

HOW TO: BENDING SPINDLE ARMS

Bending spindle arms is common practice when building a hot rod. The moment you install a dropped type axle the spindles and the tie rod connecting the spindles move-up vertically in relation to the axle, radius rods, frame, etc. This usually causes the tie rod to interfere with the radius rods, front crossmember, even the crankshaft pulley on the engine. The solution is to heat the spindle arms with a large acetylene torch and carefully bend the arms to reposition the tie rod so that the spindles can turn lock to lock (extreme left to right) without interference. If you are using a stock or split wishbone the tie rod will most likely need to go above the wishbone (depending on amount of axle drop.) In this case try to position the tie rod as low or as close to the wishbone as possible (illustration A) as frame clearance will be the main problem. If you are using a 4-Bar set-up you can take advantage of additional tie rod to frame clearance as the tie rod can be positioned lower directly behind the axle. By bending the arms to center the tie rod in the crotch of the axle bracket (illustration B) you will maintain maximum turning radius and have sufficient frame clearance.

Some good rules to follow when bending spindle arms are:

#1 Keep the centerlines of the kingpin and the rod end hole parallel. This is done by bending the spindle arm in 2 places. If these bends are too close to each other the length of the arm will be shortened, critically affecting the steering geometry. Try to make the bends as far apart as possible.

#2 Proper steering geometry when the spindles are turned left or right is regulated by the angle of the arms. A simple guide to correct turning geometry is to project a line from the center of the kingpin to the center of the rear end. Then make sure that the center of the tie rod end hole in the spindle arm is also on this line.

#3 Bending spindle arms that are made of forged steel (like original Ford spindles) or cut from steel plate is no problem. Heat the metal only enough so you can bend the arms using a large Crescent type wrench. If the metal gets too hot it may crack or crumble during the bending process. Do not heat or try to bend any item that is "cast" material.

ILLUSTRATION A

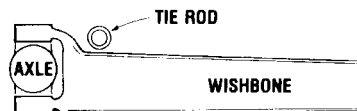


ILLUSTRATION B

