



Rusty's Off-Road Products
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Rusty's FSJ 3.5"-4" Full Size Add-A-Leaf Lift Kit

RK-350AL-FS

INSTALLATION INSTRUCTIONS

Last Revised: 12/20/2016

Introduction:

Rusty's recommends that this installation be performed by a certified automotive technician or a person with professional mechanical knowledge. Installing this kit without this expertise may jeopardize the handling and safety of the vehicle.

Read instructions several times before starting. Be sure you have all the needed parts and know where they install. Read each step completely as you go. Exhaust modifications may be necessary. Prior to drilling or cutting, check behind the surface being worked on for any wires, lines, or hoses that could be damaged. After any drilling or cutting, remove burrs and grind smooth any surfaces. An inclinometer or similar tool may be needed to measure driveshaft angles before and after the installation.

Warning:

It is the owners' responsibility to inspect all Rusty's products for proper torque specs to prevent loosening of components. Seat belts and shoulder harnesses should be worn at all times. Re-check all bolts and nuts after the first 100 miles and after any off-road usage during the first 300 miles. Although all of our products are made from the highest quality materials possible, they are not a substitute for Safe and Careful driving. In other words, have good safe on-road / off-road sense. Know the terrain, the speed limitations, and any obstacles that may lie ahead. Please remember to preserve our right to enjoy public land through the proper use of off-road vehicles.

Before Starting Installation:

1. Carefully Read all warnings and instructions completely before beginning.
2. Verify all parts have been received in this kit by checking the parts list on page#2 of this document.
3. Only install this kit on the vehicle for which it is specified.
4. Park the vehicle on a clean, dry, flat, level surface and block the tires so the vehicle cannot roll in either direction.
5. Be certain the vehicle is safely secured on jack stands or a vehicle lift prior to working around or under a vehicle. Never rely on a jack alone to support a vehicle's weight; use appropriately rated stands to support the vehicle's frame and any other heavy components.



For Questions or Suggestions, contact our Tech Department (256-442-0607)

Parts List:

Note: Please be sure that you have all the provided parts listed below before continuing with the installation.

Part #	DESCRIPTION:	Quantity
RC-LS400F-FS	Rusty's Leaf Springs - FSJ - 4" - Front (pair)	1
RC-2564	Rusty's Add-A-Leaf - FSJ Rear 2" Full Length (pair)	1
RC-LB2	Rusty's 2.5" Tapered Lift Blocks (pair)	1
RC-UB-4	Rusty's Dana 44 FSJ Grade 8 U-Bolt	3
RC-UB-5	Rusty's Dana 44 FSJ Differential Grade 8 U-Bolt	2
RC-UB-7	Rusty's Dana 44 FSJ 10" Grade 8 U-Bolt	4
RX-13	Rusty's RX100 Performance Shock: RX-13	4
EB1-BP1 (PO1313)	Rusty's Hourglass Shock Bushing w/ Open Bar Pin Pack (Contents Below)	4
EB1	Hourglass Shock Bushing (Qty:1 Per Pack)	
BP18	Open Bar Pin (Discard) (Qty:1 Per Pack)	
(PO1532)	EB1 Hourglass Shock Bushing w/ 1/2" Sleeves Pack (Contents Below)	4
EB1	Hourglass Shock Bushing (Qty:1 Per Pack)	
ES-25	1/2" Shock Bushing Sleeve (Qty:2 Per Pack)	
RC-SC1	Rusty's Leaf Spring Clips	2
RC-CP-38	3/8"-16 x 4" Length Centering Pin	4
67470328	3/8"-16 Grade 8 Nut	4
n/a	Rusty's Warning Label	1
n/a	Rusty's Decal Pack	1

FRONT INSTALLATION INSTRUCTIONS

Note: Save all factory components and hardware for reuse, unless noted.

- 1.) Raise the front of the vehicle and place jack stands under the frame. Chock the rear tires to prevent any accidental movement.
- 2.) Remove tires and wheels.
- 3.) Remove the factory shocks. Discard the shocks but save the hardware for re-use.
- 4.) Support the axle with a jack. Remove the U-bolts from the axle. Retain the U-bolt Plates for reuse.
- 5.) Free the spring from the axle by jacking the axle up some.



