

## Rusty's YJ Wrangler 4" Advanced Kit RK-400SPA-YJ INSTALLATION INSTRUCTIONS

Last Revised: 4/20/2017

### 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.

<b>Part #</b>	<b>DESCRIPTION:</b>	<b>Quantity</b>
RC-LS400F-YJ	Rusty's YJ 4" Front Leaf Spring	2
RC-LS400R-YJ	Rusty's YJ 4" Rear Leaf Spring	2
BJ02029BK	Leaf Spring Bushing Pack (Contains Front & Rear Spring Bushings)	1
KJ02009BK	YJ Frame Side Shackle Bushing Kit (Contains Front & Rear Frame Side Shackle Bushings)	1
RC-SHIMS-6	Rusty's 6° Degree Billet Steel Shim Kit (Contains 5/16" & 3/8" Tie Bolts and Nuts)	1
RC-TBFB-YJ	Front YJ Track Bar Relocation Bracket Kit	1
RC-TBRB-YJ	Rear YJ Track Bar Relocation Bracket Kit	1
RC-TCD1-TJ	Rusty's Transfer Case Drop Kit (TJ 97-02/ YJ)	1
RC-SB400-YJ	Rusty's Front Sway Bar Extended Link Kit	1
RB-BL10-UV	Brake Line Bracket Extension Kit	1
RX-36	Rusty's RX100 Performance Shock: RX-36 (Bushing Packs: PO1533 & PO1318)	2
RX-13	Rusty's RX100 Performance Shock: RX-13 (Bushing Packs: PO1532 & PO1313)	2
RC-UB-2	Rusty's Dana 35 / Dana 44 Grade 8 U-Bolt	7
RC-UB-3	Rusty's Chrysler 8.25 Grade 8 U-Bolt	2
RB-SBL10F-UV	Rusty's Stainless Steel Front Brake Hose Kit (Pair)	1
RB-SBL10R-UV	Rusty's Stainless Steel Rear Brake Hose Kit	1
RS-DPA1	Rusty's Drop Pitman Arm 1.25" (XJ/TJ/YJ)	1
RC-SB500-UV	Rusty's Forged Adjustable Sway Bar Quick-Disconnects (Pair)	1



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 tires and wheels.
3. Remove the factory shocks from their upper frame mounts in the fender well and at the axle and discard. Save the lower axle hardware for re-use.
4. Unbolt and remove the sway bar links on both sides.
5. Support the front axle with the floor jack.
6. Remove the track bar bolt from the mount on the axle.
7. Tie the track bar up and out of the way for more working room.
8. On each side, remove the bolts securing the brake lines to the frame. These bolts can be accessed from under the hood and are located on top of the frame rail just behind the upper shock mount. Save the hardware for re-use.
9. On each side, remove the four axle U-bolt nuts. If these nuts are seized, then the U-bolt will need to be cut using a cutoff wheel or similar tool. New U-bolts are supplied with the kit.
10. Using a floor jack, raise the axle up to separate it from the leaf springs.
11. Remove the shackle bolts and frame bolts holding the springs in place, then remove the springs from the vehicle. Discard the springs but save the hardware for re-use.
12. Replace the factory frame side shackle bushings with the supplied replacement bushings. (Note: Unless otherwise noted, do not torque any bolts to spec until the vehicle is lowered to the ground with the suspension supporting the vehicle's weight.)
13. Lubricate the supplied leaf-spring sleeves and bushings with water resistant grease and install them in the appropriate spring eyes.
14. On each side, install the front leaf-springs. Insert the appropriate end of the leaf spring into the frame mount first and secure it using the factory hardware, then attach the spring to the shackle using the factory hardware. Note that it may be necessary to spread the frame mount slightly if the previous springs were improperly torqued. Only spread the mount enough to facilitate sliding the spring eye into place.



