



The web home of the UN1 gearbox!

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History

It all started when Renault developed their front wheel drive vehicles such as the Renault 16.

Most of the makers of front wheel drive cars went the route of using transverse engines with the gearbox either under or in line with the engine between the front wheels or thereabouts. This has the consequence that the gearboxes from the vast majority of modern cars are useless if you are looking for a low cost source of something that you can use as a transaxle for a mid engine car. If you can't find a suitable donor from the mass produced car makers, then you are left with the Porsche family of gearboxes, and the dedicated race transaxles such as Hewland, Xtrac etc, and the latter are usually straight cut dog boxes, not ideal for the road as well as being pricey, new or secondhand!

Of the mass makers who went the route of front wheel drive cars with fore and aft engine's, the obvious ones are Renault and Audi.

To get the Audi issue out of the way, I have not worked on them, but people who do have told me that they are by no means bullet proof, and the ratios are not ideal, if you know any better, let me know!

Which leaves us with the Renault family which to my knowledge started as far as we are concerned with the 4 speed 367. Like a lot of early 5 speed gearboxes, the 369 was the 367 with 5th tacked on the back in a bulged rear cover instead of the nearly flat end cover of the 367.

My first Renault gearbox was a 369 which I took out of a 30 TX in a Parisian scrapyards, it cost me 30 francs believe it or not!

369's were used in the 30 TS and TX, the Alpine V6, Renault 20 and the Renault 5 turbo.

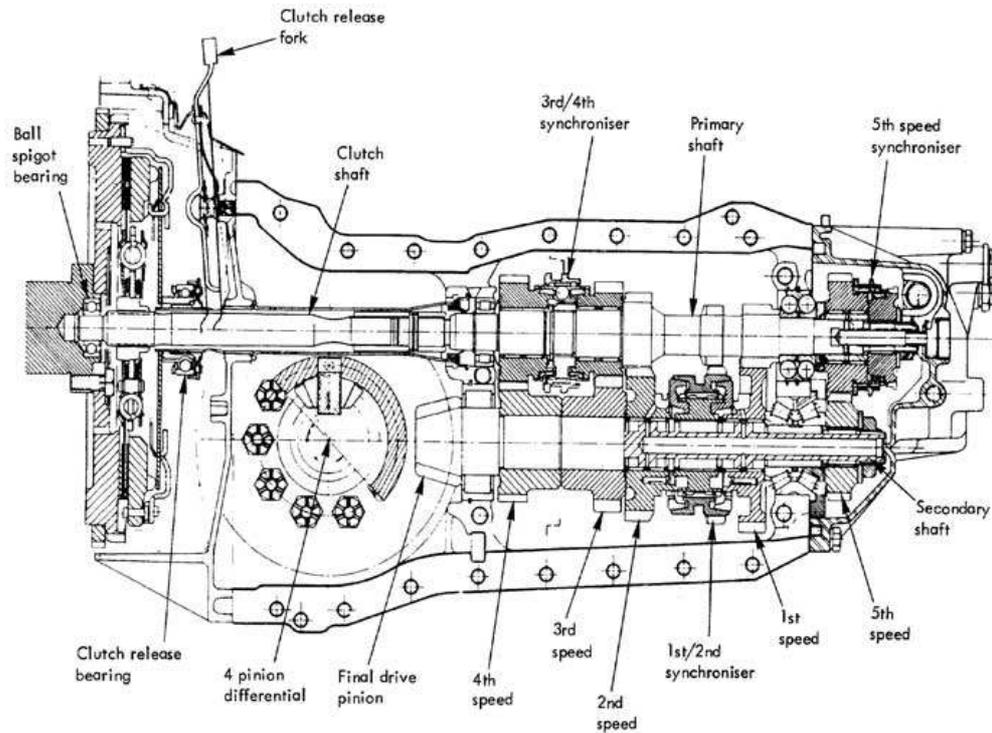
Then the UN1 appeared, and it was used in the 21 turbo and the 25.

The differences between the UN1 and 369 were small and for most purposes either will do if you can find them! The screws holding the end cover on, in the 369 were a fine pitch (1 mm I think) 8 mm thread (so they strip easily! but are easily repaired with helicoils) whereas the Un1 they were conventional M8 (1.25 mm pitch).

The other more important difference is that the tooth profile used on reverse was different. However I have found that apart from these two differences, parts can be used interchangeably with care (as long as clearances etc are OK), and in fact the gearbox in the Lola (www.bell-performance.co.uk/lolat70.htm) is a hybrid of the original 369 and a UN1 from a 21 turbo.

One other thing to be aware of is that the Alpine GTA version was set up for the opposite direction of rotation of the diff. This however is not fatal as with care the diff can be swapped around, as long as you are able to adjust backlash and bearing pre load properly. There is also the issue of the main side thrust of the crownwheel being taken by the pre load adjustment nut instead of the solid side of the casing, but this appears to be rather massive. All the Renault bell housings I have seen for the gearbox have two recesses cast into the rear face allowing the diff to be installed either way round.

The UN1 was also used in significant volume in a number of mid engine sports cars, for the same reason that they are widely used in for example GT40 replicas, they are reasonably light, tough and were once easy to get! They were used in the French Venturi sports car, the Lotus Esprit (later versions) and the De Lorean, as well as all sorts of small production and kit cars/replicas.



The UN1 has not been used in a Renault mass produced vehicle for many years now, but a descendant the UN5 has had a longer life.

As far as I can see from the UN5's I have dismantled, the UN5 is the UN1 adapted for use in vans etc by modifying them so they can use large crownwheels to give high final drive ratios (i.e. more geared down).

So the main difference is that the axis of rotation of the diff is moved further away from the actual gears, to leave space for the larger crown wheels. This also means that the bell housing is different because it has a larger bulge in it for the large crownwheel. This also means that the clutch extension shaft is longer, and more slender as it has to reach further, and pass closer to the face of the crownwheel (as the pinion is smaller in diameter), which also means that there is no longer space for the steel tube used in the UN1, so the clutch shaft has its own oil seal in the bell housing. As far as I could tell, the first motion shaft (the upper shaft in the actual gearbox) is to a similar design to the UN1 although the ratios are usually quite different (and useless for our purposes).

So although it is a close relative, the UN5 is not much use to us as the ratios are wrong and UN1 parts cannot be used in it except in certain limited areas. They also have a speedo drive on the rear cover (which is usually broken by the scrapyard) and the crownwheel can be on either side depending on application.

The last application of the UN1 proper was the last version of the Lotus Esprit, production of which seem to have been terminated by Renault's intention to stop making the UN1 at all!

Finis for the UN1, but fortunately many thousands were made and they can still be found although with increasing difficulty.



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