Detroit Speed, Inc.
QUADRA Link Rear Suspension
1962-1967 Chevy II
P/N: 041707

Detroit Speed, Inc. QUADRAlink is a great way to upgrade from original leaf spring suspension. Unlike our competitors, Detroit Speed's exclusive new 4-link geometry design is uncompromised to achieve the best possible handling. The new Detroit Speed "Swivel-Link™" (Patent No. 7,398,984) allows the suspension to fully articulate with smooth solid motion and no binding.

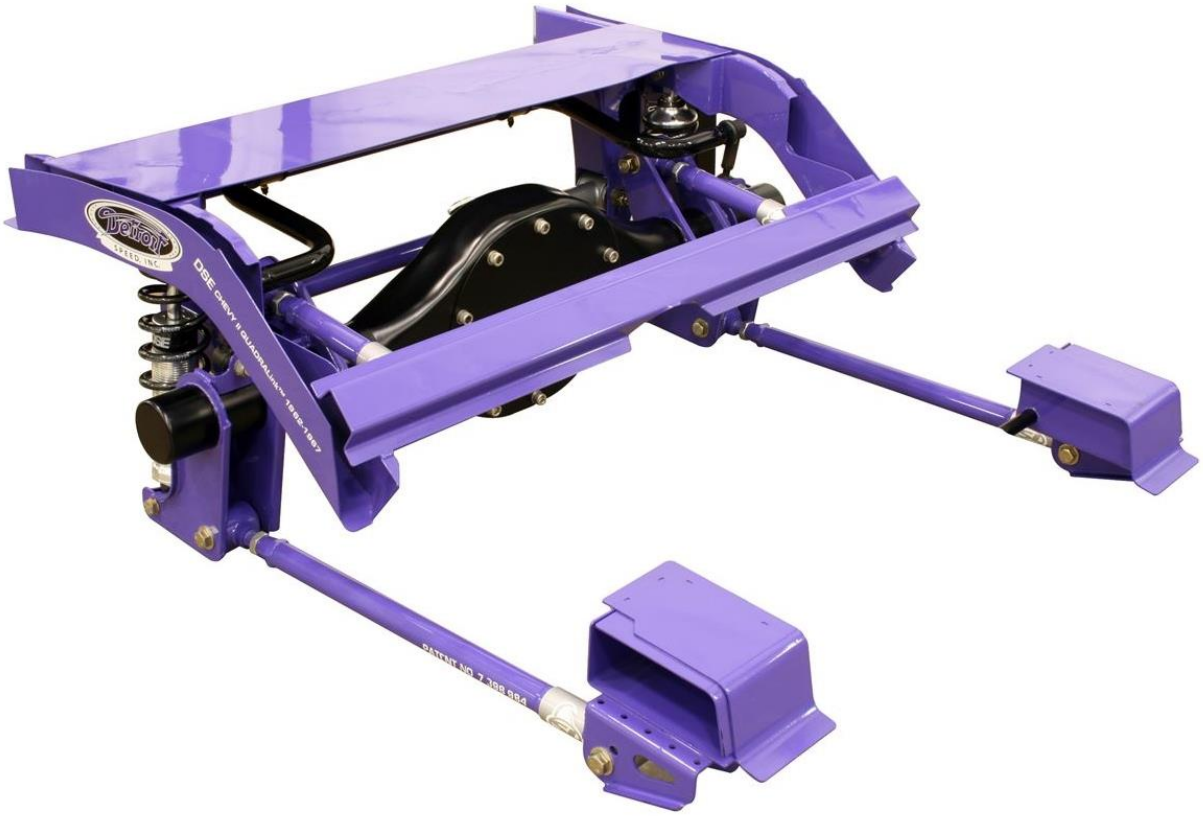
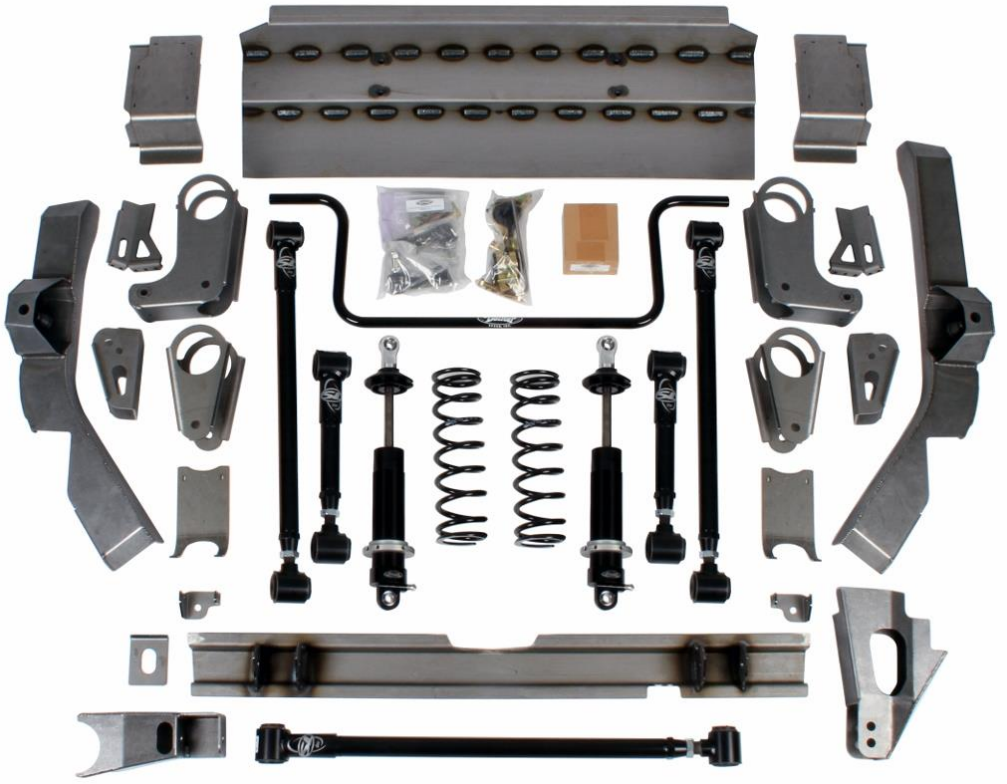
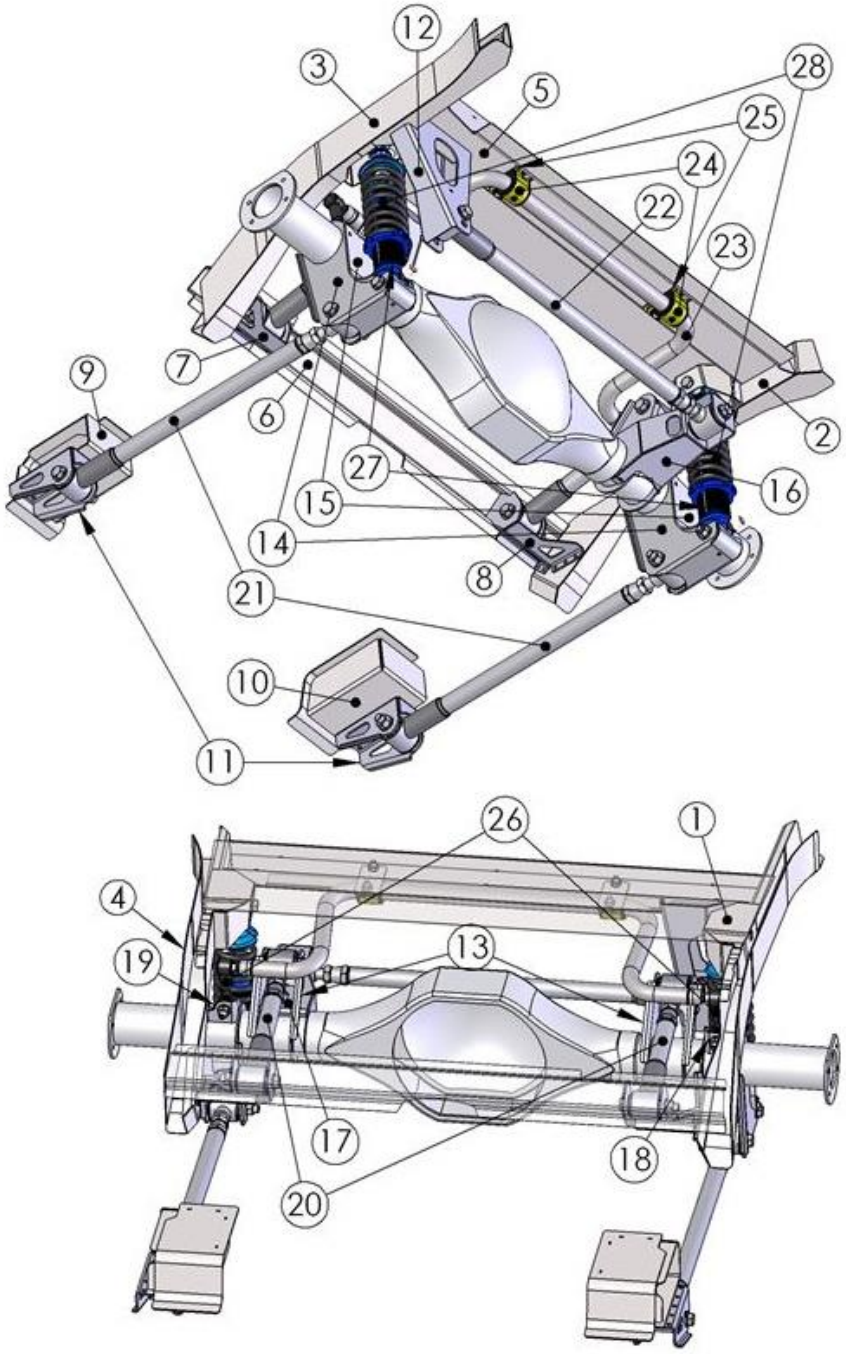