### Front Installation Instructions (Continued)

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

15. Lower the axle on to the springs. On each side, make sure the spring centering pin is aligned with the hole in the axle spring perch.
16. On each side, install the supplied U-bolts with the factory spring plates. Torque the nuts to 65 ft. lbs.
17. Snug the spring bolts. Tighten to no more than 35 ft. lbs. on both shackle and frame mounts at this time. The springs will be fully tightened once the vehicle is back on the ground.
18. Install the front track bar relocation bracket. Leave the track bar tied up and out of the way. Place Rusty's track bar bracket on top of the existing track bar mount on the axle. The Rusty's track bar mount flange will match with the factory's flange on the right side of the bracket. Secure the bracket to the original track bar mounting hole using the supplied 12mm x 2" long bolt, washer, and lock nut. Torque the 12mm x 2" bolt to 45 ft. lbs.
19. Attach the front track bar to the relocation bracket using the factory hardware and tighten it to factory specifications.
20. Note the second hole present in the Rusty's track bar mount. Using the hole in the bracket as a template, drill a hole in the factory axle mount using a 3/8" drill bit. Install the supplied 3/8" x 1 1/4" bolt, washer, and flange lock nut in the hole just drilled. Torque the 3/8" bolt to 35 ft. lbs.
21. Install the supplied 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 tightening properly.)
22. Attach the lower end of the shock to the axle mount using the factory hardware. Torque to 40 ft. lbs.
23. Install the supplied Rusty's Forged Adjustable Sway Bar Quick Disconnects with the supplied installation instructions.
24. Re-install the tires and wheels. The lug nuts will be fully torqued in a later step.
25. Raise the vehicle with a jack, remove the jack stands, and lower vehicle to the ground.



### Transfer Case Drop Installation Instructions

26. Place a floor jack in the center of the transmission mount skid plate and raise it so that it supports the weight of the skid plate.
27. Loosen, but do not remove, the bolts securing the transfer case skid plate. Allow for some movement, but make sure all of the bolts have some thread engagement and are not loosened completely.
28. **IMPORTANT:** Perform steps 29-31 one side at a time. Do not remove all of the skid plate bolts at one time! Remove the bolts on one side of the skid plate and then slowly lower the jack enough to insert the supplied transfer case drop pucks between the skid plate and the frame.
29. Insert the transfer case drop pucks and line them up with the skid plate bolt holes. In most cases, the transfer case skid will have to shift toward the rear of the vehicle slightly to properly align the holes.
30. Insert the supplied hardware through the skid plate holes and drop pucks, and start them into the threaded frame holes. Start all of the bolts, but do not tighten at this time. Note that the bolts will need to remain loose enough to perform the transfer case drop installation on the other side.
31. Perform steps 29-31 on the opposite side.
32. After installing both the driver and passenger side drop kit, tighten all of the bolts to 40 ft. lbs. It is important that you make sure all of the bolts are tight, but do not over tighten them.
33. On some Wrangler models it may be necessary to remove some of the floorboard material located under the shifter on models with a manual transmission. Trimming the floorboard will allow proper shifter function. If this statement applies to you, perform the following steps: First, remove the transmission shifter's rubber boot. After removing the boot, shift the transmission through all of the gears (including reverse) and note where the shifter makes contact with the floorboard. Using a small grinder, remove the floorboard material that is prohibiting the shifter from completely engaging all of the gears. Once the necessary clearance is obtained, reinstall the shifter boot.

