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C/E9120 Super Class A-Arm Front End

Before starting the installation of the new front end there are some measurements you must take.

Wheelbase : _____

Front Wheel Centerline From Rocker Panels: D _____ P _____

Front Tire Height : _____ Front Crankshaft Height : _____

Transmission Output Shaft Height : _____ (If stock transmission tunnel is used)

Transmission distance From Rear End : _____ (If motor is not going to be moved Back)

Front Hub To Hub Width : _____ Engine Offset : _____ Rear Rocker Height : _____ Front Rocker Height : _____

...Wheelbase is the distance from the center of the rear wheels to the center of the front wheels.

...Front wheel centerline from rocker is the distance from the front wheel centerline to the front of the rocker on each side of the car.

...Front Tire Height is half the height of the front tire.

...Front crankshaft height is the distance from the ground to the center of the crankshaft.

...Transmission output shaft height is the distance from the ground to the center of the output shaft.

...Transmission distance from the rear is the measurement from the end of the tail shaft to the yoke on the rear end. This is so the set back of the motor will be the same after the front end is installed.

...Front hub width is the distance from the wheel mounting surface on one side to the other side.

...Engine offset is the distance the motor centerline is moved to the right of the chassis centerline.

...Front and rear rocker height is the height of the rockers at the front and rear.

ALL MEASUREMENTS ARE TAKEN WITH THE CAR SITTING AT THE RIDE HEIGHT. THIS IS THE WAY YOU WANT THE CAR TO BE WHEN FINISHED AND READY TO GO DOWN THE RACETRACK.

Assembly Instructions For
Super Class A-Arm Front End

NOTE: Please read the instructions before starting the installation.

The instructions for the Super Class A-Arm front end are designed for the chassis builder or the home builder with the basic equipment.

Some of the more important equipment necessary to install the Super Class A-Arm will be Wire welder, bench or hand grinder to notch the tubing. Level (4 Foot), angle finder, plumb bob, large and small carpenters squares and a saw

to cut the tubing and body panels. A lot of small pieces of box tubing or wood to block the body and frame up.

You will need an area about 10' X 20' to install the Super Class A-Arm front end. The surface needs to be as flat and level as possible. It will not be necessary to have a jig to install the frontend kit.

You must have the front wheels and tires you are going to use before starting the install. Measurements will need to be taken from them before the new rails can be set up at the correct height. **YOU CAN'T JUST GUESS AT THIS MEASUREMENT.**

1...Slide under the car and measure the distance from the ground to the center of the output shaft on the transmission with the car at ride height and fill in the sheet. This measurement will be used if the factory transmission tunnel will be used. Jack the car up and set it on jack stands. Measure the transmission distance from the rear end and fill in the sheet. This measurement will be used if the motor is going in the same location front to back. One of the important measurements will be the motor offset in the chassis. Measure from the center of the transmission output shaft to the rocker on each side of the car. Take the difference of these measurements and divide it by two. This will be the motor offset. 1" = 1/2" offset.

2...Cut and remove any frame connectors that have been installed. Remove anything that has been welded to the factory front subframe or any part of the factory frame rails that will be removed. This will be a good time to remove the transmission mount bolts, driveshaft and shifter cable. This will let the transmission just slide off the mount. Jack up the car and remove the jack stands and set the car on the ground. Measure the rocker height from the ground at the front and rear of the rockers. Measure from center to center on the front tires, this will be your track width. Fill in the wheelbase measurement. The rest of the needed measurements will be taken as the car is disassembled.

4...Measure from the ground to the crankshaft centerline and write it on the sheet. Now you can start removing all of the front-end sheet metal. (Hood, Fenders, Inner fender wells and Bumper) Drain and remove the radiator, transmission cooler and all of the fuel lines. Remove everything down to the frame including the motor. (See Photo #1)

5...Center the front wheels and measure the front wheel centerline from the rocker panels. This can be done by measuring from the end of each rocker. All factory spindles have a tapered hole in the back which is the center of the spindle shaft. (See Photo #2) Measure from the end of each rocker to this hole and write down each measurement. These measurements should be within 1/4" of each other. If not center the front wheels again and measure them again.

