

First the oil seal was removed.



Then one of the circlips, what you see there is a dual purpose internal and external cir-clip pliers.



Then I didn't have an Allan key wrench for the top , so had to go into the next town and buy one
14mm £5.00

But even with this ,it would not come undone...even with a 3 foot bar on it and smacking hell out of it.
And I don't won't too damage it, so will seek an impact Allan-thingy for it...tomorrow...so that I can use
the gun on it.



Came out with the impact gun set quite low.



No problem .

So, what's underneath it that you need to get at? The manual just calls it an access plug.

Regards
HJ

There is a circlip that holds one of the bearings in ...if you don't open that circlip up as you are parting the
box open ...then you cant get the box apart....it a bit of a joggling act doing both at the same time ...but
the thing did quite easily come apart after this.

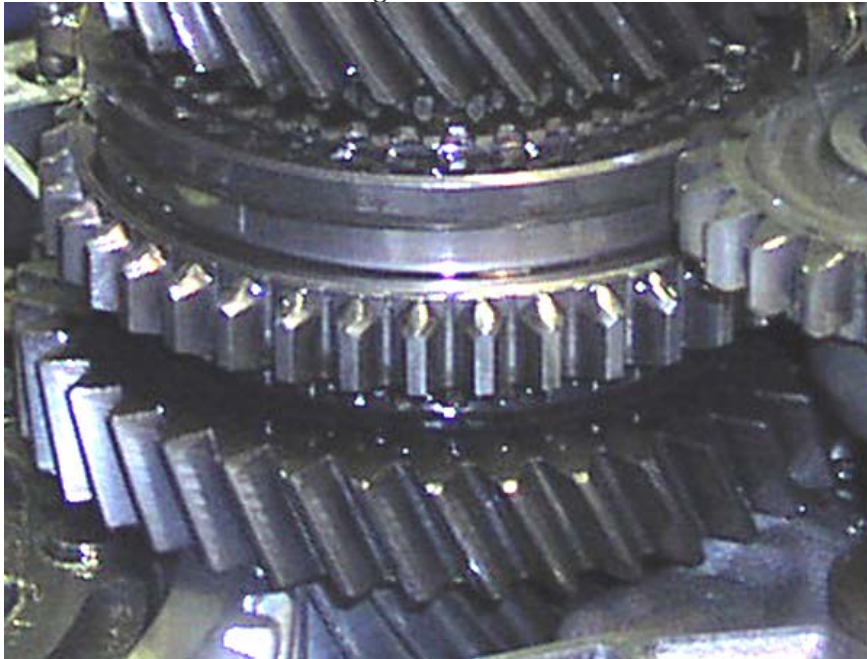
Well everything was plain sailing after that tight plug
the gearbox came apart OK.
After removing the speedo drive...reverse light switch...and reverse gear locking bolt.



Although this gear looks a bit worn...or is it supposed to look like that...I have nothing to compare.

EDIT

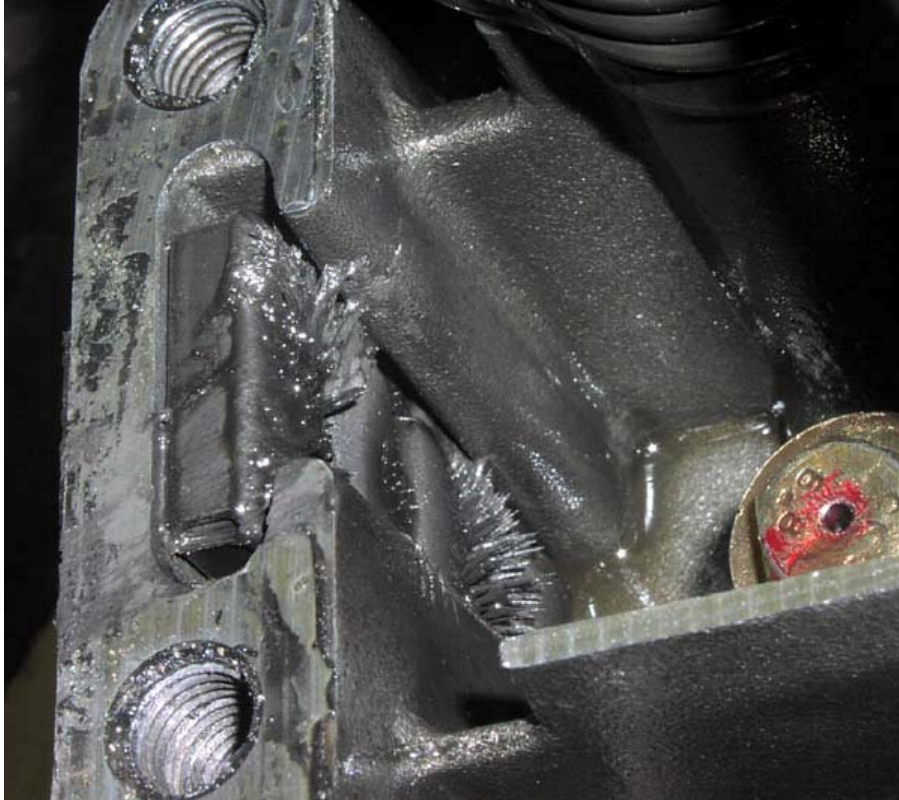
I'm told this is just normal wear...it's reverse gear...that takes a lot of stick...because it's a crash gear



The gear it meshes with are a bit pointy.



