Installation Guide for TeraFlex "Grand Up" Suspension for Cherokees

This kit is designed and recommended for off-road use only.

Tera Manufacturing recommends having this kit installed by a professional installer. Professional installers will likely be better suited to handle the required welding and axle positioning adjustments. This kit requires special attention to detail.

Use these instructions to install the TeraFlex Grand Up suspension for Cherokees. This product was designed specifically for the Jeep Cherokee.

Attention:

***Slip-yoke Eliminator* - This kit requires the slip yoke eliminator. For Cherokees using the NP 231 transfer case, use Tera part number 231SS. Transfer cases such as the 242 will require an appropriate slip-yoke eliminator kit for the Cherokee.**

***Aftermarket Accessories* Items such as extra-capacity gas tanks, skid plates, and other accessories can interfere with the proper installation of this kit. Be aware of this prior to the installation of this product. Tera Manufacturing makes no warranty as to this kit's use with any aftermarket accessories.**

***Welding* - This kit requires welding. Tera Manufacturing recommends having this kit installed by a professional installer. All welds should be spot or tack welded into position before completing the final weld.**

***Muffler work* - Custom muffler work is required for this kit. Make necessary arrangements to have this work completed.**

***Sway Bar* - Tera Manufacturing recommends using this kit with a rear sway bar kit.**

Warning:

Vehicles enhanced for off-road use have unique handling characteristics. Larger tires and higher centers of gravity cause these vehicles to handle and drive differently than a passenger car, both on and off road. Extreme care should be taken to prevent sudden sharp turns or abrupt maneuvers which could cause a loss of control, vehicle roll over, injury or death.

Tera Manufacturing, Inc.
5251 South Commerce Dr.
Murray, Utah 84107
Phone/801.288.2585
Fax/801.288.2571
www.teraflex.biz

Revised 17 August 00

Getting started

Please locate each component on this chart prior to installing this kit.

		S6XR Component Chart		
Box 1				
Units	Part #	Description		Chart
2	TFFARXJ	Lower Flex Arms		A
2	X7	A-arm FlexArms w/Rubber bushings		B
Box 2				
Units	Part #	Description		Chart
1	X6R	Spring Pad, Upper left		C
1	X1L	Spring Pad, Upper right		D
1	X1R	Control Arm Brackets left		E
1		Control Arm Brackets right		F
Box 3		Other Components		
Units	Part #	Description		Chart
2	52087832	Spring Insulator, rubber upper		G
2	SR3T	Rear Coil Springs		H
1	X4L	Spring Pad, lower left		I
1	X4R	Spring Pad, Lower right		J
2	52987866	Spring Insulator, plastic lower		K
1	AETK6291	Ball Joint, and hardware		L
1		Bracket, A-arm mount		M
4	X2-1	Bracket, Axle control arm mount		N
	Hardware Componets-Kit 1			
Units	Part #	Description	Torque Specs	Chart
2	BSX	Bump Stops, poly		O
2	TFRBSSXJ	Bump Stops, aluminum		P
2	BOLT 3/3-16X2 TYPF	Bolts, Self Tap 3/8-2	23-31 ft. lbs	Q
2	BOLT 3/8-16X4	Bolts, 3/8-4	23-31 ft. lbs	R
2	TFSRS	Spring Retainers		S
4	TFSBSPS	Spring Retainer spacers		T
4	WASHERF 3/3	Flat Washer		U
1	TFBLXR	Brakeline ext. bracket		V
2	NUT 3/8-16 LOCK	Lock Nut		W
	Hardware Compo-nents- Kit 2			
Units	Part #	Description	Torque Specs	Chart
2	BOLT 9/16-12X4	Bolt	82-109 ft. lbs.	X
4	BOLT 9/16-12X4.5	Bolt	128-170 ft. lbs.	Y
4	BOLT 5/16-18X1.5	Bolt	128-170 ft. lbs.	Z
9	BOLT 5/16-18X1	Bolt	128-170 ft. lbs.	AA
4	BOLT 5/16-18X1.5 F	Bolt	128-170 ft. lbs.	BB
5	STUD 5/16-18X1.75	Stud	128-170 ft. lbs.	CC
4	NUT 9/16-12 LOCK	Lock Nut		DD
13	NUT 4/16 FLANGE LOCK	Flange Lock Nut		EE
2	WASHER 9/16 LOCK	Lock Washer		FF
2	WASHER 9/16	Flat Washer		GG
9	WASHER 5/16	Flat Washer		HH

Some tools might need:
Torx bits (T50 & T55)
Electric hand drill
5/16" and 13/32" drill bits
Jack satands and a jack
Welder
Grinder
Other standard hand tools

Installation

1. Raise the rear of the vehicle with a floor jack. Place jack stands under the unibody.
2. Remove the shocks.
3. Place a container beneath the differential to catch fluid. Remove the rear differential cover.

