Instruction Guide

Independent Rear Suspension

Speedtech PERFORMANCE

CHASSIS - SUSPENSION - PRO TOURING - AUTOCROSS - DRAG RACING - CUSTOM BUILDS

435.628.4300 SPEEDTECHPERFORMANCE.COM

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Figure 1: 1956 Bel Air ,features our IRS [photo by Kyle Phillips]

Congratulations on the purchase of your new Speedtech Performance Independent Rear Suspension (IRS). Use only approved and appropriately rated jack and jack stands, and be sure to take all safety precautions required to complete the job safely and correctly. If you have uncertainties, seek the assistance of a highly qualified workshop to assist you.

Read and understand all instructions thoroughly before you begin. Your main assembly and set up of your new IRS can be done in a home garage with hand tools.

Speedtech enjoys seeing the progress our customers are making as they work through their builds. Join the group, Team Speedtech, on Facebook and share your pictures and your story.

Speedtech Performance sends you best wishes for your project!

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1.0 GENERAL INFORMATION

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1.1 THIS GUIDE

Thank you for purchasing your new Speedtech Performance Independent Rear Suspension System. The following instructions are intended for professional installers and are guidelines only. Speedtech Performance assumes no responsibility for the installation of any of its products. All must be installed by qualified professionals only.

NOTE: This kit requires previously install component design specifically for your project. The subframe or chassis are unique to each vehicle. These kits have their own set of instructions for proper fitment. Even though each vehicle is unique, the general concepts and specific specs remain the same across the vehicle line for installing the Independent Rear Suspension assembly.

1.2 OVERVIEW

These instructions outline the Independent Rear Suspension System that will be installed with the Speedtech Performance chassis or subframe. Photos in the instruction process may vary slightly from your exact operation.

1.3 TOOLS

Installation of the Speedtech Performance Independent Rear Suspension System can be done on the floor with simple hand tools.

Additional things to have before you start:

- Wrench
- Socket Set
- Floor Jack
- Jack Stands
- Red Loctite

2.0 CHECK IN PARTS AND HARDWARE

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2.1 CHECKING IN THE ORDER

Check in your order as soon as possible. To check in the order, Speedtech has provided tables which can be used as check lists, as displayed in figure 2. All bolts and nuts are NF unless otherwise noted. Hardware comes in several boxes. If you discover anything missing from your order, call your authorized dealer as soon as possible.

2.2 CHECK IN TABLES

Upper Control Arm

	2	Upper Control Arms Assembled: Passenger and Driver	
	2	Upper Control Arm Ball Joint (Assembled)	
	2	Upper Control Arm Ball Joint Nut (Assembled)	Aluminum Cap
	8	Control Arm Bushings (Assembled)	Delrin Plastic
	4	Grease Zerks (Assembled)	
	8	Control Arm Bushing Hats (Assembled)	Aluminum Disk
	4	Control Arm Pin Mounts Male (Assembled)	
	4	Control Arm Pin Mounts Female (Assembled)	
	8	Control Arm Mount Standoffs	Aluminum Square
	2	Ball Joint Spacers	0.30” Thick
	2	Ball Joint Castle Nut w/ Cotter Pin	
	8	Control Arm Mounting Bolts	1/2” x 2-1/4” HHS
	8	Control Arm Mounting Washers	1/2” I.D.

Lower Control Arm

	2	Lower Control Arms Assembled: Passenger and Driver	
	2	Lower Control Arm Ball Joint (Assembled)	
	8	Control Arm Bushings (Assembled)	Delrin Plastic
	4	Grease Zerks (Assembled)	
	8	Control Arm Bushing Hats (Assembled)	Aluminum Disk
	4	Control Arm Pin Mounts Male (Assembled)	
	4	Control Arm Pin Mounts Female (Assembled)	
	8	Control Arm Mount Standoffs	Aluminum Square
	2	Ball Joint Castle Nut w/ Cotter Pin	
	8	Control Arm Mounting Bolts	1/2” x 2-1/4” HHS
	10	Control Arm Mounting Washers	1/2” I.D.
	2	Control Arm Mounting Nylocks	1/2
	2	Bump Stops	Bee Hive Shaped

Rocker Push Rod

	2	Push Rods	10-3/4” Long
	2	Rod End Left-Hand Thread	5/8 w/ 1/2” I.D. LHT
	2	Rod End Right-Hand Thread	5/8 w/ 1/2” I.D.
	2	Jam Nut Left Hand Thread	5/8 LHT
	2	Jam Nut Right Hand Thread	5/8
	4	Push Rod Shoulder Bolts	1/2 x 1-3/4” SHSS
	2	Rocker Mount Thin Nylocks	3/8 NC
	2	Lower Control Arm Mount Nylocks	3/8 NC
	2	Lower Control Arm Mount Washers	3/8” I.D.

Steering Tie Rod

	2	Steering Tie Rods	12-3/4” Long
	2	Rod End Left-Hand Thread	5/8 Standard LHT
	2	Rod End Right-Hand Thread	5/8 Standard
	2	Jam Nut Left Hand Thread	5/8 LHT
	2	Jam Nut Right Hand Thread	5/8
	2	Frame Mount Shoulder Bolts	5/8 x 1-1/4” SHSS
	2	Frame Mount Washers	1/2” I.D.
	2	Frame Mount Nylock Nuts	1/2 NC
	2	Steering Arm Spacer Tall	0.60” Cone Shape
	2	Steering Arm Spacer Short	1/4” Hat Shape
	2	Steering Arm Nylock Nuts	1/2
	2	Steering Arm Mount Shoulder Bolt	5/8 x 2-1/2” SHSS

Sway Bar Link

	1	Spline Sway Bar	31”
	2	Sway Bar Bushings	Delrin Plastic
	2	Grease Zerks	
	2	Adjustable Sway Bar Arm	
	2	Sway Bar Arm Pinch Bolts	¼ x 2” HHS
	2	Sway Bar Arm Pinch Nylock Nuts	3/8
	2	Sway Bar Arm Link	2-1/2” Long
	2	Rod End Left-Hand Thread	1/2 Standard LHT
	2	Rod End Right-Hand Thread	1/2 Tall
	2	Jam Nut Left Hand Thread	1/2 LHT
	2	Jam Nut Right Hand Thread	1/2
	2	Sway Bar Arm Mount Shoulder Bolts	1/2” x 1-1/4” SHSS
	2	Lower Control Arm Mount Shoulder Bolts	1/2” x 1-3/4” SHSS
	2	Sway Bar Arm Mount Spacer	5/32” Thick
	4	Shoulder Bolt Nylock Nuts	3/8
	4	Shoulder Bolt Washers	3/8” I.D.

Frame Hardware

	1	Pinion Mount	Aluminum
	5	Pinion Bolts	7/16 x 2” NC HHS
	4	Pinion Mount Frame Bolts	7/16 x 1” NC HHS
	9	Pinion Washers	7/16” I.D.
	1	Frame Midsdection	Aluminum
	2	Ford 9in Center Lower Mount Bolts	3/4 x 5” HHS
	4	Ford 9in Center Top Mount Bolts	5/8 x 2” SHCS
	4	Ford 9in Center Top Mount Spacers	Delrin 1/2” Thick
	1	IRS Name Plate	
	6	IRS Name Plate Socket Head Cap Bolts	#8 x 3/8” SHCS

One of the following kits will be included.

Traditional Shock Mount

	2	Coil Over Mounting Shoulder Bolts – Upper	½" x ¾" SHSS
	2	Coil Over Mounting Shoulder Bolts – Lower	½" x 3" SHSS
	2	Shock Spacer Bushing	
	4	Washer	3/8"
	4	Nylock Nuts	3/8" -24

Suspension Rocker Low Pro

	2	Rockers (Assembled)	
	4	Rocker Bearings (Assembled)	
	2	Bearing Sleeves (Assembled)	
	2	Rocker Spindle Pins	
	2	Rocker Spindle Frame Mounts	
	2	Rocker Bearing Caps	
	2	Bearing Cap Flathead Bolts	3/8" x 3/4" FHS
	6	Pivot Mounting Bolts	1/2" x 1-1/2" HHS
	6	Pivot Mounting Washers	1/2" I.D.
	4	Coil-over Mounting Shoulder Bolts	1/2" x 1-3/4" SHSS
	2	Coil-over Rocker Mount Thin Nylock Nuts	3/8 Thin
	2	Coil-over Frame Mount Nylock Nuts	3/8
	2	Coil-over Frame Mount Washers	3/8" I.D.

Suspension Rocker High Mount

	2	Rockers (Assembled)	
	4	Rocker Bearings (Assembled)	
	2	Bearing Sleeves (Assembled)	
	4	Bearing Bushings (Assembled)	
	2	Rocker Frame Mounts: Front and Back	
	2	Rocker Pivot Mount Shoulder Bolts	5/8" x 2-1/2" SHSS
	2	Rocker Mount Coil-over Shoulder Bolts	1/2" x 2-1/2" SHSS
	2	Coil-over to Rocker Shoulder Bolts	1/2" x 1-3/4" SHSS
	2	Coil-over to Rocker Thin Nylock Nuts	3/8 NC
	6	Rocker Mount Bolts	1/2 x 2" SHCS

