



350 S. St. Charles St. Jasper, In. 47546  
Ph. 812.482.2932 Fax 812.634.6632  
[www.ridetech.com](http://www.ridetech.com)

**Part # 11170399**  
**70-81 GM "F" Body Level 3 Complete Air Suspension System**

**Front Components:**

1	11173002	Master Series Double Adjustable Front Shockwaves
1	11172899	Front Lower StrongArms
1	11173699	Front Upper StrongArms
1	11179100	Front MuscleBar Sway Bar w/ PosiLinks
1	11179400	Billet Tie Rod Adjusters

**Rear Components:**

1	11177199	Rear AirBar – Bolt-on 4 Link
1	21250701	Rear Master Series Double Adjustable Shockwaves

**Compressor System:**

1	30314100	5 gallon AirPod w/ RidePro E3 Control System
1	30400034	LevelPro Upgrade - 4 External Height Sensors
1	31008500	Two key fob remotes with antenna

# ridetech

Air Ride Technologies



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## Part #11173002

### 70-81 GM "F" Body Front Master Series DA ShockWaves

For Use w/ Lower StrongArms

#### ShockWave Assembly:

2	21190399	104mm Master Series rolling sleeve assembly
2	21229999	2.6" stroke Master Series <b>double</b> adjustable shock
2	90001632	Internal bump stop
2	90001686	.625" I.D. bearing
2	90001900	Bearing snap ring
2	90001907	Tall Delrin stud top – 2.75"

#### Components:

2	90001833	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	1/4"npt x 1/4" tube swivel elbows

#### Hardware:

4	99562002	9/16" SAE jam nut	Stud top hardware
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# SHOCKwave<sup>®</sup>

by Air Ride Technologies

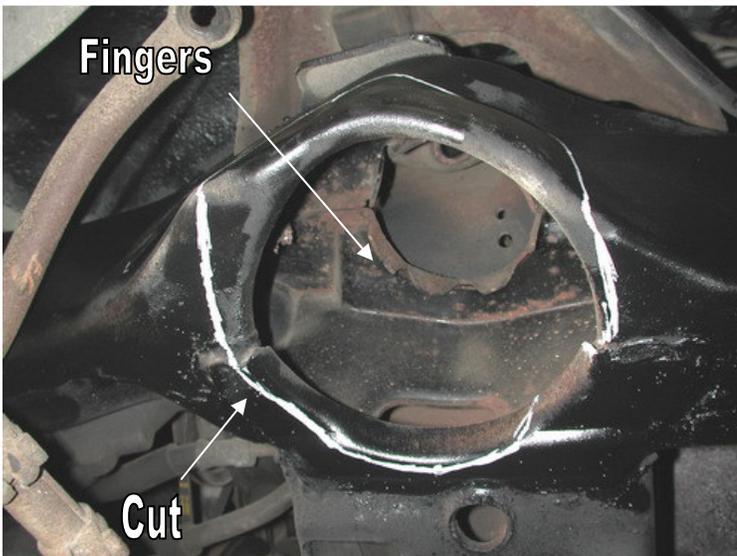
## Installation Instructions



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.

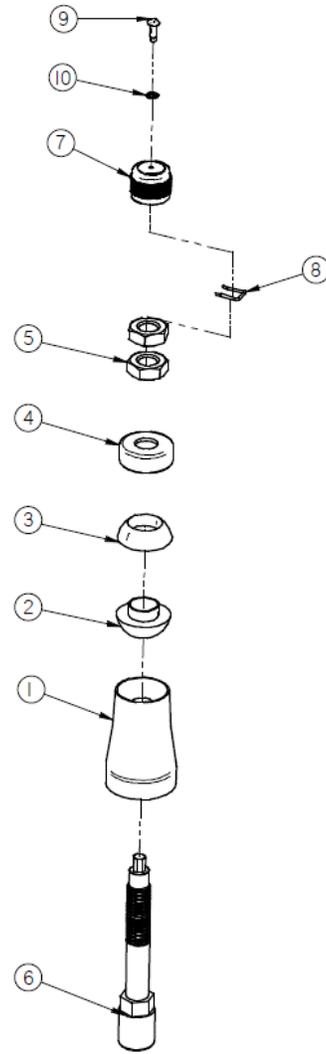
4. Fasten the Shockwave to the lower arm w/ the spacer and bolts provided w/ the lower arms.

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.