4. Disconnect brake lines. Remove the clip that secures the brake lines and ABS sensor cables to the bracket. This will provide extra length to allow more movement when dropping the axle during installation.
5. Support the rear axle with jack stands.

6. Clean the differential cover.
7. Remove the old silicone from the mounting surfaces of the differential and differential cover.

8. Apply Loctite to the five upper studs.

9. Insert the 5/16-inch studs into the five upper bolt positions on the differential.
10. Apply silicone to both the differential cover and the differential.

11. Install the A-arm mounting bracket between the differential and the differential cover. Attach the differential cover to the upper studs using nuts. Secure the lower edge of the differential cover and A-arm mounting bracket to the differential with the five bolts (5/16" x 1") included in the kit. Torque to 128-170 ft.•lbs.
12. Remove the rear sway bar. Remove the U-bolts that connect the leaf springs to the axle. Remove the leaf springs.

13. Remove the exhaust by cutting it between the muffler and the catalytic converter.

Note: Custom muffler work will be required.

14. Remove the welds that secure the shock mounts to the axle using a grinder. Be careful to preserve these parts. They will be required later.

Upper Spring Pads

15. Remove rear axle bump stops located on the unibody above the axle.

16. Identify the left and right upper spring pad brackets. In the photo above, the bracket on the right fits the driver's side.

17. Connect the upper spring pads to the unibody of the vehicle using the beveled allen-head bolts in the holes vacated by the bump stops.

18. Pull up the carpet in the cargo area.

19. Drill two holes through the unibody from underneath. Insert the carriage bolts down through the body. Using 5/16" nuts with lock washers torque to 128-170 ft.•lbs.

Control Arm Bracket

20. Align the bracket with the holes vacated by the rear leaf springs and the rear sway bar. Insert all bolts prior to tightening. Connect the control arm bracket to the leaf spring position using the stock bolt.
21. Use the stock bolts that connected the sway bar to the unibody to secure the control arm bracket to the frame. Connect the brakeline extension bracket to the underside of the driver's side bracket using one of the stock bolts. Bolts will install in the holes vacated by the removal of the rear sway bar. Tighten all bolts.
22. Locate the two holes in the bracket where

the A-arm assembly attaches to the control arm mounts of the frame mounted bracketry. Use a 5/16" bit to drill through those holes.

23. Secure the control arm mounting bracket to the body using 5/16" x 1" bolts. Nuts should fasten from the outside of the vehicle.

24. On some applications, the parking brake cable bracket will need to be removed and relocated. Drill and tap a hole to connect the bracket to the underside of the control arm bracket. It should correspond to where it was originally located. Attach using stock bolts.

25. Connect the components of the A-arm assembly. The left and right upper control arms will connect to the ball joint with bolts. Connect the components together but do not tighten. Loose bolts will ease installation.

26. Insert the A-arm assembly over the driveshaft and connect it to the control arm mounting brackets using 9/16" x 3-7/8" bolts with washers and lockwashers. Torque the bolts connecting the ball joint to the A-arm limbs.

27. Connect the ball joint of the A-arm assembly to the differential mounting bracket. A floor jack will raise the differential into position.

Properly position the axle

28. Position the axle at ride height. The distance between the spring pad and the top of the axle tube should be 11.5 inches.

29. Measure the distance between where the front of the leaf spring connected to the center of the spring perch on the axle. Make sure that these measurements are equal on both sides by adjusting the position of the axle. Actual distance may vary between vehicles, but the key is to make this measurement equal on both sides.

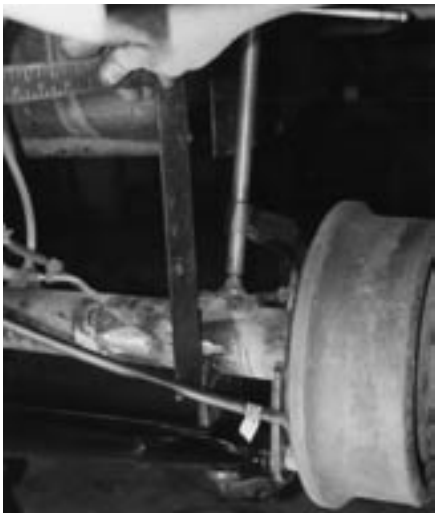
Lower control arm preparations

30. This kit will require the use of a CV drive shaft. Take precautions so that the drive line angles will be appropriate for use with such a drive shaft. The driveshaft and pinion angle should be parallel.
31. Extend the lower control arms four to six complete turns from completely compressed. Check to see that both lower control arms are the same length. Starting at a mostly compressed control arm allows for later extension and adjustment.
32. Connect the rubber bushings end of the control arm to the frame control arm

mount using 9/16" x 4-1/2" bolts. Torque to 82-109 ft.•lbs.

