



Swivel-eyed

Neglect regular greasing and the 2CV's kingpins will wear. Tony Stuart-Jones looks at the cure

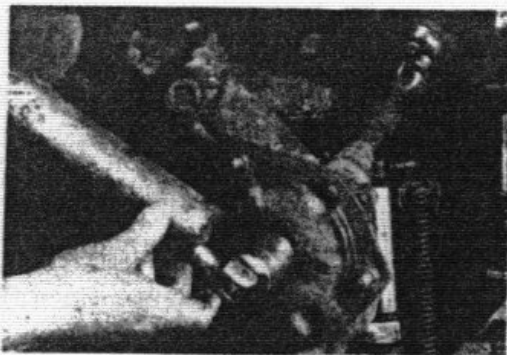


The Citroën 2CV is something of an anachronism in today's motoring world. With other car manufacturer's making their small cars ever more sophisticated, complex, and luxurious, the 2CV remains unchanged in what must be the western world's most simple and basic car in current production.

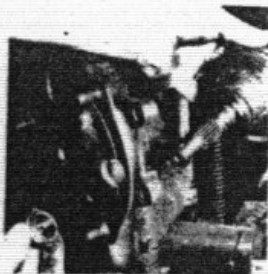
The design of the 2CV goes back to pre-war days and has old fashioned kingpins on which the front wheels pivot instead of the conventional balljoints on modern cars.

If you neglect to grease the nipples, the kingpins and bushes will wear and you'll end up with an MoT test failure which is why the 2CV was in the *Car Mechanics* workshop.

A quick check with the front jacked up revealed that there was considerable movement of the offside front wheel when it was rocked in a vertical direction. Judging by the rust and dirt around the swivel hub and



With brakes applied, considerable leverage was needed to undo the driveshaft hub. We used some scaffold tube.



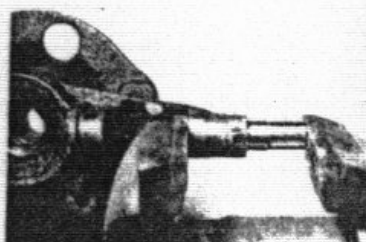
Rather than disconnect the track-rod and joint, we detached the steering arm from top of swivel.



Once the nut has been undone, the driveshaft can be compressed and withdrawn from the rear of the swivel assembly.



Once the kingpin was out, the swivel hub and thrust shers were detached from suspension arm.



Having cleaned the housings, we used a 14mm socket and vice to press in the new bushes. Take things slowly.



The swivel hub was positioned on the arm and feeler gauges used to measure correct washer thickness.

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grease nipple, it hadn't been greased for years, if at all.

Although Citroën recommend using a press to overhaul the kingpins on the 2CV, we found that the job can be done using a normal heavy-duty vice and suitable size drifts. A kingpin overhaul kit containing all the replacement parts is available from Citroën dealers for under £20 and, as we show, the job can be done in a morning.

Driveshaft hub nut

With the front wheel removed, we set about undoing the driveshaft hub nut which is tightened to a high torque of between 250-290 lb/ft. Most torque wrenches would break long before reaching this figure, so we used a long non-ratchet type wrench plus a length of scaffold tube which was attached to the 26mm socket for the nut.

With the handbrake firmly applied and an assistant stamping on the brake pedal to prevent the shaft turning, it was quite easy to undo the nut. The same procedure was used to retighten the nut afterwards.

Having removed the nut, the splined end of the driveshaft was gently tapped through the hub and the driveshaft withdrawn clear of the hub and swivel assembly. As the driveshaft is of the sliding type, its length can be compressed so the outer splined end just clears the inboard part of the hub assembly. This avoids having to disconnect the driveshaft at the inner brake drum end.

Similarly, to avoid the hassle of dismantling the steering track-rod end joint, we disconnected the steering arm from the swivel hub assembly. It's secured by a long and short 10mm bolt and locking tabs. Once these were undone, the arm was gently tapped from its locating groove in the top of the swivel assembly.