Figure 2: Check in tables with amounts, descriptions, and sizes

2.3 HIGH MOUNT OVERVIEW

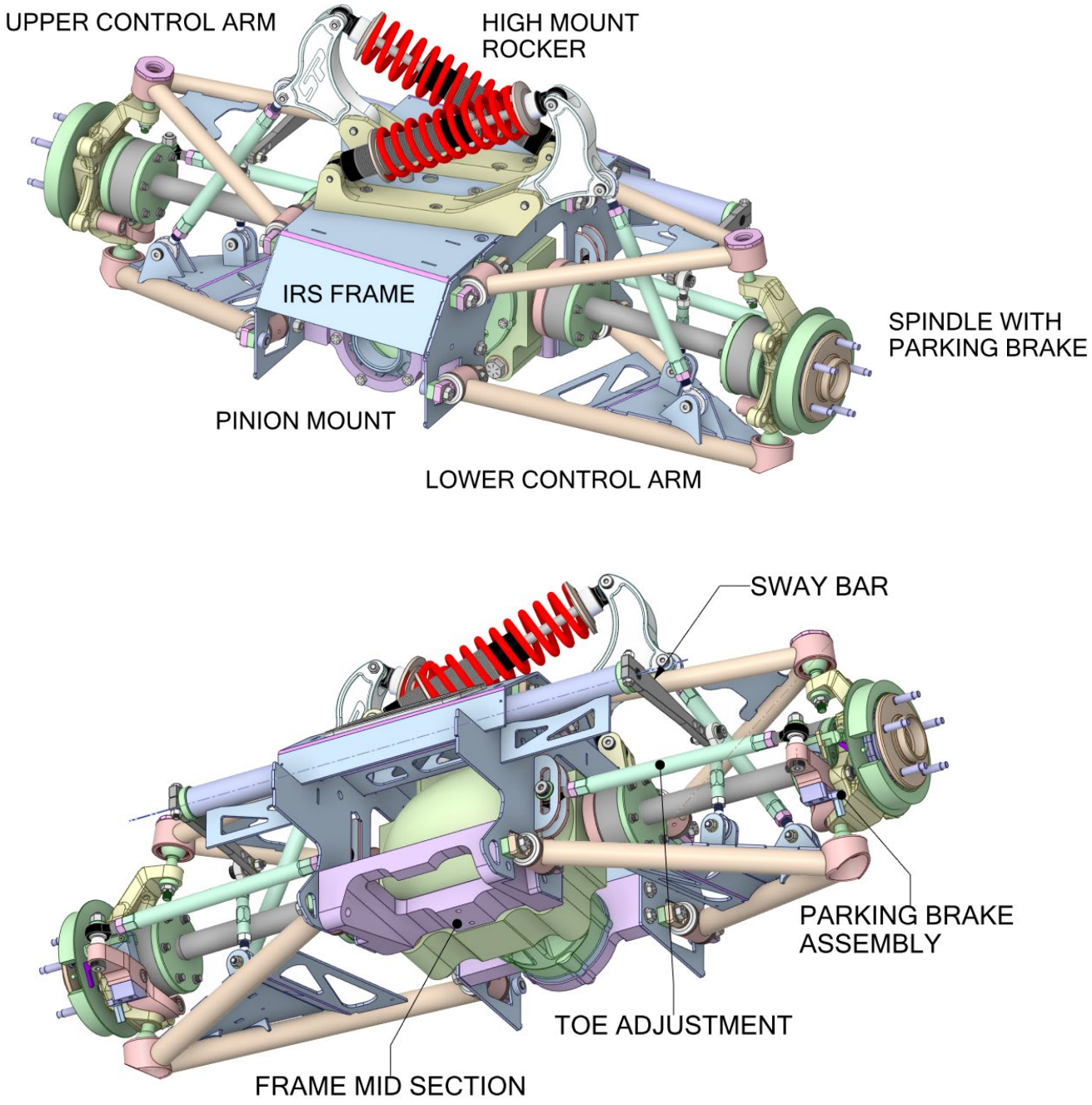

Figure 3: Two models of the high mount overview

TRADITIONAL SHOCK MOUNT OVERVIEW

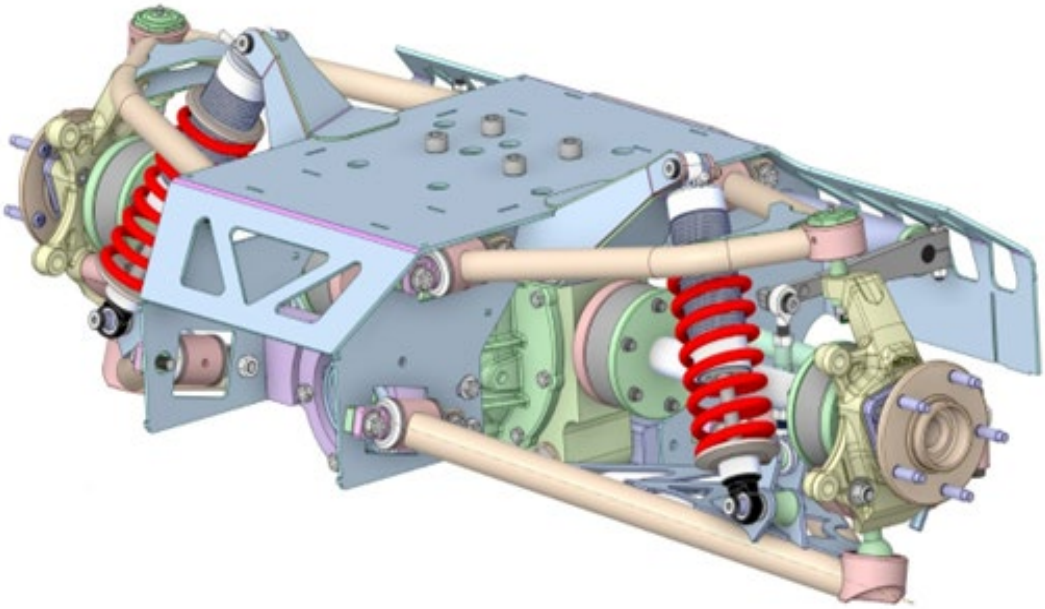

Figure 4: One model of traditional shock mount overview

LOW PRO MOUNT OVERVIEW

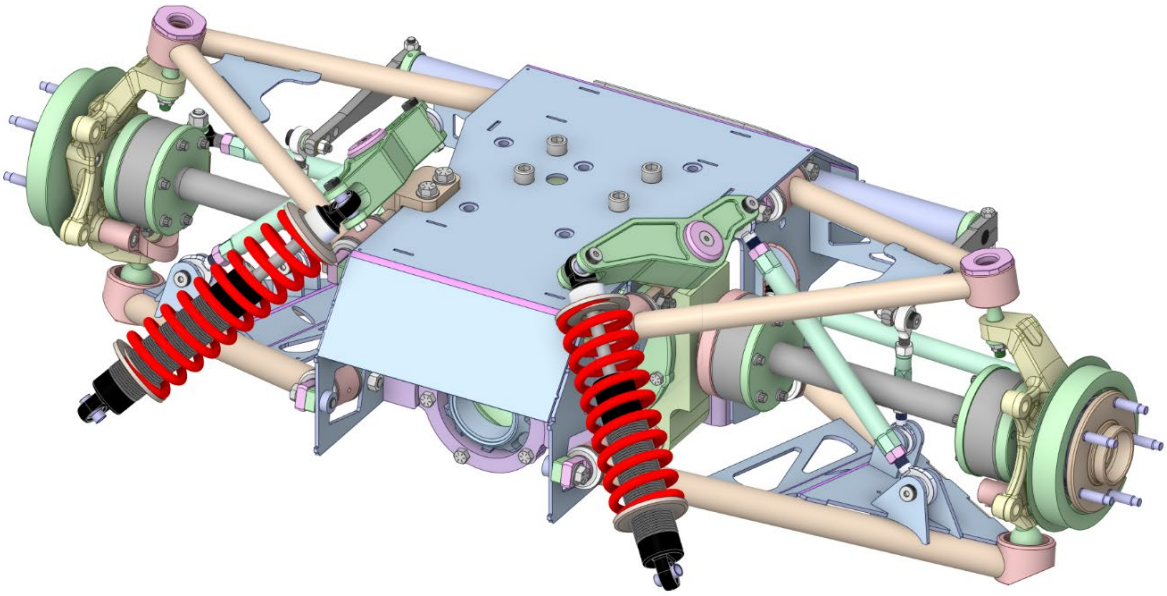

Figure 5: One mount of low pro mount overview

3.0 GETTING STARTED / INSTALLATION

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3.1 REAR DIFFERENTIAL INSTALL

NOTE: There is an optional step in this first part that makes installation of the differential much easier. Make two suds that fit into the top of the differential (5/8-18). Hand-turn them in the housing on opposite corners so they are sticking out about two inches. Place two Delrin spacers on the studs and prepare to lift it into place.

- Prepare the differential to lift into place. Follow Dutchman's instructions to assemble. Speedtech recommends using a floor jack to assist in lifting.
- Lift the differential into the frame. Leave about an inch gap on the top.
- Adjust the differential so that the four holes on top line up with the holes in the frame.
- Place the Delrin spacers one at a time on the top of the housing, then thread the 5/8x2 SHCS from the top, down into the spacers and into the holes. Repeat this for the other three holes.
- Take extra care and slowly and evenly tighten the bolts. Make sure you do not cross thread as you lift the differential into place.
- Do not fully tighten bolts until final assembly with the other two mounts installed.
    - On final assembly, use blue Silicone and torque to 75 ft.lb.

