

ABSTRACT

Related to the function, air conditioning system for a passenger coach is aimed to build thermal comfort for all passengers. People will be comfort when they are in a room with temperature of 22 – 26 °C, with 50 – 65 % relative humidity and the speed of the air flow is about 0.1 – 0.2 m/sec.

To achieve the condition, the coach needs air conditioner unit that can give convenience to all passengers. The data about air conditioner design for executive passenger coach are obtained through a survey. This survey was conducted to know in detail about some obstacles in designing air conditioner in a passenger coach. The survey was done to executive coach TAKSAKA that could hold 52 passengers, in Tugu coach station, Yogyakarta.

The refrigeration unit and air system for the coach must be able to work in the maximum outer air condition, dusty air and high-grade vibration.

This design uses Refrigerant Petrozon Rossy-22 that does not defect the ozone layer, metal, rustle sound, lubricating oil and elastomer (except elastomer with natural rubber and silicon rubber as the basis material). Petrozon can be burned when it meets the limit of 2 – 10 % volume in the fire triangle area, an area where material, air and fire source are available.

Some things necessary to be designed are the amount of cooling load, compressor, condenser, evaporator and expansion valve. The designer must also notice the limit that refers to literature books. The writer expects that the result of this design is useful and beneficial for those who are involved in refrigerator and heater instruments. Beside that, the writer also hopes that this design can be improved into a better design. The suggestions and criticisms that can improve this design are needed to make this design perfect.