Figure 1

Item	Component	Quantity
1	Inner Framerail Section with Coilover Mount - Left	1
2	Inner Framerail Section with Coilover Mount – Right	1
3	Outer Framerail Closeout – Left (Included in Mini-Tub Kit)	1
4	Outer Framerail Closeout – Right (Included in Mini-Tub Kit)	1
5	Anti-Roll Bar Crossmember	1
6	Front Upper Link Crossmember	1
7	Front Upper Link Crossmember Reinforcement - Left	1
8	Front Upper Link Crossmember Reinforcement - Right	1

9	Torque Box - Left	1
10	Torque Box – Right	1
11	Front Lower Link Mounting Bracket	2
12	Body Side Track Bar Bracket	1
13	Upper Link Axle Bracket	2
14	Lower Link/Coilover Axle Bracket	2
15	Lower Link/Coilover Axle Bracket Reinforcement	2
16	Track Bar Axle Bracket	1
17	Track Bar Axle Bracket Reinforcement	1
18	Anti-Roll Bar Axle Bracket - Left	1
19	Anti-Roll Bar Axle Bracket - Right	1
20	Upper Link-Adjustable with Swivel-Link	2
21	Lower Link-Adjustable with Swivel-Link	2
22	Track Bar-Adjustable with Swivel-Link	1
23	Anti-Roll Bar	1
24	Anti-Roll Bar Mounting Bracket with Polyurethane Bushing	2
25	Anti-Roll Bar Mounting Bracket Spacer	2
26	Male/Female Anti-Roll Bar End Link Assembly with Jam Nut and Fasteners	2
27	Detroit Speed Valved Coilover Shock	2
28	Coilover Spring	2
29	9/16"-18 x 3.75" Grade 8 Hex Head Bolt & Nylock Nut Assembly with 2 SAE Washers	10
30	1/2"-20 x 3.50" Grade 8 Hex Head Bolt & Nylock Nut Assembly with 2 SAE Washers	2
31	1/2"-20 x 2.25" Grade 8 Hex Head Bolt with 1.00" Long Spacer	2
32	3/8"-16 x 1.00" Grade 8 Hex Head Bolt with AN Washer	4
33	Spacer, 2.42" Long - For Fabrication Use Only	2
34	Templates	4
35	Instructions	1





Introduction

Congratulations on your purchase of a QUADRA Link rear suspension from Detroit Speed, Inc. This system is designed to be installed with or without Detroit Speed's Mini-Tubs. Detroit Speed's exclusive new 4-link geometry design is uncompromised and designed to achieve the best possible handling during all conditions. The patented Detroit Speed "Swivel-Link" technology in combination with tuned high-durometer rubber bushings allow the suspension to fully articulate with smooth silent motion. The binding, noise, and poor wear associated with Heim joints are no longer an issue. The jam nuts on a typical adjustable bushed link have a tendency to loosen due to suspension bind when going over uneven surfaces (like pulling into a driveway). The Swivel-Links on the QUADRA Link suspension permit the links to pivot, thus eliminating bind and unwanted torsional loading of the jam nuts. The long suspension links provide excellent pinion and u-joint angle control. This system utilizes a horizontal track bar that provides precise and effective rear axle lateral location during hard cornering. The track bar is adjustable for roll center control at various ride heights, and the front and rear crossmembers add strength and rigidity to the rear body and frame section.

Please read the entire set of instructions, watch the installation video available on the Detroit Speed website, and fully understand all of the steps involved before beginning the project. Always make sure to wear the appropriate safety equipment for the job and properly support the vehicle.

NOTE: There is an installation video available through the Detroit Speed website in the tech/install video section shown here: https://www.detroitspeed.com/1962-67-chevy-ii-installation-videos.

NOTE: All work should be performed by a qualified welder and technician.

Installation Instructions

1. Before beginning the installation, read and comprehend the entire set of instructions.

2. Prepare the vehicle
    a. With the vehicle at ride height verify that the rear axle is in the correct position and mark the fore/aft location of the axle on the rear framerails and trunk floor.
    b. Raise the vehicle a few feet off the ground so the interior, trunk and underside may be accessed. Ensure that the vehicle is level and well supported.
    c. Disconnect the negative battery cable.
    d. Remove the rear suspension and axle.
    e. Remove the fuel tank and lines.
    f. Remove the seats, carpet and padding, rear interior quarter trim panels, and package tray. Any other interior panels, headliner, door panels, etc., should be removed or masked well to protect them from grinding and welding sparks.

3. Remove the rear inner wheel tubs and trunkpan section
    a. Mark the area that will be removed. Draw a line across the vehicle at the rear edge of the floorpan/ trunkpan weld flange above the rear axle 36-1/4" wide centered in the vehicle. Measure 9-1/4" back from the forward depression of the floorpan/ trunkpan weld flange and draw another line across the vehicle 37-1/4 wide centered in the vehicle. Draw lines connecting the ends of these lines on both sides of the vehicle they should be just inboard of the rear framerail flanges. Measure 10-1/4" back from the forward depression of the floorpan/ trunkpan weld flange and draw another line across the lower portion of the trunkpan (use a square to transfer the measurement to the lower section) and connect the ends of this line up to the line drawn at the rear of the upper portion of the trunkpan.
    b. Carefully cut out and remove the trunk section marked in the previous step (See Figure 2).

