Changing of wheel bearing on Renault Espace III (2.0 16v variant shown)

Please note: This document is meant as a guide only, you should seek professional help if you are unsure of any of the procedures within this exercise. If in doubt, shout!!

Tools needed:
Jack & axle stands
Wire brush
Penetrating fluid (WD40 or SAS)
3-in-1 oil (or new engine oil)
Brake cleaner
Clean rags
5mm Allen Key
18mm spanner
24mm spanner
24mm socket
32mm socket
14mm socket
Breaker bar
Ratchet
Ball joint splitter
Big hammer
Cable/Zip ties
Copper slip.

Lift the vehicle and secure on axle stand (this is really important as some of the nuts & bolts have been there since the car was built and won't be happy about coming off)

Remove road wheel

Wire brush clean the two 24mm nuts and thread that hold the suspension strut in place, douse liberally in penetrating fluid. Wire brush clean the nut and thread of the track rod end, give them the good news with penetrating oil.

Undo the 32mm nut that secures the drive shaft assembly into the hub, you may need to get someone to stand on the foot brake whilst doing this, once the nut has backed off a bit, it should wind off easily unless the car has had a particularly hard life then use penetrating oil.

Remove brake calliper and secure out of the way using a cable/zip tie, don't allow the calliper to dangle on its own weight.
Doing so may damage the flexi pipe – after all your trying to save money.

The bolt that needs to be removed in order to take the brake caliper off has a 16mm head shown rearwards of the two bolts shown in the picture.

Remove brake disk, it is held in place with two 5mm allen head machine screws, if these screws are happy where they are, try using an impact driver, failing that, drill them out and replace upon reassembly.

Clean the 18mm nut that secure the bottom ball joint in place and liberally apply penetrating oil.

Point to note, squirting copious amounts of penetrating oil on threads and nuts that are covered in cack is a waste of time and money. Cleaning the threads first will allow the oil to seep into the threads and lubricate from within. Applying 3-in-1 or engine oil to the thread improves the ease of which the nuts will be removed.

Remove the track rod end nut, use a ball joint splitter to release the track rod end. Replace the nut so it doesn't get lost or the end of the thread doesn't get damaged. Tip, if you leave the nut on the thread a couple of turns it will prevent the arm flicking up and damaging something or someone.

Cleaning the thread of the track rod end (or any bolt) greatly improves the chances of removing it without troubles.

Undo the bottom of the two 24mm nuts holding the strut into the hub assembly using a breaker bar to release the nut then ratchet to wind it off. Point to note, the bolt is designed to be captive but the 24mm spanner will come in use if it comes free. Repeat with the top bolt. Leave both nuts on a couple of turns so you have something to whack with the hammer. Tap the end of the 24mm bolt out (ensuring the nut is on the end so not to damage the thread of the bolt) until the nut meets the strut, remove the nut and wind the bolt out with the ratchet. Be warned, the hub assembly and strut may spring apart when the bolt comes free.

It it probable that the bolts have been in place since the car was manufactured, so they are not going to be happy about coming out. Leaving the nuts on the bolts, placing a piece of wood over the nut and asking it to come out with the use of a hammer is acceptable.

Now you should be able to remove the drive shaft from the hub assembly by pulling the hub towards you and pushing the drive shaft back, gentle (and I mean gentle) persuasion, block of wood and hammer, may be used on the end of the shaft to free it from the hub, anything more aggressive and you may damage the gearbox. You have been warned)

This will expose the 18mmm nut that holds the hub assembly to the bottom ball joint. Add A bit of oil then undo this nut and use your splitter to free the hub if necessary, replace the nut when you've done.

Your hub assembly:

The wheel bearing is pressed into place with considerable force, and secured with two circlips which locate the bearing into place. Through the middle of the bearing is the inner hub of which your brake disk and wheels bolt to, it is normally held in place by the friction of the bearing (when the drive shaft is removed) or the CV joint of the drive shaft when in normal use. You may find that the middle of the bearings fall out (which is why you are changing it in the first place) and you are stuck with the inner shell of the bearing not wanting to part company with the inner hub.

This picture shows the outer bearing shell with the retaining circlip removed.

Two carefully crafted cuts with a angle grinder, not deep enough to go through the shell but enough to take the bulk of the material away and good sharp whack with a cold chisel and hitting stick will split the metal and free the shell from the hub.

Two well placed cuts will weaken the inner shell of the bearing, a good short sharp crack with a hammer propelled cold chisel will sufficiently crack the shell and allow easy removal.

I have neglected to detail the pressing of the bearing here as I used 28,000 kg of pressure to remove the old bearing shell from the out hub. When they go, they go with a pop and if something goes wrong, it goes wrong in a big way. So it is best to take your hub assembly to a garage and ask then to press the old bearing out and the new one in, any self respecting back street garage shouldn't charge you more than £20 for this little operation.

Refitting is the reverse of removal, you can add a bit of tart spray to make it look better for the next time you are under your car. Important to clean the brake disc with break cleaner during refitting as any contamination may/will affect the braking efficiency and cause you another headache. A smidgeon of copperslip on the face of the hub before refitting the disk, a bit in the splines of the drives shaft splines and on the threads of the ball joints/TRE will aid you in the future. I normally dab a bit of grease over the nuts and threads of these parts once reassembled if it not going to cause any future problems, it just makes it easier to take apart in future, after all its a Renault :)

Note from me, this is how I have tackled this job (and many others in the past). Puritans may not appreciate my methods, but they work for me and I have never had any complaints.

I hope you may find this guide useful, if you have any corrections or feel that you can add to the document please feel free to email me mark@mrsi.co.uk