

# Cam belt and water pump replacement on a Pajero 3.5 DOHC 6G74

I am not a Mitsubishi mechanic, I am a motorcycle mechanic and I have changed a number of cam belts on cars before. If you have not changed a cam belt before this one might be a bit tricky as your first one. This is not an instruction manual it is merely a document on the way I did it.



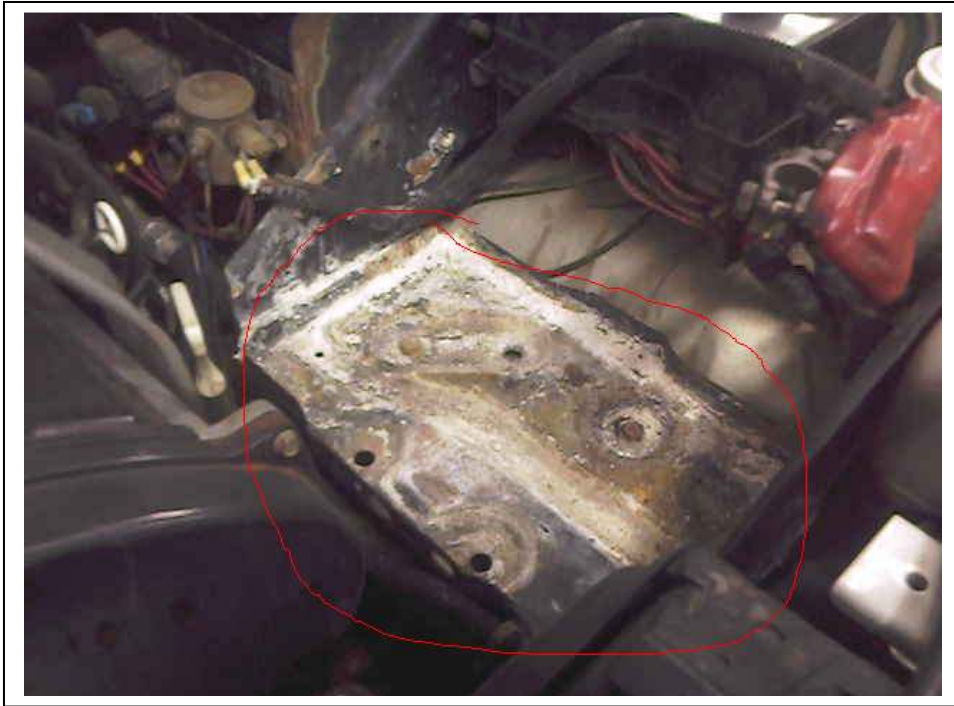
RHS and LHS will be sitting in the car facing forward ie the battery in the pic is on the LHS. Now disconnect the battery I removed it for better visibility, if you have a coded radio know the code first. Drain the radiator little tap on bottom RHS of radiator you will need to remove the bash plates underneath first. Then remove the plastic cover on top of the engine.



Disconnect all electric connectors and cables mark them if you not sure. The vacuum pipes on the RHS of the manifold not in pic are color coded, also remove the exhaust gas recirculation pipe on the RHS of the inlet manifold.



Remove all the bolts there is a blind one at the rear of the manifold as well as some small brackets around the sides of the manifold.



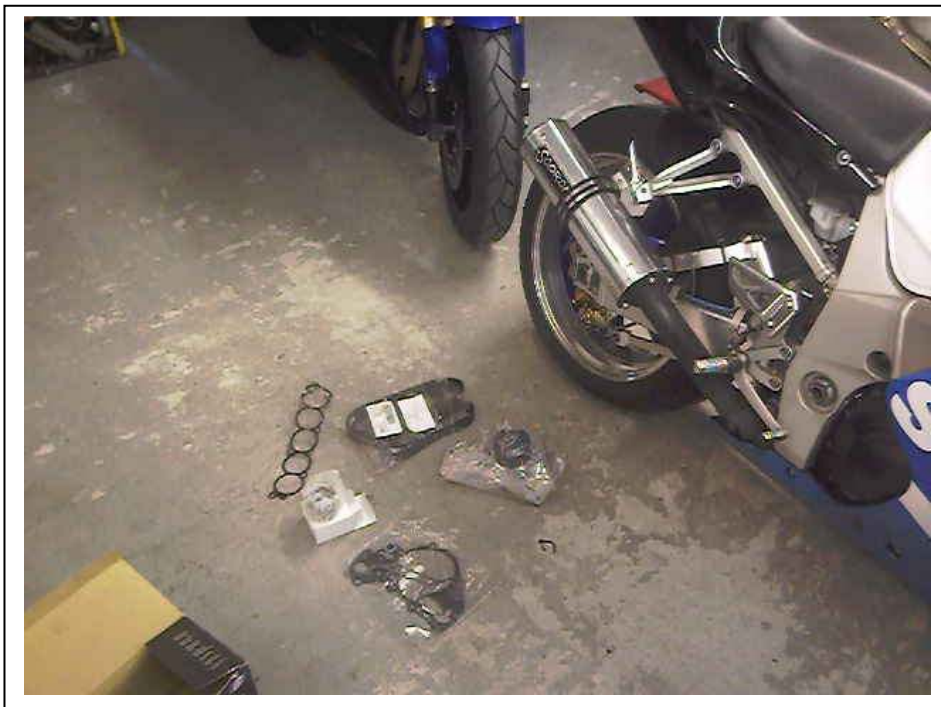
I removed the battery good thing as the tray is in need of some rust remover and paint



Remove the radiator hoses and shroud, it separates from under the vehicle to access the fan, the radiator has four bolts around the sides on auto pajero's disconnect the oil pipes from the radiator.