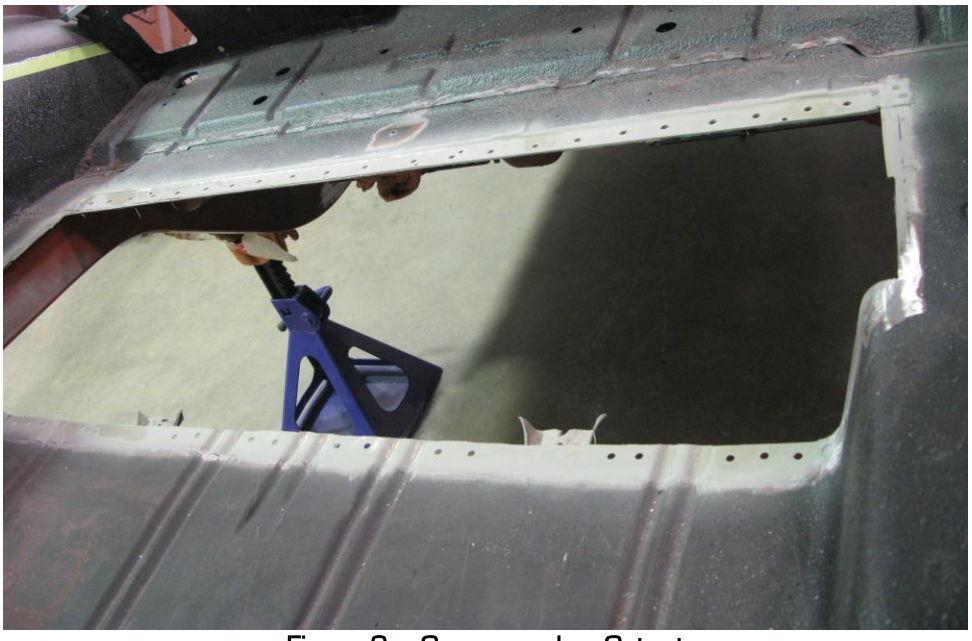


Figure 2 – Crossmember Cutout

c. If installing Detroit Speed Mini-Tubs, follow the instructions provided with the Detroit Speed mini tubs to remove the stock inner tubs and modify the framerails.

4. Install the sway bar crossmember
    a. Test fit the sway bar crossmember and trim to fit as necessary. It is installed with the front of the support beam 6-7/8" rearward of the centerline of the axle and square with the vehicle.
    b. Tack weld the crossmember in place and verify that it is positioned correctly.
    c. Weld the sway bar crossmember in place.

5. Install the framerail sections
    a. Position the inner framerail sections and clamp in position.
    b. If installing Detroit Speed Mini-Tubs, trim, fit and adjust the outer rail closeouts to obtain the best fit.
    c. Mark and drill some holes in the inner framerail flanges to line up with the flanges on the inner framerail sections.
    d. Tack weld the inner framerail sections onto the original framerails. Weld the ends of the sway bar crossmember support beam to the inner sides of the framerail sections. Weld the top of the shock mounts on the framerail sections to the bottom of the sway bar crossmember. Stitch weld the bottom cut section of the original framerail to the top of the lower part of the framerail section if installing Mini-Tubs.
    e. If installing Mini-Tubs, tack weld the outer framerail closeouts in position.
    f. Fully weld the rail sections in position.

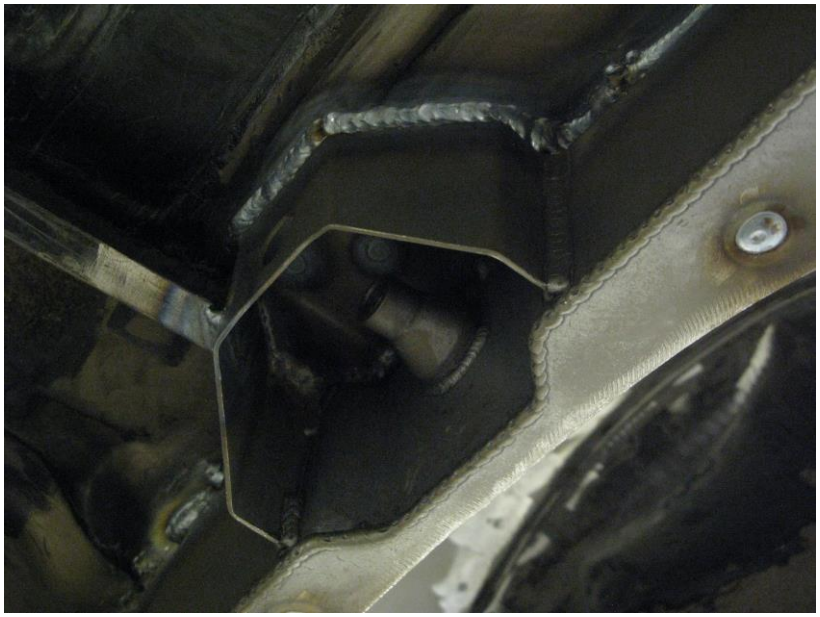


Figure 3 – Upper Shock Mount

6. Install the front link crossmember
    a. Mark the rear seat back bracket 1-1/4" up perpendicular to the floor pan using the supplied template and cut the rear seat back bracket. Drill out the spot welds to remove the bottom sections of the brackets.
    b. From the bottom of the car using the supplied template mark two 3" x 3" square areas 2-5/8" up from the bottom of the pinch weld on the floor to the bottom of the squares and centered in the vehicle with the inside edge of the squares 24-1/2" apart. Cut out the two marked square sections.
    c. Slide the front link crossmember under the rear seat bracket and insert the mounting tabs through the floor. Center and square the crossmember and clamp in place. The upper link mounting holes should be positioned 9-1/2" forward of the centerline of the axle. Readjust if it is not in the correct position.

d. Position the front link mount reinforcement brackets to fit on both tabs and against the inboard side of the framerail section.
e. Tack the front link crossmember and reinforcement brackets in place and verify their position (See Figure 4).

