



NPO ENERGO MASH

named after academician V.P. Glushko
founded in 1929



RD-170 / 171 engines
Liquid propellant rocket engines
for first stages of «Energia»,
«Zenit» LV



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RD-170/171 engines

Main parameters of RD-170, RD-171 engines family

Liquid propellant rocket engine with afterburning of oxidizer-rich gases

Propellant: LOX + kerosene

Engine modification	RD-170	RD-171	RD-171M
Thrust, sea level / vacuum, tf	740 / 806	740 / 806	740 / 806
Specific impulse, sea level/vacuum, sec	309 / 337	309 / 337	309 / 337
Pressure in combustion chamber, kgf/cm ²	250	250	250
Mass, dry / filled, kg	9750 / 10 750	9500 / 10 500	9300 / 10 300
Dimensions, height / diameter, mm	4000 / 3800	4150 / 3565	4150 / 3565
Development period	1976–1988	1976–1986	1992–1996, 2003–2004
Destination	«Energia» LV	«Zenit» LV	«Zenit» LV

Milestones of RD-171 modernization program:

The base version of RD-170/171 engine was developed in 1976–1986. These engines had passed about 900 fire tests with total running time above 100 000 sec.

Forcing version of RD-171 engine – RD-171M engine – activity was conducted in 90th (28 engines were tested up to 1996). 6 improved design engines were tested at total running time 5500 sec (running time at one of them – 1590 sec).

First serial engine RD-171M has delivered to Ukraine in March 25, 2004 after check-acceptance test at duration 140 sec.

7 serial production engines had delivered to Ukraine.

Engine certification was completed July 5, 2004.

Certification engine has passed 8 fire tests with total running time 1093,6 sec, including last test (in excess of the plan) at 105% of nominal mode.



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