

ABSTRACT

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Wankel Engine

Wankel engine is the only engine invented in 20th century and is operational till now. The engine was invented by Felix Wankel, with first patent in 1929 and first prototype DKM in 1957, also the same year Hanns Dieter Paschke constructed the KKM-57 and it was a foundation for modern wankel engine. Since, then lot of companies produced there versions of wankel engine but emissions were always a problem for them, a lot of these projects were stopped due to unsatisfactory result of research to control the emissions, and leaks in seals, only Mazda succeeded in doing this. But, even the production of last car with wankel engine Mazda RX-8 was stopped in 2012 due to stricter emission norms, now they are producing a more robust engine SkyActiv-R. Most distinguishing thing about wankel engine is that at any time there are three volumes present in the engine and it only have one moving part that is rotor itself. And the housing is oval-like epitrochoid-shaped. Mazda is researching in laser ignition which will eliminate spark plugs and direct fuel injection which will improve fuel efficiency and emissions. Due to its compact design it is used as a range extender for electric vehicles. Wankel engines are also used in automobile racing, UAV, Jet Skies and it is also fit for light aircrafts . Its use in aircrafts started in 1960 and still the research is going on to produce fuel economical airfart engines like DA36 E-Star(aircraft designed by Siemens , Diamond Aircraft and EADS) first flew in June 2013 making first flight of series hybrid powertrains (fuel consumptions are reduced by 25%). Diamond Aircraft state that the technology of wankel engine can be used for 100-seat aitcraft. Wankel engine is important for next generation hybrid vehicles.