The magnet had hardly anything on it.



And here's a close-up of one of the plastic caged diff bearings they talk about...that I'm replacing with steel caged.



Let's hope the rest goes as easy as this stage. 😊

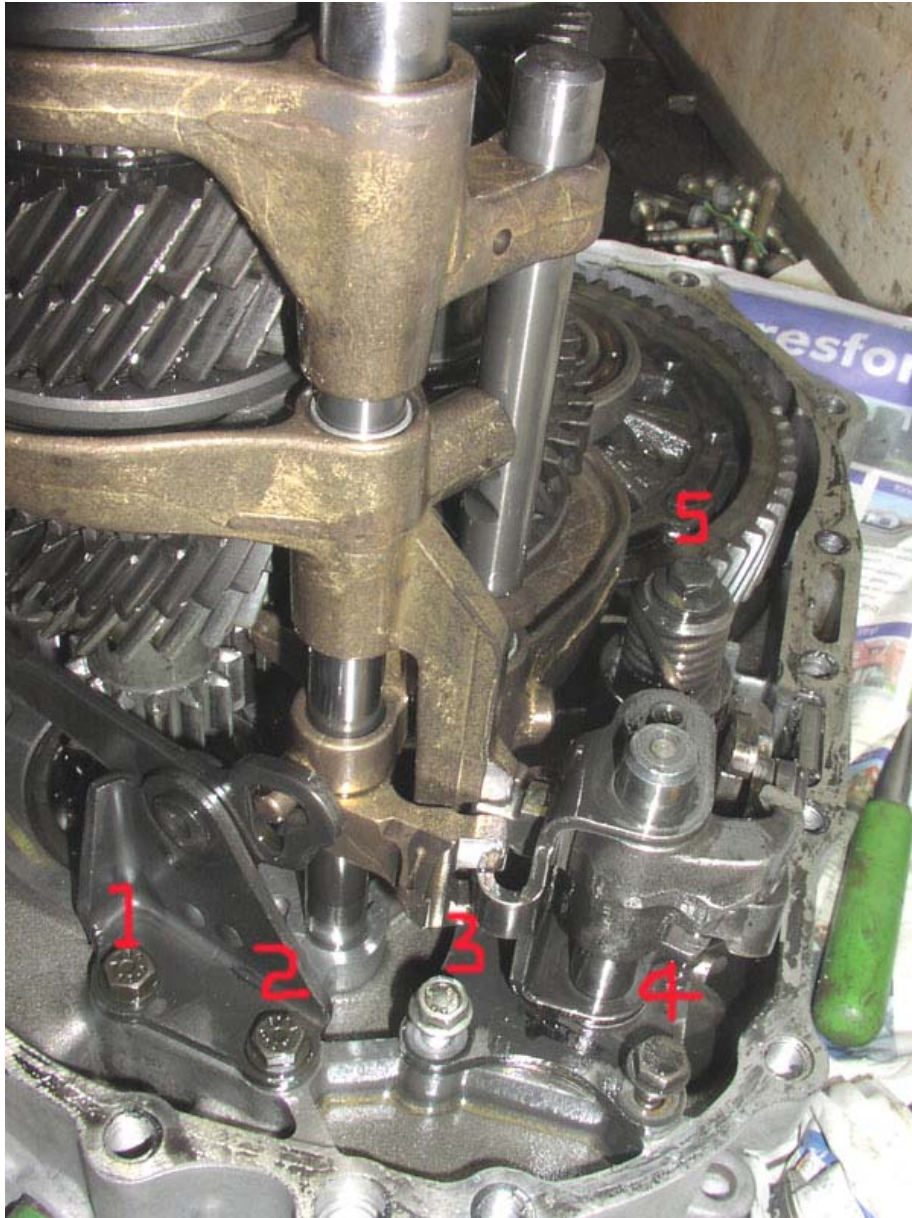
Rightttt .

This box is new to me...and unknown ...so next sequence of events could be wrong could be right.

We shall see how easy it all goes back together again...hopefully as easy as it came apart.

Put box in neutral

Take out bolts numbered 1-5



Then remove items that the bolts held down.
Next remove selector forks assembly...just pulls out.



