Rustic Racing Control Arm Installation

The following instructions should help you with the installation of your new control arms.

Preparation:
During the powder coating process, it is common for some of the coating to find its way into the bushing and housings. If this has occurred, cleaning these areas out with some sand paper will allow the bushings to be pressed in with less effort. The same is true for the lower ball joint. Because this ball joint is a press fit, the clearances are important and a little coating can make the press fit difficult.

The preparation of you car should include the removal of your old arms and an inspection of the hardware and mounting locations. I recommend using a wire brush to clear away any rust or road grime that may have built up in these locations. A quick coat of a rust prevention paint may be used on the frame but be sure not to apply it to thick on the lower arm mounting tabs.

If any of the factory bolts are in poor condition, please replace them with Grade 8 hardware.

Bushing and Ball Joint Installation:
If you are not familiar with this procedure or if you don't have pressing equipment, I would recommend taking the parts to a shop that you trust for the installation of the bushings and lower ball joints.

The arms are designed to use any of the "factory replacement" bushings. This means you can go to your local parts store and buy TRW, Moog, Prefect Circle, Dana, Napa, AC Delco, P-S-T, Energy Suspension or just about any other brand, and they will fit. Just give then the model and year of your car.

For the upper bushings and pivot shaft I recommend an off-set shaft. There seems to be some slight differences from car to car, and with these arms being shorter than stock, the offset may be needed to reach zero camber. The bushings on the upper have to be pressed in WITH the shaft in place. This can be done with a good vice and a few adapters. I don't recommend using the shaft nut to press the bushing as this may damage the threads on the shaft and/or the nut. Here are a few part numbers for the bushings and shafts:

Item	Moog	TRW	GM	ACDelco
Shaft and Bushing Kit	K-6210	13205A	88913896	45J0023
Just Bushings	K-6198 or K-2409	12310	88912526	45G8020

The upper ball joint is a simple 4-bolt installation. I recommend a dab of loc-tite on each of these bolts. Here are part numbers for the upper ball joint.

Item	Moog	TRW	GM	ACDelco
Upper Ball Joint	K-5208	10268	88911387	45D0016

Depending on your order, the lower arm may use a 9/16 press, 5/8 press or 11/16 threaded ball joint. So if you are buying your LBJ's locally, make sure your supplier understands what you are asking for because the 5/8 and 11/16 threaded are not stock parts. Also remember that if you are pressing in the ball joints yourself that extra pressure is required compared to the stock arms. The stock arms have some stretch and flex to them that my arms do not have. Make sure all of the powder coating is cleaned out of the arm and that your equipment is sound. Here is a list of part numbers that may help you, but there are many other brands that will work.

Ball Joint Size	Moog	TRW	GM	ACDelco
9/16 press fit	K-6145T	10277	88911524	45D2026
5/8 press fit	K-6141T	10267	88911522	45D2024
11/16 threaded	K-7263			

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Bump Stops:

Unlike the factory arm, your new upper arm is designed to accept a bolt-in bump stop. Just about any of the bump stops available from you local performance shop will work. I can recommend these Energy Suspension part numbers: 9.9121, 9.9116 or 9.9117. See the following: http://energysuspension.com/pages/bsp2.html

The lower arm utilizes a welded boss that is threaded to accept the bump stop. This will allow you to use a stock bump stop, the ZQ8 part or several aftermarket units too. I can recommend these Energy Suspension part numbers: 9.9101, 9.9103, or 9.9105. See the following: http://energysuspension.com/pages/bsp2.html

Global West Del-Alum Bushings:

If you have chosen to use the Global West bushings, the installation is basically the same as above, but there will be more prep work on the arms. The big issue with these bushings is that they have VERY little give but were designed to be pressed into arms that DO give. Because my arms have solid housings for the bushings, they DO NOT give, and if there are clearance issues, the aluminum bushing will deform before the arm will. So, it is very important that the arms are "clearanced" for these bushings. You will want to use a dremel or die-grinder with a sand paper roll to remove and powder coating in the housings first, and then test fit the bushings. They should slide in about half way on the lowers and to within 1/8th of full press on the uppers. Continue to remove material evenly around the inside of the housing until this is reached. My experience is that the uppers will take a little more work than the lowers. It's VERY important that you provide enough clearance before you press them in place, as they are very difficult to remove without damaging them.

Line up the grease fittings. The newest version of the arms have an access hole that is designed to match up with the grease fittings on the lowers. It's important to line this hole up with the fitting threads before you start to press the Del-Alum bushing in because they are VERY hard to remove after they are half way in without destroying them. You may also need longer grease fitting depending on the size of the end of your grease gun. Extended and angled fitting are easily obtained at your local hardware or farm supply store. On the upper arm, just press the bushing in so that the grease hole are pointed up.

Upper Arm Installation:

Upper arm installation is fairly simple with only 2 bolts holding the pivot shaft to the frame of the car. The bolts are pressed into the frame, so you will only want to turn the nuts and not the bolt. It is not uncommon for the bolt to spin and this is not a major concern, but the operation is easier if the bolt remains in place.

If you are using an offset pivot shaft, I recommend turning the shaft to make the arm effectively longer. Once you are ready for an alignment the shaft can be turned the other way or shims can be added (or both) to achieve your desired alignment settings.

Once the arm is bolted to the frame you will want to attach the spindle. Your upper ball joint should have a castle nut and a cotter pin. The procedure I use for this nut and pin system is to torque the castle nut down to 60 ft/lbs and then look to see if the pin hole is lined up with an opening in the castle nut. If it is, slide the pin in and you're done. If it's not, tighten the nut until the next available opening lines up.

Lower Arm Installation:

The lower arm installation is a more difficult proposition. I recommend installing the frame side of the arm first. Line up the bushings with the holes in the frame tabs and slide the mounting bolts through. With these 2 bolts in place you can pivot the arm toward the spindle and set the spring into the pocket. This is where it can get difficult and even dangerous if you are not careful. I have found that with most lowering springs this part is not hard, but with a full height and weight spring you need to be cautious.

With the spring resting in the arms spring pocket and lined up with the upper spring perch, roll a floor jack under the arm. Raise the jack until the spring is held into place but is not compressed. At this point you should ensure the spring cannot "shoot out" at you. This can be done by chaining the spring to the frame or installing the shock. Once you have it secured you may raise the jack further to compress the spring and bring the lower ball joint up to a location that allows it to mate with the spindle.

The lower ball joint will also have a castle nut and pin. Follow the same procedure I mentioned for the upper arm but use 83 ft/lbs on your torque wrench.

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Alignment:

The hardest part here is finding a shop that you can trust and that doesn't charge you an arm and a leg. Once you have that task taken care of, you have several options on your alignment. It really just comes down to your driving style and your desire to make you tires last. Here are the common settings recommended for improved handling over the factory settings, but not the best for tire wear:

Description	Spec (deg)	Tolerance (deg)
Front Left Camber	-0.25	0.25
Front Right Camber	-0.25	0.25
Front Cross Camber	N/A	0.25
Front Caster	4.00	0.50
Front Cross Caster	N/A	0.50
Front Total Toe	0.00	0.06
Rear Camber	0.00	0.50
Rear Total Toe	0.00	0.12
Thrust Angle	0.00	0.25

These are the Factory Specs as listed in the Factory Service Manual and should provide long tire life.

Description	Spec (deg)	Tolerance (deg)
Front Left Camber	0	1.5
Front Right Camber	0	1.5
Front Left Caster	3.25	1.0
Front Right Caster	3.75	1.0
Front Cross Caster	0.5	0.70
Front Total Toe	0.16	0.2