



GENERAL INSTRUCTION GUIDELINES

READ THIS FIRST:

- Read these instructions fully prior to beginning work. Verify all parts listed below are in the kit packaging, and all tools, equipment, skills and methods are on hand to safely complete the installation.
- Read the attached GENERAL INSTALLATION NOTES prior to beginning any work.
- Installation of these components should be performed by experienced and qualified mechanics, using safe and correct tools and equipment. Northwoods recommends this installation be performed by a qualified, certified automotive shop.
- Use safe methods in all work operations. Support the vehicle safely as required on a lift or hoist, or certified jack stands.

GENERAL INSTALLATION NOTES

- Installation shall be performed by qualified, experienced mechanics capable of performing this type of work. Northwoods recommends the work be performed in qualified ASE certified shops.
- Use only quality, certified tools and equipment appropriate for the job.
- Vehicle should only be supported by certified hoists, lifts, or jackstands of adequate capacity.
- Use only certified, dedicated spring compressors to compress and assemble springs. Northwoods recommends springs only be assembled and installed by qualified auto repair shops, using quality spring compression tools.
- Actual lift heights will vary by vehicle due to vehicle accessories, weights, loading, wear, initial ride height, and other factors.
- Upon completion of installation of springs or other suspensions and steering components, vehicles should be immediately aligned at a qualified shop.
- Modification to vehicle ride height requires re-alignment of headlights.
- Full inspection of all components installed should be checked after 300 miles of driving, including torque of all fasteners.
- Modified vehicles will handle and perform differently from stock vehicles, and the modified vehicle characteristics should be considered for driving safety. Modified vehicles may have affects to vehicle steering and response, and increased braking distances due to increased vehicle weight or larger tires.
- Modified vehicles may exhibit increased wear to suspension and other components, as well as an increase in vibration due to changes in component alignment and operating angles.
- Northwoods Performance Warranty, Return, and Replacement policies can be found on-line at northwoodsperformance.com, RESOURCES tab.



LIFT KIT INSTALLATION INSTRUCTIONS

Toyota Highlander 2008-2013

Lexus RX350 2010 - 2015

Installation time: 3-4 hours

FRONT LIFT KIT MATERIAL LIST

- Front strut 2
- Front sway bar links 2
- Flange Hex nut 10mm 6
- Washer, thick, 10mm 6
- Front leveling plate 2
-OR, DEPENDING ON KIT-
- Front Springs 2

REAR LIFT KIT MATERIAL LIST

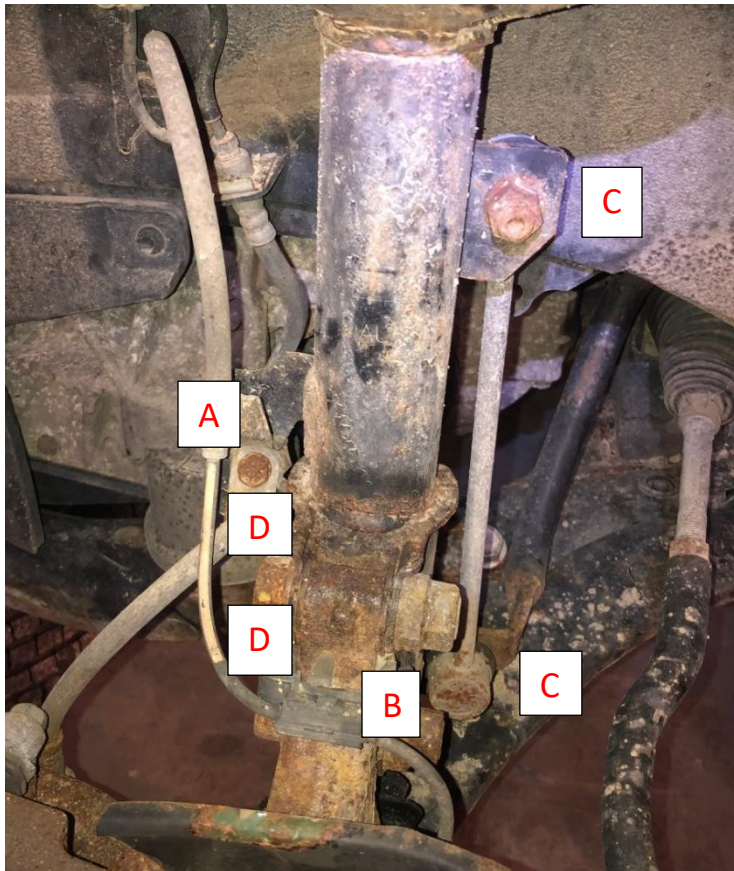
- Rear strut with spacer installed 2
- Rear sway bar links 2
- Hex nut 10mm 6
- Washer, thick, 10mm 6
-OR, DEPENDING ON KIT-
- Rear Springs 2

