



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

Ph. 812.482.2932 Fax 812.634.6632

www.ridetech.com

Part # 11170299

70-81 GM "F" Body Level 2 Complete Air Suspension System

Front Components:

1	11173001	HQ Series Front Shockwaves
1	11172899	Front Lower StrongArms
1	11173699	Front Upper StrongArms

Rear Components:

1	11177199	Rear AirBar – Bolt-on 4 Link
1	21150701	HQ Series Shockwaves

Compressor System:

1	30334100	5 gallon LevelPro Compressor Kit
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Part #11173001
70-81 GM "F" Body Front Master Series SA ShockWaves
For Use w/ Lower StrongArms

ShockWave Assembly:

2	24090399	104mm Master Series rolling sleeve assembly
2	24129999	2.6" stroke HQ Series shock
2	90001994	.625" I.D. bearing
4	90001995	Bearing snap ring
2	90009989	Tall Delrin stud top – 2.75"

Components:

2	90002310	Tall Delrin stud top base – 2.75"
2	90001902	Aluminum cap for Delrin ball
2	90001903	Delrin ball upper half
2	90001904	Delrin ball lower half
2	31954201	¼"npt x ¼" tube swivel elbows

Hardware:

2	99562003	9/16" SAE jam nut	Stud top hardware
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SHOCKwave[®]

by Air Ride Technologies

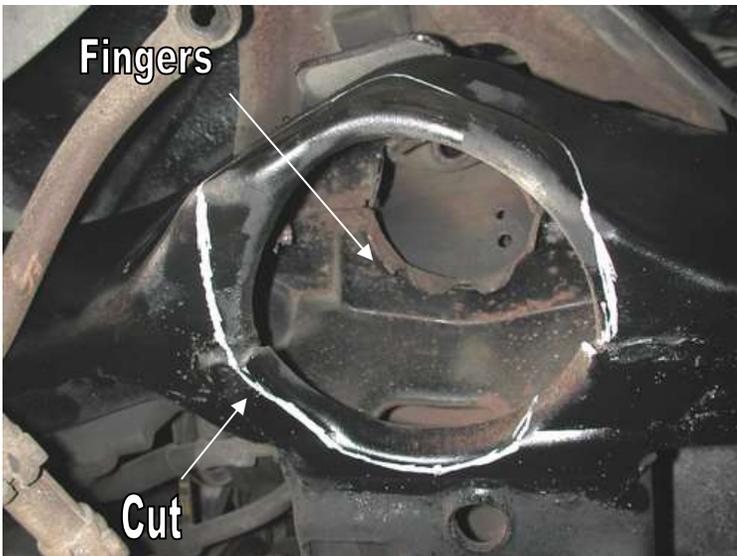
Installation Instructions



1. The frame pocket must be trimmed to ensure that the air spring does not rub against the frame. The coil spring retaining “fingers” must also be trimmed.

Note: The inflated diameter of this air spring is approximately 6”.

2. **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 separate of the shock absorber.



3. The top of the Shockwave will attach to the factory shock hole. See diagram on following page.

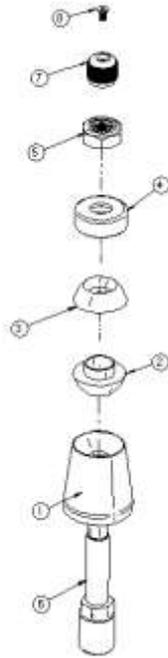
4. Fasten the Shockwave to the lower arm w/ the spacer and bolts provided w/ the lower arms.

5. Double check air spring clearance throughout full suspension travel.
Allowing the bellow to rub will result in failure and is not a warrantable situation.

6. The best ride quality will occur around 50-60% suspension travel, depending on vehicle weight this typically occurs around 90-100 psi.

