



## INSTALLATION INSTRUCTIONS

300 W. Pontiac Way Clovis, CA 93612 toll free: 1-800-445-3767 web: www.belltech.com

6435

FLIP KIT

**MAZDA B2200/B3000/B4000 2WD PICKUPS  
89-97 FORD RANGER (STD CAB)**

**Thank you for being selective enough to choose our high quality BELLTECH PRODUCT. We have spent many hours developing our line of products so that you will receive maximum performance with minimum difficulty during installation.**

- Note: Confirm that all of the hardware listed in the parts list is in the kit. **Do not** begin installation if any part is missing. Read the instructions thoroughly before beginning this installation.
- Warning:** **DO NOT** work under a vehicle supported by only a jack. Place support stands securely under the vehicle in the manufacturer's specified locations unless otherwise instructed.
- Warning:** **DO NOT** drive vehicle until all work has been completed and checked. Torque all hardware to values specified.
- Reminder: Proper use of safety equipment and eye/face/hand protection is absolutely necessary when using these tools to perform procedures!
- Note: It is very helpful to have an assistant available during installation.

### **PLEASE READ:**

These instructions cover more than one kit. **We recommend** that the installer read and understand these instructions completely, taking special notice of the portions that apply to the vehicle being modified, before the installation begins.

**We also recommend** that in the interest of maintaining the rear axle assembly-to-chassis alignment, **only one side of the vehicle be modified at a time.**

### **RECOMMENDED TOOLS:**

- Properly rated floor jack, support stands, and wheel chocks
- Combination wrench set
- Torque wrench: *0-75 lb ft. range*
- Ratcheting socket wrench and socket sets
- Air Chisel / Die grinder W/ cut off wheel
- Safety Glasses

### **KIT INSTALLATION**

1. Open the hardware kit and remove all of the contents. Refer to the part list (Page 2) to verify that all parts are present.
2. Park the vehicle on a smooth level asphalt or concrete surface. Place a block in front of and behind the front wheels. Jack up the rear of the vehicle and place jack stands securely under the frame in the manufacturer's specified locations. Remove the rear wheels.
3. Prepare the bed of the vehicle for removal by removing the bed-to-chassis hardware, all grounding straps, and the hardware that secures the fuel filler neck to the vehicle box side. Also disconnect the wiring harness at the connectors that run to the taillights.

4. Lift the bed off of the vehicle chassis and set it aside.
5. After blocking the front wheels to prevent vehicle movement, jack up the rear of the vehicle using a floor jack rated for this load. (PHOTO 1) Place four jack stands rated for this load under the chassis side rails forward of the front leaf spring hanger and aft of the rear spring hanger. (PHOTO 2 & 3) Remove the wheels and tires and set aside.
6. Locate the emergency brake cable junction forward of the left hand forward leaf spring hanger. (PHOTO 4) Using a locking-type pliers or equivalent tool, disconnect the emergency brake cable junction spring from the bracket outside of the left hand forward leaf spring hanger. (PHOTO 5) **NOTE:** The cable junction spring will be under some tension. **CAUTION: Be sure to wear eye protection when working around springs under tension.**
7. Using a locking-type pliers and hand and eye protection, disconnect the brake cable that goes to the right hand rear brake from the emergency brake cable junction. (PHOTO 6 & 7) Using a pair of pliers or suitable tool, compress the cable-housing end at the point where it runs through the spring hanger bracket. (PHOTO 8) Pull the cable back through its original routing hole in the chassis (PHOTO 9) and secure away from the chassis side rails.
8. Remove the brake hose bracket from the chassis at the point where the brake line changes from rigid to flexible tubing. (PHOTO 10)
9. Remove both shocks from the vehicle.
10. Using a floor jack rated for this load, position the jack so that it is just touching the bottom of the rear axle housing. Raise the jack another 1/8" to 1/4" to remove as much tension as possible from the rear leaf springs.
11. Remove the U-bolt nuts from U-bolts securing the rear axle housing to the leaf spring pack. (PHOTO 11) **NOTE: Once again, we recommend modifying only one side of the vehicle at a time.**
12. Lower the jack to allow the rear axle housing to drop clear of the leaf spring pack, taking care not to over extend or damage the brake system lines and hoses.
13. Clamp the leaf spring pack assembly together with C-clamps to maintain leaf spring pack integrity. (PHOTO 12)
14. Remove the stock leaf spring center bolt and nut. (PHOTO 13) Install the kit supplied bolt and nut with the nut on the top of the leaf spring pack. (PHOTO 14) Torque the nut to 88-93 Ft. Lbs.
15. Situate the kit-supplied shim and the rear axle tube saddle over the nut and mark the spring center bolt nut at a point on a line measured across the lowest point in the axle tube saddle.
16. Remove the shim and axle tube saddle and cut the leaf spring center bolt nut off at a point 1/16" – 1/8" lower than this marked point. This will allow axle tube clearance when the assembly is torqued together later during the installation process.
17. Supporting the forward end of the leaf spring pack, remove the leaf spring eyebolt. (PHOTO 15) Supporting the rear of the leaf spring pack, remove the shackle upper eyebolt. (PHOTO 16) Lay the disconnected leaf spring assembly aside for re-installation after the C-section has been installed.
18. Locate the template from the kit on the chassis as directed by the instructions on the template. (PHOTO 17) Use a center punch or similar tool to mark the chassis at the four points marked "B" and "C" on the template. After removal of the template, scribe lines between the marked points using a metal scribe, grease pencil, or suitable instrument. Where the scribed lines run off of the chassis rails

