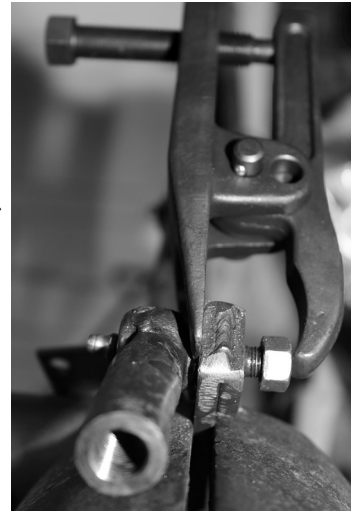


## I-29 Tie Rod Removal and Steering Box Washers *By Lee Seats*

*I thought I might remove the original steering tie rod ends and replace them as recommended by Dick Russ in his 'The Diamond in the Rough' series in the Shop Notes. The original tie rod fittings appear to be fine with no noticeable looseness or play but, as I've already admitted, I'm really enjoying taking things apart! I figured that, at the very least, I should replace the rubber washers and clean and paint. To my surprise, after removing the cotter pins and castle nuts, I can't get any of the fittings out of their respective arms. Please see the attached photo of my latest line of attack. I tried a nut and a jam nut on the threaded ends of the studs to get them to turn in the arms but they wouldn't budge. I'm assuming the studs aren't threaded into the arms and it's just the unthreaded shoulders of the studs that are in the holes. There's no evidence of any rust or corrosion and I've used a ton of PB Blaster. Haven't tried heat. Any suggestions? Best, Craig Brimicombe*

Craig, those tie rod ends are tapered so you have to knock them loose with a tie rod fork. Put it between the tie rod end and the metal its bolted to and to they will pop right out. — Lee



*Ah, I didn't consider those studs are tapered. Excellent, I'll get one of those tie rod fork tools. How about replacement rubber washers - any suggestions? Also, the 3/16" thick 'washer' on the fixed part of the output shaft in the steering box, the piece the sector gear presses against. Ours looks to be in decent shape but does appear to be compressed and the bearing surface is rough. I'm thinking of replacing it with one 1/16" or so thicker. Can you recommend any particular material? A stack of stainless fender washers? Delrin? Thanks so much for the help! Best, Craig*

The washer in the steering box should be leather. The rubber washers on the tie rods aren't necessary but you can use a 3/16"-diameter O-ring and that would keep the dirt out. — Lee