1. 90001833- Short Delrin stud top base – 2.75”
2. 90001904- Delrin ball lower half
3. 90001903- Delrin ball upper half
4. 90001902- Aluminum cap for Delrin ball
5. 99562002- 9/16” SAE jam nut
6. 90001907- Short Delrin stud top – 2.75”
7. Black adjustment knob
8. Detent clip
9. Screw
10. Washer



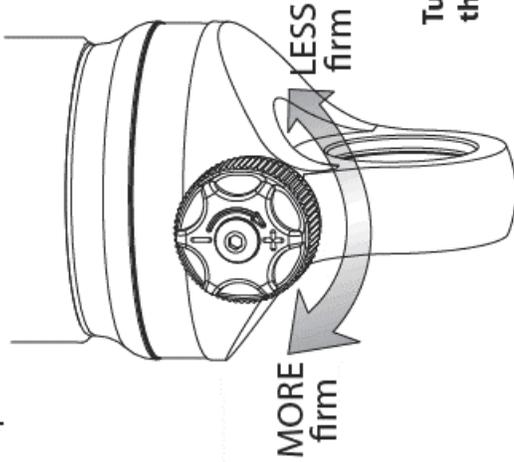
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# Shock Adjustment Instructions



## Compression Adjuster

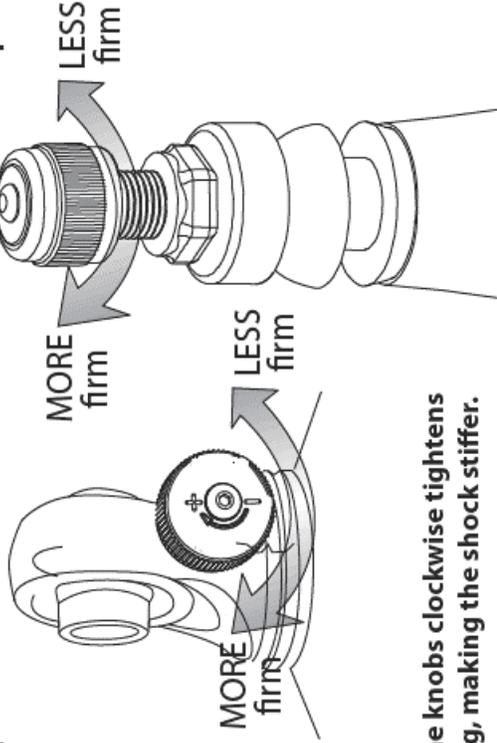
The compression adjustment is made on the body end of the shock.



Turning the knobs clockwise tightens the valving, making the shock stiffer.

## Rebound Adjuster

The rebound adjustment is made on the shaft end of the shock.



The rebound and compression knobs work completely independently from one another.

Because of the fine adjustment range RideTech recommends adjusting 3-4 clicks minimum when making a shock valve change.

All RideTech Shocks are shipped from the factory at the FULL SOFT position.

**Please note: Only rotate adjustment knob while feeling the “click”**

Trying to rotate knob past the last click could result in damage to the adjuster internal mechanism.

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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.**



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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 <b>installed in arms</b> ('71 & '72)
4	90000517	9/16" I.D. Inner bushing sleeve ('73-'81)
4	90002062	Aluminum bearing spacer
2	90001092	Tube of lithium grease

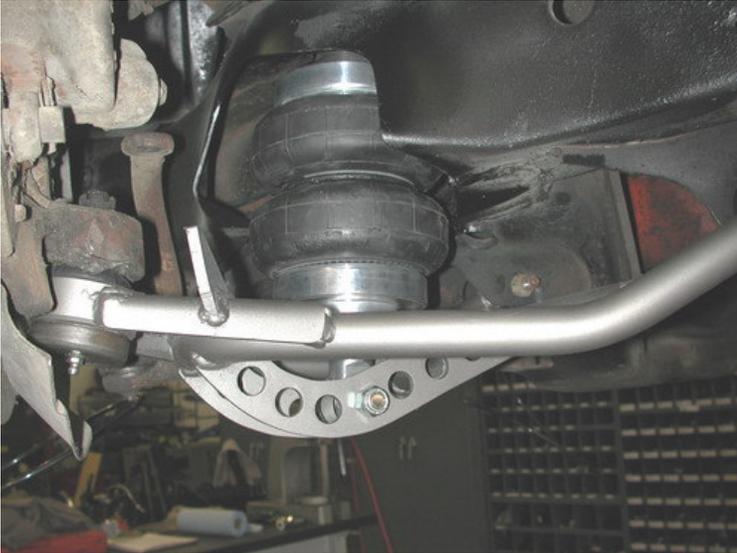
**Hardware:**

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

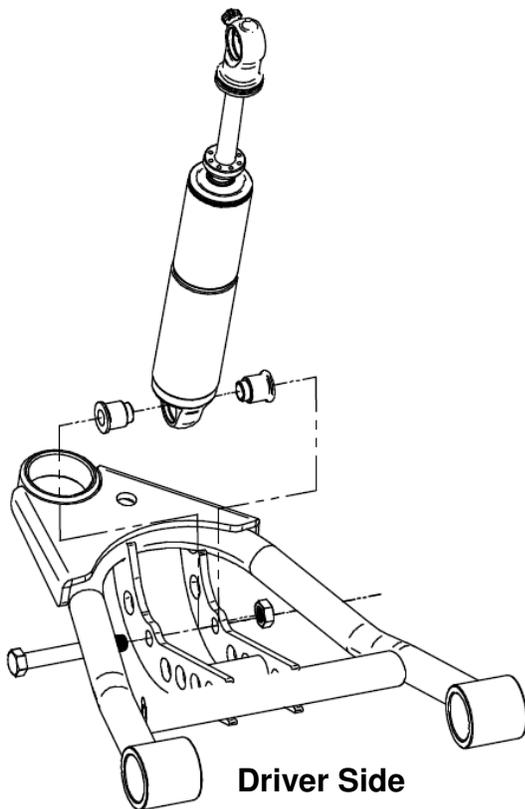
## Installation Instructions



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.



