



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

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**Part # 13010298**  
**68-70 Mopar "B" Body Air Suspension System**

**Front Components:**

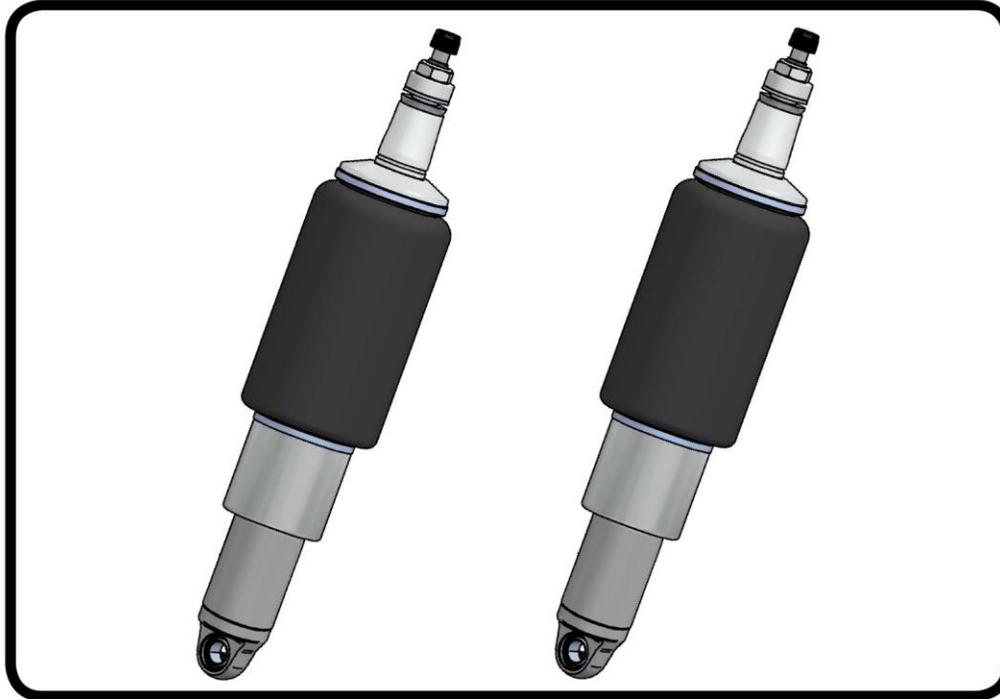
1	13013001	HQ Series Front Shockwaves
1	13013699	Front Upper StrongArms

**Rear Components:**

1	13017199	Rear AirBar 4 Link
1	21140801	HQ Series Rear Shockwaves



**Part # 13013001** - MOPAR, 68-70 B-Body & 70-74 E-Body Front HQ Shockwave



Recommended Tools



## 7000 Series Bellow, 2.0" Stud/Eye 3.6" Shock Installation Instructions

***THESE SHOCKWAVES REQUIRE RIDETECH UPPER STRONGARMS***

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Page 5-6..... Notes and Care of Your Shockwave & Shock Adjustment

ShockWave Dimensions:

Mount to Mount:

Compressed: 10.30"

Ride Height: 12.13"

Extended: 13.32"

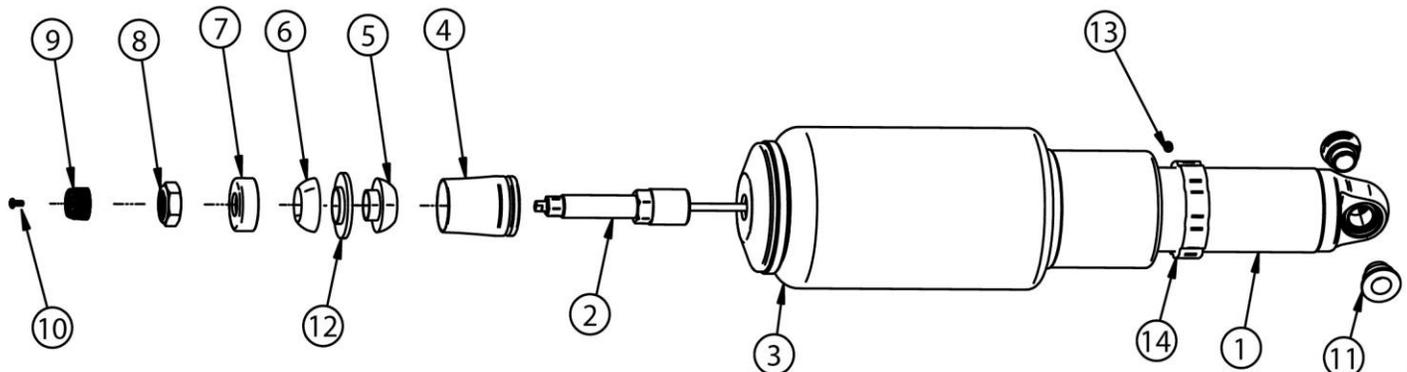
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### Major Components .....In the box

