

Mazda Motorsports

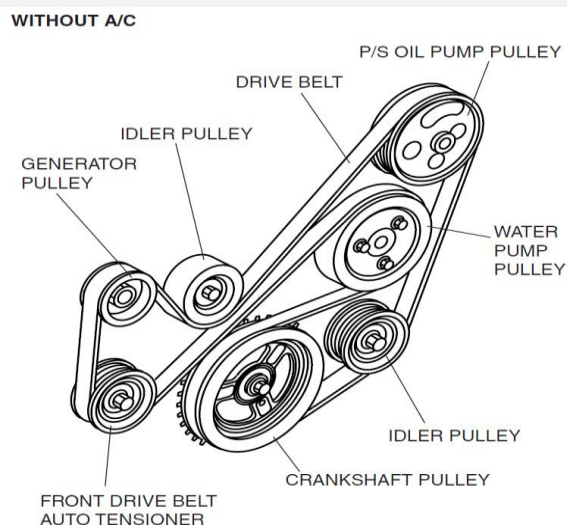
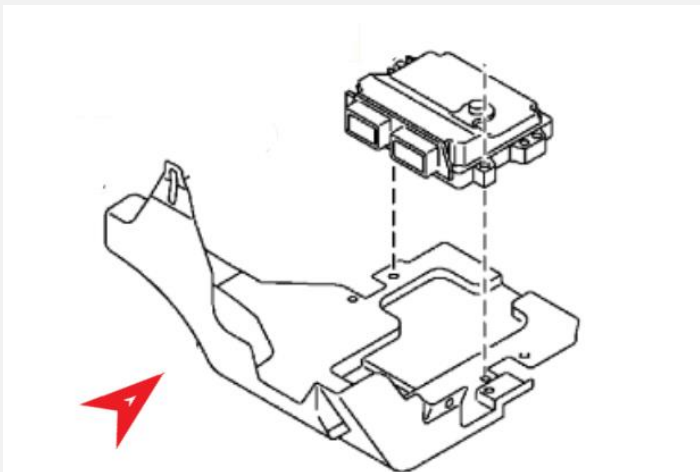
Spec MX-5 Cooling System

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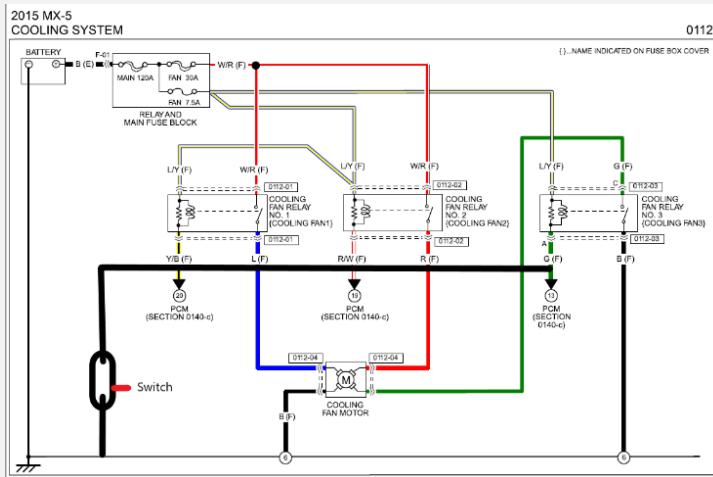


Cooling system checklist:

For those seeking to optimize their Spec MX 5's cooling system performance, it is imperative that the following items be performed to the full extent of the [rulebook \(VTS\)](#):

- **Referencing the first picture illustrated to the left:** Remove the section outlined in red from the center section of the firewall (OEM PT# NE57-56-35XA) to facilitate engine bay airflow for cooling.
- **Referencing the second illustration to the left:** Remove the Mazda ECU insulator (OEM PT # LFG1-13-3C1)
- Install air guide ducting on each side of the radiator tanks and the undertray to force air through the radiator fins. The gap between the top, bottom and sides of the radiator should be sealed.
- Replace OEM engine coolant expansion tank with the MOROSO aftermarket expansion tank, built for racing purposes.
- **Referencing the third illustration to the left:** Use Gates' serpentine belt PT# 6PK-2170 or same size equivalent to prevent belt slipping.
- Use OEM water pump (OEM PT # 1F70-15-100A) required per the VTS; this is a high flow pump.
- Thermostats may be modified, removed or replaced; the above recommendations come before this option. This option may not be necessary based on current climate conditions.

Robinair 75260 Coolant Refiller



In addition to the recommendations above, the cooling system should be in proper working order; complete the following:

- Referencing the picture illustrated to the left:** Check for leaks in the system; a common place for a leak is the cap and the expansion tank. When filling the system is it highly advised to use a vacuum fill tool (see link and picture to the left) in order to test the system for leaks before filling and to prevent air pockets in the system when filling.
- Before going on track, verify that the cooling fan is in proper working order. The cooling fan is necessary on track, particularly during drafting conditions. When airflow is restricted due to close racing, the cooling fan must be working to create the required airflow to allow the transfer of heat to be dissipated across the radiator's cooling fins.
- In the final diagram on the left, the three wires are as follows:** Yellow with a black stripe; red with a white stripe; solid green. These can all be found at the PCM connector. (Do not tap into the two main fan wires that are blue & red.)
- Add auxiliary control of the radiator cooling fan to activate the fan independent of the ECU; OEM control of the fan must remain intact. Grab all three (3) PCM controlled grounds and provide them with a switched ground as seen here. The circuit shall remain intact with the PCM (if you forget to turn on the fans, the PCM will act as the backup).
- The use of a new radiator cap is highly recommended to ensure proper pressure is maintained in the cooling system. Pressure in a cooling system is vital for keeping water in contact with the metal surfaces of the cylinder heads and block.

Pressure keeps the air compressed and maintains the water-to-metal contact that is vital to prevent localized boiling or steam pockets in the combustion chamber areas of the cylinder heads. Once steam starts in the cooling system, the problem will magnify and continue to get worse.

In addition, by keeping adequate pressure in the system, the boiling point will be high enough that this steam creation can be prevented. This is due to the boiling point of coolant being increased when put under pressure. For example, 15PSI of cooling system pressure will raise the boiling point of water to 250 degrees Fahrenheit.