Figure 4 – Reinforcement Brackets

f. Weld the front link crossmember and reinforcement brackets in place.

7. Install the torque boxes and lower link brackets
   a. The transport hold downs on each side and the axle jounce bumper brackets will need to be removed. The factory emergency brake brackets will also need to be removed or modified so they are flush with the bottom of the framerail. Otherwise the lower links will interfere with this bracket when installation is complete. Position the torque boxes against the floorpan at the front inboard corner of the rear framerails.
   b. Mark the inner framerail flanges and floorboard for plug weld locations. Drill holes for plug welding the torque boxes.
   c. Weld the torque boxes in place (See Figure 5).

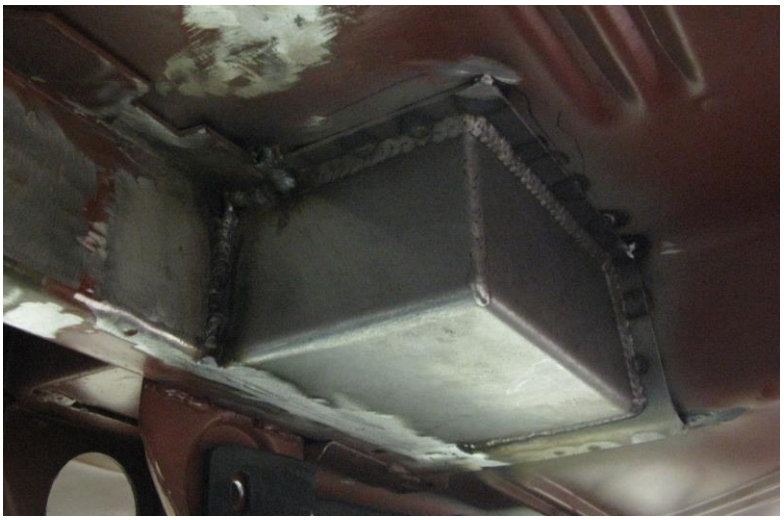


Figure 5 – Torque Box

d. Insert a 7/16" bolt through the smaller hole in the lower link bracket and through the original front leaf spring bracket bolt hole to locate the fore/aft position of the brackets. Position the brackets centered in the vehicle so that the centerline of each bracket measures 35-1/8" apart. Half of the bracket will be located on the original framerail and the other half will be on the torque box.
e. Tack weld the brackets in place, verify their position, and then weld fully (See Figure 6).

Figure 6 – Lower Link Bracket

8. Install the body side track bar bracket
    a. Position the body side track bar bracket on the driver's side of the vehicle on the framerail section and sway bar crossmember. The center of the bracket should be 7-1/4" rearward from the centerline of the axle and the link mounting bolt holes should be 14-1/4" from the centerline of the vehicle.
    b. Tack weld the bracket in place, verify its position, and then weld fully (See Figure 7). Some areas of the bracket may need to be welded from inside the bracket and/or a notch can be cut in the top of the sway bar crossmember above the edge of the bracket to weld them together.

Figure 7 – Body Side Track Bar Bracket

9. Install the tubs
    a. Install the mini-tubs as per the Detroit Speed mini-tub instructions

10. Install the axle brackets
    a. It is recommended that the axle brackets are installed when the axle tube flanges are not on the axle. If a new axle is being installed or the existing axle is being narrowed, install the axle brackets first, and then install the flanges. If the flanges are not removed, cut the axle brackets apart and weld them back together around the axle tube.
    b. It is important that the correct width for the bushings is maintained on the axle brackets when they are welded; therefore, the spacers provided with the kit should be installed in the brackets in these areas during welding. Position the axle brackets on the axle tubes as shown in Figure 14, the lower link/coilover bracket reinforcements should be welded on after the lower link/coilover brackets are welded to the axle, but the reinforcements should be kept on as much as possible during welding to maintain correct alignment. The track bar axle bracket attaches to the right upper link axle bracket and will be installed later. **NOTE:** Detroit Speed offers a pinion centering tool (P/N 070202) that will be helpful in placing your axle brackets in the correct location on your axle tube.
    c. Tack weld the brackets in place, and then verify that they are all positioned correctly. Weld the brackets securely in place.
    d. Install and weld the lower link/coilover reinforcement brackets as shown in Figure 14 if not done previously.
    e. The track bar axle bracket mounts on the rear of the passenger side upper link bracket as shown in Figure 14. The right side of the bracket lines up with the right side of the link bracket and is square to the axle tube. Position the track bar axle bracket reinforcement inside the upper link bracket.
    f. Tack weld the track bar axle bracket and reinforcement in place, verify its position, and then weld it to the other bracket.
    g. Once all of the axle brackets are fully welded in place, remove the spacers, and check the axle for straightness.