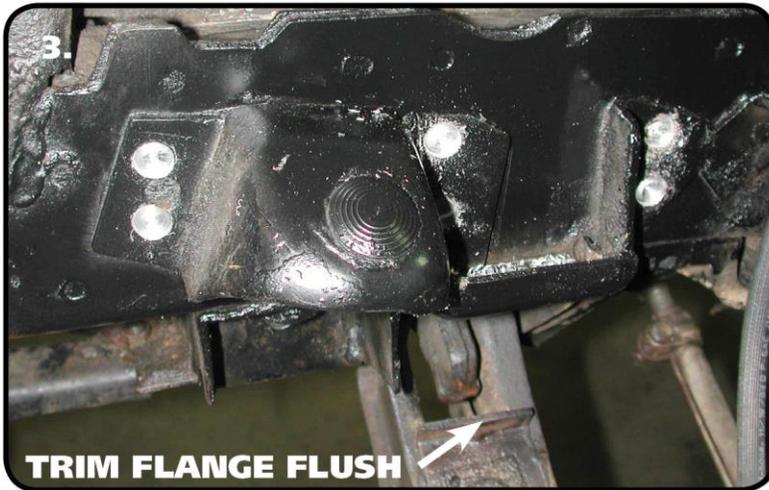
Item #	Part #	Description	QTY
1	24139999	3.6" Stroke HQ Series Shock	2
2	90009988	2" Stud Top (Installed on Shock) - Includes Adjuster Knob & Screw	2
3	24090799	7000 Series, 4" Diameter Air Spring	2
4	90002312	2" Aluminum Stud Top Base	2
5	90001904	Bottom Delrin Ball	2
6	90001903	Top Delrin Ball	2
7	90001902	Delrin Ball Aluminum Top Cap	2
8	99562003	9/16"-18 Thin Nylok Nut	2
9	90009972	Adjuster Knob - (90009988 assembly)	2
10	90009969	#4-40 X 1/4" SS, 18-8 Pan Head Torx Cap - (90009988 assembly)	2
11	90002043	1/2" ID Bearing spacers	4
12	90000582	Stepped Washer for Lower Delrin Bar to Car Body	2
13	70010893	Air Spring Locking Ring (Installed on shock)	2
14	99055000	Locking Ring Set Screw (Installed on shock)	2
	70012160	2" 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
<b>HARDWARE</b>			
	99501011	1/2"-20 X 2 1/2" Hex Bolt	2
	99502002	1/2"-20 Nylok Nut	2



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



### ShockWave Installation



1. Raise and support vehicle at a safe, comfortable working height. Let the front suspension hang freely.

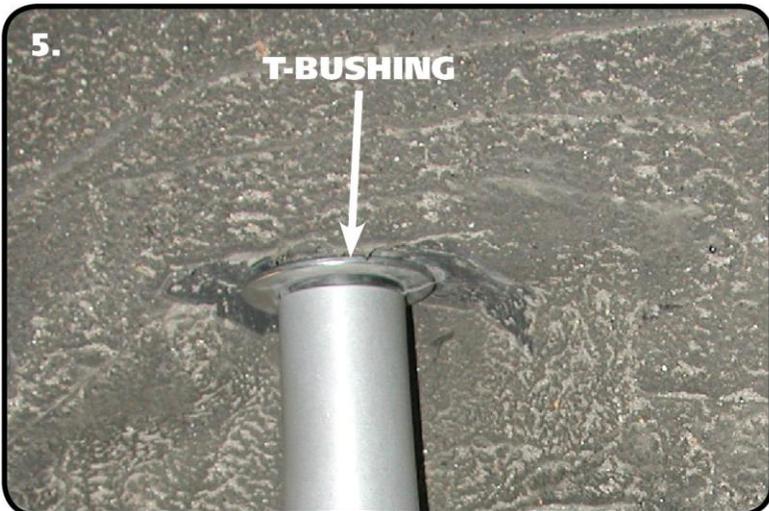
2. Remove the coil spring and shock absorber. Refer to factory service manual for proper disassembly procedure.

3. The upper arm extension stop will be in the way and must be removed. To remove the mount drill the 6 spot welds. There is a piece of metal sticking up off of the lower arm that must be trimmed.



4. A portion of the frame directly behind the bump stop mount must also be trimmed for air spring clearance. This will be cut in an upside down arch down to the top of the frame rail.

