

# INSTRUCTIONS

916-395



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## Front Axle Assembly: Hairpin Radius Rods

This radius rod front end kit is used with OEM or aftermarket tube or I-beam axles that use a perch bolt and bolt on batwings (like our 916-35000).

First, thread jam nuts onto the heim joints and assemble them onto the radius rods as shown in photos 1-2.

Make sure to use anti-seize compound on all threads and leave approximately 4-5 threads exposed on each rod end.

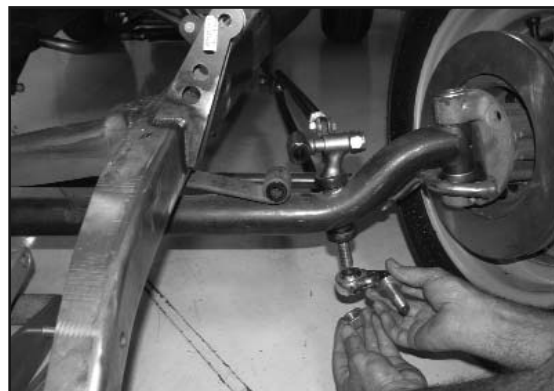
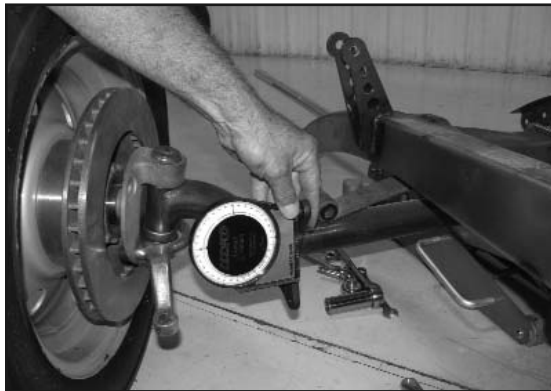
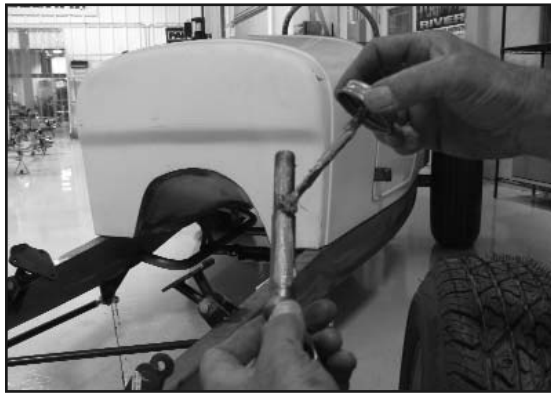


Next, thread jam nuts onto the clevises and screw the clevises into the radius rods. Again, make sure to use anti-seize compound and leave approximately 4-5 threads exposed on each clevis.



Bolt the radius rods to the frame brackets using the supplied 5/8" bolts and lock nuts. Be sure to use a cone spacer between the frame mount and heim joint to prevent binding. Torque at final assembly should be 100-125 ft. lbs.

NOTE: If your frame does not have the radius rod mount brackets installed, bolt the radius rod to the frame mount brackets (like our 916-35050) and then temporarily clamp the bracket to the frame. In later steps when you are squaring the front axle to the chassis move the bracket as required instead of adjusting the radius rod heim joints?



Apply anti-seize to the shank and threads of the spring perch. Install batwing (or wishbone, if so equipped) on axle boss and insert the spring perch. Make sure that batwings are installed on the proper side (they are marked L and R), the ears should be vertical when installed correctly. Install the lower shock mount on threaded shank of spring perch bolt and secure with nut. Do not torque at this time. Torque at final at assembly should be 100-125 ft. lbs.



Set the front axle on jack stands under the front of the frame and bolt the clevises to the batwings using the supplied 3/8" x 1" bolts and nuts. Make sure the hardware securing the clevises and rod ends is snug, but not tight at this time. Final torque at assembly should be 20 ft. lb.

Verify that the axle is level and centered from side to side, and that it is positioned approximately 3-inches below the spring perch or crossmember.



Slide a kingpin into each axle boss and use an angle finder to determine the amount of caster. This can be adjusted by threading the upper and/or lower radius rod clevises in or out. Make sure each side is adjusted equally. During initial assembly, with the chassis level on jack stands, caster should be around 10 degrees indicated. This is a preliminary adjustment – final caster adjustments must be made with wheels and tires installed and the vehicle on the ground at running weight and normal ride height. We recommend 6-8 degrees of positive caster (angled aft at the top) with the car complete and sitting on the ground at ride height. There is normally 2-3 degrees of rake in the chassis at ride height.



**\*\*At this time you need to make sure the axle is square to the frame.**

Measure from the upper clevis bolt to the rear of the frame on each side of the chassis. If your frame is already equipped with fixture welded rear suspension mounts they can be used as a reference in lieu of the rear of the frame.

Adjust by turning the heim joint on the end of the hairpin in or out as required. The dimension on the right side and left side should match within 1/16".

NOTE: If required, tack weld the radius rod mount brackets to the frame at this time.



Secure the spring assembly onto the front crossmember or spring perch on the frame using the supplied U-bolts. It's helpful to clamp the spring to the perch while threading the U-bolt nuts on

Next, assemble one spring pivot on a perch bolt. Install the nut on the pivot stud only 4-5 threads at this time. If you are using non-adjustable spring perches proceed to next step.



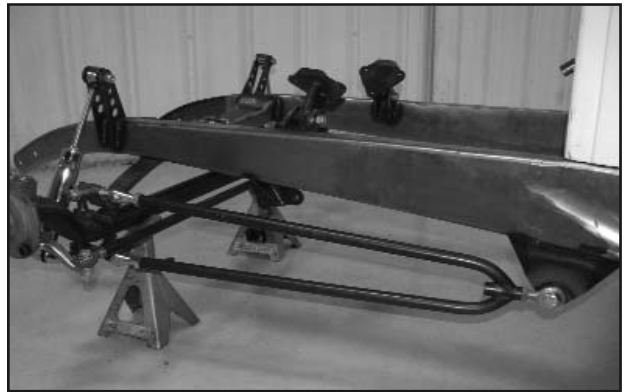
Insert the supplied bushings into the pivot and leaf spring and use the shackle to connect the spring and pivot. Make sure that the shackle nuts face aft to prevent interference with the shock body. Repeat for shackle assembly on the other side, and then tighten spring pivots.

Install shock onto lower mount. It may be helpful to use a little petroleum jelly on the mount to help the bushing slide easier. Secure using the supplied washer and nut. Secure upper shock eye to frame mount. Frame mounts will vary per application.



Secure all of the front suspension bolts, making sure they are snug, but not too tight at this time. Torque all fasteners to proper spec at final assembly.

**NOTE:** If your radius rod brackets were not welded on previously, double check the front axle to make sure that it is still square to the chassis and finish weld the frame brackets. We recommend that all critical suspension welds be of MIG or TIG method and performed by a certified welder.



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