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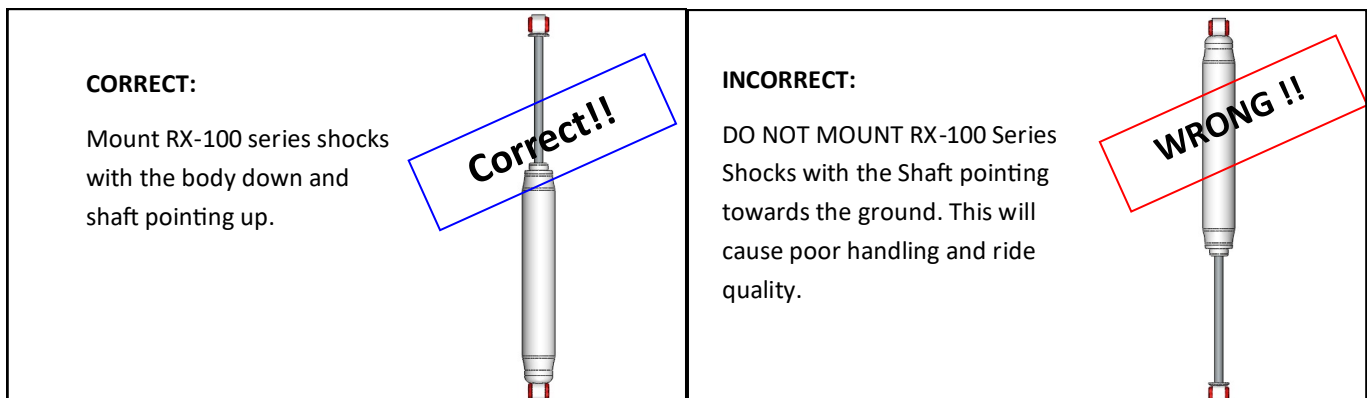
FRONT INSTALLATION INSTRUCTIONS (Continued)

Note: Save all factory components and hardware for reuse, unless noted.

- 6.) Remove the bolts from the front shackle and frame mount to remove the front leaf springs. (**Note:** Be careful when performing this step so that the leaf spring does not fall out.)
- 7.) With the springs removed, inspect all of the hardware and replace if worn or damaged.
- 8.) To install the new Rusty's springs, lube the bolts and position the spring into the frame mount first, then install the spring into the shackles. (**Note:** Do not fully tighten the hardware at this time.)
- 9.) Move the axle into position on the spring by lowering the axle jack. Place the spring center bolt in the axle perch hole.
- 10.) Be sure that the centering pin bolt is properly seated into the axle spring perch.
- 11.) Reinstall the original spring plates with the provided U-Bolts, Washers and Nuts. (Torque: 75 ft.lbs.)
- 12.) Reinstall the tires and wheels to lower the vehicle from the jack stands and rest it on its weight.
- 13.) Now you may tighten up the spring and shackle hardware that we did not fully tighten in step #8. Use the chart below to determine the appropriate torque specifications for the hardware size.

Hardware Size	Torque Specification
7/16"	50 Ft. Lbs.
1/2"	65 Ft. Lbs.
9/16"	85 Ft. Lbs.

- 14.) Install the bushings and sleeves in the new Rusty's shocks. Install them on the vehicle with the factory hardware. Torque the upper and lower bolts to 40-ft.lbs. (Note: Please refer to the illustration below for the correct orientation of the shocks.)



- 15.) Front Installation Completed!



REAR INSTALLATION INSTRUCTIONS

Note: Save all factory components and hardware for reuse, unless noted.

- 1.) Raise the rear of the vehicle and place jack stands under the frame. Chock the rear tires to prevent any accidental movement.
- 2.) Remove tires and wheels.
- 3.) Remove the factory shocks. Discard the shocks but save the hardware for re-use.
- 4.) Support the axle with a jack. Remove the U-bolts from the axle. Retain the U-bolt Plates for reuse.
- 5.) Once U-bolts have been removed carefully lower the axle.
- 6.) Using a chisel, cutoff wheel, saw, or similar tool, remove the leaf spring retaining straps that align the leafs in the spring pack. They are located on both the front and rear portion of the springs.
- 7.) Position a C-clamp near the spring centering pin and tighten it to hold the spring pack together. Remove or cut off the spring centering pin if it is seized. Carefully loosen the clamp to relieve the pressure in the spring pack in a controlled manner.
- 8.) Position the Rusty's add-a-leaf in the spring pack. It should be placed directly under the main leaf, or under the next longest leaf in the spring pack. All of the shorter leafs should be placed under the add-a-leaf in order of descending length. The long side of the new leaf will go towards the rear of the vehicle.
- 9.) Align the centering pin holes in each leaf and use a C-clamp to clamp the pack together. (**Note:** Do not use the centering pin to compress the leaf pack.) Position the pin so that the head is pointed downward and install the supplied new centering pin in the aligned holes. Lube the threads and slowly tighten the nut; do not over tighten the pin as it will strip easily.
- 10.) Install the supplied leaf spring straps on the front side of the rear spring pack.
- 11.) Move the axle into position on the spring by lowering the axle jack. Place the spring center bolt in the axle perch hole.
- 12.) Be sure that the centering pin bolt is properly seated into the axle spring perch.
- 13.) Reinstall the original spring plates with the provided U-Bolts, Washers and Nuts. (Torque: 75 ft.lbs.)
- 14.) Reinstall the tires and wheels to lower the vehicle from the jack stands and rest it on its weight.
- 15.) Now you may tighten up the spring and shackle hardware if you had to remove or replace anything while working on the rear springs. Use the chart below to determine the appropriate torque specifications for the hardware size.

