Engines

An engine, otherwise called a motor, is a device that converts energy into functional mechanical motion. Motors that transform heat energy into motion are called engines. Engines are available in numerous types like for example internal and external combustion. An internal combustion engine normally burns a fuel along with air and the resulting hot gases are utilized for generating power. Steam engines are an example of external combustion engines. They use heat to be able to produce motion along with a separate working fluid.

In order to generate a mechanical motion through different electromagnetic fields, the electrical motor has to take and create electrical energy. This particular kind of engine is very common. Other kinds of engine can be driven using non-combustive chemical reactions and some will use springs and function by elastic energy. Pneumatic motors are driven through compressed air. There are other styles based on the application required.

ICEs or Internal combustion engines

An internal combustion engine occurs when the combustion of fuel combines with an oxidizer inside a combustion chamber. In an internal combustion engine, the increase of high pressure gases mixed together with high temperatures results in applying direct force to some engine parts, for instance, nozzles, pistons or turbine blades. This particular force generates functional mechanical energy by means of moving the part over a distance. Normally, an ICE has intermittent combustion as seen in the popular 2- and 4-stroke piston motors and the Wankel rotating motor. Most gas turbines, rocket engines and jet engines fall into a second class of internal combustion engines known as continuous combustion, that happens on the same previous principal described.

Stirling external combustion engines or steam engines greatly vary from internal combustion engines. The external combustion engine, where energy is to be delivered to a working fluid like liquid sodium, pressurized water, hot water or air that is heated in a boiler of some type. The working fluid is not mixed with, consisting of or contaminated by burning products.

Different designs of ICEs have been created and are now available together with various weaknesses and strengths. If powered by an energy dense gas, the internal combustion engine delivers an effective power-to-weight ratio. Although ICEs have succeeded in various stationary utilization, their real strength lies in mobile utilization. Internal combustion engines control the power supply intended for vehicles like for example boats, aircrafts and cars. Several hand-held power equipments utilize either ICE or battery power equipments.

External combustion engines

In the external combustion engine is made up of a heat engine working with a working fluid like for instance gas or steam that is heated by an external source. The combustion will take place through the engine wall or through a heat exchanger. The fluid expands and acts upon the engine mechanism which produces motion. After that, the fluid is cooled, and either compressed and used again or discarded, and cool fluid is pulled in.

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

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