Engines

Also called a motor, the engine is a device which can convert energy into a functional mechanical motion. When a motor transforms heat energy into motion it is usually known as an engine. The engine could be available in many kinds like for instance the external and internal combustion engine. An internal combustion engine normally burns a fuel making use of air and the resulting hot gases are utilized for generating power. Steam engines are an illustration of external combustion engines. They use heat so as to produce motion making use of a separate working fluid.

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

ICEs or Internal combustion engines

Internal combustion happens whenever the combustion of the fuel combines together with an oxidizer inside the combustion chamber. Inside the IC engine, higher temperatures would result in direct force to certain engine parts like for instance the pistons, turbine blades or nozzles. This particular force produces functional mechanical energy by means of moving the part over a distance. Typically, an internal combustion engine has intermittent combustion as seen in the popular 2- and 4-stroke piston motors and the Wankel rotating engine. Most rocket engines, jet engines and gas turbines fall into a second class of internal combustion engines referred to as continuous combustion, that occurs on the same previous principal described.

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

Different designs of ICEs have been developed and placed on the market together with various weaknesses and strengths. If powered by an energy dense gas, the internal combustion engine produces an effective power-to-weight ratio. Though ICEs have succeeded in many stationary applications, their actual strength lies in mobile utilization. Internal combustion engines control the power supply used for vehicles like for example boats, aircrafts and cars. A few hand-held power equipments make use of either ICE or battery power gadgets.

External combustion engines

An external combustion engine uses a heat engine where a working fluid, like for example steam in steam engine or gas in a Stirling engine, is heated by combustion of an external source. This particular combustion happens through a heat exchanger or through the engine wall. The fluid expands and acts upon the engine mechanism which produces motion. Next, the fluid is cooled, and either compressed and used again or disposed, and cool fluid is pulled in.

The act of burning fuel together with an oxidizer in order to supply heat is called "combustion." External thermal engines may be of similar operation and configuration but make use of a heat supply from sources like for instance geothermal, solar, nuclear or exothermic reactions not involving combustion.

Working fluid could be of whichever constitution, although 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 varies phases between gas and liquid.