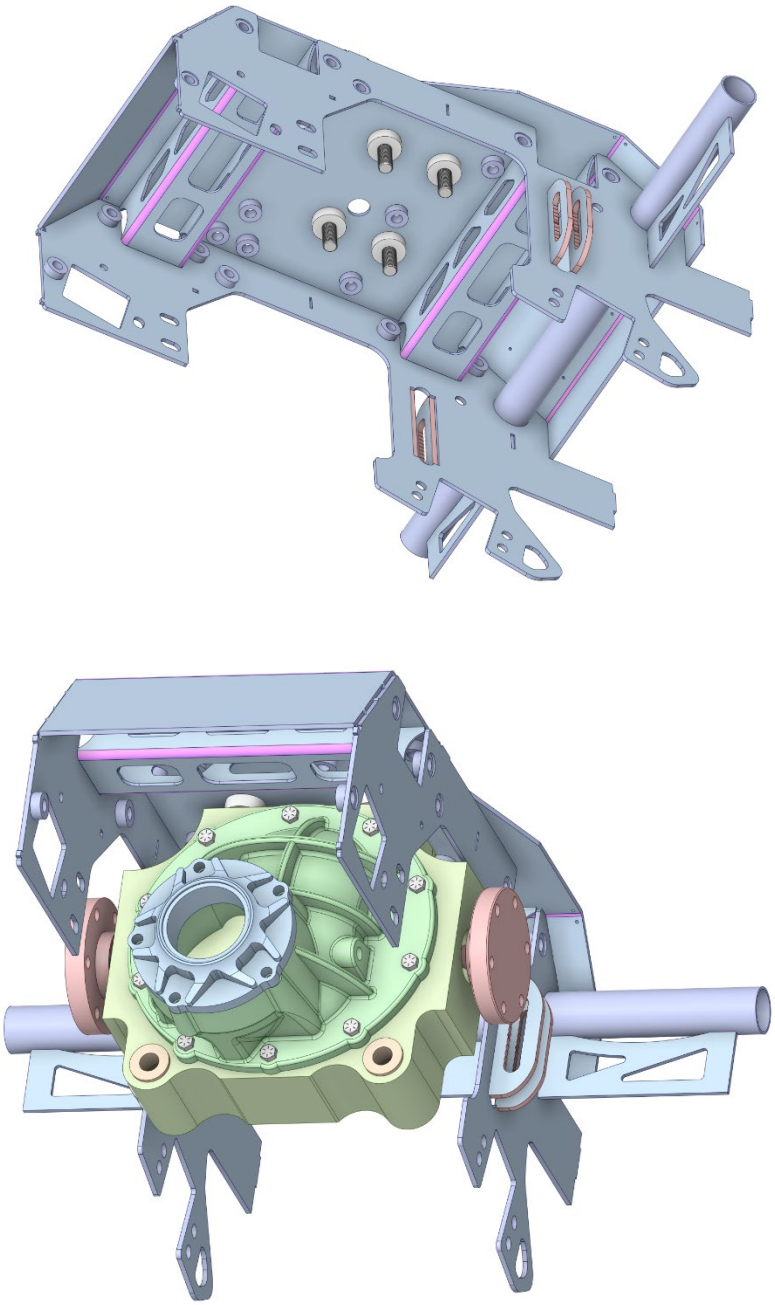


Figure 6: Two models of rear differential install

3.2 PINION SUPPORT

NOTE: The bolts cannot be fully tightened until the lower control arm is installed. There are also some critical points that line everything up; you will need to shake the housing so that the points can align. The red Loctite is more than just bolt locker in this case. It will be acting as a sealant to the open holes in the top of the casing, keeping the differential fluid inside.

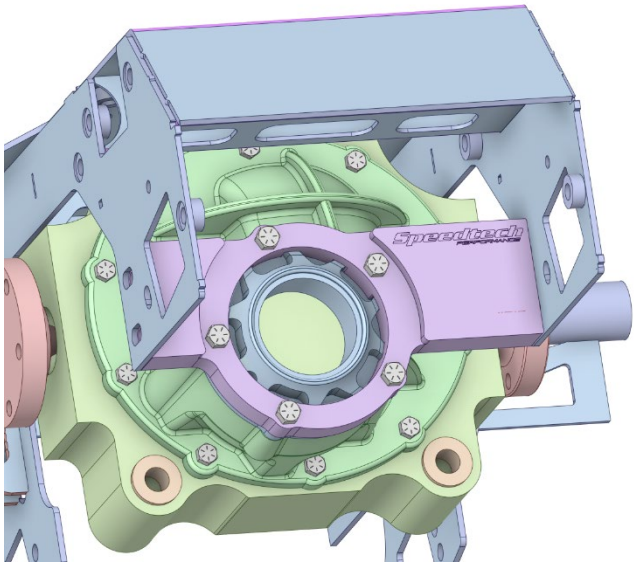
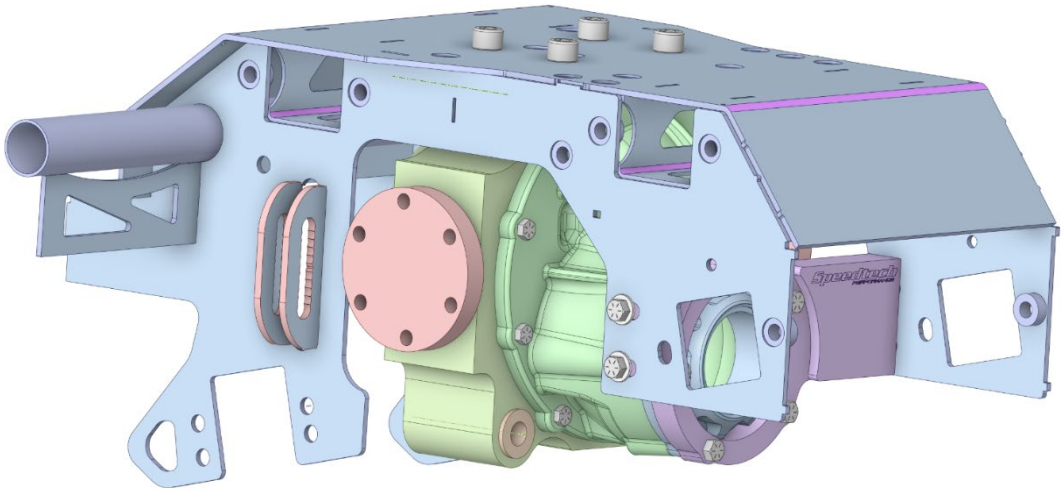


Figure 7: Two models of pinion support

- Remove the five bolts that are holding the pinion to the differential. The bolts can be discarded as they will be replaced.
- Bolt on the pinion support. There are two different styles of pinions and your applications will determine which bolts to use.
    - The standard pinion will use (5) 3/8x2-1/4 coarse thread.
        - On final assembly, use red Loctite and torque to 38 ft.lb.
    - Strange HD pinion will use (5) 7/16x2-1/2 coarse thread.
        - On final assembly, use red Loctite and torque to 52 ft.lb.
- Bolt the pinion support to the frame. Use (4) 7/6x1-1/4 with washers.

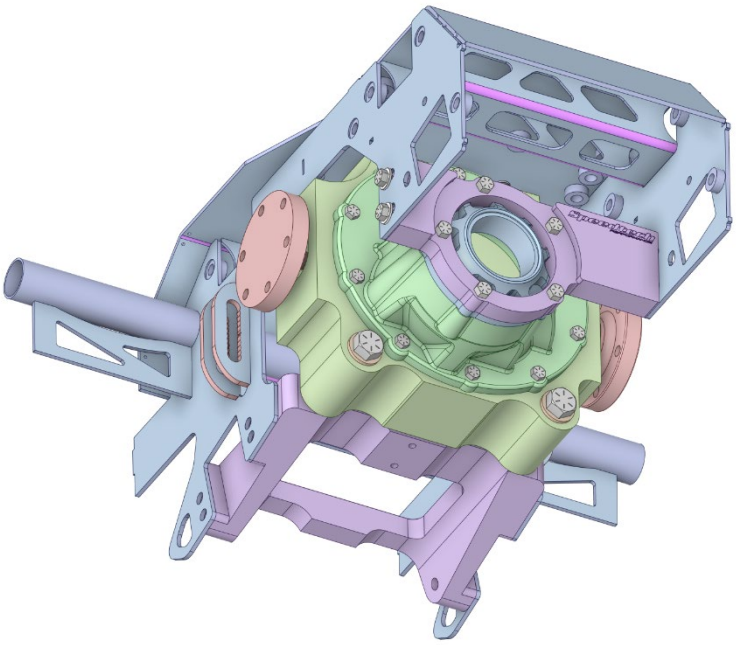
On final assembly, use red Loctite and torque to 45 ft.lb.



3.3 FRAME MIDSECTION

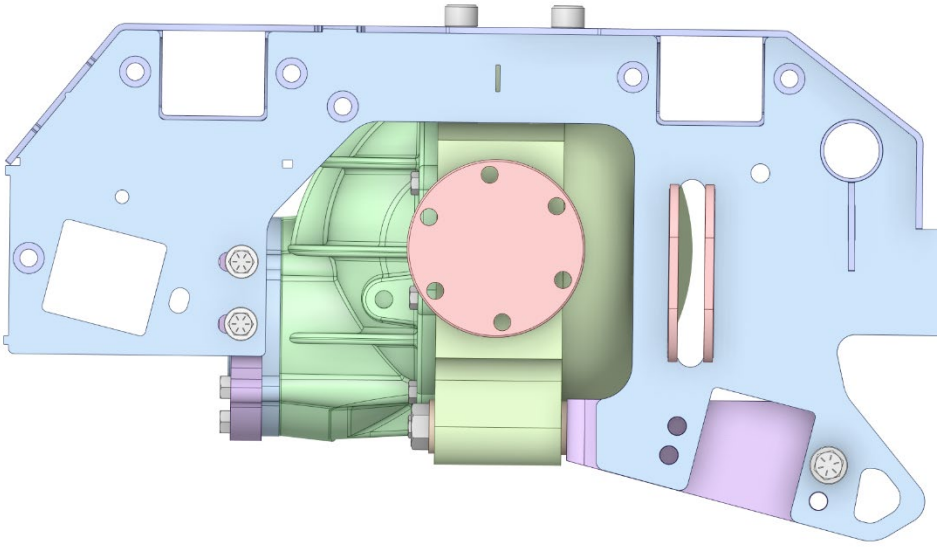
NOTE: Installing the midsection will require moving the differential around to get all the holes to align. Once all the bolts are in place, they can be tightened down for dry assembly, or torqued for final assembly.

- Locate and orient the midsection, preparing to lift it into place.
- Lift up to the lower holes on the differential. Loosely bolt on using the 3/4x5 bolts.
    - You might need to shim the midsections using flat washers.
- Lift and align up the eight side holes in the frame to the midsection.
- Bolt in a spare 1/2 bolt to hold into place.
- Symmetrically tighten all the bolts that hold the midsection in place. Slowly setting it into its final position.
- Torque to 60 ft.lb



NOTE: The reason for the tight tolerance is that the differential becomes part of the structure of the IRS block. The frame house can move and bend during the welding assembly process, causing alignment issue with the whole assembly. This housing install holds the frame in the proper shape for the rest of the suspension components.