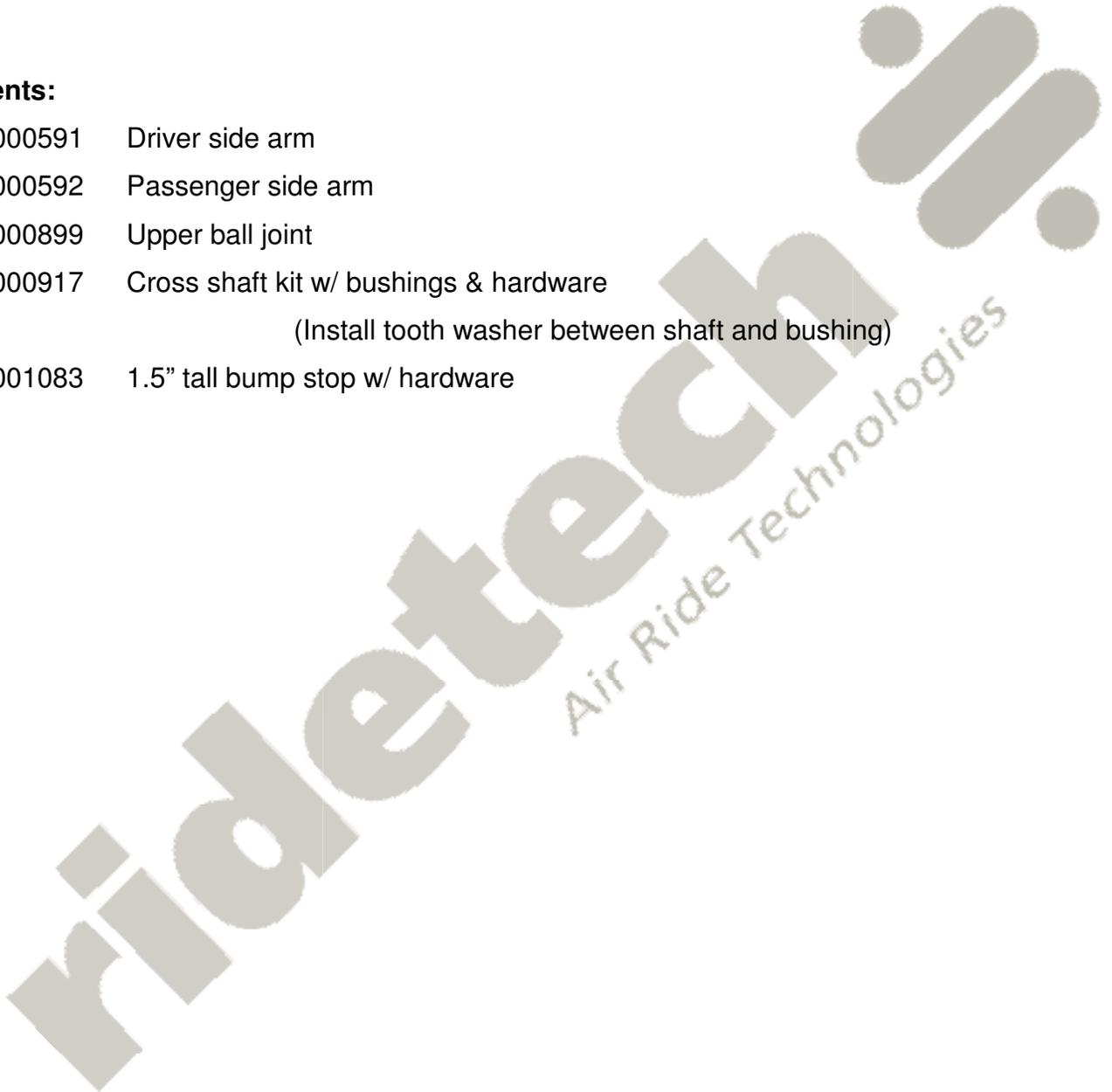
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**Part # 11173699**  
**70-81 GM "F" Body Upper StrongArms**

**Components:**

- |   |          |  |
|---|----------|--|
| 1 | 90000591 | Driver side arm  |
| 1 | 90000592 | Passenger side arm   |
| 2 | 90000899 | Upper ball joint   |
| 2 | 90000917 | Cross shaft kit w/ bushings & hardware<br>(Install tooth washer between shaft and bushing) |
| 2 | 90001083 | 1.5" tall bump stop w/ hardware  |



