Engines

An engine, otherwise referred to as a motor, is a device that transforms energy into functional mechanical motion. Motors that convert heat energy into motion are referred to as engines. Engines are available in many types like for instance external and internal combustion. An internal combustion engine normally burns a fuel using air and the resulting hot gases are used for creating power. Steam engines are an example of external combustion engines. They use heat to generate motion making use of a separate working fluid.

The electric motor takes electrical energy and produces mechanical motion via different electromagnetic fields. This is a typical kind of motor. Various kinds of motors function by non-combustive chemical reactions, other types could make use of springs and function through elastic energy. Pneumatic motors function by compressed air. There are other designs based upon the application needed.

ICEs or Internal combustion engines

Internal combustion happens whenever the combustion of the fuel combines with an oxidizer inside the combustion chamber. In the IC engine, higher temperatures will result in direct force to certain engine components like for instance the pistons, turbine blades or nozzles. This particular force generates functional mechanical energy by moving the component over a distance. Usually, an internal combustion engine has intermittent combustion as seen in the popular 2- and 4-stroke piston engines and the Wankel rotating motor. Nearly all gas turbines, rocket engines and jet engines fall into a second class of internal combustion engines known as continuous combustion, which happens on the same previous principal described.

Steam engines or Stirling external combustion engines greatly vary from internal combustion engines. The external combustion engine, wherein energy is to be delivered to a working fluid like for example pressurized water, hot water, liquid sodium or air that is heated in a boiler of some sort. The working fluid is not combined with, comprising or contaminated by burning products.

The styles of ICEs existing these days come with various strengths and weaknesses. An internal combustion engine powered by an energy dense fuel will deliver efficient power-to-weight ratio. Even though ICEs have succeeded in several stationary utilization, their actual strength lies in mobile utilization. Internal combustion engines control the power supply utilized for vehicles like for instance aircraft, cars, and boats. Some hand-held power equipments use either ICE or battery power equipments.

External combustion engines

In the external combustion engine is made up of a heat engine working using a working fluid such as gas or steam that is heated through an external source. The combustion will take place through the engine wall or via a heat exchanger. The fluid expands and acts upon the engine mechanism that generates motion. After that, the fluid is cooled, and either compressed and reused or thrown, and cool fluid is pulled in.

Burning fuel with the aid of an oxidizer to supply the heat is known as "combustion." External thermal engines can be of similar use and configuration but use a heat supply from sources like for example nuclear, exothermic, geothermal or solar reactions not involving combustion.

Working fluid can be of any constitution, even if gas is the most common working fluid. Every so often a single-phase liquid is sometimes used. In Organic Rankine Cycle or in the case of the steam engine, the working fluid adjusts phases between liquid and gas.