



## Installation Instructions



### Part # 12140298 - 1994-2004 Mustang Air Suspension System

#### Recommended Tools

##### Front Components:

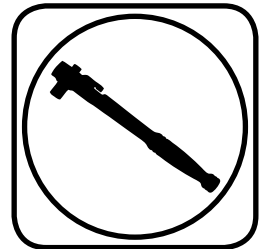
12142401 Front ShockWave Strut Instructions

##### Rear Components:

12145401 Rear ShockWave Instructions

12145899 Rear Lower StrongArms

12146699 Rear Upper StrongArms



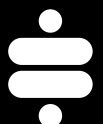
# 1994-2004 Mustang Air Suspension Installation Instructions

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812-482-2932

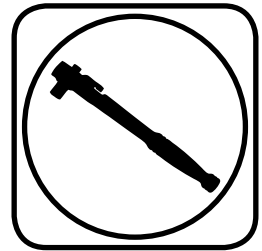




### Part # 12142401 -1994-2004 Mustang



#### Recommended Tools



## 1994-2004 Mustang Front AirStrut Installation Instructions

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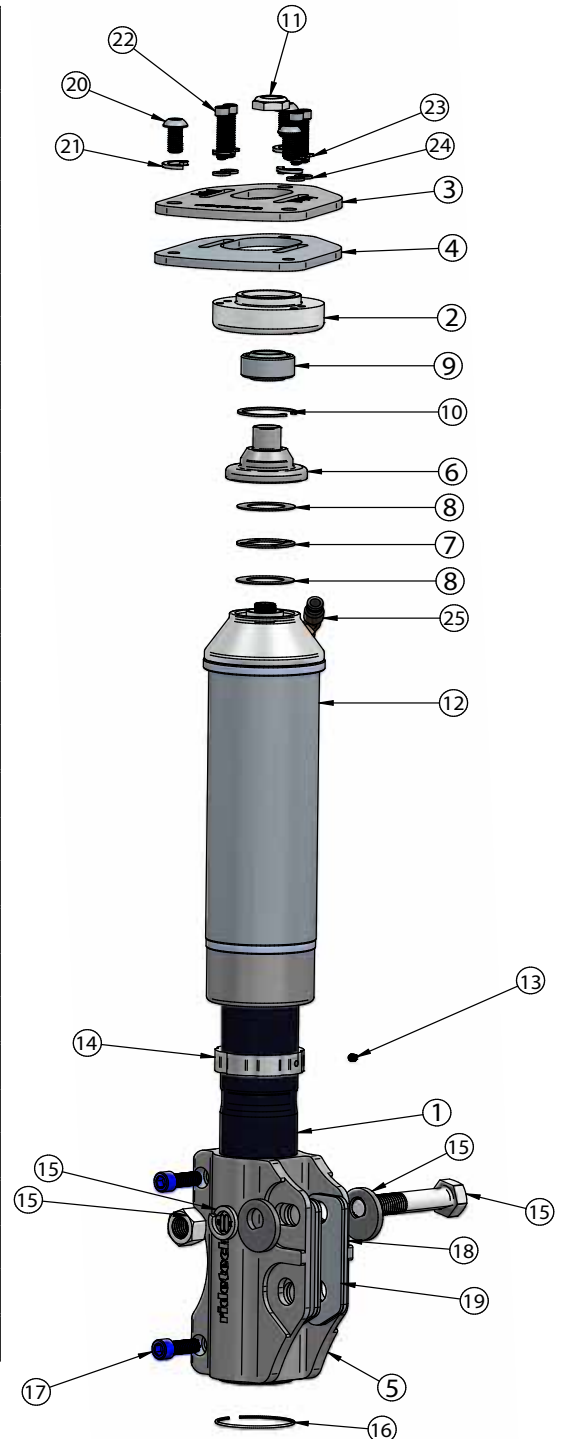
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### Included Components .....In the box

