

Rusty's TJ Wrangler 4.5" Advanced Kit RK-450A-TJ INSTALLATION INSTRUCTIONS

Last Revised: 2/21/2017

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.

Parts List:

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

Part #	DESCRIPTION:	Quantity
RC-CS400-TJ	Rusty's TJ Front Coil Springs (Pair)	1
RC-CS401-TJ	Rusty's TJ Rear Coil Springs (Pair)	1
RX-36	Rusty's RX100 Performance Shock: RX-36(Contents Below)	2
	(Bushing Packs: PO1533 & PO1318)	
RX-13	Rusty's RX100 Performance Shock: RX-13 (Contents Below)	2
	(Bushing Packs: PO1532 & PO1313)	
RS-DPA1	Rusty's 1.25" Drop Pitman Arm (XJ,TJ,YJ)	1
RC-TB122-UV	Rusty's Adjustable Front Track Bar (2.75" - 5")(XJ,TJ,YJ)	1
RC-SB500-UV	Rusty's Forged Adjustable Sway Bar Quick-Disconnects (Pair)	1
RC-CA111-UV	Rusty's Fixed Front Lower Control Arms (XJ,TJ) (Pair)	1
RC-CA121-UV	Rusty's Fixed Front Upper Control Arms (XJ,TJ,ZJ) (Pair)	1
RC-CA112-TJ	Rusty's Fixed Rear Lower Control Arm (TJ) (Pair)	1
RC-CA222-UV	Rusty's Adjustable Rear Upper Control Arms w/ Forged Rubber Ends (TJ,ZJ) (Pair)	1
RC-TCD1-TJ	Rusty 1" Transfer Case Drop Kit	1
RB-SBL10F-UV	Rusty's Brake Hoses - Stainless Steel - Front (Pair)	1
RB-SBL10R-UV	Rusty's Brake Hoses - Stainless Steel - Rear	1
RC-SB300-TJ	Rusty's Rear Extended Sway Bar Link Kit	1
RC-TBRB-TJ	Rusty's Rear Track Bar Relocation Bracket	1
RX-1313-UV	Rusty's TJ Wrangler Rear Shock Extension Kit (Pair)	1

Driveshaft Angle Measurements

Before starting to work on the vehicle it is suggested to use an angle finder to measure the driveshaft angles as reference point. This will help when adjusting the rear control arms to the correct lengths to prevent and drive line vibrations.



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

Front Installation Instructions

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

1. Raise vehicle and place jack stands under frame. Chock the rear tires to prevent any accidental movement.
2. Remove the tires and wheels.
3. Remove the factory shocks from the factory mounting points. The hardware will be reused.
4. Unbolt the sway bar links on both sides, don't discard hardware.
5. Remove the factory front brake lines from the vehicle by disconnecting the line from the brake caliper and the hard line at the frame. The hardware will be reused.
6. Support the front axle with the floor jack.
7. Remove the bolt at the axle end of the track bar. The hardware will be reused.
8. Remove the cotter pin and the nut that connects the track bar to the frame mount and remove the track bar from the vehicle. (**Note:** A tie rod end puller will be needed to complete this step.)
9. Remove the cotter pin and nut that connects drag link to the pitman arm. The hardware will be reused.
10. Remove the tie rod end from the pitman arm. (**Note:** A tie rod end puller will be needed to complete this step.)
11. Remove the nut and washer from the steering gear box shaft. The hardware will be reused.
12. Remove the factory pitman arm from the steering gear box shaft. (**Note:** A tie rod end puller will be needed to complete this step.)
13. Located the front axle side lower control arm mounting points. You will want to mark or scribe the orientation of the these bolts. (**Note:** These cam bolts adjust the caster so returning to the same location will be a good starting point for the alignment of the vehicle.)
14. Remove the bolts at the axle and frame mounts of the front lower control arms and remove the lower arms. (**Note:** The hardware will be reused, if hardware is damaged, replace with a Grade 8 hardware.)
15. Remove the bolts at the axle and frame mounts of the front upper control arms and remove the upper arms. (**Note:** The hardware will be reused, if hardware is damaged, replace with a Grade 8 hardware.)
16. On each side, remove the bolt that holds the factory coil spring retainer clip. It is located on the lower coil spring mount.
17. Remove the factory coil springs from vehicle. With the jack used to support the axle, slowly lower the axle in order to free the coil springs. (**Note:** If using a coil spring compressor, take special care.)