Bottom of shroud



My list of new parts genuine belt from mitsu R970 manifold gasket R70 water pump from midas R560 idler pulley R130 from alert parts I would have replaced the hydraulic tensioner but could not find one on the day . I replaced the plugs with normal NGK as per owners manual and not the R1000 per set platinum ones from Mitsu only difference is longevity.



Release the bolt on the pulley and then the adjustment bolt in order to release tension on the auxiliary belts one of the belts needs to be released from under the vehicle.



Remove inlet trunking from manifold. After removing power steering belt turn pulley to line up bolts in holes now you can remove the pump set it to one side.



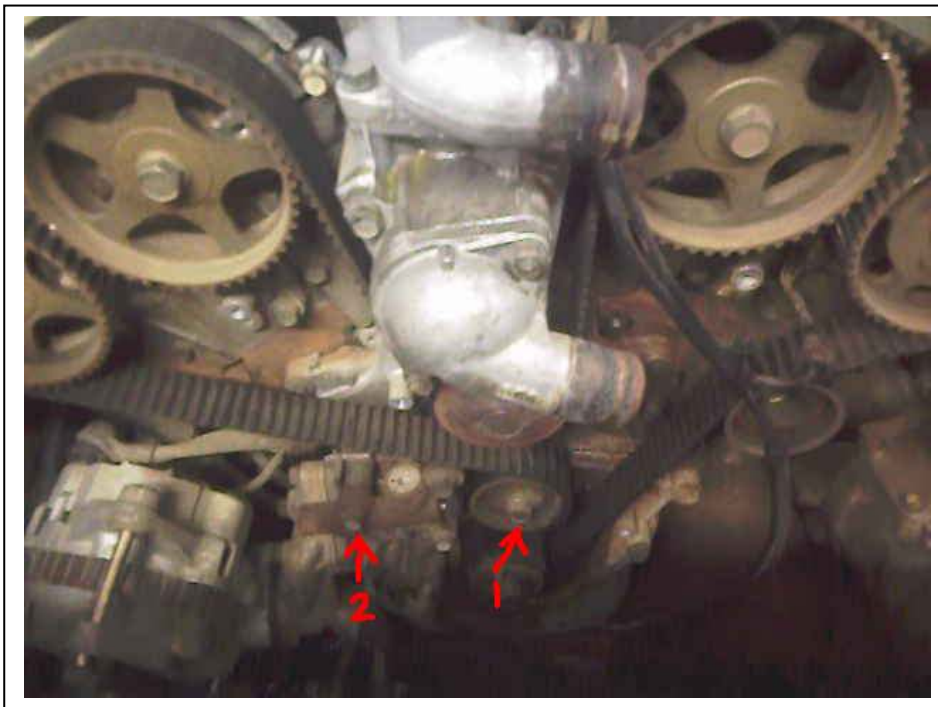
You will also need to open this small bracket to remove the power steering belt.



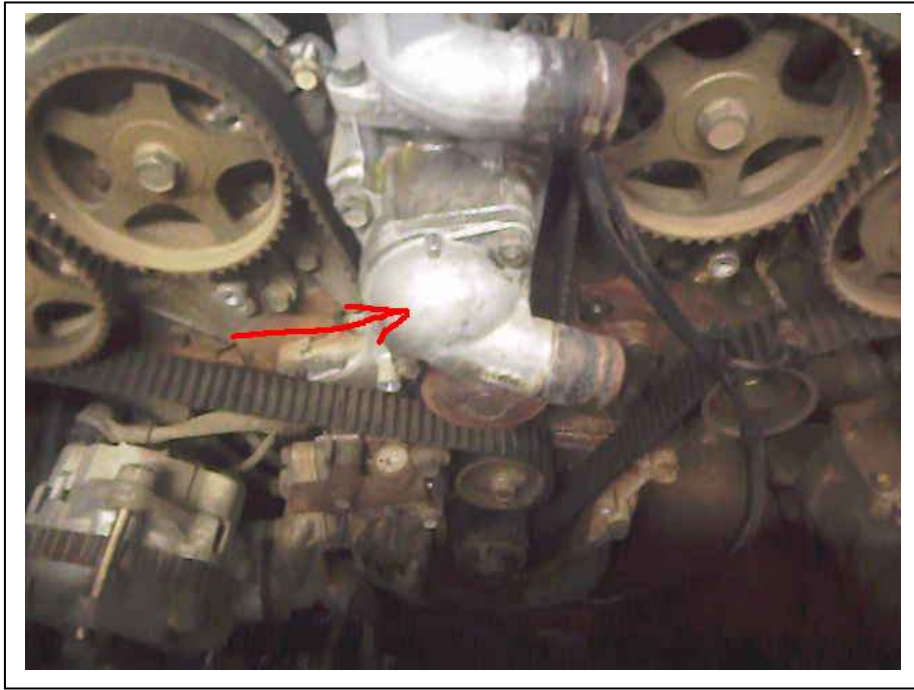
Fan removed



The alternator is located on the RHS at the bottom under the bolts and set it to one side. In the pic is the accessories bracket you will need to remove the aircon pump and aircon bracket first, aircon is on LHS at the bottom 4 bolts for the pump and I think 5 blind bolts for the bracket.



