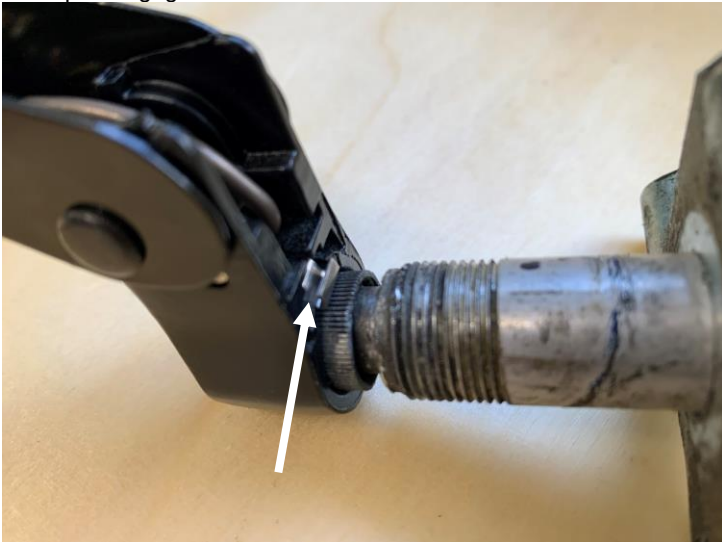




Windscreen wiper wheel box replacement

Peter Spurrs had problems with his windscreen wiper arms detaching whilst driving. Here are his story and solution.

Inspecting the car after losing a wiper arm a while ago, it became clear that the arms would not fit properly onto the splined shafts of the wheel boxes. It can be seen from the image below that the wiper arm will not go sufficiently far down the splined shaft to allow the clip to engage and secure it.



Believing the wiper arms to be at fault, I contacted Chris at the supplier (Tex). He was extremely helpful, taking the measurements of my wheel boxes and checking that their arms fitted properly onto their V8. He even sent me a new pair of arms to ensure I had the correct ones. Thanks Chris. But his arms didn't fit my car either.

That led me to examine the splined shafts more closely. The next image shows the splines to be damaged, but the damage was in the area over which the wiper arm would fit.



For ease of casting, the splined hole in the wiper arm is tapered, clearly narrowing towards the closed end. As a result, there is some clearance between the two parts over the first part of the shaft, giving the appearance of a good fit. Only when the shaft tries to fit into the hole fully, does the damage in the shaft prevent further movement.



The difference between new and old wheel boxes is clear.

Solution: change the wheel boxes

Before starting to the job, make sure you are committed to complete it. Removing the wheel boxes is technically simple, but physically awkward with the dashboard in place. Replacing them is harder - nuts needing to be threaded and tightened and physically it is most uncomfortable. Fortunately, my wife is a physiotherapist.



Replacement wheel boxes are easily obtained. Given the effort involved in removing the parts, it is worth examining the whole system and replacing everything which is worn.

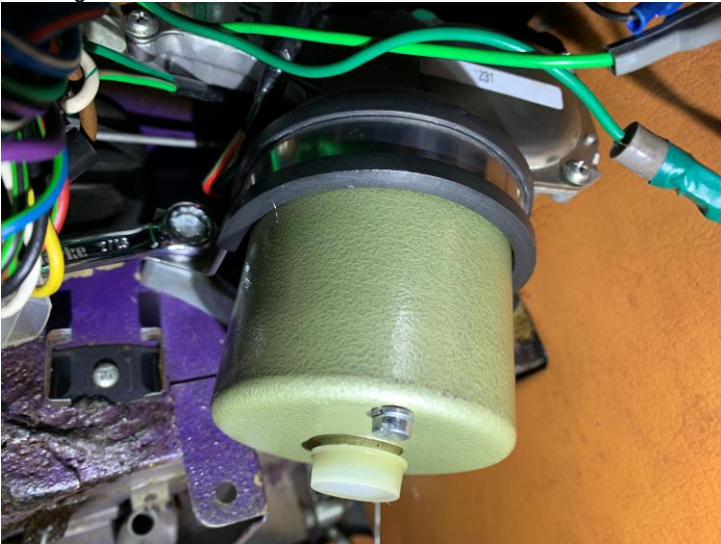
The removal process

Step 1

Remove the wiper arms. In my case, they came off easily as they were not clipped on. Arms which are clipped on just need the clip to be pushed back.

Step 2

Disconnect the wiper motor. It is under the right-hand side of the steering wheel.



1. Remove the two bolts holding the motor onto the bodywork.
2. The electrical connector block on the back of the motor can then be reached and disconnected.
3. The drive tube end nut is then undone (see image above).
4. The four machine screws on the motor face are removed next.
5. The drive end of the wiper rack can then be disconnected.

**Step 3**

Withdraw the wiper rack by pulling from the motor end. The wheel boxes will spin, so the wiper arms must have been removed before this step.

