

**CS-D30-94**  
**CS-D30-985**

**CS-D30-03-D**  
**CS-D30-03-H**

**CS-D30-10-D**  
**CS-D30-10-H**

### **NOTE:**

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Please review the product instructions prior to attempting installation to ensure installer is equipped with all tools and capabilities necessary to complete the product installation. We recommend thoroughly reading the instructions at least twice prior to attempting Installation.

Before beginning disassembly of the vehicle, check the “What’s Included” section of the instructions to ensure you’ve received all parts necessary to complete installation. Further, verify that the parts received are PROPER TO YOUR application (year range, motor, etc.) to avoid potential down-time in correcting potential discrepancies. Any discrepancies will be handled by Carli Suspension and the correcting products will be shipped UPS Ground.

## **LIFETIME PRODUCT WARRANTY**

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Carli Suspension provides a limited lifetime product warranty against defects in workmanship and materials from date of purchase to the original purchaser for all products produced by Carli Suspension. Parts not manufactured by, but made to Carli Suspension’s specifications by third party manufacturers will carry a warranty through their respective manufacturer. (i.e. King Shocks, Bilstein Shocks, Fox Shocks). Deaver Leaf Spring’s warranty will be processed by Carli Suspension.

Proof of purchase (from the original purchaser only) will be required to process any warranty claims. Carli Suspension products must be purchased for the listed Retail Price reflected by the price listed on the Carli Suspension Website at the time of purchase. Carli Suspension reserves the right to refuse warranty claims made by any customer refusing or unable to present proof of purchase, or presenting proof of purchase reflecting a price lower than Carli Suspension’s Retail Price at the time the item was purchased.

Carli Suspension’s Limited Lifetime Warranty excludes the following parts which are subject to wear: Track Bar Bushings, Track Bar Heim Joints, Limit Straps, Control Arm Bushings, Radius Arm Bushings, Shock Bushings, Sway Bar End Link Heim Joints, Shock Seals, Shock Bearings, and Corrosion on Shock Shafts or Bodies. These items will be warranted for a period of 60 days from the date of purchase only if determined to be installed properly signifying manufacturing defect. Carli Suspension cannot warrant a product’s cosmetic finish due to the varying extreme elements that may be encountered.

Any alterations, modifications, or improper installation, of the product will void this warranty. Products should be inspected for defect upon receipt and approved before installation. Any defect in NEW product will be warranted if returned before installation in its original packaging. Carli Suspension’s obligation under this warranty is limited to the repair or replacement of the defective product only. All costs of removal, installation or reinstallation, freight charges, incidental or consequential damage are expressly excluded from this warranty.

Carli Suspension is not responsible for damages and/or warranty of other vehicle parts related or non-related to the installed Carli Suspension product. This warranty shall not apply to any product that has been subjected to accident, negligence, alteration, abuse or misuse as determined by Carli Suspension. Carli Suspension reserves the right to refuse warranty claims if produced parts are combined and/or substituted with other aftermarket suspension products. Combination and/or substitution of other aftermarket suspension components may cause premature wear and/or product failure. Carli Suspension reserves the right to change/alter product without obligation to update any previously purchased products.



**PLEASE VISIT:** [Forums.CarliSuspension.com](http://Forums.CarliSuspension.com)  
*Troubleshooting advice or to download an electronic copy of this document.*

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## WHAT'S INCLUDED IN THE KIT

- Mutli-Rate Coil Springs
- Adjustable Sway Bar End Links
- Full Progressive Spring Pack
- Fabricated Shock Towers
- Rear Gusset Kit
- Adjustable Track Bar
- Carli Valved King 3.0" Shock Package
- Hole Saw and Arbor
- Limit Strap Kit

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## INSTALLATION INSTRUCTIONS

**Note:** Prior to installation, carefully inspect the vehicles steering and drive train components. Be sure to check ball joints, tie rod ends, pan-rod bar, and control arm bushings. Everything must be tight and in good working condition.

- \* We recommend installation be done by a trained professional.
- \* Read instructions carefully before attempting installation.
- \* Secure and properly block vehicle prior to installation.
- \* Front end alignment is necessary upon completion of install.
- \* Re-torque all nuts and bolts Front and Rear after 500 miles to ensure tightness.