Tape together the input and the output shafts with the gears with several layers of masking tape to keep them in relation to one another ...remove as one unit.

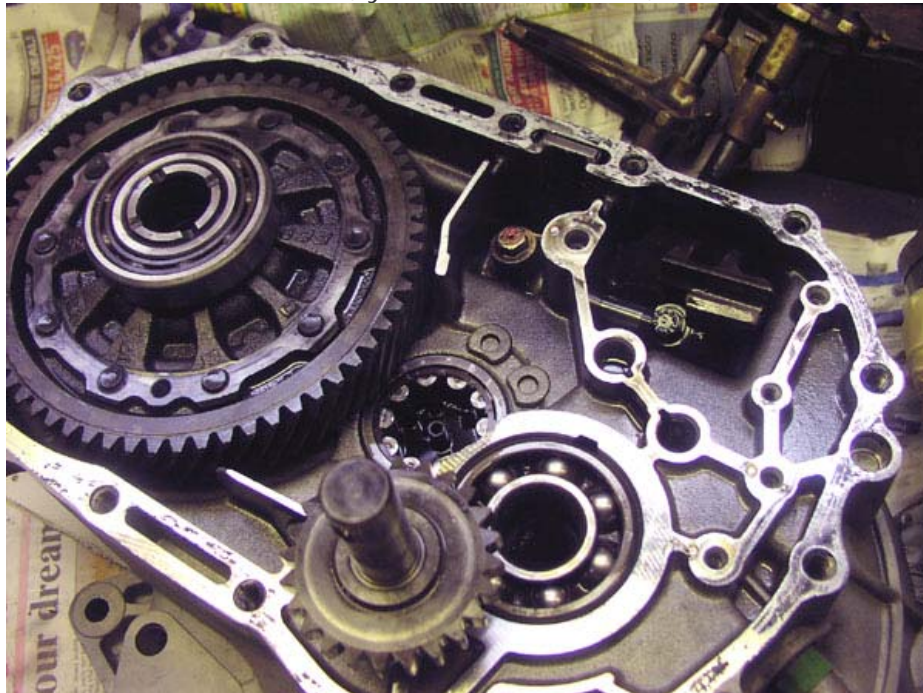
EDIT

BEEN TOLD SINCE , THAT THE SELECTOR RODS AND THE GEARSHAFTS CAN BE TAPED TOGETHER AND REMOVED TOGETHER.

Just make sure you put tape over that loose bearing on the top also, or 5th gear plus syncro hub will have to be re-aligned.



Then, you are left with this,



The diff, then, just lifts out.



Whilst scratching my head on trying to work out how I'm going to make a puller for the diff bearings...(mine will not fit...it's too chunky.)

I set to work cleaning the casings.

This is what you should be aiming for...so that you don't get any leaks from the contact faces, when sealed up.



After struggling a bit with things I finally got the diff bearings off.

Fist I had to make an adaptor for the puller to press against whilst it was extracting the bearings.



The first bearing came off OK ...the jaws of the puller cleared after grinding a bit off them.



For the next bearing, there wasn't enough room behind the bearing to get the jaws in ...after putting a screw driver in there and pivoting it on a socket and carefully going from one side to the other ...after one hour i had only lifted it about 3.5 mm...and too my reckoning using that method would have taken me another three hours.

So I cut up some pieces of extremely strong stainless steel from 3mm ss sheet and welded it to the chrome vanadium jaws of the puller...

(when I've welded chrome vanadium in the past it has failed...so I was a bit apprehensive weather it would work again.)



The new jaws fit nicely under the bearing...and can be ground off again if needed at a later date.



Off comes the second of the two bearings.



THE LAST TWO DAYS ...

The bits and pieces were given a coat of 2k black gloss.



Stack of new bearings on the bench ready to be installed.



I ummed and arghed about the diff bearings...decided to remove the metal shields they came with
...reason...think the grease in them and the Shields may form an impenetrable barrier, stopping oil
reaching the diff seals.



I made a diff bearing installation tool on the lathe , this will make sure the bearings are tapped home strait...had to modify it later with a recess in the back to drive them the rest of the way home,
If you don't have the facilities to make this then a socket or short length of pipe will do



After that it was plain sailing...I installed the bearings without any trouble.