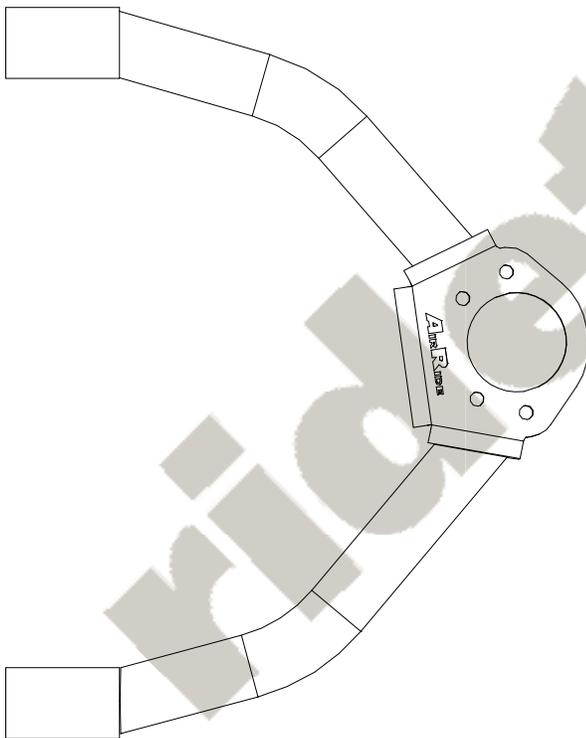
# STRONG ARMS™

by Air Ride Technologies



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**



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**Part # 11179100**

**70-81 GM "F" Body Front MuscleBar**

**Components:**

- 1 90001770 Sway Bar
- 1 90001771 Hardware kit (includes the following)
  - 2 Frame bushing
  - 2 Frame bracket
  - 4 Frame bracket washer
- 2 90000924 10mm straight PosiLink
- 2 90000926 10mm 90 degree PosiLink
- 2 90000103 Aluminum adapter for lower arm
- 4 90000717 Step washers
- 2 90001092 Tube of Lithium grease

**Hardware:**

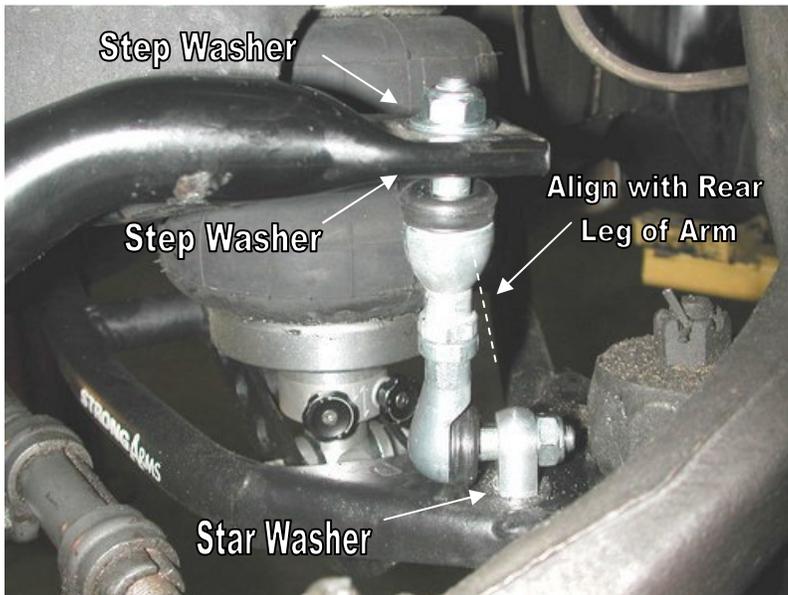
- 2 99632002 5/8" SAE Nylok jam nut Aluminum adapter
- 2 99623003 5/8" Star Washer Aluminum adapter
- 4 99112002 10mm Nylok nuts PosiLink
- 2 99115001 10mm x 1.5 stud PosiLink (use Loctite)
- 4 99371004 3/8" x 1 1/4" USS bolt Frame bracket
- 4 99311002 5/16" x 1 1/4" USS bolt Frame bracket

**MUSCLEbar™**  
by Air Ride Technologies

# POSI•Link™

## Installation Instructions

This sway bar is designed for use RideTech lower StrongArms.



