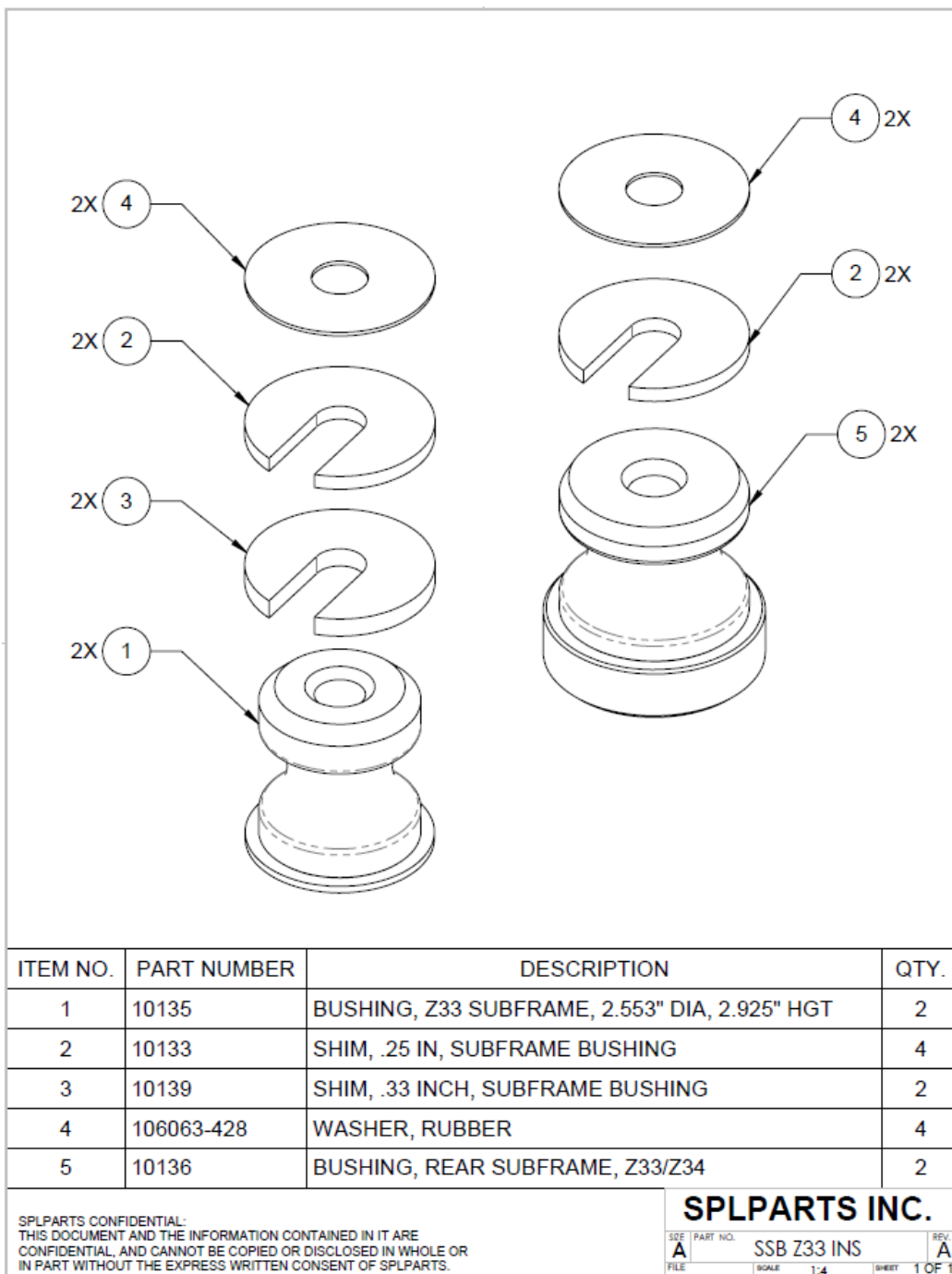