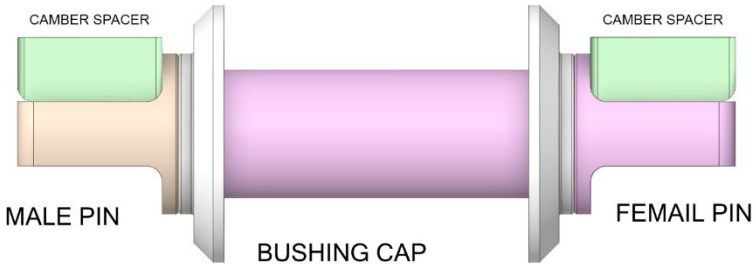
Figure 8: Two models of midsection



3.4 LOWER CONTROL ARMS

NOTE: The lower control arms will come assembled with the mounting plate zip tied together. The ball joint is preinstalled; however, you will need to install the camber spacers.

- Orient the control arms.
- Prepare them for install by cutting the zip tie, placing the camber spacers, and inserting 1/2x2-1/4 bolts and washers into the pins and camber spacer. Ensure the radius edge is against the pin. The flat edge goes against the chassis.



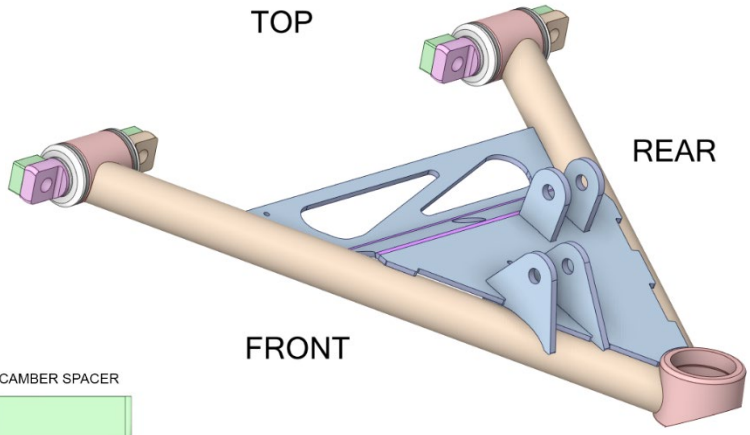
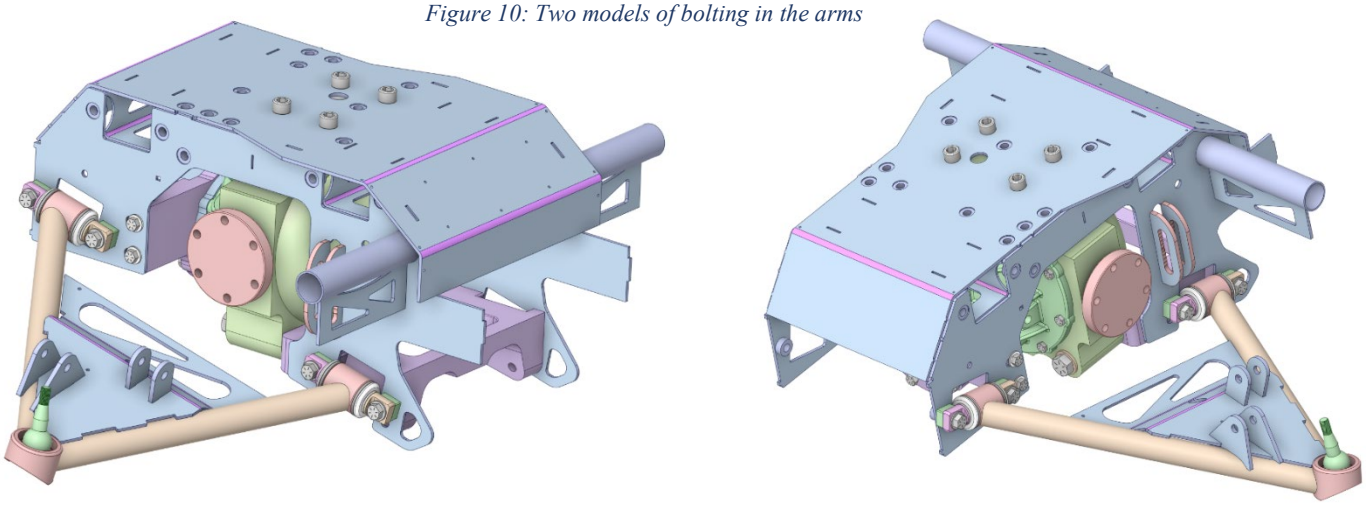


Figure 9: A model and close up of the lower control arms

- Bolt into the frame using the upper holes for street driving or the lower mount holes for road course racing.
  - The rear two bolts screw into the aluminum mid plate.
    - On final assembly, use anti-seize and torque to 60 ft.lb.
  - The most front bolt screws into a threaded insert in the frame.
    - On final assembly, use anti-seize and torque to 60 ft.lb.
  - The second front bolt will need a washer and nylock nut on the inside of the frame.
  - On final assembly, torque to 60

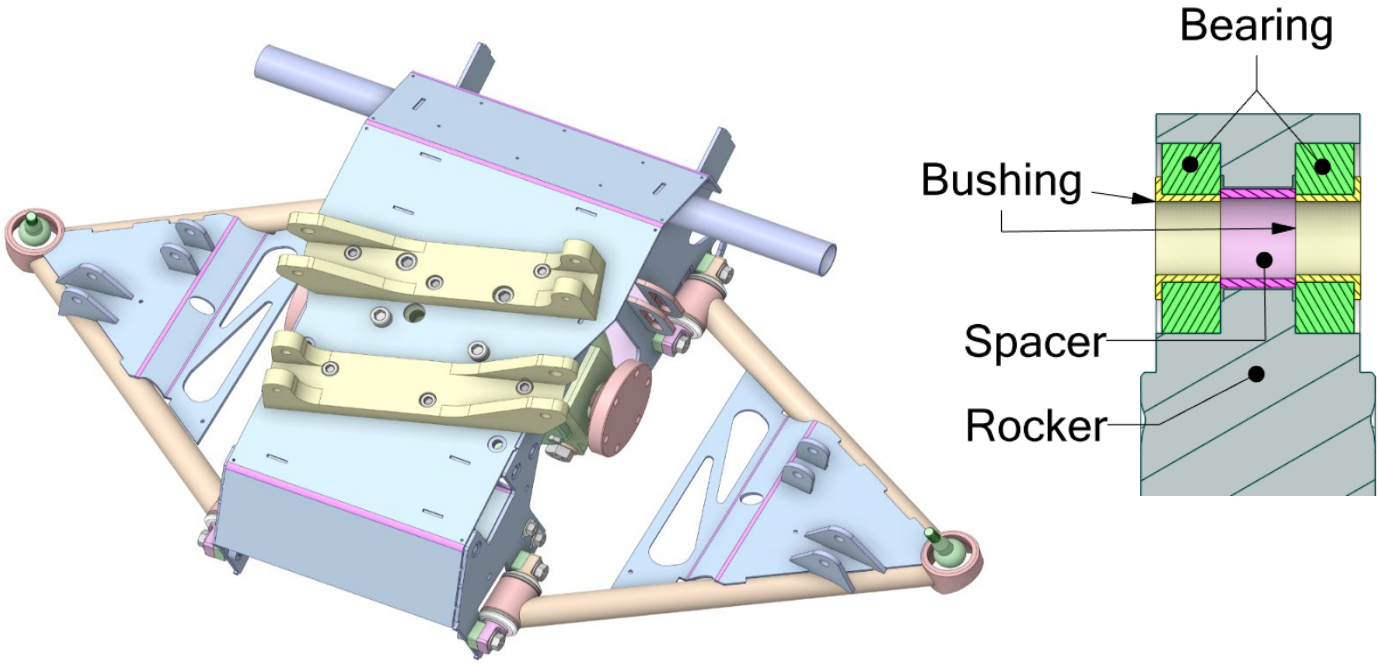
Figure 10: Two models of bolting in the arms



3.5.1 SHOCK ROCKER ASSEMBLY – FOR HIGH MOUNT CONFIGURATION

NOTE: The two shock mount plates are unique and have to be installed in the correct places. The rear base for passenger side rocker has two additional holes to go over the existing differential bolts.

- Identify the two rocker bases.
- Install them onto the top of the frame using (3) 1/2x1 SHCS each.
    - On final install, use red Loctite and torque to 60 ft.lb.



- Locate the two rocker claws and prepare them for install. The bearings and sleeves are preinstalled, but ensure that the assembly is centered.
    - Refer to figure 10 and double-check that the rockers are assembled correctly.

- Install the rockers into the bases. The long end will point up and in; the short end will point out and down.
    - Make sure that the total bearing stack is intact.
    - Use the 5/8x2-1/2 shoulder bolt and thread it through the whole assembly, seating it into the counterbored base.
        - One final assembly, use red Loctite and torque to 40 ft.lb.

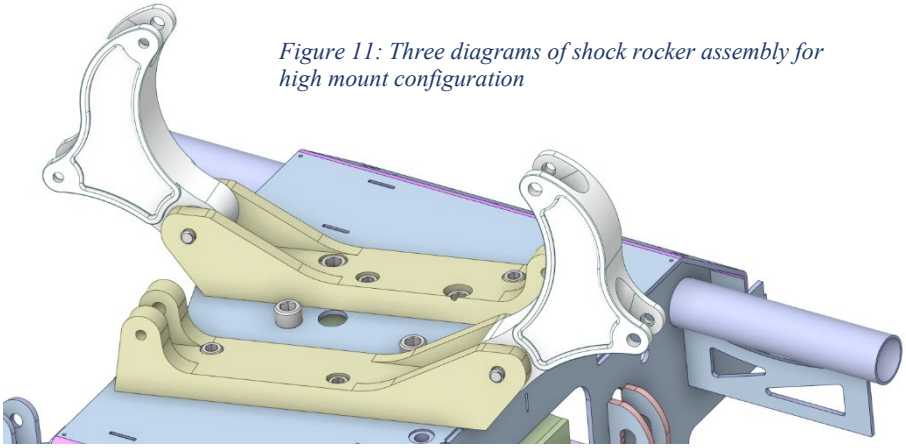


Figure 11: Three diagrams of shock rocker assembly for high mount configuration

3.5.2 SHOCK ROCKER ASSEMBLY – FOR LOW MOUNT CONFIGURATION

- Install the base onto the frame.
  - The bases are identical and can be installed on either side. They rest on top and hang over the edge of the frame.
  - Use (3) 1/2x1-1/2 bolts and washers each.
  - The holes are slightly slotted to account for differences in assembly and powder coat. Evenly tighten the bolts to ensure good contact with the frame.
    - On final install, use red Loctite and torque to 60 ft.lb.

