

ridetech



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	1/4"-28 straight grease fitting
2	90001001	Upper bars - TW7.375" (C-C length 9.250")
2	90001589	Threaded Kevlar lined Heim end
2	99752004	3/4"-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 1/4" Gr.5 bolt	Billet mount to axle bracket
2	1/2"-13 x 1 3/4" 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 3/4" Gr.5 bolt	Upper and lower bars
6	5/8"-11 Nylok jam nut	Upper and lower bars
2	1/2"-13 x 2 1/4" Gr.5 bolt	Upper Shockwave mount
2	1/2"-13 Nylok jam nut	Upper Shockwave mount
2	3/8"-16 x 3/4" 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.

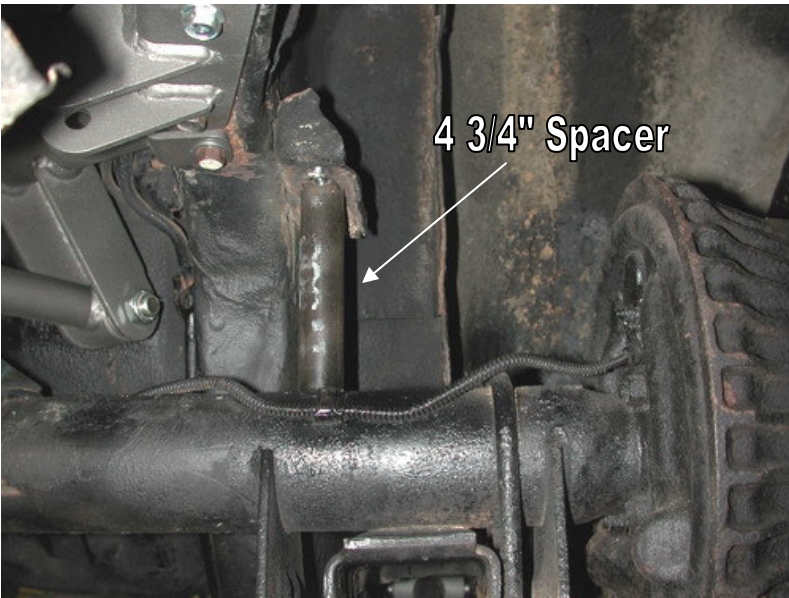


9. From the inside of the car drop the reinforcement plates through these holes. Secure the assembly with 4 3/8" Nyloc nuts and flat washers. You may need to flatten part of the seam just above the top two holes.



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.

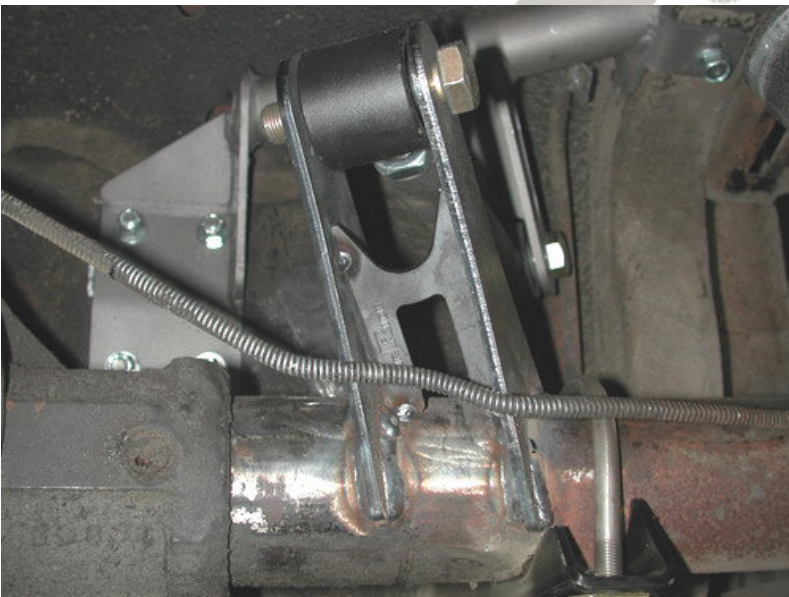


12. To center the axle drop a plum off the quarter panel and measure into the axle.

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.

