



Thank you for purchasing a Clayton Off Road product.

3505012 – TJ 4.0" Pro Series Long Arm Lift Kit

1100106	3 Link Bridge - OEM D30, and Rubicon D44 ONLY
1100108	Front spring retainers with hardware
1200010	4 Link axle truss - D35,D44,D60,F8,8 Ford 9 inch and Sterling 10.25
1200502	Rear lower shock bracket kit
1200508	Rear coil spring retainer kit
1300103	DOT approved stainless steel brakelines
1505400	Front coil springs (pair)
1505401	Rear coil springs (pair)
1900310	Pro Series Long Front Control Arm Kit / 3 Adjustable Arms
1900320	Pro Series Long Rear Control Arm Kit / 4 Adjustable Arms
2205010	TJ Front frame brackets - (pair)
2205020	TJ Rear frame brackets - (pair)
2205310	TJ/LJ 3 Link Frame Mount
2400100	Drop pitman arm
4500200	HD Adjustable front trackbar
4500420	Drop trackbar bracket
JKS-2001	JKS swaybar disconnects



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

WARNING: Suspension systems and their components are designed to enhance your vehicles off-road performance. This may cause your vehicle to handle differently, on and off-road, then it did from the factory. Always wear your seatbelts, and take extra care when driving a modified vehicle. Failure to do so can result in loss of control which may result in a rollover causing serious injury, even death to the driver and/or passengers of the vehicle. Regular maintenance and constant inspections are required to keep your modified vehicle safe and function properly.

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. The installer is responsible for proper installation insuring a safe and properly functioning vehicle. Take extra care when operating a modified vehicle and thoroughly inspect your vehicle before and after every off-road use.

Please read the entire instruction manual before starting the installation. If anything is unclear, please contact us before starting your installation.

Contact at: (203) 757-0339 or email sales@claytonoffroad.com

Tool requirements

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.

Front Arms Installation Procedures

1. Use provided AutoCAD drawing to locate lower weld on control arm brackets. Depending on your current skid plate, or model year, you may need to modify the skid plate to clear these brackets.
2. Put the truck up on jack stands or lift.
3. Support the transmission using a floor jack.
4. Remove belly pan.
5. Remove front driveshaft.
6. Remove the paint from the frame rail from the front belly pan bolt forward about 6" on the bottom and about ½" up each side.
7. Clamp a piece of flat metal to the outside of the frame rail about 1" forward from the front belly pan bolthole.
8. Clamp the front control arm bracket in place:
 - a. For 1997-2002 models it should be 1.625" from the center of the front belly pan bolthole.
 - b. For 2003+ models (including Rubicon) it should be 3.625" from the center of the front belly pan bolthole.
9. Tack the bracket in at the four corners.
10. Remove clamps and weld all four sides. It may be easier to weld the inside with the drive train pushed way up or the exhaust removed.
11. Repeat steps 4 through 8 on the other side. See Photo Below.



12. Next you will need to prep the driver side frame right above the new lower control arm bracket. You will need to unclip the brakeline, fuel line and any other wires running down the frame in this location. We carefully removed these lines, saving the frame clips as they will be reused. We also wrapped the lines in tin foil to help prevent any weld spatter getting on the lines or wires.
- 13. WARNING!!! The line running down the frame rail includes the brake lines and gas lines. Be extremely careful not to damage them in any way. They also pose a serious fire hazard if cut or heat is applied to them. You may want to remove the lines completely, and then reroute them above the bracket once all the welding is complete.**
14. The new frame side 3 link bracket will need to be properly clearanced to fit above the new frame bracket. There is a top and bottom. The hole should be higher up. Depending on your welding above, this bracket may need to be grinded down more or less until it fits nicely above this bracket. See photo below.

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15.
16. The 3 link bracket will be in line with the back of the lower control arm brackets. Clean and grind the frame so it is ready to weld. **Make sure you cover the lower slot so you do not get any weld spatter in this location. Weld spatter or any debris will be difficult to clean out and may not allow proper installation of the flat plate.**
17. Pictures below show front and back of the new bracket ready for welding.