- Install the spindle pin into each of the mounts.
  - Apply red Loctite and thread into the countersunk hole.
  - Ensure that the flange is seated on the mount.
  - Use a 1-5/16 wrench and torque to 100 ft.lb.

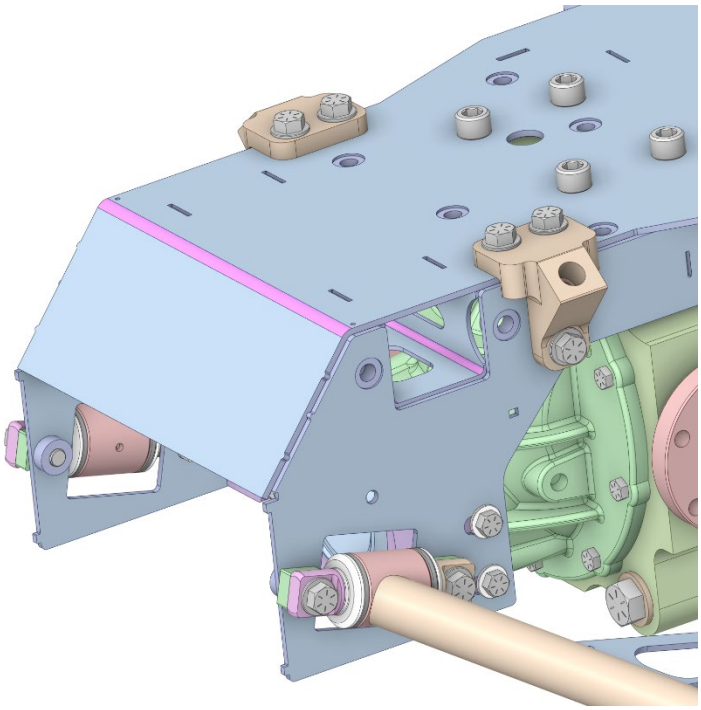
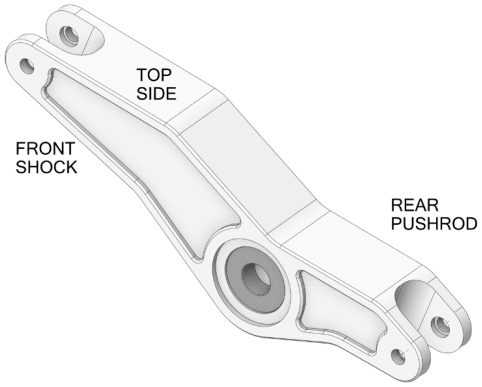
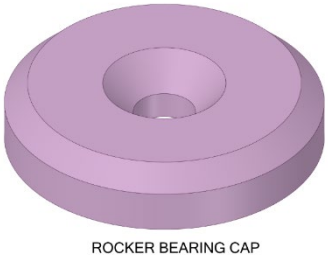


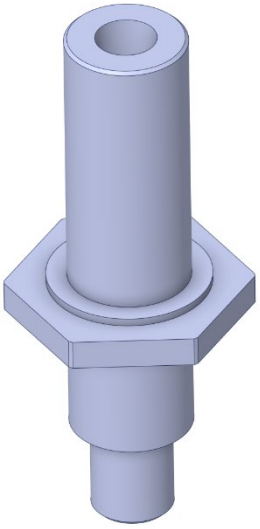
Figure 12: One diagram of shock rocker for low mount assembly

NOTE: The pin will never have to be removed once installed; this way the first fitment is the final assembly for this part.

- Install the preassembled rockers on each side.
    - Double-check that the rocker is assembled correctly. It has two bearings with a spacer in between them.
    - Slide the rocker onto the spindle: long arm points forward, arch bends upwards.

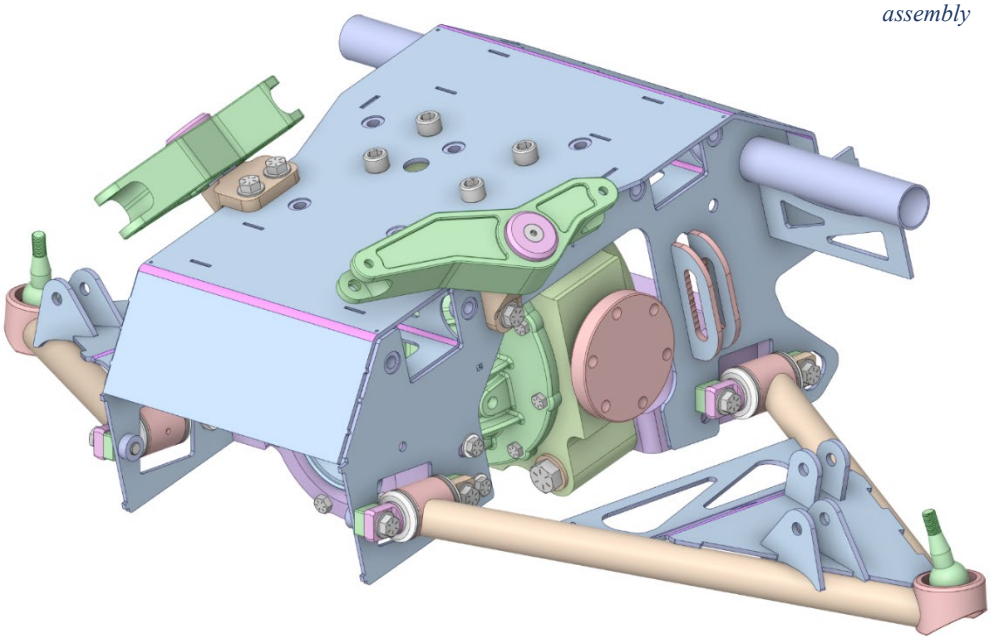






- Tighten down the rocker using the rocker bearing cap and 3/8x3/4 flat head bolt.
    - On final assembly, use red Loctite and torque to 35 ft.lb.

Figure 13: Three parts and second diagram of shock rocker for low mount assembly



3.6 SHOCK INSTALLATION

NOTE: Depending on where you are in your build, it may be an advantage to install shock mock ups in place of the actual shocks. For intended ride height; high mount shock length is 15-5/8", low pro shock length is 15-3/8in. The following instructions are intended for final shock installation.

- HIGH MOUNT SHOCK INSTALL:
    - Bolt the shock body into the base using the 1/2x2-1/2 shoulder bolt.
        - Make sure the shoulder is seated properly into the counterbored base.
        - On final assembly torque to 20 ft.lb. Then install the jam nut and torque it to 20 ft.lb.
    - Bolt the shock spring into the rocker using the 1/2x1-3/4 shoulder bolt.
        - Snug up the shoulder bolt into the threaded rocker, taking care not to strip the thread out.
        - Bolt on the 3/8 thin nylock jam nut. Torque to 20 ft.lb on final assembly.

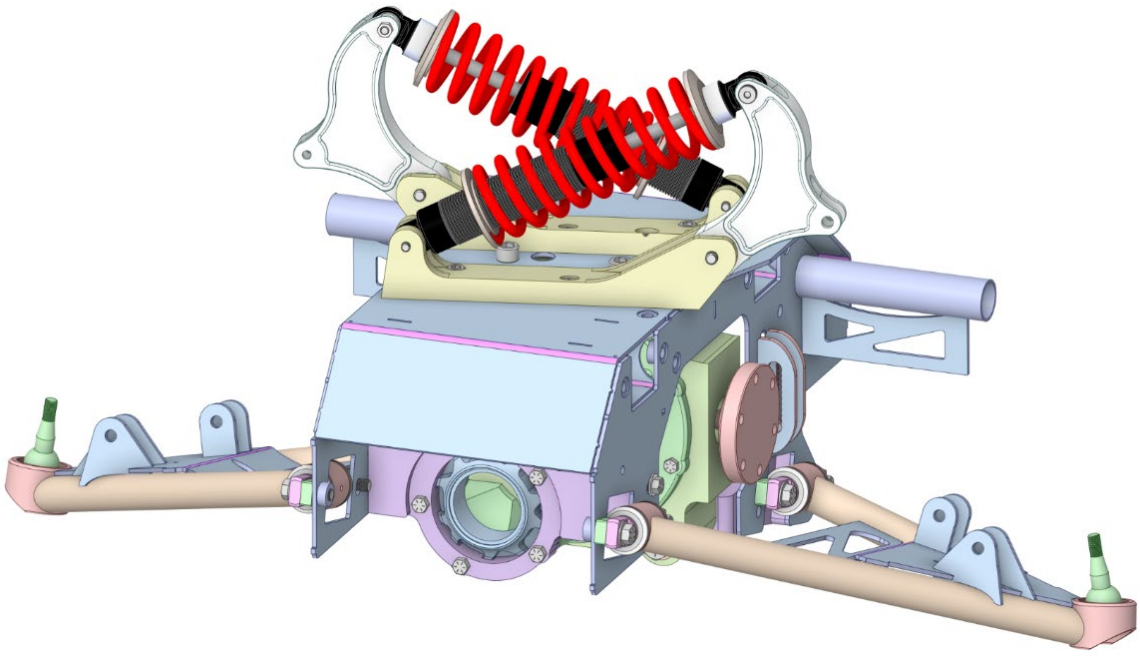


Figure 14: High mount shock installment

- LOW MOUNT SHOCK INSTALL

    - Bolt the shock body into the frame using 1/2x1-3/4 shoulder bolt.
    - Tighten using a 3/8 nylock jam nut and washers.
        - On final assembly, torque to 20 ft.lb.

    NOTE: The shoulder bolt in the frame may need some movement with the washers to fit properly. Ensure that the shoulder of the bolt is not binding on any washers that are not lined up and that the nylock nut is properly seated and is tightening the frame onto the shock rod end.

    - Bolt the shock spring into the rocker using the 1/2x1-3/4 shoulder bolt.
        - Snug up the shoulder bolt into the threaded rocker, taking care not to strip the thread out.
        - Bolt on the 3/8 thin nylock jam nut. Torque to 20 ft.lb. on final assembly.