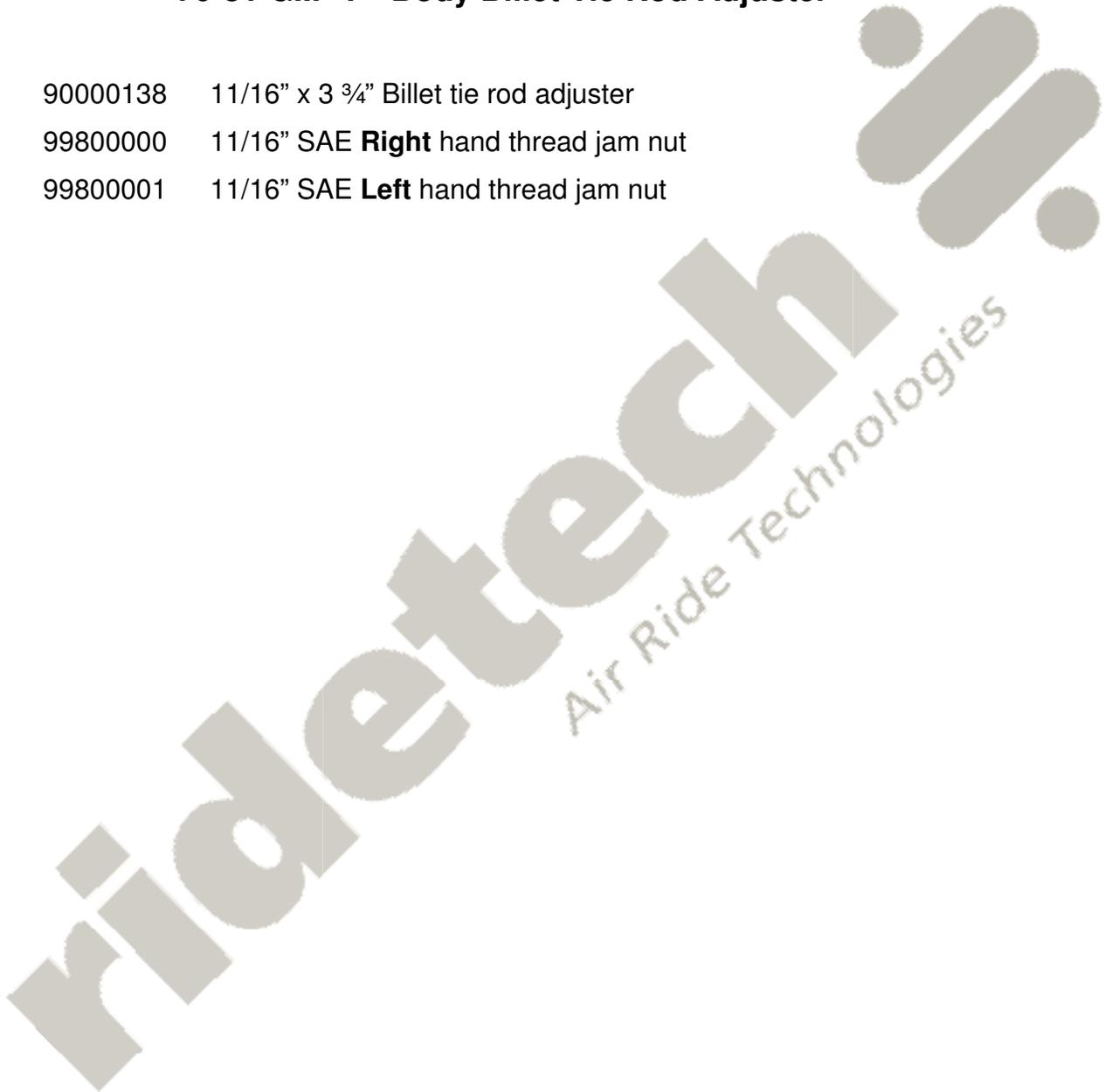
1. Apply grease to the polyurethane bushing, then slide it over the sway bar.
2. Place the clamp bracket over the poly bushing, then bolt the sway bar to the frame using the 5/16" x 1 1/4" or the 3/8" x 1 1/4" bolts supplied. Do not tighten yet.
3. Attach the aluminum adapter to the hole in the lower control arm with a 5/8" Nylok jam nut. **The adapter should align with the rear leg of the lower arm. The star washer must be installed between the lower arm and the adapter.**
4. Attach the 90 degree PosiLink to the adapter with a 10mm Nylok nut.
5. Attach the straight end to the sway bar with a step washer on each side of the bar. A 10mm Nylok nut will secure the assembly.
6. Tighten frame mount bolts.
7. Check clearance through full suspension travel. Make sure the PosiLink does not bind.



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**Part # 11179400**  
**70-81 GM "F" Body Billet Tie Rod Adjuster**

- |   |          |   |
|---|----------|---|
| 2 | 90000138 | 11/16" x 3 3/4" Billet tie rod adjuster     |
| 2 | 99800000 | 11/16" SAE <b>Right</b> hand thread jam nut |
| 2 | 99800001 | 11/16" SAE <b>Left</b> hand thread jam nut  |





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**Part # 11177199**  
**70-81 GM "F" Body AirBar**  
For Use w/ Shockwaves or CoilOvers