SHOCKwave[®]

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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

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.**



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Part # 11172899

70-81 GM "F" Body Lower StrongArms

For Use w/ Shockwaves or CoilOvers

Components:

1	90000589	Driver side arm
2	90000590	Passenger side arm
2	90000896	Ball joint
8	90001089	Polyurethane bushing half
4	90000516	1/2" I.D. Inner bushing sleeve installed in arms ('71 & '72)
4	90000517	9/16" I.D. Inner bushing sleeve ('73-'81)
4	90002062	Aluminum bearing spacer
2	90001092	Tube of lithium grease

Hardware:

2	99501013	1/2" x 3 1/4" SAE gr.8 bolt	Shockwave to lower arm
2	99502002	1/2" SAE Nylok nut	Shockwave to lower arm
2	99371010	3/8" x 5 1/2" USS bolt	Sway bar end link
2	99372002	3/8" Nylok nut	Sway bar end link
4	99501014	1/2" x 3 1/2" SAE bolt	Lower arm to frame ('71 & '72)
4	99502003	1/2" SAE Nylok Jam Nut	Lower arm to frame ('71 & '72)
4	99561002	9/16" x 3 1/2" SAE bolt	Lower arm to frame ('73 & '81)
4	99562003	9/16" SAE Nylok Jam Nut	Lower arm to frame ('73 & '81)

STRONG ARMS™

by Air Ride Technologies

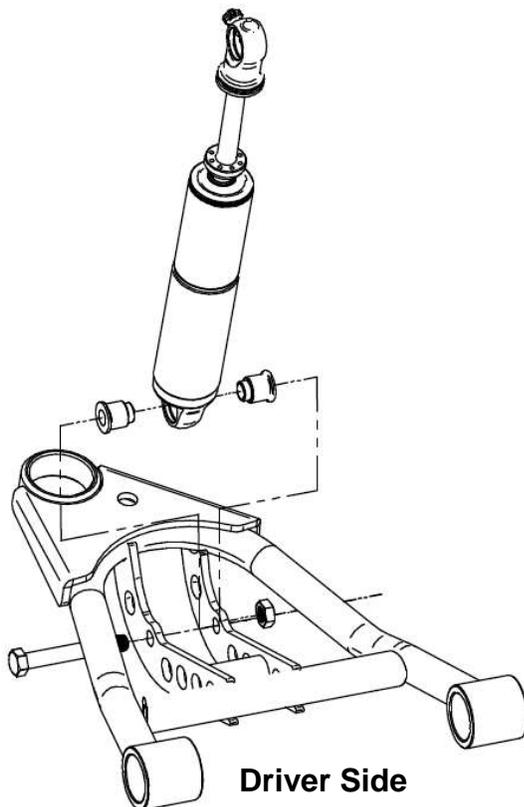
Installation Instructions



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

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". '71 & '72 model years will use 1/2". '73-'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 and Nylok nut, an aluminum spacer must be installed on each side of the bearing.