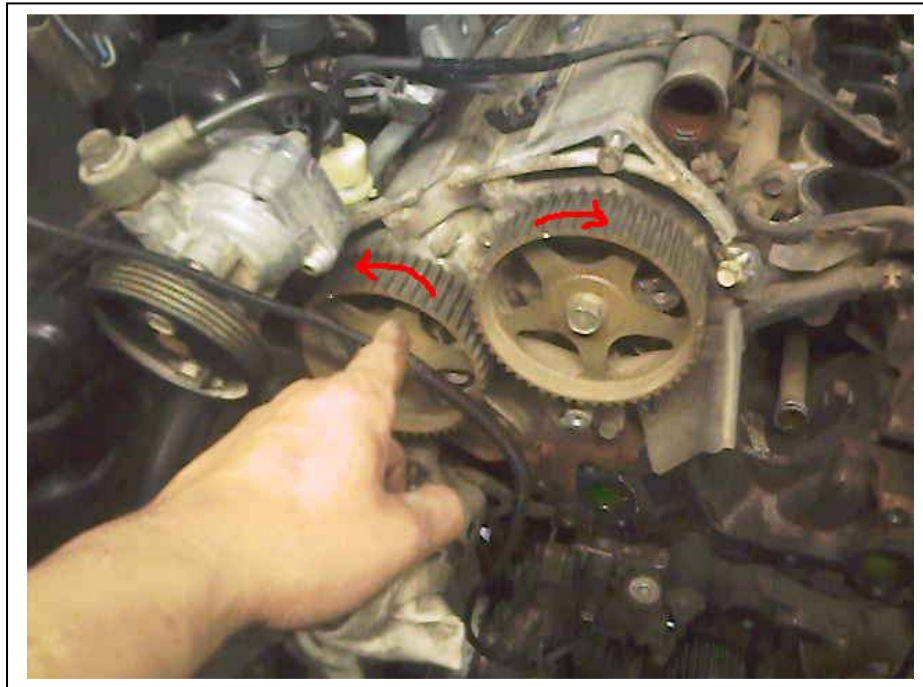
No 1 is the idler tensioner and no 2 is the auto tensioner I would have replaced both but could not find the auto tensioner on the day. I plan on replacing the radiator and hoses soon so when I do I will replace the tensioner then.



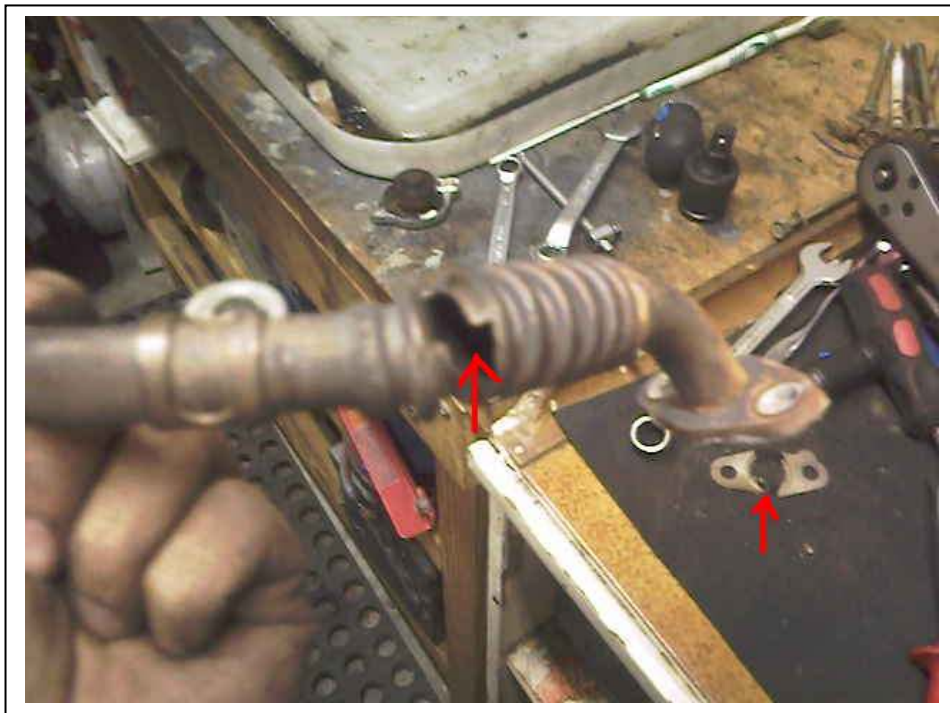
This is the thermostat housing you will need to remove the complete housing in order to remove the water pump.