11. Verify the installation
    a. At this point the fabrication work is complete. Send the axle to a qualified shop to have the ends welded (if necessary).
    b. Check the axle tubes for straightness and have them straightened (if needed).
    c. Mocking up the car before painting all of the components is recommended. Mock up includes installing all of the suspension components (the link bolts still don't need to be tightened yet) installing the wheels/tires, and resting the vehicle on all four tires.
    d. Position the rear axle in place under the car and install the links as shown in Figure 1. **NOTE:** Do not tighten the bolts at this time. Support the axle at ride height. Check the axle position in the car and adjust the end links as necessary.
    e. Install the coilover shocks and springs so you can double check that the rear axle is positioned correctly in the vehicle. Use anti-seize on the threads of the bolts. It should be centered from side to side, and the wheelbase should be correct on both sides of the vehicle (110.0" for a 1962-67 Chevy II). The pinion angle should be measured and adjusted to your preference. Two degrees down is recommended. Raise and lower the vehicle to verify that there is no interference.
    f. The lower attachments on the rear seat cushion frame will need to be attached to the upper link crossmember.
    g. Paint or coat the components as desired.

12. Final assembly and adjustments
    a. It is easier to first install the ARB endlinks by threading them into the end of the ARB ends. Use high strength red Loctite and tighten.
    b. Install the ARB by welding the ARB mounting bracket spacers onto the ARB crossmember and then install the ARB mounting brackets with bushings. Use the provided super grease on the ARB bushings. Torque the ARB mounting bolts to 30 ft-lbs with medium strength Loctite (See Figure 8 on the next page).

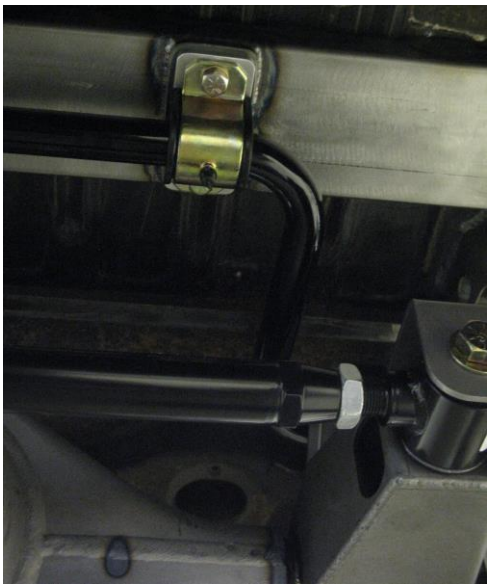


Figure 8 – ARB Spacer and Bracket

c. Install the rear axle and suspension assembly; the end link bolts will be tightened later with the vehicle sitting at ride height.
d. Reinstall the fuel tank, fuel lines, and interior components that were removed. Install the wheels on the vehicle and lower it onto the ground.
e. Verify that the track bar is installed in the hole that places it closest to horizontal.
f. Position the axle in the vehicle by adjusting the end links. **NOTE: There can be no more than 2" of exposed threads on the end link (¾" of thread engagement in the tube). This measurement does include the jam nut (see page 15).** It should be centered from side to side, the wheelbase must be correct on both sides of the vehicle, and the pinion should be adjusted to the desired angle. Once the axle is in the proper position, torque the end link jam nuts to 100 ft-lbs.
g. Settle the suspension by bouncing the vehicle several times.
h. With the vehicle at ride height, torque the rear suspension link pivot bolts to 120 ft-lbs.
i. Torque the coilover mounting bolts to 60 ft-lbs with the vehicle sitting at ride height.
j. Install the ARB endlinks onto each axle bracket and torque the endlink stud nuts to 40 ft-lbs.
k. Confirm the axle position again. Double check that all of the bolts and jam nuts are tightened to their respective torque specifications.

13. Setting the vehicle ride height.
    a. With the vehicle assembled with all components installed, adjust the vehicle ride height. Before adjusting the ride height, Detroit Speed recommends cleaning the threads of the shock. Once the threads are clean, apply dry bicycle chain lube to the threads of the shock body before adjusting the spanner nut and compressing the coilover spring. Allow the chain lube to dry before adjusting the spanner nut. If you have the non-adjustable shocks, the spanner nut has a soft tip set screw that will need to be tightened before the vehicle is driven.
    b. Detroit Speed does include a Spanner Tool (P/N: 031060) to adjust the ride height however if you have the adjustable coilover shocks, Detroit Speed does offer an Adjustment Tool available as P/N: 031061 if needed. A photo can be seen in Figure 9.

Figure 9 – Detroit Speed Spanner & Adjustment Tools

Single Adjustable, Double Adjustable or the Double Adjustable Remote Canister Coilovers were purchased as an upgrade, refer to the following information for adjustment procedures.

PLEASE NOTE: ALL ADJUSTABLE TYPE SHOCKS GET MOUNTED BODY SIDE UP SHAFT SIDE DOWN

Detroit Speed Single Adjustable Shock Applications

To change from the recommended "Detroit Tuned" valving, adjustments can be made independently to the rebound setting. The rebound is controlled by the knob at the lower shock mount (Shock is mounted body side up). The knob rotates clockwise (+) to increase the damping and counterclockwise (-) to decrease the damping. Refer to Figure 10a below.