18.



19.

20. You may want to run the lines over the top of the bracket. This may make welding easier.



21.

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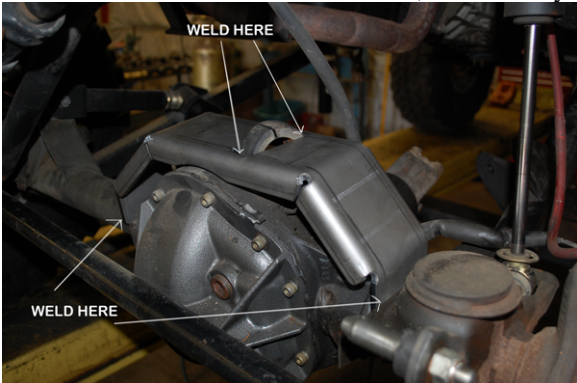
22. Once the 3 link bracket above is welded top, bottom and inside to the lower control arm bracket, make sure to let it cool, then reinstall all lines and wires against the frame. Do not install them into the frame clips yet. Leaving them loose will make installing the flat plate easier. Picture below shows the flat plate inserted into the slot and ready to weld. Once again we put tin foil on the lines, and make sure they will not come in contact with any of the lines or wires. Make sure you can put a bolt through both holes before welding. There is a top and bottom to the flat plate.



23.
24. Once both brackets are welded, let cool, paint, and reinstall all lines back into the OEM frame clips.
25. The next step is to get the axle ready for the upper 3 link mount. Instructions below are for OEM D30 or OEM Rubicon D44 axles with optional Pro Series Bridge.
26. You will need to remove the stock rubber bushing. We found the easiest way was to cut a slit in the top and then you should be able to hammer out the bushing. See picture below.
27. With the bushing removed you should be able to take the new Pro Series bridge and fit it into place.



28.
29. Mark where you will need to weld and grind the paint off the tubes on both sides of the axle. You will also need to weld the bridge to the driver side lower coil bucket mount.
30. You will need to weld the upper OEM mount to the Pro Series Bridge. Weld as much as possible to the bridge, front, back, and the sides. Where it meets the tubes, as much as you can of both sides and down each side.



31.
32. Welding to both sides of the tubes, and the upper mount gives it superior strength. You can cut the top of the mount off after welding for a clean look, or leave the top mount sticking up. It should not be in the way for the 3 link mount.

33. If you ordered the complete upgrade kit with the Pro Series Bridge, we already welded on the top 3 link mount to the bridge.



34.
35. The complete kit also comes with a powder coated arm with double adjusters. Adjust your pinion angle at ride height, and install new upper arm. Make sure you have at least 1 inch of thread engaged into the arm at each end. Try to keep thread engagement the same on the top and bottom.
36. Rear install all lines in their proper mounting location. Tighten all bolts to factory specs.

Rear Arms Installation Procedures

1. Remove muffler. It will have to be moved or replaced later with a smaller unit to clear control arms.
2. Remove the paint from the frame starting about 16" back from the new front mount 6" towards the rear of the frame rail on the bottom and about 1/2" up each side. The rear spacer insert for the belly pan on the driver side needs to be ground off flush with the frame rail. This bolt will not be used on the belly pan.
3. Clamp a piece of flat metal to the outside of the frame rail about 16" back from the new front control arm mount. Do this just like you did for the front bracket.
4. Clamp the front control arm bracket in place. It should be 17.5" from the back of the new front control arm mount to the front of the new rear control arm mount. Make sure it's pressed tightly against the flat stock, which should be clamped to the frame rail. Make sure you measure parallel with the frame rail to locate the bracket.
5. Tack the bracket in at the four corners.