| Item # | Part #   | Description                      | QTY |
|--------|----------|----------------------------------|-----|
| 1      | 27569999 | Strut Cartridge                  | 2   |
| 2      | 90002470 | Bearing Retaining Mount          | 2   |
| 3      | 70012100 | Upper Caster Plate-Driver(Shown) | 1   |
| 3      | 70012101 | Upper Caster Plate-Pass          | 1   |
| 4      | 90002469 | Lower Caster Plate               | 2   |
| 5      | 70012068 | Strut Extrusion                  | 2   |
| 6      | 90002368 | Thrust Bearing Adapter           | 2   |
| 7      | 70010987 | Thrust Bearing                   | 2   |
| 8      | 70010988 | Thrust Bearing Washer            | 4   |
| 9      | 90001042 | Upper Mount Bearing              | 2   |
| 10     | 90000805 | Bearing Snap Ring                | 2   |
| 11     | 99562003 | 9/16"-18 Nylok Nut               | 2   |
| 12     | 21090798 | Strut Air Spring                 | 2   |
| 13     | 99055000 | M5 x.8 x 5mm Set Screw           | 2   |
| 14     | 70008913 | Locking Ring                     | 2   |
| 15     | 90000801 | Eccentric Bolt                   | 1   |
| 16     | 70010992 | Strut Retaining Ring             | 2   |
| 17     | 99371042 | 3/8"-16 x 1" SHCS                | 6   |
| 18     | 70012031 | Spindle Spacer-.120" Thick       | 4   |
| 19     | 70012032 | Spindle Spacer-.097" Thick       | 4   |
| 20     | 99371029 | 3/8"-16 x 3/4" BHSC              | 6   |
| 21     | 99373010 | 3/8" Split Lock Washer           | 6   |
| 22     | 99251012 | 1/4"-20 x 1 1/4" SHCS            | 8   |
| 23     | 99253009 | 1/4" Flat Washer                 | 8   |
| 24     | 99253007 | 1/4" Split Lock Washer           | 8   |
| 25     | 31954201 | 1/4" Fitting                     | 2   |
|        | 90002263 | Tube Red Loctite                 | 1   |
|        | 90002276 | Tube Anti-sieze                  | 1   |

