

## Installation Notes: 86000-R Race Series +3.5" L/T Kit

Applies to the following Part #s: 86000-R, 86000-R-H, 86000-R-16, 86000-R-H-16, 86004-R, 86004-R-H, 86004-R-10FJ, 86004-R-H-10FJ

**Factory manual is recommended for removal and re-installation of all factory components.**

Place vehicle securely on jack stands. Make sure the front wheels are not contacting the ground. Chock both rear wheels of the vehicle to secure it from rolling back. Remove the front wheels and tires.

### **Before you start disassembly:**

- Make sure the vehicle is secure and ready to work on.
- The vehicle suspension should be at max extension.
- Disconnect the negative (-) battery terminal at the battery. (Reason - you will be working close to the air bag sensors and welding on the vehicle.)

### **Step 1:**

Remove the factory lower skid plates by removing the 4 12mm bolts.

### **Step 2 - Factory Swaybar Removal:**

Loosen the sway-bar end links from the spindle. Disconnect the 4 14mm bolts from the bushing area on the bottom of the frame. Weave the sway-bar and end links between the frame and lower strut pieces. (This process may be easier if you remove the end links from the sway-bar.)



### **Step 3 - Differential Oil Drain (Necessary to remove and install 4WD axles):**

Locate the factory diff drain plug and loosen the plug using a 12mm allen wrench or socket. Drain out about a ½ qt. to keep the diff from leaking once the axles are removed. If the gear oil is dark and smells, now would be a good time to change it. (DO NOT remove the axles at this time. Removal is explained in step 7.)

### **Step 4 - Rubber Apron Removal:**

Locate the factory aprons on each side of the vehicle and remove the plastic clips. (These items can be reinstalled once the complete kit has been installed.)

### Step 5 - Spindle Removal:

Disconnect the ABS wire from the ABS sensor at the lower portion of the stock spindle. Remove the hardware from all brackets holding the ABS wire and brake lines to the spindle. Using a 17mm socket remove the front brake calipers and securely place out of your working area.

Next loosen the tie-rod jam nuts from each tie-rod end using a 22mm wrench. Remove the cotter pins from both outer tie-rod ends at the spindle. Loosen the 19mm nut on the tie-rod at the spindle. Strike the steering arm portion of the spindle just above the tie-rod to loosen the tapered fit. If striking the spindle does not work you can use a "pickle fork" (using a "pickle fork" may damage the rubber tie rod boot). Let both tie-rods hang free and out of your working area.

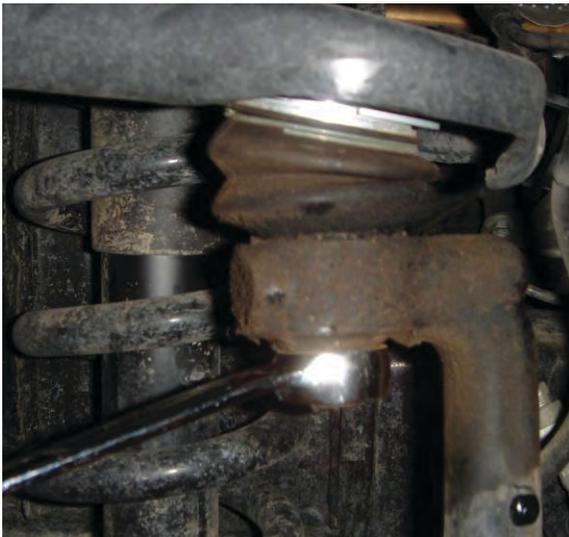
Using a chisel or flat putty knife and a hammer tap around the outer edge of the hub cover to remove. Once the hub cover has been removed undo the cotter pin and remove hardware.

Loosen both 4wd axles nuts on each side using a 36mm socket. (These are usually very tight and an impact gun is useful for removal.)

Loosen the lower ball-joint cradle from the spindle using a 19mm socket on both bolts. (Leave the bolts loose until the upper ball-joint nut has been loosened.)

Use a 19mm wrench or socket to loosen the upper ball-joint nut at the top of the spindle. Strike the top portion of the spindle under the ball-joint to loosen the tapered fit. If striking the spindle does not work you can use a "pickle fork" (using a "pickle fork" may damage the rubber ball joint boot)

Carefully lift and remove the spindles. (You may have to tap on the 4wd axle to loosen the splines in the hub bearing. Be careful not to damage the threads on the end of the axle shaft.)



### Step 6 - Upper Control Arm Removal:

Using a 19mm wrench and socket loosen the upper cross shaft bolt and remove. (You may need to bend the wheel apron out of the way to remove the bolts.) On the driver side inner wheel apron remove the bolt holding the wire harness. Remove any other sensors from both aprons that might be obstructing the bolt from removal.

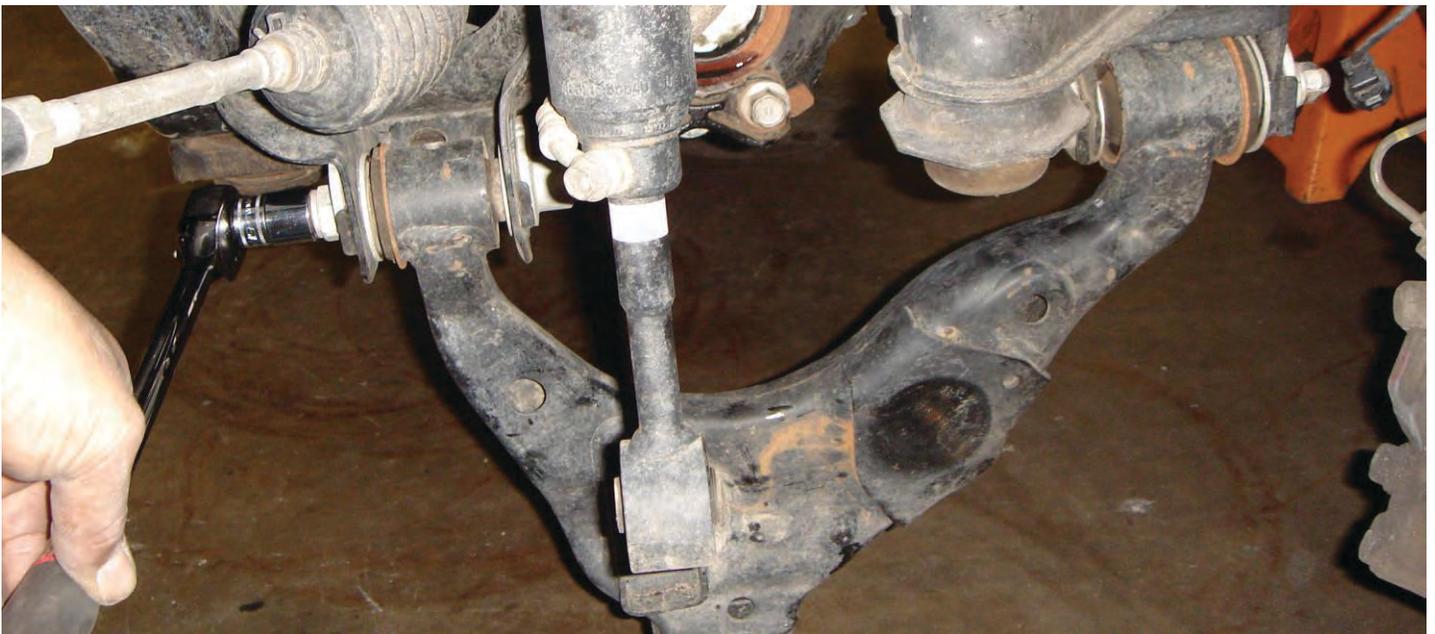
### Step 7 - 4WD Axle Removal:

Start by using a brass drift or pry bar and tap on the inner cv-joint to release the inner retaining clip. Tapping on the inner joint where the factory grooves in the CV housing is recommended. Once the retainer clip has been released, remove the axle. Make sure you mark which one is right and which was left - DO NOT SWAP SIDES. Refer to extended axle instructions for proper installations.



### Step 8 - Lower Arm Removal:

Using a 19mm socket and wrench loosen both lower cam bolts. Let the control arms hang down and remove the front and rear cam hardware. With the hardware removed, remove the control arms from the frame.