at the bottom of the chassis, scribe lines perpendicular to the frame rail using a combination square and a suitable marking instrument.

19. Drill a 3/8" hole through the frame rail at the two points marked "B" in Step 17. Pilot drilling with a smaller drill first can make this procedure easier, and then moving up in drill bit size gradually to the final 3/8" size. **CAUTION: Always use eye protection when using power tools.**
20. Using a die grinder with an abrasive wheel or similar tool cut out the section of the chassis indicated by the previously scribed lines. (PHOTO 18) **CAUTION: Always wear eye protection when using power tools.**
21. Remove the upper shock mount by drilling through the center of its attaching rivets with a 3/8" drill bit. Pilot drilling with a smaller drill first and then moving up in drill bit size gradually to the final 3/8" size can make this procedure easier. (PHOTO 19 & 20) **CAUTION: Always use eye protection when using power tools.**
22. Using a chisel or sir hammer cut off the head of the center-drilled rivets and punch the remaining rivet bodies out of the frame rail. (PHOTO 21) **CAUTION: Always use eye protection when using power tools.** Remove the upper shock mount from the frame rail and retain for later use.
23. Locate the C-section of the frame rail by aligning the holes in the C-section with the holes recently vacated by the upper shock mount rivets. Install one or more of the kit supplied bolts in these holes to assist in further C-section installation. After ensuring that the C-section is in contact with the bottom of the frame rail, install a C-type clamp or suitable tool on the forward part of the C-section to assist in further C-section installation. (PHOTO 22) NOTE: It may be necessary to clean up the rivet holes in the chassis to allow bolt insertion without damaging the bolt threads. This can be accomplished with a round file or suitable tool.
24. Using a center punch, mark the center of the holes in the C-section on the chassis rails behind them. Drill each center-punched location using a 1/2" drill bit. This procedure can be made easier by pilot drilling with a smaller drill first and then moving up in drill bit size gradually to the final 1/2" size. (PHOTO 23) **CAUTION: Always wear eye protection when using power tools.**
25. Install kit supplied 1/2" bolts, nuts and flat washers and torque to 140-145 Ft-lb making sure that the previously removed upper shock mount is also bolted back into its original location. (PHOTO 24)
26. Raise the floor jack under the rear axle housing until the leaf spring assembly can be installed back into its hangers while positioned under the axle housing. Position the leaf spring into its hanger and install the upper shackle eye bolt and nut and the forward leaf spring pack eye bolt and nut, but do not tighten at this time.
27. Position the kit supplied axle-housing saddle so that the hole in the bottom of the saddle fits over the nut on the spring center bolt. The kit supplied 2-degree shim will be installed between the axle tube saddle and the leaf spring pack with the thickest part of the shim toward the rear of the vehicle. The saddle should also be positioned so that the hole in its base is forward of the saddle side-to-side centerline, moving the axle assembly aft. Lower the floor jack until the axle housing rests on the saddle with the saddle "horns" under the lips of the spring pad mounts.
28. Install the kit supplied U-bolts, flat washers, nuts and spring support plates, making sure that the central hole in the spring support plate is forward of the side-to-side center line of the support plate. Do not tighten this hardware to final torque at this time.
29. Repeat steps 10 through 27 for the remaining side of the vehicle.

