

# KARS Cradle Support Installation Instructions

PLEASE NOTE: Anytime you are welding on a computer controlled vehicle, You **MUST** disconnect the Negative Battery cable.

PLEASE NOTE: Safety Is Our Friend! Get to know him. Anytime you are working underneath a vehicle you **MUST** use proper tools to support the vehicle, i.e., Jack Stands, etc...

If you have a Stage 2 or Stage 3 kit, be sure to read the sections concerning your support plates and the differential supports!

Please read through entire directions **BEFORE** beginning installation.

- 1) Raise your V to a comfortable working height, allow yourself ample room under your V.
- 2) Support the rear differential with a floor jack or other method allowing you to raise and lower it.
- 3) At this time loosen, but **DO NOT** remove, the front 2 cradle bolts, lower control arm nuts, Stage 3 buyers also loosen the back two cradle bolts.
- 4) The next section applies to Stage 3 Buyers Only. Stage 1 and 2 buyers resume at step 8. Remove the back 2 cradle bolts completely, allow the cradle to droop in the back, you will see there are locating pins, (shafts), that protrude into the bushing. Loosen the front bolts **JUST ENOUGH TO ALLOW THE CRADLE TO LOWER JUST ENOUGH TO GET THE SPACERS BETWEEN THE PIN AND TOP OF YOUR BUSHING!** Do Not, remove all 4 cradle bolts at one time for **ANY** reason.
- 5) On the spacers, the 3/8" spacers will **ALWAYS** go to the top of the bushings. The 1/2" will **ALWAYS** go to the bottom of the bushings. The larger diameter spacers will go on the rear bushings. The spacers are a snug fit over the rubber, and it may be helpful to lightly lube them to help with the installation.
- 6) Once the top spacers are on in the rear, install the bottom spacers, re-install the bolts using the original washers under the spacers. **Hand Tighten Only**, as you will need to drop the front of the cradle next. I also recommend using an anti-seize on all threads.

- 7) Install the front spacers on top of the bushings, you will see that you do not need to drop the front of the cradle nearly as far as the rear.  
Install the lower spacers now.
- 8) Back to all kits now. Once the lower spacer on the front bushing is in place, place your Cradle Support up in place, now, I have found it is much easier if you have one of the lower control arm nuts in the socket ready, then as you lift the Support in place, thread the nut up on the lower control arm bolt, this will hold the Support in place while you align it.
- 9) Slide the large factory washer BETWEEN the Support mounting flange, and the lower bushing, then slide the bolt through both, sandwiching the washer. See Figure 2.
- 10) At this time, thread the remaining nut onto the lower control arm bolt, DO NOT tighten any bolts yet. Your support should be in place but hanging down some.
- 11) If you are using the support plate for the frame area on your V, then please see the section regarding the proper installation of this plate, if you are not and are choosing to install the kit without the added support plate along the frame, please be advised; this is at your OWN RISK, as KARS Highly recommends the use of this plate.
- 12) On the '05 models, the holes in the support plate/Cradle Kit, should be aligned with the 2 holes per side where the factory has provided weld nuts inside the frame. If you have an '05 model, please install the 4 outrigger bolts at this time.
- 13) On the '04 models, you will need to drill the 2 holes per side into the support plate, and on into the frame, providing the holes for the self tapping bolts included in the kit. Once these holes are drilled, proceed by starting the self-tappers into the holes, BUT do not tighten them yet.
- 14) Once these bolts are all in place, but not tight, then slowly begin to tighten the front cradle bolts, if you have a S-3, also begin at this time to tighten the rear cradle bolts, once you see that all the travel is gone from drawing the cradle up into position, then snug up the lower control arm nuts.
- 15) At this time, if you have an impact gun, turn it on full power, and tighten the front cradle bolts completely, then the rears (S-3) then the lower control arm nuts. If you are hand tightening, the using a 1/2" torque wrench, tighten the front bolts to a minimum of 150 ft. lbs, and the rears (S-3) to a minimum 125 ft. lbs. The lower control arm nuts need to be the same 125 ft. lbs.

16) At this time, HAND TOOL only, tighten the 4 outrigger bolts, KARS Highly recommends removing each bolt, and applying a threadlocking, i.e. Loctite, material to the threads before the final tightening sequence.