### Step 9 - Prep, Weld and Brake Line:

With the lower arms removed it is highly recommended to clean and weld the outsides of the lower cam tabs. (This will ensure that they will not bend. TOTAL CHAOS also offers replacement lower cam tab gussets part #'s 59860, 59860-10FJ, 59960). If using the factory bump stops remove them from the frame. Remove the paint from the area where the bump stop was in order to weld. Thread the factory bump stop into the bump stop extension provided in the kit. There should be a small piece of the bump stop stud sticking through the extension. Hold the bump stop with added extension up to the frame. Center bump stop as close to factory location as possible and tack in two areas. Weld in spaces around area as much as possible.

Remove the factory brake line clips from all mounts frame side and spindle side. Loosen the bottom brake line fitting at the caliper then at the top of the frame. Install the new brake lines provided in this kit. Before tightening the fittings make sure the line is not contacting anything that might damage the line. Snug down both lines at this time.

Bump stop spacer welded on and painted, reinstall the factory rubber bump stop into the threaded hole in the spacer.



**BEFORE STEP 10, PLEASE REFER TO PAGE 23 FOR INSTRUCTIONS TO PROPERLY INSTALL BUSHINGS IN THE UPPER AND LOWER CONTROL ARMS.**

### Step 10 - Installing the Lower Control Arm:

Before installing lower control arms you may need to bend lower arm tabs out slightly for easier fitment. With the welded areas painted (cam adjusters.) Grease the bushing face and tab face before installing arm into tabs. Use the factory hardware, center the alignment cams and snug down all at this time.



**THE NEXT STEP WILL BE DIFFERENT DEPENDING ON WHICH 3.5" LOWER CONTROL ARM YOU HAVE. PLEASE REFER TO THE IMAGES BELOW TO DETERMINE THE CORRECT WAY TO PROCEED.**



### **OLD STYLE UNIBALL END**

**(Produced up to Feb. 2022)**

If your lower control arm uniball end does not have an integrated steering stop tab, please continue to step **12.A**.



### **NEW STYLE UNIBALL END**

**(Produced after Feb. 2022)**

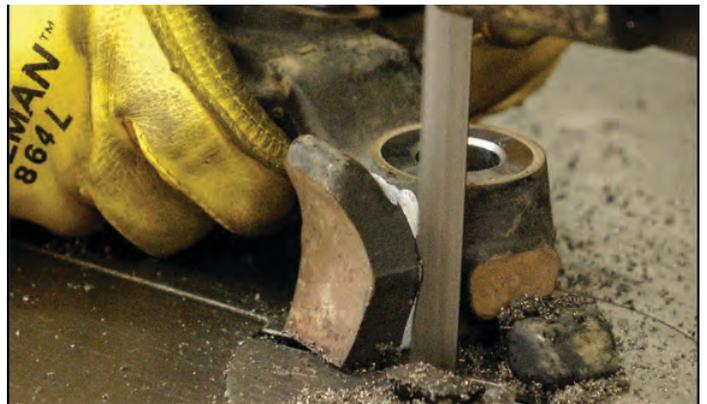
If your lower control arm uniball end has the integrated steering stop tab, please continue to step **12.B**.

## STEP 12.A - OLD STYLE LOWER CONTROL ARM UNIBALL END

Once the Ball Joint cradle is removed from the vehicle, mark the steering stops with a light colored marker so you know what needs to be removed.



Cut the steering stops off of the Ball Joint cradle using either a band saw, hack saw, reciprocating saw, or a disc cutter.



Sand off any rough edges from cutting the steering stops off.

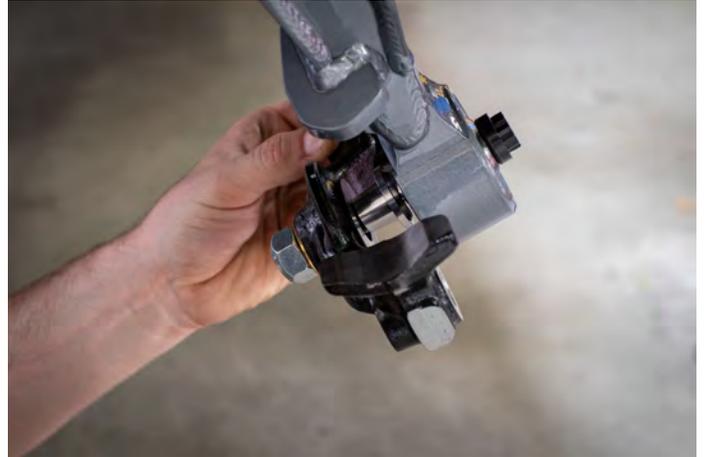


Paint the sanded area so the modified cradle doesn't rust.



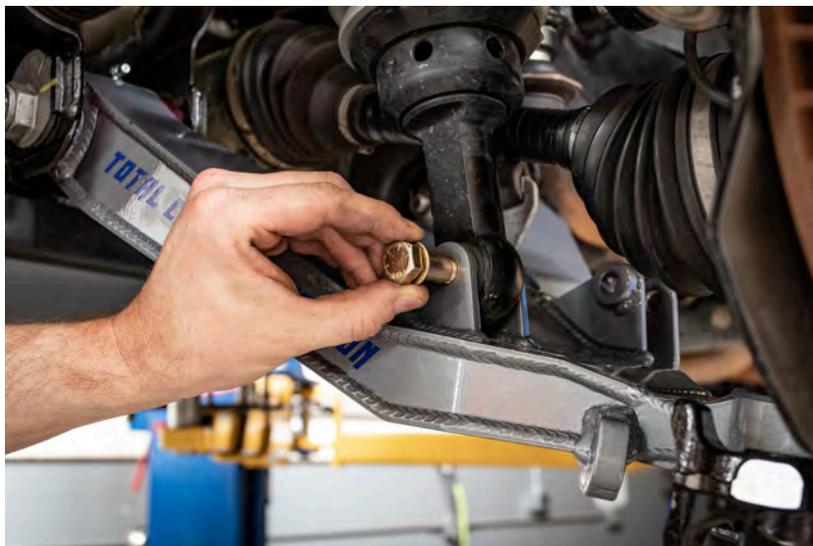
## STEP 12.B - NEW STYLE LOWER CONTROL ARM UNIBALL END

Insert the misalignment spacers into the uniball with the short spacer on the top and the tapered spacer on the bottom. Next insert the 5/8" bolt through the spacers, uniball, the **un-modified** stock ball joint cradle, SAE washer and into the provided c-lock nut. Torque the nut to 150 ft/lbs.



### Step 13: Shock Installation

Before installing the shocks make sure the fittings and reservoir are facing the front of the vehicle. Place the top portion of the shock into the coil tower on frame. Line up the bolt pattern and thread in the supplied 3/8" bolts and washers (torque shock bolts and nuts to 90 ft/lbs. 122-NM). (Repeat this procedure for the other side of the vehicle). Swing lower control up and install supplied 1/2" bolt through lower shock and mount.



#### Step 14 - 4WD Axle Installation:

Grease the inner and outer dust seals. Place a small amount of grease on each end of the axle splined areas. Place the inner axle shaft into the diff housing, rotate the axle till the splines line up. While holding the outer CV give the axle a good shove towards the diff to seat the retaining clip. If the axle does not seal all the way against the seal you may need to tap it in lightly. Install the outer CV nut then tap on the CV joint till it seats against the seals. (A dead blow or plastic hammer is recommended in order to not damage the axle threads.)



#### Step 15 - Upper Control Arm Installation:

It is recommended to bend the sheet metal apron to ease upper arm bolt installation. Start install of control arm by greasing the bushing face on both sides of the control arms. Place the control arm in upper mount with pivot gussets facing up and the bent tube facing forward (the pivot gussets also have part numbers on them that notate the side of the vehicle that arm is for.) Using the supplied Washers slide the bolt from front to rear of the vehicle. Make sure the washers are on each side of the bushings. (Torque nut to 85 ft/lbs. 115-NM) (Repeat process on other side.)