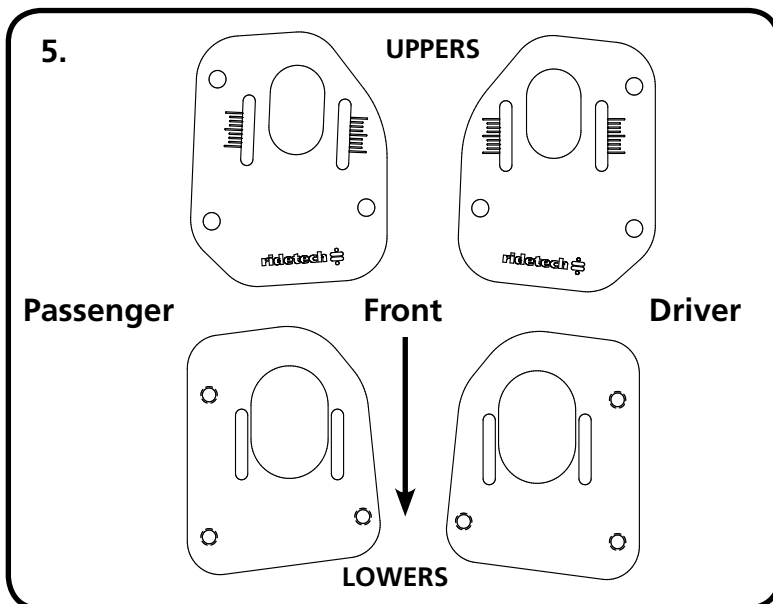




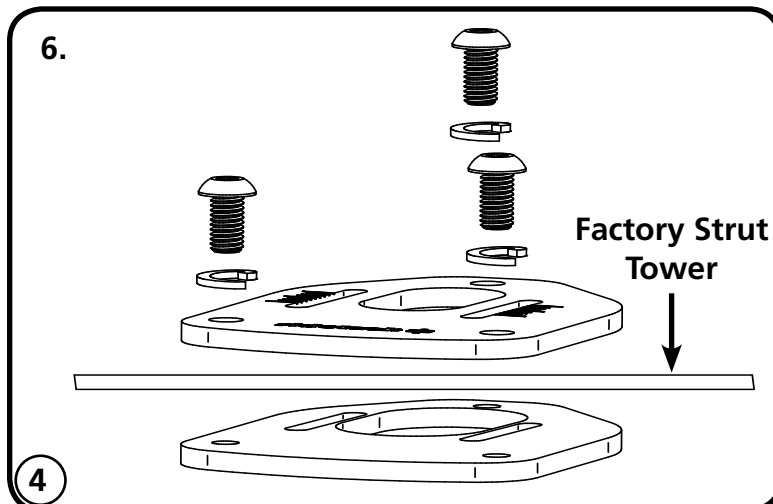
### Disassembly

1. This kit will replace the OEM Strut, Coil Spring, and Upper Strut Mount. These items will need to be removed from the car. It will be necessary to disconnect the Swaybar from the Lower Control Arm and remove the Disc Brake Caliper from the spindle, **DO NOT LET THE CALIPER HANG BY THE BRAKE LINE.** Refer to the factory service manual for disassembly procedure...
2. Support the front hub and control arm assembly and remove the (2) struts bolts(retain hardware) that attach the strut to the spindle.
3. Remove the (3) nuts holding the upper strut mount to the car body. **DO NOT REMOVE THE CENTER NUT.**
4. Remove strut assembly from the car.

### Getting Started



5. The upper strut mount provided in this kit has been designed to provide the ability to get more caster adjustment than the OEM setup. Camber adjustment is done at the spindle mount. The Caster Plate Assembly consists of 2 Plates per side, the Upper Plate is specific to each side. The Lower Steel plate is the same for each side. The Steel Plate is installed on the bottom side of the Strut Tower and the Aluminum Plate is installed on the top of the strut tower. The Aluminum Upper Plate is installed with the Ridetech Logo readable from the front of the car. If the logo is upside down when standing at the front of the car, the plate is installed on the incorrect side.

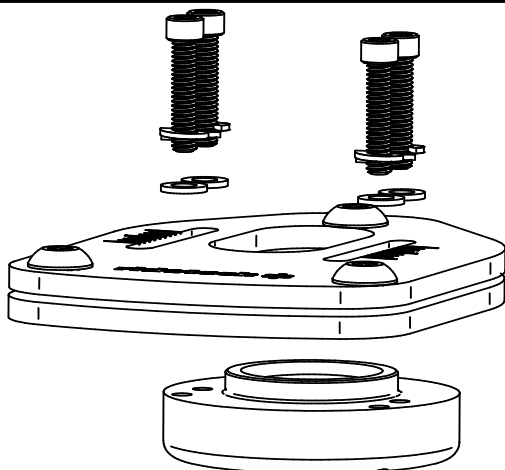


6. Use Illustration 6 to help you determine the correct position and orientation of the Caster Plates. Position the Steel Plate on the bottom side of the Factory Strut Tower. Lay the Aluminum Upper Plate on top of the Strut Tower aligning the 3 holes with the holes in the Tower. Apply Red Loctite to (3) 3/8" x 3/4" Button Head Bolts. Install a 3/8" Lock Washer on each Bolt and thread one in each hole of the Upper & Plate. Tighten all 3 bolts on each side. The slots in the Upper & Lower Plates should line up.



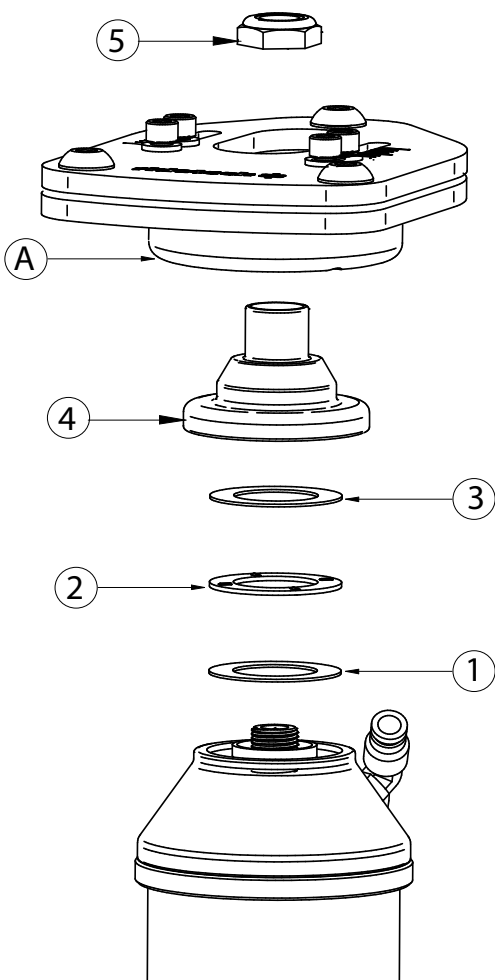
### Upper Mount Assembly

8.