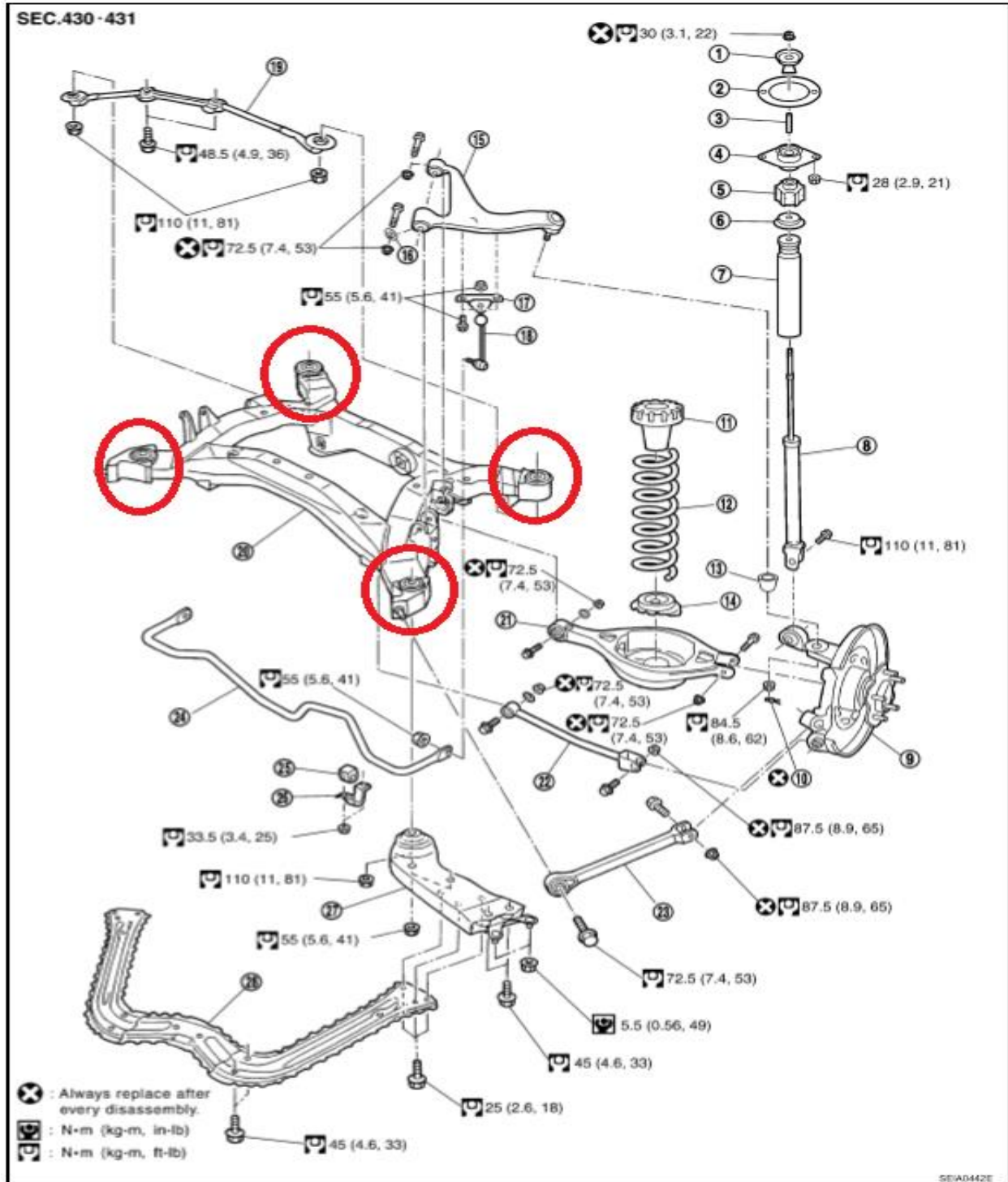