6...Jack up the front of the car and place on jack stands. These jack stands must be under the body not the factory frame or subframe. Unbolt or cut the factory front subframe and roll out of the way. (See Photo #3)

7...If the firewall and floor are going to be cut out you must first measure the width of the rockers at the front and rear. This can be done by measuring between the pinch welds on the bottom or top of the rockers. These measurements are needed to make sure that the rockers are back at the correct width when mounting the outriggers to the rockers from the frame rails. If the placement is not the same the doors will not close correctly.

8...If the firewall and floor are to be cut out trim the floor even with the rocker panels all the way back to the 2 X 3 crossmember.

9...Start the installation by placing blocks or homemade stands under the front and rear of the rocker panels so the car is set up at ride height as determined in step #3. This must be how you want the car to sit when done. See Photo #4. Let the air out of the rear tires so the weight is off them and on the blocks so that car will not move. Now it's time to remove the motor and transmission. Use small shims to level the car side to side. When done with this step the car should be sitting just like you want the car to sit on the ground when it is complete. **THIS IS VERY IMPORTANT BECAUSE**

THE HEIGHT OF THE CAR CAN'T BE CHANGED AFTER THE NEW FRONT END IS INSTALLED.

10...A centerline for the chassis is needed. This can be done by finding the center of the rear frame rails using a plumb bob. Hold the plumb bob on the outside of each frame rail and marking the floor. (See Photo #5) Once this is done, find the center of these marks and mark the floor. This will be the chassis centerline for the rear of the car.

11...To find the chassis centerline of the front of the body measure the width of the outside of the rockers. Do this using a large carpenters square. Stand the square up against the outside of the rockers even with the front and rear of the door jam and mark the floor. Measure between the front two marks and the two rear marks and find the center and mark the floor. Use a chalk line or a long straight edge to mark the floor from the rear centerline to the front centerline all the way out to the front of the car. This line must be long enough so the front crossmember of the frame can be centered on the line. (See Photo #6)

12...The next line you need to draw on the floor is the front wheel centerline from the end of the rocker panels. Average out the to measurements if they are not the same. Measure from the end of the rocker panels and mark the floor. Once this is done draw a line from mark to mark. This line is what you are going to line up the center of the new brackets with on the new frame rails. (See Photo #6) Use a large square and check that these lines are square where they meet in the middle.

13...Bolt the rack and pinion crossmember between the frame rails with the 3/8"X1" bolts supplied in the kit. (See Photo #7) The brackets face to the rear of the car and are offset to the driver side of the car. Measure the length of the crossmember and mark the center. This will be the centerline for lining up the front frame on the lines on the floor. (See Photo #8)

14...Put the front frame on jack stands or blocks so the bottom of the front part of the frame is 3/4" lower than half the total height of the front tires. (11-1/4" for 24" tall fronts) and the front part of the frame rails are level. (See Photo #9). Clamp or tack weld a piece of steel between the rear of the frame rails to hold it the same as the front width.

15...Measure the driver and passenger side of the lower a-arm mounting tubes between the brackets and mark the center on the outside of each tube. With the frame level and at the right height center it on the centerlines right to left and front to back. (See Photo #10)

16...Slide the frame front to back and line the marks made on the lower a-arm mounting tubes up with the front wheel centerline on the floor. Use a small square standing on the floor to line up the marks on the frame. After moving, check the frame right to left. (See Photo's #11 & 12)

17...With the frame in the proper placement cut a piece of 2 X 3 tubing to go from the new front frame rail to the rear 2 X 3 crossmember. Take your time because the cuts on each end will not be 90 degrees. Make the rails the same width as the front rails all the way back to the rear crossmember. Tack weld into place when fit. Use more of the 2 X 3 tubing to make the front outriggers to connect the frame rails to the rocker panels where the window bars meet the rockers. (See Photo #14) These can be moved to the rear a little bit for header clearance.