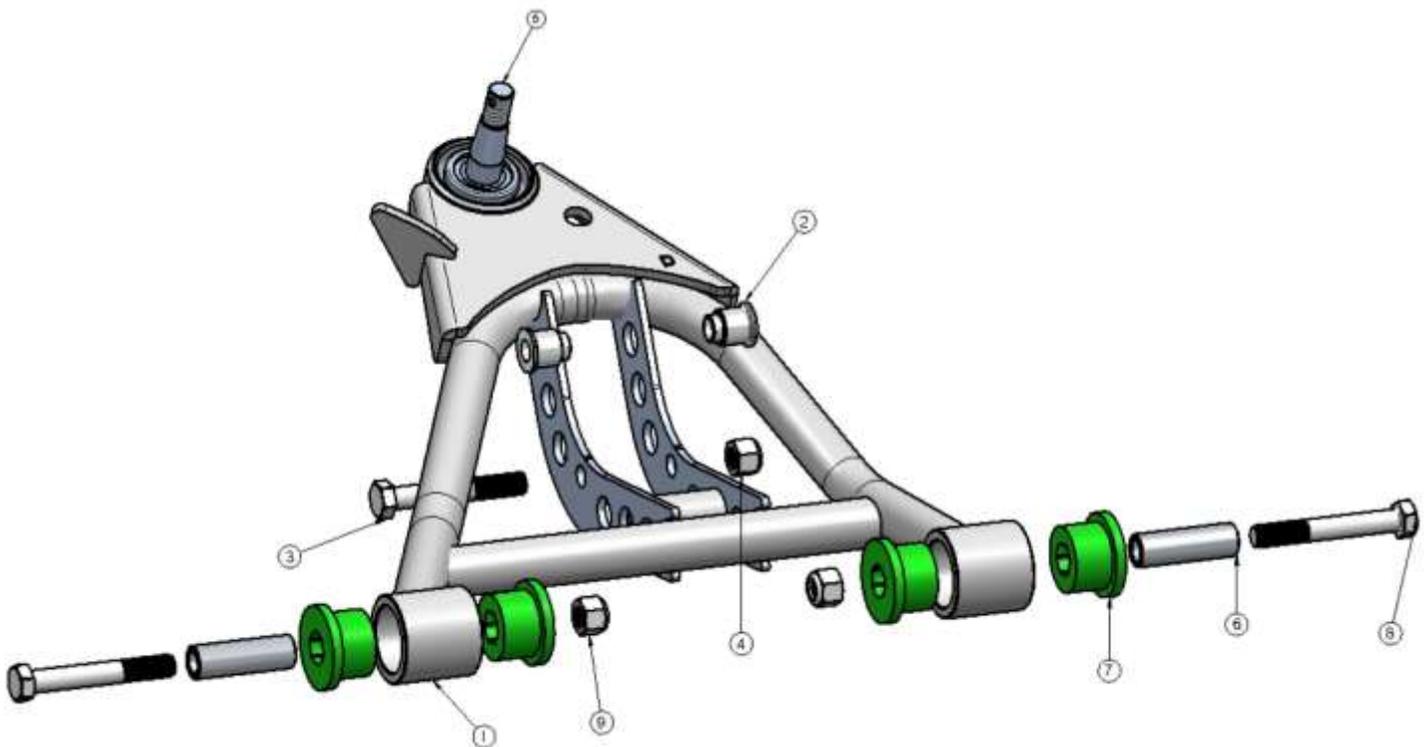
4. Slide the ball joint boot over the stud, then push the stud up through the spindle. Secure w/ the new castle nut and cotter pin supplied.

5. Grease the ball joints.

STRONG ARMS™

by Air Ride Technologies

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





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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 |
| 2 | 90000917 | Cross shaft kit w/ bushings & hardware |
| | | (Install tooth washer between shaft and bushing) |
| 2 | 90001083 | 1.5" tall bump stop w/ hardware |

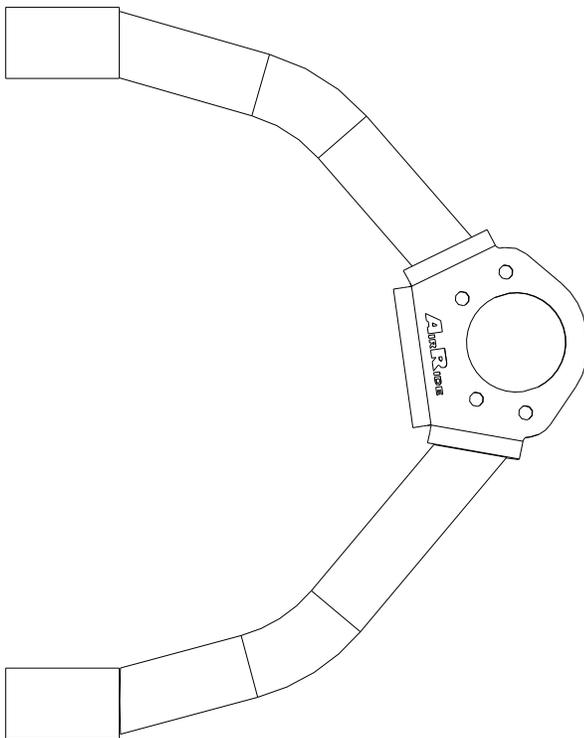
STRONG ARMS™

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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.