Front Installation Instructions (Continued)

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

18. Install the supplied upper control arms using the factory hardware retained in step 15. Use the hole location that measures out to 15.25" away from the pressed in rubber bushing that attaches to the frame mount. If you purchased adjustable upper control arms set them to 15.25" center of bolt hole to center of bolt hole. Do not torque hardware to spec until vehicle is resting on its weight at ride height. (**Note:** Position the unused hole location above the hole used on the axle side bracket of the upper control arms.)
19. Install the supplied lower control arms using the factory hardware retained in step 14. Position the lower control arms so that the short side of the bend is mounted towards the axle. If you purchased the adjustable lower control arms set them to 16.25" center of bolt hole to center of bolt hole. (Do not torque hardware to spec until vehicle is resting on its weight at ride height. **Note:** The length of the control arms are an approximate starting point and maybe have to be adjusted in order to align the vehicle.)
20. Set the new coil springs into place and reinstall the factory coil spring retainer clips you removed in step 7. (Torque to 10 ft. lbs.)
21. Reinstall the tires and wheels
22. Jack up the vehicle and remove the jack stands in order to lower the vehicle back to the ground to be set to ride height.
23. Torque the bolts that attach the upper control arms to the axle and the frame mounts to 55 ft. lbs.
24. Torque the bolts that attach the lower control arms to the axle to 85 ft. lbs. and the bolts on the frame mounts to 130 ft. lbs.
25. Install the new Rusty's front shocks into their upper mounting position with the supplied hardware. (Torque to 17 ft. lbs.) (**Note:** It is a good idea to take a wire brush and clean any excess paint from the threads on the stud to prevent the nut from tighten properly.)
26. Install the lower end of the shock to the axle using the factory hardware. (Torque to 20 ft. lbs.)
27. Install the supplied drop pitman arm using the nut and washer removed during step 11. (Torque to 185 ft. lbs.)
28. Reattach the drag link to the new drop pitman arm using the nut and cotter pin removed during step 9. (Torque the nut to 45 ft. lbs.) then install the cotter pin.
29. Install the supplied adjustable front track bar to the factory axle mounting location with the factory hardware. (Torque to 55 ft. lbs.)
30. Before attaching the track bar to the frame mounting point, you will need to center the body over the axle. To make adjustments, unlock and rotate the steering wheel slowly in order to shift the body over the axle. Once centered lock the steering wheel into position and adjust the track bar tie rod end to the proper length and attach to the frame. (Torque to 55 ft. lbs.) and install the cotter pin.
31. Install the supplied Rusty's Quick Disconnects at this time using the supplied instructions.



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Front Installation Instructions (Continued)

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

32. Install the supplied front extended stainless steel brake lines. (**Note:** Make sure to properly bleed the brake system prior to driving the vehicle.)
33. Front Installation is now completed!

Transfer Case Drop Installation Instructions

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

1. Place a jack under the passenger side of the transfer case crossmember in order to support it.
2. Remove the 3 bolts that attach the transfer case crossmember to the frame rail.
3. Lower the jack used to support the transfer case crossmember enough room in order to install the supplied transfer case drop spacers into position.
4. Install the correct supplied bolts loosely (Qty: 3 Per Side) on the passenger side. (**Note:** For 1997-2002 models use the supplied 1/2"-13 x 2-3/4" Length Head Socket Cap Screw (Qty: 6) and for 2003-2006 models use the M12 x 1.75mm x 60mm Length Hex Head Cap Screw (Qty: 6).)
5. Move the jack to the driver side of the vehicle.
6. Repeat steps 2-4 as the installation will be the same as the passenger side.
7. Tighten the supplied hardware to 55 ft. lbs.
8. Transfer Case Drop Installation Completed!

Rear Installation Instructions

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

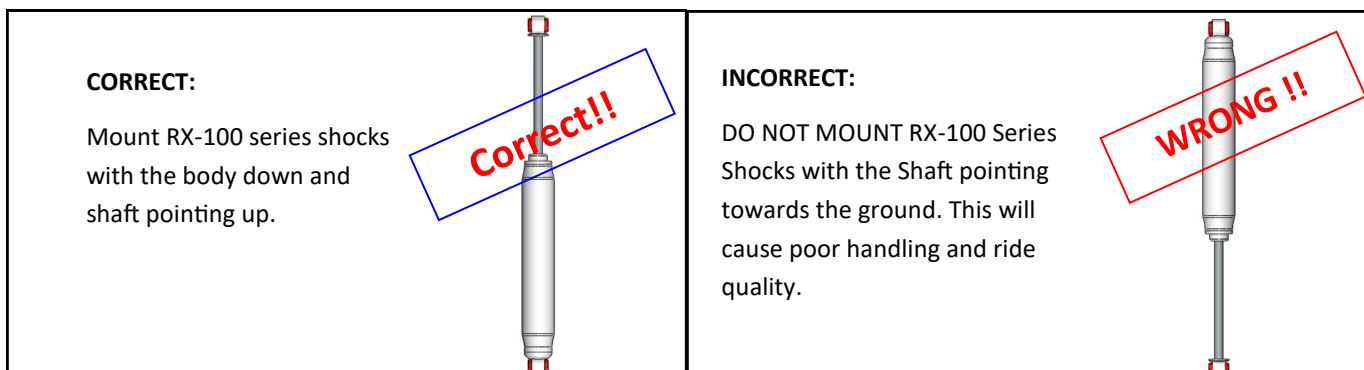
1. Jack up the vehicle at the axle and place the jack stands under the frame.
2. Remove the tires and wheels.
3. Support the rear axle with the floor jack.
4. Remove the factory shocks, keeping the factory hardware and discarding the old shocks.
5. Remove and discard the rear sway bar links from the axle and the sway bar. Retain the hardware, it will be reused.
6. Remove the factory rear brake line from the vehicle by disconnecting the line from the . The hardware will be reused.
7. Remove and discard the plastic shield from the driver side of the rear track bar.
8. Remove the rear track bar bolt from the axle side mounting point. Retain the hardware, it will be used again.



