r Car – Whizz into the Future!!

aircar







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Introduction

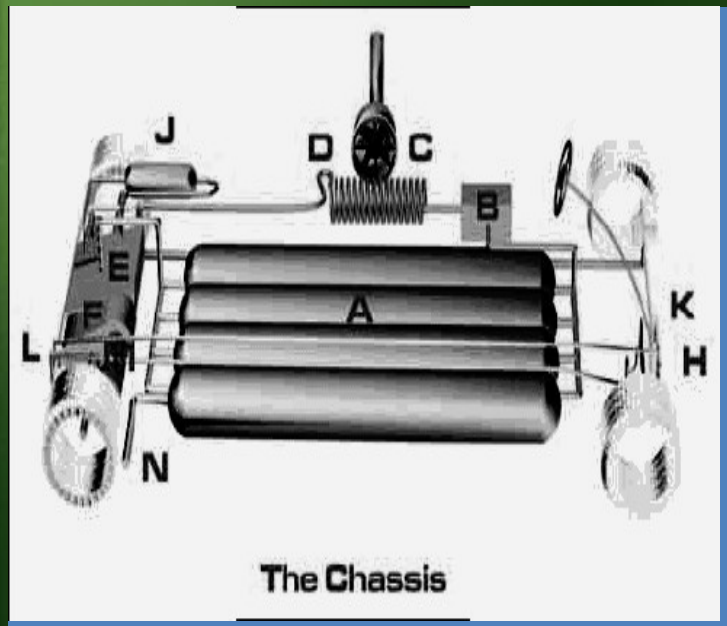


Gone are the days when the roads were packed with cars emitting obnoxious fumes, because now its time for the AIR CAR to roll on everybody into a clean, green and eco-friendly future!

INSPIRATION AND INNOVATION



How Compressed Air Can Fuel a Car



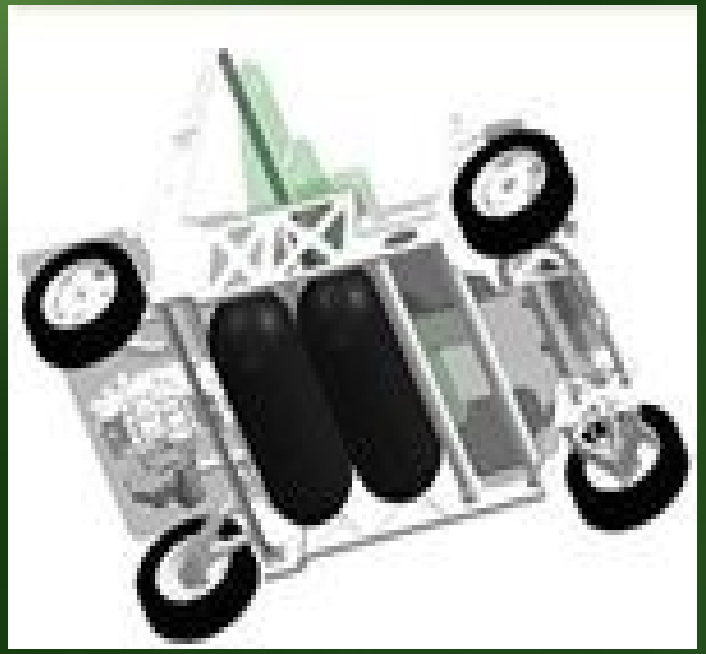
The Chassis

- Compressed air at 300 bars is stored in the carbon fiber tanks **A**.
- Air is released through the main line and decompression takes place in **B.**
- The now cold air passes through a heat exchanger C,adds thermal energy for air conditioning **D**.

- Warmed compressed air now passes to the engine **E**, where two more stages of decompression and re-heating take place.

- Engine drives the rear axle **G** through transmission **F**. Control of engine speed is through a conventional accelerator pedal **H** controlling a valve within the engine.