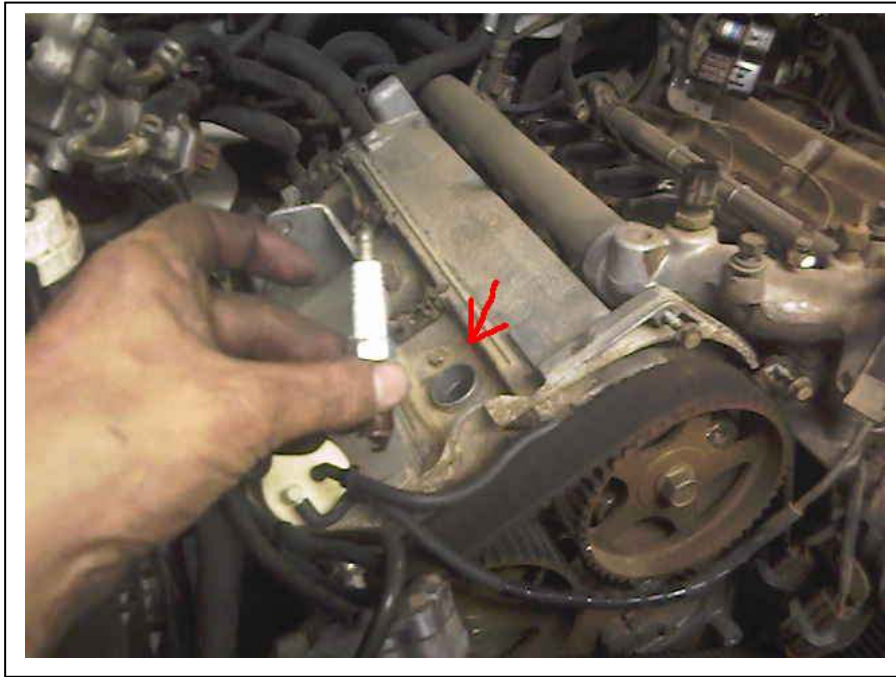
Aircon pump moved to one side.



If you have your engine at TDC on the number one cylinder as you should when you remove the timing belt on the RHS cylinder bank the two camshaft sprockets will shoot violently to the sides, keep your fingers clear. This will happen because the cams are under spring tension.



When I removed my exhaust gas recirculation pipe on the RHS of the inlet manifold I discovered it was broken this will explain the smell of fumes I use to get in the car from time to time.



Spark plugs live under the plastic cover as shown in pic, you will have to remove them in order to rotate the engine using the crank bolt which you will need to thread back in after removing the front pulley. I used two pieces of metal pipe cut to the correct length and placed against the chassis with two bolts put through the pulley this locked it good and I released the bolt will little effort using a power bar.



I set the inlet manifold to one side on a pile of rags because I did not want to remove all the small hoses at the back.



Clean all the mating surfaces for the water pump 2 and 3 and replace the o ring on this pipe if you bought a quality water pump ie not made in china mine was from Japan and it came with all gaskets and o rings.



This is the water pump removed note the small screw at the back of the pump you will need to remove this screw to separate the pump from housing.



In typical mitsu fashion you need to take off a million parts just to do one simple thing make sure you have a clean area to put it all.



This is the accessories bracket removed.



This is the aircon bracket removed.



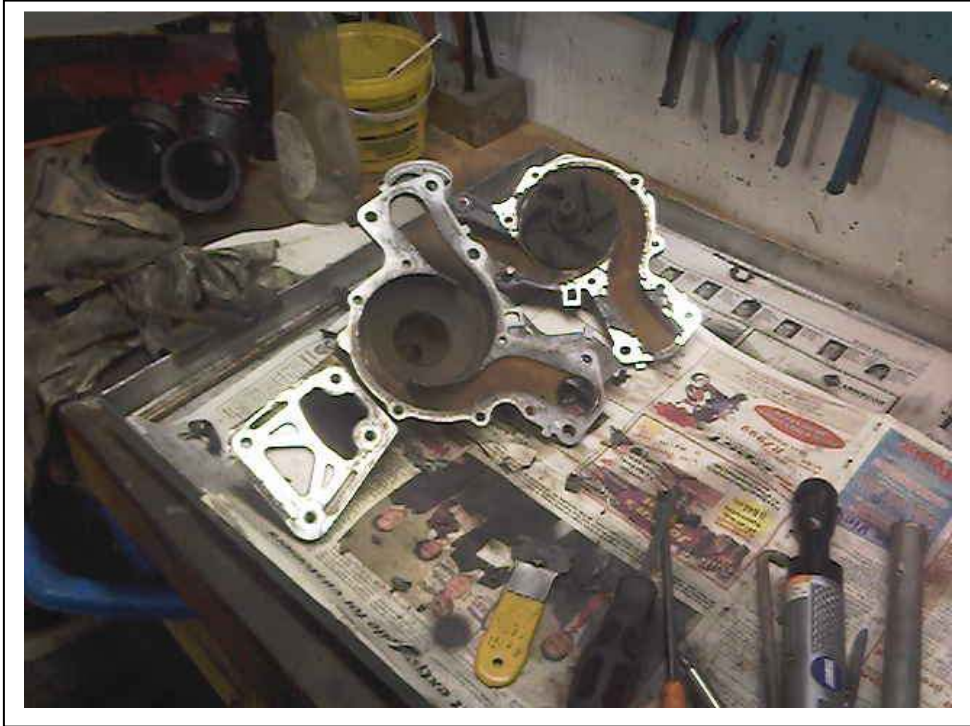
This is the auto tensioner removed note the small hole.



