

# MOUNTAIN OFF ROAD ENTERPRISES LLC. P O BOX 690, DELTA, COLORADO 81416

Phone 877-533-7229 888-698-5337 Fax E-mail: info@mountainoffroad.com www.mountainoffroad.com

# INSTALLATION INSTRUCTIONS FOR M.O.R.E.™ FULL WIDTH AXLE SHACKLE REVERSAL SYSTEM (S.R.S.™) WITH 2.5" YJ SPRINGS.

### PART # 7686-FWK2.5

THIS SYSTEM FITS 1976-1986 Jeep® CJ-5, CJ-7, CJ-8 VEHICLES.

Please read all instructions carefully (including terms-policies) before work is started on your vehicle. Familiarize your self with all components in this system. These instructions will refer to all items by letter not description. In addition to basic hand tools, the following specialty tools are needed to perform this installation: Welder (220Volt Recommended), Oxy/Acetylene cutting torch, grinder, floor jack, jack stands (4), torque wrench, 15/16" wrench & socket.

NOTES: SRS may not be compatible on Jeeps with Nerf Bars or any type of side bars that attach to the frame at the point in which the shackles will be hung from.

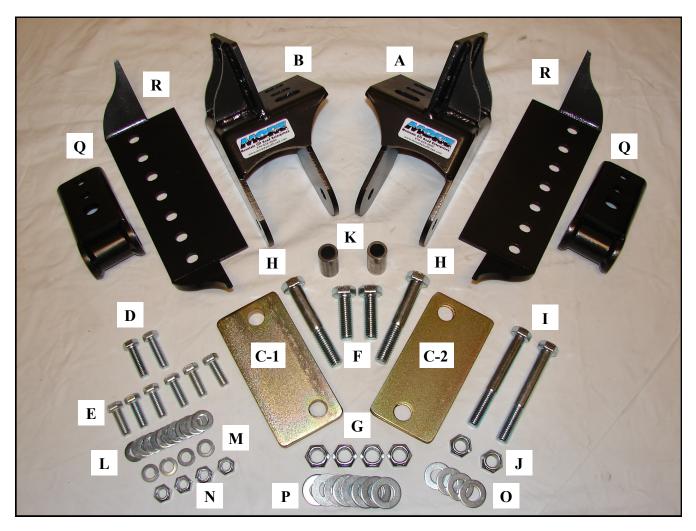
Some aftermarket headers may cause interference with the SRS.

## S.R.S.<sup>TM</sup> # 7686-FWK2.5 contains the following items:

| ITEM:        | DESCRIPTION:           | SIZE:             | QTY: | PART #            |
|--------------|------------------------|-------------------|------|-------------------|
| A            | BRACKET-PIVOT DS       |                   | 1    | 7686-FWBDS        |
| В            | BRACKET-PIVOT PS       |                   | 1    | <b>7686-FWBPS</b> |
| C-1          | FRAME SPACER PLATE     | 3"X6"-1/4"2 HOLES | 4    | 7686-FS           |
| C-2          | FRAME SPACER PLATE     | 3"X6"-1/8"2 HOLES | 2    | 7686-TFS          |
| D            | BOLT-BRACKET DS        | 7/16-14X1-1/2     | 2    | 15159             |
| $\mathbf{E}$ | <b>BOLT-BRACKET PS</b> | 7/16-14X1-1/4     | 6    | 15157             |
| $\mathbf{F}$ | <b>BOLT-BRACKET</b>    | 5/8-11X2          | 2    | 15311             |
| G            | NUT-BRACKET BOLT       | 5/8-11            | 4    | 37036             |
| Н            | <b>BOLT-BRACKET</b>    | 5/8-11X4          | 2    | 13319             |
| I            | <b>BOLT-SPRING</b>     | 9/16-12X4-1/2     | 2    | 13271             |
| J            | NUT-SPRING BOLT        | 9/16-12           | 2    | 37270             |
| K            | TUBE-SPACER FRAME      | 7/8X1-7/8X.120    | 2    | S107686           |
| L            | WASHER-FLAT            | 7/16 SAE          | 12   | 33084             |
| M            | WASHER-LOCK            | 7/16 SPLIT        | 4    | 33624             |
| N            | NUT-SHACKLE HANGER     | 7/16-14Crimp Nut  | 4    | 37266             |
| O            | WASHER-FLAT            | 9/16 SAE          | 4    | 33088             |
| P            | WASHER-FLAT            | 5/8 SAE           | 8    | 33090             |
| Q            | SHACKLE HANGER         |                   | 2    | FSH25             |
| R            | SHACKLE HANGER BRACKET |                   | 2    | 7686-SHB          |
| -            | INSTRUCTION SHEET      |                   | 1    | 7686-FWK2.5       |