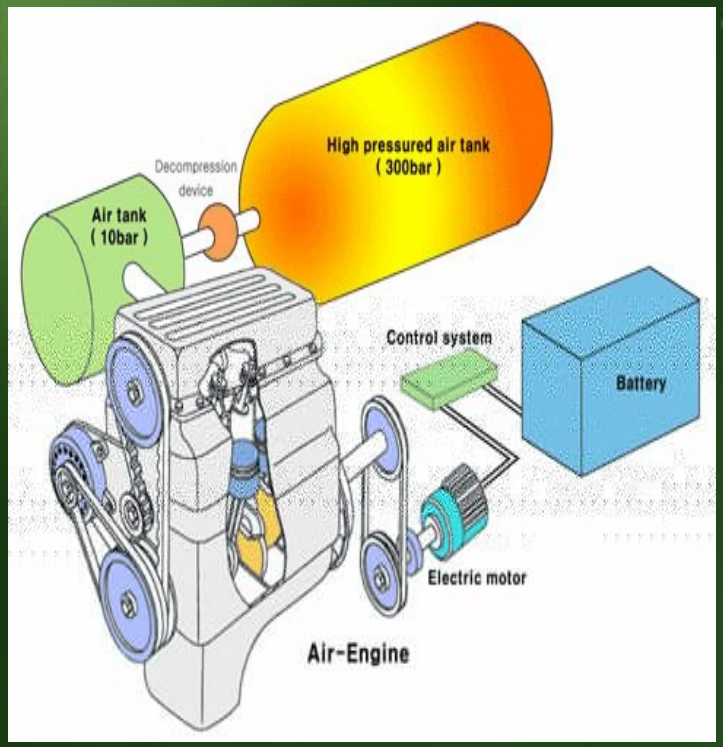
Compressed air tanks



- Air tanks store 90m³ of air at 300 bars of pressure.
- In the case of an accident, there would be no explosion or shattering because the tanks are not metallic but made of glass fiber.
- An elongated crack would appear in the tank, without exploding, and the air would simply escape, producing a loud but harmless noise.

- Before compression, the air is filtered to get rid of any impurities. Carbon filters are used to eliminate dirt, dust, humidity and other particles.

How do air engines work?



- Engine provided with three chambers namely-
  - ✓ Intake and compression
  - ✓ Combustion chamber
  - ✓ Expansion and exhaust
  - ✓
- Car at speeds below 60 km/h runs on compressed air and above it on air-fuel mixture
- Injection similar to normal engines, uses special crankshafts and pistons, this allows more power to be developed in the engine.
- Energy recycler system utilizes energy wasted in braking and deceralation to power an onboard compressor and at car start up and acceleration.

Refilling methods for Air Cars

- ***At home***

- Tanks are refilled by plugging the car into a mains socket to feed the motor-alternator which compresses the air with the motor-compressor.

- It takes 4 hrs at 230 volts for it.

Disadvantages

- Any conversion of energy between forms results in loss.. For compressed-air cars, energy is lost when electrical energy is converted to compressed air.

- Tanks get warm when filled rapidly. It would be difficult to cool the tanks efficiently while charging and would either take a long time to fill the tanks, or they would have to take less than a full charge.

- Refueling the compressed air container using a home or low-end conventional air compressor may take as long as 4 hours.

Time to driving without oil : Now an Air Car from Tata Motors



- ***Tata Motors*** has signed an agreement with ***Motor Development International*** of ***France*** to develop a car that runs on compressed air, thus making it very economical to run and be almost totally pollution free.

- The car could cost around ***Rs 350,000*** in ***India*** and would have a range of around ***300 km*** between refuels. The cost of a refill would be about ***Rs 90.***

Conclusion

- From all the disruption made one can say that by using air car there is reduction in air pollution. The emission benefits of introducing this zero emission technology are obvious. Also, the aim of project is to cut cost, create job locally. Also air car provides an answer to the shortage of fuel and high price of fuel.
- With petrol and diesel prices going up and the price of oil subjects to fluctuation for motorist, this becomes headache; use of air motor is only the solution. All know that there will be shortage of gasoline (petrol, diesel), in future, engine that runs on compressed air is only the alternative for it.
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Various models of Air Car











Thank you
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