BEDLAM'S AUTOBOX MODIFICATION

January 2006

To create faster gearchanges. With thanks to Jared in the USA

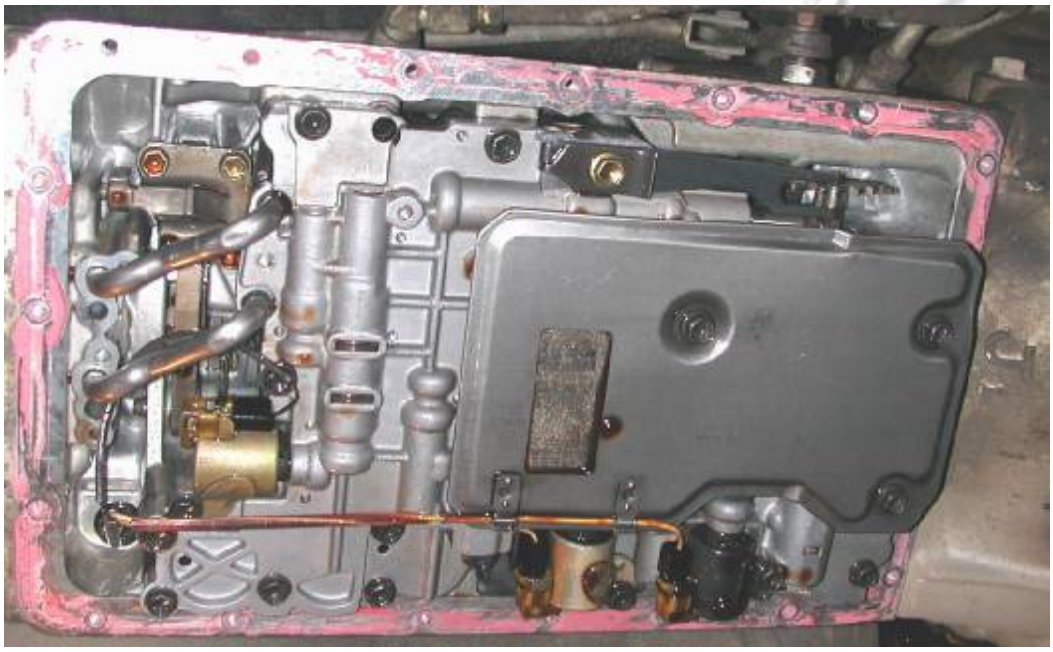
This mod can be done in around 2 hours, by anyone who isn't scared to get their finger nails dirty.

1st. Drain the transmission from the autobox sump and disgard safely.

2nd. Remove the bolts holding the sump, and if you follow the dipstick tube there is a bolt which is fixed onto the side of the intake manifold, just run your hand down the dipstick holder and you'll feel where the bolt is and take this bolt out, as you need to pull the dipstick tube off as well.

3rd. you will now have to give the sump a little tap with a soft hammer, or get yourself a bit of wood and use that to loosen off the sump.

4th. Once you have removed the sump you will now see the inside of the autobox.

