

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.

Main Brace Installation

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

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

1. Raise your V to a comfortable working height and properly support it; 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. Loosen, but **DO NOT REMOVE** the front 2 cradle bolts and the lower control arm nuts,
4. (Stage 3 only) Remove the back 2 cradle bolts completely, allowing the cradle to droop in the back. Note the locating pins (shafts) that protrude into the bushing.

DO NOT REMOVE all 4 cradle bolts at one time for ANY reason.

5. (Stage 3 only) Carefully loosen the front cradle bolts allowing the cradle to lower just enough to get the spacers between the pin and top of your bushing!
6. (Stage 3 only) Install the 3/8" large diameter spacers on top of the bushings.
7. (Stage 3 only) Install the 1/2" large diameter spacers on the bottom of the bushings

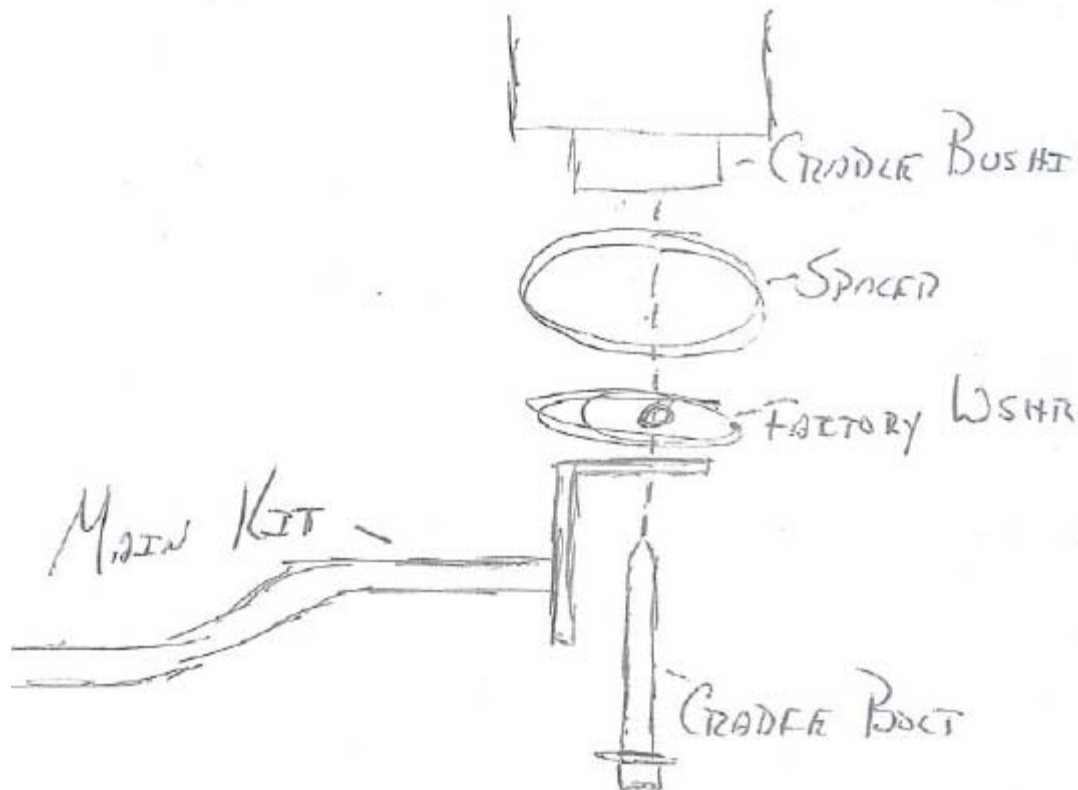
NOTE: The spacers are a snug fit over the rubber, and it may be helpful to lightly lube them to help with the installation.

8. (Stage 3 only) Apply anti-seize on all threads and reinstall the rear cradle bolts hand tight using the original washers under the spacers

9. Lower the front of the cradle
10. Install the 3/8" small diameter spacers on top of the bushings.
11. Install the 1/2" small diameter spacers on the bottom of the bushings
12. Raise your Cradle Support up in place

TIP: 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.

13. Insert the large factory washer BETWEEN the Support mounting flange, and the lower bushing, then slide the bolt through both, sandwiching the washer.



14. 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.
15. Refer to the Support Plate Welding Instructions below, if applicable. Use of the support plate along the frame is highly recommended, Failure to use the support plate is done at your OWN RISK.

