RUBICON MANUFACTURING INC. 3290 MONIER CIR., RANCHO CORDOVA, CA. 95742 916-473-4600

INSTALLATION INSTRUCTIONS FOR:
RE4410 LJ TRI-LINK REAR TRUSS ASSEMBLY

Application Notes:

1) This is not a standalone kit - it has been specifically designed for use in conjunction with Rubicon MFG's Extreme Duty Long Arm Kits. Modification of this kit or any of its components to adapt to a different manufacturer's system will void any warranty expressed or implied.
2) This kit requires modifications to the exhaust system. Generally, after the suspension is installed, plan on having a shop install a system starting at the rear of the catalytic converter and continuing on back, and also using a smaller muffler.

Safety Warning:
Suspension systems or components that enhance the off-road performance of your vehicle may cause it to handle differently, on and off-road, than it did from the factory. Care must be taken to prevent loss of control or vehicle rollover during sudden maneuvers. Failure to drive the vehicle safely may result in serious injury or death to driver and passengers. We recommend you always wear your seat belt, drive safely and avoid quick turns and other sudden maneuvers. Constant maintenance is required to keep your vehicle safe. Thoroughly inspect your vehicle before and after every off-road use.

Installation Warning:
We recommend that certified technicians perform the installations of our products. Attempts to install these products without knowledge or experience may jeopardize the safety of the vehicle. These instructions only cover the installation of our products and may not include factory procedures for disassembly and reassembly of factory components. Read instructions from start to finish and be sure all parts are present before disassembling the vehicle. Included instructions are guidelines only for recommended procedures and in no way are meant to be definitive. Installer is responsible to insure a safe and controllable vehicle after performing modifications. Do not perform test drives on public roads with partially completed installations. Always double and triple check your work before use.

KIT CONTENTS

RE4410 LJ Tri-Link Rear Truss Kit

Also required for retrofit use with existing Rubicon MFG Long arm:
RE4045 Tri-Link upper control arms

TYPICAL TOOLS REQUIRED

Drill motor, drill bits 7/16" & 17/32", angle grinder with sanding disks
Basic mechanical hand tools and T-55 Torx head bit
Floor jack, jackstands (2 pair)

INSTALLATION OVERVIEW

1. Rear truss installation
2. Upper control arm brackets and Rear link installation

Step 1 – Rear truss assembly

A. With the upper control arms removed and axle lowered, sand the top of the upper control arm brackets flat, removing the ears from the top front edge. Next, sand the tabs on the outer edges of the brackets to be smooth with the bracket. Then drill out the hole in the upper control arm mount to 7/16". **Refer to Images 1 and 2**.

Image 1

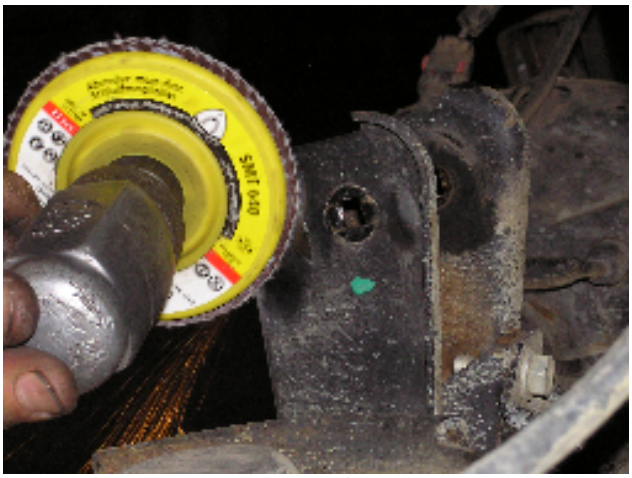

Image 2

B. Loosely pre-assemble the rear truss assembly. Attach the left and right control arm brackets, upper pivot support, and the differential cover bracket. **Refer to Image 3.**

Image 3

C. Remove the upper three differential cover bolts and lower the truss assembly over the upper control arm brackets. Insert two 7/16" x 3.5" bolts through the upper control arm brackets with the 2" spacers in the control arm pocket. Using the supplied 5/16"x1" bolts, align the rear cover bracket and lightly tighten the bolts. Tighten the two ½" bolts that go through the control arm brackets and main truss. Mark and drill the four additional holes on the control arm mounts. **Refer to Image 4.**