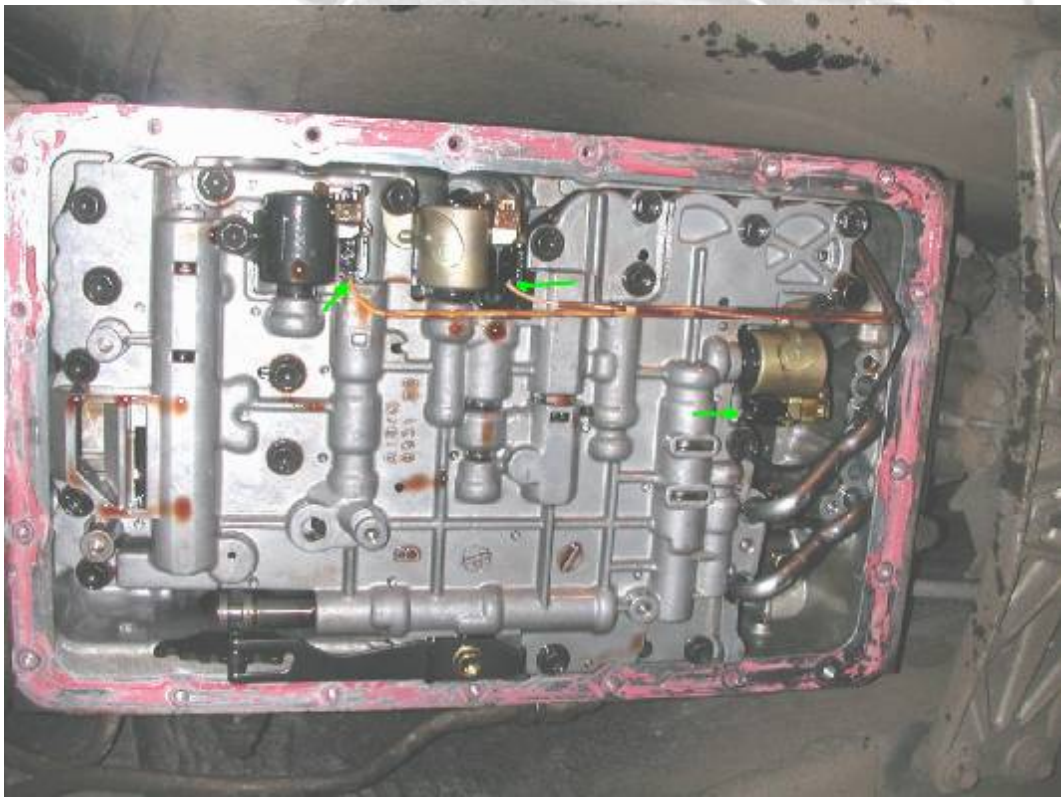


5th. You will see a large rectangular plate which is held in place with 3 bolts, which you will now have to remove, then unclip the wire from it, If you wish you can buy yourself a new one from Toyota or you can give the filter a good clean, once you have removed the filter you will now see the complete valve body. That’s the bit with all the humps and bumps

Now if you look at the other end of the box you will see 2 pipes about 4" long with bends on each end. These need to be prised out gently. Just ease them out of there placement by pulling at each end (you might need to use a small bit of wood to start them moving) and wiggle them free, then put them to one side.

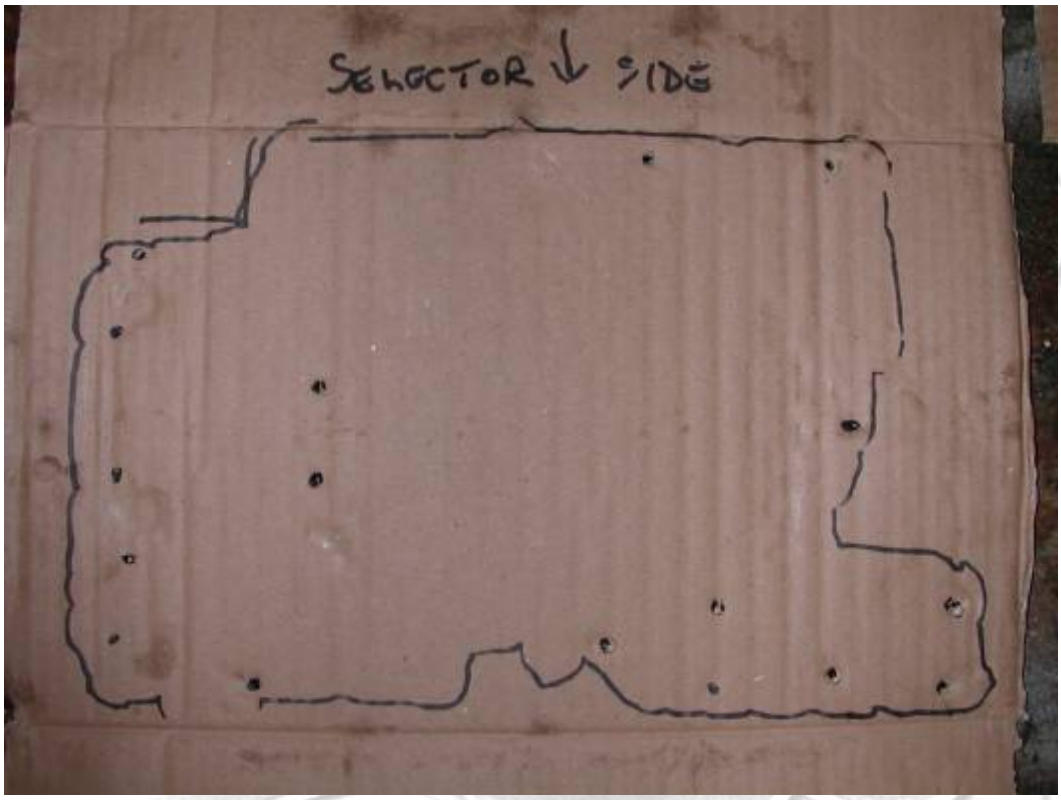
6th. You will now have to remove the kickdown cable, which is fed through the side of the box and is hooked onto a quadrant. Just pull the quadrant round and unhook the cable from it.