- 16.(2005 Models Only) The holes in the Support Plate and Main Brace, should be aligned with the 2 holes per side where the factory has provided weld nuts inside the frame.
- 17.(2004 Models Only) Drill the 2 holes per side into the Support Plate, and on into the frame, providing the holes for the self tapping outrigger bolts included in the kit.
- 18.Install, but do not tighten, the 4 outrigger bolts at this time.
- 19.Slowly tighten, snug only, the front cradle bolts and (Stage 3 only) slowly tighten, snug only, the rear cradle bolts.
- 20.When all the travel is gone from drawing the cradle up into position, then snug up the lower control arm nuts.
- 21.Tighten the front cradle bolts completely (150 ft-lbs)
- 22.(Stage 3 only) Tighten the rear cradle bolts completely (125 ft-lbs)
- 23.Tighten the lower control arm nuts (125 ft-lbs)
- 24.Remove, one at a time, each of the 4 outrigger bolts and apply threadlock (Loctite). Then, reinstall the bolt and tighten wrench tight.

NOTE: 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.

- 25.Drill the holes for the cradle lock tabs as described below. The cradle lock tabs are the 2 tabs facing the rear of the car, attached to the main brace.
 - a. Use a punch to tap a locating mark into the metal at the center of each hole. This will prevent the drill bit from wandering away from the center.
 - b. Drill the holes required for the supplied self tapping bolts.
- 26.Apply threadlock (Loctite) to each of the lock tab self-tapping bolts and tighten wrench tight.

Support Plate Welding Instructions:

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

2. These plates will be located under the frame area just ahead of the rear tires.
3. 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.

PLEASE NOTE: Anytime you are welding on a computer controlled vehicle, You MUST disconnect the Negative Battery cable. Failure to do so WILL result in ECM Damage!

4. Disconnect the Negative Battery cable.
5. (2005 Models only) Align the pre-drilled holes in the support plate with the existing factory holes in the body/frame.
6. (2004 Models only) Center the support plate on the frame in such a way that the pad on the outrigger will be completely surrounded by support plate material.
7. Weld support plate to the frame.
8. Complete remainder of kit installation.
9. Paint and/or apply undercoating as desired

Differential Support Installation Instructions:

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.

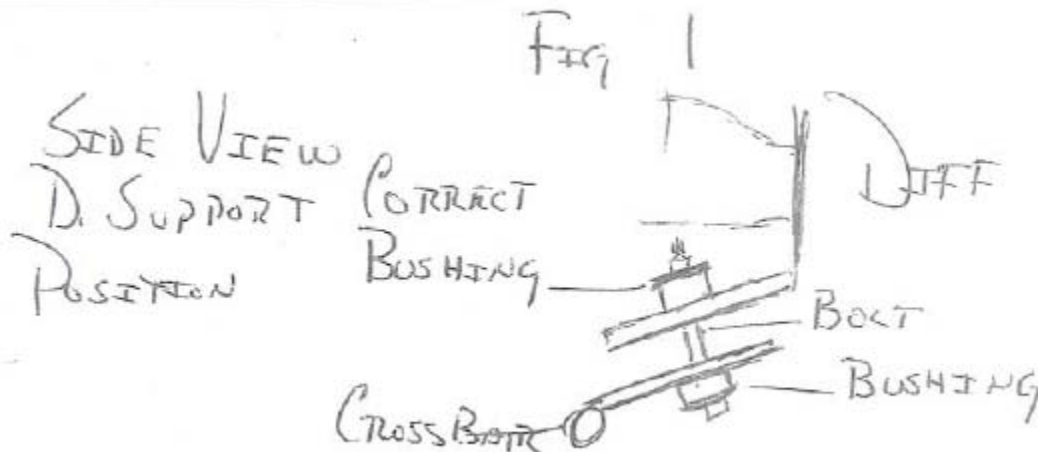
1. Remove the bottom 4 bolts in the pinion support on your differential.
2. Place the Differential Support in position, making sure the bottom plate faces forward.

NOTE: The differential has an aluminum case, therefore its very important you DO NOT CROSSTHREAD the differential support bolts.

3. Using the supplied bolts supplied, start all 4 bolts before tightening any of the bolts, to be sure they will all engage properly.
4. Tighten all 4 bolts.
5. Complete installation of the Main Brace.

6. With the Main Brace installation complete and all other bolts are tightened to specification, install the 2 remaining bolts provided.

NOTE: These bolts have the polyurethane bushings on them. The arrangement of these bushings and washers is critical. THEY MUST BE INSTALLED AS THEY ARE ON THE BOLTS WHEN RECEIVED. This will ensure maximum life from these bushings.



7. Tighten, hand tight, the lock nuts and bolts. Tighten only enough to just begin to lower the front of the differential, This should remove any looseness in the attaching bolt/nuts/bushing combo, without drawing the D.S. too low.

NOTE: The bushings WILL NOT collapse like a rubber bushing, so be careful to not overtighten.

8. 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