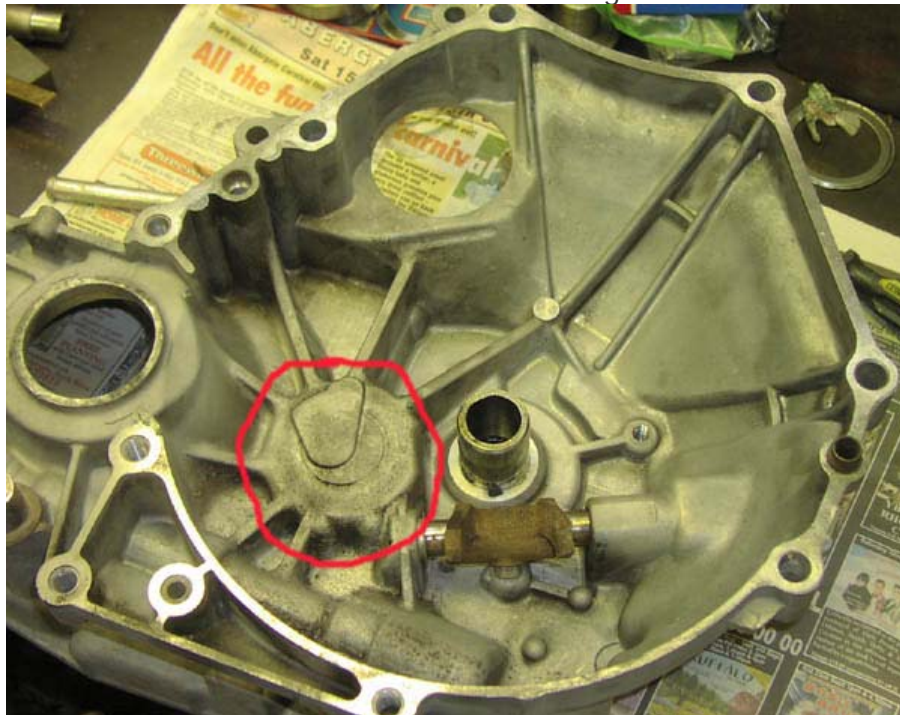
ALWAYS INSTALL BEARINGS BY TAPPING THE INNER CAGE, NEVER THE OUTER ON SHAFTS...
FOR INSTALL OF BEARINGS IN HOLES TAP THE OUTER RACE



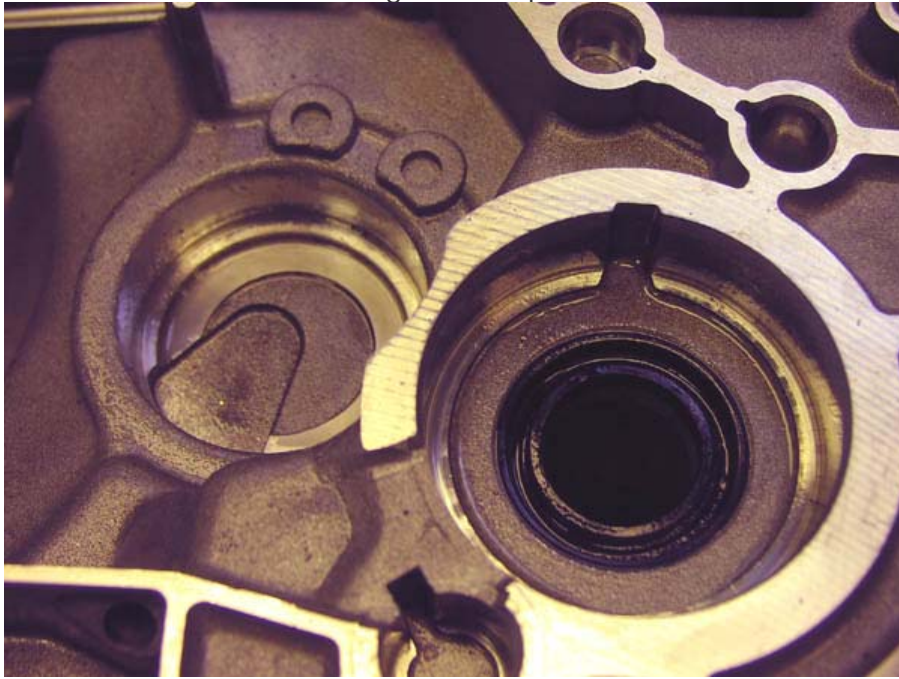
Well I made that tool

Well it wasn't needed...

As TOMCAT (rover.net) told me I could get the bearing out just by pouring boiling water here on the back of the housing :-



I did do, and within three seconds out pops the bearing.
The other bearing was knocked out with a soft alloy rod from the clutch side...
You then see the gearbox input shaft oil seal.



Remove it.

And then put a new seal in, what I always do with these seals is to put hylomar on the edge of the seal also.



AFTER THE NEXT STAGE YOU ARE SUPPOSED TO CHECK THE SHIMMING OF THE BOX...MY BOX IS LOW MILEAGE , AND DIDN'T HAVE ANY EVIDENCE OF WEAR ON THE SHIMS OR EVIDENCE OF THE SHIMS ROTATING AND WEARING AWAY AT THE ALLOW HOUSINGS.