Now if you look at the picture below you will see 3 solenoids. 2 on one side of the box and another by itself, you need to unplug the wires from them just push the little clip in and unhook the wires and let them hang.

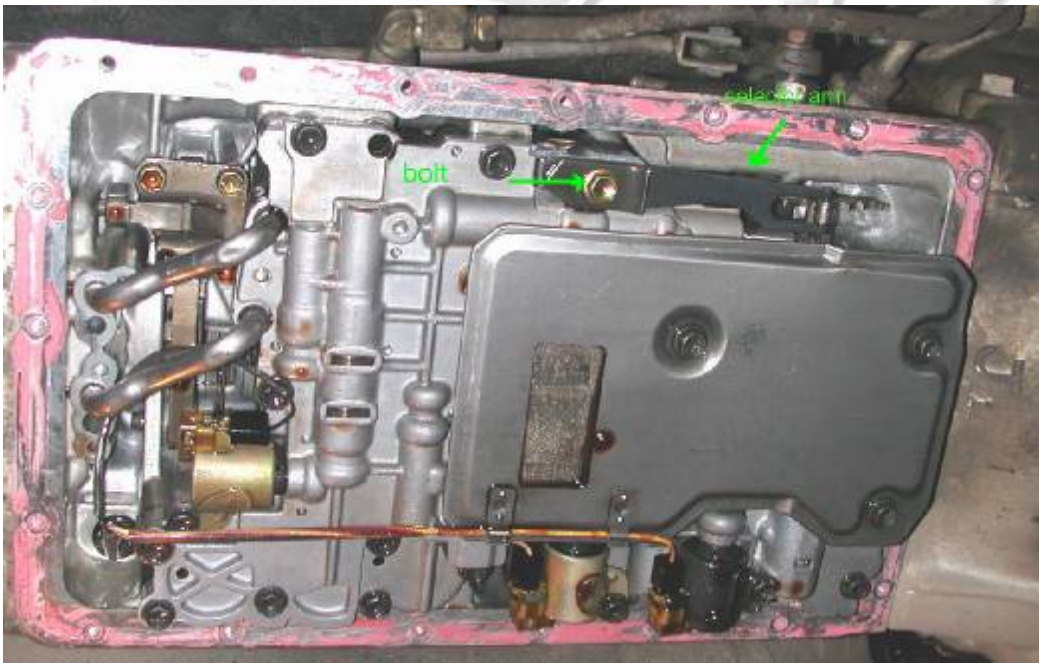


Now you are ready to remove the valve body, there are 17 bolts you need to remove, to take the valve body off.

This bit is VERY important, the BOLTS ARE PLACE SPECIFIC, this means that they will only go back into where they came out of, so what you need to do is make a template up like we did and mark out the bolt pattern. You could just copy the pattern below onto a bit of card, but make sure you do a template, or your gonna have major problems getting the bolts back in.

