

## Installation Manual

**Hard-Arm™ Suspension: 1993-1998 Jeep Grand Cherokee Package Deal Lift kit**

**1993 - 1998 Jeep Grand Cherokee**

Last Revision No.: 8/2/08



**Thank you for purchasing a Clayton Off Road Mfg Long arm suspension.**

Please check to make sure you have all necessary parts before you start your install.

### 1993-1995 Jeep Grand Cherokee ZJ

- 8 adjustable control arms
- front 3 piece cross member ( 93-95 round hole style)
- unibody frame rails
- rear frame brackets
- rear 4 link axle truss
- front coils
- rear coils
- trackbar and drop bracket
- drop pitman arm
- brakelines ( set of 3, 2 front 1 rear )
- front spring retainers
- JKS swaybar disconnects



### 1996-1998 Jeep Grand Cherokee ZJ

- 8 adjustable control arms
- front 3 piece cross member with ½ spacer plate ( 96-98 square hole style)
- unibody frame rails
- rear frame brackets
- rear 4 link axle truss
- front coils
- rear coils
- trackbar and drop bracket
- drop pitman arm
- brakelines ( set of 3, 2 front 1 rear )
- front spring retainers
- JKS swaybar disconnects



If you are missing any of the above items, or are unclear about what parts you need to call and ask before you begin your installation process.

**WARNING:** Suspension systems and their components are designed to enhance your vehicles offroad performance. This may cause your vehicle to handle differently then it did from the factory. These systems and any components should be installed by certified technicians. Attempts to install these products without proper knowledge can lead to poor performance, or possible failure, which may jeopardize the safety of the vehicle and its passengers. Take extra care when operating a modified vehicle and thoroughly inspect your vehicle before and after every offroad use.

**Clayton Off Road Mfg. – 1261 Meriden Road – Waterbury – CT – 06705 – (203) 757-0339 sales@claytonoffroad.com**

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## Tool requirements

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1. 175A or greater mig welder
2. Plasma cutter and or a good 4.5" grinder with cut off wheels.
3. Four large jack stands, ramps or a 4-post drive on lift works best.
4. Various wrenches and shop tools for removing and installing control arms.
5. A **1 7/16** wrench is needed to tighten the upper control arm jam nuts, and a **46mm** wrench is needed to tighten the lower control arm jam nuts.

## General Information

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These instructions are split into numerous sections. We recommend reading through the entire instruction manual before starting your install. You may find a different order may work for your actual installation. Below is a quick informational guide on what we do, in what order and why.

1. We start by prepping the unibody and installing the entire subframe. This includes the front 3 piece cross member, unibody rails, and rear frame brackets. Clean, paint, and let dry.
2. Next we remove the rear upper arms and cut off the 5 link brackets, and install the 4 link axle truss. Now the majority of the welding is done, and you will begin swapping components over. Clean, paint and let dry.
3. Brake fluid may discolor the powder coating on the arms. So we install them next to make sure we do not ruin the finish on the control arms. Some customers choose to leave this as a last step in order to not damage the brakelines during the installation, such as over extending them installing coils, or hitting them with a grinder while cutting of the OEM frame brackets.
4. Make sure lower control arms are exactly the same length. We measure them and double check by putting the bolts through both ends. Upper arms front and rear Do NOT have to be the same length. At first we just eyeball the pinion angle and cast angle and install the upper control arms. Once the vehicle is under its own weight, and all other components are installed, we set final measurements.
5. We install coils while we install the control arms, and let the vehicle back under its own weight.
6. Now install the trackbar, drop bracket, drop pitman arm, shocks and swaybar disconnects.
7. Now everything is installed and we set proper control arm angles, set the track, and tighten everything in the Jeep.

These are general instructions giving you an idea of what will be required. Actual instructions with measurements and pictures are shown below.

## FAQ and important procedures

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1. Front upper control arms – straight one is used on the passenger side, and the bent/dog legged one is used on the driver side to allow more clearance over the pumpkin.
2. Lower front control arms should be the same length. Lower rear control arms should be the same length.
3. Rear upper arms do NOT need to be the same length. With vehicle at ride height under its own weight, set the track, set a proper pinion angle, then adjust the upper arms so the bolts fit through the brackets, and then tighten all bolts.
4. Front trackbar alignment and caster angle procedure.
  - a. Make sure steering wheel is unlocked.
  - b. Remove trackbar at frame end.
  - c. Use bottle jack to hold axle from twisting forward or backwards and remove both upper arms at the axle end.
  - d. Use bottle jack to set 4.5-5 degrees of caster. (DO NOT install arms yet)
  - e. Set vehicle track.
  - f. Once track is set, double check caster angle and install both upper arms at the same time. Meaning do NOT install one upper arm, remove the jack and then install the other. This will cause unequal load on one arm, and cause the bushings to wear out faster. Upper arms do NOT have to be the same length.