So was omitted...

box re-builders tell me that shimming is often not necessary, unless you've had complete failure of the bearings and they have rotated the shims in the housing or your replacement bearings are bigger or smaller...my bearings checked out exactly the same as the old ones

A new double row bearing was installed, I ground half a millimetre off the back of the nut so that it would tighten up in another place, (I did this on a surface grinder, but you could do it on the side of a grind stone) and then you torque to 81 lbs per foot...my torque wrench doesn't have newtons on it .

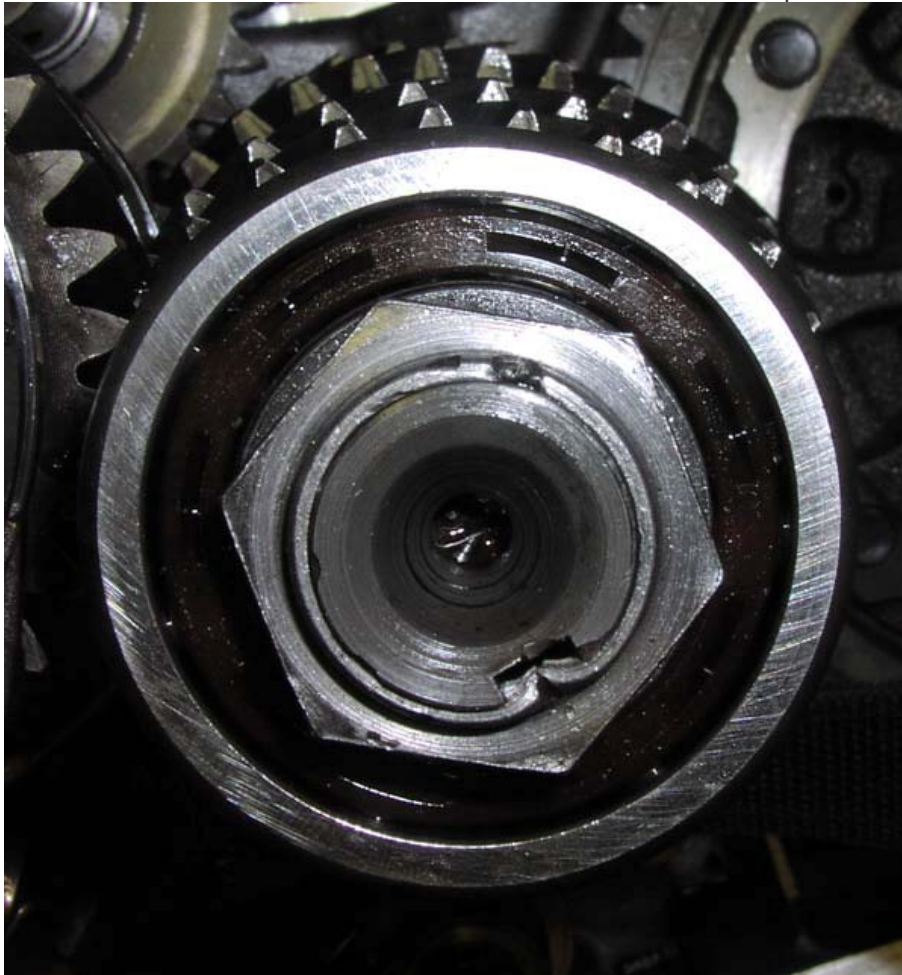
110 newtons

CAUTION !!!

NUT IS LEFT HAND THREAD



After this it was staked, notice the stake is in another place.



OH YEAH

don't forget to tape the input shaft to protect the new oil seal, when you push the shaft thru it.