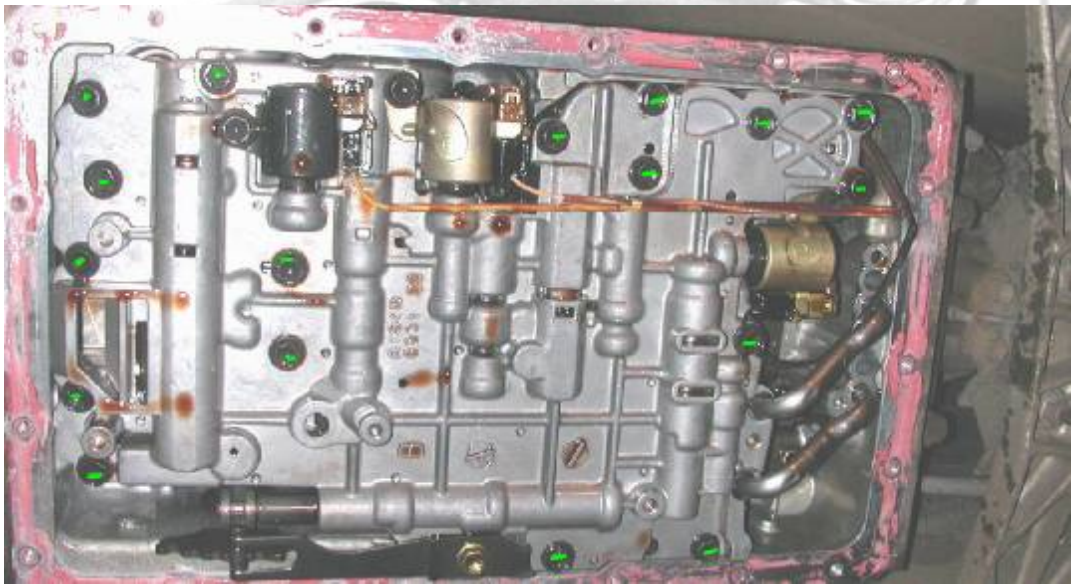


Before you undo all the bolts on the valve body you will need to loosen down the selector arm bolt a little. DO NOT REMOVE this bolt.



Once you have slackened this bolt down you can start to remove the valve body bolts and put them into the template, if you can have a friend to give you a little help doing this, and have an old basin handy as your gonna drop a check ball out and a large spring, and you DONT want to loose them.

The check ball is fixed onto a little plastic unit which also has a little spring sitting on the other end the plastic unit is rectangular shape and MUST be installed this way when putting it back into it's recess. We have pointed it out with a large screwdriver at the bottom of the picture above. The large spring just fits back into it's recess, when your putting it all back together.

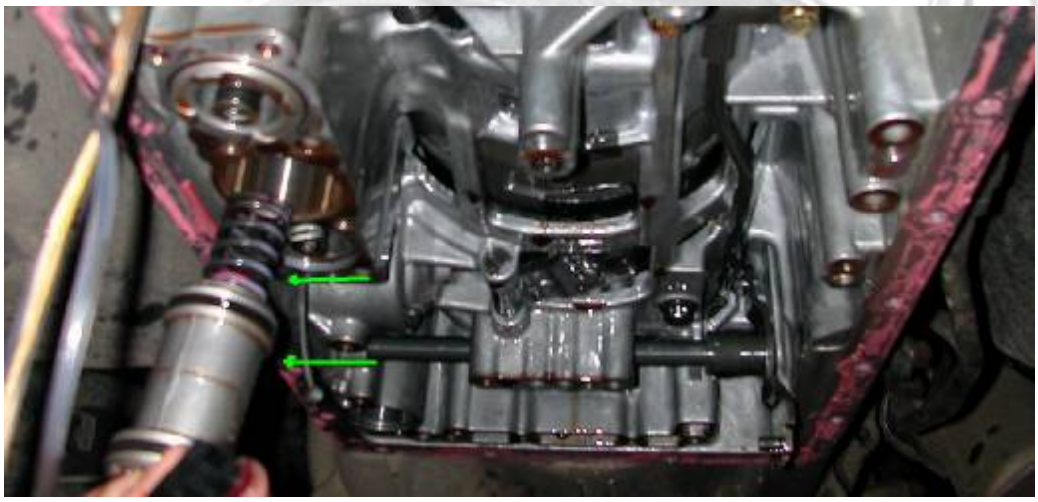


Once you have removed all the bolts from the valve body (shown above), put it in a safe place and give it a little clean if you wish, we will now go back to the box and do the mods to that.

