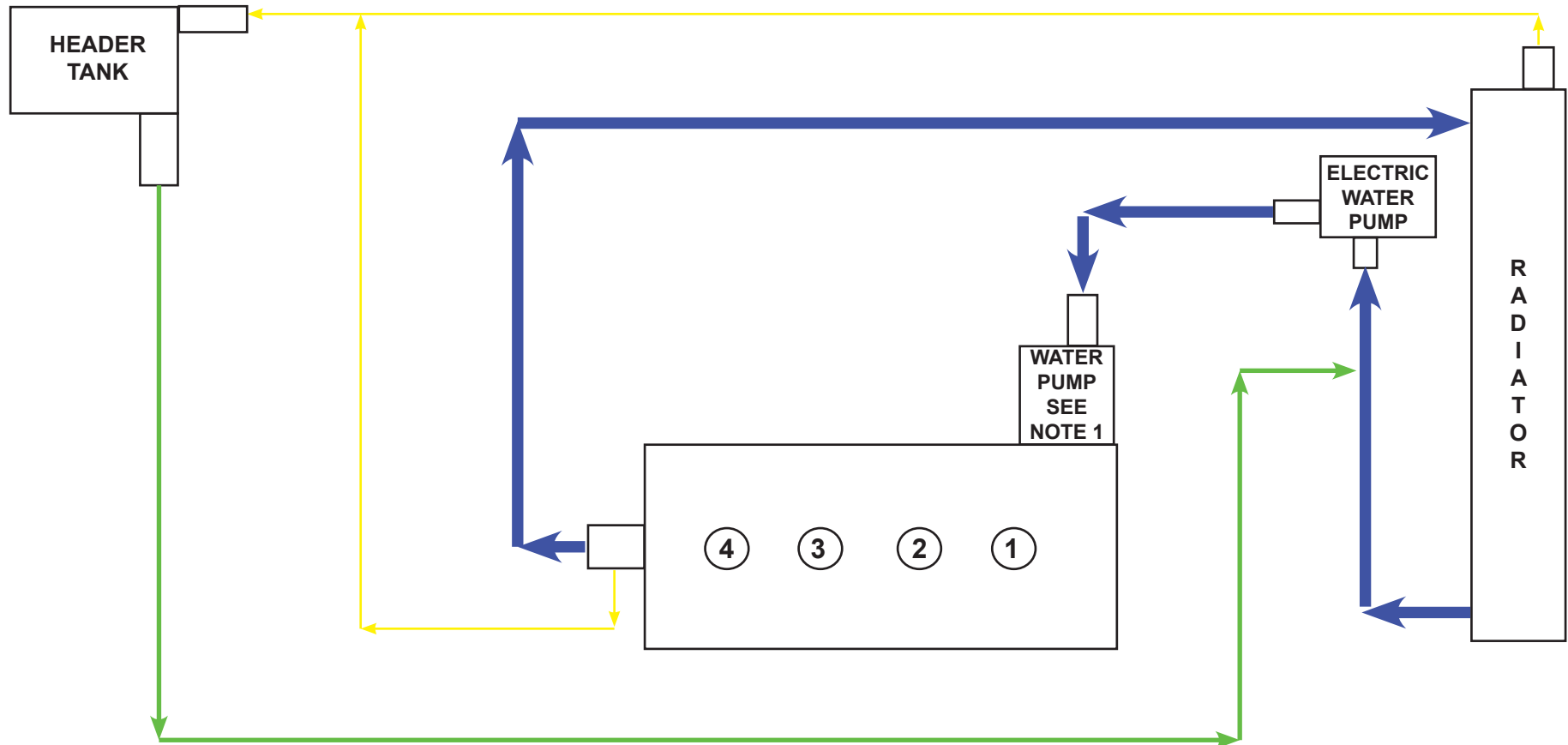


## Duratec Cooling System with Electric Water Pump

Engine with electric water pump control either with MBE9A9/9A6 ECUs controlled directly or MBE9A4/9A8 ECUs with external amp unit or external water pump controller.



Arrowhead direction shows direction of flow		
	Blue	Main cooling system flow
	Yellow	Engine automatic bleeding system flow
	Green	Header tank supply to cooling system

View from above

When using an electric water pump, the MBE ECU controls the flow and speed of the cooling system based on engine temperature, this simplifies the cooling system dramatically since the ECU will maintain the engine's temperature to a pre-determined target temperature and will change the water pump speed to obtain the temperature. So when the vehicle is in competition use, the ECU is continually changing the speed of the water pump to help maintain the optimum temperature. If in a rally car, race car or track vehicle when a radiator fan is also fitted, the radiator fan can also be controlled to help maintain an optimum temperature particularly when the vehicle is in a stationary position such as in the paddock, services or pit lane. The ECU can even run both the water pump and the radiator fan when the engine is turned off to help prevent heat soak to either a pre-determined temperature or length of time after the engine is turned off.

**Note 1:** The blades of the original water pump must be removed so only the electric water pump controls the flow.

**Note 2:** No thermostat must be used due to the fact that the ECU now controls water flow and speed through the system.

**Note 3:** The engine recirculation flow pipe should be removed and blanked at both ends, again this is because the cooling system flow is controlled by the electric water pump.

**Note 4:** Do not attempt to use any other configuration than described and the electric water pump must be controlled for the system to function correctly.

We cannot comment on any other cooling system layout,