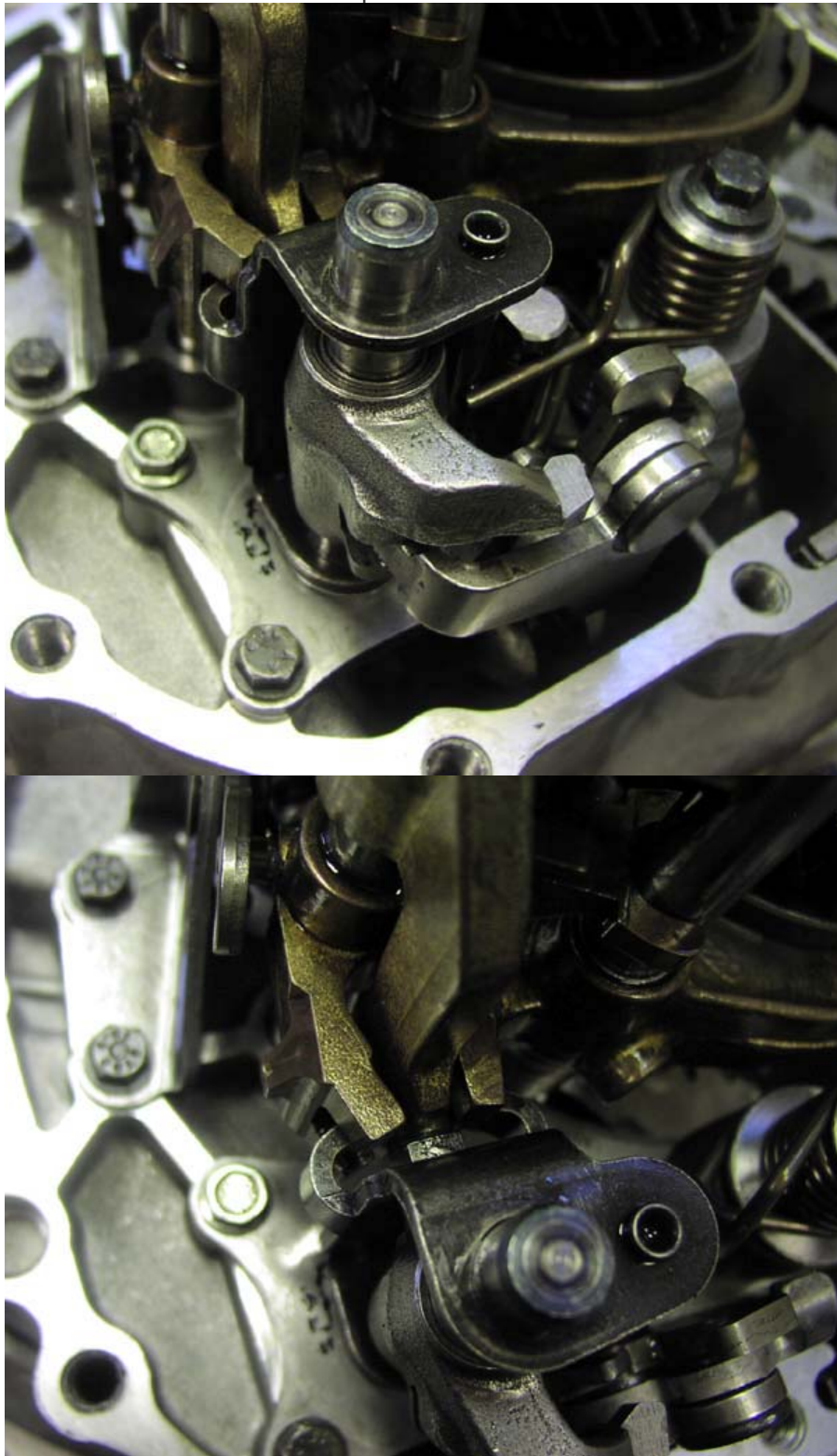
Before you put both covers together, check and make sure that it goes into fifth gear, apparently it is possible to assemble box...so that you cant select fifth gear...then your right up the creek without a paddle, ITS TOO LATE, if you find this out once the box is installed in your car.....remedy is to take the top syncro rings and hubs off...reassemble and keep trying 'til you can get to do this. :-