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### Front Arms Installation Procedures

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1. Raise truck up on jack stands, ramps or lift.
2. Remove transfer case skid plate.
3. Put a floor or bottle jack under the transfer case to support it.
4. Remove cross-member by removing the two bolts on each side and the one center bolt.
5. Remove transmission mount from old cross member and install in the new one.
6. Wire wheel or grind paint away for welding.
7. Find the front of the new cross member. Reference your old cross member for proper transmission mount location. The plates where the new control arms mount should angle the control arms out. Openings should face forward. Put the eight-flange plate bolts in, the nuts and lock washers go on the inside and tighten.

**See Photo 1. \*\*\* NOTE 96-98 Model shown, 93-95 same process.**

8. Center the new cross member and secure it using the two mounting holes on each side. **See Photo 2.**
9. Make three welds on each side where the cross member contacts the uni-body frame rail, one on the end and one down each side. **Make sure these are good welds! See Photo 3.**
10. Remove jack from transfer case.
11. Take a measurement from the center of the bolt on the lower control arm mount axle side to the center of the new mounting hole on the cross member on each side.
12. Adjust the control arms to this length for each side.
13. Remove one lower control arm.
14. Cut the control arm mount off of the uni-body as close as possible using a plasma cutter or cut off wheel. Upper mount does not need to be removed.
15. Grind any extra off to make it look as neat as possible.
16. Spray paint bare metal to prevent rusting.
17. Install control arm. Upper control arm mount should be angled in.
18. Rubber bushings should be located at the axle side reusing your OEM control arm bolts. Use the supplied 9/16's bolts at the frame side to attach control arm.
19. Repeat steps 13 to 18 for the other side.
20. Set track or make sure track is set correctly before adjusting upper arms.
21. Measure distance from the center of the control arm bolt on the axle back to the new mounting point on the upper arms.
22. Adjust new control arms to these measurements.
23. Remove one side at a time and install new arms.
24. Drive side upper control arm is bent to clear hi-pinion housings. Use the gold 7/16s bolt at the adjuster side where it connects to the lower long arm. The supplied silver 10mm bolts are used at the axle upper bushing end.
25. The axle may have to be moved forward a lower control arm length of 36 is about where you should be.
26. Tighten all mounting bolts and adjustment locking nuts. Make sure articulating joint is centered.
27. Grease all articulating joints.

### Rear Arms Installation Procedures

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1. Remove muffler. It will have to be rotated or replaced later with a smaller unit to clear control arms.
2. Remove drive shaft at the pinion.
3. You may have to grind about 1/4" off the top of the control arm mount on the driver's side to let the fuel lines and ABS cables move out of the way for welding. **See Photo # 4.**
4. Locate the control arm mounts on each frame rail. The front edge should be lined up with the point where the frame rail goes back to single thickness of metal. **See Photo # 5-6.**
5. Wire wheel or grind paint away for welding.