# 7686- FWK2.5 S.R.S.™ Contents



| Notes: |  |  |  |
|--------|--|--|--|
|        |  |  |  |
|        |  |  |  |
|        |  |  |  |
|        |  |  |  |
|        |  |  |  |
|        |  |  |  |

### 7686-FWK2.5 S.R.S.™ - GENERAL INFORMATION:

This system will fit Jeep® CJ vehicles with any engine. This system will lift the front of the Jeep® (1"-1.5") over where it sits now. Before starting this installation, check the frame to make sure it is in good condition, is straight and has no excessive rust. Only install it on vehicles in good sound condition. This system will work with stock and most aftermarket bumpers, with or without a winch. Welding, cutting and grinding is required for installation.

<u>AXLES:</u> This kit is designed to work with Full Width Axles that have spring perches that measure 31-1/4" to 31-1/2" Center to Center.

<u>FITTING CONCERNS</u>: Interference with nerf bars & headers may become an issue. Please check on these issues before continuing.

<u>LEAF SPRINGS</u>: This system has been designed to work with 2.5" YJ stock and aftermarket leaf springs. It has been tested with several different manufactures springs up to 4.5" lift and works fine. It will work with springs that have been placed on top of the axle housing (spring over axle).

<u>PITMAN ARM:</u> You may need to use a stock pitman arm. If a "dropped" arm is used there is a possibility that the tie rod could contact the drag link upon suspension compression. This will depend on the amount of lift, be sure and check for any interference! M.O.R.E.™ offers a Heavy Duty steering gear bracket that will move the steering box forward 1-1/4", PN# SB7686-1.

<u>DRIVE SHAFT:</u> The front drive shaft <u>will need</u> to be modified. A longer travel slip-yoke needs to be installed. Due to the suspension movement the stock slip-yoke will not have enough travel and the fact that this system will push the axle forward approx. one inch, the stock shaft length will not be enough. M.O.R.E.™ recommends calling Tom Wood's Custom Drive Shafts at: 877-497-4238.

BRAKE HOSES: The stock brake hoses will work if you are using stock leaf springs mounted under the axle. If you have any lift in your springs, or a spring over axle conversion, the stock hoses will have to be replaced with longer ones. M.O.R.E.™ has Extended Stainless Braided Brake Lines available if needed.

### TERMS-POLICIES:

DAMAGE CLAIMS: All orders are carefully packed, however, mishandling by the carrier can result in damage. The carrier has the responsibility for the shipment from the time it leaves our warehouse until it is delivered to you. All claims for lost or damaged goods should be reported to the carrier, not to M.O.R.E.<sup>TM</sup> LLC. RETURNS: No returns will be accepted without prior permission from M.O.R.E.<sup>TM</sup> LLC. After you receive a Return Goods Authorization (RGA) number, merchandise must be returned prepaid and insured. A claim must be made with in 30 days from receipt of merchandise. The original invoice or a copy with the RGA number written on must accompany all returns. A 20% restocking fee will be charged on all parts returned for credit or refund unless merchandise is proven to be defective or was shipped wrong by M.O.R.E.<sup>TM</sup> LLC. No merchandise will be issued credit or refund if it has been installed, modified, used in any way or is in unsalable condition.

