

LONGLEAF SPRING KITS

available from

HOLBROOK SPECIALTIES

115 E. ARLINGTON ST., GLADSTONE, OREGON 97027

503-655-4747

www.holbrookspecialties.com

Thank you for your interest and or purchase of the “Long Leaf Spring Kit” The springs should give you a moderate 3” lift, a softer more for-giving ride and at the same time add to the overall travel capabilities and articulation of the suspension. We think you will be more than pleased as we were after the installation onto our own personal CJs. However, as any “Real Jeoper” knows, **NO TWO JEEPS ARE ALIKE!** With this in mind, please read the following carefully before beginning the installation, paying close attention to the **cautions** listed on the last page!

The measurements given for the relocation of the solid mount spring hangers, toward the center of the vehicles frame, is a close approximation! The body of your Jeep may be mounted forward or rearward on the frame and the factory spring hangers might be located in slightly different positions also. The clutch and brake peddle pivot bracket that was located below the frame and riveted in place from the factory on '71 and earlier Jeeps has been found to be as much as ½ inch off in its position on otherwise identical rigs. It seems that the factory's Jeep assembly was far from “Rocket Science”! During these initial steps we suggest that you do not torque down any bolts – just make them snug – as repositioning might be required. If your Jeep has the old original “C” type shackles they will need to be replaced before continuing with the installation. New shackle kits, with a plate for each side of the spring, are available for a nominal cost. If your Jeep is still using the original “thru the floor” clutch and brake peddle system, (stock on '71 and earlier Jeeps) the pivot bracket that is riveted to the bottom of the frame might interfere with the positioning of the new solid mount hanger for the left front spring. Cutting or grinding to remove some of the material from the hanger might be necessary.

Do **ONE** end at a time and **ONE** spring at a time.

Install the **front** springs first

Welding is required to properly install this kit. After you are satisfied with the position of the new solid mount frame hangers and have bolted them to the frame, we recommend that you have a **certified welder**, weld them to the frame.

STEP 1 Disconnect the shocks and raise the Jeep high enough so that when the suspension hangs, the tires will clear the ground, then place stands under the bumpers and lower the Jeep onto the stands. Leave your floor jack under the axle at this time.

STEP 2 Remove tires, u-bolts and u-bolt plates and jack up the axle housing away from the old spring and remove one spring from the vehicle.

STEP 3 Measure from the center of the shackle hanger bolt the distance indicated for your Jeep, and mark the frame as shown in the drawing. This is only a close approximation. The final position must be determined by **you** the installer! Bolt the spring to the shackle & the new hanger to the other end of the spring. Swing the spring hanger up into contact with the frame. Slide the hanger rearward until it lines up with your mark on the frame. The shackle should have an angle like the white one in the drawing. If not, slide the hanger forward or rearward until it does! Mark the position of the hanger on the frame.

STEP 4 Drill one hole, the one closest to the axle, and bolt the hanger in place. If you are satisfied with the shackle position after the FULL WEIGHT TEST, the second hole can be drilled without removing the spring.

STEP 5 Bolt the axle assembly to the leaf springs using your u-bolt plates and new u-bolts. Do not hook up the shocks at this time. (U-bolts are **not** supplied with the kit due to the vast number of transplanted axle assemblies and the different tube diameters of those assemblies.) Two steel tapered wedges are supplied for the **rear only** and should be placed between the spring and axle perches with the **thick** end forward. These wedges bring the rear driveline into a close proximity of parallel u-joint angle. This angle may need to be adjusted by lowering the crossmember away from the frame or increasing the degree of wedge. Only “ballpark” adjustments should be made. The final settings should only be done after the springs have “taken a set” following your first off road excursion. Due to the vast number of combinations of engine, transmission, transfercase and axles used in Jeeps the driveshaft lengths and angle of slope will vary from rig to rig and therefore will require some **thought of your own** as to how best to align the rear drive-shaft. Remember that u-joints should run parallel with each other for maximum strength and longevity as well as minimizing vibrations! Rotate the rear drive shaft and check to see that the yokes do not come into contact with the driveshaft.

STEP 6 Install the tires and carefully lower the entire weight of the vehicle onto the springs. Bounce on the front and rear bumpers. Now take a look at the shackles. They should be vertical or leaning toward the springs slightly. Front tire clearance is usually not a problem due to the rather large fender opening, but due to the small stock rear fender opening, it is critical that the rear solid mount hanger be positioned properly!
The rear tire should be well forward in the fender opening **not** centered. The reason for this is that as the rear leaf spring collapses, the axle and tire will move up and rearward. Narrow tires that move inside the fender well will have no problem but wide tires that protrude through the fender opening can easily come in contact with the body due to the extreme flexibility of these springs.

In some cases it might be necessary to install an extended jounce bumper or bump stop, to limit the travel to minimize tire rubbing. If you are satisfied with the position of the tire and the shackle you can do the final bolting of the solid mounts to the frame, if not, then you might want to reposition the mounts slightly. Remember what we said... **NO TWO JEEPS ARE ALIKE!**

STEP 7 With the weight of the rig on the springs, measure the distance between the upper and lower shock studs front and rear. Keep in mind that the springs will settle a bit after their first use. The shock that you use should have an equal amount of travel to collapse and expand from this measurement. A shock that has too short of an extended length will limit the downward movement of the springs, however this condition is far more desirable than having the shocks too long so that they bottom out! That is the job of the jounce bumper. Don't over-shock your Jeep! It will kill the ride and usually isn't necessary anyway.

