

## CoolMan User Manual

Jordyn Brosemer '20, Monserrat Mendez '20 and Nick Steele '20  
[brosemej@lafayette.edu](mailto:brosemej@lafayette.edu), [mendezm@lafayette.edu](mailto:mendezm@lafayette.edu) and [steelen@lafayette.edu](mailto:steelen@lafayette.edu)

---

### **Overview:**

CoolMan is a fully compartmentalized cooling system designed to be used in the Acopian dyno room and installed directly onto the car. It is used to cool the motor and motor controller and is vital in completing the endurance events.

### **Google Drive File Path:**

CompleteAssembly>2019-2020-Complete>Enclosure>CoolingShelf>GLVBatteryAndCoolingShelf.iam

### **Resources:**

<https://sites.lafayette.edu/motorsports/cooling/>

### **Design Features:**

CoolMan is a 12 volt DC-DC inline cooling system with 4 main parts:

1. Koolance 2600 RPM fan
2. Koolance PMP-500 pump
3. Koolance TPL010K temperature sensor and YF-S201 flow sensor
4. 12VDC-24VDC converter

Mounted directly above CarMan, it operates using ½” vinyl tubing with two quick connect valves. In addition, there is a drip tray designed to prevent leaks from entering the CarMan enclosure. There are no reservoirs in this design.

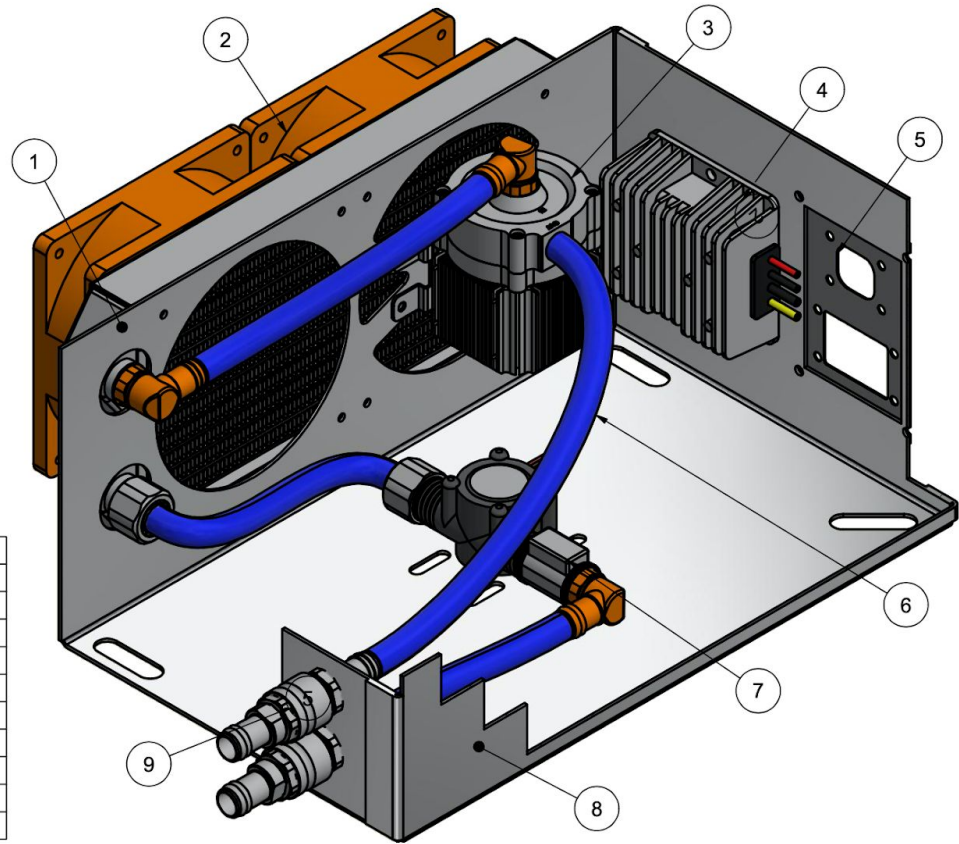
### **Current State of the Design:**

A prototype exists currently in the dyno room. Made out of laser cut plastic it is extremely similar to the assembly shown below. No testing has been performed, but the system is operational.

### **Future Team Recommendations:**

Testing must be done in order to determine if this system is effective enough to outlast the endurance events. If more cooling is required, adding a cooling fluid reservoir or a large radiator and fan is recommended. A quick fix might be to add more cooling fluid by coiling more tubing.

### CoolMan Component Layout:



CoolMan	
#	Description
1	1/16" Aluminum Shell
2	Radiator and Fan
3	Pump
4	24v to 12v Converter
5	CoolMan Panel
6	1/2" Tubing
7	Flow and Temp Sensor
8	Drip Tray (Not Shown)
9	Quick Disconnect S13