FRONT STRUT REMOVAL

1. From inside the engine bay, remove the wiper arms, and the cowling cover to access the upper strut mounts.



2. Remove two of the three strut top retaining nuts (14mm). Loosen the third.
3. Remove brake and ABS line bracket (A, 12mm), the ABS line clip (B), the upper and lower sway bar link bolts (C, 6mm hex and 17mm box end wrench), the upper and lower knuckle bolts (D, 22mm). Support the knuckle assemble to keep the axleshaft from overextending.



4. Remove the last upper strut body nut and remove the strut.

IF NORTHWOODS SPRINGS ARE BEING ASSEMBLED ONTO STRUTS, COMPLETE NOW

Northwoods recommends installing the lift kit and tuned springs with new struts and hardware for best performance.

1. Using a dedicated strut compression tool, compress the spring.
2. Remove the top plate retaining nut.
3. Disassemble the strut.
4. Clean and inspect all parts. Discard and replace worn or defective parts.
5. Assemble the strut with the Northwoods spring. Note: front springs have a Left Hand and Right Hand orientation. Be sure to assemble on the correct front strut.
6. Proceed to spacer installation on the strut.

HINT: Highlander front springs can be difficult to compress on the spring only to release the tension on the strut mount. Do not over compress the spring and cause possible permanent deformation of the spring. We recommend compressing the spring using the upper and lower spring perches to avoid damage to the spring.



SPACER INSTALLATION—FOR 1.5" BOLTED SPACERS, IF PROVIDED

1. Install the spacer on the top of the strut. Verify there is clearance between the top of the strut studs and the upper spacer plate studs. If necessary, cut the top of the three top strut studs to allow clearance. Recommended: cut strut mounted studs to 7/8" height. Hint; install a nut on the stud prior to cutting to smooth the threads on nut removal.
2. Install the spacers on the strut with thin washers and hex nuts. Recommend use of blue lock-tight on the nuts, and tighten securely.

GENERAL NOTE ON INSTALLATION

This kit is designed to be fit on OEM strut systems. There are many manufacturers of struts, with slight design variations. Some struts are taller on the shaft and upper mounts, or have larger stud bases than stock. If required, some modifications may be required. Through the center hole in the top plate of the spacer, inspect to verify there is clearance between the strut and the top spacer plate. It is critical that the lower spacer plate mount flat and fully to the strut body.



STRUT INSTALLATION

Strut installation is in the reverse order of removal.