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## DISASSEMBLY (OF OEM FRONT END NOT AFTERMARKET)

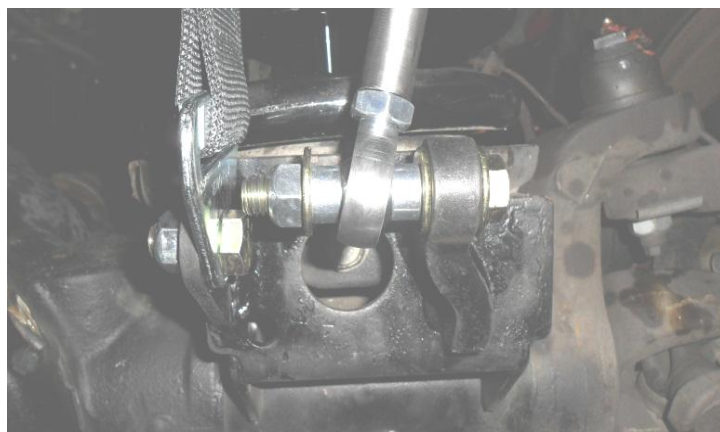
1. Set emergency brake and block rear wheels, in front and behind tires.
2. Remove inner fender wells. Be sure to disconnect ABS sensor wire from fender well at this time.
3. Disconnect sway bar end links from sway bar and axle, and then remove end links.
4. Disconnect brake line bolts from axle on both sides. (13mm Bolts located between upper and lower control arms.)
5. Remove pan-rod bar by removing bolts at driver side frame mount and Passenger side axle mount.
6. Remove Nut and Washers from top of the shock. (both sides)
7. Jack up front of truck and place jack stands under frame behind lower control arms.
8. Remove wheels and tires.
9. Remove lower shock bolts and pull shocks from vehicle (both sides)
10. Remove coil springs. You will reuse OEM isolators.
11. Remove three flange nuts holding upper shock mounts to coil bucket (both sides). Do not lose track of the shock mounts, stud rings or retaining nuts as these will all be reused!

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## ASSEMBLY: START INSTALL ON PASSENGER SIDE OF TRUCK

12. Drill 3 existing holes in coil bucket to 9/16".
13. On the passenger side rotate clamp on turbo outlet, located just above coil bucket on passenger side, 180 degrees so smooth parts of clamp faces out and retighten.
14. Place the Stud Rings against the bottom of the upper coil bucket. **MAKE SURE THE LOCKING PORTION OF THE NUTS FACE DOWN!** With the supplied 1/2" Bolts and washers, start the threads into the stud ring (stud ring only, no tower) from the top of the coil bucket, **DO NOT TIGHTEN** at this time. This will keep the stud ring in place while you work.
15. Feed shock reservoir through the bottom and out top of the coil bucket. Reservoir faces towards front of the truck.
16. Place OEM isolator on top of Carli coil and install.
17. Rotate the Coil so that logo is facing OUT.  
**NOTE: HEMI Coils are side specific, marked P and D for passenger and driver. For easier installation, separate right side tie rod end from knuckle.**
18. If the shock was purged to aid in installation, use compressed air to lightly charge the shock to extend it to line up the bottom shock hole into shock bolt pocket and install lower bolt.
19. Tighten lower shock bolt to 100 lbs/ft.
20. Lower the truck so the coils are under tension and bear the weight of the vehicle. This will hold the stud ring in place while the shock tower is installed.

