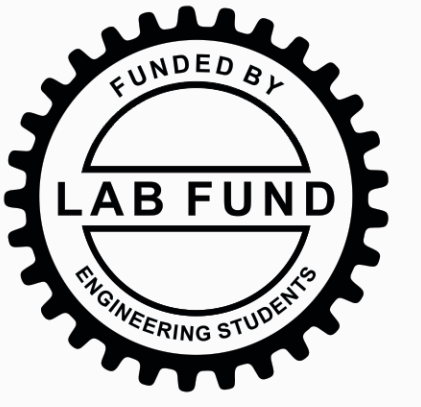


Cross-Country Condenser

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Problem Statement

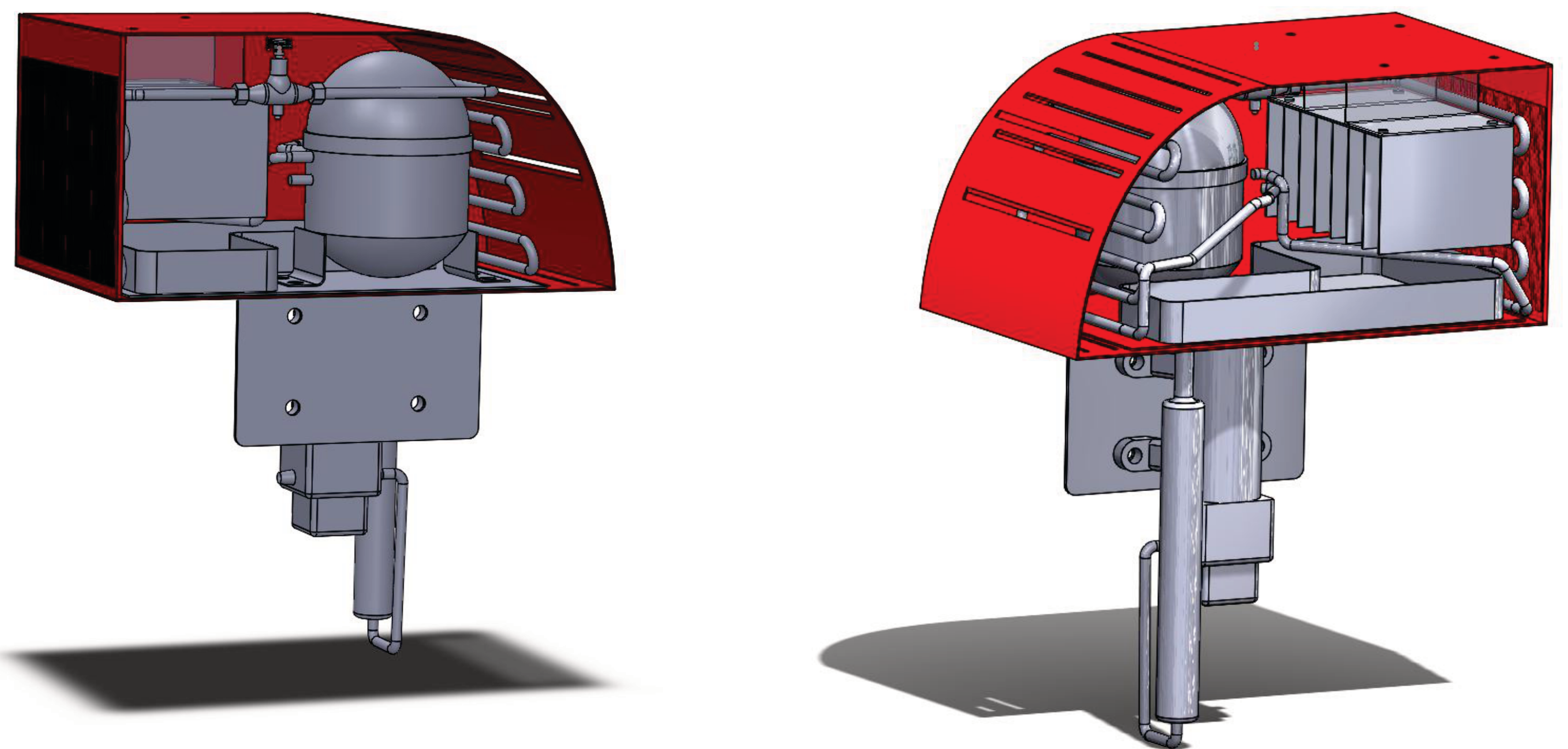
Hypo-hydration can be as impairing as the legal Blood alcohol concentration(BAC) limit in Canada or sleep deprivation. A typical trucker drives around 3000km per week. In order to avoid late fines, freight operators run tight schedules where water detours cause inconvenience. This design aims to increase the availability of clean drinking water to truck drivers during cross country trips.