8. Attach the Bearing Housing to the Caster Plate Assembly. The Housing is positioned with the 4 threaded bolt holes to the front of the car lining 2 holes up with each slot. Insert the housing up from the bottom. Apply Antiseize to the threads of each of the (4) 1/4" x 1 1/4" Socket Head Bolts. Install a 1/4" Lock Washer and Flat Washer on each bolt. The bolts will be inserted through the caster plate with 2 bolts in each slot threading into the Bearing Housing.

9.



9. Install the Air fitting into the Airspring using thread tape. The Strut comes preassembled, but if for some reason you need to disassemble the strut, Figure 9 shows the assemble order. Remove the Adjuster Knob from the Strut shaft for assembly. Bolt the strut assembly into the upper mount (A), see diagram 9 for assembly order.

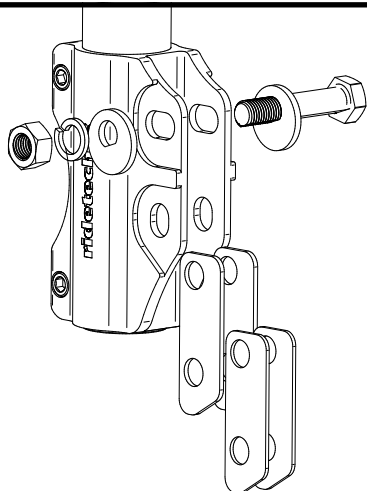
1. Lower Torrington Bearing Race
2. Torrington Bearing
3. Upper Torrington Bearing Race
4. Bearing Adapter (Small Diameter Up)
5. 9/16" Locknut

Assemble components and install into upper mount tightening upper nut. Reinstall upper adjustment knob



### Assembly

10.



**10.** Due to various thickness of the spindles, the kit comes with shims for the spindle. It may necessary to run multiple shims of some. If multiple shims are required, install (1) Thick and (1) Thin on each side of the spindle. The lower Strut mounting holes reuses the OEM Bolt. The upper Slotted holes use the 16mm Eccentric Bolt provided in the kit. This Eccentric Bolt is used for camber adjustment.

**NOTE:** Torque Strut Mounting Bolts to 135 ftlbs

**11.** Route the Airline to the Air Spring. When hooking up the Airline be sure that you can turn the steering from lock to lock with out tugging on the Airline. This situation will eventually cause the line to leak. The Air Spring can be rotated on the Strut to located the fitting. This can be done by grabbing the piston of the Air Spring and rotating it on the Strut body.

**12.** Repeat previous steps on Passenger side.

**13.** After both sides are installed, reattached the Sway Bar Linkage and Reinstall the Brake Caliper.

**14.** It will be necessary to have the car aligned after installing the Ridetech Strut Setup.

**15.** A good starting point for ride height is going to be approximately 2 1/2" up from fully deflated. To find this, deflate the car and measure from the top of the Wheel Opening to the ground. Inflated the car 2 1/2" up from the deflated measurement. This will be a good starting point but, not set in stone. DO NOT be afraid to try different Ride Heights but, keeping in mind that you do need some compression travel to maintain a good ride quality.



### Strut Adjustment

#### Strut Adjustment 101- Single Adjustable

##### Rebound Adjustment:

How to adjust your new struts.

The rebound adjustment knob is located on the top of the Strut protruding through the upper mount.

You must first begin at the ZERO setting, then set the shock to a soft setting of 20.



