

## 2007 – 2017 Jeep Wrangler JK two and four door model, transfer case support assembly and motor mount bump stop kit installation guide.

### Step 1 – Unpack kit and verify contents.

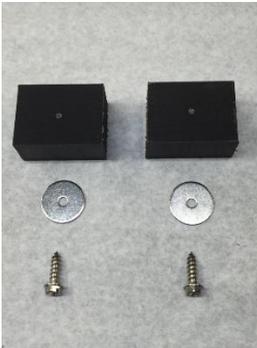
Remove all items from the box. Box should contain the items below.

- (1) Transfer case support assembly with frame bracket and hardware installed.



Parts bag labeled 1.

- (2) polyurethane bump stops
- (2) stainless flat washers
- (2) #12x3/4 slot head hex washered screws



Parts bag labeled 2.

- (3) M10-1.5x25 bolts
- (2) M10-1.5x35 bolts
- (5) M10 lock washers
- (20) M10 flat washers



Parts bag labeled 3.

- (1) two door model shim with two corners removed
- (2) 1/8" thick shims
- (2) 3/16" thick shims
- (2) M10-1.5x45 bolts (two door model)
- (2) M10-1.5x65 bolts (four door model)
- (4) M10 flat washers
- (2) M10 lock washers
- (2) M10 nylon lock nuts (four door model)



### **Step – 2 Gathering the required tools.**

Please note the tools required for two door model and four door model installation are different. For two door models follow 2a and for four door models follow 2b.

2a – Please gather the following tools for two door models.

- Safety glasses
- WD40 or equivalent lubricant
- 16mm, 17mm, 18mm, 5/16" and 15/16" sockets and socket wrench
- 17mm stubby combination wrench and 15/16" combination wrench
- Medium sized ballpeen hammer

2b – Please gather the following tools for four door models.

- Safety glasses
- Power drill
- 3/16" and 7/16" drill bits
- Masking tape and tape measure
- Fine permanent marker or felt tip pen
- Center punch
- WD40 or equivalent lubricant
- 16mm, 17mm, 18mm, 5/16" and 15/16" sockets and socket wrench
- 17mm and 15/16" combination wrench
- Medium sized ballpeen hammer

### **Step 3 – Preparation.**

Lift the vehicle using an appropriate lift or jack and safe jack stands. Always make certain that the vehicle is safely supported before working underneath.

**Step 4 – Installing the motor mount bump stops.**

- A. Locate and inspect the left and right side motor mounts and motor mount frame brackets making sure they are in good working condition.
- B. Locate the space between the bottom of the motor mount and motor mount frame bracket left and right side and remove any dirt, oil and other debris.



- C. Locate parts bag 1, remove the contents. Note that the polyurethane bump stop has a pre-drilled 1/8" hole on one side, this hole is there to accept the #12x3/4 stainless steel screw that holds the bump stop in position. Make sure that the hole faces down when installed.



- D. Start on the left side motor mount and position the polyurethane bump stop in the space between the bottom of the motor mount and the motor mount frame bracket. If the space between the bottom of the motor mount and the motor mount frame bracket is smaller than the bump stop, then try one of the two options. Note the bump stop must fit tightly between the bottom of the motor mount and the motor mount frame bracket.  
Option one is to raise the engine on one side to open up the space enough to tap the bump stop into position then proceed to the other side and do the same.  
Option two is to shave some material off the bump stop not more than 1/8". This can be achieved by using a bench grinder or hand grinder. Note only remove material from the bump stop on the side opposite of the side with the pre-drilled hole.



Once the space between the bottom of the motor mount and the motor mount frame bracket is sufficient to accommodate the bump stop, the bump stops can be positioned and installed,

position the bump stop with the pre-drilled hole facing down and in line with the factory located hole in the motor mount frame bracket, this hole is to the rear of the motor mount frame bracket and directly underneath the motor mount on both left and right sides. Then tap the bump stop into position with a hammer until the pre-drilled hole is visible through the factory located hole in the motor mount frame bracket. Then install the stainless steel flat washer onto the #12x3/4 stainless steel screw and install the screw into the pre-drilled hole. Tighten until snug and the washer is not loose, do not over tighten.



### Step 5 – Removal of transfer case skid plate.

- A. Loosen the four 18mm bolts that hold the transfer case skid plate in position using an 18mm socket and socket wrench. Then leave the bolt that is located to the left rear and remove the three remaining bolts, then pivot the skid plate to the side to gain access to the back of the transfer case.



### Step 6 – Preparation of the transfer case.

- A. Inspect the transfer case back side, in the case where the vehicle has a metal dampener installed on the back side, remove dampener and disregard. Then inspect the threaded stand offs on the back side of the transfer case making sure they are free of debris and corrosion. In some cases it is necessary to use one of the bolts in bag 2 M10-1.5x35 Use WD40 or equivalent lubricant to lubricate the hole then run the bolt in and out of the five factory threaded stand offs on the back side of the transfer case making sure each hole pictured is free of debris and corrosion and the bolt has no problem threading in all the way in and out.



### Step 7 – Preparation of the upper frame cross member.

Located behind and above the vehicle's transfer case is the vehicle's upper frame cross member. Follow 7a. For two door models and 7b. For four door models.

7a. Remove the two factory bolts in the upper frame cross member that hold the emission canister bracket to the upper frame cross member using a 16mm socket and socket wrench, then proceed to step 8.



