

Welcome to my page on the complete strip down of the

Tamiya 3 speed 4 wheel drive transmission

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So I begin, this transmission is of the brass gear type, Some gearboxes have more aluminium gears in them.



So we begin by removing the front case, Check the spur for wear. The pinion is very small on the motor and has a high wear rate.



Pull of the spur gear and examine the input shaft for wear.

Removing the next casing shows the 2nd / 3rd gear dog ring. Some people call them syncro rings. Pull of the selector fork and the dog ring. Under the input shaft you will find the 2nd gear lay shaft this also just pulls out.



This shows the contents of the above removed.



Now we move to the end of the gearbox.
This shows the casing removed.



This end of the gearbox is a little more technical,
It has both the 1st gear dog ring and also the 4 wheel drive
dog ring.
Here you can see the output shaft in the centre.
Below the 1st gear lay shaft.
To the right you see the 4 wheel drive output shaft.
The top dog ring is the 4 wheel drive.
The lower is the 1st gear ring.



As before remove the top dog ring and its selector fork.
Just pull out the 4 wheel drive output shaft.



Here you see the above removed



Now remove the 1st gear dog ring and the selector fork
complete with the selector shaft.
Also remove the bearing and spacer on the lay shaft.



As before the contents removed.
Here you see the back of the input shaft.
Now without pressing out the input shaft this cannot be removed.
Pressing out this shaft can be done with special equipment.
This is done very carefully not to brake the casing or deform
the gears.
More later in this write up



The rear casing showing the 4 wheel drive idler gear



Remove the idler gear



A very crude bush lives in here,
Not very good thinking how much torque goes through this.



The idler with the bush pressed out



The last casing you can remove



Back to our input shaft.

This shows the input shaft once it has been pressed out.
This is some of the bearings that can not be removed without special equipment.

Once removed it needs to be machined to be reassembled.



The centre casing with the input shaft removed.
viewed from the front.

You now can remove the 2nd gear lay shaft bearing.



This bearing here takes all the load of the input and output shafts in the centre.

This bearing gets a lot of wear.



There are more bearings on this shaft in the 2nd gear. These bearings can not be removed without machining. Once removed it needs to be machined to be reassembled.



Now we return to the output shaft This has the 4 wheel drive gear on it. Once again this gear assembly has to be pressed apart. Using special equipment this can be removed.



Once pressed apart the shaft needs to be machined to remove the gear and bearings. As with the input shaft it needs machined to be reassembled.



Here is a picture of the fully striped down gearbox.



Here is a picture of one of the bronze bearings with a crack, just goes to show that they are just not up to the job. Other problems are high friction and gear meshing which leads to badly worn gears. So I started looking into fully ballracing it. Thinking about gear wear, I thought could I get this gearbox to hold oil, read on.....

Fully ballraced oil tight gearbox conversion

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If you are interested in a conversion for yourself or have any questions or comments please

E-mail me at lees@thisrocks.freeserve.co.uk

This modification also applies to the Bruiser and mountaineer style transmission

Tamiya mountaineer busier hi-lux hilux hi lux blazer bearing bearings ballrace ball race ballraces ball races conversion

modification strip down 4 wheel drive truck monster r/c rc oil tight brass alloy aluminium