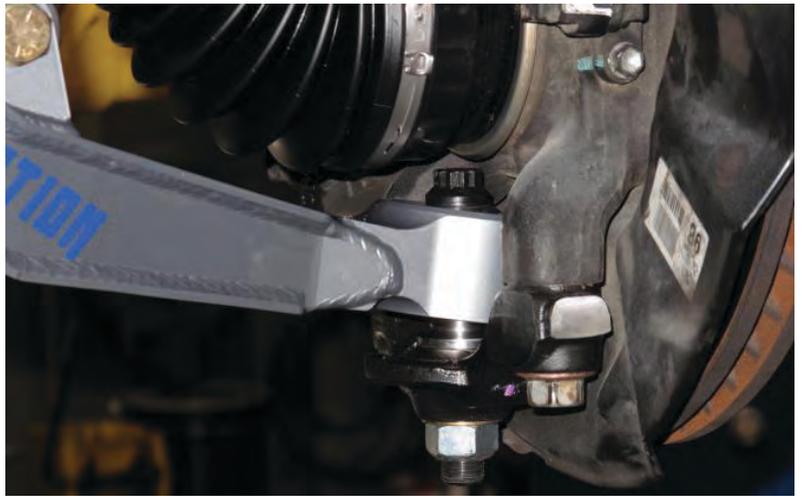
### Step 16 - Spindle Installation:

While holding the spindle up slide the 4WD axle through the bearing/turning the hub to insure proper spline alignment.

Lower the spindle till the ear of the spindle rests on top of the lower uni-ball adapter. Using the stock 16mm bolts thread them through ball joint cradle then into the spindle. (Leave these bolts finger tight for now). Using a floor jack under the ball joint cradle, carefully jack up the lower control arm about 2" being careful to not lift the vehicle off of the jack stands.

Next lower the upper control arm down to the top of the spindle, using the proper mis-alignment spacers top and bottom. Install the upper 9/16" bolt through the upper control arm mis-alignments, then through the spindle, using the 9/16" washer and nut provided. With the spindle on the suspension tighten all hardware. Now lower the jack returning the suspension to full droop and remove the jack.

Torque the upper 9/16" bolt to 100 ft/lbs 135-NM, 2 lower 19mm bolts to 118 ft/lbs 160-NM and the axle nut torque to 174 ft/lbs 235-NM. Tighten the axle nut, install the keeper over the nut and install a new cotter pin. Install the axle hub cap and tap to seat in place.



### Step 17 - Tie-Rod Extension Install:

Remove the stock outer tie-rod end from the inner tie-rod. Install tie-rod extension provided along with lock washer onto outer tie-rod using anti-seize and tighten all the way. Thread onto the inner tie-rod (Do not tighten at this time, an alignment will need to be done.) Place ball joint end into spindle and secure with the factory castle nut. (Torque nut to 75ft/lbs 101-NM and install new cotter pin.)



### **Step 18 - Caliper and Brake Line Install:**

Place the rotor over the hub bearing, slide caliper and brake pads over the rotor. Push caliper on until the mounting holes are lined up. Tighten caliper to the spindle using factory hardware. (Torque caliper bolts to 91 ft/lbs 123-NM). Mount all factory brake line brackets using factory hardware. Make sure supplied clips with the brake lines are installed on both ends. Refer to vehicle repair manual for brake bleeding procedures.

### **Step 19 - ABS Wire Routing:**

Make sure the ABS wire takes the stock path to the ABS plug. Mounting the ABS wire to the inside of the upper arm is recommended. Tie-wrap the ABS wire in two locations on the straight tube of the upper control arm. From this point, route the wire just like factory. Check to make sure the ABS plug is inserted all the way and be make sure that the ABS wire is free from obstruction and potential damage.

### **Step 20 - Limit Strap Weld-On Clevis Mount Installation:**

When placed on a vertical surface the supplied limit strap mount has angle built into it. Be sure that when the mount is welded onto the frame that the bottom of the mount is facing at an outward angle. Place the limit strap mount as close to the top of the frame as possible and also as close to the rear of the coil bucket as possible (keep in mind that you have to weld the outside of both sides of the mount.) Mark the area that will be welded and remove all paint and debris the surrounding area. Once paint is removed tack the limit strap mount into place. After double checking placement, it is recommended to cover the CV boots and any other delicate parts with a welding blanket before welding. Weld as much surface as possible, wait for welds to cool then paint.



### **After Install Is Complete (Shocks Installed):**

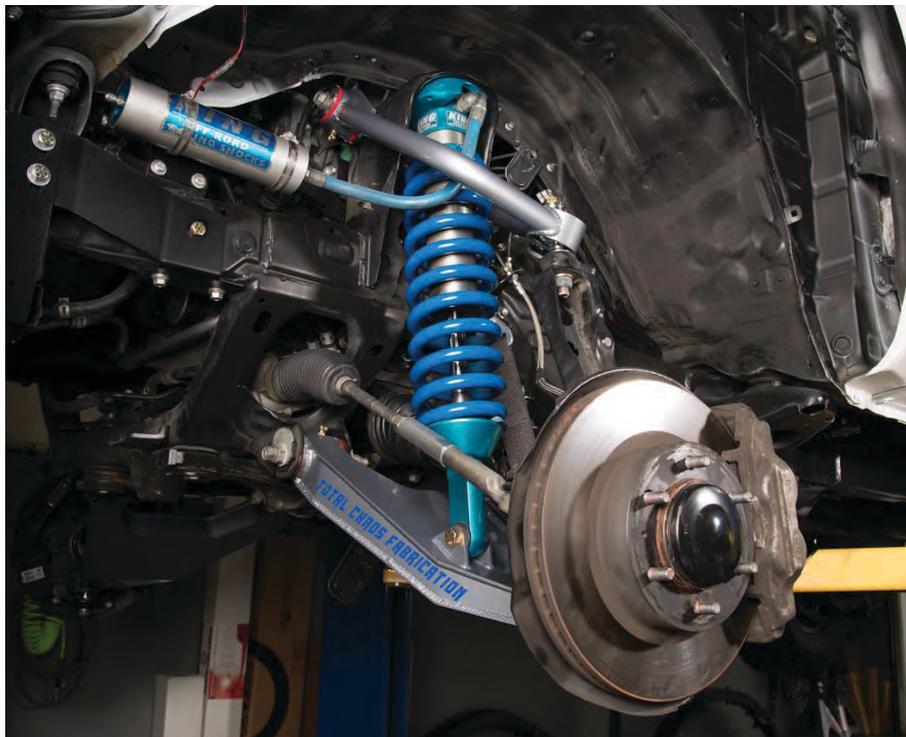
Adjust the limit straps so that there is at least a  $\frac{1}{4}$ " gap between the high mis-alignment spacer and the uni-ball cup on the upper control arm. (Take measurement at full droop) Limit straps will stretch over time and will need to be adjusted periodically to prevent damage to the shock and uni-ball components.

### Step 21 - Coilover Reservoir Weld-On Mounts:

Start by routing reservoir under the upper control arm facing forward on the vehicle. Make sure the hose itself is not coming in contact with anything that will damage the hose or fittings. Hold the reservoir along the front frame section in a place where you can still charge the shock reservoir. Weld in res. mounts in desired areas suitable for the manufacturer of the reservoir shock.



### Finished Install Picture:



## **Step 22 - Reminders:**

- Bleed front brakes after installation.
- Check for fluid leaks and spongy pedal.
- Charge both front shocks' reservoirs. Contact shock manufacturer for correct PSI. (Make sure shocks are at max extension before charging!)
- Using a tape measure set toe 1/8" to 3/16" toed in on the front and lock down jam nuts before driving. This will allow you to test drive and get to the alignment shop.
- Re-torque should be done after 500-1000 miles.
- Torque all wheel lug nuts before driving.
- Perform a visual check on complete install before driving!
- Get an alignment from a qualified shop that has long travel knowledge.