6.
7. Remove clamps and weld all four sides.
8. Remove the lower control arm bracket on the frame. The best way is to use a 4.5"x.045" cut off wheel. Make a cut up the inside corner of the bracket up to the frame then across the back of the bracket along the bottom of the frame rail. Next cut about two thirds of the way through the weld at the top of the bracket on the out side. Using a hammer or large adjustable wrench you can now bend the bracket out and it will pop off the frame. Then cut through the weld in the bracket the same way on the inside and snap it off. Grind the frame rail smooth and paint the new bracket and frame rail where the old bracket.
9. Repeat steps 2 through 7 on the other side.
10. Remove the rear axle from the vehicle. If the tires are left on it makes it easy to handle and work on. The axle can be left in the vehicle but makes the job more difficult.
11. Remove the upper control arm mounts and grind the axle tubes smooth.

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12. In most application you should be able to reuse the factory breather hole and brakeline distribution block. In most cases you will need to remove the brakeline bracket on the passenger side temporarily. Then reinstall it once your welding is complete. Center the truss on the axle. Make your measurements from the rim or brake assembly. Don't use the differential housing as a reference point.
13. For OEM axles refer to TJ low pinion rear axle truss position drawing for truss angle setting.
14. Tack weld into place in four places on both legs of the truss.
15. Weld all four sides of both legs of the truss.
16. If you purchased our lower shock conversion kit, or purchased the package deal this is a good time to install the new lower shock mounts. Please refer to the shock installation below.
17. If you purchased our rear spring retainers, or purchased the package deal this is a good time to drill and tab the lower spring cup for the 3/8-16 bolt.
18. Paint truss and axle tubes.
19. Put the axle back under the vehicle.
20. Set both lower control arms to the same length, 31" for our 4.0 lift and 31.5 for our 5.5" lift, you should be able to put the bolts in both ends with the arms side by side. Final adjustments can be made later to center the axle if needed.
21. Install the lower arm at the axle side first. Swing the arm up into the frame side bracket. The Johnny Joint may need to be twisted for proper alignment. You'll have to roll the tire forward to align the bolthole.
22. Repeat step 19 on the other side.
23. Put the springs back in and a bottle jack under the pinion to hold the pinion angle. Now is the best time to swap out springs and shocks if needed.
24. Install upper and lower spring retainers if purchased reusing factory upper bolts, and supplied 3/8 grade 8 bolt with lock washer.
25. Once you have the pinion angle set where you want it you will have to center the axle under the vehicle. I find a come along or ratchet strap works well to pull the body over. Make your measurements from the same reference point on both sides.
26. Install the upper arms on the frame side first. It maybe necessary to lower or raise the t-case to get the driver side upper bolt in. **Do NOT install the skid plate before the upper arm is in with the bolt.**
27. Adjust them to the proper length and put the bolts in on the axle side. Do not worry about them being the same length; just adjust them so the bolts go in on both sides. You may have to twist the Johnny Joint to make it go in. Keep the amount of thread engaged equal from one side to the other. Meaning do not have one adjuster completely closed up, and the other one over extended.
28. Tighten the four lower control arm bolts, the four upper control arm bolts and lock the jam nuts on all four arms. You can slide a large screwdriver in along side the Johnny Joint to keep it aligned while locking the jam nut.
29. Grease all Johnny Joints.

Exhaust Modifications

1. We have found that the catalytic converter can be moved about 15" to 16" forward and a smaller muffler install that ends before the rear control arm bracket. The oxygen sensor will have to be moved and the wires lengthened to do this. If you have a 1" to 2" body lift it is possible to have a tail pipe bent to go up and over the rear upper control arm. It will be tight without a body lift and you may have to go under the arm. Another option is to just put a turn down at this point.