**Components:**

2	90000587	Lower bar axle mount
1	90000576	Driver side upper cradle assembly
1	90000577	Passenger side upper cradle assembly
2	90001029	Lower bars - WW24.750"
2	90001001	Upper bars - TW7.375" (C-C length 9.250")
2	90001584	Threaded rod end – press in rubber bushings
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
2	90000575	Inner axle tabs (Short)
2	90000574	Outer axle tabs (Long)
2	90000578	Axle tab braces
4	90000588	Upper cradle reinforcement plates

**Hardware: Part # 99010029**

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

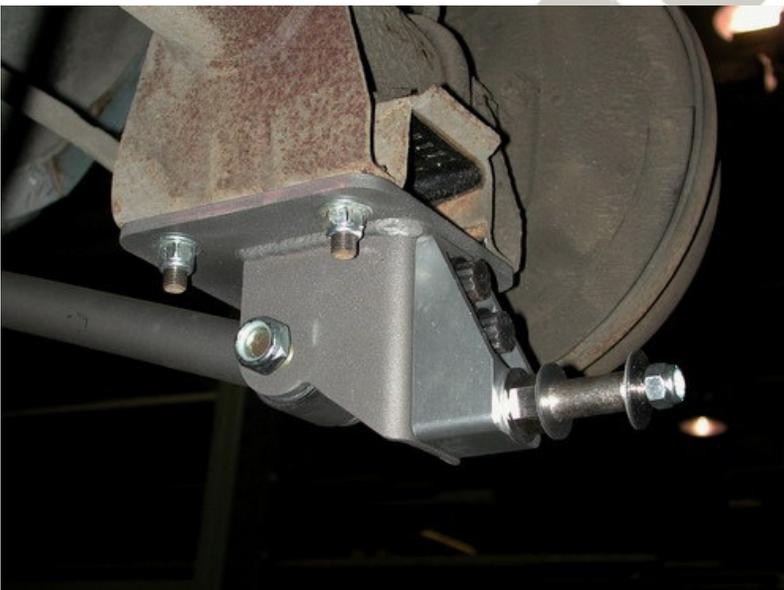
# **AirBAR**<sup>®</sup>

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, 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.

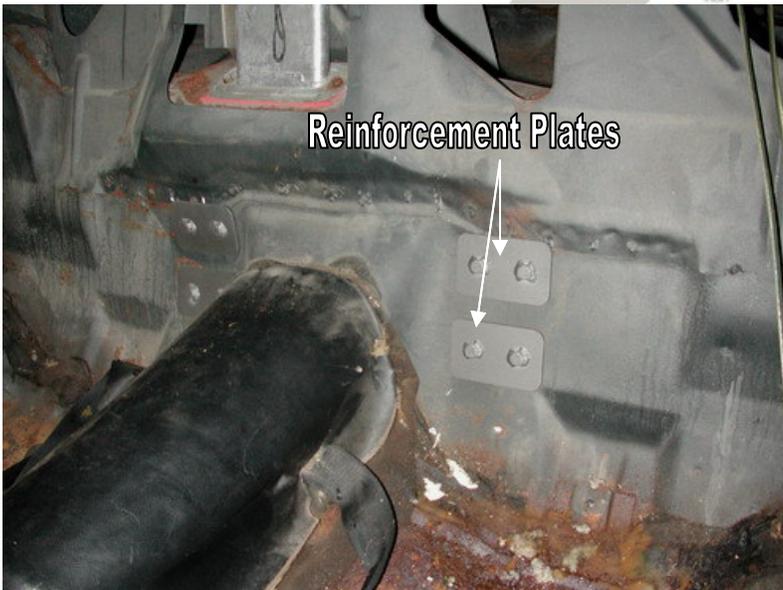
6. Swing the small end of the lower bar up to the axle and secure with 5/8" x 2 3/4" bolt and Nyloc. **Do not tighten yet.**



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.

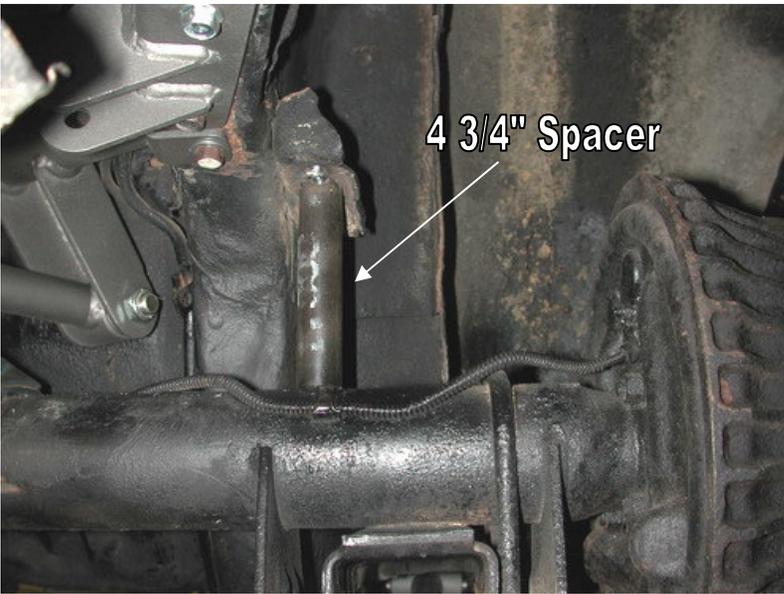


9. From the inside of the car drop the reinforcement plates through these holes. Secure the assembly with 4 3/8" Nyloc nuts and flat washers. You may need to flatten part of the seam just above the top two holes.



