

**MOBILE POWER STATIONS BASED ON AIRCRAFT GAS-TURBINE ENGINES**

Gas-turbine power station is a modern, high-technology plant, which generates electricity and heat energy. It consists of one or more gas-turbine engines – power-plants ganged with electric generator and combined into one power complex by controlling system. Mobile power stations are used in districts, which are distant from source of electric power, e.g. during building of waterworks, mines, bore-holes drilling etc. Primary purpose of mobile power stations is their usage as emergency source of electrical power when electric system is damaged because of natural disasters or other reasons. Light-weight and compact mobile power stations, which are easily brought to the place of disaster, can lighten the consequences of disasters considerably.

Quick start, ease of maintenance and ability to operate with gaseous and oil fuel compensate lowered efficiency in comparison to diesel engine. Gas-turbine power station has power from 20 to 10 000 kW. Gas-turbine power station can give a significant amount of heat power to its customer – with coefficient 1:2 in relation to electric power.

Operating principle of mobile power stations based on gas-turbine engine is quite simple. Clean air is moved into gas-turbine compressor. Being compressed there air is moved into combustion chamber at high pressure, where the main fuel – gas is moved. The mixture flames. Energy, in the form of stream of incandescent gas, appears during the burn of gas-air mixture. This stream is moved to the turbine wheel and rotates it. Rotational kinetic energy brings compressor and generator into action through the turbine shaft. Derived electricity is moved through the transformer to the power customers.

Power production can be started after 8-12 hours after the arrival of mobile power station to the job site. Coefficient of efficiency of modern mobile gas-turbine stations is high and begins from 35%. Also mobile gas-turbine stations can give a large volume of cheap heat power to the heating systems. Stations are equipped with parameters check systems including environmental parameters, automatic fire safety system and noise reduction system.

Due to all these characteristics mobile power stations based on aircraft gas-turbine engines are widely used all over the world.

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