**NEED REPLACEMENT PARTS?**

**KIT PARTS LISTS LOCATED ON  
THE FOLLOWING PAGES**

Kit: 86000-R (Box 1 of 2)

PART #	DESCRIPTION	QTY
68601L	Upper A-Arm: Left +3.5"	1
68601R	Upper A-Arm: Right +3.5"	1
10034TCF	1"-3/4" Hi-misalignment Spacer TCF	2
100916	1"-9/16" Hi-misalignment Spacer	2
10251	Bolt: 9/16"- 18 x 5" GRADE 8 (Zinc)	2
12203	Washer: 9/16" AN (gold zinc)	2
30004	Tapered Spindle Adapter: 9/16" ID	2
12204	Washer: 9/16" SAE (gold zinc)	2
11202	Nut: 9/16"- 18 C-lock (Zinc)	2
69620	Washer: Upper Arm 2 1/4" x 3/16" x 9/16" ID	8
10005	Zerk Fitting: 1/4"- 28 90 degree	4
68610	Bump Stop Spacer: 3/4" x 2"	2
99016	Chromoly Tie Rod Extension: 16mm for +3.5"	2
12016	Washer: 16mm Lock (zinc)	2
97340	Brakeline: 15"	2
33301	Brakeline Clip	2
FK-WSSX16T-1	1" Uniball Stainless w/ PTFE Liner	2
30604	Snap Ring 1" Uniball	2
60684	Bushing Universal Half - Urethane: Red	8
69120	Inner Sleeve: Upper A-Arm	4
69611	11" Limit Strap - Triple Layer	2
69618	Adjustable Limit Strap Clevis	2
69619	Weld-on Clevis Mount	2
59204	Reservoir Tab	4

Kit: 86000-R (Box 2 of 2)

PART #	DESCRIPTION	QTY
68602L-4130	Lower A-Arm: Left +3.5" - RACE Series	1
68602R-4130	Lower A-Arm: Right +3.5" - RACE Series	1
10141	Bolt: 5/8"- 18 x 4.00" - 12 pt Head   Black	2
10058C	1"-5/8" Hi-misalignment Spacer CUSTOM	2
10058TAC	Tapered Adapter: Lower A-Arm	2
12103	Washer: 5/8" AN (gold zinc)	2
11102	Nut: 5/8"- 18 C-lock (Zinc)	2
10025	Bolt: 1/2"- 20 x 2.50" GRADE 8 (Zinc)	2
10030	Bolt: 1/2"- 20 x 3" GRADE 8 (Zinc)	2
12003	Washer: 1/2" AN (gold zinc)	8
11001	Nut: 1/2"- 20 Nylock (Zinc)	4
10005	Zerk Fitting: 1/4"- 28 90 degree	4
FK-WSSX16T-1	1" Uniball Stainless w/ PTFE Liner	2
30604	Snap Ring 1" Uniball	2
60293	Bushing Universal Full - Urethane: Red - 1.25" ID	6
60685	Bushing Universal Half - Urethane: Red - 1.25" ID	2
68608	Inner Sleeve: Lower A-Arm Front - 1.250" OD	2
68609	Inner Sleeve: Lower A-Arm Rear   05 Taco - 1.250" OD	2

Kit: 86000-R-H (Box 1 of 2)

PART #	DESCRIPTION	QTY
68601L-H	Upper A-Arm: Left +3.5" (HEIM Pivots)	1
68601R-H	Upper A-Arm: Right +3.5" (HEIM Pivots)	1
FK-JMX12T	Heim: RHT 3/4 x 3/4	4
11373	Nut: 3/4"- 16 RHT Jam (Zinc)	4
10034TCF	1"- 3/4" Hi-misalignment Spacer TCF	2
100916	1"- 9/16" Hi-misalignment Spacer	2
10251	Bolt: 9/16"- 18 x 5" GRADE 8 (Zinc)	2
12203	Washer: 9/16" AN (gold zinc)	2
30004	Tapered Spindle Adapter: 9/16" ID	2
12204	Washer: 9/16" SAE (gold zinc)	2
11202	Nut: 9/16"- 18 C-lock (Zinc)	2
68610	Bump Stop Spacer: 3/4" x 2"	2
99016	Chromoly Tie Rod Extension: 16mm for +3.5"	2
12016	Washer: 16mm Lock (zinc)	2
99868	Heim Spacer: 86000H	8
97340	Brakeline: 15"	2
33301	Brakeline Clip	2
FK-WSSX16T-1	1" Uniball Stainless w/ PTFE Liner	2
30604	Snap Ring 1" Uniball	2
40041	11" Limit Strap	2
69618	Adjustable Limit Strap Clevis	2
69619	Weld-on Clevis Mount	2
59204	Reservoir Tab	4

Kit: 86000-R-H (Box 2 of 2)

PART #	DESCRIPTION	QTY
68602L-4130	Lower A-Arm: Left +3.5" - RACE Series	1
68602R-4130	Lower A-Arm: Right +3.5" - RACE Series	1
10141	Bolt: 5/8"- 18 x 4.00" - 12 pt Head   Black	2
10058C	1"- 5/8" Hi-misalignment Spacer CUSTOM	2
10058TAC	Tapered Adapter: Lower A-Arm	2
12103	Washer: 5/8" AN (gold zinc)	2
11102	Nut: 5/8"- 18 C-lock (Zinc)	2
10025	Bolt: 1/2"- 20 x 2.50" GRADE 8 (Zinc)	2
10030	Bolt: 1/2"- 20 x 3" GRADE 8 (Zinc)	2
12003	Washer: 1/2" AN (gold zinc)	8
11001	Nut: 1/2"- 20 Nylock (Zinc)	4
10005	Zerk Fitting: 1/4"- 28 90 degree	4
FK-WSSX16T-1	1" Uniball Stainless w/ PTFE Liner	2
30604	Snap Ring 1" Uniball	2
60293	Bushing Universal Full - Urethane: Red - 1.25" ID	6
60685	Bushing Universal Half - Urethane: Red - 1.25" ID	2
68608	Inner Sleeve: Lower A-Arm Front - 1.250" OD	2
68609	Inner Sleeve: Lower A-Arm Rear   05 Taco - 1.250" OD	2

Kit: 86000-R-16 (Box 1 of 2)

PART #	DESCRIPTION	QTY
68601L	Upper A-Arm: Left +3.5"	1
68601R	Upper A-Arm: Right +3.5"	1
10034TCF	1" - 3/4" Hi-misalignment Spacer TCF	2
100916	1" - 9/16" Hi-misalignment Spacer	2
10251	Bolt: 9/16" - 18 x 5" GRADE 8 (Zinc)	2
12203	Washer: 9/16" AN (gold zinc)	2
30004	Tapered Spindle Adapter: 9/16" ID	2
12204	Washer: 9/16" SAE (gold zinc)	2
11202	Nut: 9/16" - 18 C-lock (Zinc)	2
69620	Washer: Upper Arm 2 1/4" x 3/16" x 9/16" ID	8
10005	Zerk Fitting: 1/4" - 28 90 degree	4
68610	Bump Stop Spacer: 3/4" x 2"	2
99016	Chromoly Tie Rod Extension: 16mm for +3.5"	2
12016	Washer: 16mm Lock (zinc)	2
97340	Brakeline: 15"	2
33301	Brakeline Clip	2
FK-WSSX16T-1	1" Uniball Stainless w/ PTFE Liner	2
30604	Snap Ring 1" Uniball	2
60684	Bushing Universal Half - Urethane: Red	8
69120	Inner Sleeve: Upper A-Arm	4
69611	11" Limit Strap - Triple Layer	2
69618	Adjustable Limit Strap Clevis	2
69619	Weld-on Clevis Mount	2
59204	Reservoir Tab	4

Kit: 86000-R-16 (Box 2 of 2)