WARRANTY: All merchandise is warranted to be free from defects in materials and workmanship prior to installation. Any alteration or improper use will void this warranty. Because all parts we sell are intended for use in heavy-duty applications it is not possible to warrantee or guarantee the performance of any items.

M.O.R.E.™ LLC. products and the products manufactured by others, which we sell may be subject to an infinite variety of conditions due to the manner in which they are used, serviced and/or installed. Purchasers and users of such products rely upon their own judgment as to the suitable use selection, service and installation of such products.

PRODUCT DISCLAIMER: Modification of your vehicle to enhance performance with parts sold by M.O.R.E.™ LLC. may create a dangerous condition which could cause serious bodily injury, and the buyer hereby expressly assumes all risks associated with any such modifications. All parts sold by M.O.R.E.™ LLC. and for racing or off road use only. Mountain Off Road Enterprises LLC. will not accept responsibility for personal injury or property damage arising from the failure of any parts manufactured or sold by M.O.R.E.™ LLC.

Specifications are subject to change without notice.

Jeep®, AMC®, CJ®,YJ®, Wrangler®, are registered trademarks of the Chrysler Corporation.

M.0.R.E™, BombProof™, S.R.S.™, SlipLoc™, DoubleJointed™, RockProof™, are trademarks used by Mountain Off Road Enterprises, LLC. The M.O.R.E.™ logo is copyright©, 1999-2008.

- **STEP 1**: If your Jeep® is equipped with a winch, remove it's mounting plate from the side plates. Remove the side plates from the frame. Remove the front bumper. Loosen but do not remove the two top bolts in the front frame crossmember that attach the steering box mounts to the crossmember. <u>See</u> figure 1.
- **STEP 2**: Raise and support the Jeep® with jack stands under each side of the frame behind the front springs. With the front suspension un-loaded (wheels off the ground about 3") remove the tires/ wheels. Remove the front shocks. Remove the front drive shaft. Place two more jack stands under the axle housing outside the springs. Remove the front leaf springs. Remove the stock front shackle brackets from under the frame just behind the front bumper. See figure 2.
- **STEP 3**: Remove the rear spring brackets from the frame. The best way is to heat the rivet head with a torch and use a air hammer and chisel bit to knock the head off. If a torch is not available, a grinder can be used. Grind the one weld on the outside of the frame and use a hammer to knock the bracket off the frame. It may be necessary to heat the remaining rivets in the brackets to red hot in order to get the bracket to break loose. Clean-up the excess slag with a grinder (Underneath and on the side of the frame). Be careful, do not scar the frame rail. See figures 3a,b & c.
- **STEP 4**: At the front of the frame, insert item "K" into the hole In the boxed frame. See figure 4. This keeps the frame rails from collapsing when tightening the bolts. Bolt item "A" on the drivers side frame using items "D", "L" & "M". Thread the bolts into the same holes that the stock shackle bracket was removed from. Do not tighten at this time. Bolt item "B" to the passenger side frame rail using items "E", "L" & "M". Do not tighten at this time. See figure 5.
- <u>STEP 5</u>: You will need to determine the center to center spring perch measurement of the axle you are planning to use, either 31-1/4" or 31-1/2". If your Jeep® is equipped with a winch plate that attaches to the side of the frames, take it's side mount plates and insert them between the frame and the new spring brackets (items A&B). Insert one of items "C-1" on each side between the winch side plate and brackets A&B for 31-1/2" axle. Or one of items "C-2" on each side between the winch side plate and brackets A&B for 31-1/4" axle. If a winch is not being installed, use two of item "C-1" for 31-1/2" axles. Or one of item "C-1" and one "C-2" on each side between the brackets and frame for 31-1/4", See figure 6. Install item "P" onto "H" and install through the rear holes. Install item "P" onto "F" and install in the front holes. Install items "P" & "G" on items "H" & "F". Do not tighten at this time. Tighten Items "D" & "E" installed in step 4 to 50 lb. Ft. torque. Tighten the two top bolts (steering box mounts) you loosened in step 1 to 50 lb. Ft. torque. Install the front bumper and tighten its hardware using hand wrenches. Install the winch mount plate if using to the side plates and torque the nuts to 50 lb. Ft. torque. Now, torque items "H" & "F" to 110 lb. Ft. torque. See figure 7.
- <u>STEP 6</u>: Install both leaf springs (large eye) end into the **M.O.R.E.™** items "A" & "B" brackets (you must turn the leaf springs around). Use items "I", "J" & "O" provided. Do not tighten at this time. <u>See figure 8</u>.
- <u>STEP 7:</u> Pivot the leaf spring by hand up to the frame, use a jack stand to hold the spring up. Attach Your shackle plates to the leaf springs and shackle hangers <u>See figure 9</u>. "NOTE" The shackle hanger can be positioned either direction to allow ideal shackle angle <u>See figure 10a &10b</u>. Attach shackle hanger item "Q" to the shackle hanger bracket item "R" using items "E", "L" & "N" <u>See figures 10a &10b</u>, If you are using a 31-1/2" axle then the shackle hanger will need to be slid to the outer most position in the shackle hanger bracket <u>See figure 11.</u> If you are using a 31-1/4" axle then the hanger will be slid to the inner most position in the shackle hanger brackets.