-Begin with the Strut 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.**

### STILL HAVE QUESTIONS?

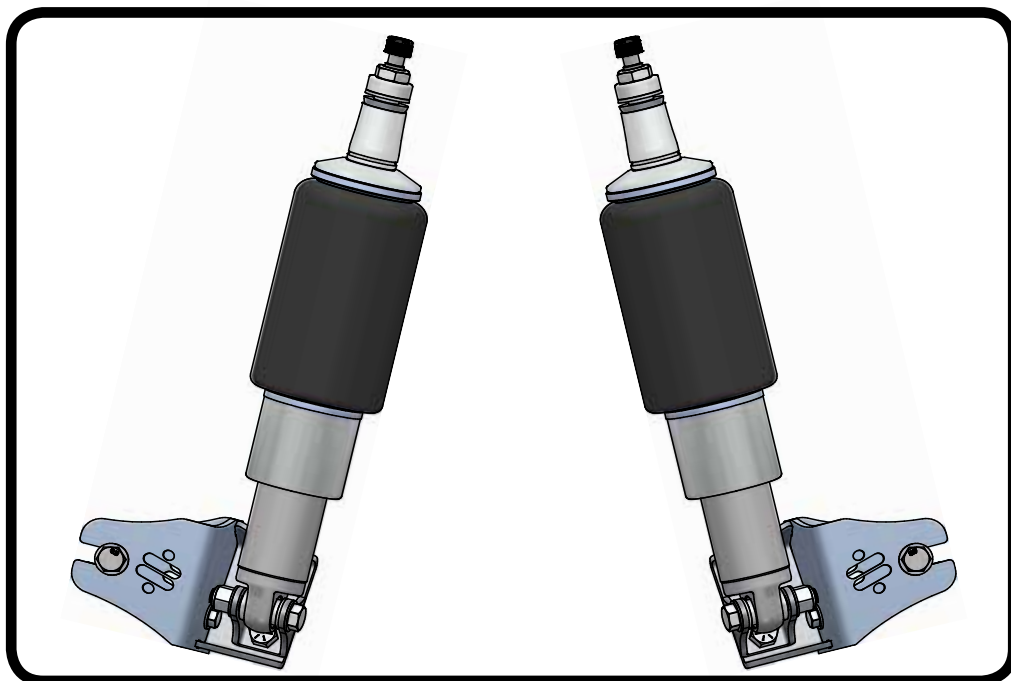
#### Tech line hours

Monday - Friday

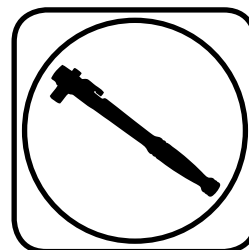
8AM - 6PM (EST) ..... 812-482-2932



### Part # 12145401 - 1994-2004 Mustang HQ ShockWaves



#### Recommended Tools



## 1994-2004 Mustang HQ Series Rear ShockWaves Installation Instructions

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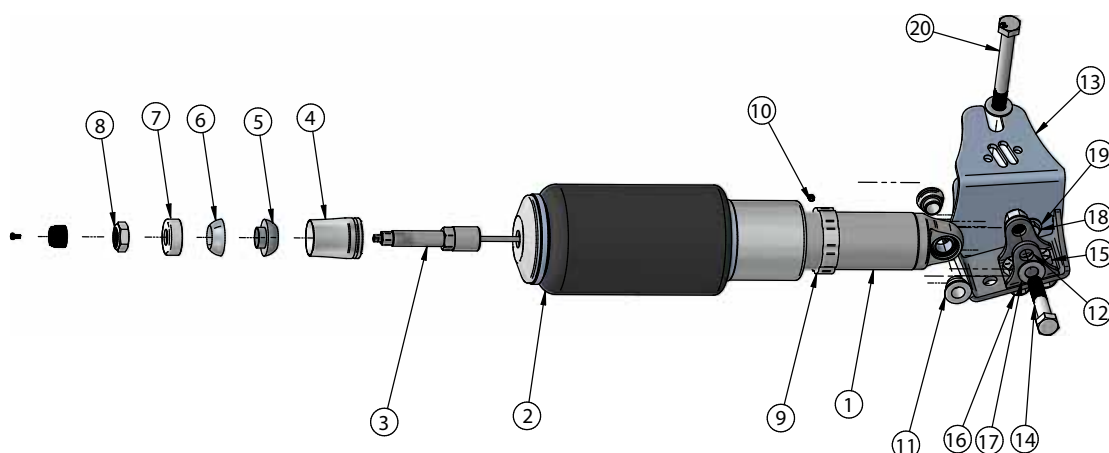
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### Major Components .....In the box

