

Part # 11300399 67-70 Impala Level 3 Complete Air Suspension System Street Challenge Package

Front Components:

1	11283011	TQ Series Front Shockwaves
1	11282899	Front Lower StrongArms
1	11283699	Front Upper StrongArms
1	11289100	Front MuscleBar Sway Bar w/ PosiLinks
1	11289400	Billet Tie Rod Adjusters

Rear Components:

1	11284699	Rear CoolRide Kit for StrongArms
1	11280711	TQ Series Rear Shocks
1	11284499	Rear Lower StrongArms
1	11306699	Rear Upper StrongArm & Panhard Bar Kit
1	11289102	Rear MuscleBar Sway Bar

Compressor System:

1	30314100	5 gallon AirPod w/ LevelPro Control System
1	30400034	4 Pack of LevelPro Height Sensors
1	31008500	Key Fob Remote Controls



Part # 11283011 65-70 Impala Front TQ Series Shockwaves For Use w/ StrongArms

ShockWave Assembly:

- 2 24090399 104mm Master Series rolling sleeve assembly
- 2 24339999 3.2" stoke TQ Series shock
- 2 90001994 .625" I.D. bearing
- 4 90001995 Bearing snap ring
- 2 90009989 Tall Delrin stud top 2.75"
- 2 70008913 Locking Ring
- 2 90006782 Stud Top Spacer

Components:

- 2 90002309 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 (Must use Thread Sealant)
- 4 90002221 Reservoir Mount
- 1 85000003 4mm Allen Wrench

2	99562003	9/16" SAE jam nut	Stud top hardware
12	99050000	4mm Socket Head Screw	Reservoir Mount



Installation Instructions



1. The Shockwave bellow will rub the frame, so some trimming must be done. Using a die grinder, remove the bump stop bracket from the coil spring pocket.



2. The inside lip of the pocket must also be remove to allow for Shockwave bellow clearance.

3. The coil spring retainer needs to be trimmed for the swivel stud top clearance.

Note: Double-check Shockwave clearance through full suspension travel. **Allowing the Shockwave to rub will result in air spring failure and is not a warrantable situation.**



4. Surrounding the hole that the factory shock stem went through is a bushing cup. This must be removed using a chisel or air hammer.

5. Apply thread sealant to an elbow air fitting and screw it into the bottom of the Shockwave.



6. Insert the Shockwave into the coil spring pocket with the stud sticking through the factory shock hole. See assembly diagram on next page.

7. Attach the Shockwave to the lower control arm using a $\frac{1}{2}$ x 3" bolt and Nylok jam nut. An aluminum spacer must be installed on each side of the bearing.

8. Driving height pressure should be around 100psi. 6-8 clicks in the shocks will be a good starting point. This will vary to vehicle weight and driver preference.

- 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

- Although the ShockWave has an internal bumpstop, <u>DO NOT DRIVE THE VEHICLE</u> <u>DEFLATED RESTING ON THIS BUMPSTOP. DAMAGE WILL RESULT.</u> 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. <u>This is a non warrantable situation.</u>
- 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. <u>This is a non warrantable situation!</u> If you need to raise your vehicle higher that 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. <u>This is a non</u> <u>warrantable situation.</u>
- 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.



Part # 11282899 65-70 Impala Front Lower StrongArms For use w/ Shockwaves or CoilOvers

Components:

- 9000093 Driver side lower arm 1 1 90000094 Passenger side lower arm 2 90000904 Ball joint 2 90000928 **Bushing** 2 90001045 Control arm pivot bearing **Bearing housing** 2 90000734 2 90000735 Bearing retaining plate 2 90000733 Aluminum bearing spacer Bearing stud (Set to 3 1/16") 2 90000732
- 4 90002062 Aluminum spacer Shock to lower arm