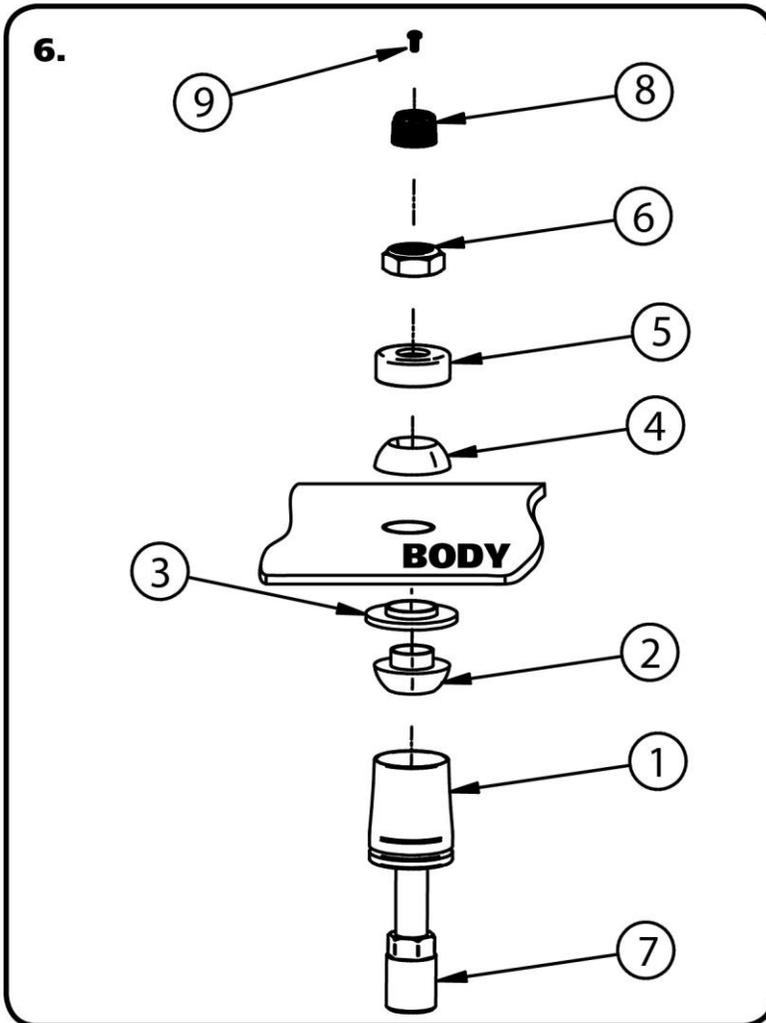
**Allowing the Shockwave to touch the frame at any point through full suspension travel will damage the unit and is not warrantable.**



5. **Image 5** illustrates how the T-Bushing is installed.



### ShockWave Installation



6. The air fitting location can be rotated by twisting the bellow assembly separate of the shock. Place the Shockwave into the OEM shock location with the stud sticking through the OEM shock hole. See assembly **Diagram 6**.

1. Stud top aluminum base
2. Delrin ball lower half
3. T-Bushing Adapter

#### **BODY**

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

7. With a 1/2" bit, enlarge the lower factory shock hole. Install a 1/2" ID Spacer in each side of the Shock Bearing. Raise the lower arm up to the Shockwave and fasten with a 1/2" x 2 1/2" bolt and Nylok nut. Torque to 75 ftlbs.

8. Bolt the upper StrongArm to the body and spindle. There is a driver and passenger side and they are stamped accordingly.

9. This system will utilize the factory torsion bar. Back the adjustment bolt out just enough to allow the suspension to fully compress. If it is backed out too far the Shockwave will not be able to pick the car up. The adjuster can also be used to level the car out.

10. Ride height on this Shockwave is approximately 12.0" tall, but will vary to driver preference.





### Notes and Care of your Shockwaves

#### NOTES:

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

**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. Make sure the fitting doesn't contact the frame.

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.

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## 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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**Part # 13013699**  
**Chrysler B & E Body Front Upper StrongArms**

**Upper StrongArms**

1	90000602	Driver side upper arm
1	90000603	Passenger side upper arm
4	90000918	Bushings <b>(Pressed into arms)</b>
2	90000895	Ball joint