| Item | Part #              | Description                                                | QTY |
|------|---------------------|------------------------------------------------------------|-----|
| 1    | 24159999            | 5.2" Stroke HQ Series Shock                                | 2   |
| 2    | 24090799            | 7000 Series 4" Dia. Bellow                                 | 2   |
| 3    | 90009988            | 2.00" Stud Top                                             | 2   |
| 4    | 90002312            | 2.00" Stud Top Base                                        | 2   |
| 5    | 90001904            | Lower Delrin Half                                          | 2   |
| 6    | 90001903            | Upper Delrin Ball Half                                     | 2   |
| 7    | 90001902            | Upper Delrin Ball Cap                                      | 2   |
| 8    | 99562003            | 9/16-18" Nylok Nut                                         | 2   |
| 9    | 70008913            | Air Spring Locking Ring                                    | 2   |
| 10   | 99055000            | Locking Ring Set Screw                                     | 2   |
| 11   | 90002043            | Shock Bearing Spacer - 1/2" ID                             | 4   |
| 12   | 90002158            | 2 Hole Lower Shock Mount                                   | 2   |
| 13   | 90002467            | Driver Lower Shock Mount-Axle Mount                        | 1   |
| 13   | 90002468            | Passenger Lower Shock Mount-Axle Mount (Not Shown)         | 1   |
| 14   | 99501003            | 1/2"-13 x 2 1/2" Hex Bolt (Lower Shock to Mount)           | 2   |
| 15   | 99501001            | 1/2"-13 x 1" Hex Bolt (2 Hole Mount to Axle Mount)         | 4   |
| 16   | 99502001            | 1/2"-13 Nylok Nut (Lower Shock & Mount Bolts)              | 6   |
| 17   | 99503001            | 1/2" SAE Flat Washer                                       | 8   |
|      | 99371004 & 99372002 | 3/8"-16 x 1 1/4" Hex Bolt & Nylok Nut(Lower Mount to Axle) | 2   |
|      | 99373003            | 3/8" SAE Flatwasher                                        | 6   |
| 20   | 99121002 & 99122001 | m12-1.75 x 110mm & Nylok Nut (Axle Mount to Axle)          | 2   |
|      | 90001995            | Bearing Snap Ring (Installed in Shock Body)                | 4   |
|      | 90001994            | 5/8" ID Bearing (Installed in Shock Body)                  | 2   |





### Getting Started and Disassembly

Congratulations on your purchase of the Ridetech Mustang ShockWave System. This system has been designed to give your Mustang excellent handling along with a lifetime of enjoyment. The ShockWave System provides flexibility that can not be achieved with Conventional CoilSprings.

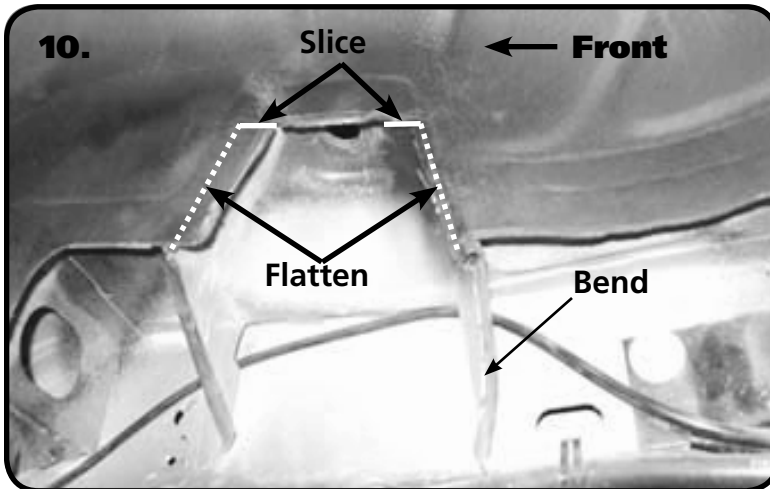
**This ShockWave System is Designed to replace the factory Shock and CoilSprings.**