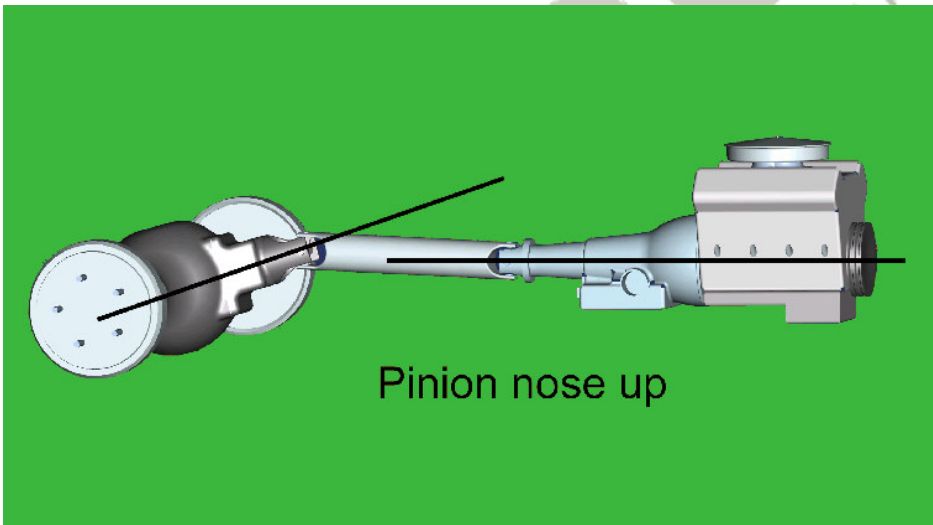
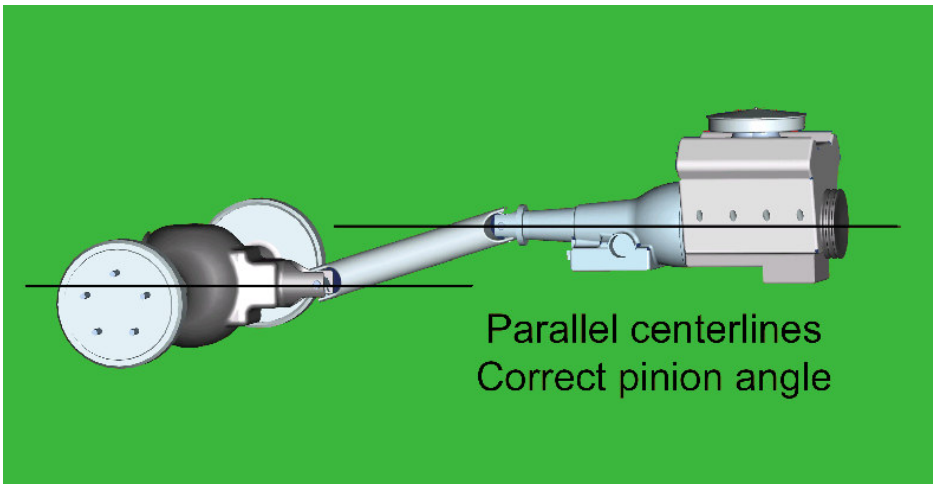
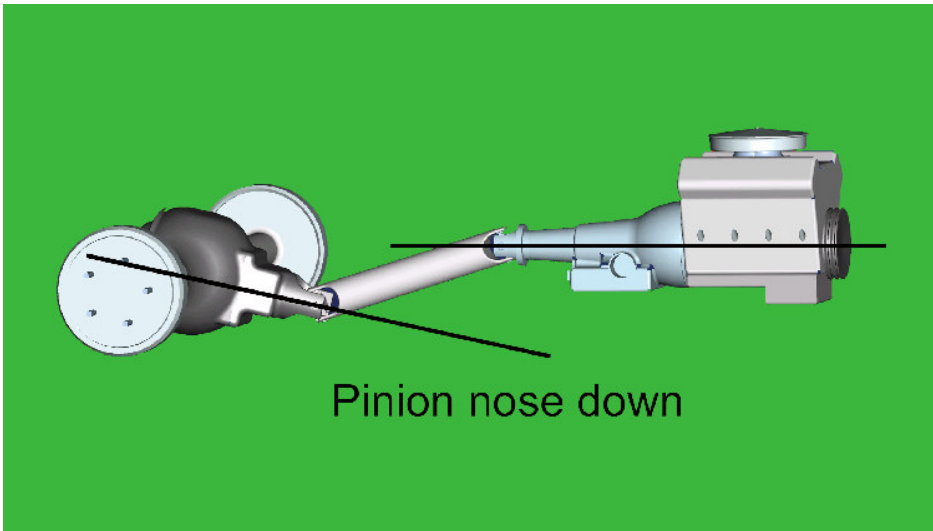
15. One trick to help maintain these settings is to tack weld a 4 3/4" spacer between the bump stop pad and the axle.