2	99752001	3⁄4"-16 Lock nut Gr.8	Pivot bearing
2	99752004	¾"-16 Jam nut	Pivot bearing
2	99753001	³ ⁄ ₄ " Flat washer	Pivot bearing
6	99371018	3/8" x 1 ¼" SHCS	Pivot bearing
6	99373005	3/8" Lock washer	Pivot bearing
2	99501012	1⁄2" x 3" SAE Gr. 8 bolt	Shockwave to lower arm
2	99502002	1/2" SAE Nylok nut	Shockwave to lower arm
2	99371004	3/8" x 1 ¼" USS bolt	Steering stop
2	99372004	3/8" USS regular nut	Steering stop



Installation Instructions

- 1. Raise and support vehicle at a safe, comfortable working height. Let the front suspension hang freely.
- 2. Remove the coil spring, shock absorber, upper and lower control arms, sway bar and the strut rods. There is a washer on each side of the lower control arm frame bushing, these will be reused. The factory lower control arm bolt will be reused as well.

Note: This kit is designed for use with our MuscleBar sway bar. It is easier to install it **before** the lower arms. The factory sway bar will not fit.



3. Bolt the lower StrongArm to the frame using the factory bolt. Be sure to reinstall the T washers that came off the factory arm bushing.

4. The front leg of the lower arm will attach to the frame in place of the strut rod. Refer to the diagram on the next page for assembly order.

Note: The hole in the frame may need to be buffed to allow bearing assembly to slide in.



5. Using the bearing retainer as a template; drill three 3/8" holes in the frame to secure the assembly. Use three 3/8" x 1 $\frac{1}{4}$ " SHCS and lock washers to secure the assembly.



6. Attach the Shockwave to the lower control arm using a $\frac{1}{2}$ " x 3" bolt and Nylok jam nut. An aluminum spacer must be installed on each side of the bearing.

7. Two 3/8" x 1 $\frac{1}{4}$ " bolts and nuts are supplied for the steering stop. They will bolt to the rear side of the ball joint plate. This can be adjusted to limit steering radius.



8. The Caster setting on this system has a lot of adjustment. We recommend setting it at 3-3.5 degrees.

9. Driving height pressure should be around 100psi. 6-8 clicks in the shocks will be a good starting point. This will vary to vehicle weight and driver preference.





Part # 11283699 65-70 Impala Front Upper StrongArms

Components:

- 1 90000478 Driver side upper arm
- 1 90000479 Passenger side upper arm
- 2 90000905 Ball joint
- 2 90000907 Bushing kit (4 pieces)
- 2 90000102 Cross shaft

4	99373005	3/8" Lock washer	Upper cross shaft
4	99371013	3/8" x 1" SAE bolt	Upper cross shaft
4	99373001	3/8" fender washer	Upper cross shaft



Installation Instructions



1. Drop the ball joint down through the ball joint plate, secure w/ the hardware supplied.

2. 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.)

Driver Side – Top View



3. Insert the ball joint stud through the spindle and install new castle nut and cotter pin supplied.

4. Thread Zerk fitting into ball joint and grease.

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



Part # 11289100 65-70 Impala Front MuscleBar

Components:

- 1 90000104 Sway bar
- 2 90001100 Bushing and strap kit
- 2 90000929 12mm end link
- 2 90001092 Tube of Lithium grease

2	99122001	12mm x 1.75 Lock nut	PosiLink to sway bar
4	99433002	7/16" SAE flat washer	PosiLink to sway bar
2	99122007	12mm lock washer	PosiLink to lower arm
4	99371004	3/8" x 1 ¼" USS bolt	Frame bracket
4	99372002	3/8" USS Nylok nut	Frame bracket
8	99373003	3/8" SAE flat washer	Frame bracket





Installation Instructions

*****This sway bar is designed for use with our front StrongArms*****



1. Slide the sway bar though the same holes in the frame that the factory bar went through.

2. Install the new polyurethane bushing over the sway bar. Lubricate with the Lithium grease supplied.

3. Slide the frame bracket over the bushings and clamp the sway bar up to the frame using a couple "C" clamps. The sway bar should be centered in the hole through the frame.