Note: Slight variance between control arm lengths will be compensated in the axle mounts.

33. Connect one axle control arm mount to each side of the bottom end of the lower control arm. Fasten with a 9/16" x 4.5" bolt and appropriate nut. It is not necessary to torque this bolt at this time, but it should be secure.



34. With a C-clamp or other device, secure the control arm mounts onto the axle. Align the inside bracket on both sides with center of the leaf spring perch.
35. Once the axle brackets are secured, spot weld them in place.

*Note: Because proper positioning of the axle brackets is critical, verify correct position **prior** to welding.*

36. Once the spot welding is complete, remove the lower end of the control arm from the brackets.
37. Bolt the metal sleeve from the lower end of the control arm between the control arm axle brackets using the 9/16" mounting bolt. This will prevent the brackets from distorting during welding.
38. Complete welding control arm brackets to the axle.
39. Attach lower control arms to axle using bolts in step 33 and torque to 82-109 ft.•lbs.

Lower spring pad

40. With the vehicle at ride height, measure the angle of the upper spring pad.

41. Adjust the positioning of the lower spring pad so that the upper and lower spring pads are parallel.
42. Check for correct positioning of spring pads prior to welding spring pads in position.
43. Weld the lower spring pad in position.

Attaching the shock mounts

44. Weld the lower shock mounts to the axle so that the lower mount is parallel to the upper shock mount.

Note: Shock mount location is important because it should not be the limiting factor in the performance of this kit.