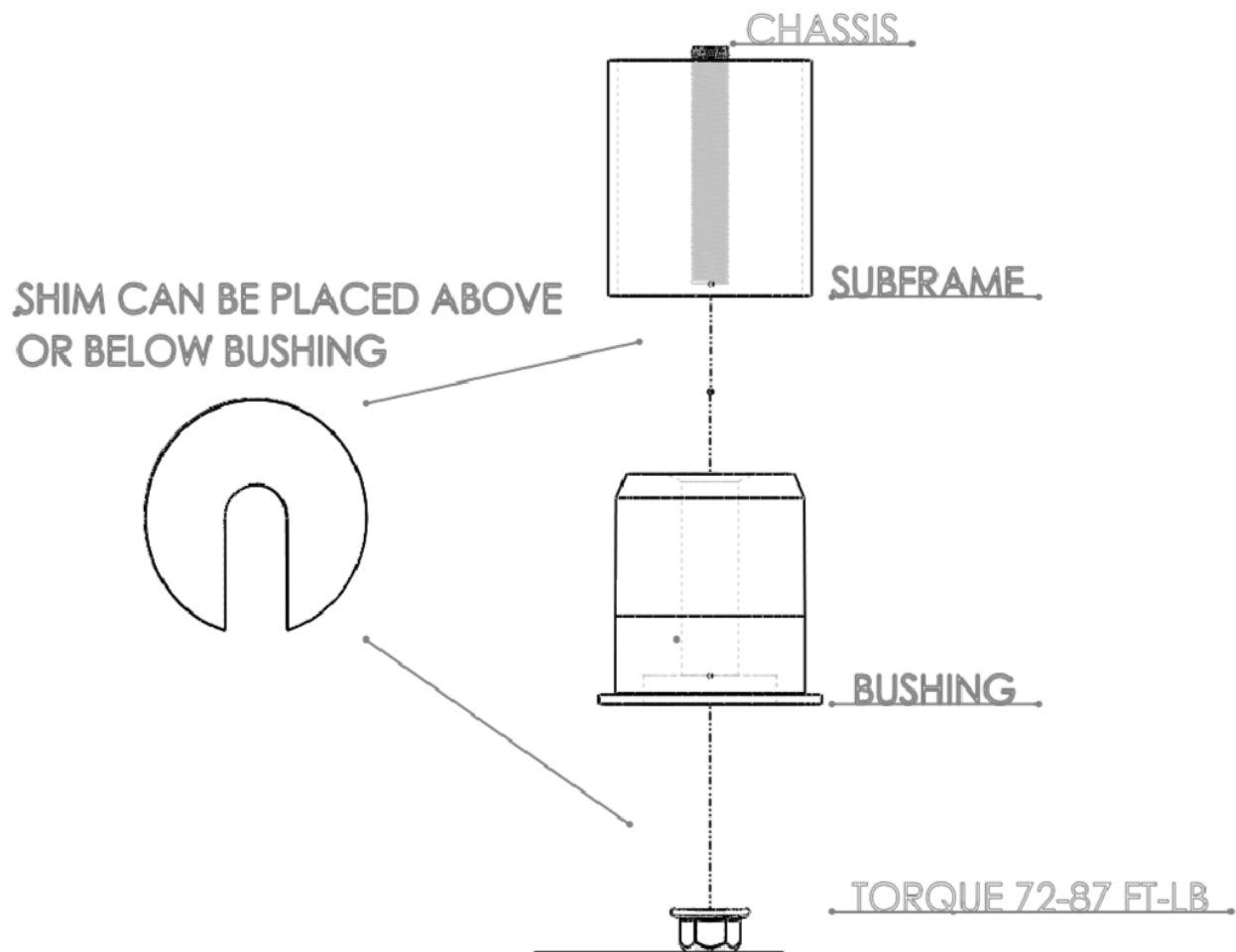