21. Take bolts and washers out of stud ring
22. Install supplied stainless high mis-alignment spacers into shock bearings.
23. Feed Fabricated Shock Tower over the end of the shock reservoir and up over the top of the shock. The Carli logo will face outward.  
**NOTE:** Access to nitrogen will greatly help with this step. It is recommended that you release the shock pressure for easiest manipulation of the shock into the tower. If not, there may be a bit of a struggle to get the tower/shock lines up.
24. Rotate tower so the reservoir fitting is facing outward (away from the frame rail) allowing access to both sides of the tower (for the bolt head and nut).
25. Insert upper shock bolt and torque the nut to 100ft.lbs.
26. Rotate assembled tower so the reservoir fitting faces the front of the truck and the Carli logo faces outward.
27. Secure Fabricated Towers to the stud ring with supplied fasteners and torque to 45 lbs/ft.
28. Position reservoir mount on the frame rail in front of the coil. Ensure to position the mount as high on the frame as possible to avoid the sway bar contacting the reservoir when mounting.
29. Install reservoir mount with supplied self-tapping screws.
30. Secure reservoir to the mount with supplied hose clamps.
31. Repeat steps for Driver's side.
32. **FOR YEAR 03-05:** Drill the lower sway bar end link mount on the axle to 1/2". The mount is located off the front of the lower coil seat.  
**FOR YEAR 2006+:** Trucks DO NOT need drilling Use supplied reducer sleeve)
33. Assemble the new Stainless End links 1.5" longer than stock.
34. Install Stainless end links onto truck with supplied hardware and tighten. **NOTE THE ORDER** of spacers and washers, from the outside in goes -bolt, washer, OEM mount, washer, spacer, heim end, spacer, washer, and nut. You will connect to sway bar when truck is at ride height.
35. Reinstall wheels and tires and set truck on ground.
36. Connect sway bar to end links reutilizing factory bushing/& nut.
37. Tighten until rubber bushings start to crush.
38. Assemble the Carli Track Bar with the heim joint on the frame end and the Bushing/crush sleeve at the frame end.
39. Choose the appropriate crush sleeve size for the factory bolt and install the crush sleeve into the bushing using synthetic chassis grease.
40. Apply loctite to heim joint threads and set the track bar to 39-1/8" center to center (of the eyes). Tighten locknut to 150 ft. lbs. to ensure proper thread preload.
41. Insert pan-rod bar into axle side mount and tighten bolt/nut assembly to 185 ft. lbs if 14mm bolt (signified by 18mm socket fitment of the bolt head) or 220 ft. lbs if 16mm bolt (signified by 21mm socket fitment of the bolt head).
42. Insert pan-rod bar into frame side mount and tighten bolt/nut assembly to 185 ft. lbs if 14mm bolt (signified by 18mm socket fitment of the bolt head) or 220 ft. lbs if 16mm bolt (signified by 21mm socket fitment of the bolt head).  
**2010+ TRUCKS:** Install provided stainless steel shim into upper track bar bracket! See instructions in your track bar box for more detail on track bar installation.  
**NOTE:** If the holes do not line up at the frame side, have someone key on the ignition (do not start the truck) and move the steering wheel to align the bar and the bracket hole.
43. Reinstall fender wells and secure ABS lines.
44. Make sure to install vent tube from the factory shock tower to the edge of the coil bucket on the driver side.
45. Double check all fasteners and lugs.



### LIMIT STRAP PLACEMENT

46. Clean the metal on the edge of the flat front of the lower coil bucket on the axle, inboard of the End Link mount.
47. Place the supplied Limit Strap Tab so that it angles UP and points straight forward. Ensure its placed as high and inward as the mounting surface will allow.
48. Tack it onto the axle and double check clearance
49. Complete the weld
50. Apply paint to prevent rust.
51. Mount the Limit Strap to the bottom tab.
52. With the shocks installed, droop the front axle as far as it will go.
53. With the axle drooped, pull the limit strap upward (vertically) and hold it to the front of the upper coil bucket.
54. Mark the center of the hole on the limit strap.
55. Allow the limit strap to hang once marked then measure 1.5 inches UP from the mark you just made and make another mark. This will allow for the stretch of the Limit Strap during heavy cycling.
56. Center punch and drill hole to 1/2" and clean.
57. Install Limit Strap when the vehicle is on the ground.