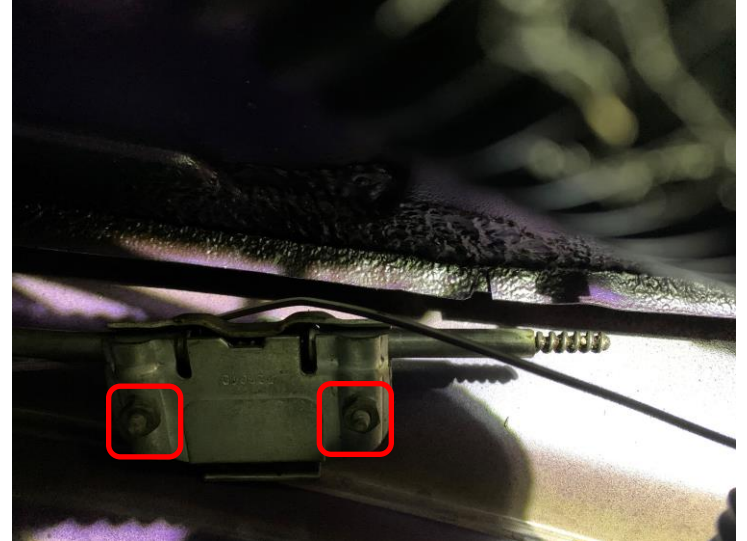
Step 4

Remove the loudspeaker mounting from the passenger footwell.



There are four screws or bolts and two push-on connectors for the loudspeaker.

Next remove the two nuts from the backplate of the passenger side wheel box.



It is a best use a portable light to illuminate the area behind the dashboard. A pair of safety specs is recommended to prevent eye injury from falling parts and debris.



With the back plate removed, the guide tubes can be released. The guide tubes have flared ends to prevent them moving in operation. Finally, remove the nut, spacer and washer from outside the car, and remove the wheel box from the inside.

Step 5

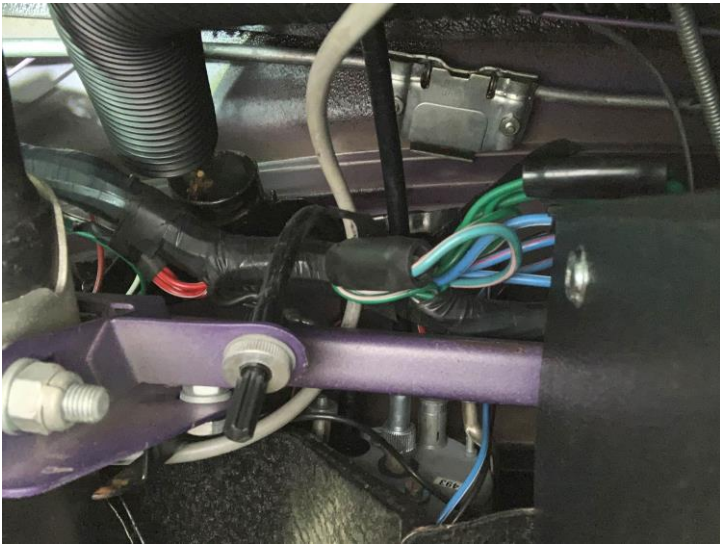
Remove the driver's side wheel box. The process is the same as for Step 4, but made more difficult by the steering wheel, wiring and heater pipes.

Step 6

Inspect, clean, replace and grease parts as necessary.

Step 7

Repair paintwork damage and corrosion around the wheel box holes on the bonnet.



The replacement process

It is possible to fix the wheel boxes to the car, then position the wiper rack tubes followed by the back plate and securing nuts. Whilst this method holds the wheel box in place, the box is upside down and the components tend to fall out. A better method is to loosely assemble the wheel boxes before securing them to the car. It has the advantage of allowing the wheel box to be turned so that the components don't fall out, but it has to be held by hand.

Once assembled, it can be rotated and fitted to the car.

In summary

1. Mount the driver's side wheel box and tube
2. Mount the passenger's side wheel box and tube
3. Replace the loudspeaker mounting
4. Connect the drive rack to the motor
5. Insert the drive rack into the tubes
6. Connect the drive rack end nut to the wiper motor
7. Connect the electrical feed
8. Test the system
9. Bolt the wiper motor to the car

Before bolting the wiper motor to the car, it is worth testing that the whole system works i.e. off, slow speed, high speed and self-park. A typical problem is failure of the self-park mechanism, which is often an earthing problem. Resetting the multi-connector block may solve it.

Key parts

Wiper motor	(1)
Parking switch	(6)
Shaft and gear	(7)
Crosshead and rack	(12)
Motor to wheelbox casing	(13)
Casing wheelbox to wheelbox	(14)
Spindle and gear	(17)
Rubber spindle tube	(18)
Wheelbox nut	(19)
Rubber washer	(20)