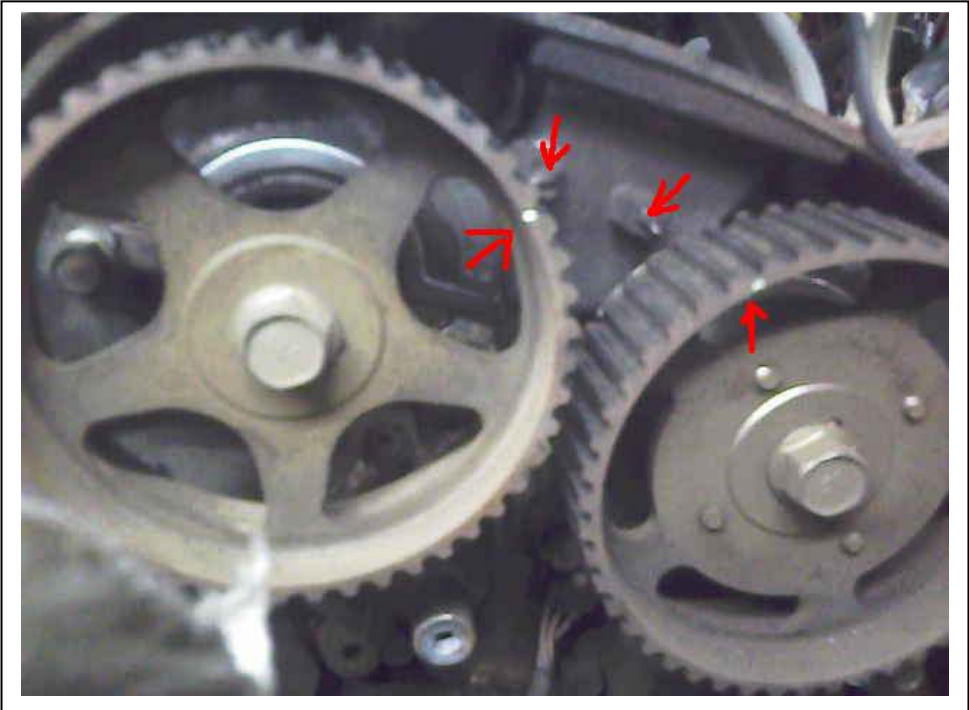
Place the auto tensioner in a vice and gently squeeze until the two small holes are lined up I used a small drill bit to hold them in line.



Ready to be installed. Once you have set the belt up on the idler pulley install the auto tensioner and pull the pin out.