## FULL REAR SPRINGS (2 PERSON OPERATION!)

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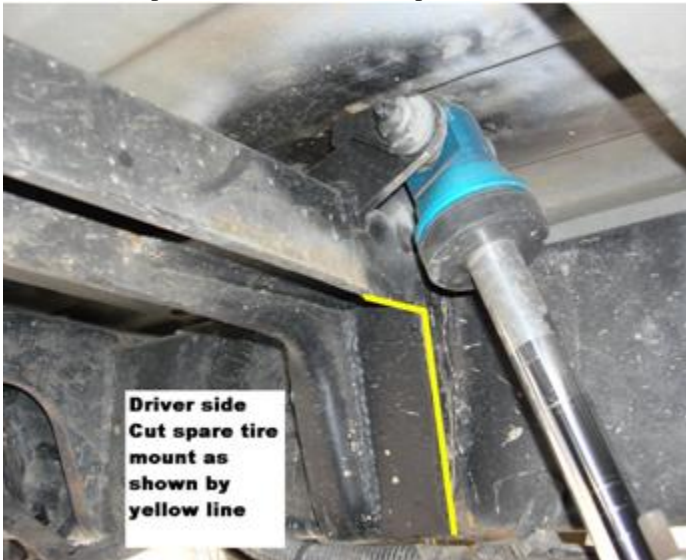
- 58.** Raise the Rear of the truck. If working without a shop hoist, support truck with suitable safety stands. To do this put the truck in park, block front wheels; both in front and behind tires, then disengage emergency brake. Place floor jack underneath rear axle and raise truck. Place safety jack stands under the frame to support the truck and lower the truck onto jack stands.
- 59.** Remove rear wheels.
- 60.** Supporting the axle, loosen the U-Bolts on the opposite you are working on to allow the axle to droop.
- 61.** Remove the rear shocks at this time.
- 62.** Remove the E-brake cable from the rotor assembly and re-route it OUT of the spring hanger. Only remove it from the spring hanger, it does not need to be removed from the body mount window. Let the cable hang until reassembly later.
- 63.** Loosen the front bolt at the spring hanger, then the bolt on the frame at the rear shackle.
- 64.** Remove U-Bolts and top plate
- 65.** Slowly drop axle until the factory leaf comes off the axle pad.
- 66.** Remove the already loosened bolts and take out the leaf.
- 67.** Remove the shackle from the leaf spring (paying attention to its orientation when it was removed.)
- 68.** Install Factory Shackle onto new Carli Leaf Spring in the same orientation as the factory spring.
- 69.** Torque the shackle bolt to 100 lbs/ft. The shackle will go on the side of the single wrap, the double or triple military wrap is the front of the leaf spring.
- 70.** Lift spring on to axle and reinstall. **SNUG THE HANGER AND SHACKLE FRAME BOLTS, BUT DO NOT FULLY TIGHTEN.**  
**NOTE:** If there is not sufficient room to install the leaf spring, it may be necessary to loosen the u-bolts on the opposing side to get the needed droop.
- 71.** Install supplied new U-Bolts and top plate. Snug up, but leave loose to assist with the other side.
- 72.** Repeat process on opposite side.
- 73.** Reattach E-Brake cable to rotor assembly. Use supplied rubber clip to prevent the E-brake cable from moving during driving. It can be attached to the 3/8" bolts that go through the square u-brackets attached to the leaf springs.



## REAR SHOCKS

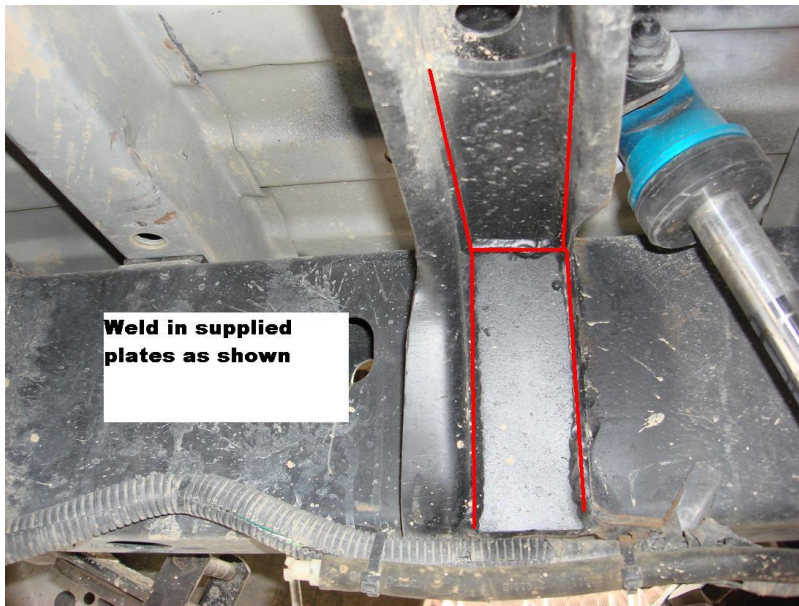
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- 74.** Remove Spare Tire
- 75.** Cut out the top forward corner of the spare tire mount (**See Illustration H**).