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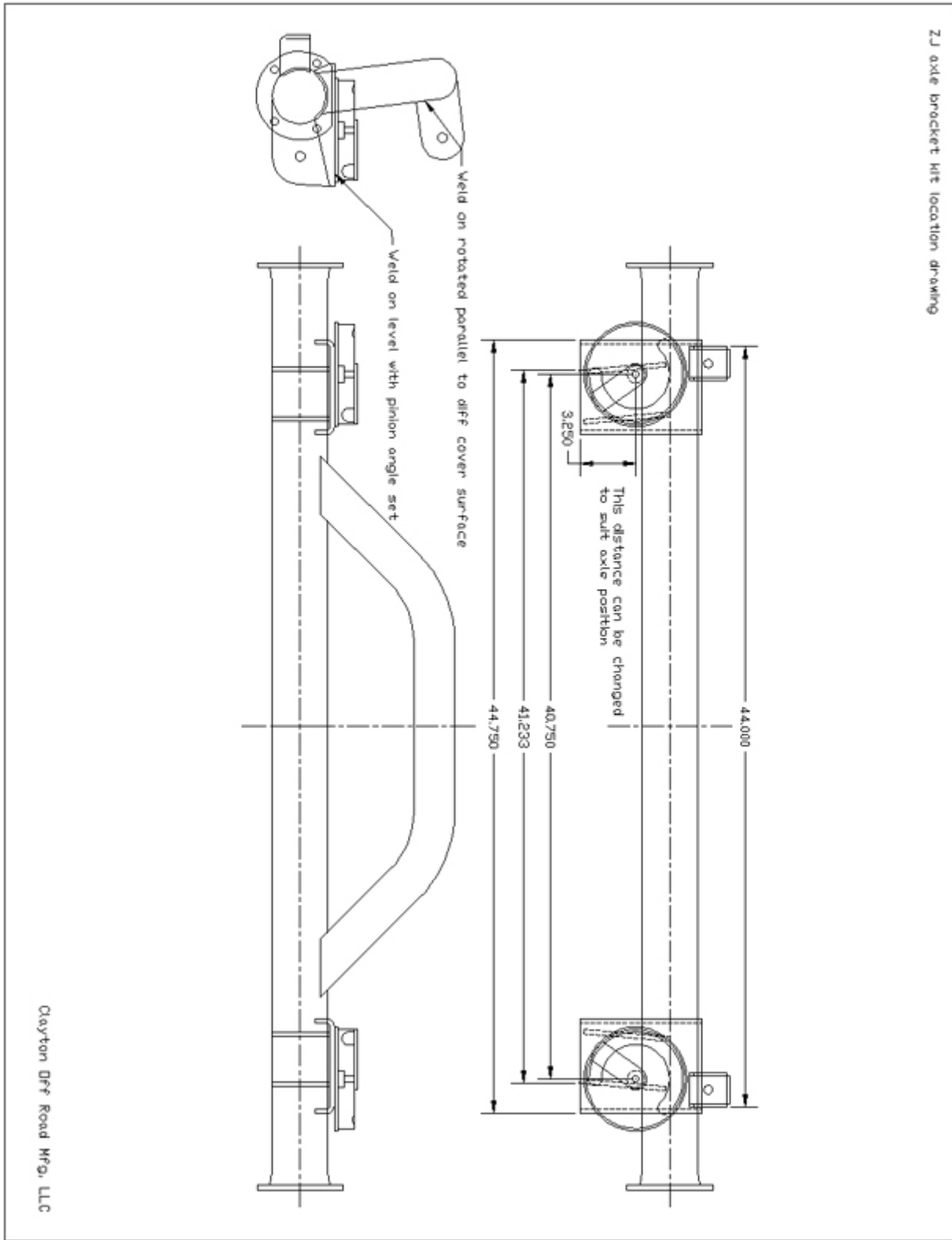
6. Push the bracket up tight against the frame rail.
7. Run a straight edge, I like to use a piece of 2x2 angle iron across the two mounts. Make sure they are square and level to each other.
8. Make two welds on each side on the front and back of each mount.
9. Make four welds on each side up and down on the side of the frame rail. **See Photo # 5-6.**
10. Place the frame rail channel between the cross member and the rear control arm bracket. Hold it in place with a jack. **See Photo # 7.**
11. Center it on the frame rail in the rear and align it in the front so it matches up with the angle on the cross member.
12. Weld it in place in the front and rear on three sides. Then weld a long the frame rail. A full weld is not needed along entire frame rail. You may stitch weld this section. **See Photo # 7**
13. Take a measurement from the center of the bolt on the lower control arm mount axle side to the center of the new mounting hole on the cross member on each side.
14. Adjust the control arms to this length for each side.
15. Remove one lower control arm.
16. Cut the control arm mount off of the uni-body as close as possible using a plasma cutter or cut off wheel. Upper mounts needs to be removed also. Just the outer portion needs to be removed.
17. Grind any extra off to make it look as neat as possible.
18. Spray paint bare metal to prevent rusting.
19. Install control arm.
20. Repeat steps 5 to 19 for the other side.
21. Remove all the brackets for the fuel lines, ABS cables and e-brake cables that attach to the upper control arm. Just let them hang loose permanently.
22. Both upper control arm brackets and trackbar bracket need to be cut off. Removing the rear axle from the vehicle makes this easier, but is not necessary. If the tires are left on it makes it easy to handle and work on.
23. Remove the upper control arm mounts and grind the axle tubes smooth.
24. For a standard 4 link truss simply center the truss on the rear axle. Make your measurements from the rim or brake assembly. Don't use the differential housing as a reference point. A STANDARD Truss is every truss, EXCEPT the 14 bolt.
25. For a 14 bolt truss installation you will need to center the tabs on the truss. The tabs are offset to allow you to clear the wide and offset housing.
26. Next line the truss up parallel to the differential cover-mount.
27. Tack weld into place in four places on both legs of the truss.
28. Weld all four sides of both legs of the truss.
29. Paint truss and axle tubes.
30. Put the axle back under the vehicle.
31. Upper arms will not be the same length. Set your pinion angle and vehicle track, then install upper arms using the 9/16s bolts at the truss and frame bracket end.
32. Tighten all bolts, jam nuts and grease all articulating joints.

