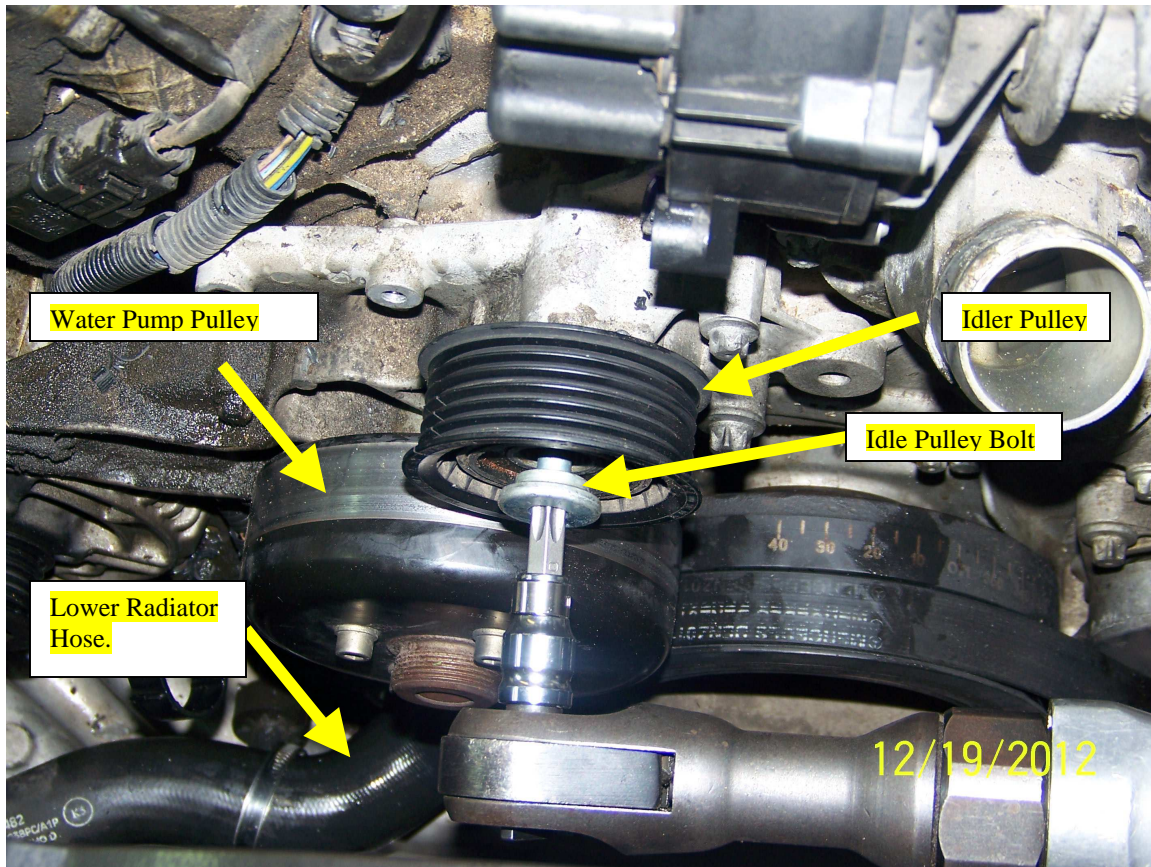




Now you can swing all of the released components up and out of the way.

STEP 6: REMOVE THE IDLER PULLER

The Idler is mounted directly to the water pump just above the water pump pulley. There is a plastic center cap that covers the mounting bolt. Gently pry off the cap and remove the bolt with a T-50 Torx. The picture below shows me removing the idler.



