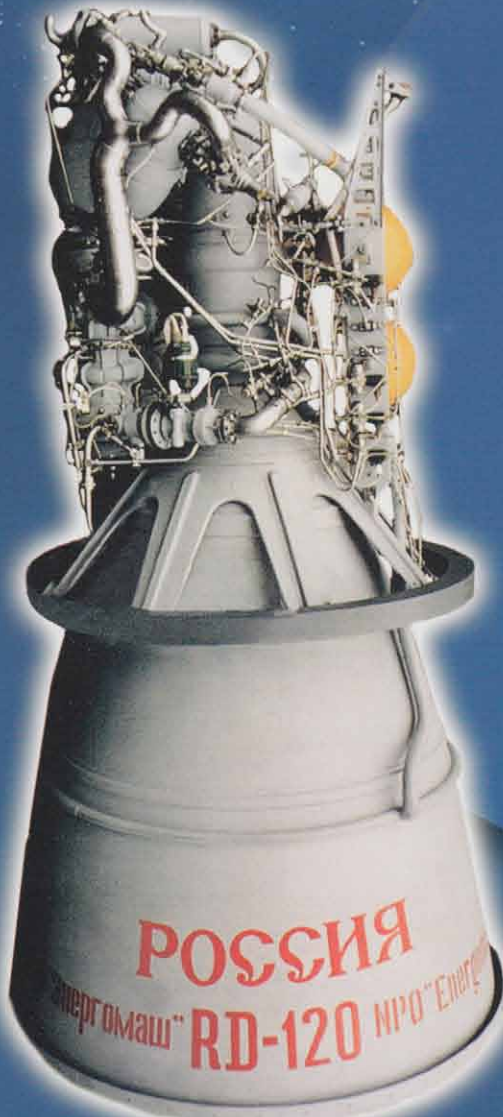




NPO ENERGO MASH

named after academician V.P. Glushko
founded in 1929



RD-120 engine

Liquid propellant rocket engine
for second stage
of «Zenit» LV



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RD-120 engine



Main parameters of RD-120 engines family

Liquid propellant rocket engine with afterburning of oxidizer-rich gases
Propellant: LOX + kerosene

Engine modification	RD-120	RD-120 forced	RD-120K
Thrust, sea level / vacuum, tf	- / 85	- / 93	80 / 87
Specific impulse, sea level/vacuum, sec	- / 350	- / 350	304,4 / 330
Pressure in combustion chamber, kgf/cm ²	166	181,6	179,8
Mass, dry / filled, kg	1125 / 1285	1125 / 1285	1080
Dimensions, height / diameter, mm	3872 / 1954	3872 / 1954	2435 / 1400
Development period	1976-1985	2001-2003	1986-
Destination	«Zenit» LV	«Zenit» LV	advanced LV

«Zenit-3SL» LV RD-120 engine modification program

The base RD-120 engine was developed in 1975-1985.

177 engines were produced, 560 fire tests were conducted at total running time 139 186 sec, 40 launches in structure of «Zenit» LV.

Modernized RD-120 engine: forcing of thrust up to 93 ton instead of 85 ton.

4 improved design engines were tested at total running time 8135 sec.

Zenit LV first launch with upgraded RD-120 engine was fulfilled in June 10, 2003 under Sea Launch program.

The interbranch tests of forced RD-120 engine were completed successfully, that allow to use this engine in interests of Federal Space Agency of Russia.

RD-120K (RD-120U) engine development program.

Sea level modification of RD-120 engine (with short nozzle).

RD-120U engine is intended for advanced LV, as example, modernized «Soyuz-2» LV and «Onega» LV.

2 fire tests of 1 engine were conducted.

RD-120U – single chamber engine with 2 (or 4) steering chambers.



Uwe W. Jack

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