You should now get both of your shims.

In the picture below you will see 3 Accumulators. We are only modding 2 of them, which I have marked out with green arrows.

Remove 1 of the accumulators. Just pull it gently down. It will be full of fluid, so your gonna get some fluid down your arm

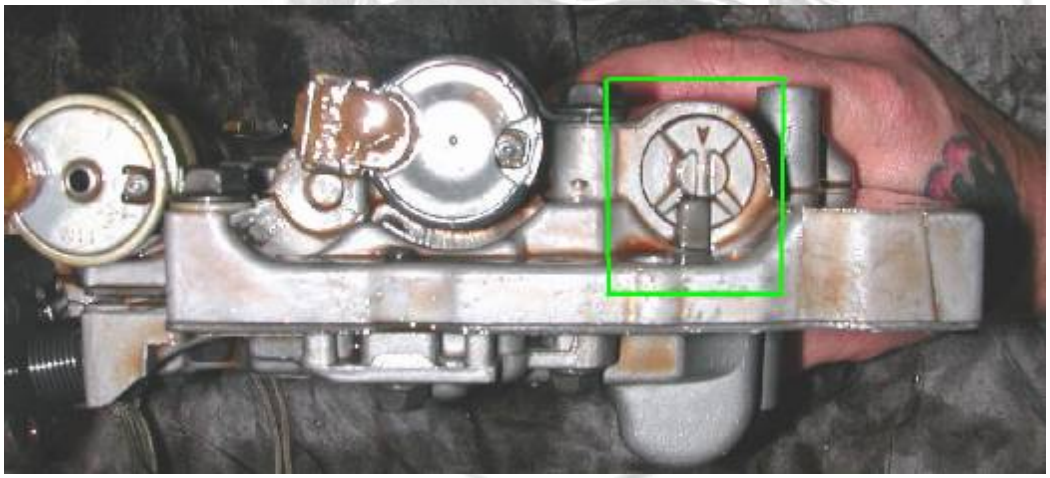


It will have a couple of springs in it, or just the 1 spring dependant on which you remove 1st. Take out the spring(s).

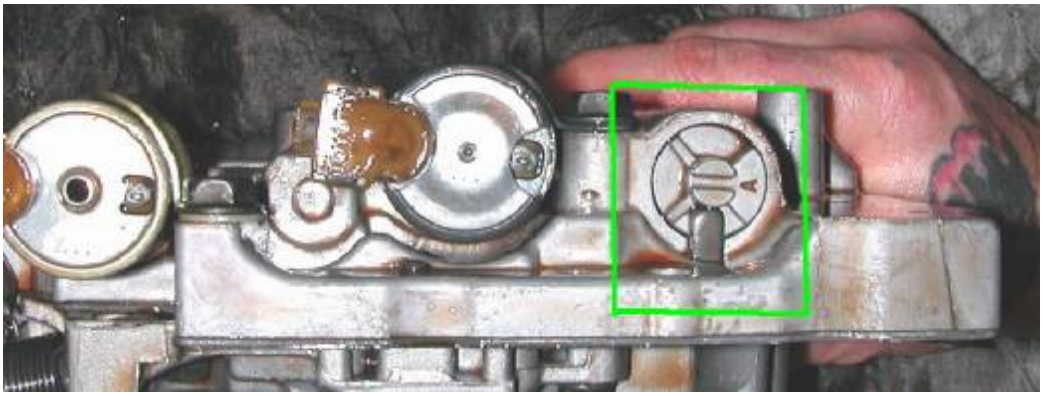
Get your shim and sit it on top of the spring.

And then put the shim and spring back into the accumulator, and sit it out of the way safely, do the same with the other accumulator and sit that out of the way as well, but do NOT forget which one goes where, as they have to be put back into their right recesses.