Rear Installation Instructions (Continued)

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

9. Remove the bolts at the axle and frame mounts of the rear lower control arms and remove the lower arms. (**Note:** The hardware will be reused, if hardware is damaged, replace with a Grade 8 hardware.)
10. Remove the bolts at the axle and frame mounts of the front upper control arms and remove the upper arms. (**Note:** The hardware will be reused, if hardware is damaged, replace with a Grade 8 hardware.)
11. Remove the factory rear coil springs using the same method used to remove the front coil springs.
12. Install the supplied adjustable upper control arms using the factory hardware retained in step 10. Set the length of the adjustable upper control arms so that they are 3/8" longer than the factory arms, this will be a good starting point, however will possibly need some adjustment to achieve the correct pinion angle. (**Note:** Make sure to install the arms so that the brake lines will attach to the supplied control arms in the same manner as attached to the factory rear control arm. (**Note:** Do not torque hardware to spec until vehicle is resting on its weight at ride height.)
13. Install the supplied rear lower control arms using the factory hardware retained in step 14. Position the lower control arms so that the short side of the bend is mounted towards the axle. If you purchased the adjustable lower control arms set them to 16.25" center of bolt hole to center of bolt hole. (**Note:** Do not torque hardware to spec until vehicle is resting on its weight at ride height.) (**Note:** The length of the control arms are an approximate starting point and maybe have to be adjusted in order to align the vehicle.)
14. Install the provided rear coil springs and slowly raise the rear axle until the coil springs are seated. (**Note:** Use caution not to lift the frame off the jack stands.)
15. Reinstall the tires and wheels.
16. Jack up the vehicle and remove the jack stands in order to lower the vehicle back to the ground to be set to ride height.
17. Torque the bolts that attach the upper control arms to the axle and the frame mounts to 55 ft. lbs.
18. Torque the bolts that attach the lower control arms to the axle and the frame to 130 ft. lbs.
19. Install the bushings and sleeves in the new Rusty's shocks. Install them on the vehicle with the factory hardware. (Torque upper bolts to 18 ft. lbs. and lower bolts to 40 ft. lbs.) (Note: Please note the orientation of the rear shocks.)



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Rear Installation Instructions (Continued)

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

20. Install the supplied rear extended stainless steel brake line. (Note: Make sure to properly bleed the brake system prior to driving the vehicle.)
21. Install the provided rear track bar bracket into position using the supplied 1/2"-13 x 1-1/2" bolt, washers and lock nut into the factory track bar mounting hole on the axle. (Torque to 80 ft. lbs.)
22. Drill the two hole locations where the plastic cover attached to the axle track bar mount to a 5/16" hole.
23. Install the provided 5/16"-18 x 1" bolts, washers and lock nuts into the two hole locations you have drilled to 5/16". (Torque to 18 ft. lbs.)
24. Install the factory rear track bar to the installed rear track bar relocation bracket using the factory hardware removed in step 6. (Torque to 50 ft. lbs.)
25. Install the supplied bushings and sleeves into the supplied rear sway bar links.
26. Install the rear sway bar links with the factory hardware remove in step 4.
27. Rear Installation is now complete!

Final Notes

At this point there should be no parts left but installing the stickers. The vehicle will need to have an alignment as soon as possible, if you don't you may get the "death wobble", poor tire wear or just a bad handling vehicle.