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.

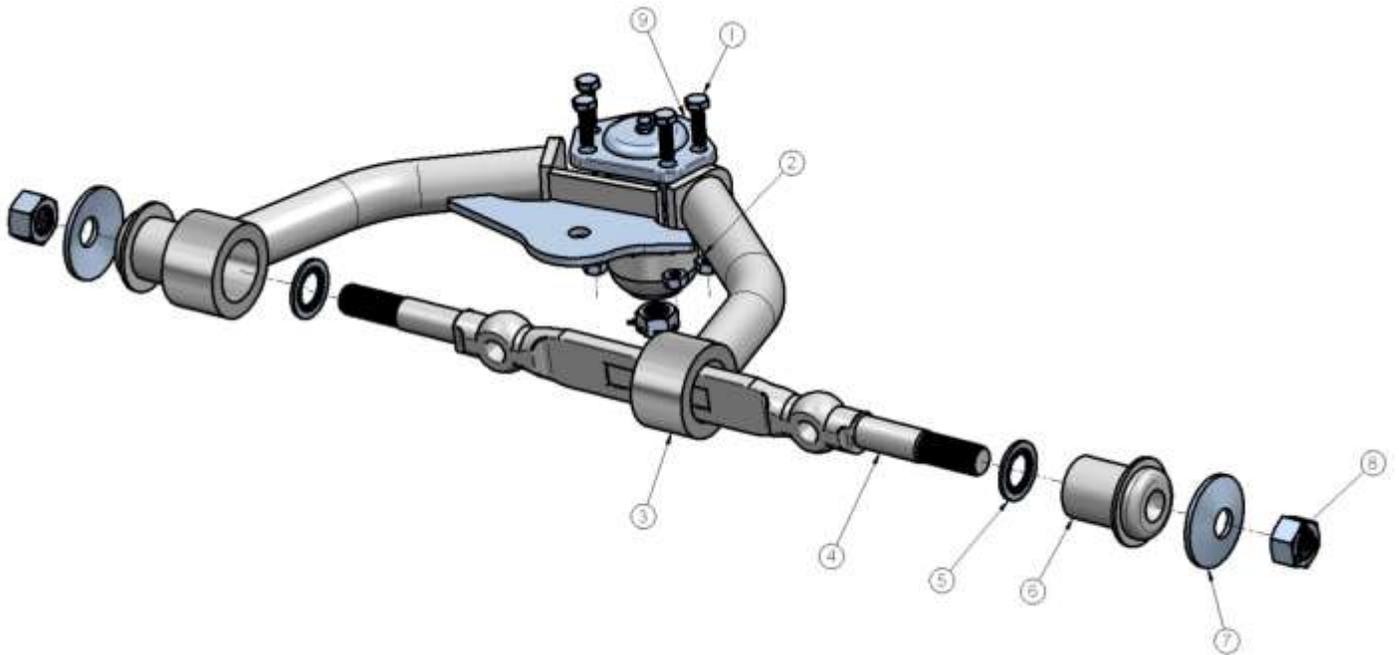
5. Position the suspension at mid travel and then tighten the cross shaft nuts.