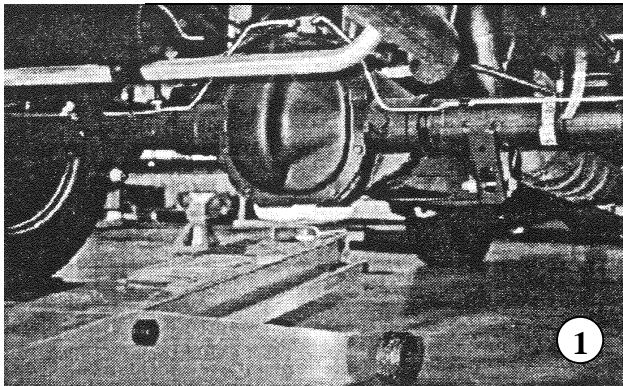
30. After completing the installation for both sides of the vehicle, torque the U-bolt nuts in 5-10 Ft-lb increments to 85-95 Ft-lb.
31. Secure the brake line bracket to the chassis using a C-clamp or suitable tool. Using a cutoff wheel or suitable tool, trim the 90 degree bent portion of the brake line bracket, leaving the hole in the bracket. (PHOTO 25) **CAUTION: Always use eye protection when using power tools.**
32. When installing the bump stops in the C-sections, install the brake line transition bracket removed in step 7 under the washer and nut on the left hand bump stop. (PHOTO 26) Some brake line re-configuring may be necessary to install the bracket. If the brake line needs to be re-configured, use a tubing bender of the proper size and use caution as the brake line can be damaged if handled improperly.
33. Re-route the right hand side emergency brake cable back through the original hole in the vehicle chassis and the hole in the C-section. (PHOTO 27) Route the cable through the leaf spring hanger bracket hole and reconnect the cable to the cable junction. Re-install the brake junction spring in the original hole in the left hand leaf spring hanger.
34. On an extended cab vehicle with a two-piece drive shaft, it will be necessary to relocate the drive shaft center carrier bearing. This is accomplished by unbolting the carrier bearing from its mount and installing the kit-supplied spacer with the kit supplied hardware. Install the spacer with the widest portion toward the rear of the vehicle. Torque the kit supplied nut/bolt combination to 88-93 Ft-lb.
35. Re-install the wheels and tires, raising the floor jack if necessary to gain adequate clearance. Torque the lug nuts to 85 Ft. lbs. Re-install the rear shock absorbers. Torque the upper and lower hardware to 39-53 Ft. Lbs.
36. Raise the floor jack so that the jack stands are unloaded and can be removed from under the vehicle. Remove the jack stands and lower the vehicle to the ground. At this time torque all leaf spring eye and spring shackle eye bolts to the specifications applicable to the year model being modified. 1994 and earlier 74-115 Ft-lbs, 119 and up 65-87 Ft-lbs.
37. Re-install the bed of the vehicle. The installation is complete.