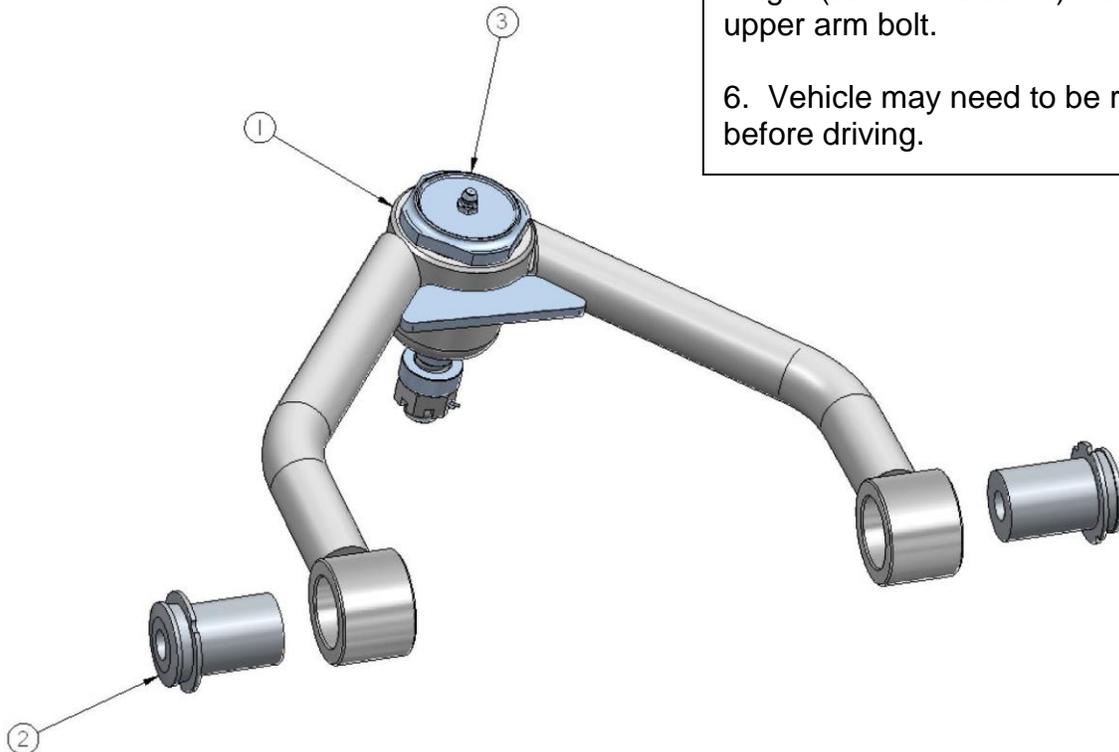
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1. Remove factory upper arm.
2. Bolt StrongArm to frame using factory bolts. (Do not tighten yet.)
3. Slide ball joint boot over ball joint stud. Push stud through spindle. Secure w/ the castle nut and cotter pin supplied. The supplied spacer may be need to achieve proper castle nut to cotter pin hole alignment.
4. Install grease fitting and lubricate ball joint.
5. Position the suspension at ride height (about mid travel) and tighten upper arm bolt.
6. Vehicle may need to be realigned before driving.





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**Part # 13017199**  
**68-70 Chrysler "B" Body Rear AirBar**

**Components:**

1	90000601	Upper bar bridge
1	90000600	Upper Shockwave bridge
2	90000599	Lower bar frame mounts
2	90000615	Lower axle mounts
1	90000535	Driver side lower mount
1	90000536	Passenger side lower mount
2	90002855	Upper bars – TW 8.125" (10" C-C length)
2	90002843	Lower bars – WW 21.75"
2	70013364	RH R-Joint Threaded Housing End (installed in bars)
2	99752004	3/4"-16 jam nut – for rod end
14	70013334	R-Joint Spacers
4	70013769	Front Lower R-Joint Spacer
2	90000524	Inner axle tab (Larger)
2	90000155	Outer axle tab
2	90000616	Inner support plates
2	90001617	5/8" shock studs w/ hardware
4	90002067	Aluminum spacer for stud
4	99566001	S-10 U-bolts w/ hardware -Lower axle bracket to axle
2	70010694	Jig brackets for upper bar installation

**R-Joint Components** (installed in bar ends)

70013279	Retaining Ring
70012380	Wavo Wave Spring
70013275	R-Joint Center Ball
70013276	R-Joint Composite Center Ball Cage

# AirBAR<sup>®</sup>

by Air Ride Technologies

**Hardware:** (Part # 99010021)

**4 Link Bars**

6	5/8"-11 x 2 3/4" Gr.5 bolt	Upper & lower bars
2	5/8"-11 x 4" Gr.5 bolt	Lower bar frame mount
8	5/8"-11 Nylok jam nut	Upper & lower bars

**Lower ShockWave mount to axle bracket**

4	1/2"-13 x 1 1/4" Gr. 5 bolt	Lower Shockwave mount to axle bracket
4	1/2"-13 Nylok nut	Lower Shockwave mount to axle bracket

**ShockWave to Lower Mount**

2	1/2"-13 x 2 1/4" Gr. 5 bolt	Shockwave to lower mount
2	1/2"-13 Nylok jam nut	Shockwave to lower mount