**76.** Clean and prep area

**77.** Weld in supplied reinforcing plates. (See Illustration I) After area has cooled paint the raw metal with spray paint as not to rust.



## FINAL ASSEMBLY

**78.** You may now install rear shocks. When installing shocks the shaft must go upwards towards the bed with the shock body @ the axle. (See Illustration I). Install upper bolt first so shock may hang. Then install lower bolt. Tighten to OEM specifications

**79.** Install fender liners and reattach ABS clips.

**80.** Install wheels/tires and set truck on ground.

**81.** Torque lug nuts to 115 lbs/ft.

**82.** Install Limit Straps onto welded tab and coil bucket hole with supplied hardware.

**83.** Align truck; re-torque all hardware after 500 miles

## OPERATIONAL INSPECTION AND SETTINGS:

Please note, the shocks included with this system come nitrogen charged, they require specific nitrogen pressure to operate correctly. Although they're shipped charged, customers should depress the shaft into the body of the shock to ensure it pushes out on its own. If the shaft remains in the body, it should be checked for nitrogen.

Ensure the vehicle is supported properly and that the axle is at full droop when verifying nitrogen pressure. Many gauges will release nitrogen in the process of checking the pressure; ensure your gauge will maintain shock pressure during verification (Lock out Gauge/King Shock Charging Manifold) to avoid loss of nitrogen. If you're unsure of whether the shocks are charged or not, many suspension shops, welding supplies, tire shops, or motorcycle repair shops will be able to check or refill your nitrogen charged shocks.

Without the proper nitrogen pressure, Carli Suspension's shocks will not operate properly and will be more susceptible to damage to the seals and internals of the shock. Again, No shocks will be replaced under warranty if the shocks were not properly charged before installation.

### Nitrogen Pressures: CHARGE WITH SHOCKS AT FULL EXTENTION

Bilstein 7100:	200 psi
Bilstein 9100:	225 psi
King 2.5:	225 psi
King 3.0:	250 psi
F/R Hydro Bumps:	250psi
7100 Plunger shock:	250psi