You will need to use your judgment on how tight you will take these bolts, as they are only there to locate the outrigger, so DO NOT OVERTIGHTEN.

17)Final step: You will now need to drill the holes for the cradle lock tabs. These are the 2 tabs facing the rear of the car, attached to the main bar. Try your best to locate the center of the hole, and use a punch to tap a locating mark into the metal to give your drill bit its best chance of staying in the center of the hole while drilling. Once the hole is drilled, use the supplied self tapping bolts and tighten them, use hand tools only, also use a threadlocker as well, and use your judgment in torquing them.

#### Support Plate Welding Instructions:

The recommended support plates will need to be welded into place before you install the KARS Cradle Kit.

These plates will be located under the frame area just ahead of the rear tires.

Be sure to clean any paint, undercoating away and get down to bare metal before welding, its best to place the plate in position and trace around it to be sure where to clean.

**BEFORE WELDING ON ANY COMPUTER CONTROLLED VEHICLE, DISCONNECT THE NEGATIVE BATTERY CABLE!**  
Failure to do so WILL result in ECM Damage!

On '05 models, align the pre-drilled holes with the existing factory holes in the body/frame.

On '04 models, just be sure to center the plate in such a way, that the pad on the outrigger will be completely surrounded by support plate material.

#### Differential Support Installation Instructions:

1) If you have purchased a KARS Cradle Kit in the form of a Stage 2 or Stage 3, then you will be installing the differential support. Its highly

recommend you install the Differential Support BEFORE the main section of your KARS Cradle Support Kit.

- 2) Begin by removing the bottom 4 bolts in the pinion support on your differential.
- 3) Now, using the bolts supplied, place the D.Support in position, making sure the bottom plate faces forward.
- 4) Start all 4 bolts before tightening any of the bolts, to be sure they will all engage properly, this is an aluminum case, and its very important you **DO NOT CROSSTHREAD THESE BOLTS.**
- 5) Now tighten the 4 bolts. This will be all that is done prior to the install of the main Cradle Kit.
- 6) Once the KARS Cradle Kit is completely installed, and all other bolts are tightened to spec, you will take the 2 remaining bolts provided, these bolts have the polyurethane bushings on them. Be sure to note the position of these bushings and washers, **THEY MUST BE INSTALLED AS THEY ARE ON THE BOLTS WHEN RECEIVED.** This will ensure maximum life from these bushings.
- 7) See Figure 1
- 8) Now hand tighten only, the lock nuts and bolts, tighten only enough to just begin to lower the front of the differential, what you are looking for here is to remove any looseness in the attaching bolt/nuts/bushing combo, without drawing the D.S. too low. The bushings **WILL NOT** collapse like a rubber bushing, so be careful to not overtighten.

This will be your final step!!!! ENJOY!!!!

Some comments from the inventor.

First let me thank-you again for purchasing the KARS Cradle Kit. I believe that this is the most complete way to improve the problems associated with the rear of the V.

I have found there to be minimal to no intrusion into the joy of driving the V, i.e., increased cabin noise, diminished ride quality etc....actually, just the opposite.

Please call me if you have any questions or problems with the kit:

Doug Klein     1-866-255-7068

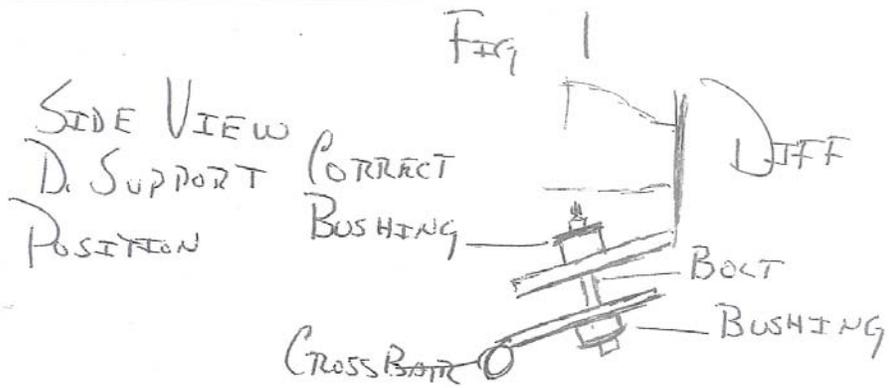


Fig 2