**Lower Bar Frame Mount**

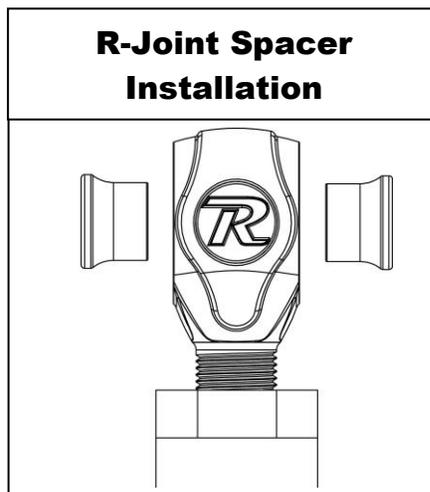
8	3/8"-16 x 1 1/4" Gr. 5 bolt	Lower bar frame mount
8	3/8"-16 Nylok nut	Lower bar frame mount
16	3/8" SAE flat washer	Lower bar frame mount

**Upper Bridges**

30	3/8"-16 x 1" thread forming bolt	Upper bridges
32	3/8" SAE flat washer	Upper bridges
2	3/8"-16 Nylok nuts	Inner support plate
2	1/2"-13 x 1 1/4" Gr.5 bolt	Shockwave bridge to body
2	1/2"-13 Nylok nut	Shockwave bridge to body
2	1/2" SAE flat washer	Shockwave bridge to body

**Bar Setting Jig**

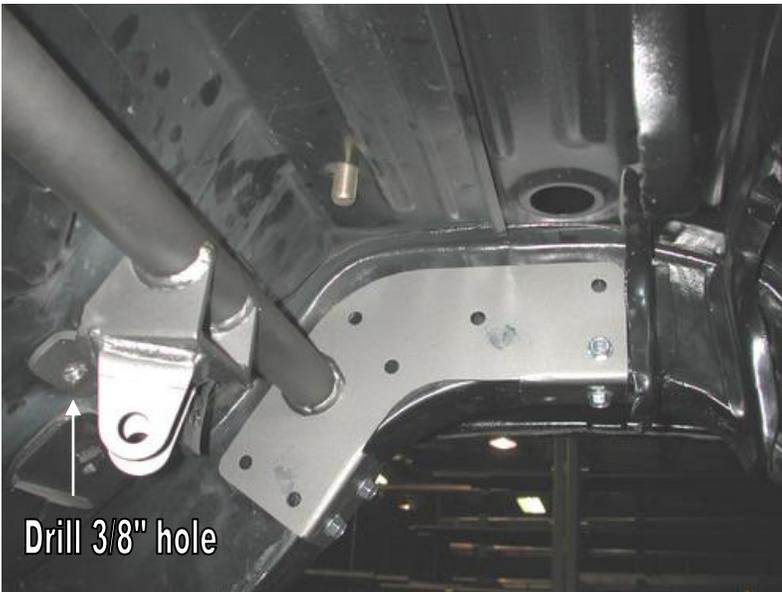
2	3/8"-16 x 3/4" Gr. 5 bolt	Upper bar installation jig
2	3/8"-16 nut	Upper bar installation jig



# 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, front leaf spring mounts, shocks and tail pipes. Refer to the factory service manual for proper disassemble procedures.



3. Slide the upper bar bridge between the frame rails. Using the bridge as a template, mark all the holes in the frame and drill with a 5/16" bit. Then secure the bridge using the 3/8" x 1" thread forming bolts and flat washers.

4. The front of the bridge will require a 3/8" hole to secure it to the body. The inner support plate will drop into these holes from the inside of the car. Two 3/8" nylocs will secure the plate.



5. The upper Shockwave bridge will slide between the frame rails directly behind the factory shock cross member. The bridge will be positioned by bolting the tabs to the factory shock hole. Fasten the bridge to the factory shock mount using 1/2" x 1 1/2" bolt, flat washer and Nyloc nuts. Using the bridge as a template drill the holes in the frame with a 5/16" bit. 3/8" x 1" thread forming bolts and flat washers will hold the bridge in place.

6. Screw one of the Shockwave studs into the upper bridge.

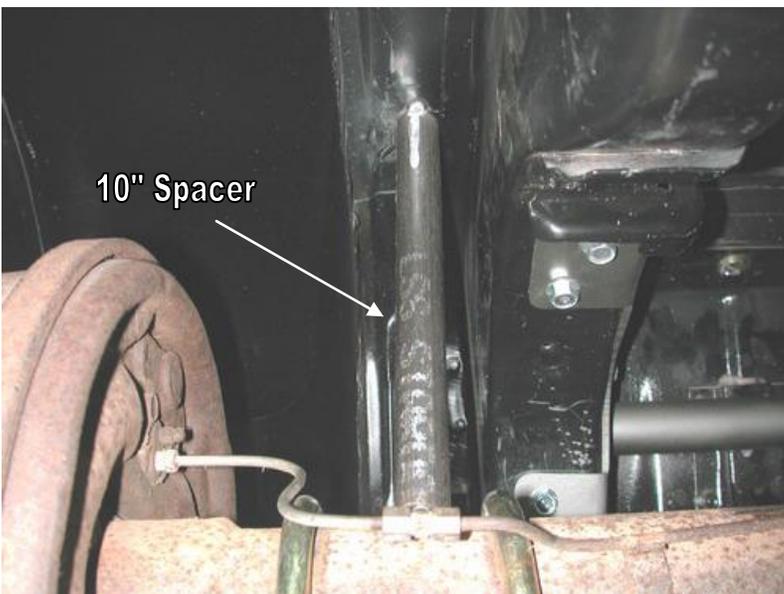


7. Bolt the lower axle bracket to the leaf spring pad using the 9/16" U-bolts and hardware supplied. Bolt the lower Shockwave mount to the axle bracket using the 1/2" x 1 1/4" bolts and Nylok nut.