4. Adjust the frame bracket so that the corner of the bracket is flush with the outside of the frame rail.

5. The factory bolt holes will not be used. Two new holes must be drilled with a 3/8" bit.

6. Secure the assembly with two 3/8" x 1 $\frac{1}{4}$ " bolts, flat washers and Nylok nuts.



7. Install the lower StrongArms.

8. Screw one end of the PosiLink into the end of the sway bar. A12mm lock washer will be used between the stud and the sway bar.



9. The other end of the PosiLink will attach to the tab on the StrongArm using a 12mm flat washer and locking nut.

10. Check sway bar clearance through full suspension travel.

11. Congradulations!! Your New MuscleBar installation is now complete. If you have any further questions feel free to contact us at 812-482-2932.





11289400 65-70 Impala Billet Tie Rod Adjuster

- 2 90000090 5/8" x 6" Billet tie rod adjuster
- 2 99800002 5/8" SAE **Right** hand thread jam nut
- 2 99800003 5/8" SAE Left hand thread jam nut



Part # 11284699 65-70 Impala Rear CoolRide For Use w/ Lower StrongArms

Components:

2	F6781	267c Air spring
2	A032	Upper air spring bracket
2	A168	Upper bracket frame washer

2	7/16 x 6" stud	Upper air spring bracket to frame
2	7/16" USS Nylok nut	Upper air spring bracket to frame
2	7/16" flat washer	Upper air spring bracket to frame
2	3/8" USS Nylok nut	Air spring to upper bracket
2	3/8" x 3/4" USS bolt	Air spring to lower arm
6	3/8" flat washer	Air spring
2	3/8" lock washer	Air spring to lower arm



*** For use w/ RideTech shock kit ***



1. Apply thread sealant to an elbow air fitting and screw it into the top of the air spring.

2. Place the upper air spring bracket on top of the air spring clocked so the air fitting access hole is next to the fitting. Fasten it to the air spring using two 3/8" Nylok nuts and flat washers.

3. Screw the 7/16" x 6" all thread into the nut at the bottom of the bracket.



4. Place the upper washer on top of the coil spring pocket.



5. Raise the assembly into the coil spring pocket with the all thread sticking through the upper washer. Secure the assembly with a 7/16" Nylok nut and flat washer.



6. Fasten the air spring to the lower arm using a 3/8" x 3/4" bolt, flat washer and lock washer.

7. Double check air spring clearance through full suspension travel.

8. Ride height on this air spring is approximately 5" tall. This may vary to driver preference.



Part # 11280711 65-70 Impala TQ Series Rear Shock Kit

Components:

- 2 24379999 7" stroke TQ Series shock
- 2 90002024 1.7" eyelet Adjustable
- 4 90001994 .625" bearing
- 8 90001995 Snap ring for bearing
- 2 90002060 Extended T-bar Installed in shock body
- 4 90001980 Snap ring for T-bar
- 4 90002067 Aluminum bearing spacer .625" I.D.
- 2 90002329 Round head cantilever pin
- 2 90000471 Aluminum spacer
- 4 90002221 Reservoir Mount
- 1 85000003 4mm Allen Wrench

Hardware:

- 4 99371004 3/8" x 1 ¼" USS bolt
- 8 99373003 3/8" SAE flat washer
- 4 99372002 3/8" USS Nylok nut
- 12990500004mm Socket Head Screw

Shock to frame Shock to frame Shock to frame Reservoir Mount

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.



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-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. <u>CONTINUE ON NEXT PAGE.</u>



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.

Shock adjustment 101- Triple Adjustable

Triple Adjustable: Step One: High Speed Compression



-High speed compression adjustments are used in both street driving and track tuning.