Driver Side – Top View

STRONG ARMS™

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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





Air Ride Technologies

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Part # 11177199

70-81 GM "F" Body AirBar

For Use w/ Shockwaves or CoilOvers

Components:

1	90002080	Lower bar axle mount – Driver side
1	90002081	Lower bar axle mount – Passenger side
1	90000576	Driver side upper cradle assembly
1	90000577	Passenger side upper cradle assembly
1	90001029	Lower bar - WW24.750" – Passenger side
1	90002328	Lower bar - WW24.750" – Driver side
2	99250001	¼"-28 straight grease fitting
2	90001001	Upper bars - TW7.375" (C-C length 9.250")
2	90001589	Threaded Kevlar lined Heim end
2	99752004	¾"-16 jam nut – for rod end
4	90000552	Aluminum spacer for Heim end
4	90001942	Rubber bushings pressed into bars
4	90001090	Poly bushing half – Front of lower bar
2	90000526	Inner bushing sleeve – Front of lower bar
2	90001624	Lower billet Shockwave mount
2	90001617	Lower Shockwave stud
4	90002067	Aluminum spacer for stud
2	90000575	Inner axle tabs (Short)
2	90000574	Outer axle tabs (Long)
2	90000578	Axle tab braces
4	90000588	Upper cradle reinforcement plates
2	70010694	Jig brackets for upper bar installation

Hardware: Part # 99010029

8	7/16"-20 Nylok nut	Lower bar axle mount
8	7/16" SAE flat washer	Lower bar axle mount
10	3/8"-16 x 1" thread forming screw	Upper cradle assembly
22	3/8" SAE flat washer	Upper cradle assembly & reinforcement plates
12	3/8"-16 Nylok nut	U-bolts and reinforcement plates
2	3/8"-16 x 3" square U-bolts	Upper cradle assembly
2	1/2"-13 x 1 ¼" Gr.5 bolt	Billet mount to axle bracket
2	1/2"-13 x 1 ¾" Gr.5 bolt	Billet mount to axle bracket
4	1/2"-13 Nylok nut	Billet mount to axle bracket
6	5/8"-11 x 2 ¾" Gr.5 bolt	Upper and lower bars
6	5/8"-11 Nylok jam nut	Upper and lower bars
2	1/2"-13 x 2 ¼" Gr.5 bolt	Upper Shockwave mount
2	1/2"-13 Nylok jam nut	Upper Shockwave mount
2	3/8"-16 x ¾" Gr. 5 bolt	Upper bar installation jig
2	3/8"-16 nut	Upper bar installation jig

AirBAR[®]

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, tail pipes, bump stops and pinion snubber. Refer to the factory service manual for proper disassemble procedures. Keep the factory U-bolts and the front leaf spring mounts and bolts. They will be reused.



3. Fasten the large end of the lower bar to the factory leaf spring hanger using the factory hardware. Then reattach the hanger to the car. These two larger bushings are polyurethane and are lubricated at the factory. Future lubrication can be done with any non petroleum based lubricant such as lithium or silicone.



4. Bolt the lower bar axle mount to the leaf spring pad using the factory studs and U-bolt. New 7/16" Nyloc nuts are supplied.

5. Attach the Billet ShockWave mount to the axle mount using the 1/2" bolts and Nyloc nuts. It will be easiest to do this before attaching the lower bar.

6. Swing the small end of the lower bar up to the axle and secure with 5/8" x 2 3/4" bolt and Nyloc. **Do not tighten yet.**



7. Raise the upper cradle into position against the body and clamp in place. The contour of the plate will match the contour of the body. On cars that came with a factory sway bar the two forward holes on the bottom will already be there. The rest of the holes must be drilled with a 5/16" bit. Use the 3/8" x 1" thread forming bolts to secure the assembly.



8. Using the cradle as a template, drill four 3/8" holes in the floor pan.



9. From the inside of the car drop the reinforcement plates through these holes. Secure the assembly with 4 3/8" Nyloc nuts and flat washers. You may need to flatten part of the seam just above the top two holes.



10. Bolt the upper bar to the cradle using a 5/8" x 2 3/4" bolt and Nyloc nut.

11. Bolt the two axle tabs to the other side of the bar also using a 5/8" x 2 3/4". The shorter tab will go to the inside. Pinion angle, axle center, and ride height must all be set before welding the tabs to the axle.