PART #	DESCRIPTION	QTY
68602L-4130	Lower A-Arm: Left +3.5" - RACE Series	1
68602R-4130	Lower A-Arm: Right +3.5" - RACE Series	1
10141	Bolt: 5/8" - 18 x 4.00" - 12 pt Head   Black	2
10058C	1" - 5/8" Hi-misalignment Spacer CUSTOM	2
10058TAC	Tapered Adapter: Lower A-Arm	2
12103	Washer: 5/8" AN (gold zinc)	2
11102	Nut: 5/8" - 18 C-lock (Zinc)	2
10025	Bolt: 1/2" - 20 x 2.50" GRADE 8 (Zinc)	2
10030	Bolt: 1/2" - 20 x 3" GRADE 8 (Zinc)	2
12003	Washer: 1/2" AN (gold zinc)	8
11001	Nut: 1/2" - 20 Nylock (Zinc)	4
10005	Zerk Fitting: 1/4" - 28 90 degree	4
FK-WSSX16T-1	1" Uniball Stainless w/ PTFE Liner	2
30604	Snap Ring 1" Uniball	2
60292	Bushing Universal Full - Urethane: Red	4
60293	Bushing Universal Full - Urethane: Red - 1.25" ID	2
60685	Bushing Universal Half - Urethane: Red - 1.25" ID	2
68606	Inner Sleeve: Lower A-Arm Front   2010+ FJ	2

Kit: 86000-R-H-16 (Box 1 of 2)

PART #	DESCRIPTION	QTY
68601L-H	Upper A-Arm: Left +3.5" (HEIM Pivots)	1
68601R-H	Upper A-Arm: Right +3.5" (HEIM Pivots)	1
FK-JMX12T	Heim: RHT 3/4 x 3/4	4
11373	Nut: 3/4"- 16 RHT Jam (Zinc)	4
10034TCF	1"- 3/4" Hi-misalignment Spacer TCF	2
100916	1"- 9/16" Hi-misalignment Spacer	2
10251	Bolt: 9/16"- 18 x 5" GRADE 8 (Zinc)	2
12203	Washer: 9/16" AN (gold zinc)	2
30004	Tapered Spindle Adapter: 9/16" ID	2
12204	Washer: 9/16" SAE (gold zinc)	2
11202	Nut: 9/16"- 18 C-lock (Zinc)	2
68610	Bump Stop Spacer: 3/4" x 2"	2
99016	Chromoly Tie Rod Extension: 16mm for +3.5"	2
12016	Washer: 16mm Lock (zinc)	2
99868	Heim Spacer: 86000H	8
97340	Brakeline: 15"	2
33301	Brakeline Clip	2
FK-WSSX16T-1	1" Uniball Stainless w/ PTFE Liner	2
30604	Snap Ring 1" Uniball	2
40041	11" Limit Strap	2
69618	Adjustable Limit Strap Clevis	2
69619	Weld-on Clevis Mount	2
59204	Reservoir Tab	4

Kit: 86000-R-H-16 (Box 2 of 2)

PART #	DESCRIPTION	QTY
68602L-4130	Lower A-Arm: Left +3.5" - RACE Series	1
68602R-4130	Lower A-Arm: Right +3.5" - RACE Series	1
10141	Bolt: 5/8"- 18 x 4.00" - 12 pt Head   Black	2
10058C	1"- 5/8" Hi-misalignment Spacer CUSTOM	2
10058TAC	Tapered Adapter: Lower A-Arm	2
12103	Washer: 5/8" AN (gold zinc)	2
11102	Nut: 5/8"- 18 C-lock (Zinc)	2
10025	Bolt: 1/2"- 20 x 2.50" GRADE 8 (Zinc)	2
10030	Bolt: 1/2"- 20 x 3" GRADE 8 (Zinc)	2
12003	Washer: 1/2" AN (gold zinc)	8
11001	Nut: 1/2"- 20 Nylock (Zinc)	4
10005	Zerk Fitting: 1/4"- 28 90 degree	4
FK-WSSX16T-1	1" Uniball Stainless w/ PTFE Liner	2
30604	Snap Ring 1" Uniball	2
60292	Bushing Universal Full - Urethane: Red	4
60293	Bushing Universal Full - Urethane: Red - 1.25" ID	2
60685	Bushing Universal Half - Urethane: Red - 1.25" ID	2
68606	Inner Sleeve: Lower A-Arm Front   2010+FJ	2

Kit: 86004-R (Box 1 of 2)

PART #	DESCRIPTION	QTY
68601L	Upper A-Arm: Left +3.5"	1
68601R	Upper A-Arm: Right +3.5"	1
10034TCF	1"-3/4" Hi-misalignment Spacer TCF	2
100916	1"-9/16" Hi-misalignment Spacer	2
10251	Bolt: 9/16"- 18 x 5" GRADE 8 (Zinc)	2
12203	Washer: 9/16" AN (gold zinc)	2
30004	Tapered Spindle Adapter: 9/16" ID	2
12204	Washer: 9/16" SAE (gold zinc)	2
11202	Nut: 9/16"- 18 C-lock (Zinc)	2
69620	Washer: Upper Arm 2 1/4" x 3/16" x 9/16" ID	8
10005	Zerk Fitting: 1/4"- 28 90 degree	4
68610	Bump Stop Spacer: 3/4" x 2"	2
99015	Chromoly Tie Rod Extension: 15mm	2
12016	Washer: 16mm Lock (zinc)	2
97340	Brakeline: 15"	2
33301	Brakeline Clip	2
FK-WSSX16T-1	1" Uniball Stainless w/ PTFE Liner	2
30604	Snap Ring 1" Uniball	2
60684	Bushing Universal Half - Urethane: Red	8
69120	Inner Sleeve: Upper A-Arm	4
69611	11" Limit Strap - Triple Layer	2
69618	Adjustable Limit Strap Clevis	2
69619	Weld-on Clevis Mount	2
59204	Reservoir Tab	4

Kit: 86004-R (Box 2 of 2)

PART #	DESCRIPTION	QTY
68602L-4130	Lower A-Arm: Left +3.5" - RACE Series	1
68602R-4130	Lower A-Arm: Right +3.5" - RACE Series	1
10141	Bolt: 5/8"- 18 x 4.00" - 12 pt Head   Black	2
10058C	1"-5/8" Hi-misalignment Spacer CUSTOM	2
10058TAC	Tapered Adapter: Lower A-Arm	2
12103	Washer: 5/8" AN (gold zinc)	2
11102	Nut: 5/8"- 18 C-lock (Zinc)	2
10025	Bolt: 1/2"- 20 x 2.50" GRADE 8 (Zinc)	2
10030	Bolt: 1/2"- 20 x 3" GRADE 8 (Zinc)	2
12003	Washer: 1/2" AN (gold zinc)	8
11001	Nut: 1/2"- 20 Nylock (Zinc)	4
10005	Zerk Fitting: 1/4"- 28 90 degree	4
FK-WSSX16T-1	1" Uniball Stainless w/ PTFE Liner	2
30604	Snap Ring 1" Uniball	2
60293	Bushing Universal Full - Urethane: Red - 1.25" ID	6
60685	Bushing Universal Half - Urethane: Red - 1.25" ID	2
68608	Inner Sleeve: Lower A-Arm Front - 1.250" OD	2
68609	Inner Sleeve: Lower A-Arm Rear   05 Taco - 1.250" OD	2

Kit: 86004-R-H (Box 1 of 2)

PART #	DESCRIPTION	QTY
68601L-H	Upper A-Arm: Left +3.5" (HEIM Pivots)	1
68601R-H	Upper A-Arm: Right +3.5" (HEIM Pivots)	1
FK-JMX12T	Heim: RHT 3/4 x 3/4	4
11373	Nut: 3/4"- 16 RHT Jam (Zinc)	4
10034TCF	1"- 3/4" Hi-misalignment Spacer TCF	2
100916	1"- 9/16" Hi-misalignment Spacer	2
10251	Bolt: 9/16"- 18 x 5" GRADE 8 (Zinc)	2
12203	Washer: 9/16" AN (gold zinc)	2
30004	Tapered Spindle Adapter: 9/16" ID	2
12204	Washer: 9/16" SAE (gold zinc)	2
11202	Nut: 9/16"- 18 C-lock (Zinc)	2
68610	Bump Stop Spacer: 3/4" x 2"	2
99015	Chromoly Tie Rod Extension: Taquito Kit 15mm	2
12016	Washer: 16mm Lock (zinc)	2
99868	Heim Spacer: 86000H	8
97340	Brakeline: 15"	2
33301	Brakeline Clip	2
FK-WSSX16T-1	1" Uniball Stainless w/ PTFE Liner	2
30604	Snap Ring 1" Uniball	2
40041	11" Limit Strap	2
69618	Adjustable Limit Strap Clevis	2
69619	Weld-on Clevis Mount	2
59204	Reservoir Tab	4