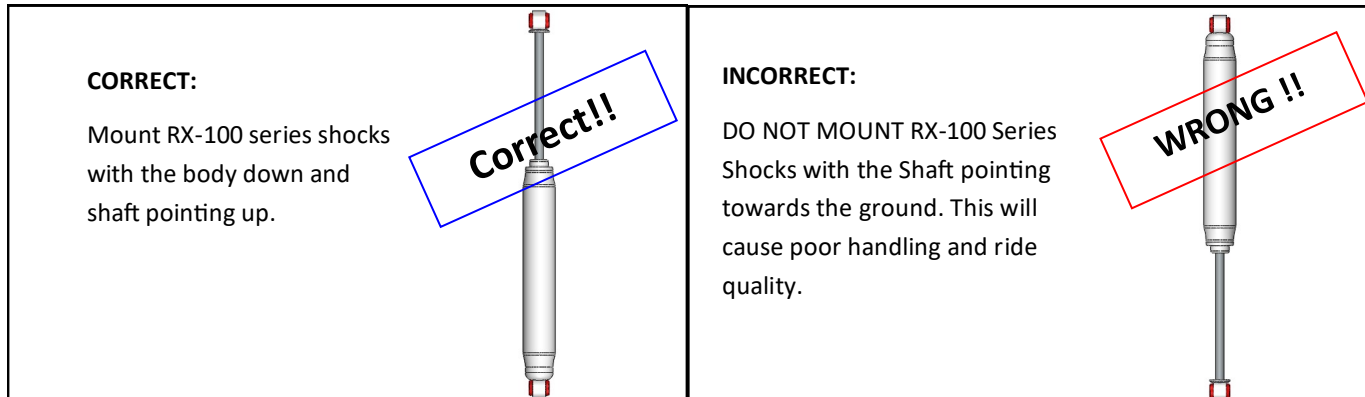
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REAR INSTALLATION INSTRUCTIONS (Continued)

16.) Install the bushings and sleeves in the new Rusty's shocks. Install them on the vehicle with the factory hardware. Torque the upper and lower bolts to 40-ft.lbs. (**Note:** Please refer to the illustration below for the correct orientation of the shocks.)



17.) Installation Completed!

RUSTY'S STAINLESS STEEL BRAKE LINE INSTALLATION INSTRUCTIONS:

If you purchased the optional Rusty's stainless steel brake lines with your suspension kit you will install them now. (**Fitment Note:** Some FSJ Vehicles equipped with the optional Heavy Duty Towing Package will require 3/16" to 1/4" Brass Thread Adapters in order to install the brake lines.)

- 1.) Make sure that the vehicle is parked on a level surface and can not roll.
- 2.) Remove the factory brake hoses and discard from the vehicle making sure to use the correct size fitting wrench to avoid damaging the corners on the fittings. (**Note:** Be prepared for a mess.)
- 3.) Clean all of the surfaces that the new brake lines will mount to prior to installing the new lines.
- 4.) Install the stainless steel brake lines to your vehicle and tighten the fittings with the correct size fitting wrench.
- 5.) Clean lines and surfaces around lines of any remaining residual brake fluids.
- 6.) Now that all of the brake lines have been replaced you will need to fill the vehicles master cylinder with the correct brake fluid and bleed the brake system. (**Note:** Keep an eye on the amount of fluid in the master cylinder and top off as needed when bleeding the system.)
- 7.) Reinstall the cap to the master cylinder.
- 8.) Installation Completed!



Final Notes:

- Cycle the steering lock-to-lock and double-check all components for proper operation and clearance.
- Double-check all fasteners for proper torque. Check all fasteners again after 100 miles.
- At this point there should be no remaining new parts left to be installed except for the stickers.
- Re-torque all fasteners after 500 miles and recheck after 1000 miles. Visually inspect components and re-torque fasteners during routine vehicle service.
- A professional alignment is recommended as soon as possible.

Alignment Specifications:

Castor: +7 Degrees

Camber: 0 Degrees

Toe: Should start at 0

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