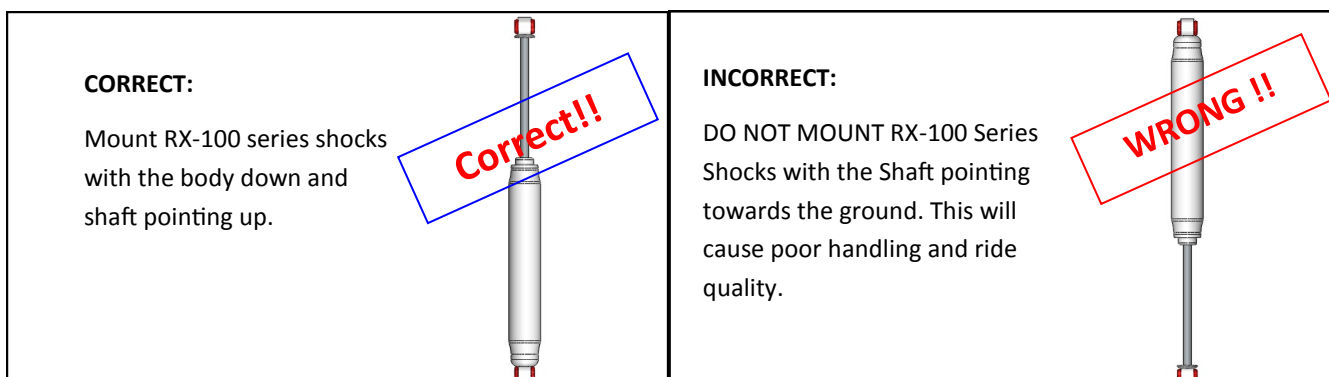
### Rear Installation Instructions

34. Raise vehicle and place jack stands under the vehicle's frame. Chock the front tires to prevent any accidental movement.
35. Remove the tires and wheels.
36. Remove the factory shocks. Discard the shocks but keep all hardware for re-use.
37. Remove the retainer clip that attaches the factory brake line to its upper mounting bracket and let hang.
38. Disconnect track bar from the axle. Save the hardware for re-use.
39. On each side, remove the four U-bolt nuts and remove the U-bolts and plates. If the U-bolt nuts are seized, the U-bolts will need to be cut using a cutoff wheel or similar tool. New U-bolts are supplied with the kit. Save the U-bolt plates for re-use.
40. Using a floor jack, raise the axle up to separate it from the springs.



### Rear Installation Instructions (Continued)

41. On each side, remove the shackle bolts and frame bolts from the leaf spring and remove the spring. Discard the leaf springs but save the hardware for re-use. (Note: Unless otherwise noted, do not torque any bolts to spec until the vehicle is lowered to the ground with the suspension supporting the vehicle's weight.)
42. Install the supplied Rusty's Z-shaped brake line relocation bracket in between the factory mounting point and the brake line end. Attach the end of the bracket without the slotted hole to the original frame mounting point using the supplied 5/16" x 1" bolt and flanged lock nut.
43. Carefully re-form the metal brake line so that it reaches the lower portion of the Rusty's relocation bracket. Position the line/hose through the slotted hole in the lower portion of the bracket and secure the line to the bracket using the original retaining clip. Once secure, torque the 5/16" bolt to 9 ft. lbs.
44. Using the supplied 7/16" x 1" and 7/16" x 2" bolts, flat-washers and lock nuts, attach the new Rusty's track bar mounting bracket to the existing axle bracket. Torque the 7/16" hardware to 37 ft. lbs.
45. Lubricate and install the bushings and sleeves in the rear leaf springs. Use a water-resistant grease.
46. Install the rear leaf-springs. Insert the spring into the frame mount and secure it using the factory hardware, followed by the shackle end. Note that it may be necessary to spread the frame mount slightly if the previous springs were improperly torqued. Only spread the mount enough to facilitate sliding the spring eye into place. Do not tighten the hardware at this time.
47. Verify that the thick end of the axle shims on the leaf springs are facing toward the front of the vehicle. Lower the axle and line up the spring centering pins with the holes in the leaf spring perches.
48. Install the supplied U-bolts and plates on then torque the nuts to 65 ft. lbs.
49. Snug the leaf spring bolts. Do not tighten the spring bolts to more than 35 ft. lbs. on both shackle and frame mounts at this time. The bolts will be fully torqued once the vehicle is on the ground.
50. Connect the track bar to the Rusty's drop bracket using the original factory 12mm bolt and flange nut. Torque to 45 ft. lbs.
51. Install the bushings and sleeves in the new Rusty's shocks. Install them on the vehicle with the factory hardware. (Torque upper bolts and lower bolts to 40 ft. lbs.) (Note: Please note the orientation of the rear shocks.)



### Rear Installation Instructions (Continued)

52. Reinstall the tires and wheels and lower vehicle.
53. Torque the front and rear wheel lug nuts to factory specifications.
54. Torque the spring shackle bolts to 95 ft. lbs. and the frame bolts to 105 ft. lbs.
55. Cycle the steering lock-to-lock and check for proper clearances on all components.
56. Double-check all fasteners for proper torque. Re-check all fasteners after 100 miles.

### Drop Pitman Arm Installation

57. Disconnect the draglink tie rod end from the factory pitman arm.
58. Remove the stock pitman arm from the steering gear box.
59. Install the new Rusty's drop pitman arm, use a drop of thread lock compound on the nut and torque to 120 ft. lbs.
60. Reattach the drag link to the new pitman arm, torque to 60 ft. lbs. and install cotter pin.
61. Adjust the draglink according to manufactures specifications to center the steering wheel.
62. 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:**

<u>Part #</u>	<u>DESCRIPTION:</u>	<u>Quantity</u>
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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