Before the kingpin can be removed, we had to remove the upper expanding plug and the lower threaded plug from the top and bottom of the swivel hub. We found the best way to remove the expanding plug was to drill a hole through the plug and lever it out with a punch. The bottom plug is locked by the collar flange bent over the end of the hub casting, and once this had been turned up using a hammer and chisel, we were able to unscrew the plug and remove it.

A long drift (actually an old $\frac{3}{8}$ in. drive extension) and a hammer was used to drive out the old kingpin through the bottom, and the swivel hub detached from the suspension arm.

It was quite easy to drive out the old bushes from the hub using an old 14mm socket and extension, and once this had been done, both the hub end of the suspension arm were thoroughly cleaned.

Suspension arm

A point to check at this stage is the fit of the kingpin in the suspension arm. If the old 'pin is very easy to drive out, check the fit of the new one in the arm. If it slides through without resistance or can be moved sideways, then the bore in the arm is worn and you'll need a new arm. This often happens when the top and bottom bushes have seized and the kingpin has no alternative but to pivot on the arm, which it's not supposed to do for obvious reasons.

Fitting the new bushes is quite easy, using a vice and a 14mm $\frac{3}{8}$ in. drive socket which is just the right diameter. The bushes should be pressed in until the inner ends are flush with the arm faces of the hub. Allow yourself 2½ hours per kingpin, and this takes into account the "hassle" factor usually encountered with seized parts etc.

Once the bushes have been fitted, it's important that the correct thrust washer thickness is determined. To do this, refit the hub assembly to the arm with the new washer pack inserted then measure the clearance between the hub and arm at top and bottom. It should be between 0.1mm and 0.4mm. If it's more or less than this, you'll need to buy the correct thickness washer from a Citroën dealer.

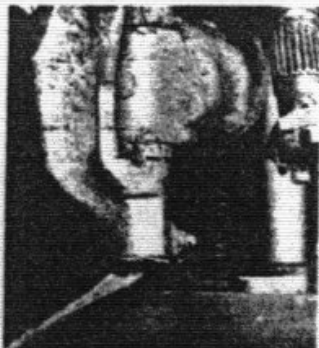
Partially inserting

We now started the refitting by smearing all parts with grease, then centralising the washers by partially inserting the new kingpin from below. The 'pin was then withdrawn and inserted from the top. The washers were then held in place while the kingpin was drifted into position. We used a hardwood block to prevent damage to the 'pin end during insertion. It's important that the 'pin is correctly positioned with the grease holes facing at right-angles to the centre line of the car. Also, the lower part of the 'pin should be approximately 7mm from the lower flange of the hub assembly.

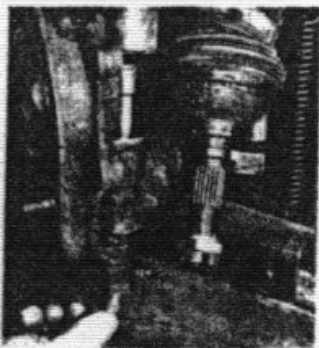
Next, the recesses above and below the kingpin were filled with grease and the new expanding plug drifted into the recess at the top. Once it was fully seated, the centre of the dome was lightly tapped to expand and seal the plug.

At the bottom end, we screwed in the new plug until the collar was touching the hub flange, and locked the plug by tapping down the collar at four points around the edge.

We made sure the new assembly was fully greased before refitting the steering arm and driveshaft in the reverse order of removal. The driveshaft hub nut was then retightened using the same method as for unscrewing it to complete the job.



Use a chisel to bend back the lower plug collar flange before unscrewing plug with screwdriver.



The old kingpin was then drifted out through the bottom using a hammer and suitable size drift.



We inserted the new kingpin from the underside to make sure the thrust washers were centralised.



The new kingpin was greased and thrust washers held central while the pin was drifted into position.



Having filled the recess with grease, we gently tapped the new expanding plug into position.

Finally, we tightened the lower threaded plug and turned down the collar flange with a hammer to secure it.