Kit: 86004-R-H (Box 2 of 2)

PART #	DESCRIPTION	QTY
68602L-4130	Lower A-Arm: Left +3.5" - RACE Series	1
68602R-4130	Lower A-Arm: Right +3.5" - RACE Series	1
10141	Bolt: 5/8"- 18 x 4.00" - 12 pt Head   Black	2
10058C	1"- 5/8" Hi-misalignment Spacer CUSTOM	2
10058TAC	Tapered Adapter: Lower A-Arm	2
12103	Washer: 5/8" AN (gold zinc)	2
11102	Nut: 5/8"- 18 C-lock (Zinc)	2
10025	Bolt: 1/2"- 20 x 2.50" GRADE 8 (Zinc)	2
10030	Bolt: 1/2"- 20 x 3" GRADE 8 (Zinc)	2
12003	Washer: 1/2" AN (gold zinc)	8
11001	Nut: 1/2"- 20 Nylock (Zinc)	4
10005	Zerk Fitting: 1/4"- 28 90 degree	4
FK-WSSX16T-1	1" Uniball Stainless w/ PTFE Liner	2
30604	Snap Ring 1" Uniball	2
60293	Bushing Universal Full - Urethane: Red - 1.25" ID	6
60685	Bushing Universal Half - Urethane: Red - 1.25" ID	2
68608	Inner Sleeve: Lower A-Arm Front - 1.250" OD	2
68609	Inner Sleeve: Lower A-Arm Rear   05 Taco - 1.250" OD	2

Kit: 86004-R-10FJ (Box 1 of 2)

PART #	DESCRIPTION	QTY
68601L-H	Upper A-Arm: Left +3.5" (HEIM Pivots)	1
68601R-H	Upper A-Arm: Right +3.5" (HEIM Pivots)	1
FK-JMX12T	Heim: RHT 3/4 x 3/4	4
11373	Nut: 3/4"- 16 RHT Jam (Zinc)	4
10034TCF	1"- 3/4" Hi-misalignment Spacer TCF	2
100916	1"- 9/16" Hi-misalignment Spacer	2
10251	Bolt: 9/16"- 18 x 5" GRADE 8 (Zinc)	2
12203	Washer: 9/16" AN (gold zinc)	2
30004	Tapered Spindle Adapter: 9/16" ID	2
12204	Washer: 9/16" SAE (gold zinc)	2
11202	Nut: 9/16"- 18 C-lock (Zinc)	2
68610	Bump Stop Spacer: 3/4" x 2"	2
99016	Chromoly Tie Rod Extension: 16mm for +3.5"	2
12016	Washer: 16mm Lock (zinc)	2
99868	Heim Spacer: 86000H	8
97340	Brakeline: 15"	2
33301	Brakeline Clip	2
FK-WSSX16T-1	1" Uniball Stainless w/ PTFE Liner	2
30604	Snap Ring 1" Uniball	2
40041	11" Limit Strap	2
69618	Adjustable Limit Strap Clevis	2
69619	Weld-on Clevis Mount	2
59204	Reservoir Tab	4

Kit: 86004-R-10FJ (Box 2 of 2)

PART #	DESCRIPTION	QTY
68602L-4130	Lower A-Arm: Left +3.5" - RACE Series	1
68602R-4130	Lower A-Arm: Right +3.5" - RACE Series	1
10141	Bolt: 5/8"- 18 x 4.00" - 12 pt Head   Black	2
10058C	1"- 5/8" Hi-misalignment Spacer CUSTOM	2
10058TAC	Tapered Adapter: Lower A-Arm	2
12103	Washer: 5/8" AN (gold zinc)	2
11102	Nut: 5/8"- 18 C-lock (Zinc)	2
10025	Bolt: 1/2"- 20 x 2.50" GRADE 8 (Zinc)	2
10030	Bolt: 1/2"- 20 x 3" GRADE 8 (Zinc)	2
12003	Washer: 1/2" AN (gold zinc)	8
11001	Nut: 1/2"- 20 Nylock (Zinc)	4
10005	Zerk Fitting: 1/4"- 28 90 degree	4
FK-WSSX16T-1	1" Uniball Stainless w/ PTFE Liner	2
30604	Snap Ring 1" Uniball	2
60292	Bushing Universal Full - Urethane: Red	4
60293	Bushing Universal Full - Urethane: Red - 1.25" ID	2
60685	Bushing Universal Half - Urethane: Red - 1.25" ID	2
68606	Inner Sleeve: Lower A-Arm Front   2010+FJ	2

Kit: 86004-R-H-10FJ (Box 1 of 2)

PART #	DESCRIPTION	QTY
68601L-H	Upper A-Arm: Left +3.5" (HEIM Pivots)	1
68601R-H	Upper A-Arm: Right +3.5" (HEIM Pivots)	1
FK-JMX12T	Heim: RHT 3/4 x 3/4	4
11373	Nut: 3/4"- 16 RHT Jam (Zinc)	4
10034TCF	1"- 3/4" Hi-misalignment Spacer TCF	2
100916	1"- 9/16" Hi-misalignment Spacer	2
10251	Bolt: 9/16"- 18 x 5" GRADE 8 (Zinc)	2
12203	Washer: 9/16" AN (gold zinc)	2
30004	Tapered Spindle Adapter: 9/16" ID	2
12204	Washer: 9/16" SAE (gold zinc)	2
11202	Nut: 9/16"- 18 C-lock (Zinc)	2
68610	Bump Stop Spacer: 3/4" x 2"	2
99016	Chromoly Tie Rod Extension: 16mm for +3.5"	2
12016	Washer: 16mm Lock (zinc)	2
99868	Heim Spacer: 86000H	8
97340	Brakeline: 15"	2
33301	Brakeline Clip	2
FK-WSSX16T-1	1" Uniball Stainless w/ PTFE Liner	2
30604	Snap Ring 1" Uniball	2
40041	11" Limit Strap	2
69618	Adjustable Limit Strap Clevis	2
69619	Weld-on Clevis Mount	2
59204	Reservoir Tab	4

Kit: 86004-R-H-10FJ (Box 2 of 2)

PART #	DESCRIPTION	QTY
68602L-4130	Lower A-Arm: Left +3.5" - RACE Series	1
68602R-4130	Lower A-Arm: Right +3.5" - RACE Series	1
10141	Bolt: 5/8"- 18 x 4.00" - 12 pt Head   Black	2
10058C	1"- 5/8" Hi-misalignment Spacer CUSTOM	2
10058TAC	Tapered Adapter: Lower A-Arm	2
12103	Washer: 5/8" AN (gold zinc)	2
11102	Nut: 5/8"- 18 C-lock (Zinc)	2
10025	Bolt: 1/2"- 20 x 2.50" GRADE 8 (Zinc)	2
10030	Bolt: 1/2"- 20 x 3" GRADE 8 (Zinc)	2
12003	Washer: 1/2" AN (gold zinc)	8
11001	Nut: 1/2"- 20 Nylock (Zinc)	4
10005	Zerk Fitting: 1/4"- 28 90 degree	4
FK-WSSX16T-1	1" Uniball Stainless w/ PTFE Liner	2
30604	Snap Ring 1" Uniball	2
60292	Bushing Universal Full - Urethane: Red	4
60293	Bushing Universal Full - Urethane: Red - 1.25" ID	2
60685	Bushing Universal Half - Urethane: Red - 1.25" ID	2
68606	Inner Sleeve: Lower A-Arm Front   2010+FJ	2



159 North Maple St. Unit J, CORONA CA 92880  
P. 951-737-9682 F. 951-737-9006  
WWW.CHAOSFAB.COM

## Frequently Asked Questions & Important Things To Read About TC Equipment and Parts

### 1. Uniballs:

TC uses a 100% stainless steel uniball and race for maximum corrosion resistance in all our equipment. The uniballs feature a military grade PTFE Liner that makes much less noise than the standard lined uniballs used in competing brands. This military grade PTFE Liner is self-lubricating and does not require any additional lubrication or grease. If you have a ball that is making some noise apply either a layer of Tri-Flow Superior Dry Lubricant (No. TF21013) or CRC Dry PTFE Lube (No. 03044).