Solid Subframe Bushings Kit Installation Instructions SPL SSB Z33









Introduction

Thank you for your purchase of this SPL Parts performance suspension product. These products are intended to provide experienced chassis tuners enhanced performance and flexibility in dialing-in your suspension settings. Please read these instructions fully before attempting installation. If you have further questions contact us at: tech@splparts.com. The SPL team is here to help.

A Few Words About Product Safety:

Within these Installation Instructions important safety information is generally preceded by one of three signal words indicating the relative risk of injury. The signal words mean:

⚠ WARNING A hazardous situation which, if not avoided, could result in death or serious injury. You CAN be KILLED or Seriously HURT if you do not follow instructions.

⚠ CAUTION A hazardous situation which, if not avoided, could result in minor or moderate injury. You CAN be moderately HURT and may suffer property damage if you do not follow instructions.

NOTICE Careful attention is required to this instruction or operation but does generally not relate to personal injury. Damage to you SPL product or other property may result if you do not follow instructions.

	 WARNING <u>Modified suspension settings:</u> <u>Repetitive Inspection &</u> <u>Maintenance required to</u> <u>reduce risk of accident.</u>  www.splparts.com	
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⚠ WARNING

Installation of your SPL components and enhanced suspension performance may result in your vehicle handling differently than as factory equipped. Your choice of tire and wheel combinations, camber and toe-in settings may reduce braking performance and/or result in excessive wear or damage to SPL and OEM components during competition, track day or high-stress on road use. Contacts with other vehicles, pot holes or uneven road surfaces may result in overload stresses to fasteners, heim joints and other components initiating either immediate or accelerated failures. ***To reduce risks of accident and serious injury always:***

- Routinely inspect OEM suspension and steering components, braking system and SPL components including control arms, fasteners and heim joints for indications of overload stress, bending or physical damage (however, slight). Remove fasteners and heim joints as necessary to reveal potential damage within sleeves and joints. Best practices for competition and track includes inspection before and after each session, capturing driver input regarding any impacts, unusual vibration, or suspension feedback.
- **Immediately remove and replace any OEM or SPL component or fastener with indicated or suspected damage (including bending or damaged threads).**
- Do Not modify or substitute SPL components, over torque fasteners through use of impact or air tools or configure suspension settings outside of those recommended by OEM or established through owner testing of vehicle.
- Use of oversize tire/wheel combinations may increase stopping distances, modify ride height, roll centers and/or compromise performance of vehicle stability control and other systems.
- **Certain states regulate on highway suspension modifications. Vehicle owner and driver responsible for compliance with all equipment laws and regulations.**
- **All Occupants Buckle UP, USE Supplemental Restraints, and required SCCA or other club crash protection.**

⚠ WARNING SPL recommends professional installation of these components by technicians having access to vehicle lift, safety glasses/personal protective gear and experience with OEM maintenance techniques, recommendations, safety messaging, torque & other specifications.

⚠ WARNING Cancer and Reproductive Harm – www.P65Warnings.gov.

NOTICE Place the bushings in the freezer the night before working on the vehicle which will make pressing in the bushings easier.



Safety Requirements:

- **⚠ WARNING** Always wear safety glasses and any necessary protective garments. If using any fluids, chemicals, or solvents, a respirator is recommended.
- **⚠ CAUTION** Always use properly rated jack stands or an automotive lift when working under your Vehicle.

Tools Required:

- Ratchet
- Ratchet Extension
- Sockets
- Wrenches

Procedure:

1. **⚠ CAUTION** Raise and secure the rear end of the car and remove the rear wheels.
2. Remove the subframe using the factory service manual as a guide. Support the subframe on a bench or suitable stands.
3. Remove the OEM subframe bushings. You can either press them out or cut them out. The entire bushing must be removed, including the outer metal shell/race.
4. To remove the metal shell/race, carefully make two parallel cuts about a half inch from each other using a body saw being careful not to cut into the subframe. Collapse the shell/race in on itself and knock out the race.
5. Press in the new bushings from the bottom of the subframe with a shop press. The bushings at the front of the subframe are replaced with the smaller subframe bushings (1) and the bushings at the rear of the subframe are replaced with the larger subframe bushing (5). The flat portion on each of the bushings should be pointed towards the ground.
6. Re-install the subframe with the factory hardware plus desired shims. Torque the four main subframe nuts to 72-87 ft-lbs.
7. The supplied rubber isolators can be optionally installed between the chassis and the subframe bushing to help dampen some noise.