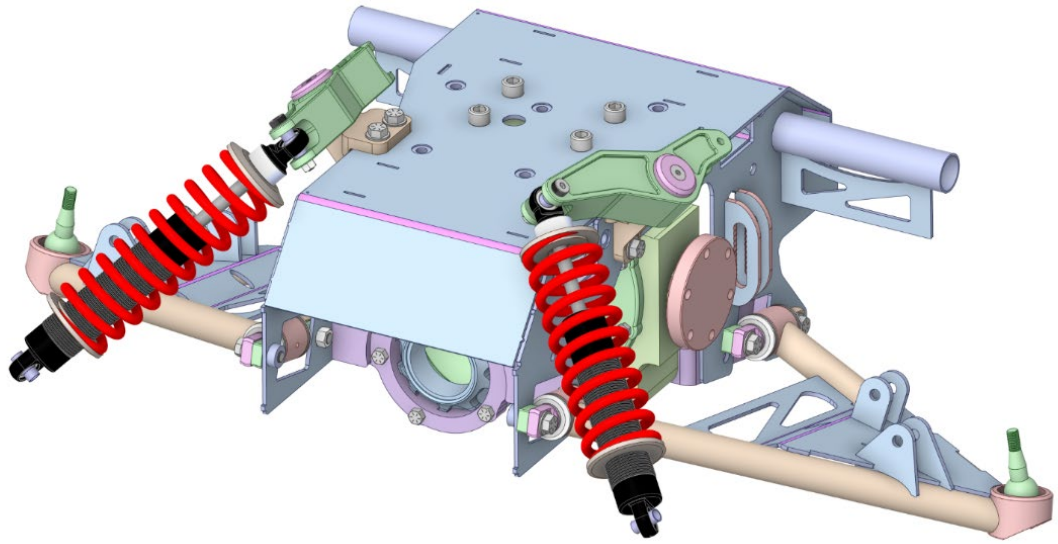


Figure 15: Low mount shock installment

- TRADITIONAL MOUNT SHOCK INSTALL

    - Bolt the shock body into the upper frame using 1/2x1-3/4 shoulder bolt.
    - Tighten using a 3/8 nylock jam nut and washers.
        - On final assembly, torque to 20 ft.lb.
    - Use the shock spacer bushing between the mounting tabs
    - Bolt the shock body into the lower position using 1/2x3 shoulder bolt.
    - Tighten using a 3/8 nylock jam nut and washers.
        - On final assembly, torque to 20 ft.lb.

NOTE: The shoulder bolt in the frame may need some movement with the washers to fit properly. Ensure that the shoulder of the bolt is not binding on any washers that are not lined up and that the nylock nut is properly seated and is tightening the frame onto the shock rod end.

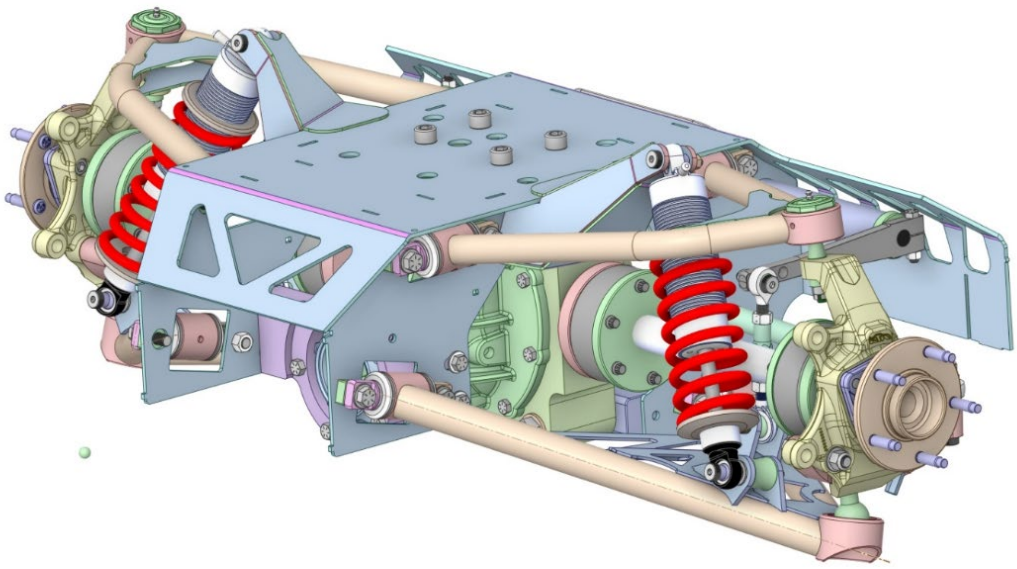


Figure 16: Traditional mount shock install

3.7 PUSH ROD

- Locate and assemble the push rod; refer to figure 17.

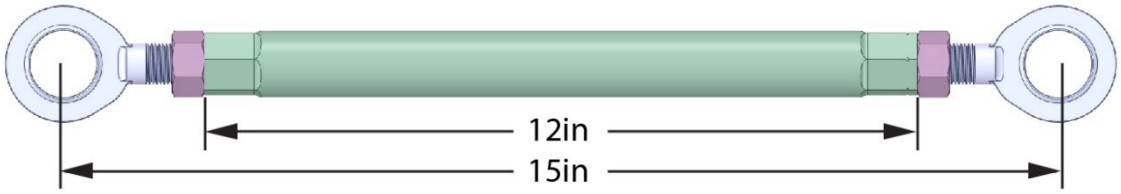


Figure 17: Push rod

  - Thread the jam nut onto the high rod ends.
  - **NOTE:** One of the joints is reverse thread.
  - Set the eye-to-eye width to 15” on the push rod, making sure that the thread exposed on each joint is symmetrical. Tighten the jam nut.

- Bolt one end into the rocker. Use a 1/2x1-3/4 shoulder bolt.

    - Snug up the shoulder bolt into the threaded rocker, taking care not to strip the thread out.
    - Bolt on the 3/8 nylock jam nut. Torque to 20 ft.lb. on final assembly.

- Bolt the other end into the lower control arm. Use a ½ x 1-3/4 shoulder bolt in the forward most tabs on the arm.

    - Snug up the shoulder bolt into the threaded rocker, ensuring not to strip the thread out.
    - Bolt on the 3/8 thin nylock jam nut. Torque to 20 ft.lb. on final assembly.

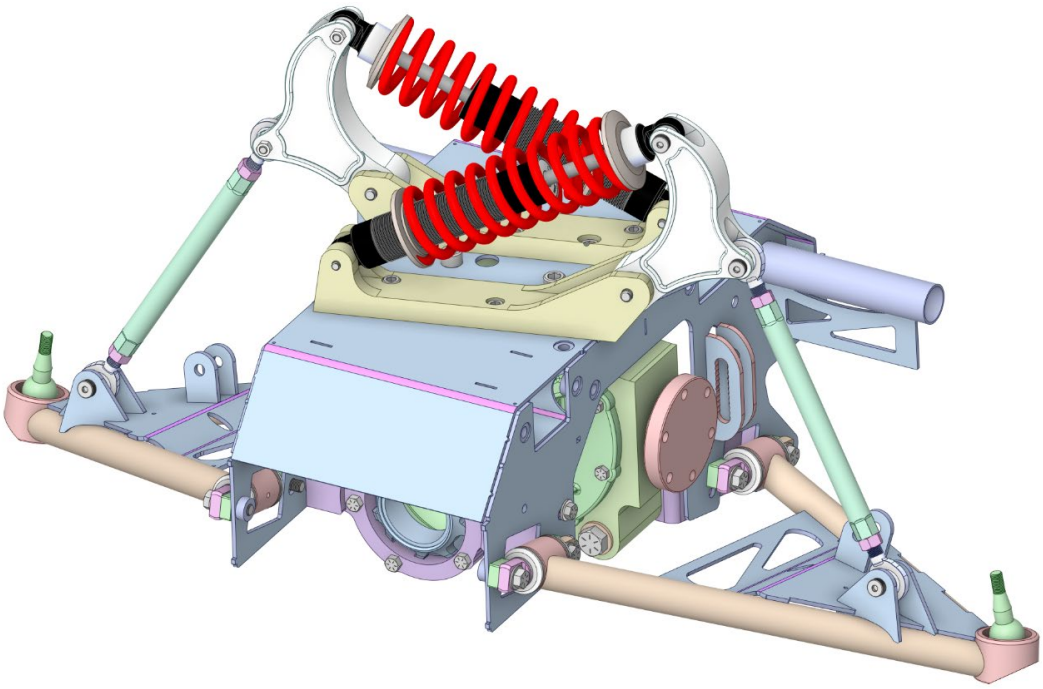


Figure 18: Adding the push rod onto the assembly

3.8 SPINDLE ISNTALLATION

- Set the spindle onto the lower ball joint pin.
    - Ensure that the correct spindle is on the correct side. The brake mount will be on the forward side.
    - Tighten the castle nut onto the ball joint.
        - On final assembly, torque to 60 ft.lb.
- Install cotter pin.
- Install the preassembled steering arm.
    - Review the steering arm assembly with the diagram.
- Bolt steering arm onto the spindle.
    - Point the arm towards the rear.
    - Use (2) 1/2x2-1/2 SHCS.
    - Bolt on the (2) thin nylock jam nuts on the front side.