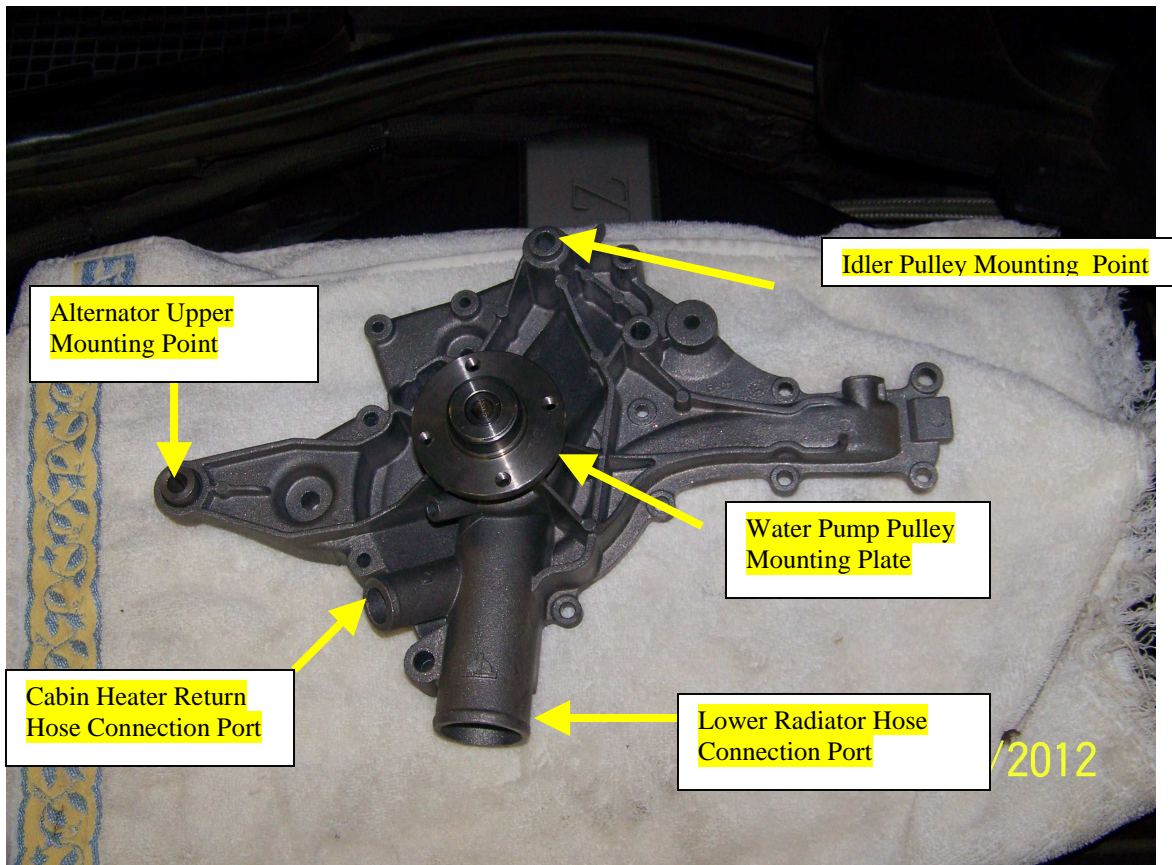
Notice that the water pump pulley is still in place in this picture. Remember, I learned from my work that a different order of removal would make things easier. If I had removed the water pump pulley earlier as I suggest here access to the lower radiator hose would be much simpler. I drained the coolant at the start of the job, which took some knuckle banging to access the clamp on the lower radiator hose. I later realized that there was no need to drain the coolant until you are ready to actually remove the pump, which is the next set of steps.

STEP 7: DRAIN THE ENGINE COOLANT

I disconnected the lower radiator hose from the water pump to do this step. You could use the radiator drain port on the lower right side but I have never had much luck with the design MB uses for those and even if it works it is slow. The lower radiator hose will drain the system very quickly. The hose cannot be disconnected from the radiator as that connection appears to use a permanent clamp. I placed a pan under the car, disconnected the hose from the water pump and lowered the hose to drain the system. On the water pump end this hose is held in place by a standard hose clamp that you can loosen with either a flat head screw driver or a nut driver. The nut driver gives a more solid hold and so worked best for me. I also recommend that you first remove the front lower under carriage cover so that you can direct the drainage flow to your catch pan. I made a mess of the floor trying to avoid this step. The picture above in step 6 is the best I have of the lower radiator hose. During this step you will also need to disconnect the smaller hose connected to the water pump. I think this is the return from the cabin heater core. I disconnected that hose before I got a picture, but it is pretty straight forward.

STEP 8: REMOVE THE WATER PUMP

First, let me say that this is the strangest looking water pump I have ever seen. It is held in place by 16 bolts of various lengths and sizes. You will need Torx size E-10, E12, and E14 sockets to complete this step. I found that my air ratchet was really helpful for this step because some of the mounting bolts were very long with lots of thread. Here is a picture of the new pump before installation. Look at all of the bolt holes. I will use this picture to point out a few things before we start the removal process.



Note that the upper Alternator mounting point is part of the water pump housing. I have never seen anything like that in my life. No problem though as the alternator stayed in place when this bolt was removed. Anyway, to make sure I got all the bolts in the correct location I placed the new water pump on top of the engine on the towel shown and as I removed a bolt from the old water pump I carefully placed it in the same hole in the new water pump. Once I got all of the bolts out of the old pump it came off of the engine very easily with only a gently pull on the main pulley mounting plate. I then put the old pump next to the new pump, transferred all of the bolts to the correct holes in the old pump so that I could maintain their positions while I set the new pump in place on the engine. Below I show the new pump sitting on top of the engine with all of the bolts removed from the old pump and now sitting in the correct location. There are two bolts that are not shown in this picture including the upper alternator mounting bolt and the idler pulley mounting bolt. The locations of these are obvious so I was not concerned about them for this step.



I have no more pictures, but here are a few key points for installing the new pump. The water pump has a lot of sealing surface area, which is why it takes so many bolts to hold it in place. The new pump will come with a new gasket, but needs sealant to make a good seal. I used gasket cement to adhere the gasket to the pump and a very light coat between the pump and the engine. I was very concerned about getting a good seal so I really took my time with positioning the new pump and tightening the bolts. When installing the new pump, I started with the four long bolts shown above, then gradually installed and tightened the smaller bolts, working my way around the pump until all were tight. I did not find torque specs for these, but they all appeared to be aluminum so I was careful not to over tighten. Once the new pump is mounted, just reverse the above steps to put things back together. Once everything was back together, I refilled the system with pure water and ran the engine for a day to check for leaks. Once I was confident of being leak free I drained about two gallons from the system and replaced with Zerex G-05 coolant. From everything I have read Zerex G-05 is the only coolant other than the MB formula that is approved for this engine. One last word of caution. I had a tough time getting the serpentine belt back into position. The tensioner would not allow for enough adjustment to get the belt on the idler and my T-50 kept slipping out of the socket. My assistant and I finally used all of our combined strength to lift the belt up and over the idler pulley. If anyone knows the trick to getting the serpentine belt on, please let me know.