12. To center the axle drop a plum off the quarter panel and measure into the axle.

13. Ride height is determined by measuring 14 1/2" center-to-center on the Shockwave.

14. Setting pinion angle is described on the next page.

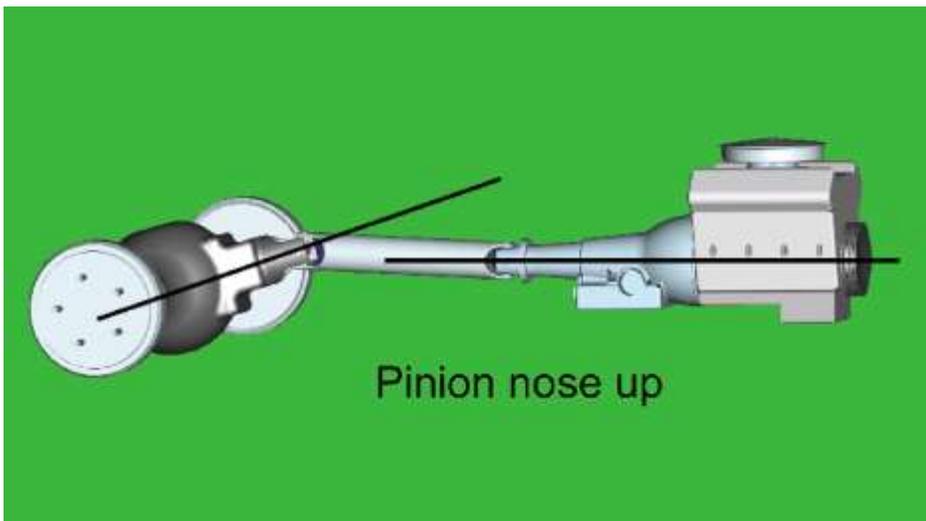
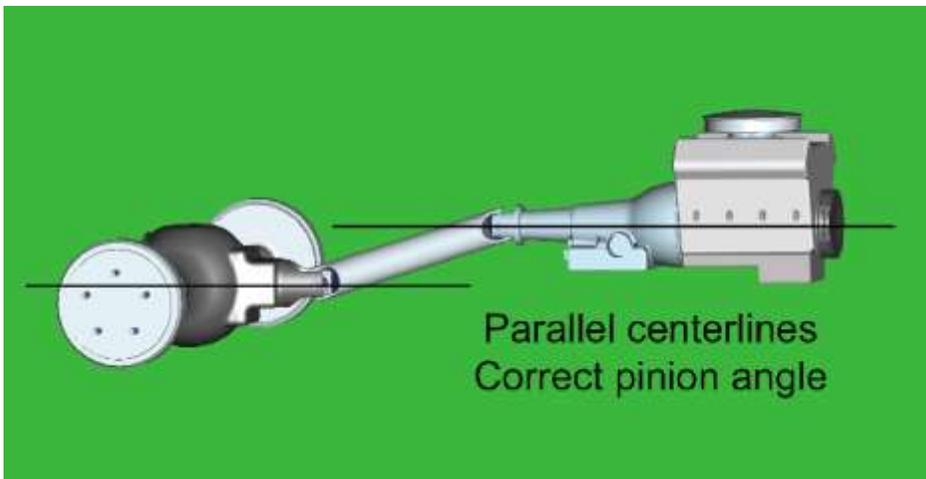
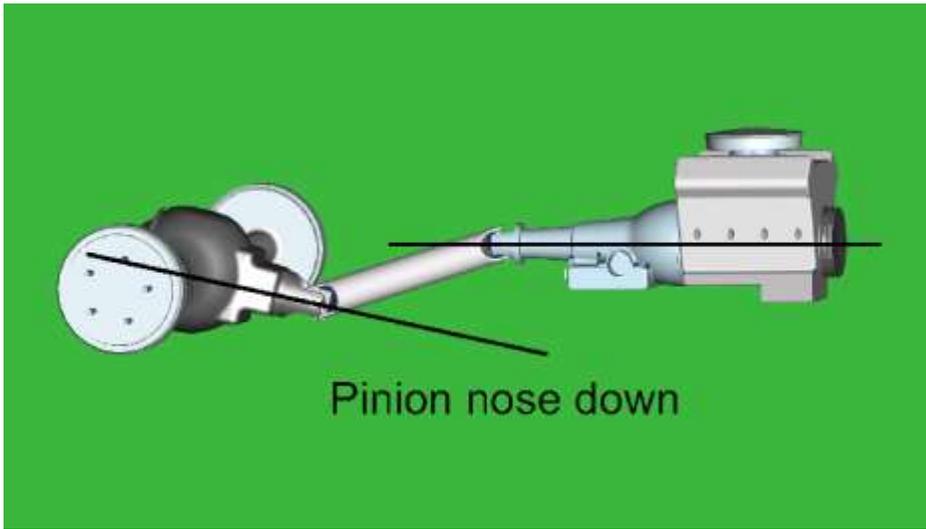
15. One trick to help maintain these settings is to tack weld a 4 3/4" spacer between the bump stop pad and the axle.