Uniballs are a consumable item and will need to be replaced when the military grade PTFE Liner wears away. Grabbing your wheel and applying force to see if the ball is moving in the race will determine their maintenance schedule. Each uniball is retained in the uniball cup at the end of the arm with a large snap ring. . Wiping the uniballs down with a damp cloth to remove any built up dirt and debris will help extend the life of these parts Replacement parts are available directly from TOTAL CHAOS Fabrication Inc.

### 2. Polyurethane Bushings:

Poly bushings can and will make some noise. They offer many benefits vs. a factory style rubber bushing. To reduce as much noise as possible, TC uses a synthetic grease that contains PTFE called Superlube (No. 41150). If Superlube is not readily available use a good synthetic grease (Mobil 1, Valvoline, etc.).

When greasing your pivot bushings on the vehicle it is very important not to force too much grease into the zerk fittings. This will cause excess pressure to become trapped in the pivot and will result in mushrooming the bushing shoulders out of the pivots. To prevent this, first loosen the factory bolt that holds the arms to the frame and separate the washers from the face of the bushings when applicable. This will allow any excess pressure and grease to escape. Don't forget to re-torque the factory bolt when you are finished to a factory torque specification!

### 3. Zerk Fittings:

The grease nipples or zerk fittings that are supplied with our arms are 1/4"-28 in size. Should you have a tapped hole that has an excess amount of powder coat in it, use a 1/4"-28 tap to clean it up. When installing the zerk fittings take care not to over tighten them as they are hollow and can snap off. When fully installed they will not sit all of the way flush with the pivot, just insert them two or three rotations until they are snug. Don't forget to have them pointing in the right direction so you can get a grease gun onto them once the arms are installed onto the vehicle.

### 4. Anti-seize:

To aid in future disassembly of components, we recommend that you liberally apply an anti-seize to all metal on metal contact surfaces such as the ID of the uniball, hi-mis spacers, and inner sleeves. Also, apply it to the threads on any C-lock or Stover nut. This will prevent the C-lock portion of the nut from galling onto the bolt.

### 5. Black Oxide Coated Parts:

Some components (such as 4340 axle shafts and lower uniball conversion cups) are coated with Black Oxide. While this will help to prevent rust, depending on your climate you may want to further coat these parts. For axle shafts we wrap a layer of electrical tape the length of the shaft (excluding the splines). For lower uniball conversion cups you can use black spray paint, just be sure to mask of the uniball before painting.

### 6. Hardware Torque:

All hardware should be re-torqued after an initial break in period of 50 miles and again at 500 miles. Periodically after that you should inspect your suspension to ensure that nothing is loose, worn, or damaged.

### 7. Uniball Caps:

We do not use any sort of cap or cover over our uniballs as these actually lead to premature wear and corrosion. With a cap installed moisture and containments work their way up through the underside of the uniball and then become trapped. With no cover this moisture can evaporate and you have easy access to wipe down the uniball periodically.



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P. 951-737-9682 F. 951-737-9006  
WWW.CHAOSFAB.COM

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## Recommended Alignment Procedure

All vehicles equipped with TOTAL CHAOS suspension systems should be taken to an alignment shop that is familiar with off-road suspension systems. There is increased caster angle built into most TOTAL CHAOS suspension systems. When setting alignment, camber and toe should be set as close to factory spec as possible, while caster will usually be higher than factory specifications. Attempting to bring caster to factory spec will likely result in camber and toe being out of factory specifications which will result in poor driveability and uneven tire wear. The caster that is built into TOTAL CHAOS suspension systems is sufficient, attempting to add excessive caster into the alignment may result in the inability to adjust camber and toe. Alignment specifications will vary depending upon:

- Vehicle model
- Suspension kit purchased
- Prior vehicle modifications
- Desired coilover spring pre-load and or ride height

TOTAL CHAOS' suspension products are designed to align with aftermarket shocks that are set to the recommended amount of lift. Some vehicles may not correctly align if the ride height is altered from the recommended settings. If you have followed all of the instructions and the vehicle still won't align correctly, it's likely that there is something installed wrong, or the frame mounting points and/or knuckles may be bent or damaged.

## How to Grease TOTAL CHAOS Polyurethane Bushings

**Note:** Polyurethane bushings are prone to squeaking and have the potential of making slight noise even if maintained properly. The reason TOTAL CHAOS uses polyurethane is that it is far stronger, and has much less flex than stock rubber bushings. TOTAL CHAOS recommends using Super Lube® (or an equivalent PTFE marine grade water proof grease). Avoid using lubricants such as, white lithium, any type of penetrant, or spray style lubricant.

### Pre control arm installation:

1. Using a mallet, install the dry bushings into the control arm pivots.



2. With the bushings installed in the control arm, generously apply grease to the inner diameter of the bushings trying to fill the bushing grooves completely with grease.



3. Generously grease the outer diameter of the supplied TC metal inner sleeves.



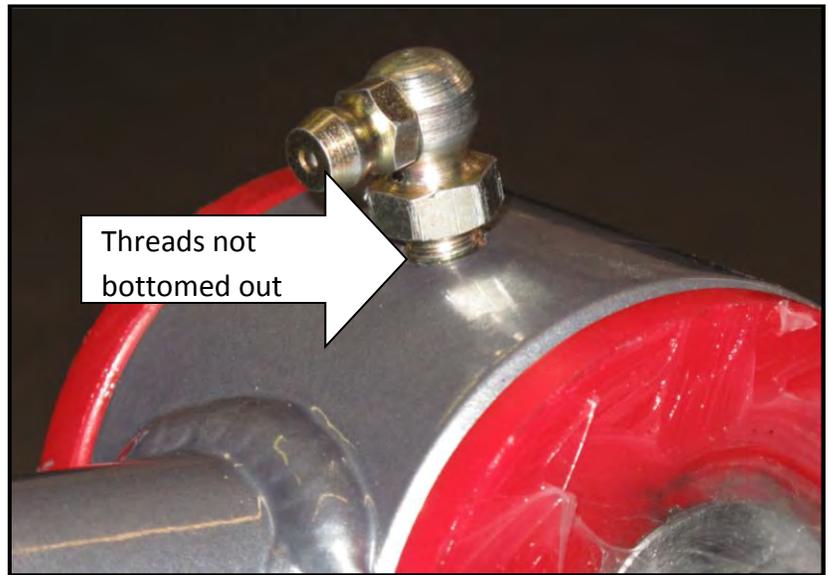
4. Using a mallet, arbor press, or smooth jawed vise, install the metal inner sleeve into the bushing.



5. Using the excess grease, use your finger or a small brush to lubricate the outsides or "hats" of the bushings where they make contact with the plated end washers or control arm pocket.



6. When installing the zerk fittings, it may be necessary to use a knife or sharp object to clean out the top of the threaded hole so the 1/4"-28 NTP threads will catch. When tightening the zerk, **DO NOT** try and tighten the zerk to the bottom of the thread. It is only necessary to turn the zerk until it gets snug. Then rotate as far as necessary to make the fitting accessible for a grease gun.