Modifying the Stock Belly Pan

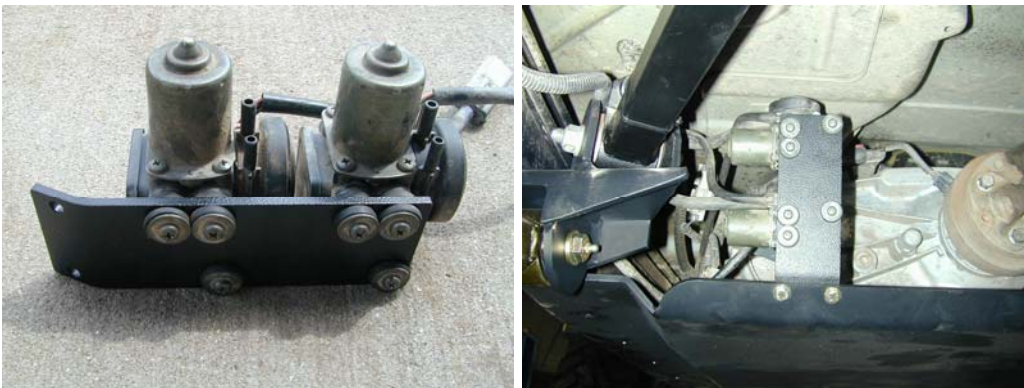
1. Measure from your mounting holes to the new brackets and mark the belly pan accordingly.
2. Measure down from the mounting surface that contacted the frame 2" mark this and use a cut off wheel to make the proper cuts for clearance.
3. Grind all edges smooth and paint.
4. Install the belly pan.

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5. Some final adjustments may have to be made to the pinion angles by adjusting the upper arms. Changes to the lower control arms may have to be made to center the axles in the wheel wells.

Installing a Clayton Off Road Mfg. 2 piece flat skid plate

1. Our 2-piece flat skid plate is intended to fit between the front and rear frame brackets.
2. Rubicon models, or TJs using a Rubicon t-case or Atlas t-case will require a 1 inch BL to allow clearance between the floor and the larger 4:1 tcase.
 - a. Clayton Off Road does NOT recommend installing a t-case spacer to allow for clearance.
3. Separate the skid plate from the cradle
4. Install cradle into OEM bolt holes using OEM bolts. Make sure cradle is centered left to right, as well as back to front. Tighten up OEM bolts on each side to factory specs.
5. Reinstall OEM transmission bolts and tighten to factory specs.
6. Install ¼ flat skid to cradle using supplied allen bolts.
7. Rubicon models come with a new bracket to relocate the OEM air pumps.
 - a. Remove both air pumps off OEM bracket
 - b. Reinstall the rubber grommets into new bracket
 - c. Reinstall both Oem pumps, one will be backwards from original location
 - d. Bolt to back of skid plate, and reattach wires and hoses.



HD Drop Track Bar Installation.

1. Remove factory trackbar.
2. Grind paint away from both sides of frame and around factory trackbar bracket where it makes contact with our new trackbar drop bracket.
3. Bolt up, using the supplied washer and nut. **This is intended for positioning ONLY, and needs to be fully welded.**
4. Located below is a picture to better illustrate how and where your trackbar drop bracket should be welded. Weld both side around the frame. And all the way around the stock mount.

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1. Let bracket cool, and paint.
2. Drill out lower location to 9/16s. Install lower end using new hardware and flange bracket.
3. Set vehicle track.
4. Adjust Johnny Joint so that the supplied 9/16s bolt easily slides through the new trackbar drop bracket.
5. Tighten upper and lower trackbar bolts and jam nut making sure the Johnny joints stays centered in trackbar drop bracket.

Please note, this trackbar and drop bracket is intended to be used with a drop pitman arm to provide proper angles. Completed installation pictured below.



TJ/LJ Lower shock conversion kit

1. Cut off OEM lower shock brackets. They will NOT be reused.
2. There is a left and right bracket. Please make sure the shock bracket angles in towards the center of the Jeep. Grind the backside of the control arm tabs and axle area and weld. This bracket is designed to add clearance by removing the stock OEM shock bracket, strengthen the lower control arm brackets, and properly space and locate the shock.
3. These brackets reuse the lower Oem shock bolt.
4. Let brackets cool, paint, and install shocks.