18...The front strut bars will be the next bars to go in. These bars should be mounted as high as possible where they meet the window bars and at least 6" to 9" past the a-arm mounting brackets on the front rails. There must be a minimum of 3" between this bar and the mounting brackets so the control arms will not hit the bars. When both bars are fit the same distance from the mounting brackets and at the same height at the rear section, they both can be tack welded in place. (See Photo #13)

19...Cut and fit the 1-1/4" support bars to go from the frame rails up to the front strut bars. tack weld each one in after fit. (See Photo #15)

20...Weld the front frame rails to the rear pieces of 2 X 3 that go to the rear crossmember. There are 4 frame rail plates in the kit. (See Photo #13) Center the plate on the weld and clamp. Weld all the way around the outside and all the way around the inside of the center hole. repeat this on the inside and outside of both frame rails. (See Photo #16) Then weld the frame rails to the rear crossmember at the rear.

21...Bolt the rack and pinion in place using the rack mounting kit supplied in the kit. Slide a clevis onto each of the mounting tabs that are on the lower a-arm mounting tubes and just drop a bolt in the hole to hold it in place. Cut and fit the small bent tubes to go from the clevis to the center of the rack crossmember. The bent part of the tube goes to the front to miss the rack and pinion. When both tubes are fit tack weld both of them in place then weld the bars in. (See Photo #17)

22...Screw the 3/4" rod ends into the control arms so there are 6 or 7 threads showing past the jam nut. You must use anti-seize on the threads to keep them from locking up. (See Photo #18)

23...Bolt the upper and lower control arms on using the 3/4" bolts supplied in the kit. Just start the bolts for now about 5 or 6 threads.

24...Bolt the spindles to the a-arms. The bottom ball joint gets a spacer between the nut and spindle that is supplied in the kit. Just tighten do not install cotter pins at this time. (See Photo #19)

25...Install the front hubs so the wheels and tires can be bolted on. The hub and a-arms may need to be lifted so the tire can be installed. DO NOT INSTALL THE SHOCKS AND SPRINGS AT THIS TIME.

26...With the tires installed and the frame rails still at the installed height measure from the frame rail to the side wall of each tire at the front and rear. Turn each tire in or out until you have the same measurements front and rear. This is to make sure both tires are pointing straight ahead so the rack tie rods can be installed. Next turn the input shaft on the rack all the way to the right then turn it back all the way to the left counting the turns. Then turn the rack back to the right half the distance. This will put the rack in the center. Mark the shaft and the rack housing with a line so this can be checked time to time as the tie rods are installed to make sure it is still centered.

27...Screw one of the high misalignment rod ends into each of the tie rod tubes so there are 6 to 7 threads showing past the jam nut. (See Photo #22) Slide the tie rod tube over the rack tie rod so it stops 1/4" from the rubber rack boot. Trim the end of the tube until the rod end lines up with the mounting hole in the steering arm. The threaded part of the rack tie rod may need to be trimmed if it stops the tube from sliding on all the way.

28...Measure how far the tie rod on the rack slides into the tie rod tube. Subtract a 1/2" from this measurement and mark the tube. Drill a 3/8" hole only in one side of the tube even with this mark. This hole will be for a plug weld. Repeat this on the other side of the car. (See Photo #23)

29...Slide the tie rod tube back on the rack tie rod but this time put a 7/16" flat washer on the bolt first then insert it in the spindle arm from the top. Then slide a 7/16" flat washer on, then a mis alignment bushing, then the rod end, then the safety washer, then the nut. (See Photo #24) Repeat this on the other side. Check that the rack is still centered and that the tires are still the same distance from the frame rails front and back. If everything checks out weld the tie rod tubes to the rack tie rods using the holes drilled for the plug welds only at this time. After welding the plug welds remove the rack from the car. Slide the rack boots back as far as you can so the ends of the tie rod tubes can be welded.

30...Install the springs on the shocks and bolt them in place. Bolt the bottom on first. There should be one 1/2" wide bushing on each side of the lower bearing of the shocks. Jack up the frame until the top bearing lines up with the shock mount and install the top bolt. Repeat this on the other side of the car.