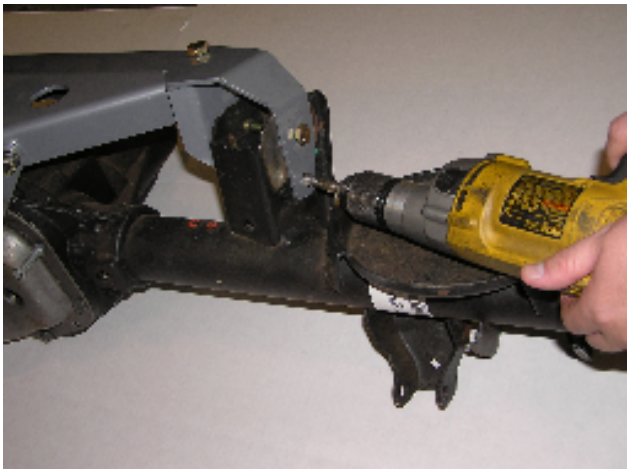

Image 4

D. Insert the two additional 7/16" x 3.5" long bolts through the newly drilled lower holes in the brackets using the supplied spacers to keep the factory axle brackets from collapsing. Once all hardware is installed, tighten all but the three of the upper pivot support brackets. **Refer to Image 5 & 7.**

Image 5

NOTE: Do not install all of the upper pivot support bolts at this time. Leaving two bolts out and swinging the bracket out of the way will assist in installing the upper link assembly. Once the assembly is in place and axle centered, install and fully tighten all hardware.

Step 1 – Rear upper control arm mounts

A. Locate the right and left upper control arm brackets onto each frame rail approximately 1.5" behind the cross member, temporarily clamp in place. The driver's side bracket will require that you re-route the brake line, fuel lines and electrical harness out of the way. In most cases the brake lines and fuel lines will be able to run in the pocket between the frame and new control arm bracket. **. Refer to Image 1&2.**

B. Proceed to the rear arm installation, Step 3

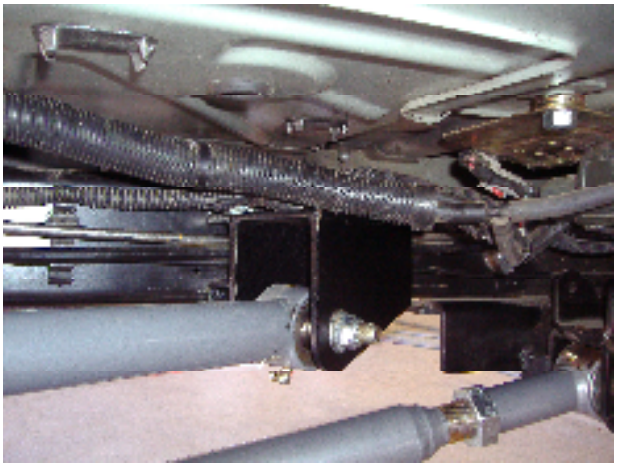

Image 1

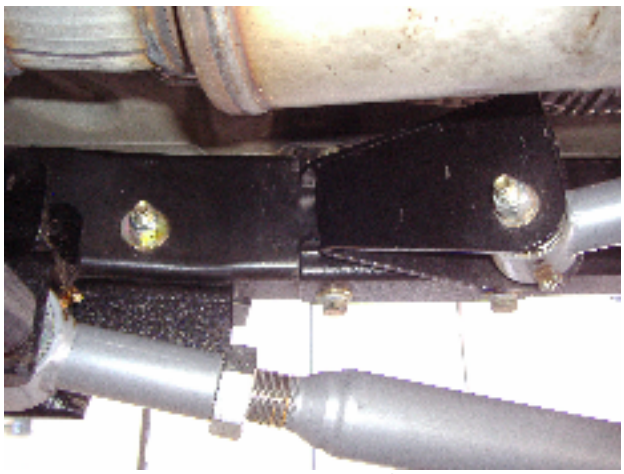

Image 2

Step 3 – Rear arm installation

NOTE: If using this kit as a retrofit to an existing Rubicon MFG Long Arm Kit, you will also need the RE4045 Tri-Link Upper control arms. The LJ long upper arms will not work for this application without modifications.

A. UPPER TRI-LINK - Pre-assemble the two upper arms to the HD S/F ball assembly. The main pivot assembly will connect to what will now be the right upper arm; the threaded coupler with the ½" sleeve welded to it will be the left upper arm. It is recommended that the ½" bolt be installed from the bottom up for maximum clearance. Set both arms at an equal distance from center of end to center of end, approximately 35 1/2" - do not tighten the jam nuts at this time. **Refer to Image 6.**

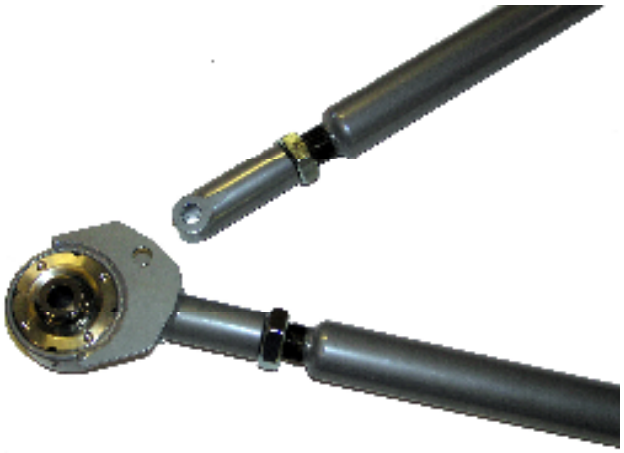

Image 6

NOTE: It is very important that 1" of thread contact be maintained between the upper arms and the pivot assembly.