16. Once everything is double-checked the tabs can be tack-welded into place. Then tack in the axle tab brace between the two tabs.

17. To avoid heating the rubber bushing, remove the upper bar. The tabs and brace can now be welded solid. Only weld 1" at a time and skip around to avoid warping the axle tube.

18. Reinstall the upper bar and snug all of the Nyloc nuts with the axle still at ride height. These bushings are rubber and do not require any lubrication.



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.



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

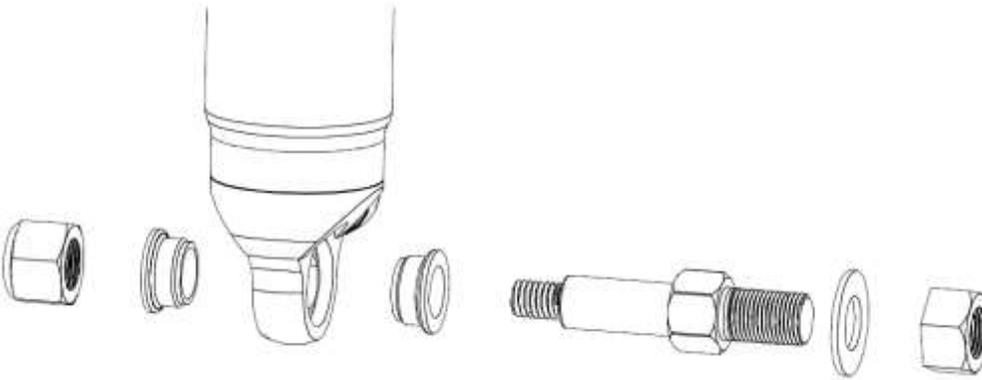
20. Screw the lower Shock stud into the billet mount. Bolt the Shockwave to the stud with the Nyloc nut. There should be one spacer on either side of the bearing. The top eyelet will bolt to the cradle using a $\frac{1}{2}$ " x $2 \frac{1}{4}$ " bolt and Nylok jam nut.

21. The $4 \frac{1}{2}$ " spacer can now be removed.

22. The exhaust will have to be rerouted.

23. The factory rear sway bar will not work, but most aftermarket ones will.

22. Double check to make sure the air spring cannot rub on anything at any time. This will cause failure and is not warrantable.

