REMOVING EUROPA FROZEN FRONT SUSPENSION PIVOT PIN

In the spirit that what has been tried and found not to work is just as valuable information as what has been tried and does work, the following little saga is presented.

Removing the front shock absorbers on a Europa is, in theory, easy. If you own a Europa, you may recall that the upper suspension components are located by a ½ inch diameter, 8 inch long hardened steel pivot pin. This pin has a nut welded on one end and the threaded end is inserted from inside the car. On the driver's side, from the pedals it goes through: a locating collar on the frame, the trailing upper "A" arm, the top of the shock absorber, another locating collar, the leading upper "A" arm, and the locating link for the anti-sway bar with a washer and a lock nut added to the end. To remove the shock absorber you remove this nut and washer and drift the pin out. This is fine if the pin will, in fact, drift out. If the pin refuses to budge - a difficulty I experienced on one side of my Europa - you have a problem. In this case I'd recommend that you first assess the extent of the problem by unbolting the outer ends of the upper "A" arms from the ball joint and the bottom of the shock from the lower "A" arms. By attempting to rotate these components on the pivot pin, you will find whether these items are frozen to the pin in addition to the pin being frozen to the collars. In my case everything was frozen up. In either case the strategy is to break the pin loose by first attempting to turn it. If the "A" arms and shock are frozen to the pin, unbolting them means that in attempting to turn the pin you will only have to work against the pin being frozen to the collars, and not, at the same time, the problem of the pin being frozen to the (immibile) "A" arms and shock. In attempting to turn the pin I tried the following in the order listed:

1) Put a socket wrench on the nut welded onto the pin, plus a long series of extensions, so that the rachet was located where I could lean into it. (Removing the seat helps.) After I couldn't budge it with the rachet alone, I slipped a cheater pipe on and, eventually, succeeded in breaking the nut loose from its weld. It would spin on the pin, although the nut wouldn't come off, as part of the weld was in the way.

2)Removed the anti-sway bar locating link from the front of the pin, found another properly sized nut, and locked the two of them against each other on the threaded portion of the pin. After a number of attempts, and resorting to the cheater pipe again, I stripped the threads off the nuts, although the threads on the hardened steel pin were not damaged. (Note: The front wheel wells on the S1, S2, and TC vary in size. For my S1, to get a rachet on the nut on the threaded end of the pin, it was necessary to cut a hole in the wheel well, insert the wrench through the hole, and remove the hood to get a good grip on the wrench. I am not sure this would be a problem with other Europas.)

3) Screwed another nut on the threaded end, drilled a hole through the nut and the pin, and put in a piece of broken drill bit to act as a locking pin. The outcome here was to shear the

piece of drill bit - again using the cheater pipe which was also used in steps 4) and 5) below.

4) Same as 3) except used a larger diameter piece of drill bit. Result this time was to shear the threaded portion of the pivot pin off.

5) Hammered the nut onto the pivot pin, drilled another hole, inserted the piece of drill bit, and, finally, broke the pivot pin loose so it rotated in the collars - although the rotation was restricted by the "A" arms and shock, which were still frozen to the pivot pin.

What I should have done at this point, although I didn't think of it, was to rebolt the "A" arms to the ball joint and the shock to the lower "A" arms and attempt to break them loose by rotating the pin. I think this would have worked if not all at once, then for the "A" arms and shock separately, i.e. bolt the "A" arms in place and leave the shock free, etc. In case this doesn't work, here's what I did: I drilled a series of holes through the top collar of the shock and the pivot pin. As I increased the diameter of the holes to about ½ inch, the pin broke in two and the shock could be removed with some tugging. This allowed the front half of what remained on the pivot pin with the leading "A" arm still frozen onto it to be removed. The rear half, however, had the trailing "A" arm frozen to the pivot pin on one side of the collar and the formerly welded, but still unremovable, nut on the other side so that it couldn't be removed. There was, by this time, however, enough of the pivot pin exposed between the frozen "A" arm and the collar to drill a series of 1/8 inch diameter holes through the pin at different angles until it broke. Finally, I was able to drill the frozen pieces of pivot pin out of the "A" arms. The rubber bushings of the "A" arms were in good condition, even though they had been taking all the movement of the front suspension.

Some other things that didn't work were squirting penetrating fluid into holes drilled into the collars and heating the collars with a propane torch. I am not familiar with what could be done with a welding torch, but if I had to do it again I'd definitely investigate this possibility - it could save a lot of hassle.

I only had this problem on one side of the car. The pin on the other side drifted right out. In retrospect, I think that the problem was caused by my tightening the nut on the frozen pivot pin side too tightly several years earlier. Tightening this nut too much tends to 'sandwich' thing together, restricting movement. What could be done is to install grease fittings on the collars. This would require welding an additional piece of metal to the collars to increase thickness. Although I didn't do this, I sure put a lot of grease on things when I reassembled them.

James Scherer
Ithaca, New York