## FACTORY TORQUE SPECS

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Shock Absorber Upper Nut	40ftlbs
Shock Absorber Lower Bolt	100ftlbs
Shock Tower to Frame	55ftlbs
Lower Ball Joint Nut Initial Torque	35ftlbs
Lower Ball Joint Nut Final Torque	148ftlbs
Upper Ball Joint Nut	70ftlbs
Lower Control Arm Frame Nuts	200ftlbs
Lower Control Arm Axle Nut	200ftlbs
Upper Control Arm Frame Nuts	120ftlbs
Upper Control Arm Axle Nut	120ftlbs
Stabilizer Bar Frame Bolt	45ftlbs
Stabilizer Link Axle Bracket	110ftlbs
Stabilizer Link Stabilizer Bar Nut	27ftlbs
Stabilizer Link Axle Bracket (Power Wagon)	110ftlbs
Stabilizer Bar Nut (Power Wagon)	110ftlbs
Hub/Bearing Bolts	149ftlbs
Axle Nut	132ftlbs Beginning 263ftlbs Final Torque
Track Bar to Frame (2500/3500 4x4)	200ftlbs
Track Bar to Axle (2500/3500 4x4)	200ftlbs
Tie Rod End Nut	55ftlbs
ABS Assembly Mounting Bolts	11ftlbs
ABS Assembly ABM Screws	31 inlbs
ABS Assembly Brake Line Fittings	170 inlbs
Dynamics Sensor	97 inlbs
Wheel Speed Sensors, Front Sensor Bolt	190 inlbs
Wheel Speed Sensors, Bracket To Knuckle	60 inlbs
Wheel Speed Sensors, Rear Sensor Stud	200 inlbs
ABM Mounting Screws	53 inlbs
RWAL Module Mounting Bolts	11ftlbs
RWAL Valve Brake Line Fittings	170 inlbs
Rear Wheel Speed Sensor Mounting Bolt	200 inlbs
Brake Booster Mounting Nuts	21 ftlbs
Master Cylinder Mounting Nuts	160 inlbs
Reservoir Retaining Screws	6 ftlbs
Caliper Bleed Screws	14 ftlbs
Caliper Mounting Pins, Front	24ftlbs
Caliper Mounting Pins, Rear	22 ftlbs
Caliper Adapter Mounting Bolts, Front (1500)	130ftlbs
Caliper Adapter Mounting Bolts, Front (2500/3500)	275ftlbs
Caliper Adapter Mounting Bolts, Rear (1500)	120ftlbs
Caliper Adapter Mounting Bolts, Rear Upper (2500 and 3500)	163ftlbs
Caliper Adapter Mounting Bolts, Rear Lower (2500 and 3500)	190ftlbs
Junction Block Bolts, Front (1500)	14ftlbs
Junction Block Bolts, Rear (1500)	18ftlbs
Junction Block Bolts, Rear (2500/3500)	7.5ftlbs
Brake Pedal Assembly Bracket Bolts (1500)	23ftlbs
Brake Pedal Assembly Bracket Nuts (2500/3500)	21ftlbs
Support Plate Mounting Bolts/Nuts (1500)	75ftlbs
Support Plate Mounting Bolts/Nuts (2500/3500)	150ftlbs
Brake Line Fittings, Master Cylinder	14ftlbs
Brake Line Fittings, Junction Block (Both)	14ftlbs
Caliper Brake Line Banjo Bolt, Front	20ftlbs
Caliper Brake Line Banjo Bolt, Rear	20ftlbs
Brake Hose Bolts To Frame, Front	7.5 ftlbs
Brake Hose Fitting	14ftlbs
Parking Brake Pedal Assembly (1500)	18ftlbs
Parking Brake Pedal Assembly (2500/3500)	14ftlbs
Hub/Bearing Bolts (1500)	120ftlbs
Rotor to Hub Bolt, Rear (2500 and 3500 DRW)	114ftlbs
Extension to Rotor Nut, Front (2500 and 3500 DRW)	128ftlbs
Hub/Bearing Bolts, Front (2500 and 3500 4X2)	130ftlbs
Pitman Arm Gear Shaft Nut (2500, 3500)	177ftlbs

Drag Link to Pitman Arm (2500, 3500)	100 ftlbs
Drag Link to Tie Rod (2500, 3500)	100 ftlbs
Drag Link Adjuster Clamp (2500, 3500)	40 ftlbs
Tie Rod End to Knuckle (2500, 3500)	78 ftlbs
Tie Rod End Adjuster Clamp (2500, 3500)	40 ftlbs
Stabilizer Bar Link to Axle (2500, 3500)	50 ftlbs
Steering Damper to Axle or Linkage(2500, 3500)	75ftlbs
Steering Damper Bracket U-Bolt Nuts (2500, 3500)	45 ftlbs
Track bar to Axle - M16 fastener (2500, 3500)	200 ftlbs
Track Bar to Frame - M16 fastener (2500, 3500)	200 ftlbs
Lug Nut 9/16 X 18 with 60° Cone	130 ftlbs
Lug Nut 9/16 X 18 with 60° Cone (2500, 3500 - SRW)	140ftlbs
Lug Nut 9/16 X 18 with Flat Washer (3500 - DRW)	145ftlbs
Lug Nut 9/16 X 18 with Flat Washer (4500, 5500 - DRW)	148ftlbs
Spare Tire Winch	15ftlbs
Jounce Bumper Bolts	21.5ftlbs
Shock Absorber, Lower Nut/Bolt	100ftlbs
Shock Absorber, Upper Nut/Bolt	100ftlbs
Spring Clamp U-Bolt Nuts	110ftlbs
Spring Front Nut/Bolt to Frame	254.5ftlbs
Spring Shackle Nut/Bolt, Upper/Lower	160ftlbs