8. Bolt the new lower bar frame mount to the body using 3/8" x 1 1/4" bolts, Nyloc nuts and flat washers.

9. Insert the WIDE R-joint Spacers into the center pivot ball in one end of the lower bar and NARROW Spacers into the other end. Attach the wide end of the lower bar to the frame mount using a 5/8" x 4" bolt and Nyloc jam nut. The smaller end will attach to the axle mount using a 5/8" x 2 3/4" bolt and Nyloc jam nut.

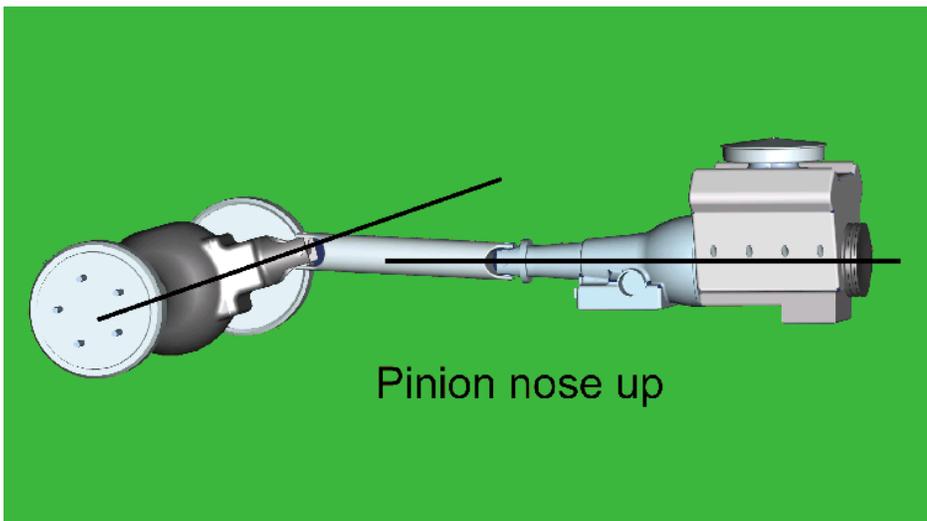
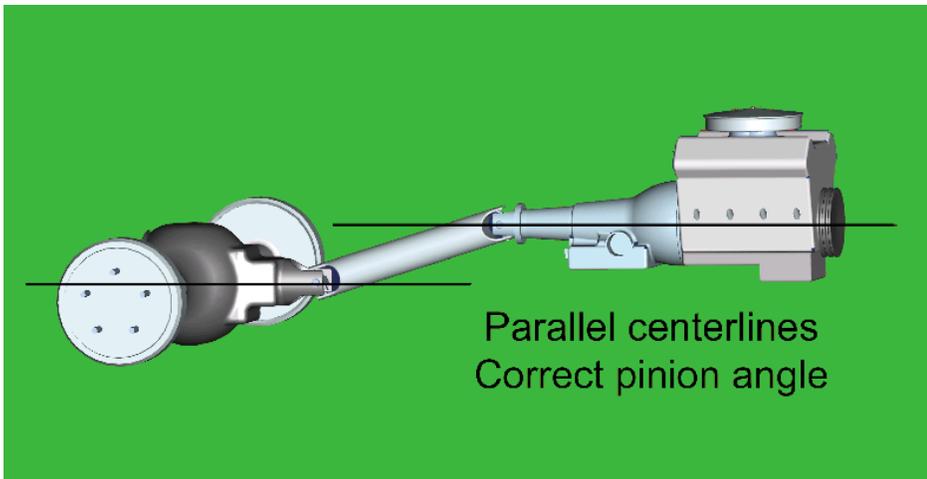
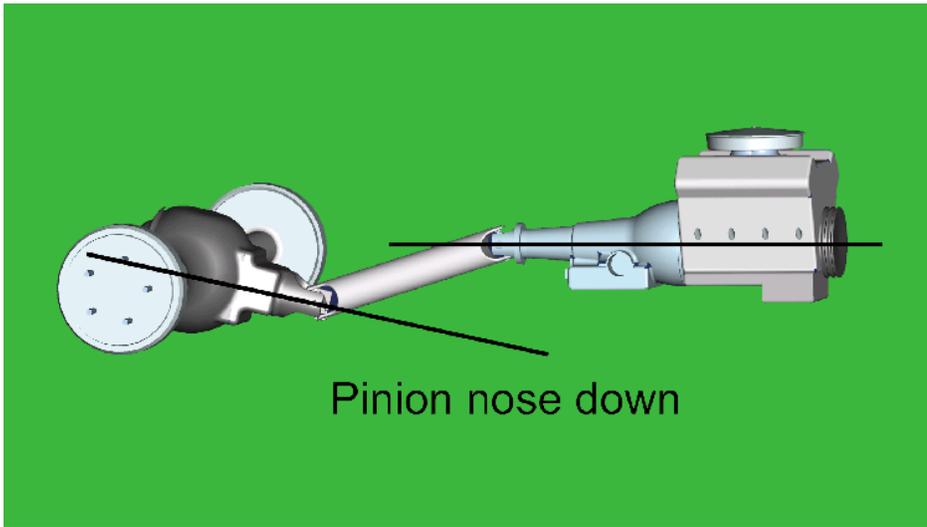