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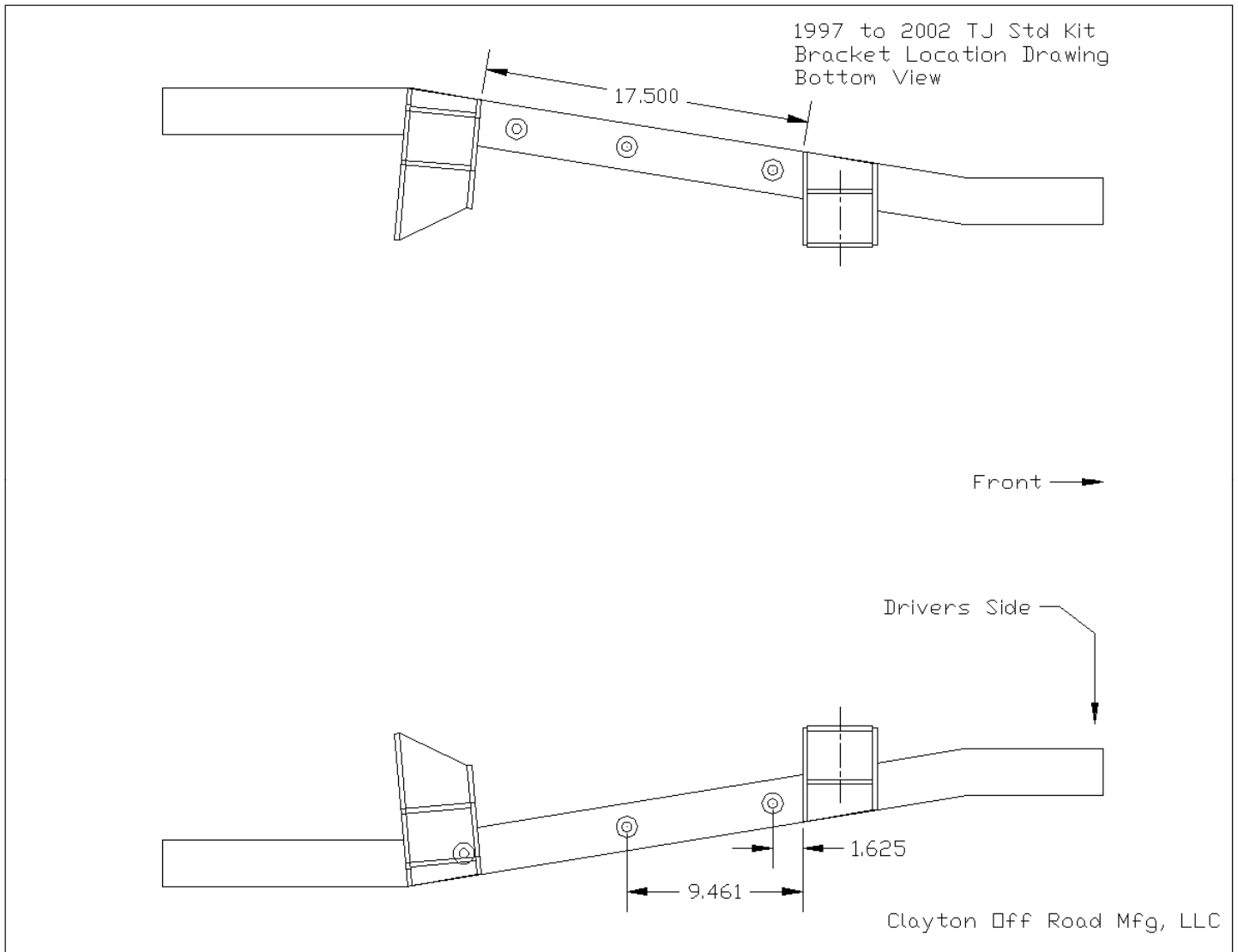