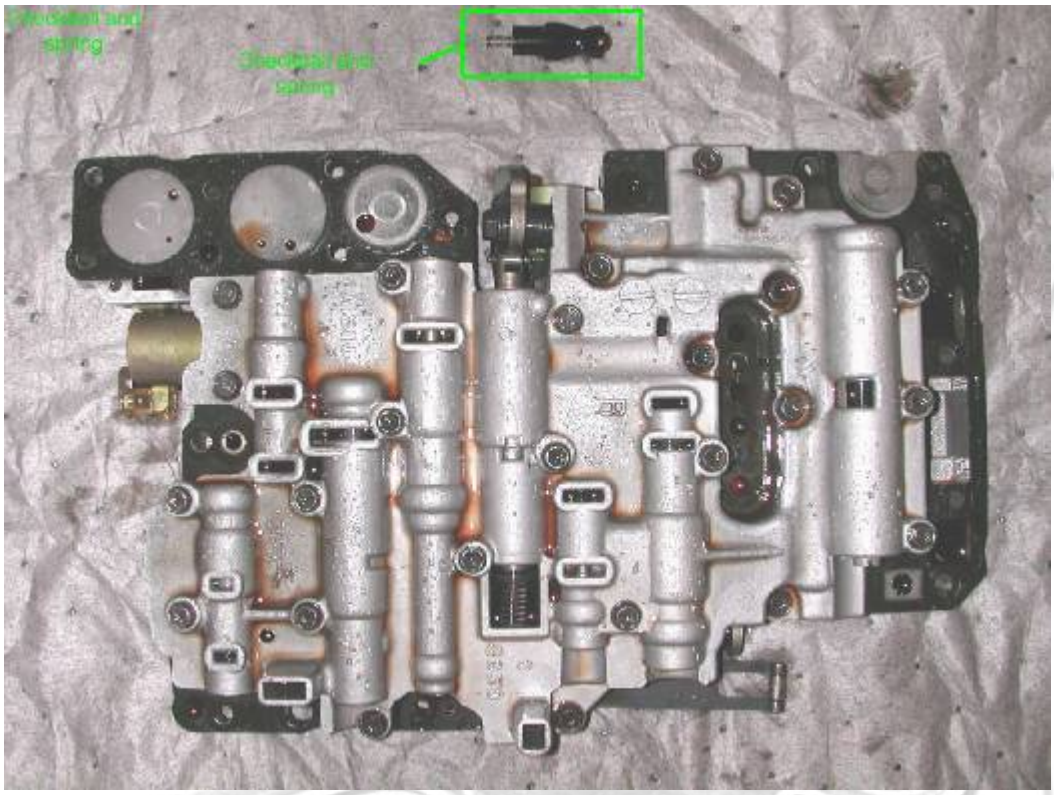
We now need to go to the valve body so have it on a table or something and study the side of the valve body until you can identify the part we have marked out below.



This is the adjuster for the pressure regulator, and if yours is in the same position as in the picture above (12 0'clock) then it is set at medium and you need to get a small bladed screwdriver, and push the dial inwards and turn to the left so that it now looks like the picture below.