10. Raise the axle to ride height. This can be determined by measuring 10" from the top of the axle up to the body, just outside the rail.

11. Then center the axle left to right between the frame rails.

12. The pinion angle must also be set at this time. This is explained on the next page.

13. One trick to help maintain the settings is to tack weld a 10" spacer between the axle and body. This spacer is temporary and must be removed after installation is complete.



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

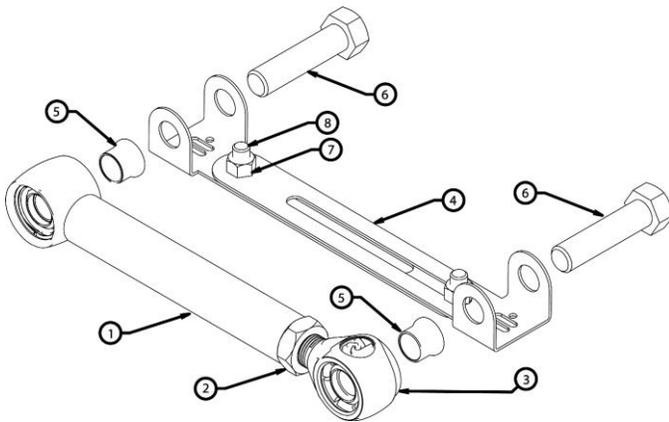
Your transmission angle should be around 3 degrees down in the rear. If it is more or less than 3 degrees, you might want to consider changing it. Too little angle on the transmission reduces the amount of oil getting to the rear bushing. Too much transmission angle will increase the working angles of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

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

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

## Upper Bar 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. Long tab to the inside, short tab to the outside.
- 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.	R-Joint End
4.	Alignment jig
5.	R-Joint spacer
6.	5/8"-11 x 2 3/4" bolt
7.	3/8"-16 nut
8.	3/8"-16 x 3/4" bolt





15. Check the length of the upper bar; it should be 10" C-C.

16. Refer to the previous page on using the setting jig to tack weld the tabs onto the axle.

17. Tack-weld the tabs to the axle then recheck alignment. To avoid warping the axle, weld 1" at a time and skip around.

18. Insert R-Joint spacers into the r-Joint in the upper bars and install the bars using 5/8" x 2 3/4" Bolts and 5/8" Nylok Nuts.



19. Apply thread sealant to the air fitting and screw it into the top of the Shockwave.

20. Fasten the Shockwave to the lower mount using the 1/2" x 2 1/4" bolt and Nylok nut.

21. The 10" spacer can now be removed.

22. With the axle still at ride height all of the bolts can be tightened.



23. The stock exhaust tail pipe will not work. A turndown may be installed or a custom pipe may be fabricated.

**24. Double-check Shockwave/CoilOver clearance through full suspension travel. Failure to do so will cause failure and is not a warrantable situation.**



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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.