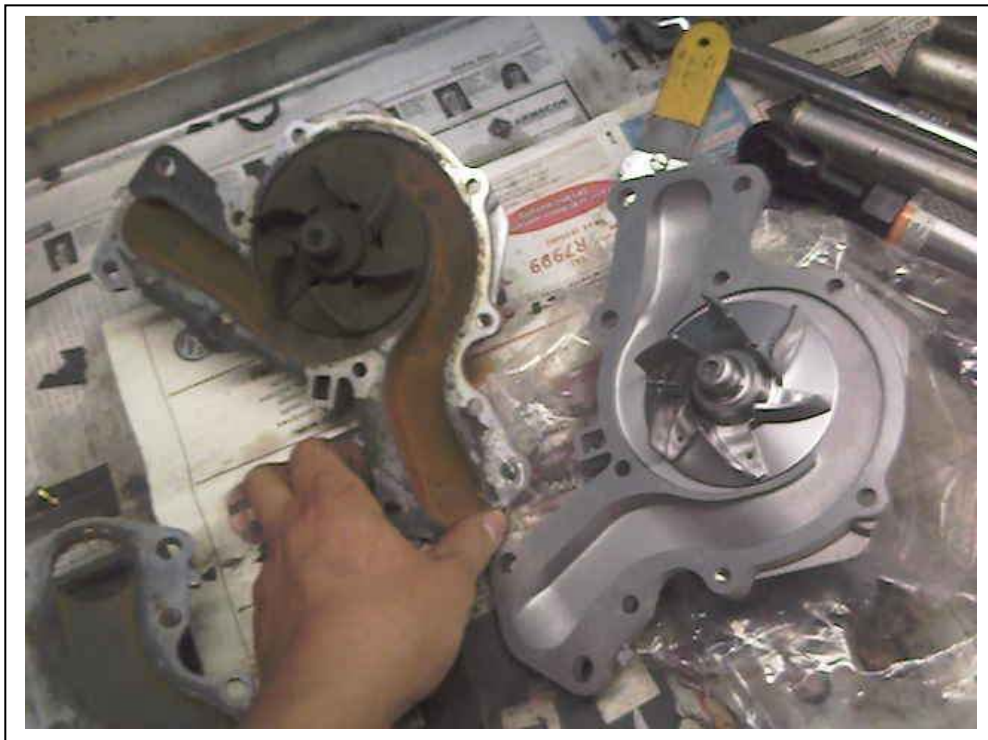
Water pump now disassembled



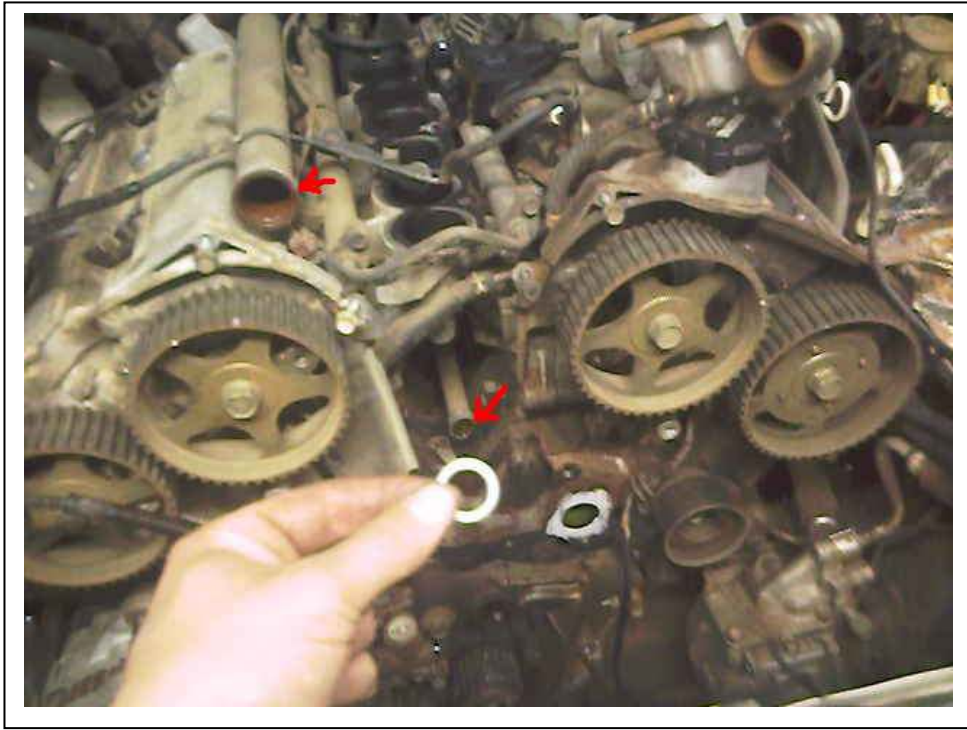
These are the timing marks for lining up the cams I put some tipex on.



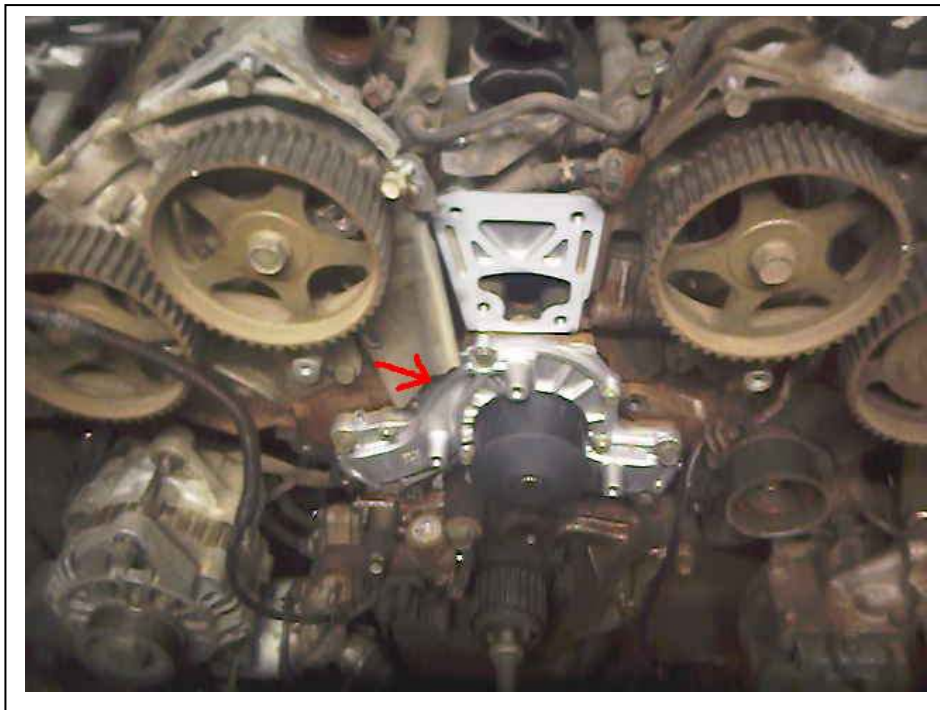
Cleaning the surfaces of the water pump housing