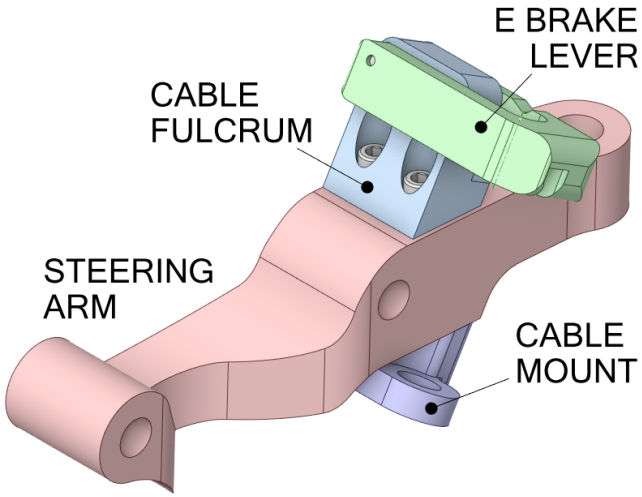
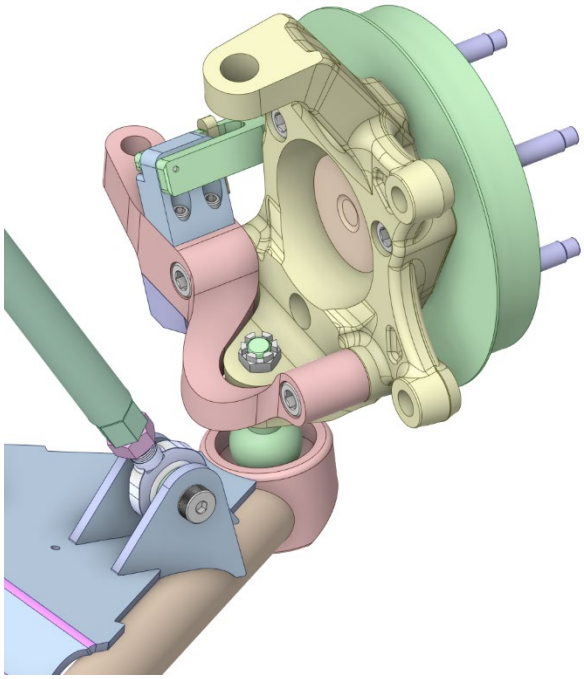
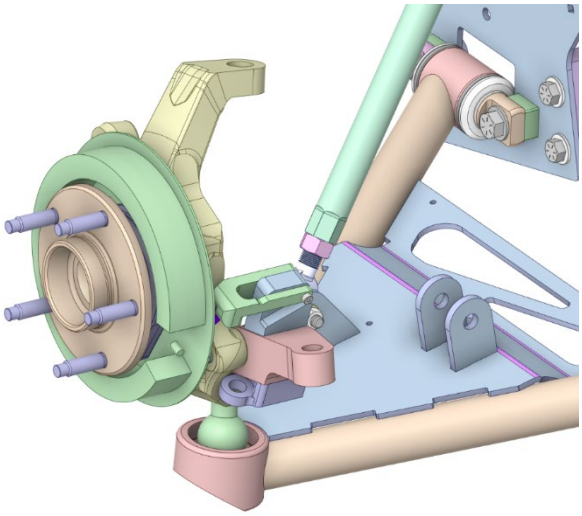


Figure 19: Three models of the spindle installation





3.9 UPPER CONTROL ARM

NOTE: The upper control arms are preassembled much the same way the lowers were assembled. Refer to the lower control arm (step 3.8) for specifics and details on the collar/pin assembly.

- Identify the upper control arm and orient them. The bent tube in the arm is in the forward position.
- Bolt the upper control arms to the frame using (4) 1/2x1-3/4 bolts and washers on each side.
    - On final assembly, use red Loctite and torque to 60 ft.lb.

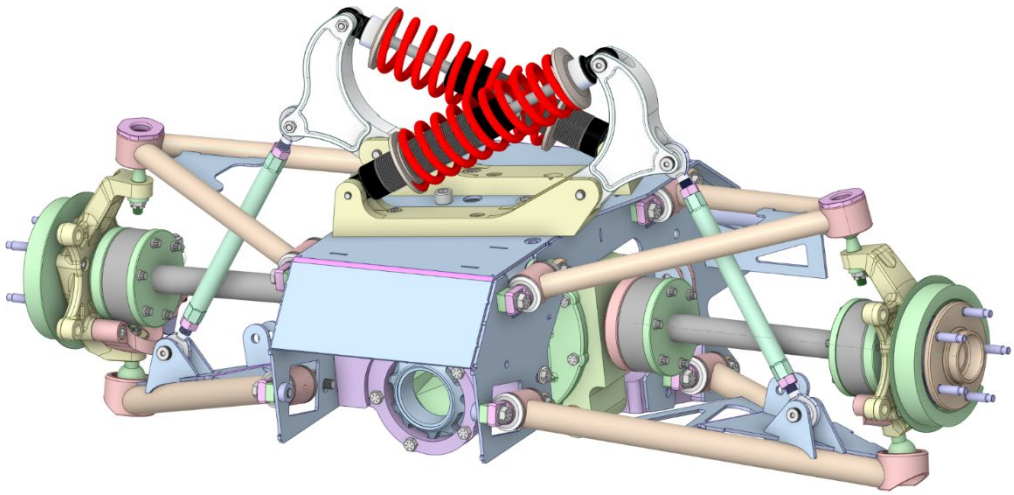


Figure 20: Upper control arm installment

NOTE: Do not attach the upper control arm to the spindle; that will be done as part of the CV axle installation, however, having the upper control arm ready will greatly assist the next step. For dry fitting, attach the upper control arm onto the spindle with the spacer.

3.10 CV AXLE INSTALLATION

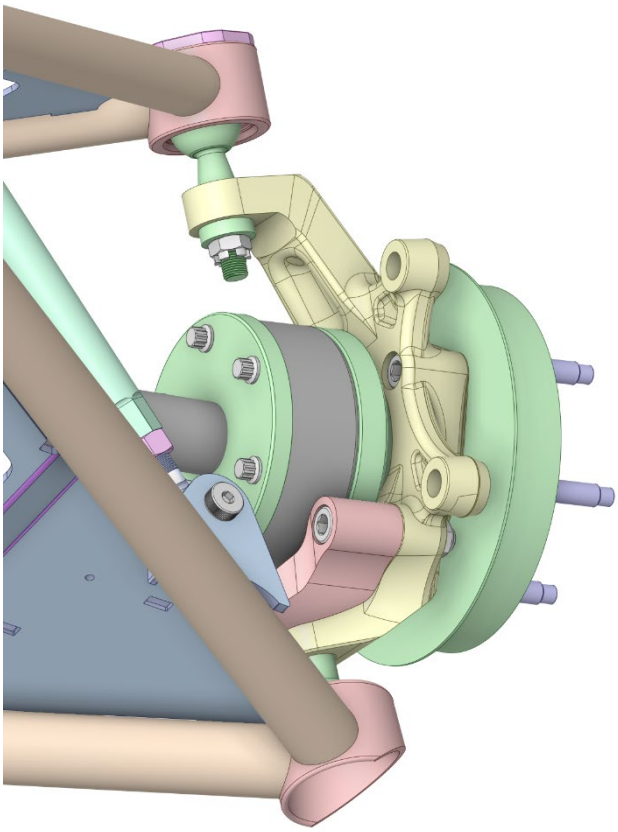
NOTE: For dry fitting during the build process, this step can be skipped.

The CV joints don't need to be installed until the final assembly. Please refer to Dutchmen instruction on the specifics of their axle, warranty, stress limits, and care.

The CV joints are packed with molly grease. Take extra care working with the joints as molly grease is messy and difficult to work with.

Use the instructions to prepare the axles for install.

- Install the stub axle into the gm bearing hub on the spindle.
  - Slip in the axle into the spline drive and tighten hub nut.
- Remove one the grease plate and keep the bolts in place.
- Install the CV joint to the stub axle on the differential.
  - Torque the (6) bolts to 65 ft.lb.
- Remove the other grease plate. Keep the bolts in place.
- Bolt the CV joint to the stub axle on the spindle.
- Lower the upper control arm into the spindle as this will help support and stabilize the assembly.
  - Torque the (6) bolts to 65 ft.lb.
- Seat the upper control arm ball joint.
  - Tighten on the castle nut with the 0.30" aluminum spacer.
  - Torque to 45 ft.lb. Install cotter pin.
- Apply red Loctite to the hub nut, torque to 120 ft.lb.



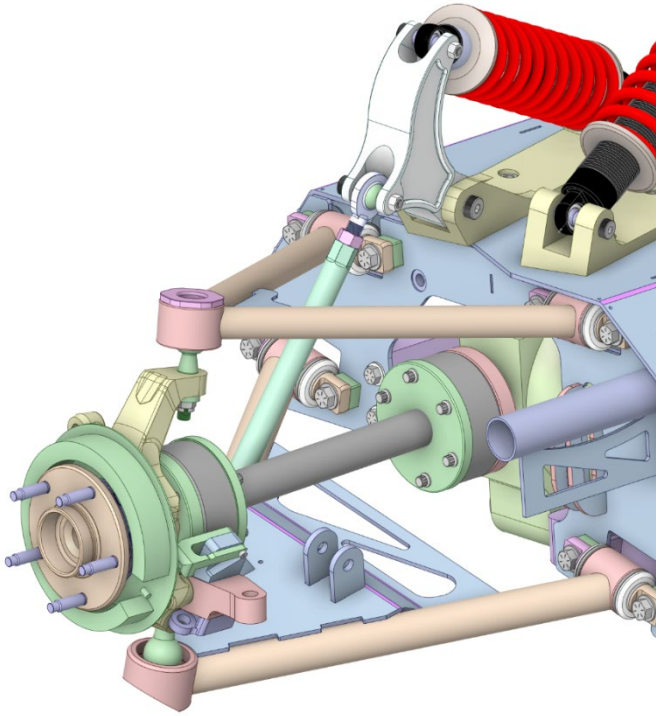


Figure 21: CV axle installment

3.11 SWAY BAR ASSEMBLY

NOTE: There are multiple mounting locations; the more forward is for street driving and the rear (closer to the bar) is for higher performance.

- Insert the splined sway bar into the tube.
- Center the sway bar in the tube by inserting the two Delrin bushings on each end.
- Clamp on the sway bar arms on each side, take extra care that they are even and parallel with each other.
    - Pinch the clamps on using the 3/8x2 bolts. Torque to 35ft.lbs.
- Prepare the sway bar link. Refer figure 22.
- Bolt the link into the sway bar arm.
    - Use a 1/2x1-1/4 shoulder bolt, spacer, 3/8 nylock, and washer.
    - Stack the spacer in-between the rod end and the sway bar arm.
- Bolt the link to the lower control arm.
    - Use a 1/2x1-3/4 shoulder bolt, nylock, and washer.
    - Take care that the washer and nut are properly seated. Torque to 35ft.lbs.