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.

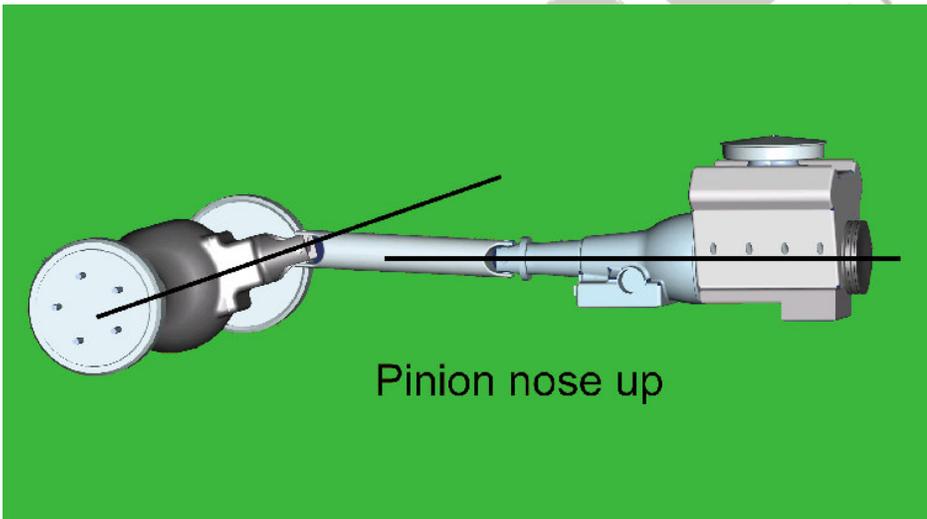
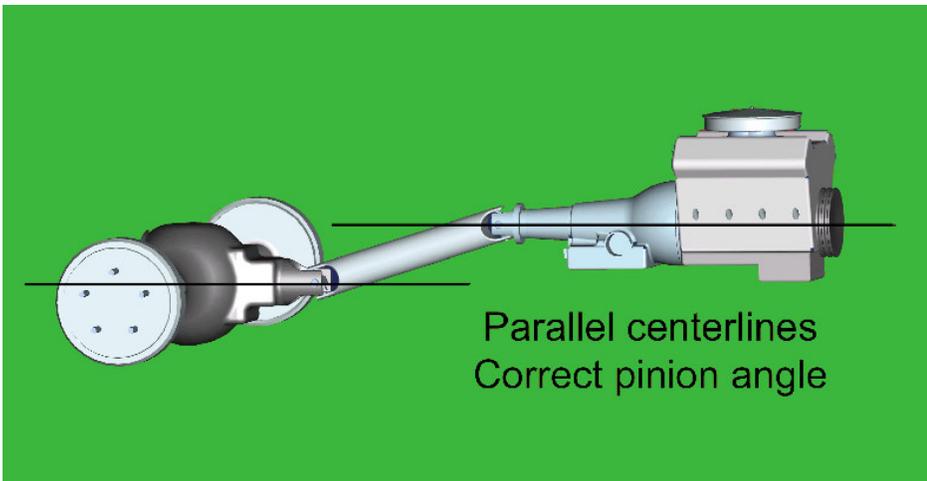
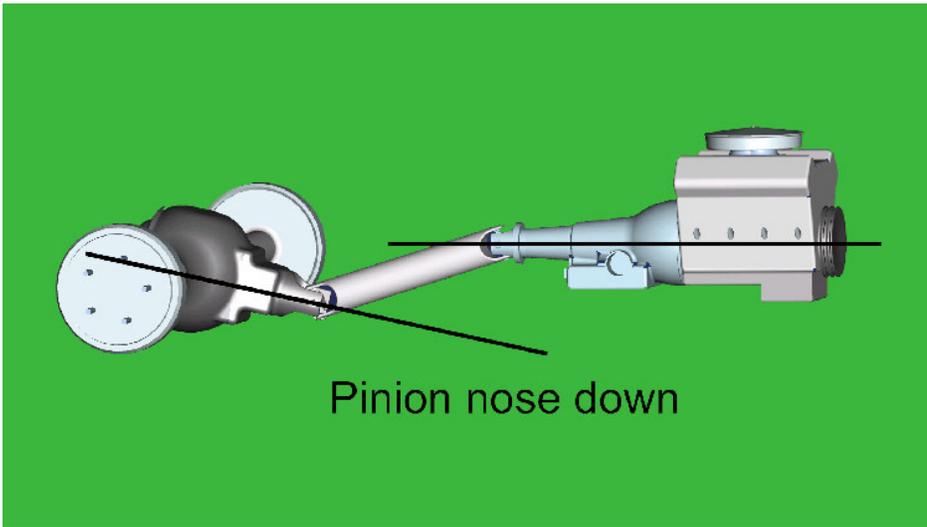
15. One trick to help maintain these settings is to tack weld a 4 3/4" spacer between the bump stop pad and the axle.