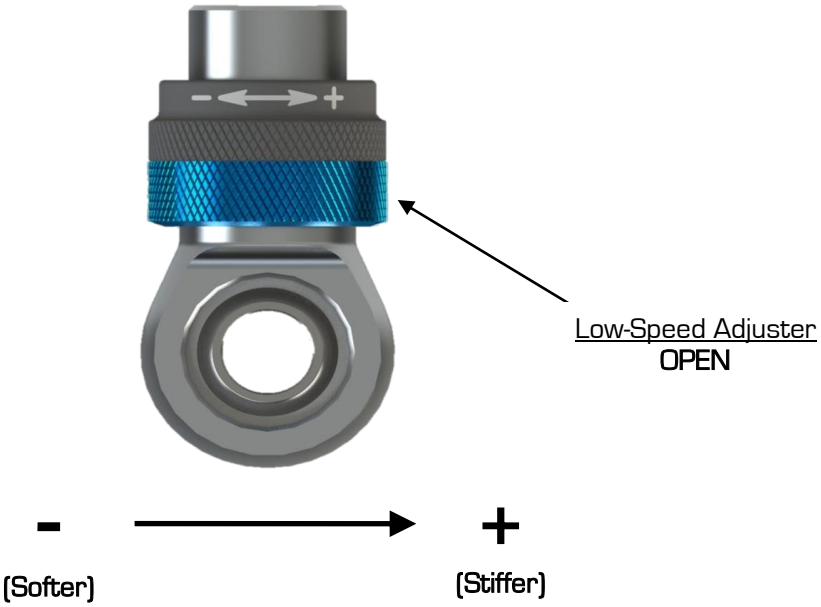
Figure 10a- Detroit Speed Single Adjustable Shock

To return to the Detroit Speed recommended settings, turn the knob clockwise (+) to full damping. Once at full damping, turn counterclockwise (-) to reach the recommended settings. Refer to Figure 10b for the rebound settings.

Rebound (Shaft Knob)..... 20 Open (counterclockwise, -)

Figure 10b – Detroit Speed Recommended Settings

Adjuster Operation



- Adjuster (60-64 Clicks)

  The low-speed adjuster is a "clicker" style adjuster meaning that its adjustment is measured by detents located inside the blue adjuster knob. There are 16 clicks per 1 revolution of the knob. It uses a right-hand thread in its operation which means as you increase low-speed, the adjuster will move up on the eyelet. The recommended change for an adjustment is 8 clicks at a time. The low-speed adjuster's reference position is **full stiff** (closed, or all the way up) and referred to -0 (-0 = full stiff, -64 = full soft).

- Tuning Notes
  - Racetrack
    - For more grip, soften the damping.
    - For increased platform control, stiffen the damping.
  - Street
    - For a more comfortable ride, soften the damping.

***DO NOT FORCE KNOB WHEN IT STOPS TURNING, YOU MAY DAMAGE THE ADJUSTER AND INTERNAL HARDWARE**

Detroit Speed Double Adjustable Shock Applications

To change from the recommended "Detroit Tuned" valving, adjustments can be made independently to both the high and low speed settings. The rebound is controlled by the sweepers at the lower shock mount. The sweepers rotate clockwise (+) to increase the damping and counterclockwise (-) to decrease the damping. The sweepers can be seen in Figure 11a below.

Figure 11a – Detroit Speed Double Adjustable Shock

When adjusting the low speed rebound start at full (+) position, when adjusting the high speed rebound start at full (-) position. To return to the Detroit Speed recommended settings turn the sweeper clockwise(+) to full damping for the low speed setting, and counterclockwise (-) to full damping for the high speed setting. Once at full damping, turn counterclockwise (-) for the low speed setting, and clockwise (+) for the high speed setting to reach the recommended settings. Refer to Figure 11b for recommended settings.

Low Speed Rebound (Sweeper)..... 20 sweeps (counterclockwise)(-)
High Speed Rebound (Sweeper)..... 2 sweeps(clockwise)(+)

Figure 11b – Detroit Speed Recommended Settings

To change from the recommended "Detroit Tuned" valving, adjustments can be made independently to both the high and low speed settings. The rebound is controlled by the sweepers at the lower shock mount. The sweepers rotate clockwise (+) to increase the damping and counterclockwise (-) to decrease the damping. Refer to Figure 12a below.