### PART LIST FOR 6435 KIT

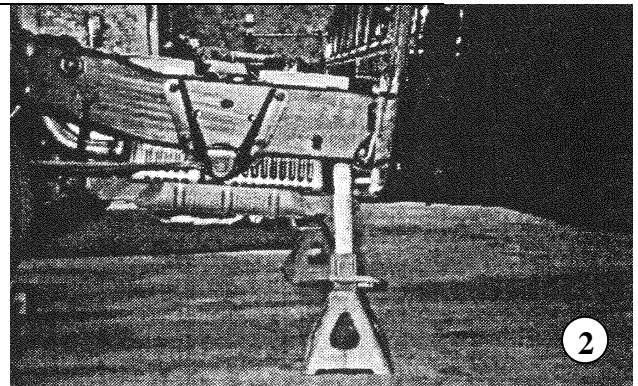
PART No.	DESCRIPTION	QTY.
6435-001	C-Sec, LH	1
6435-002	C-Sec, RH	1
6600-010	U-Bolt Plate	2
6435-005	Saddle	2
6600-015	U-Bolts	4
110505	5/8"-18 Nylon L/N ZP	8
110502	5/8" A325 F/W ZP	8
110408	1/2"-20 x 1-1/4" Grade 8 CS ZP	16
110402	1/2"-20 Grade C LN ZP	16
110660	1/2" A325 FW ZP	32
4975-001	Pinion Shim 2°	2
110314	Spring Center Bolt 7/16"-20 x 5"	2
110321	Coupling Nut 7/16"-20 x 1-1/8"	2

## PART LIST FOR 6437 KIT

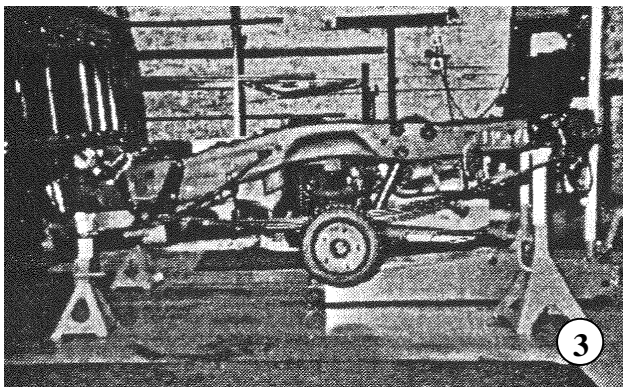
PART No.	DESCRIPTION	QTY.
6435-001	C-Sec, LH	1
6435-002	C-Sec, RH	1
6600-010	U-Bolt Plate	2
6435-005	Saddle	2
6600-015	U-Bolts	4
110505	5/8"-18 Nylon L/N ZP	8
110502	5/8" A325 F/W ZP	8
110408	1/2"-20 x 1-1/4" Grade 8 CS ZP	16
110402	1/2"-20 Grade C LN ZP	16
110660	1/2" A325 FW ZP	32
4975-001	Pinion Shim 2°	2
110314	Spring Center Bolt 7/16"-20 x 5"	2
110321	Coupling Nut 7/16"-20 x 1-1/8	2
4987-001	Carrier Bearing Spacer	1
110311	7/16"-20 x 1-3/4" Grade 8 CS ZP	2
110307	7/16" A325 FW ZP	4
110303	7/16"-20 Grade C LN ZP	2



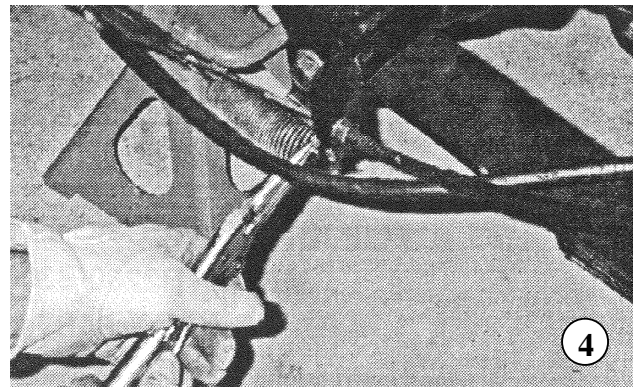
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