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.

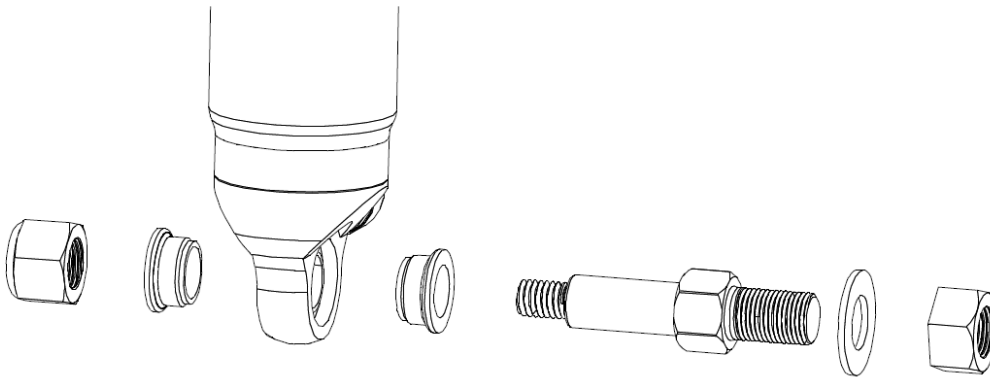
20. Screw the lower Shock stud into the billet mount. Bolt the Shockwave to the stud with the Nyloc nut. There should be one spacer on either side of the bearing. The top eyelet will bolt to the cradle using a 1/2" x 2 1/4" bolt and Nylok jam nut.

21. The 4 1/2" spacer can now be removed.

22. The exhaust will have to be rerouted.

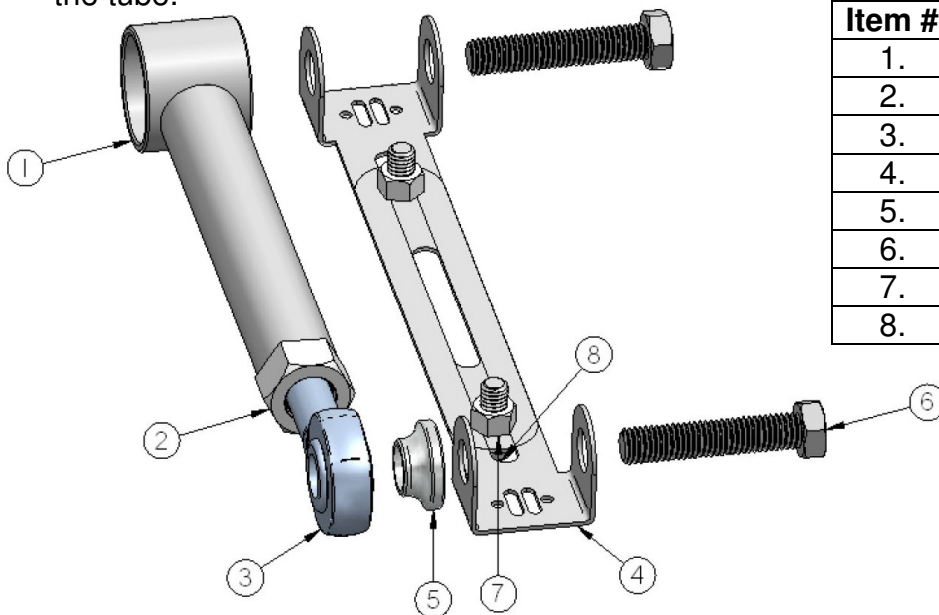
23. The factory rear sway bar will not work, but most aftermarket ones will.

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 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!