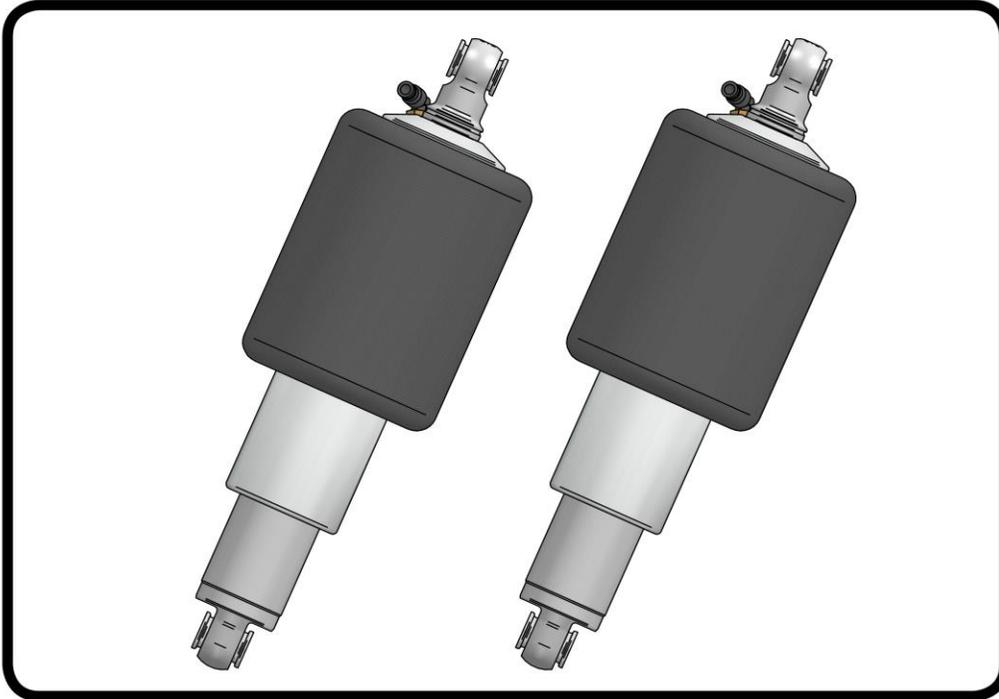
Having said that, you could potentially encounter a vehicle that has rust or collision damage in these areas. Or maybe you intend to consistently place the vehicle in severe racing applications with sticky racing slicks and high speed corners. In these cases it is perfectly acceptable to weld the AirBar 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!



### Part # 21140801 - 4.1" Stroke HQ Series Shockwave

#### Recommended Tools



## 8000 Series Bellow, Eye/Eye 4.1" Shock Installation Instructions

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- Page 4..... Shock Adjustment

#### ShockWave Dimensions:

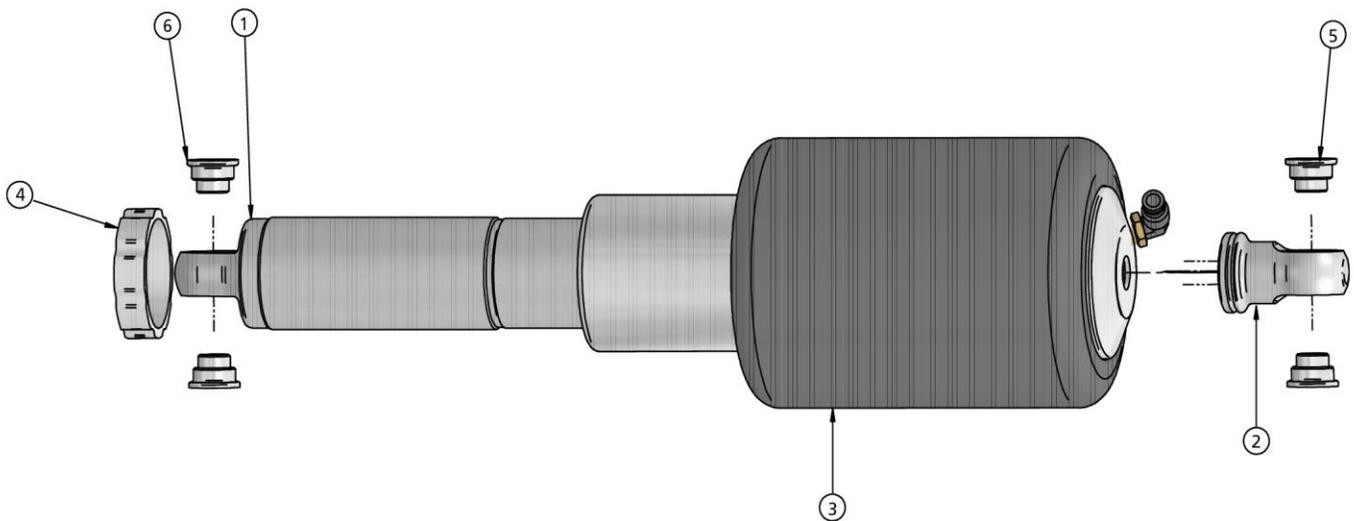
Center of bearing to Center of bearing:	
Compressed:	10.75"
Ride Height:	12.83"
Extended:	14.22"





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

Item #	Part #	Description	QTY
1	24149999	4.1" Stroke HQ Series Shock	2
2	90002024	Shock Eyelet	2
3	24090899	8000 Series, 5" Diameter AirSpring	2
4	70008193	AirSpring Locking Ring (Installed on Shock)	2
5	90002044	Spacer kit - 1/2" ID and 5/8" ID	4
	90001994	5/8" ID Bearing (installed in shock and eyelet)	4
	90001995	Bearing Snap Ring (installed in shock and eyelet)	8



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