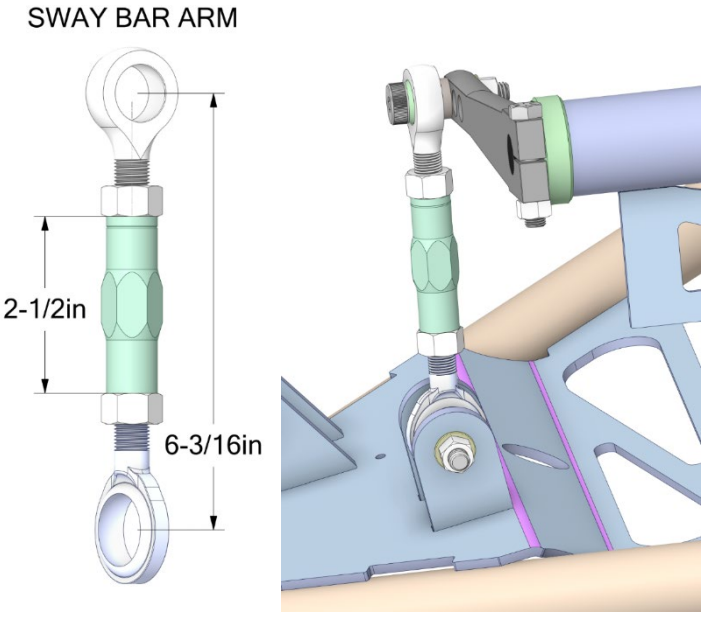


Figure 22: Two models of the sway bar assembly

3.12 TOE BAR INSTALLATION

- Locate and prepare the tow steering bar; refer to figure 22.

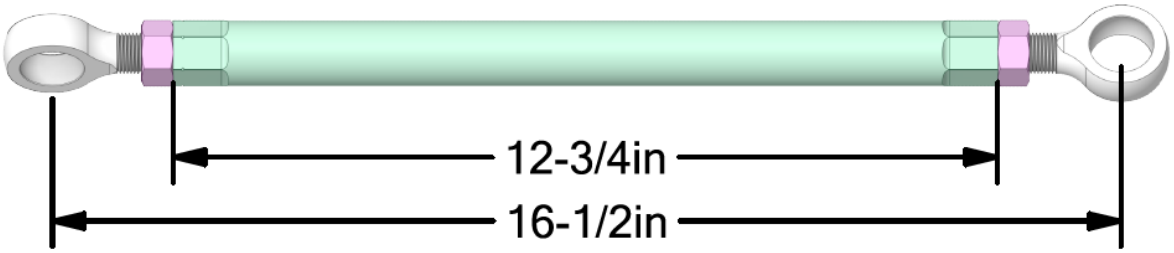


Figure 23: Tow steering bar

- Bolt one end into the frame. The initial starting point is marked.
    - Use 5/8x1-1/4 shoulder bolt, washers, and nylock nut.
    - Use the washers to ensure the proper clamping and that the bolt and nut have optimal contact.
    - On final assembly, torque to 60 ft.lb.

- Bolt the other end into the steering arm. Follow figure 22.
    - Use 5/8x2-1/2 shoulder bolt, cone spacer, hat spacer, and nylock nut.
    - Build the recommended stack from the bottom up on the steering arm.
    - On final assembly, torque to 60 ft.lb.

NOTE: The steering arm is a highly tunable tool. Your application will determine how you want to control the bump steer.

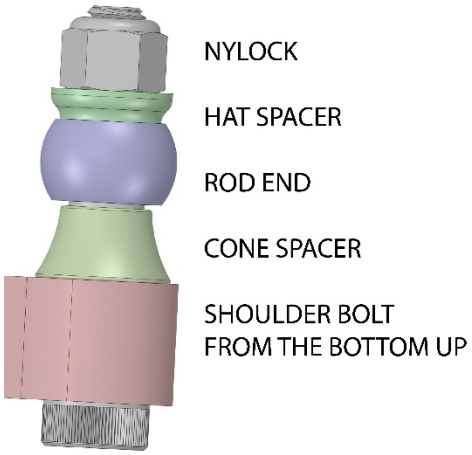


Figure 24: Order of bolts on the steering arm

4.0 TORQUE/ALIGNMENT

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FINAL TORQUE CHECKLIST AND 500-MILE CHECKLIST

This needs to be performed before you hit the road. It also needs to be check after the first 500 miles to ensure safety. It will also be a quick reference for routine maintenance schedule.

Bolt	Location	Torque	1st Check	500mi Check
1/2" x 2 ¼"	Lower Arm Mount	60 ft.lb.		
3/8" Nylock	Push Rod Mount	20 ft.lb.		
1/2" x 1 3/4"	Upper Arm Mount	60 ft.lb.		
3/8"	Sway Bar Link	35 ft.lb.		
5/8"	Toe Bar	60 ft.lb.		
Grease	Control Arms			

Figure 25: Torque check list

ALIGNMENT

WARNING: Do not drive the car before having a professional wheel alignment performed.

NOTE: Use our suggested alignment specifications, do NOT allow the alignment shop to use pre-programmed factory alignment specifications! If your chosen alignment shop cannot match our suggestions, find a different shop familiar with performance alignment set-up.

These are only provided as a suggested starting point and may need refinement to achieve the optimum settings for your driving style or situation. If you are unsure which set-up to use, please call our technical department for help at (435) 628-4300.

DAILY DRIVING	TRACK DRIVING
0 Toe	0 Toe
0 Deg. Negative Camber	-1 ½" (-1.5) Deg. Negative Camber

Figure 26: Alignment checklist

5.0 WARRANTY

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DIFFERENTIAL CARE, BREAK-IN, and WARRANTY INFORMATION

OIL REQUIREMENTS

For Tru Trac and Wavetrack posi units, use a quality petroleum/mineral-based oil. **The Manufacturers do not recommend synthetic oil**. Friction additive/modifier is not required. Do not use any RedLine, Shockproof, Royal Purple or similar gear oils. Specifically, any standard 75W 90 or 140 will work just fine.

OIL LEVEL

Many differentials are easy to fill with gear oil. However, the 9" Ford design can be difficult to fill completely. The location of the fill plug on the 9" Ford can cause oil to run back out before it is completely full. Most 9" housings hold at least 2 1/2 – 3 quarts of oil and sometimes as much as 5 quarts. It is important to take your time and be sure that the oil has settled into all the crevices and recheck the oil level to be certain that it is completely full before driving the vehicle.

BREAK IN

Any overloading or overheating will cause the gear oil to break down and the ring & pinion will fail. All new gear sets require a break-in period to prevent damage from overheating. After driving the first 15 to 20 miles, it is best to stop and let the differential cool before proceeding. Dutchman's warranty requires at least 500 miles before towing. DMI also requires towing for very short distances (less than 15 miles) and letting the differential cool before continuing during the first 45 towing miles. This may seem unnecessary, but it is very easy to damage the differential by loading it before the gear set is completely broken in. DMI recommends changing the oil after the first 500 miles. This will remove any metal particles or phosphorus coating that has come from the new gear set. The greatest damage results when a new ring & pinion has been run for several miles during the first 500 miles and the oil is very hot. Any heavy use or overloading at this time will cause irreparable damage to the gear set that can be determined by inspection and will not be warranted by DMI.

CLUTCH TYPE "POSITRACTIONS"

Posi-traction chatter is normal for limited slip and clutch type posi-traction differentials. Both rear tires must measure the same circumference in order for the differential to function properly without premature wear. **Limited slip additive or friction modifier for limited slip differentials must be used with the oil to reduce positraction chatter in the event that the oil is changed.**

LOCKERS

Mechanical Locking differentials will bang and clunk during normal operation. Both rear tires must measure the same circumference in order for a locking differential to function properly.

GEAR NOISE

Richmond Gear and other aftermarket (non-OEM) gears are designed primarily for strength ***and may be noisy***. This noise is especially inherent in vans and quiet passenger cars. **No gear manufacturer warrants their product or set up to be 100% quiet.**

SIGNS OF LUBRICATION FAILURE

When a gear runs low on oil, damage is sure to result. The cause of damage is not always obvious. When a differential runs low on oil, the oil volume may not be sufficient to keep the gear cool. Once the oil breaks down from contact with the hot gear, wear occurs very rapidly. Material will wear off the drive side of both the ring & pinion teeth and leave a feather like pattern on both surfaces. A gear that wears from friction due to lack of lubrication and excessive heat seldom experiences a color change from heat because any discoloration is worn off the teeth during each contact. Ring & Pinion gears are heat treated separately so that the pinion, whose teeth make contact more often than the ring gear, is designed to be harder. To accomplish this, the two gears are heat treated separately and a soft gear will not cause both the ring & pinion to wear.

DUTCHMAN AXLE WARRANTY EXCLUSIONS

1. Any damage due to abuse, overloading, or lubrication failure (e.g. oil deterioration, water contamination, low oil level).
2. Any vehicles used off road or for competition.
3. Mini and mid-sized vehicles with tires over 31” tall will not be warranted due to the overloading caused by tall tires.

Most items are not warranted against abuse, overloading, or improper lubrication. All rear axle parts must be returned to DUTCHMAN'S shop freight prepaid for inspection and determination. We do not authorize and will not pay for outside repairs. **Any unauthorized outside repairs or modifications void this warranty.** We will not pay for labor, inconvenience, loss of time or revenue, telephone calls, commercial losses, or loss of perishable goods. This is our only warranty expressed or implied. All returned goods must be accompanied by copy of purchase invoice within 30 days and will be charged a 20% service charge for handling.

6.0 CONGRATULATIONS

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Congratulations on completing your project! We know you will get many years of enjoyment from your project. Please join the group, Team Speedtech, on Facebook. Team Speedtech is a community of customers, dealers, and factory employers that have a passion for pro touring muscle cars and are using Speedtech Performance products. You can ask questions and get advice from the group members and share your experience. Everyone enjoys seeing the videos and pictures during the progress of your project and Speedtech encourages you to share them!

Thank you for choosing Speedtech Performance and entrusting us with your independent rear suspension for your custom muscle car.

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