TJ/LJ Rear spring retainers

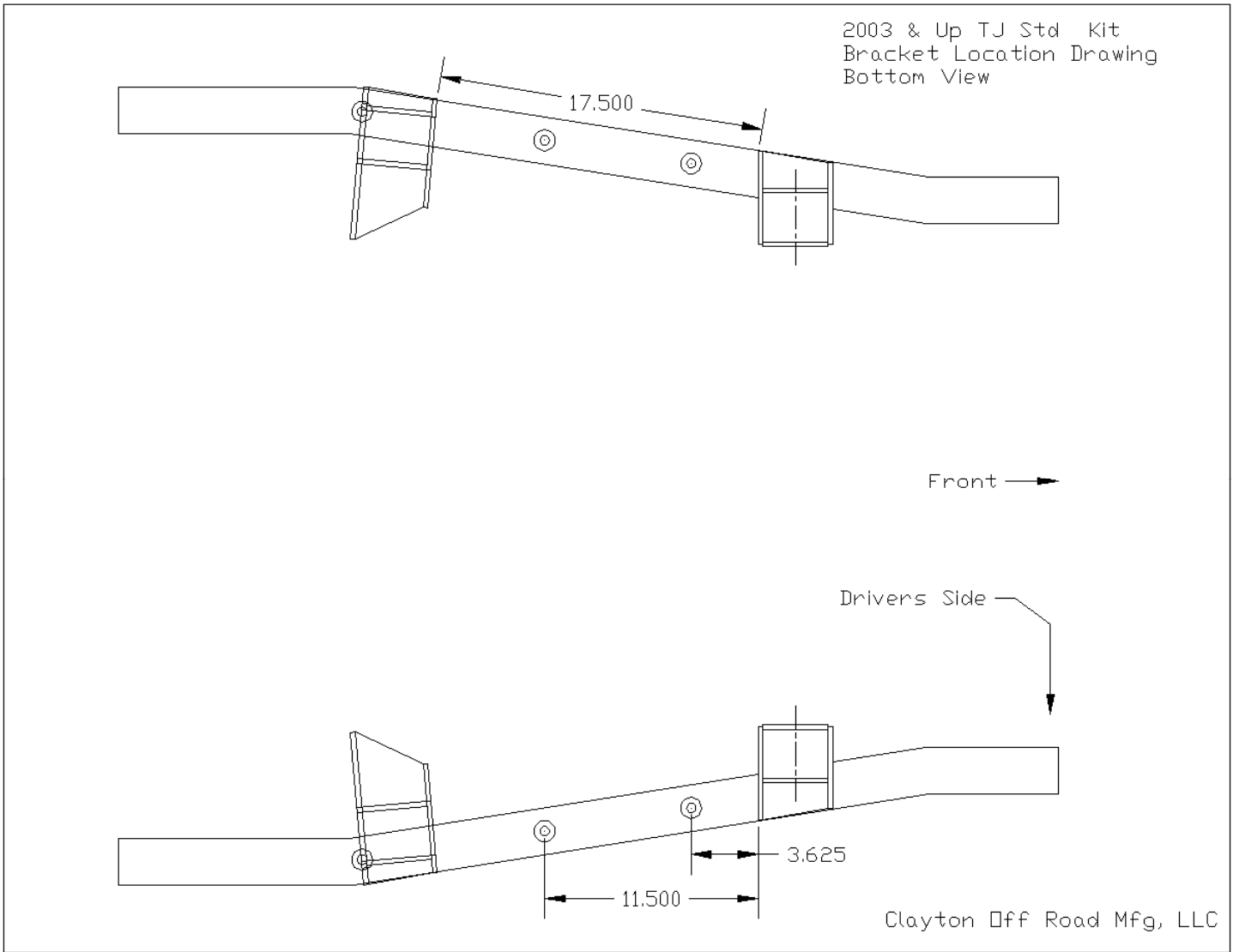
1. Remove upper bump stop and bump stop cup. (Upper bolt should be a 15mm.)
2. Drill and tap a 3/8-16 hole in the lower spring bucket cup.
3. Install springs. Make sure the factory upper spring isolator is in place.
4. Reuse OEM upper bolts clamping the spring.
5. Clamp lower spring using the supplied 3/8-16 bolt and lock washer as seen below.