B. Remove two of the bolts from the upper pivot support bracket and slide the upper arm link assembly into the upper control arm pockets. Install supplied ½" x 4" bolts through the upper arm mount and mount support bracket.

C. Install 5/8" bolt through upper pivot support bracket and main truss to fully secure upper assembly. **Refer to Image 7.**

D. Install the ½" bolt up from the bottom of the pivot ball through the control arm coupler for maximum clearance, use the supplied top lock nut on this bolt. **Refer to Image 8**.

Image 7

Image 8

NOTE: The ½" bolt on the end of left upper control arm coupler that connects to the pivot must be tightened after final adjustments are made. This attachment point is not designed to be left loose as a pivot itself.

E. With the lower arms attached to the cross member and axle housing, and the wheelbase set raise the axle into ride height position. Approximately 12-14" distance between upper and lower spring cups. With a string line or straight edge, measure axle center off the side of the frame down to the axle. Center the axle under the frame and set the relative pinion angle.

Raise the left and right upper arms into the control arm mounts previously clamped to the frame and insert ½" hardware. Check each side for equal distance back from the cross member assembly, adjust arms in or out as necessary to locate the upper control arm brackets in there permanent position. Double check axle center and pinion angle and make sure that enough adjustment is left available for fine tuning the pinion or axle center.

E. With all measurements confirmed, mark and drill the 4, **17/32"** mounting holes for each bracket into the frame. Insert the included fish wire thru the drilled hole towards the back of the frame to the access hole at the factory upper control arm mount. Thread the stud on the wire and carefully pull into place. Once the stud is thru the mounting hole and bracket carefully unthread the wire and install a flat washer, lock washer and nut onto the stud. Repeat for all eight studs. Stud all four holes before tightening any hardware. Once installed torque all bracket mounting hardware to 75 ft/lb**. See Image 9**

Note: It is important that the stud holes are drilled to 17/32" . If the hole is too small the stud will not properly tighten and if too large the stud will spin in the hole not allowing proper tightening of the hardware.

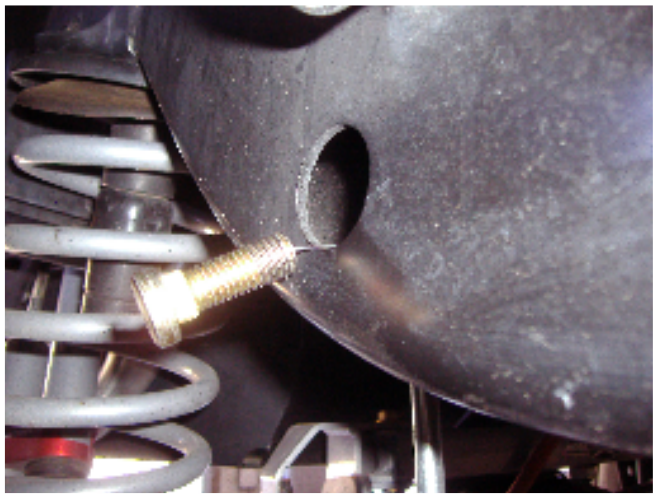

Image 9

Note: We recommend that the upper control arm brackets be bolted in place as described above. However it is possible to weld the brackets into place for a more permanent installation. If it is decided to weld the brackets into place, use extreme caution on the driver's side frame rail. The fuel lines, brake line, and electrical harness are within inches of the necessary weld area.

Rear suspension tuning

The Rubicon Express Tri-Link offers a multitude of adjustment to the rear axle. For centering the axle left to right under the chassis you will need to adjust the upper control arms in and/or out. You should always try to turn each side equal in or out to maintain pinion angle.

Example:

If the axle needs to be moved to the passengers side (too much tire sticking out of the fender on the drivers side) you would want to lengthen the drivers side arm and shorten the passengers side arm equally. If unequal adjustments are made, the pinion angle will change. In some instances, you may not be able to equally adjust the upper arms, if this is true then you will need to fine tune the pinion angle with small adjustments to the lower control arms.

Once all adjustments are made, verify that all brackets are installed properly, fuel lines, brake lines and electrical harness are unobstructed and hardware is tight, including the jam nuts on the control arms and the arm attaching bolt on the pivot assembly.