HDK Installation Tips

Rule 1) Use Never-Seize or like product on ALL threads.

Rule 2) Be extremely careful when working in and around the motor and suspension. NEVER leave anything hang without proper support underneath (approved jack stands, etc.).

Before installing your pre-assembled K-frame in your car it is a good idea to disassemble and reassemble one of the lower control arm assemblies from the K-frame to become familiar with the sub-assembly.

To disassemble:

1. Remove the 5/8" poly-lock nuts at the rear of the pivot shafts and the 1/2 " poly-lock nuts at the front.
2. Untighten all 4 of the 5/8" jam nuts on the poly ends of the lower control arms.
3. Remove the set screw lock nuts and set screws on the axle tube of the K-frame.
4. Remove the washers, rear support bar, and all aluminum spacers from each end.
5. Push the axle out thru the rear. Due to the stickiness of the Energy Suspension lube, often a light tap with a rubber mallet is required.

To re-assemble:

1. Place the axle thru the rear poly end of the lower control arm
2. Add one of the 3/4" id x 1-1/2" od aluminum spacers.
3. Slide the axle thru the axle tube and flush with the opposite opening.
4. Add the second 3/4"id x 1-1/2" od aluminum spacer
5. Slide the axle thru the second spacer and opposite side poly end
6. Add the 1-1/2od aluminum spacers on each end, ½ id on the front, 5/8 id" on the rear
7. Add the rear brace, if an offset brace is used, the longer offset to the LH / drivers side
8. Replace the 5/8" washers and 5/8 jam nuts on the rear
9. Replace the set screws making sure they are aligned with the flat spots machined on the axle.
10. Replace the set screw lock nuts
11. Retighten the 1/2" front and 5/8" rear poly locks at the end of the axles.
12. Retighten all 4 of the 5/8" jam nuts on the poly-ends of the lower control arms

Components:

1. Lower control arm assembly:
    a. If you have sway bar brackets on the LCA, the brackets will be to the front. Otherwise, the LCA are interchangeable side to side.
    b. Always put a slight amount of grease on the axle and Energy Suspension lube on the poly ends when assembling.
2. Upper control arm:
    a. The upper control arms are NOT side specific and can be installed into the stock UCA factory mounts several ways to achieve desired caster setting without binding.

b. Please notice the ball joint housing is slightly offset. The UCA can be installed with the ball joint housing offset to the front of the arm for less caster (manual steering @ +3 *) or flipped over with the housing to the rear for more caster (power steering @+6*). The UCA also can be swapped to the opposite side and change the offset from front (+3*) to rear (+6*). Also the spacers (1/4" aluminum per side) can be placed one per each side OR stacked with both on the same side moving the arm / housing even further forward on rearward depending on spacer location.
c. Use the stock cam adjusters. If your old ones are worn and rusty, new ones are available thru Summit Racing and other parts suppliers. Once all the components are installed with preliminary alignment specs, adjust the poly ends on the UCA arms so that the factory alignment cam adjuster are close to neutral (straight up and down). This will make any "fine tuning" at the alignment shop much easier for the tech.

3. Upper shock mounts
    a. The upper shock mounts are side specific. (A body only)
    b. Place the supplied ¾"od X ½" id sleeve into the ¾" round cut out located in the mid portion of the factory upper shock mount
    c. Using the sleeve as a guide, drill a ½" hole thru the inner fender sheet metal.
    d. Place the supplied 7/8" od sleeve into the factory upper shock mount. Often buildup of debris and paint needs to be removed from this factory hole. It is also a tight fit
    e. Bolt the side specific shock mount with the UPPER bolt coming from the bottom thru the top mount hole using the supplied 5/8" X 1.25" bolt, washers and poly lock nut and the LOWER mount bolt coming from the engine compartment thru the sleeve with the supplied ½" X 1.5" bolt, washers and poly-lock nut.
    f. Snug / Tighten into position
4. Support hoops (A body only)
    a. The support hoops are NOT side specific
    b. Bolt the top snugly to the INSTALLED upper shock mount with the (2 per side) supplied bolts, washers and poly-lock nuts
    c. Clamp lower tabs to frame. Sometimes a small amount of a sloppy weld needs to be removed or the upper bolts loosened slightly to allow the tabs to snuggly clamp to the frame
    d. Using the 3/8" holes in the tabs for a guide, drill a 3/8" hole (two per side) thru the frame rail
    e. Remove the support hoop and drill completely thru both sides of the frame being CAREFUL to keep the drill level and horizontal
    f. Enlarge ONLY the OUTSIDE holes to ½"od
    g. Place the supplied 3/8" X 3" bolts and washers from the 3/8" inner frame hole, thru the frame and out the ½" od leaving the threads sticking outward into the outer wheel well. Add the sleeves thru the larger ½" od holes in the outer frame rails.
    h. Slightly loosen the upper shock mount and Install the hoops using the 3/8" course bolts washers and poly locks to the upper portion of the mount and placing the lower tabs over the threads coming thru the frame rail. Add the 3/8"washers and poly locks to the lower brackets.