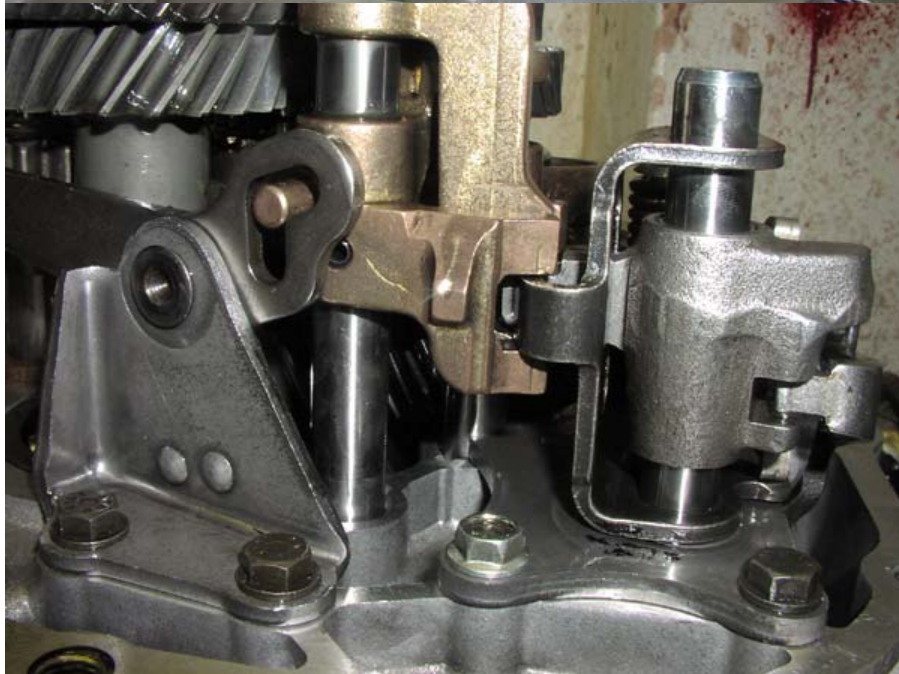
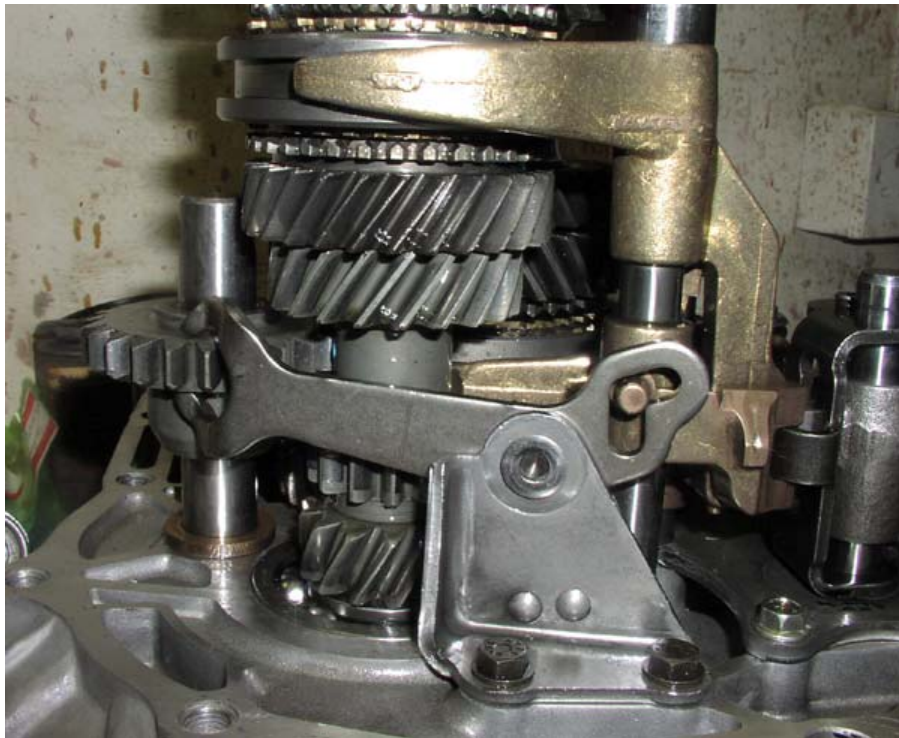


fifth gear is engaged when you see the syncro hub exposed as above...(below top bearing in the picture above)

THEN MAKE SURE IT ALL TURNS BY TURNING THE DIFF BY HAND.
And make sure the top bearing is level with shaft.

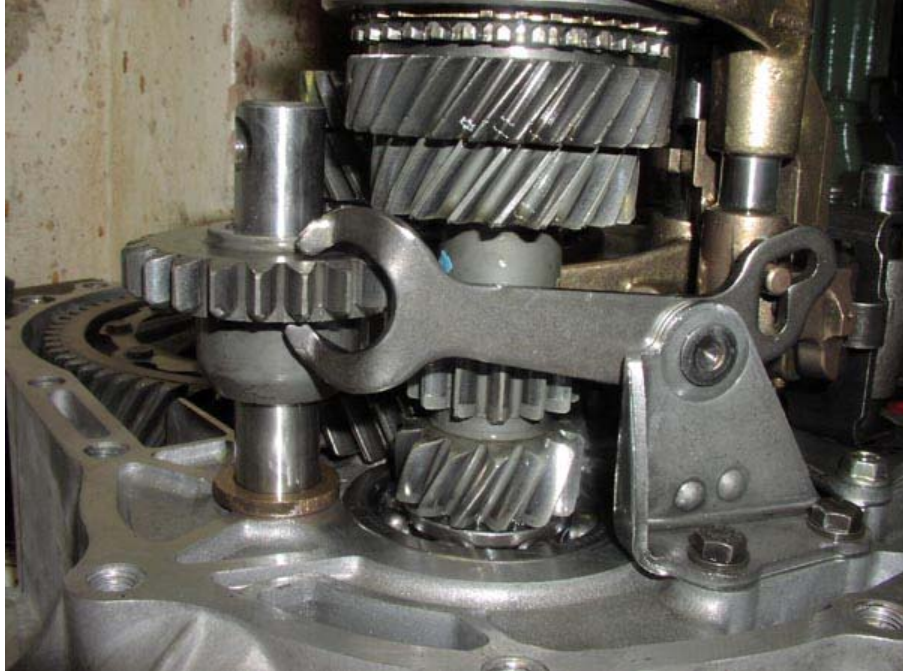
The rest of the pictures are for reference