New pump old pump



New o ring



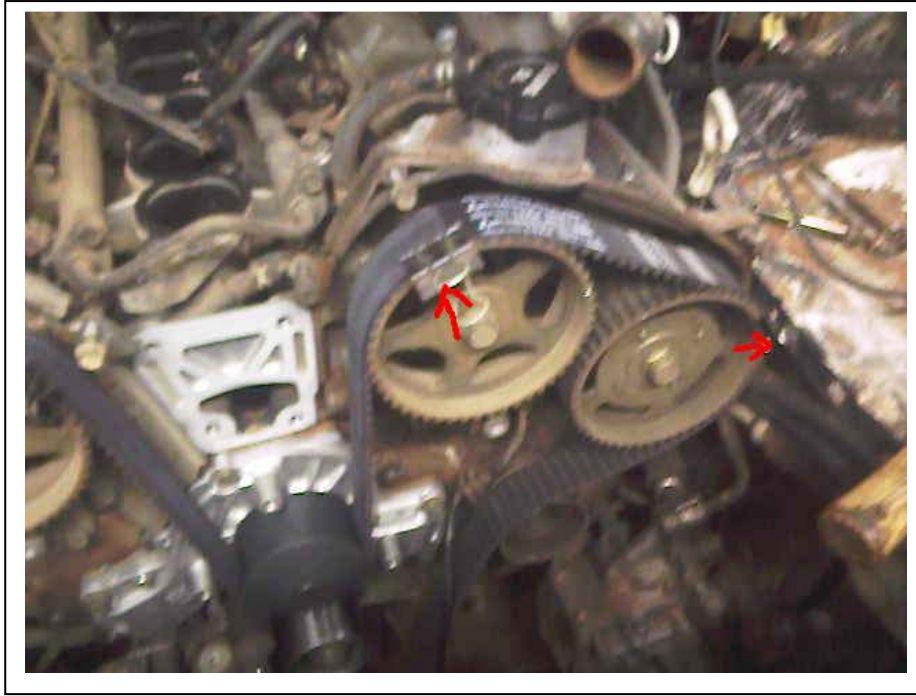
New water pump installed



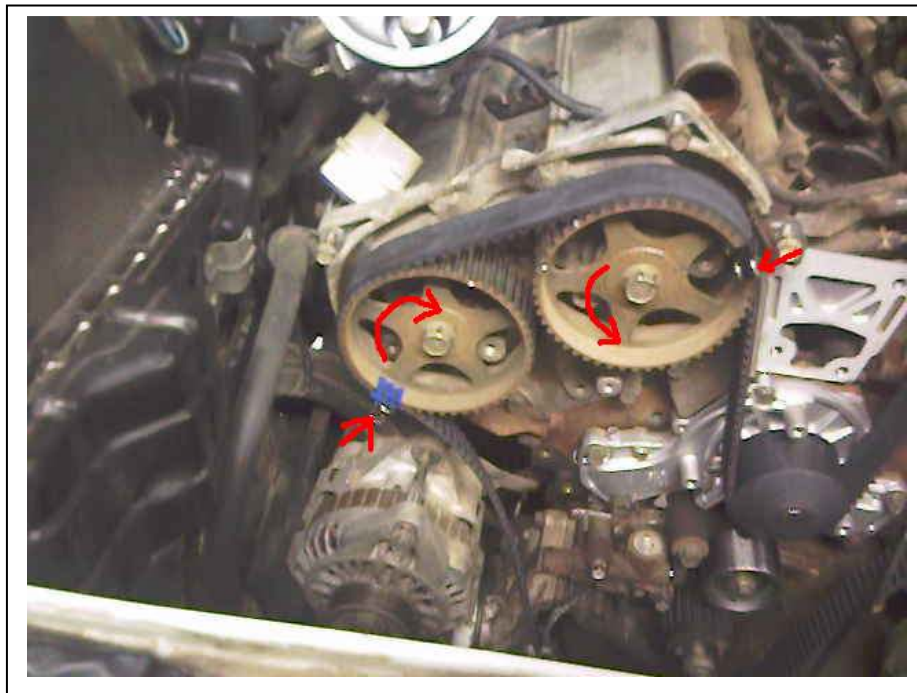
New idler pulley



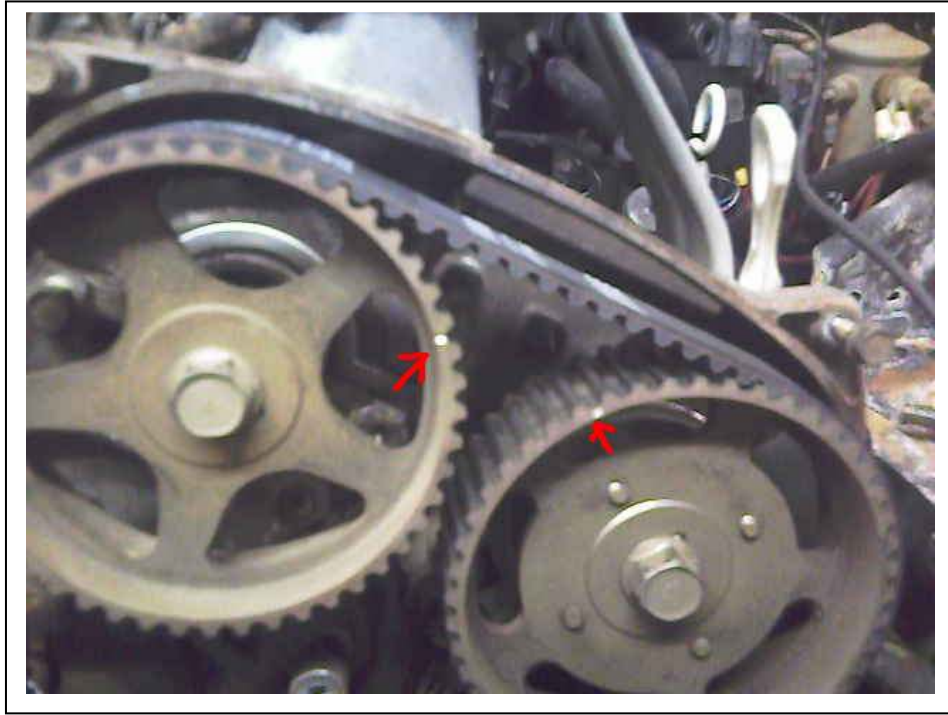
This is the timing mark on the crank pulley you will need to set it up one tooth counter clock wise before fitting the belt as it comes on tension the timing will align.