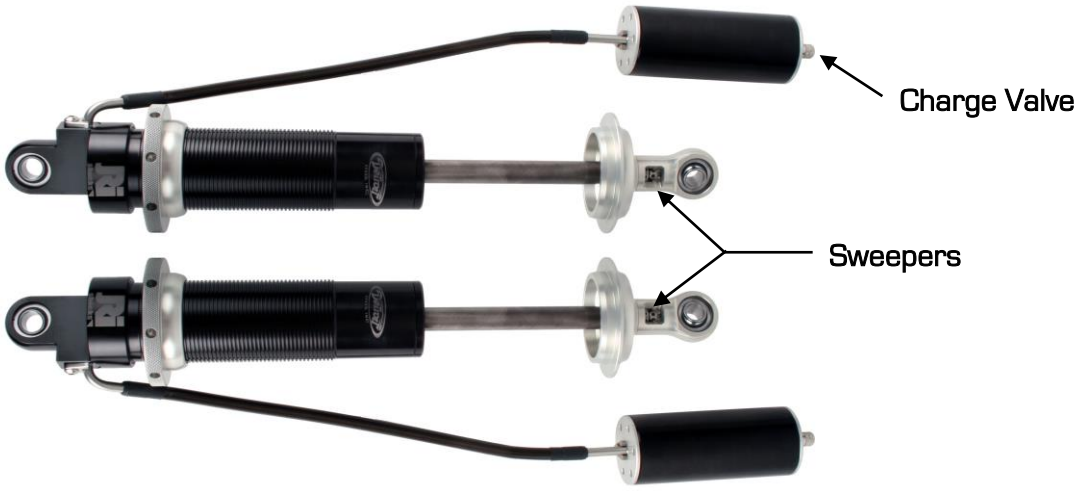


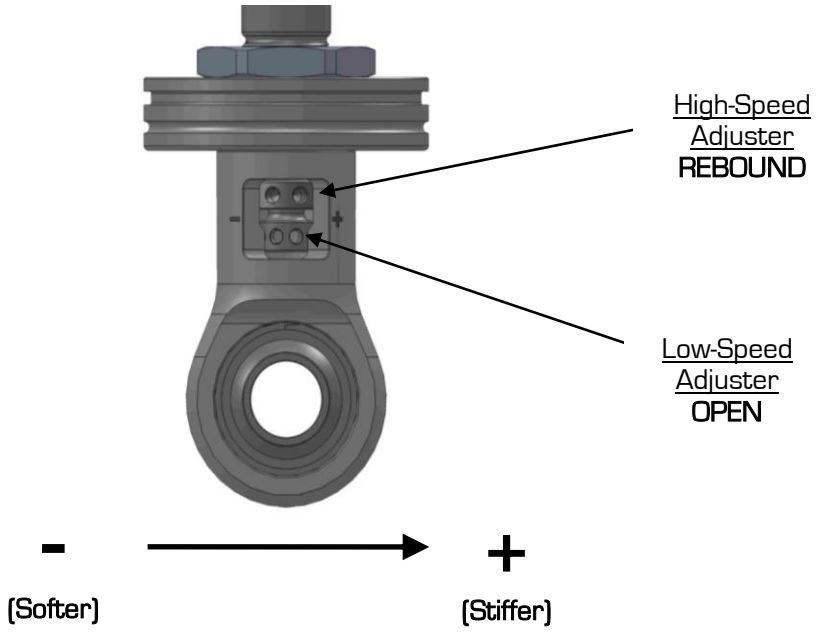
Figure 12a – Detroit Speed Double Adjustable Shock w/ Remote Canister

When adjusting the low speed rebound start at full (+) position, when adjusting the high speed rebound start at full (-) position. To return to the Detroit Speed recommended settings turn the sweeper clockwise(+) to full damping for the low speed setting, and counterclockwise (-) to full damping for the high speed setting. Once at full damping, turn counterclockwise (-) for the low speed setting, and clockwise (+) for the high speed setting to reach the recommended settings. Refer to Figure 12b for recommended settings.

Low Speed Rebound (Sweeper)..... 20 sweeps (counterclockwise)(-)
High Speed Rebound (Sweeper)..... 2 sweeps(clockwise)(+)

Figure 12b – Detroit Speed Recommended Settings

Adjuster Operation



- **High-Speed Adjuster (12 Sweeps)**
  The high-speed adjuster is a "sweep" style adjuster meaning that its adjustment is measured by the location of the adjuster in the eyelet window. It uses a left-hand thread in its operation which means; as you increase high-speed, the adjuster will move down in the window*. The high-speed adjuster's reference position is **full soft** and referred to as +0 (+0 = full soft, +12 = full stiff).

- **Low-Speed Adjuster (25 Clicks)**
  The low-speed adjuster is a "clicker" style adjuster meaning that its adjustment is measured by detent grooves located inside the high-speed shaft. It uses a right-hand thread in its operation which means; as you increase low-speed, the adjuster will move up in the window. The low-speed adjuster's reference position is **full stiff** and referred to -0 (-0 = full stiff, -25 = full soft).

The low-speed adjustment does not change when adjusting the high-speed.

To aid in the installation of the reservoirs, we also offer a set of Billet Aluminum Remote Canister Mounts. The canister mounts are available exclusively through Detroit Speed, P/N: 032102. They are shown below.

Figure 13 - Billet Aluminum Remote Canister Mounts

If you have any questions before or during the installation of this product please contact Detroit Speed at tech@detroitspeed.com or 704.662.3272

SPEED, INC.
CHEVY II QUADRA LINK
AXLE BRACKET LOCATIONS
TOP VIEW
FRONT VIEW
CENTERLINE OF AXLE*
13 3/4"
13 3/4"
17 9/16"
17 9/16"
TRACK BAR BRACKET
REINFORCEMENT
LOWER LINK/COILOVER
BRACKET REINFORCEMENT
LOCATIONS
RIGHT VIEW
25.0°
POSITION SWAY BAR
BRACKETS SO THIS
SURFACE IS VERTICAL
FRONT
2.0° NEGATIVE PINION
ANGLE RECOMMENDED
POSITION TRACK
BAR BRACKET
SO THIS SURFACE
IS VERTICAL
POSITION LOWER
LINK/COILOVER BRACKETS
SO THESE SURFACES
ARE HORIZONTAL
*NOTE THAT THE CENTERLINE OF THE AXLE IS NOT LOCATED AT THE CENTER OF THE
PINION, AND DEPENDING ON AXLE TYPE, MAY NOT BE LOCATED AT THE CENTER OF
THE CARRIER HOUSING. THE PINION IS OFFSET TO THE PASSENGER SIDE OF THE VEHICLE.

Figure 14

Detroit Speed, Inc.
Swivel-Links

WARNING:

There can be no more than 2" of exposed threads on the end link (3/4" of thread engagement in the tube). This measurement does include the jam nut (see below).