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 washer on either side of the bushing. 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.

23. Driving height should be around 80 psi and there should be approximately 3 clicks on the shock knob. These numbers will vary to driver preference.





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**Part # 21250701**  
**7000 Master Series DA Shockwaves**  
Double Adj. - 4" Diameter - 5" Stroke - .625" Bearing/.625" Bearing

2	21259999	5" stroke <b>double</b> adjustable shock
2	21190799	7000 series Shockwave bellow assembly
2	90001632	Internal bump stop
2	90001682	Short eye mount (1.5" tall)
4	90001686	.625" I.D. bearing
4	90001900	Snap ring
4	90002044	Bearing spacer kit
2	31954201	1/4" npt x 1/4" tube swivel elbow fitting

# SHOCKwave<sup>®</sup>

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"

Shockwave  
Air Ride Technologies

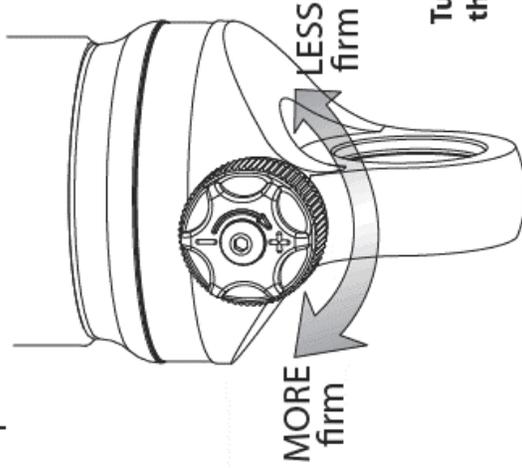
Use these spacers  
when mounting on  
1/2" bolt.

# Shock Adjustment Instructions



## Compression Adjuster

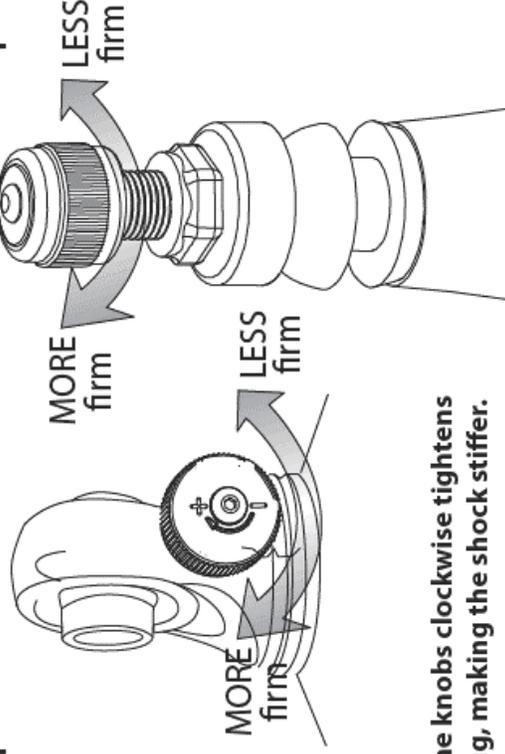
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**Please note: Only rotate adjustment knob while feeling the "click"**

Trying to rotate knob past the last click could result in damage to the adjuster internal mechanism.

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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.**
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**Part # 30314100**  
**5 Gallon AirPod Compressor System**  
with RidePro E3 Controller

- 1 5 gallon AirPod
- 1 31398002 RidePro E3 Display
- 2 6-32 x 3/8" Phillips pan head screw for display
- 1 31900031 Display Harness
- 1 WIR External power harness
- 1 90001924 Fuse holder
- 1 90001920 40 amp fuse
- 1 #10 Yellow butt connector
- 1 #10 5/16" eye connector
- 2 31940002 30' roll of 1/4" airline
- 4 31954201 1/4"npt x 1/4"airline fitting
- 1 Installation Guide





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**Part # 30400034**  
**4 Pack of LevelPro Height Sensors**

4	31980002	Rotary height sensor
4	31980001	Linkage kit for height sensor
2	31900046	13' height sensor cord
2	31900047	18' height sensor cord
10	90002030	Heavy duty heat shrink tube - for rubber rod ends



350 S. St. Charles St. Jasper, In. 47546  
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[www.ridetech.com](http://www.ridetech.com)

**Part # 31008500**  
**RidePro E3 Remote Control kit**

1	31900039	Remote module
2	31900042	Key Fob
1	31900041	Antenna
1	31900001	Module to control panel USB cable