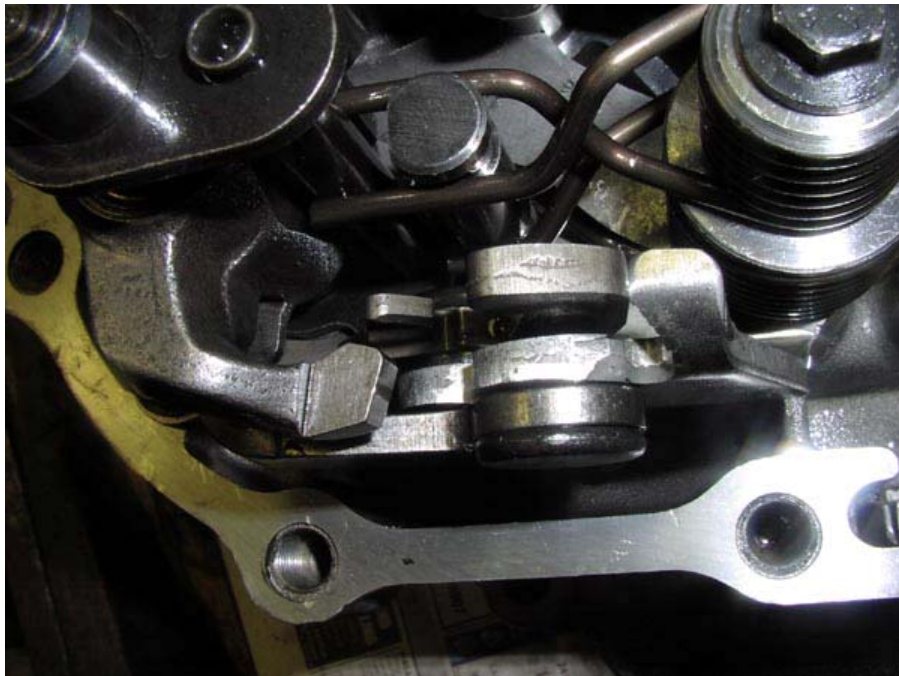








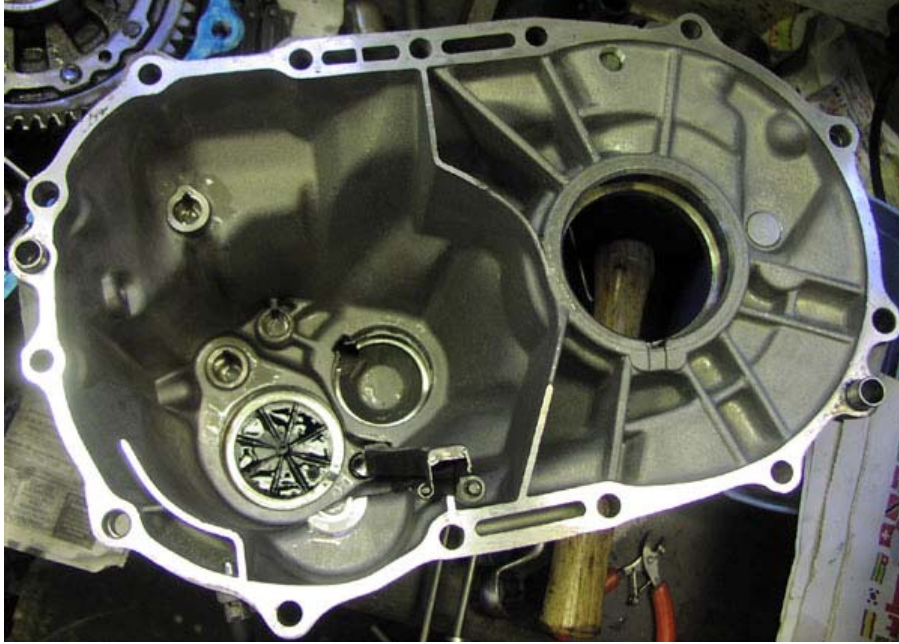




Here it is ready to go back together.
Hylomar is spread on both halves
and the gears are and diff have mtf94 spread over them.



This is the top half...note I've oiled the bearing locations and the selector shaft locations.



Here is the circlip groove and circlip (the one that is accessible from the outside behind the plug that I had trouble getting to unscrew) from the inside ...now you know how it works HJ 😊



Here's the box fully assembled , I've got my fingers crossed, toes crossed ...every thing is crossed...gears seemed to check out OK ...wont really know, 'til I get it in the car....wish me luck.



I have to paint it next with alloy wheel paint ...then hopefully it won't turn into a ball of corrosion again.