Alignment Recommended Specifications

- Toe: Should be set at 0 to 1/32" Toe Out
- Castor: 7.5 Degrees Positive
- Camber: 0

WARNING

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Rusty's Extended Stainless Steel Front and Rear Brake Hoses

RB-SBL10-UV

INSTALLATION INSTRUCTIONS

Last Revised: 5/21/2017

Parts List:

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

RB-SBL10F-UV Parts List:

<u>Part #</u>	<u>DESCRIPTION:</u>	<u>Quantity</u>
RB-SBL10F-UV	Rusty's Front Extended Stainless Steel Brake Hose	2
RB-SBL10-CW	3/8" Copper Crush Washer	4
RB-SBL10-MB	Brake Hose Frame Mounting Bracket	2
RB-SBL10-RC	Brake Hose Mounting Bracket Retaining Clip	2
67378927	5/16" -18 x .625" Length Hex Head Thread Cutting Screw	2

RB-SBL10F-UV Installation Instructions

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

1. The installation of these brake lines can be installed with the vehicle on the ground. You need to park the vehicle on level ground and set the parking brake/chock the tires to prevent any movement.
2. Turn the tires in order to gain better access to the calipers and the brake lines.
3. Inspect all of the brake components and repair or replace components as necessary.
4. Disconnect the factory soft line from the hardline connection at the frame rail. Retain the factory hardware for reuse.
5. Remove the factory banjo bolt from the caliper, make sure to remove the factory crush washers as well. Retain or replace the banjo bolt for installation of the new brake hoses.
6. Clean and inspect all of the mounting surfaces before continuing.
7. Mount the supplied brake hose mounting bracket to the frame rail in the factory mounting hole with the original hardware. (**Note:** If needed use the supplied 5/16" -18 x .625" Length Hex Head Thread Cutting Screws to mount brake hose mounting brackets to the frame rail if you need to relocate the lines for any reason.)



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RB-SBL10F-UV Installation Instructions (Continued)

8. Insert the supplied brake hose through the mounting bracket opening then insert the supplied retaining clip to secure the line.
9. Attach the brake hose to the factory hard line by starting the threaded fitting on the factory hard line by hand then tighten to factory specifications.
10. Attach the brake hose to the caliper using the factory banjo bolt and the supplied copper crush washers. Position a crush washer on each side of the fitting at the bottom of the brake hose. Tighten to factory specifications.
11. Position the brake line in order to make sure that it will not get caught or damaged by the suspension or tire when in use.
12. Repeat steps 2-11 on the opposite side of the vehicle.
13. If only installing the front brake hoses at this time you may go ahead and bleed the brake lines using standard brake system bleeding procedures. (Note: If installing the rear brake hose, you can wait to bleed

RB-SBL10R-UV Parts List:

Part #	DESCRIPTION:	Quantity
RB-SBL10R-UV	Rusty's Rear Extended Stainless Steel Brake Hose	1
RB-SBL10-MB	Brake Hose Frame Mounting Bracket	1
RB-SBL10-RC	Brake Hose Mounting Bracket Retaining Clip	1
67378927	5/16" -18 x .625" Length Hex Head Thread Cutting Screw	1

RB-SBL10R-UV Installation Instructions

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

1. The installation of the rear brake line can be installed with the vehicle on the ground. You need to park the vehicle on level ground and chock the tires to prevent any movement.
2. Inspect all of the brake components and repair or replace components as necessary.
3. Disconnect the factory soft line from the hardline connection at the frame rail. Retain the factory hardware for reuse.
4. Remove the bolt that attaches the factory soft line to the frame rail. Retain the factory hardware for reuse.
5. Disconnect the two hard lines at the brake line fitting on the rear axle.



RB-SBL10R-UV Installation Instructions (Continued)

7. Clean and inspect all of the mounting surfaces before continuing.
8. Mount the supplied brake hose mounting bracket to the frame rail in the factory mounting hole with the original hardware. (**Note:** If needed use the supplied 5/16" -18 x .625" Length Hex Head Thread Cutting Screws to mount brake hose mounting brackets to the frame rail if you need to relocate the lines for any reason.)
9. Insert the supplied brake hose through the mounting bracket opening then insert the supplied retaining clip to secure the line.
10. Attach the brake hose to the factory hard line at the frame by starting the threaded fitting on the factory hard line by hand then tighten to factory specifications.
11. Attach the brake hose fitting to the axle tube using the fitting that the rear axle breather tube is attached with.
12. Connect both of the factory hard lines on the axle tube to the threaded fittings on the rear brake hose junction block by starting the threaded fittings on the factory hard lines by hand then tighten to factory specifications.
13. Connect both of the factory hard lines on the axle tube to the threaded fittings on the rear brake hose junction block by starting the threaded fittings on the factory hard lines by hand then tighten to factory specifications.
14. If only installing the rear brake hose at this time you may go ahead and bleed the brake lines using standard brake system bleeding procedures.

Important Safety Notes

CAUTION!!! Failure to properly bleed the brake system will cause your brakes not to work properly. Before the vehicle is ready to drive you will need to refill the brake reservoir with brake fluid and bleed any air out of the brake lines. If you have any reservations or not experienced in this procedure please do not attempt the installation and seek professional assistance or help in order to ensure the effectiveness of your brake system.

WARNING

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