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REVIEW ON THE TECHNOLOGY OF LIQUID OXYGEN KEROSENE ENGINE FOR THE
BOOSTER STAGE OF LONG MARCH 5**Abstract**

Long March 5 is China's new generation of large-scale launch vehicle (code-named CZ-5/5B). The core stage is bundled with four boosters, and each booster uses a dual-unit parallel liquid oxygen kerosene high-pressure staged combustion engine. The engine adopts the high pressure staged combustion cycle, and has the characteristics of high performance, self-starting, wide range of thrust and mixing ratio adjustment and compact structure. In this paper, the development history and technical scheme characteristics of CZ-5 rocket's liquid oxygen kerosene engine are reviewed. The ignition matching characteristics of the different engines in the first launch of the Long March 5 are analyzed. The key technologies in the development of the parallel mode engines are analyzed emphatically, such as self-starting ignition technology, large time difference asynchronous shutdown technology and adaptability of complex force-thermal environment. The subsequent improvement direction of improving performance, lightening structure, reducing cost and enhancing adaptability for liquid oxygen kerosene engine is proposed, as well as the demand for high-precision online fault diagnosis system for liquid oxygen kerosene engine.

Keywords: Long March 5; LOX /kerosene engine; Self-starting technique; Ignition matching characteristics; Thermal environment adaptability