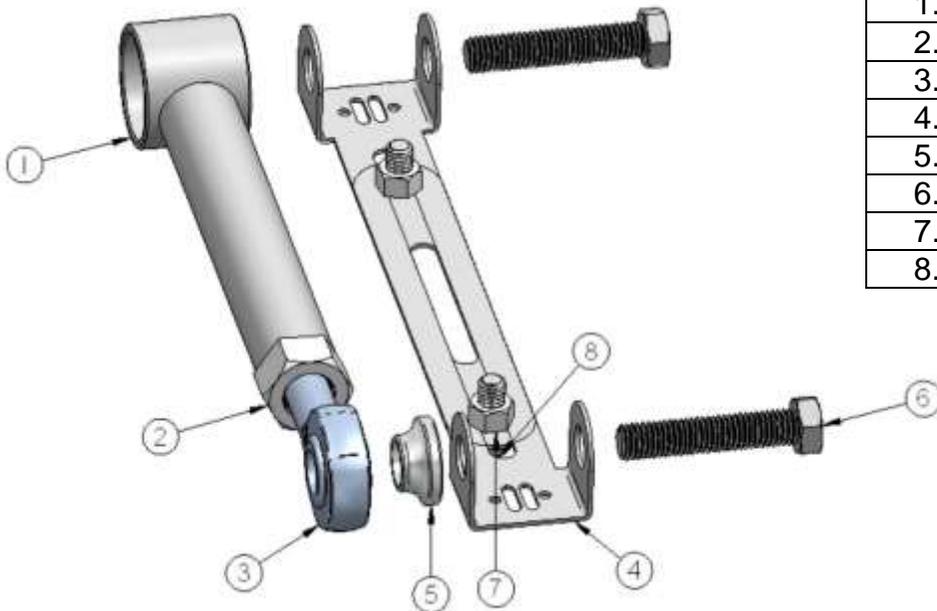


Upper Bar Installation Jig

- 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 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

one



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!

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Part # 21150701
7000 HQ Series Shockwaves
 Single Adj. - 4" Diameter - 5" Stroke - .625" Bearing/.625" Bearing

2	24059999	5" HQ Series shock
2	24090799	7000 series Shockwave bellow assembly
2	90002024	Short eye mount (1.5" tall)
4	90001994	.625" I.D. bearing
8	90001995	Snap ring
4	90002044	Bearing spacer kit
2	31954201	1/4" npt x 1/4" tube swivel elbow fitting

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.

SHOCKWave[®]

by Air Ride Technologies

7000 Series Shockwave

Use these
spacers when
mounting on 5/8"
bolt.



Compressed Height	11.5"
Ride Height	14.5"
Extended Height	16.5"

Use these spacers
when mounting on
1/2" bolt.



Part # 30334100 - 3 Gallon LevelPro Compressor System

Recommended Tools

Components:

2	31920020	Thomas 319 Compressor
1	31934001	4 way RidePro air valve assembly
1	31913100	3 gallon Aluminum tank
5	31988150	Air pressure sensor
1	31398001	RidePro LevelPro ECU
1	31398002	RidePro LevelPro Display
2	99064002	6-32 x 3/8" Phillips pan head screw for display
1	82010000	Installation Guide

Wiring & Hardware:

1	31900031	Display Harness
1	31900020	Air valve wiring harness
1	31900006	Air pressure sensor wiring harness
1	31900048	Main power / compressor harness
2	90001924	Fuse holder
2	90001922	20 Amp fuse
6	99104001	10-24 x 1" phillips screw
6	99102002	10-24 Nylok nut
6	99103001	#10 SAE flat washer
2	90001913	12-10 Gauge Butt Connector
2	90001916	#10 x 5/16" Ring Terminal

Airlines & Fittings:

2	31940002	1/4" DOT airline – 30' roll
6	31954201	1/4" npt x 1/4" tube elbow fitting - air springs / tank
7	31954000	1/4" npt x 1/4" tube straight fitting - air valve
2	31952150	1/8" npt female x 1/4" tube straight fitting - compressor
2	31957003	1/8" npt nipple (install between FIT2150 & compressor)
3	31957004	1/4" npt plug - plug extra supply port
1	31954400	1/4" air line tee- compressors to check valve fitting
1	31959301	Check Valve- SCREWS INTO TANK FOR COMPRESSOR LINE



THE CHECK VALVE SUPPLIED SCREWS INTO THE AIR TANK WITH AN AIR FITTING THREADING INTO IT. THE COMPRESSOR LINES WILL FEED INTO THE CHECK VALVE.