**STEP 8:** Depending on your springs you may be able to now set the shackle angle at 60 degrees with the springs hanging ( No Weight ) and everything will be fine, See Figure 12. We suggest that you do this as a starting point but once the hanger bracket has been clamped to the frame at the 60 degree angle you then apply weight to the springs. The shackle angle should be straight up and down 90 degrees with the weight on the springs, see figure 13, If it is not 90 degrees than move the shackle hanger brackets item "R" forward or back until the correct angle is achieved. The back of the bracket will be between the forward body tub outrigger but may be positioned one way or the other to allow for the correct shackle angle see figure 14.

**STEP 9:** Once you have the bracket set in position tack the bracket in a few areas and then remove the shackle hanger so you can fully weld the bracket to the frame. Weld the bracket fully front and back, top and bottom. Be sure to weld across inside of frame, See figure 15.

<u>STEP 10:</u> Test drive the Jeep® . Chances are the steering wheel may not be centered. You can adjust the drag link to center it. Installing this shackle reversal system will not affect the alignment (camber or toe-in), so having the Jeep® aligned is not necessary. The caster will increase slightly, however it is a non-tire wearing angle. Go back and check all of your work and make sure everything is done properly. Check the brake lines and make sure that they are not being stretched to far.

<u>STEP 15:</u> Your drive shaft will need to have a long travel slip yoke installed to work properly with this system. Call Tom Wood's Custom Drive Shafts at: 877-497-4238. DO NOT TRY TO SHORT CUT THIS STEP OR DAMAGE COULD OCCUR TO YOUR DRIVE TRAIN!!!

You are finished! Be sure to re-check all hardware for tightness after 100 miles. If you have any questions, please call. Thank you for purchasing this product from M.O.R.E.™ Keep on Jeepin'.





FIGURE 1



FIGURE 2

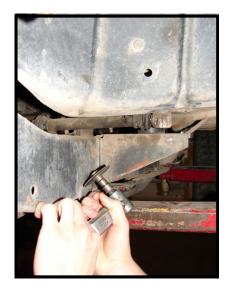


FIGURE 3a



FIGURE 3b



FIGURE 3c



FIGURE 4



FIGURE 5



FIGURE 6 FIGURE 7



FIGURE 8

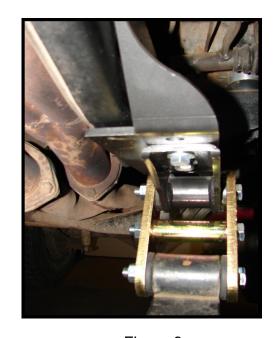


Figure 9



Figure 10a



Figure 10b



Figure 11



Figure 13



Figure 12



Figure 14



Figure 15