7b. On four door models the upper frame cross member located behind and above the transfer case does not have the two factory bolts like the two door models do, therefore two holes must be marked out and drilled by using the factory located hole in the upper frame cross member as a starting point for measurements.



- A. Start by placing a strip of masking tape about 8" long to the right of this hole along the center of the upper frame cross member. Then using a tape measure pull a measurement from the right side edge of this hole, then make a mark using a fine permanent marker or felt tip pen at 3 ¼" and mark at 5 ¼". These marks should be close to the center of the strip of masking tape.



- B. Now measure and mark the center of the width of the upper frame cross member at the two marks already made, therefore making two points of location on the upper frame cross member. Please measure twice if needed, the location of these points has to be correct for the kit to function correctly. These two points must be exactly 2" on center apart from each other. This can be checked by using one of the shims supplied in bag 3 by placing the shim over the two points of location. These marks should be exactly in the middle of the two holes in the shim. If

after measuring twice and checking the marks with a shim and the marks look satisfactory, take the center punch and hammer and make two center punch marks at the two locations.



- C. Now using the power drill with the 3/16" bit installed drill through the upper frame cross member at the two center punched locations. "Caution" there is a factory located hole on the upper side of the upper frame cross member that is not visible. This hole is in close proximity above the hole that will be drilled at the 5 1/4" punch mark, be careful not to run into this hole. If you reach up and feel above your marks before drilling you can feel this hole. Pay close attention to the angle of the drill, it must be on a slight angle when drilling the hole that is marked at 5 1/4" location, so that not to run into the factory located hole mentioned on the top side of the upper frame cross member. Once these two holes are drilled through the upper frame cross member successfully remove the 3/16" bit and replace with 7/16". Now enlarge both holes with this bit again, pay close attention to the angle of the drill when going through the upper section of the upper frame cross member.



### Step 8 – Mounting of the frame bracket.

Start by removing the 15/16" nut washer and bolt from the transfer case support assembly and frame bracket. Then remove the frame bracket from the transfer case support assembly.



Follow 8a. For two door models and 8b. For four door models.

8a. Locate parts bag 3 and remove the contents. Find the two bolts that are the shorter of the four bolts supplied M10-1.5x45 and install a lock washer and a flat washer on each bolt. Then find the shim with the corners removed, that shim goes up against the emission canister bracket first, then use one 3/16" shim and one 1/8" shim to start. Position these shims between the frame bracket and the upper frame cross member, then use the two bolts already prepped to fasten the frame bracket through it's oblong holes, then through the shim stack and through the emission canister bracket and into the upper frame cross members two threaded holes. Then tighten the bolts using the 17mm socket and socket wrench,

do not tighten all the way, leave them loose enough to still be able to move the frame bracket from left to right.



8b. Locate parts bag 3 and remove the contents. Find the two bolts that are the longer of the four bolts supplied M10-1.5x65 and install a flat washer on each bolt. Then use two 1/8" shims and one 3/16" shim to start. Then position these shims between the frame bracket and the upper frame cross member. Then using the two bolts already prepped to fasten the frame bracket through its oblong holes, then through the shim stack and into and through the two holes previously drilled in the upper frame cross member. Then fasten those two bolts at the top side of the upper frame cross member by using two flat washers and two nylon M10 lock nuts. Then tighten the bolts and lock nuts by using 17mm wrench on the bolt and the 17mm socket and socket wrench on the nut, do not tighten all the way, leave them loose enough to still be able to move the frame bracket from left to right.



### Step 9 – Mounting of the transfer case support assembly.

- A. Start by positioning the transfer case support assembly's polyurethane bushing into the frame bracket, but do not install the 5/8" through bolts yet.



- B. Locate parts bag 2 and remove contents. Start by installing a lock washer first and then a flat washer on each of the bolts supplied five in total. Two of the bolts are longer than the others, these are to be used on the two factory stand offs on the transfer case that have the threads recessed. Start by installing one of the longer bolts through the transfer case support assembly's bolt pattern using the bolt hole to the upper right when looking at the transfer case. Once the bolts pass through use the remaining flat washers from bag 2 as shims. Start with two flat washers positioned between the transfer case support assembly and the vehicle's transfer case. Then proceed by installing the remaining four bolts through the transfer case support assembly

the same way with two washers used as shims on every bolt. Note the one long bolt goes in the middle of the three lower bolts because of the recessed threads. Then tighten all five bolts until snug.



- C. Then check the alignment of the through holes in the frame bracket and the polyurethane bushing that is installed on the tubular end of the transfer case support assembly. These holes should line up, if they do not then adjust the shims between the frame bracket, or the washers between the transfer case support assembly and the transfer case by adding or subtracting them to get these holes to line up, and the 5/8" through bolt passes through. Then finish off the 5/8" through bolt with the 5/8" flat washer and then the 5/8" nylon lock nut. At this point tighten the frame bracket bolts on two door models with 17mm stubby combination wrench or 17mm combination wrench and 17mm socket and socket wrench on four door models. Then fully tighten the five bolts that fasten the transfer case support assembly to the transfer case using 17mm socket and socket wrench. Then finish by tightening the 5/8" through bolt with a 15/16" combination wrench and a 15/16" socket and socket wrench. Now put the transfer case skid plates back in position and install the bolts and tighten with a 18mm socket and socket wrench.



**Congratulations you have just completed the installation of our product that will bring you driving pleasure for years to come! For replacement parts or technical questions, please call 508-463-7400 or visit our website at [www.chlevercraftindustries.com](http://www.chlevercraftindustries.com)**