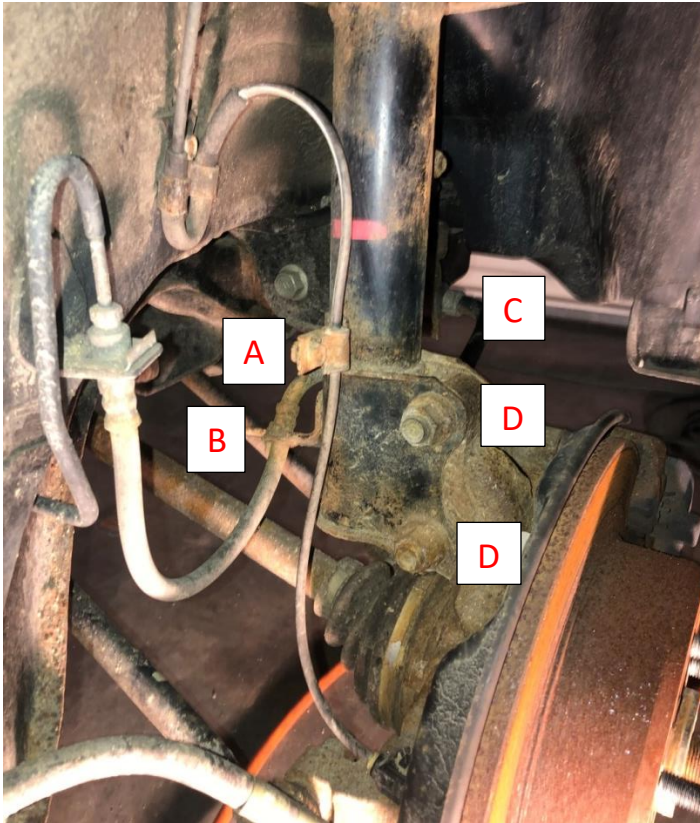
1. If provided with the lift kit and assembled struts, install leveling plate on top of strut mount. It will fit loosely for now.
2. Place the strut in place, and secure loosely in place with three flange nuts from the strut spacer through the car body. Do not tighten.
3. Align the upper and lower knuckle bolts and install. Tighten securely.
4. Install the brake and ABS line bracket with the bolt.
5. Grease the sway bar links. Install the new sway bar links. Install from inboard to outboard direction, with the studs facing outboard on both the top and bottom. Grease zerks face rearward. Tighten securely.
6. Lower the car from the lift and securely tighten the strut spacer to car body nuts.

REAR STRUT REMOVAL

1. From inside the rear cargo bay, remove the plastic cover over the top strut mount, and remove the three strut top retaining nuts.



2. Remove brake and ABS line bracket (A), the brake line clip (B), the upper and lower sway bar link bolt (C, 5mm hex and 14mm box end wrench), and the upper and lower knuckle bolts (D, 19mm).



3. Remove the strut.

IF NORTHWOODS SPRINGS ARE BEING ASSEMBLED ONTO STRUTS, COMPLETE NOW

Northwoods recommends installing the lift kit and tuned springs with new struts and hardware for best performance.

1. Using a dedicated strut compression tool, compress the spring.
2. Remove the top plate retaining nut.
3. Disassemble the strut.
4. Clean and inspect all parts. Discard and replace worn or defective parts.

5. Assemble the strut with the Northwoods spring.
6. Proceed to spacer installation on the strut.

SPACER INSTALLATION

1. Install the spacer on the top of the strut. Verify there is clearance between the top of the strut studs and the upper spacer plate studs. If necessary, cut the top of the three top strut studs to allow clearance. Recommended: cut studs to $\frac{3}{4}$ " total height. Hint; install a nut on the stud prior to cutting to smooth the threads on nut removal.
2. Install the spacer on the strut with hex nuts and thin washers. Recommend use of blue lock-tite. Tighten securely.

STRUT INSTALLATION

Strut installation is in the reverse order of removal.

1. Place the strut in place, and secure loosely in place with three nuts from the strut spacer through the car body. Use a thick washer under the strut mount nuts. Do not tighten.
2. Align the upper and lower knuckle bolts and install. Tighten securely.
3. Install the brake and ABS line bracket with the bolt.
4. Grease the sway bar links. Install the new sway bar links. Install from inboard to outboard, with the studs facing outboard on both the top and bottom. Grease zerks face rearward. Tighten securely.
5. Lower the car from the lift and securely tighten the strut spacer to car body nuts.