Begin with the shocks adjusted to the ZERO high speed compression position (full stiff). Do this by rotating the high speed compression adjuster (large knob) clockwise until it stops.

-Now turn the high speed compression adjuster knob counter clock wise 20 clicks. This sets the shock at 20. (settings 21-24 are typically too soft for street use. For typical street driving the high speed compression adjuster will remain at setting 20.

Step Two: Low Speed Compression

Low speed compression adjustment is what is typically felt during street driving.



Begin with the shocks adjusted to the ZERO low speed compression position (full stiff).
 Do this by rotating the low speed compression adjuster (small knob) clockwise until it stops.

 -Now turn the low speed compression 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 low speed compression 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 low speed compression knob clock wise 3 additional clicks.

-If the vehicle is too stiff rotate the low speed compression 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.

Step 3:

Adjust rebound according to Single Adjustable instructions.

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.



Installation Instructions



1. Fasten the upper shock T-bar to the bottom of the frame using two 5/16" x 1" bolts, Nylok nuts and flat washers.

2. Use the new cantilever pin supplied to attach the bottom of the shock to the axle.



- 1. Cantilever Pin
- 2. 5/8" SAE Washer
- 3. Aluminum Bearing Spacer
- 4. .625" Bearing
- 5. Aluminum Bearing Spacer
- 6. Factory axle bracket
- 7. ¹/₂" Lock Washer
- 8. 1/2" SAE Nut





Part # 11284499 65-70 Impala Rear Lower StrongArms For use w/ CoolRide

Components:

- 2 90001027 Lower arm WW 22.5"
- 4 90001085 Poly bushing half
- 2 90001089 Poly bushing half (Rear)
- 2 90001086 Poly bushing half (Front)
- 2 90000722 Inner bushing sleeve 2.625" long x .625" I.D x .75" O.D. (Rear)
- 2 90000467 Inner bushing sleeve 2.5" long x .625" I.D. x .75" O.D. (Front)
- 2 90001092 Tube of Lithium grease

4	99621006	5/8" x 3 ¾" SAE Gr. 8 bolt	Upper and lower arms
4	99632002	5/8" SAE Nylok jam nut	Upper and lower arms/panhard bar stud



Installation Instructions



 Clean the bushing surfaces on the frame and axle brackets.
 Lubricate with the lithium grease supplied.

Fasten the StrongArm to the frame and axle using the 5/8" x 3 ³/₄" bolts and Nylok jam nuts supplied.

3. Fasten the air spring to the lower arm using a 3/8" x 3/4" bolt, flat washer and lock washer supplied w/ the air spring kit.



Part # 11306699 67-70 Impala Rear Upper StrongArm & Panhard Bar Kit

Upper Arm Components:

- 1 90001117 Upper StrongArm C-C 10.00"
- 1 90001589 Kevlar lined Heim end .75" thread x .625" I.D.
- 1 99752004 3/4"-16 SAE jam nut
- 2 90002066 Aluminum bearing spacer
- 1 90001085 Poly busing half
- 1 90001089 Poly busing half
- 1 90000722 Inner bushing sleeve 2.625" long x .625" l.D x .75" O.D.

Panhard Bar Components:

- 1
 90000998
 Panhard bar TW 33.875" (C-C 35.75")

 1
 90001942
 Rubber bushing Pressed into panhard bar

 1
 90001946
 Kevlar lined Heim end .75" thread x .75" I.D.