Background

Atmospheric water generation has been a known technology for several decades. It has been Acknowledged that without the shipping industry, our access to products would be very limited. This design applies this water generation technology to the freight industry in attempt to improve safety and efficiency of shipping.

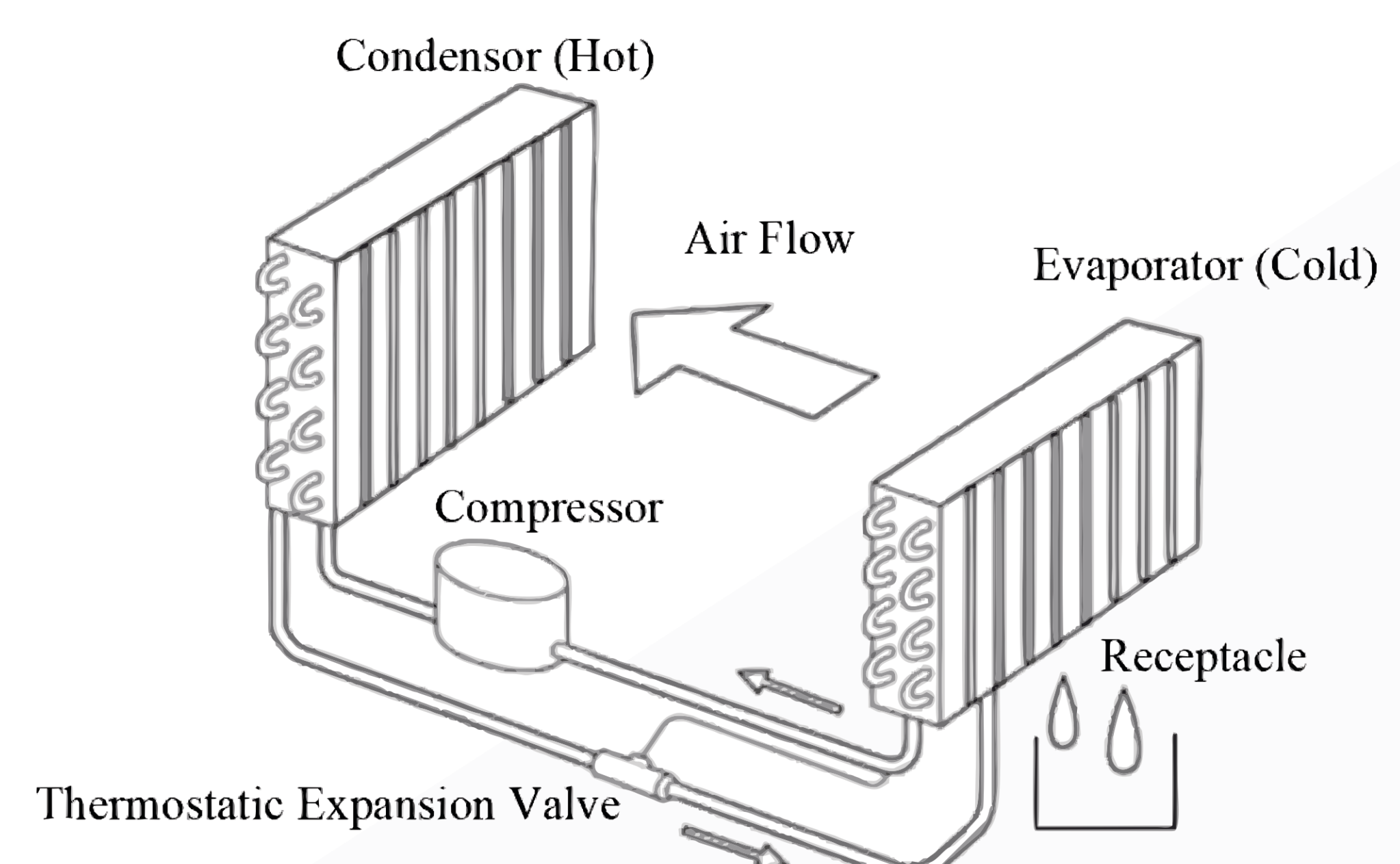
Design Solutions

This design utilized a traditional vapor-compression refrigeration system to dehumidify incoming air. To minimize engine interference, an electric compressor is utilized rather than a typical automotive mechanical belt compressor. The water is then transported via gravity to a small filter. This clean drinking water is then pumped to container located in the cabin of the truck, accessible to the driver. This system shown here will be retrofitted to the roof of the trucks cabin for maximum airflow and versatility.



Design Specifications

Power supplied	24 V
Weight	12 Kg
Volume	25 cm ³
Max water capacity	2 L
Air Intake	232 cm ²



Future Recommendations

For future renditions of this design, the system will be incorporated with the trucks existing air conditioning system. This system will be marketed towards truck manufactures to include the water generation system in new models of their trucks.