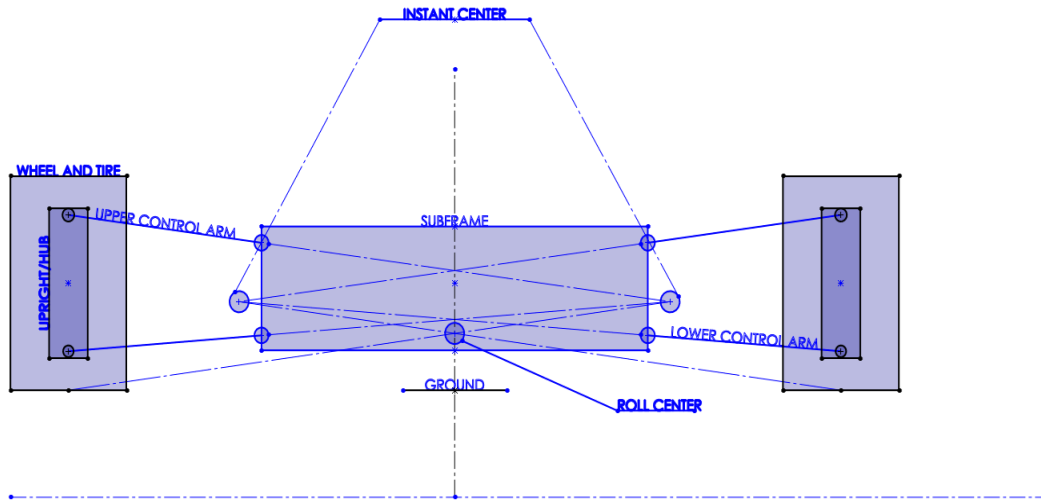


Shim Installation:

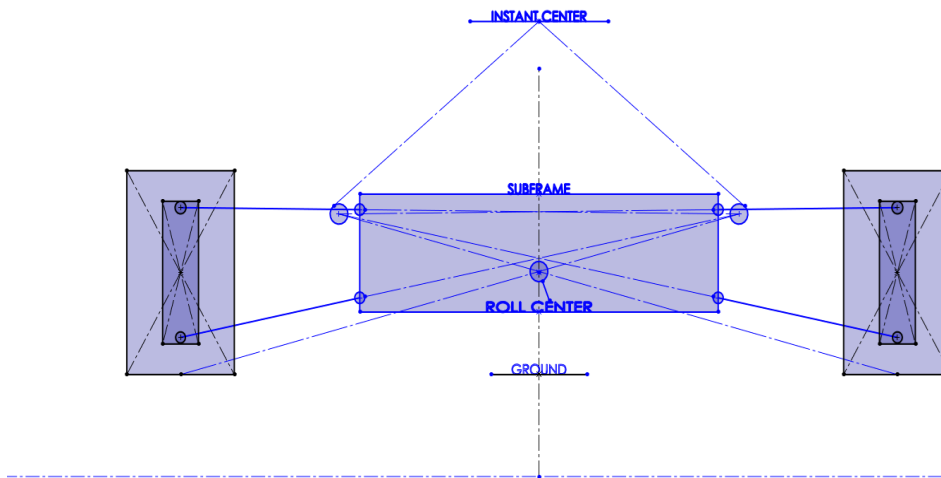
8. To place the front of the subframe at the OEM location, the Subframe Bushing Shim (2) and (3) should be installed above the subframe. To place the rear of the subframe at the OEM location, no shims should be installed.
9. You can raise and lower the subframe to change anti-squat and roll center by swapping the location of the shims to the top or bottom. If you choose to raise your subframe, make sure to place spacers underneath the bushing before tightening the subframe nut on the stud. This is because the stud is not threaded for its full length, and the nut will bottom out before it is tightened fully. The spacers you use beneath will depend on how much you raise the subframe. Make sure not to tighten the nut past the threads on the stud connecting to the vehicle, as this can damage the threads on both the stud and the nut.
10. **NOTICE** Raising the subframe will alter your rear alignment. Following installation have the car professionally aligned, as replicating the original settings is nearly impossible. It may be necessary to adjust the toe in order to drive the car to an alignment shop if you either added or subtracted camber. Take these instructions with you to ensure that the parts are adjusted correctly.
11. **WARNING** Check all torques after the first 100 and 500 miles of driving, or after your first two sessions at the track if it is a track car, to make sure that nothing has loosened up due to vibrations. Maintain a full copy of SPL Instructions and product safety messaging with your vehicle maintenance records.