1. The rear OEM Shocks, Pinion Snubber and Mount, CoilSpring, and Horizontal Kicker Shock will need to be removed from the Rear of the car.
2. Raise the vehicle and support it by the frame allowing the suspension to hang freely. Be sure the rear differential will be able to swing down to get the rear springs out.
3. Place a jack under the center of the rear differential and raise it up to the point the jack is touching the rear differential. Be sure that the car is high enough that you will be able to lower the jack supporting the rear differential to remove the Coilsprings.
4. The Nut will need to be removed from the top of the shock. The top of the shock is either locked in the trunk behind the side covers, or in the hatch under a plastic cover located by the wheel tub.
5. Unbolt the lower shock from the shock mounting bracket and unbolt the shock bracket from the differential.
6. Lower the jack slowly to remove the tension of the Coilspring. Pay attention to the brake line and ABS(if equipped) wire that you don't damage them when lowering the differential
7. With the springs loose, remove the from the car.
8. Remove the OEM Pinion Snubber and mount from the rear body.

To get Started refer to the page 4 on how to assemble the top of the ShockWave

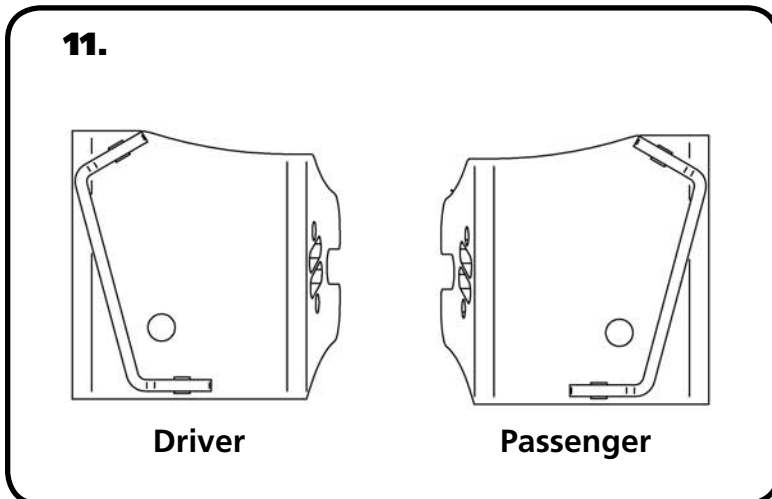


### Body Prep and Lower Mount Installation



**10.** Illustration 10 shows the modifications that need to be done to the Shock opening for Shock-Wave clearance. The rear has been done in the picture to show what the end result should look like. Slice the sheetmetal at the top of the opening forward and backward even with the top of the opening. With the sheetmetal sliced, bend the pinch weld inward until it is flat against the front and back of the opening. Bend the rear brace back to clear the Air Spring on the Shockwave.

**Repeat on both sides of the car.**



**11.** If you haven't done so already, remove the OEM Lower Shock Mount from the axle. If you are installing StrongArms, now is a great time to do the Lowers. Remove the rear Lower Control Arm bolt and replace it with the 12mm Bolt, (2) Flat Washers, and Nut supplied in the kit. Install the Bolt, Washer, and Nut with a Flat Washer on the outside of each Bracket. **DO NOT** tighten, just start the Nut on the Bolt and leave it loose for now. Illustration 11 shows the New Lower Shock Mount viewed from the rear.

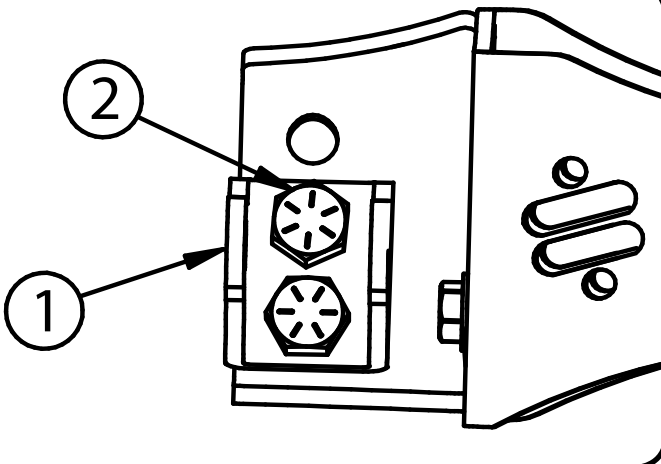


**12.** Slide the Lower Shock mount on to the Axle Mount. The Shock Mount wraps around the OEM Control Arm mount. The Slots on the side of the Mount slide on the Lower Control Arm Mounting Bolt. Install (1) 3/8-16 x 1 1/4" bolt (Threads pointing forward) through the hole in the Shock Mount and Lower Control Arm Mount. Install a 3/8" Flat Washer and 3/8" Nylok Nut on the Bolt and tighten. Tighten the Lower Control Arm Bolt.