STEP 8 With the proper length shocks installed, tighten **all** the suspension bolts and nuts. Be sure to **tighten the u-bolts** to the **proper torque!** See torque settings on last page. A common mistake is to over tighten the shackle bolts which forces the plates to rub on the frame and springs. This will inhibit the shackles ability to move freely as the springs flex. Self-locking nuts should be used on the shackle bolts to cure this problem.

STEP 9 Have someone turn the steering all the way to the right and then to the left while you watch for tie rod clearance. Be sure to re-set the toe-in for 1 to 2 degrees of toe-in.

STEP 10 Have a **certified welder** weld the solid mount hangers to the frame **immediately** following the installation! Re-check all the bolts and nuts, **especially** the u-bolts after your first few miles of use, and **periodically** to be sure that **nothing** is coming loose.

ENJOY THE RIDE!!

SEE CAUTIONS LISTED ON NEXT PAGE!!

CAUTION!! These springs are not designed for use with a front shackle reversal system (solid spring mount at the front bumper) as used on all M38-A1 Jeeps and they are not designed for a "spring over" system.

CAUTION!! The installation of **any lift kit** will raise the center of gravity of the vehicle it is installed upon. This fact, coupled with the short wheelbase and narrow track of most CJs **might increase** the possibility of a rollover under certain circumstances. The softer springs allow for a very forgiving ride and can allow you to drive at an increased speed over rough terrain, **increasing your risk** of accident. **DRIVE RESPONSIBLY!**

CAUTION!! Do **not** attempt to do this installation on any sloping or uneven surface! Failure to heed this warning can result in an unsatisfactory installation, **injury or death!**

CAUTION!! Use **extreme** care when jacking up your vehicle and always use approved axle stands positioned properly to support the weight of your Jeep. Failure to heed this warning can result in **injury or death!**

CAUTION!! Make sure there are **no** fuel leaks, fuel lines, brake lines or electrical wires in the vicinity of the frame **before** drilling or welding! Failure to heed this warning can result in **injury or death!**

CAUTION!! Make sure your brake hoses will allow for the full travel of the new suspension. Repositioning of the frame end of the hoses **may** provide adequate travel otherwise new, longer hoses **will** be required!

CAUTION!! New u-bolts **will** stretch after their first use. Be sure to re-torque them to proper specifications for the diameter of the bolt stock being used.

7/16" x 20 grade 5 u-bolt stock torque = 44 - 58 ft. lbs

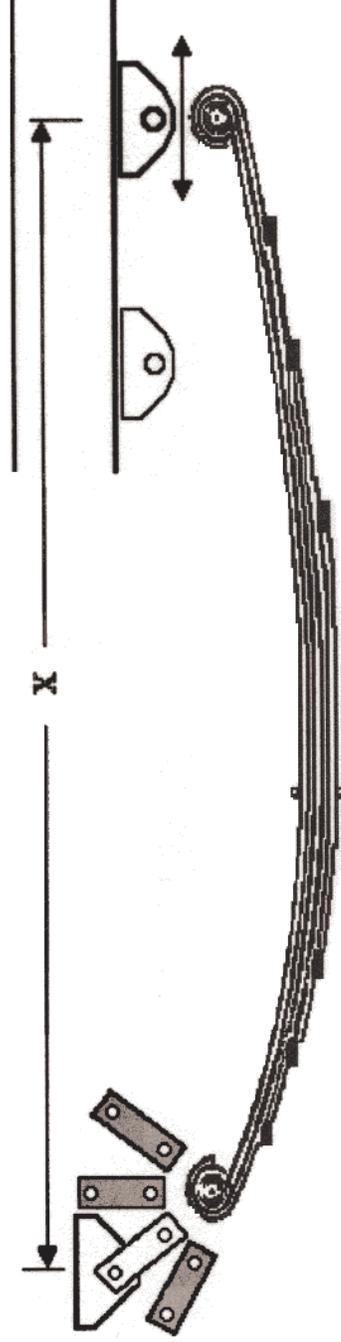
1/2" x 20 grade 5 u-bolt stock torque = 66 - 84 ft. lbs

CAUTION!! Leaf spring assemblies are designed to work as a unit. Failure to keep the u-bolts **tight at all times** will result in spring center bolt distortion and/or failure which will stress each leaf individually! This will destroy the spring and also its ability to maintain its arch!

No components of this kit are manufactured by Holbrook Specialties and the packaging of these components into a kit is not intended, in any way, to infringe upon the patents and/or rights of the manufacturers of those individual components.

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- X = 45 ³/₄" on front springs for MB, M38, CJ2A, CJ3A & CJ3B
- X = 49" on rear springs for MB, M38, CJ2A, CJ3A & CJ3B
- X = 46 ¹/₂" on front springs for '71 and earlier CJ5 & CJ6
- X = 49" on front springs for '72 thru '75 CJ5 & CJ6
- X = 52 ¹/₄" on rear springs for '75 and earlier CJ5 & CJ6

Measure from the center of the shackle hanger bolt the distance indicated for your Jeep, and mark the frame. This is only a close approximation. The final position must be determined by you, the installer. Bolt the spring to the shackle and the new hanger to the other end of the spring. Swing the spring hanger up into contact with the frame. Slide the hanger rearward until it lines up with your mark on the frame. The shackle should have an angle like the white one in the drawing. If not, slide the hanger forward or rearward until it does!

NOTE: Measurements are close approximations as NO TWO JEEPS ARE ALIKE!