Roll Center Adjustment and Ride Height Adjustment by Raising Subframe

The following diagram depicts the subframe at the OEM location, with the stock ride height and roll center. Notice the gap between the subframe and the chassis, where the shims would sit.



The following diagram shows the subframe raised closer towards the chassis (no more gap between subframe and chassis), and the ride height lowered the same amount. The roll center position is un-changed.



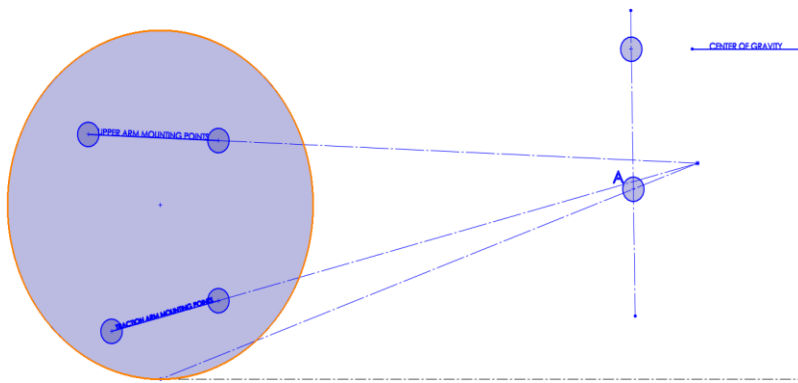
If we are to compare the 2 subframe positions with the car at the same ride height in both cases, raising the subframe will raise the roll center.

Note: Raising the subframe will not significantly change ride height. This is because the ride height is determined by the shock/spring assembly as it sits between the chassis and the knuckle.

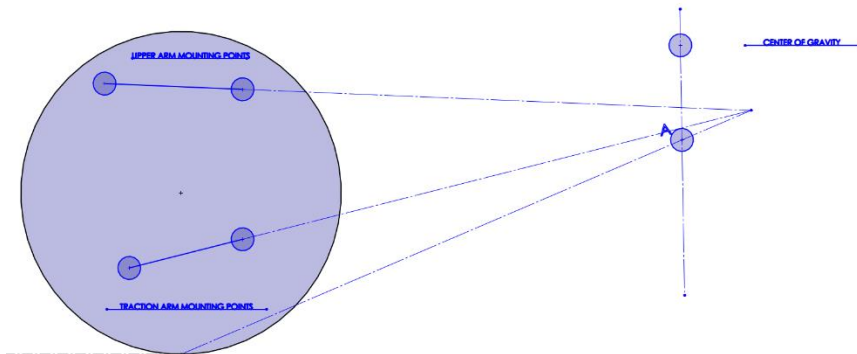
Raising the subframe and effect on Anti-Squat

The ratio between the height from the ground to point “A”, and the height from the ground to CG, is the amount of anti-squat. As a general rule, more anti-squat keeps the rear end from squatting under hard acceleration, and reduces traction.

The following diagram depicts the subframe at the OEM location, with the stock ride height and anti-squat. Notice the gap between the subframe and the chassis, where the shims would sit.



The following diagram shows what happens when you raise the subframe closer to the chassis. For this example, we are comparing what happens to the anti-squat when the ride height remains the same. When the subframe is raised, the rear “instant center” is raised as well, that moves point A up and increases anti-squat.





SPL™ LIMITED WARRANTY¹

What is Covered? Subject to the terms, exclusions and limitations herein, SPL Parts, Inc. ("SPL") exclusively warrants to the owner of the vehicle SPL components are initially installed on, SPL will, according to terms herein, repair or replace defects in SPL materials or workmanship that upon SPL's inspection are determined to exist as of the date of sale to the initial end user/customer (hereafter "Customer").

- The term of this Limited Warranty shall be twenty-four months from SPL delivery to first end user/Customer.