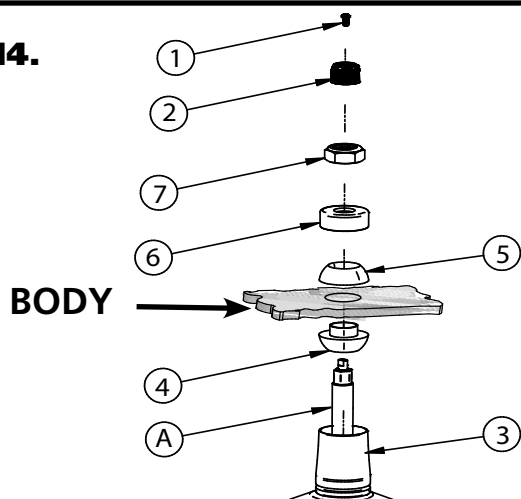
### Shockwave Installation

13.



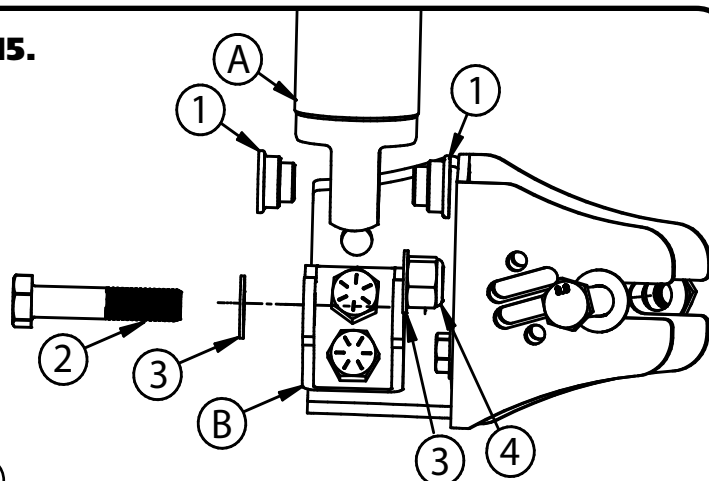
**13.** Attach the 2 Hole Lower Shock Mount(1) to the Main Mount using 1/2" x 1" bolts (2) with a Flat Washer and Nylok nut on the back side. The Mount bolts to the 2 lower holes. If a higher ride height is desired, the top 2 holes can be used.

14.



**14.** Insert the Air Fitting into ShockWave using Thread Sealant on the Threads. Remove the Screw(1) from the Adjuster Knob(2) and remove the Knob from the Stud Top(A). Install the Stud Top Base(3) onto the Stud Top(A) followed by the Lower Delrin Ball(4). Install the Lower Ball with the Collar pointing up. Insert the Stud Top through the factory hole shock hole. Install the Upper Delrin Ball(5) onto the shock stud with the flat side facing the frame. Next, Install the Delrin Ball cap (6) onto the shock stud with the Concave side facing the Upper Delrin ball. Install the Nylok Nut(7) 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(2) using the screw(1).

15.



**15. 16.** Install the ShockWave(A) in the Lower Shock Mount(B) using a 90002043 Spacer(2) inserted into each side of the Shock bearing. Slide the shock into the stock mounting location. It may be necessary to use the jack and raise the differential to align the mounting holes. With the mounting holes aligned, insert a 1/2"-13 x 2 1/2" Bolt (3) and 1/2" Washer (4) through the Mount and Shock. Install a 1/2" Flat Washer (4) and 1/2"-13 Nylok Nut (5) on the Bolt and Tighten.

**Repeat the steps for the other side of the car.**



### Notes and Care of your Shockwaves

#### NOTES:

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

The threads on the fittings need to have thread sealant applied to seal properly.

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 than 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 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

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812-482-2932