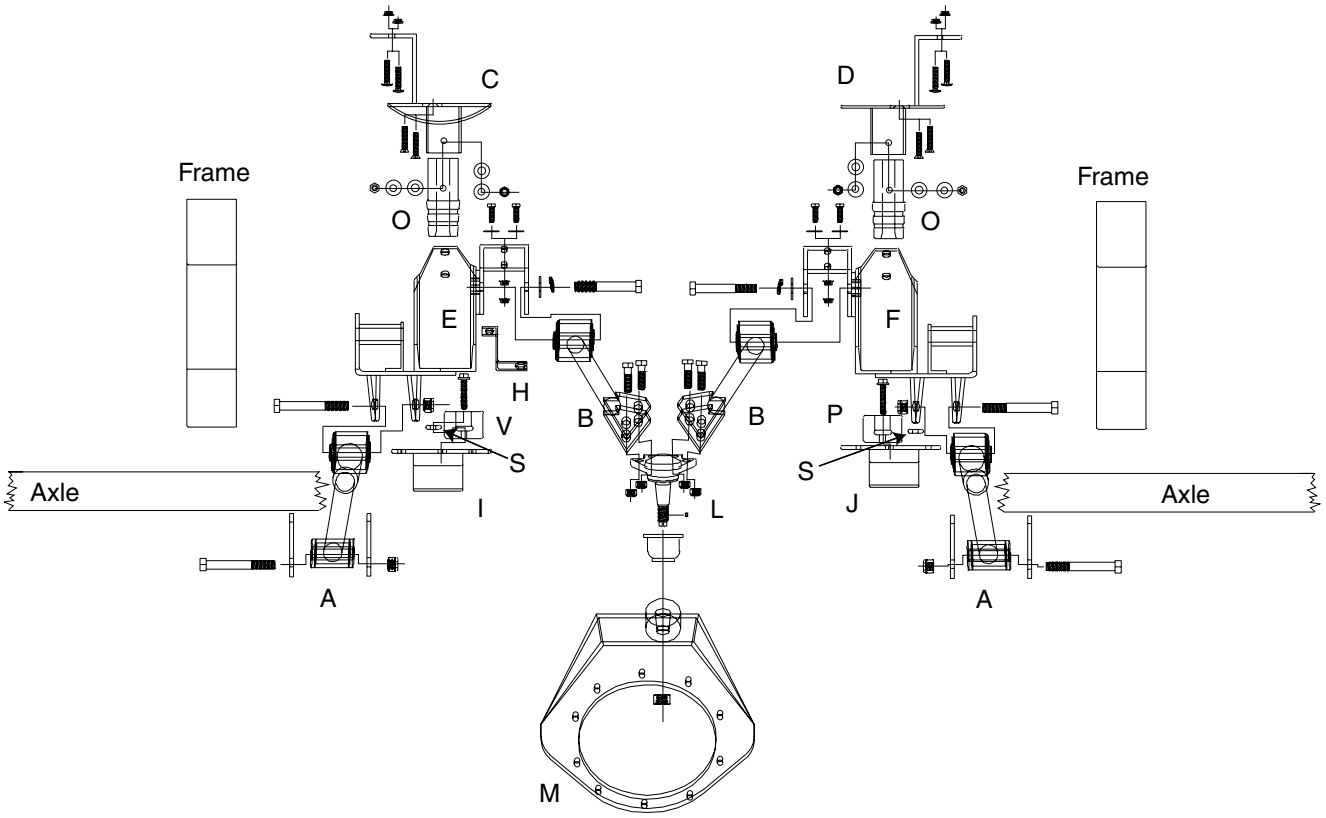
Springs

45. Place the black plastic spring pad (part #52087866) on the lower spring pad. Align the three tabs with the holds in the spring pad and push so that it is flush with the plate. Install the rubber spring pad (part #52087832) below the upper spring pad.

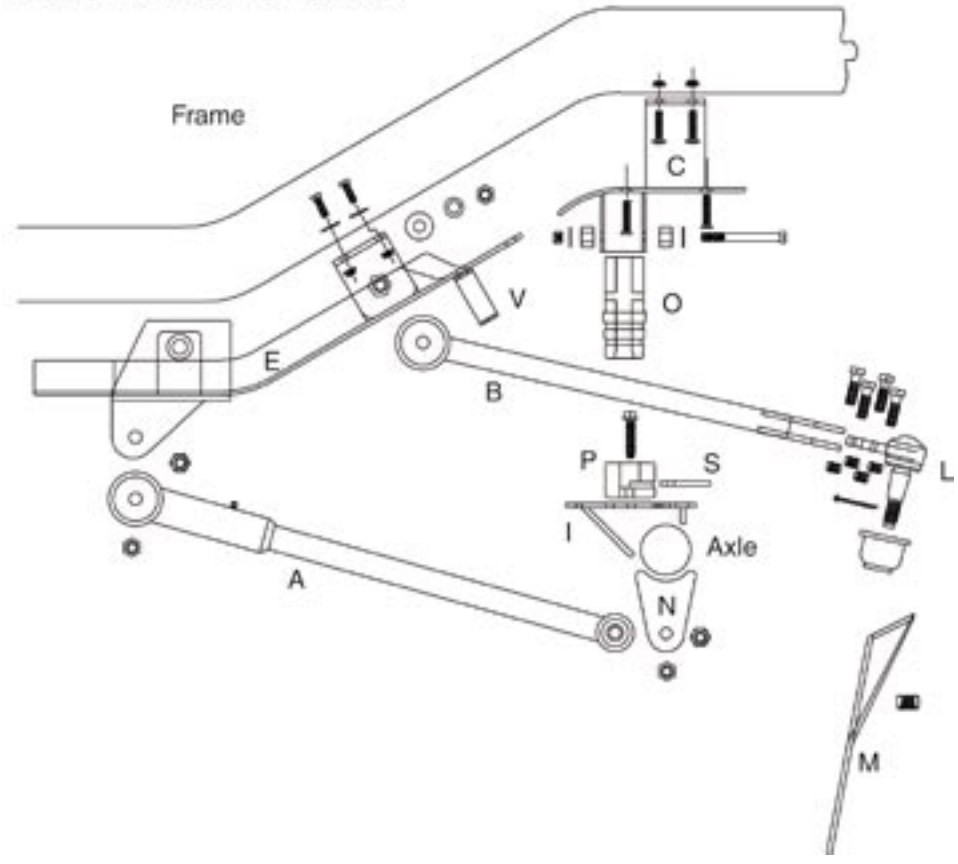
46. Install the upper bump stop spacer. Drill a hole through the openings on the upper spring pad.
47. Insert the 3/8" x 4" bolt, washer, and an aluminum spacer into the upper bump stop cup and through the polyurethane extended bump stop.
48. Install the spring. You can follow the photos for a suggested method of connecting the items together.
49. Once the spring is in position, connect the spacer, washer and finally the nut. Be sure that the spring is properly position in a way that the upper retainer clips do not slip through the openings on the upper end of the spring's pigtail.

50. Place the lower, aluminum bump stop spacer inside the spring before positioning the bottom end of the spring onto the lower spring pad. Position the retainer clip in a way that it will secure the lower end of the spring.
51. Insert the retain clip into the lower bump stop and secure with the bolt included in the kit.
52. Secure brake lines with the clip removed in Step 4 to the extension bracket on the rear driver's side control arm mounting bracket.

Left/Driver's Side



Left/Driver's Side



Revised 17 August 00