i. Once all poly lock nuts are started, tighten all bolts up. Start with the upper shock mount and then proceed to the support hoop.

5. Installing the rack and pinion
    a. Use the supplied bolts, spacers, and rack bushings. If your rack comes with bushings and they are different from the poly bushings supplied, remove them and use the ones supplied.
    b. It is important to install the rack as far rearward as possible for optimum rack performance. Keep a minimum of clearance (1/4") between the rack housing and the oil pan sump.
    c. Center the rack by turning lock to lock and coming back exactly half way. A second way, or to confirm the rack is centered, the end of the tie rods should extend outward from the K-frame equally.
    d. Install the tie rod ends w/ their locking nuts. On some power rack and pinion installs (all models), it may be necessary to add a (supplied) 1"extender to the tie rod .
6. Installing the spindle
    a. With the K-frame including LCA and UCA assemblies installed into car, place the spindle on the LCA ball joint and then attach the UCA ball joint to the spindle
    b. Use the adjustable ride height simulators of the shock to adjust and simulate ride height.
    c. For the initial set-up, keeping the spindle face at 0* camber, the flat face of the spindle is normally pre-assembled approx. 9-5/8" to 10" from the frame rail (note: the frame rails are not perfectly parallel)
    d. Attach the tie rod ends simulating toe-in at 1/16 to 1/32" (total).
7. Coilover tips
    a. Install the ride height simulators for mock-up and initial alignment.
    b. Use one of the three adjustable holes to obtain your desired ride height / stance with the correct diameter tire combo you plan on running.
        i. the shortest is a shock ride height of 12"……DS-401 (10" coil spring)
        ii. the middle is a shock ride height of 13"……..DS403 (10" coil spring)
        iii. the longest is a shock ride height of 13 7/8"…….DS501 (12" coil spring)
    c. There is a ½ (plus or minus) of height adjustment with the pre-load adjustment, but choosing the correct ride height shock for your build will give you a better ride.
    d. Don't forget the thrust bearings and the spanner wrenches, they will make height/preload adjustments easier
    e. The spherical mounting is recommended. The upper and lower control arms swing in different arcs (due to the factory built-in anti-dive). The poly-end mounts tend to bind.
    f. The longer (12") shock and spring combo will give a smoother ride. When changing from the 10" to the 12", the spring rate dropped approx. 20%. However, for a lower ride height stance, there just isn't enough room for the longer shock / spring.
8. Spring rates (A-body)
    a. Rates are based on a 10" shock / spring. Deduct approx. 20% for the 12" shock / spring. Please remember to take into account any other lightening factors regarding your car.
        i. Small block: Iron heads…400 – 450 lb rate aluminum heads…350 – 375 lb rate
        ii. B/RB: Iron heads…550 – 600 lb rate aluminum heads…450 – 500 lb rate
        iii. Hemi: Iron heads…550 – 650 lb rate aluminum heads…..500 – 550 lb rate

I hope these tips are helpful. If you have any suggestions or new ones, please let me know. And as always, please do not hesitate to contact me with any questions or concerns.

Alignment specs

Camber…
Drag car……0 degrees
Street car…..passenger side / RH @ 1/4 degree negative
driver side / LH @ 1/2 degree negative

Caster….
Street application
Manual…3 degrees positive
Power…..6 degrees positive

*****Some manual drag cars go up to 6 degrees positive for greater high stability at high speed

Toe-in…
1/32” total

Thank you for your business,

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