets onto the airspring. The upper bracket will have a slot for airline access. When installing the fitting, be sure it is pointed towards this slot.
5. The supplied center stud should be inserted into the nut that is welded to the inside of the upper bracket. This will attach the upper bracket to the upper coilspring cup. It may be trimmed to correct length.
6. Insert the stud through the existing hole in the coilspring pocket. Tighten the nut on the center stud to 15 -20 ft/lb. The lower bracket will sit on the old coilspring mount with no other attachment. The tall side of the lower bracket goes to the front of the car.
7. Re-attach the shock absorbers and route the airlines.

If you have any questions concerning the air ride system, please don't hesitate to call us. We want to insure that your installation is done as safely as possible, and that it will be reliable for years to come.

**RIDETECH 812.482.2932**





350 S. St. Charles St. Jasper, In. 47546  
Ph. 812.482.2932 Fax 812.634.6632

[www.ridetech.com](http://www.ridetech.com)

**Part # 11310701**  
**91-96 Impala HQ Series Rear Shock Kit**

**Shock:**

2	986-10-020	7.55" Stroke Eye Top Shock Cartridge
2	70011139	5/8" ID Shock Bushing
2	70011138	3/4" ID Shock Bushing
2	90002102	1/2" ID Shock Sleeve
2	90002068	Wide Trunnion

**Components:**

2	90001619	Shock Bolt Kit
---	----------	----------------

**Hardware:**

4	99311001	5/16" x 1" USS bolt	Shock to frame
8	99313002	5/16" SAE flat washer	Shock to frame
4	99312003	5/16" USS Nylok nut	Shock to frame





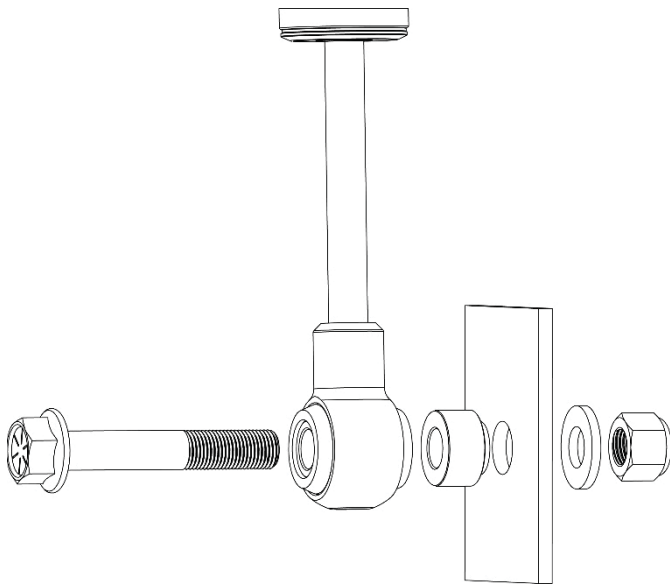
350 S. St. Charles St. Jasper, In. 47546  
Ph. 812.482.2932 Fax 812.634.6632

[www.ridetech.com](http://www.ridetech.com)

## Installation Instructions



1. Attach the upper T-bar to the frame in the oem location using the supplied 5/16 x 1" USS bolts, washers and Nylok nuts.



2. Attach the shock to the axle using the new shock bolt kit supplied.