What is Not Covered?: Your SPL Limited Warranty does not cover: (1) defect in a SPL component causing or contributing to damage to the motorized chassis, body, emissions, belting/airbags, electrical system or other vehicle system or component separately warranted or supplied by a manufacturer other than SPL, (2) SPL components used in competition or other events which may involve unforeseen vehicle components, suspension set ups and contact between vehicles and obstacles, (3) damage to SPL components or your vehicle from additions, alterations, or other products or components not supplied by SPL, (4) damage or degradation of performance from failure to adequately inspect, maintain, adjust or service as recommended or required, damage resulting from improper suspension set-up, loading, accident, collision, vandalism, abuse, misuse, neglect, fire, flood, normal wear, (5) *damage caused or related to use of SPL control arms or other parts as a tie-down for dyno testing or transport* (6) *labor, consequential, incidental, punitive or other damages or costs, including those incurred in removing or delivering your SPL component to SPL for inspection, repair or replacement.*

Obtaining Warranty & Customer Service: For questions or claims contact: SPL Warranty, 30307 Ranch Road 12, Unit 100, Dripping Springs, Texas 78620; Tech@splparts.com. Please have proof of purchase available.

Remedy Limited to Repair/Replacement by SPL. Limited time for Filing Warranty Claims. BINDING, SINGLE CLAIM ARBITRATION-Venue: Upon Customer's removal and delivery to SPL, SPL inspection and SPL determination of a covered defect, *the exclusive remedy provided hereunder shall at SPL's option be repair or replacement of the defective SPL component. Written notice of any claim for breach/damages related to this Limited Warranty must be provided SPL within 20 days of customer notice or concern with a defect and in all instances within 30 days of the date your Limited Warranty expires (i.e. not later than twenty-five months from delivery). For separate, valuable consideration received; all claims arising from or related to purchase or use of SPL components shall exclusively be maintained as a separate action by each Customer with jurisdiction, venue and determination applying Texas state law (without reference to treaties or conflict of law provisions) through binding arbitration before a neutral selected by Customer from the JAMS® panel closest to Austin, Texas. To the extent permitted by law, each party shall bear its own costs and fees.*

Other Exclusions –Limitation of Damages - Your Rights Under State Law.

In consideration of the purchase price negotiated, SPL shall not be liable for: costs incurred by Customer removing, transporting or presenting components to SPL for repair or replacement under this Limited Warranty (expedited or other shipping is Customer's responsibility), any time loss, rental costs, towing or for any incidental, consequential, punitive or other damages Customer may incur arising or in any way related to Customer's negotiation, purchase and use of SPL components. Your exclusive remedy hereunder is repair or replacement as described above. By claiming the benefits of this Limited Warranty Customer agrees: (a.) your sole and exclusive remedy in any proceeding for *breach* of this express Limited Warranty is money damages in an amount equal to the *lesser* of the purchase price of the covered SPL part or the reasonable cost for material and labor necessary to repair or replace SPL components that Customer proves at *arbitration* should have been done hereunder but were not; (b.) your sole and exclusive remedy in a proceeding for *breach* of any applicable implied warranty is money damages in an amount equal to the *lesser* of the purchase price of the covered SPL part or the amount Customer proves at *arbitration* equal to the reasonable cost for material and labor necessary to correct the defect(s) in SPL components upon which the finding of breach of implied warranty is based. This Limited Warranty of repair or replacement shall not be construed as a representation or warranty of future performance. The duration of any implied warranty shall be limited to the term of express Limited Warranty provided above. By making a claim under this Limited Warranty you acknowledge receipt of these terms and agreement to be bound thereby.

No employee or other agent of SPL is authorized to amend or waive this written Limited Warranty or make additional representations or warranties regarding any SPL features, performance, workmanship or materials. This Limited Warranty shall be construed according to Texas Law without reference to treaties or conflict of law principles.

This Limited Warranty gives you specific rights. You may also have other rights that vary from state to state. For example, some states do not allow limitations of how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the limitations and exclusions herein may not apply to you. All other warranties are hereby disclaimed, except to the extent prohibited by applicable law.

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