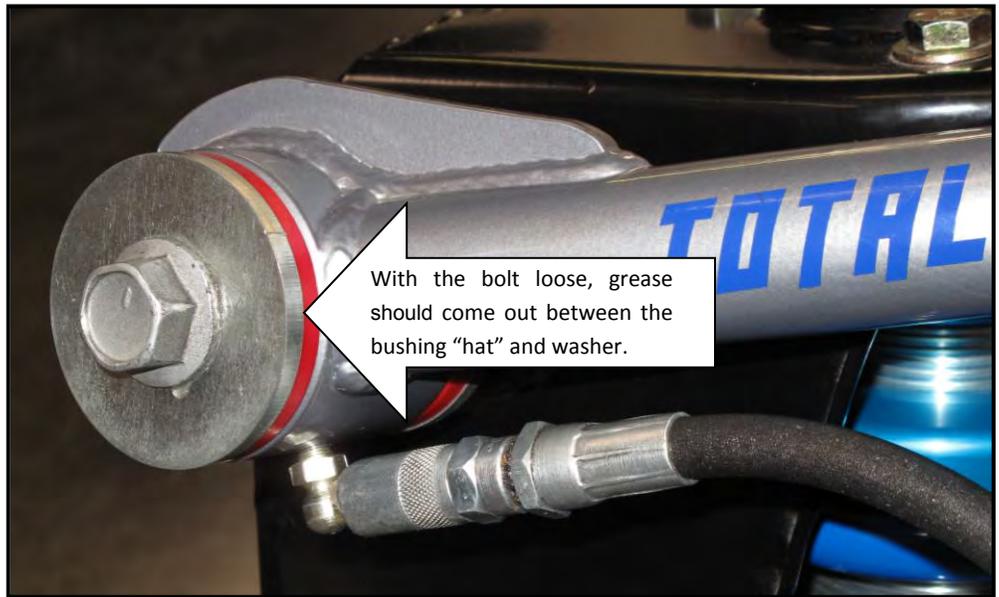


#### Greasing maintenance:

1. To grease TOTAL CHAOS control arm's on the vehicle, it is not mandatory to have the vehicle jacked up with the wheel off. Although it will make the process much easier.
2. First you **MUST** loosen the bolt holding the bushings together. This opens an area for the grease to expand when being pumped into the zerk fittings. If you do not loosen the bolt, the grease being pumped into the bushing has nowhere to go. This will cause the grease to hydraulic and then mushroom and destroy the bushing. If you see the bushing start to deform, immediately stop pumping in grease, grab a small pick, and push in the ball on the zerk fitting to release the excess pressure.



3. With the bolt loose, pump grease into the zerk fitting until you can see the excess grease bleed out from between the bushing “hat” and the plated end washer.



4. Refer to the vehicle owner’s manual to find the applicable factory torque spec. Re-torque all hardware, and re-check all hardware after 500 miles. Continue enjoying your Total Chaos Suspension system.



www.chaosfab.com  
P. 951-737-9682 F. 951-737-9006  
159 North Maple St. Unit J Corona, CA 92880

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## WARNING

TOTAL CHAOS FABRICATION'S aftermarket suspension products and accessories modify a vehicle for uses which exceed conditions anticipated by the vehicle manufacturer. The uses include the high-performance demands required during off-road. These conditions vary in the degree of severity and cannot be controlled by the vehicle or product manufacturer. If the components within the suspension system or accessories become worn due to frequent on-road and/or extreme off-road use, the safety and reliability of the vehicle is at risk. The maintenance of aftermarket equipment to ensure the vehicle occupants safety is entirely your responsibility. Do not purchase TOTAL CHAOS manufactured products or components unless you are willing to accept this responsibility. Do not install any TOTAL CHAOS suspension products or accessories unless you are certified and/or competent at installing the product without causing present or future injury to yourself or other vehicle occupants, other vehicles and their occupants, pedestrians and motorcyclists; seek an authorized installation center.

TOTAL CHAOS FABRICATION long travel suspension systems were designed for off-road use only. This suspension system is not to be modified from its original design in any way. TOTAL CHAOS is not liable nor held responsible for any injury's or death that can occur from off-road use or as the result of product failure. Customer/driver assumes all liability in assuring that the suspension system is properly installed, maintained, and operating in safe conditions. The following are guidelines for maintaining a safe operating vehicle. Safety and reliability are our number one concern.

Visually inspect all equipment for clearance and unusual wear.

Regularly clean and inspect equipment such as suspension components, heim joints, polyurethane bushings and all hardware. Replace items as necessary. All suspension components are available for individual replacement direct from TOTAL CHAOS. We strongly recommend the suspension system be installed by an authorized installation center. TOTAL CHAOS FABRICATION reserves the right to warranty any components that we have determined to be product or material defective. Off-road abuse can damage suspension components.

**BREAK IN PERIOD.** After every installation we recommend checking the torque of all nuts and bolts to assure that the torque has taken after driving 500 miles. Some minor adjustments may need to be made.

The customer assumes all responsibility for the use of all equipment and the proper maintenance of said equipment. This equipment will alter the center of gravity of your vehicle and also the handling characteristics that you may be accustomed to. Even though your vehicle may have a wider track width it is capable of rolling over. Please wear your seat belt and demand that all passengers do so as well.

Please remember that no matter how well your vehicle is built it is only as safe as you drive it. This equipment is designed to improve the performance of your vehicle. INCREASING PERFORMANCE ALSO INCREASES YOUR RISK WHILE OPERATING THIS VEHICLE. The operator must know and understand the vehicles handling characteristics. None of this equipment is guaranteed to be free of defect or to protect the driver or occupants from death or injury in the event of a collision. Please drive in a safe and sane manner.



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## Returns

Contact customer service to issue an RMA number. All items returned must be within 60 days of the date of purchase and must be accompanied by the original sales invoice. Items must be shipped freight pre-paid. Photo copy the original receipt for your personal records. A 20% restocking fee will be applied to **ALL** returned products. Refunds are issued same method as the original payment. **No refunds after 60 days of purchase.** There are no refunds or exchanges on any special ordered items.

## Core Charges

All cores must be received within 45 days of purchase date for a full core credit. Cores cannot be damaged or modified in any way.

## Replacement Parts

TOTAL CHAOS attempts to stock all items associated with a suspension system for individual replacement. Off Road use can damage individual parts and associated components. Demand peaks can occur which can delay delivery and availability. You will be kept informed on the status of your delivery in the event that your items ordered are not in stock. You will be notified when items become available before shipment.

## Back Orders

All back orders remain on file and will be shipped upon availability. Notify your sales representative if you do not wish to have back ordered items held. All items are billed prior to shipment without notification.

## Finishes

All products that are manufactured by TOTAL CHAOS have undergone thorough steps of quality control throughout the production, assembly, and packaging processes. TOTAL CHAOS offers no warranty on finishes and no items are refundable for an unsatisfactory finish. If any items are damaged in shipping, see UPS CLAIMS. Items that come with a black finish are coated with a black oxide to protect against corrosion; paint color of your choice should be applied over the oxide coating. Items that are raw should be oiled to prevent rust or can be painted to preference.

## UPS Claims

TOTAL CHAOS is not responsible for any damages or losses incurred during shipping. If a package appears to be damaged during shipping, the customer must notify the UPS driver or a UPS facility immediately before opening and start a claim. TOTAL CHAOS will not warranty any damages caused during shipping. Failure to immediately notify UPS can result in a loss of recourse to the damaged items.

## Limited Warranty

*TOTAL CHAOS* warrants only parts and components that we manufacture to the original retail purchaser who owns the vehicle in which the products were originally installed. There is no warranty on any manufactured parts or components if they have been modified from their original design in any way. Copies of the original purchase receipt may be required to warrant any items. *TOTAL CHAOS's* obligation under this warranty is limited to the repair or replacement of the part at *Total Chaos's* discretion. Components requiring warranty by outside suppliers may be subject to returning the item for inspection by the vendor. Each vendors warranty policy applies to these items. This warranty does not include reimbursement for shipping of the product to or from TOTAL CHAOS and DOES NOT include any costs incurred during down time of the vehicle or any other consequential losses.

## Uniball's, Heims, Bushings, Hardware

Items such as uniballs, heim joints and bushings require maintenance. Inspect these items periodically for unusual wear and to ensure they are performing properly, replace as necessary. Replacement is required when you notice that the ball has slop while seated in the race. Longevity of these components varies on each vehicles application. These items vary in tolerances by the manufacturer. Some production runs will produce parts that have tighter tolerances. It is recommended that 100-110ft lbs. of torque be placed on uniballs and heims when assembling. There can be a break in period for uniballs and heims associated with some production runs for the ball to wear into the Teflon liner. Clunking or creaking can be associated with these components after installation. This does not warrant component replacement. Contact TOTAL CHAOS if you are concerned of noise. It is at the discretion of the manufacture or supplier to determine if the item should be replaced. This does not include reimbursement for shipping of the product to or from TOTAL CHAOS and DOES NOT include any costs incurred during down time of the vehicle or any other consequential losses. All parts that come pre-assembled, such as steering, must have the hardware torqued after installation. All components should be checked periodically after the installation and re-tightened as necessary.