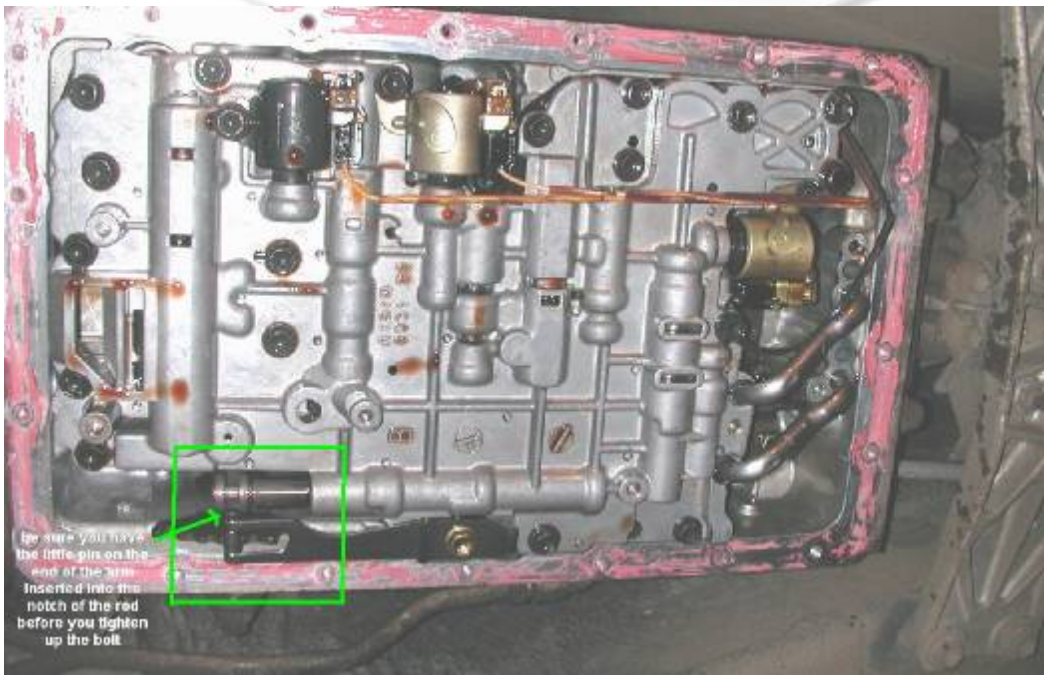


You have now just turned up the pressure across the whole box. Now you need to take the valve body back over to the car as your going to put it all back together, this is where your mate comes in handy. Since you have shimmed the accumulators they wont sit in there recesses once reinserted, so this is the awkward bit. Put the accumulators and large spring back into the recesses, and have your friend hold them there. You will need to offer up the valve body and MAKE SURE YOU HAVE THE CHECKBALL AND IT'S LITTLE UNIT AND SPRING SITTING THE RIGHT WAY ROUND. THE SPRING PART OF THE CHECKBALL GOES INTO THE BOX FIRST.



You will need to offer this up with the valve body. It's a little awkward but it can be done. Then get 2 bolts and put them in opposite corners on the valve body so that it is held in place. Now just put everything back on and connect the wires back up to the solenoids,

Be sure that you have the selector arm back in the same position it came off or you wont be able to move the shifter to the right gear. And remember to tighten up the bolt you just loosened down on the selector arm.



DO NOT go mad with the tightening of the bolts I don't know the torque settings for the bolts. Just make sure they are tight. You should have a good idea on how tight they go from how tight they where to loosen off.

Once you have everything back on, replace sump and you should have at LEAST 1 gallon of transmission fluid for a refill.

Refill the box and once you have about 3/4 of the fluid in the box start the car and move the gearshifter through all the gears a few times. Then switch off see if you got a level on the dipstick. Once you see it showing a little on the dipstick, you need to start the car and move the selector again and get the car warm. Keep adding once the car is warm and keep checking the fluid, DO NOT SWITCH off the car when checking the fluid from here on, as the car has to be running and hot to check your transmission fluid level.

After you have the right amount of fluid in the box go and take it a drive and enjoy a nice quick gear change.

I want to add that if you do this moification it is a good idea to add a transmission cooler, which will keep the temperature down.

This mod is NOT mine, all credit goes to a lad in the States who is a certified autobox technician and I have spoken with him on several occasions, so THANKS Jared for giving us this top mod.

Jared got some of this info from Toyota's top guy on boxes on the west coast of America.

We ran this mod for over a month, and we had severe problems with the box retarding the ignition timing due to the slow change on the box, But this has now been more or less eradicated thanks to the faster shift.

We used 6mm shims and found that these where just right, to keep the car changing fast but not to be kicking you in the back during changes.

If you prefer you could have some 8mm shims made up and that would reduce the shift time even more but be warned it will then get a little intrusive, particularly during town driving.

I have been asked if this modification will work on the V8 Soarer. Yes it will. The valve body is little different from the TT but that's nothing to be worried about as it has the same accumulators.

Andy (Bedlam) - Glasgow, Scotland. 13th January 2006