### Drop Track Bar Installation.

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1. Remove factory trackbar and OEM frame bracket.
2. Removing the spring maybe necessary to remove and install OEM bolts, and weld in bracket.
3. Hold bracket in OEM location and mark where you will need to weld.
4. Grind paint away from both sides of frame, top and bottom and where it makes contact with our new trackbar drop bracket.
5. Bolt into OEM location reusing the OEM bolts and tighten all bolts to factory specs.
6. Weld in trackbar drop bracket. **A 1-2 inch stitch weld on both sides and bottom is adequate.**
7. Let bracket cool, and paint.
8. Install axle side of your new adjustable trackbar reusing your factory bolt.
9. Temporarily set vehicle track until springs are installed front and rear.
10. Adjust Johnny Joint so that the supplied 9/16s bolt easily slides through the new trackbar drop bracket.

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Photo # 1.



Photo # 2.



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Photo # 3.



Photo # 4.



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Photo # 5.



Photo # 6.



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Photo # 7.



**Damage or Missing Parts Policy:** If you receive a product that is damaged or missing parts you must contact us within 14 days to arrange replacement. You maybe required to submit photos of damaged parts before new parts are sent. Damage parts maybe request to be returned for inspection.

**Return Policy:** You have 30 days to return a product in it original packaging. Parts cannot have been installed, painted and/or modified in any way. You must contact us to obtain a RGA # (Return Goods Authorization) before shipping your product back. All returns are subject to a 15% restocking fee. Your return must have the return authorization number clearly marked on the outside of the package and must be shipped prepaid. Packages shipped COD will be refused. Return's are subject to inspection and maybe refused if they are damaged or used. You are responsible for proper shipping to ensure product is not damaged or lost. We recommend insuring your product for the full amount in the case it is damaged or lost during return shipment.

**Warranty Policy:** Clayton Off Road Mfg. comes with our abuse proof limited lifetime warrantee against bending or breaking our control arms only. This covers the original purchaser of our suspension lift. This warrantee cannot be transferred to a secondary purchaser and is void if the control arm is modified in any form or not used in its proper application. Original purchaser must obtain a RGA # and is responsible for shipping the product back and agrees to return shipment charges. This warrantee does not cover worn bushings, missing snap rings, or any kind of rust damage to the threads or inserts or actual arm.

#### **What is not covered:**

Clayton Off Road Mfg. components may have minor finish damage to powder coated or plated surfaces, which may occur during shipping and is not covered under warranty. Johnny Joint bushings, washers, snap rings, OEM rubber bushings, hardware, brake lines, shocks, springs, skid plates, trackbars, and any mounting brackets are not covered. These parts are subject to wear and are not considered defective when worn. They are warranted for 90 days from the date of purchase for defects in workmanship only. Products or components which have been subjected to abuse, accident, alteration, modification, improper installation, tampering, negligence, misuse, or products installed on a vehicle used in sanctioned racing events. A race is defined as any contest between two or more vehicles, or any contest of one or more vehicles against the clock, whether or not such contest is for a prize.

Clayton Off Road Mfg. is not responsible for any retail parts that maybe sold.

Clayton Off Road Mfg. shall not be liable for any loss, damage or injury, whether ordinary, direct, special, incidental or consequential damages, arising from the manufacture, sale, installation, resale, delivery, possession, handling or use of its products.

Clayton Off Road Mfg. is not responsible for typographical errors either in pricing or in content.

Warranties, policies and prices subject to change without notice.