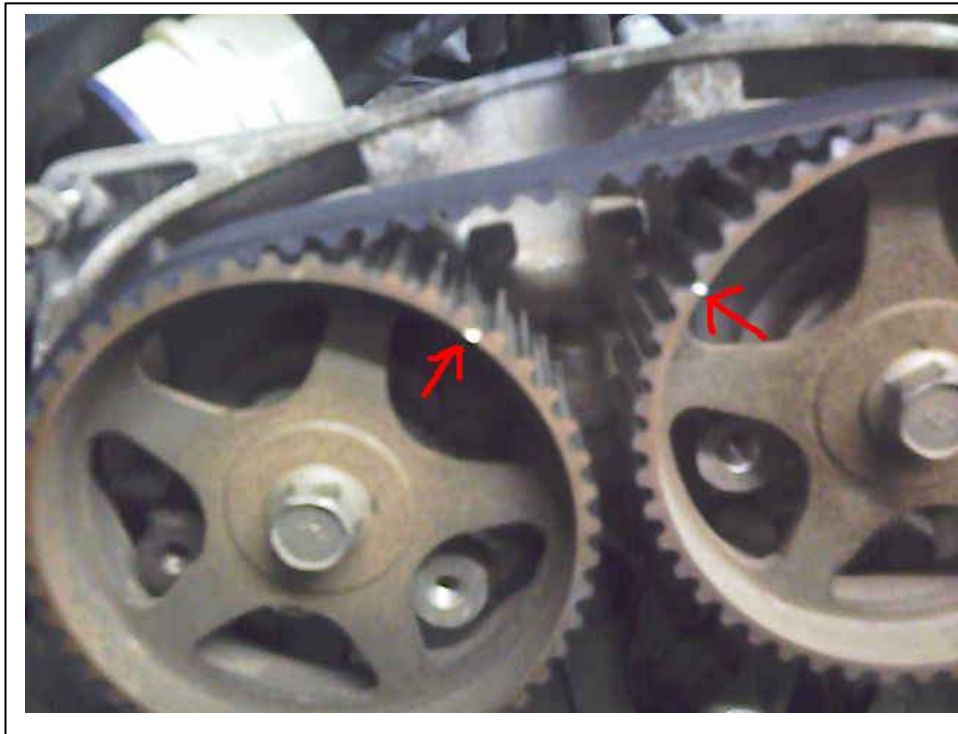
Fit your belt to the LHS bank first align the timing marks using two 17 mm spanners on the cam pulley bolts they will also have moved under spring tension, when aligned fit your belt and use paper clips to hold the tension between the two cams in the correct position (the cams will want to pull away from each other under spring tension)



Now do the same on the RHS bank route the belt round the water pump first do not pull too hard on the belt make sure all your slack is on the tensioner side.



LHS aligned



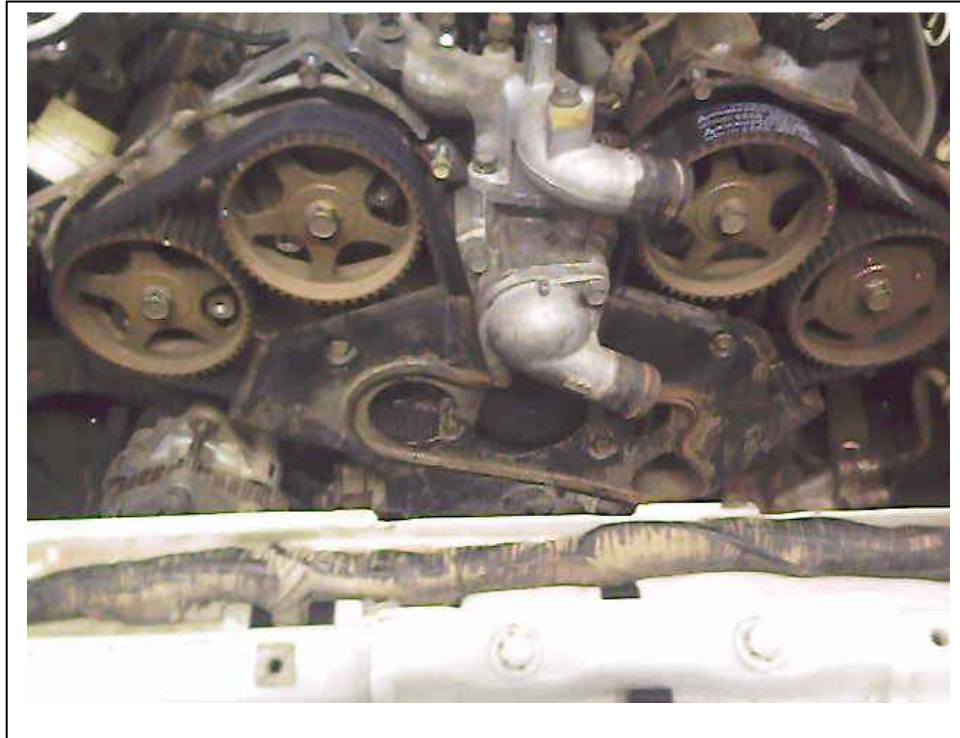
RHS aligned



New belt on



The manual calls for the idler pulley to be torqued to 10 NM of tension on the belt a simple tool can be fabricated here if need be I just used my own experience of twisting the belt. Before you release the tension on your old belt twist it on the longest stretch so you can have a feel for how much tension should be applied.



Turn the engine over by hand a number of times let it stand a few minutes and turn it again if all is in alignment tighten the idler pulley bolt to 50Nm fit engine covers and crank pulley tighten to 180Nm everything else is in reverse of what's been done. Take note of the routing of the crank angle sensor wire.

Regards Colin Kensley