 1
 99752004
 3/4"-16 SAE jam nut

 2
 00000724
 Aluminum T bushing
- 2 90000724 Aluminum T-bushing
- 1 90000461 Panhard bar axle stud

2	99621006	5/8" x 3 ¾" SAE Gr. 8 bolt	Upper arm
3	99632002	5/8" SAE Nylok jam nut	Upper arm / panhard bar stud
1	99561003	9/16" x 3" SAE Gr. 8 bolt	Panhard bar to frame
2	99562001	9/16" SAE Nylok jam nut	Panhard bar
1	99563001	9/16" USS flat washer	Panhard bar stud
1	99603003	5/8" USS flat washer	Panhard bar stud



Installation Instuctions





1. Replace the factory upper trailing arm with the StrongArms. 5/8" x 3 $\frac{3}{4}$ " bolts and Nylok jam nuts are supplied to replace the factory hardware. An aluminum spacer will be installed on each side of the Heim end.

Note: Some cars may have two upper arms. In this case you will need to order a second upper arm, part # 11306698

10. Replace the factory panhard bar with the new one using the new stud and hardware supplied. The rubber rod end will be attached to the axle.

Check air spring clearance through full suspension travel. Allowing the air spring to rub will result in failure and is not a warrantable situation.



11. The Heim end will attach to the frame using the 9/16" x 3" bolt and Nylok nut. Two aluminum T-bushings need to be installed on each side of the Heim end.

12. The panhard bar should be approximately $35 \frac{3}{4}$ " center eye to center eye, but may need adjusted to center the axle. This should be checked at ride height.



Part # 11289102 65-70 Impala Rear MuscleBar

Components:

1	90001782	Rear sway bar (Includes the following)	
		2 1" I.D. Polyurethane bushings	
		2 Bushing clamp	
4	90000926	90 degree 10mm PosiLinks	
1	90000738	Sway bar frame bracket	
		.	

- 1 90000739 Sway bar frame bracket
- 2 90000740 Sway bar axle bracket
- 2 9000088 U Bolts 7/16" x 4 ¹/₂" tall x 3 ¹/₄" wide

3	99431002	7/16" x 1 ¼" USS bolt	Upper bracket
10	99432001	7/16" USS Nylok nut	U bolt / upper bracket
13	99433002	7/16" SAE flat washer	U bolt / upper bracket
2	99115001	10mm Posi Link studs	PosiLink (use Loctite)
4	99122001	10mm Nylok nut	PosiLink
8	99373003	3/8" SAE flat washer	PosiLink
2	90002275	Aluminum crush washer	PosiLink
2	90001092	Tube of lithium grease	





SWA8100 Installation Instructions



1. Loosen the 3 nuts holding the upper bar bracket to the cross member on the passenger side of the car. Remove the reinforcement plate.

2. Install the new sway bar frame mount using the 7/16" flat washer and Nylok nuts supplied. The tab for the PosiLink will face towards the outside of the vehicle, the image below shows the passenger side.



3. Most cars do not have an upper bar on the driver side, but the 3 bolt holes are there. $7/16^{\circ} \times 1 \frac{1}{4}^{\circ}$ bolts, flat washers and Nylok nuts are supplied to fasten the bracket to the frame.

4. Fasten the PosiLink to the upper bracket using a 10mm Nylok nut. A 3/8" flat washer needs to be installed on each side of the bracket.





5. Attach the axle bracket, bushing and bushing bracket to the axle using the U bolt, 7/16" Nylok nut and flat washers supplied.

6. The inside edge of the axle bracket should be 2 3/8" from the center section. If you are using an aftermarket axle the brackets should be 21 7/8" apart, from inside to inside.

Note: Be sure not to put the bar on upside down. The back section of the bar should drop down to allow differential cover access.

7. Attach the sway bar to the PosiLink using a 10mm Nylok nut and two 3/8" flat washers.



Congratulations!!! Your new MuscleBar installation is now complete. If you have any further questions please call our tech support line. 812-482-2932





Part # 30314100 5 Gallon AirPod Compressor System

with LevelPRo Controller

- 1 5 gallon AirPod
- 1 31398002 LevelPro 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 ¼" airline
- 4 31954201 ¹/₄"npt x ¹/₄"airline fitting
- 1 Installation Guide





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



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Part # 31008500 LevelPro Remote Control kit

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