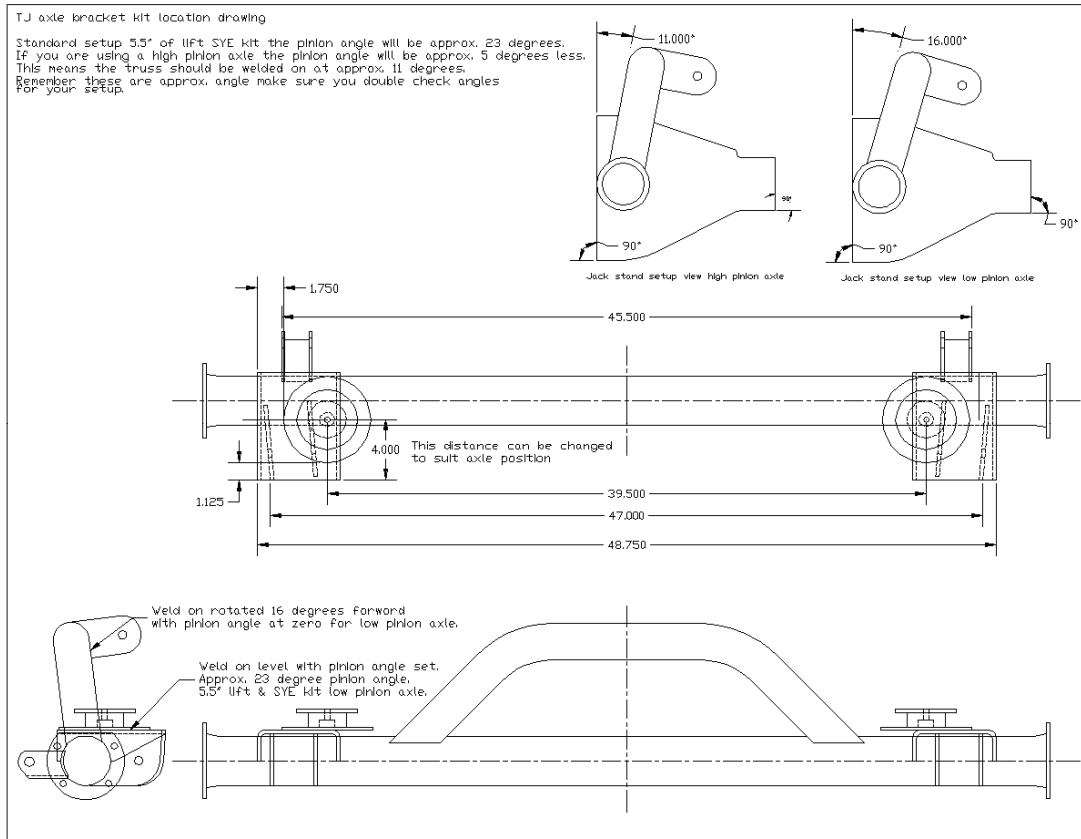
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Damage or Missing Parts Policy: If you receive a product that is damaged or missing parts you must contact us within 14 days to arrange replacement. You may be required to submit photos of damaged parts before new parts are sent. Damage parts may be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

Return Policy: You have 30 days to return a product in its 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. Returns are subject to inspection and may be 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 Inc. comes with our abuse proof limited lifetime warranty against bending or breaking our control arms only. This covers the original purchaser of our suspension lift. This warranty 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 warranty 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 Inc. 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 Inc. is not responsible for any retail parts that may be sold.

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

Warranties, policies and prices subject to change without notice.