

The invention relates to rocket engineering and can be used as main propulsion system of final stages of rockets and upper-stage rockets of launch vehicles and spacecrafts. A liquid rocket propulsion system has main and placed in sequence detachable fuel tanks, fixed tightly composed two-component liquid rocket engine with turbo-pump system for supply of fuel components to combustion chamber, this has a turbine, the exhaust collector of which is connected to circular collector of the unit for injection of exhaust gas to nozzle supersonic section; system for control of thrust vector of engine that has interceptor units installed in each fourth part of the nozzle, those are connected to high-pressure feed line of the engine and the drive connected to control system. The main fuel tanks of cylindrical, spherical or conical form are placed over the engine. The detachable tanks are placed in space of tail section of upper-stage rocket and connected by split joints to lower ring of the main fuel tank and carrier of the engine. The fuel tanks are connected by automated split hydraulic system that comprises devices for intake and supply of fuel components from fuel tanks to pumps of the engine. The invention makes it possible, while preserving high compactness of assembly and high dimension-mass characteristics of propulsion system, to provide control of the engine thrust vector by control channels, and stabilization of flight (pitch and course), this increases a lot functional possibilities of the propulsion system and makes it possible to increase ballistic efficiency of the propulsion system.