

Directory: commercial engines

Model	Max thrust (lb)	Power max (SL) (shp)	Notes/Description (Inc submodel)	Application
TFE731-5	4,500	-	55/56, Rockwell Sabreliner 65A, IAI Westwind 1125	Turbofan – Cesna Citation Ultra, Hawker 800, CASA C101; -5A powers Dassault Falcon 900 and re-engined Falcon 20; -5B powers Falcon 900C
TFE731-20	3,500	-	Turbofan – Bombardier Learjet 45	
TFE731-40	4,247	-	Turbofan – Gulfstream Astra SPX and Dassault Falcon 50EX, Bombardier Learjet 45	
TFE731-50		-	Turbofan – Gulfstream 100/150	
TFE731-60	5,000	-	Turbofan – Dassault Falcon 900EX	
TPE331				
TPE331-10R	-	900	Turboprop – EADS Casa C212-300 Aviocar	
TPE331-14	-	1,651	Turboprop – 14A/B Piper Cheyenne 400; -14GR/HR BAe Jetstream 41; -14GR-801E Antonov An-38	

IAE INTERNATIONAL AERO ENGINES

IAE marked a major milestone in July when it began assembly of the 2,000th V2500 engine. The company, whose partners includes Rolls-Royce, Pratt & Whitney, MTU and Japanese Aero Engines, claims a significant lead over CFM on the Airbus A320 family with more than 70% of the market and orders and options for around 2,500 more engines. Production also reached record levels in 2001 when 281 engines were produced, while 220 are expected to be shipped in 2002, providing a valuable source of income to the partners through difficult times. Future improvements and technology for a next generation family are being developed through the company's Vista initiative. This allows IAE to tap into the best research and technology elements under development within the partner companies and gives it access to areas such as the swept fan, three-dimensional aerodynamics, low emissions combustors, new generation reduction gearboxes, active noise control, blisks (bladed disks) and blings (bladed rings). Although the effort is geared towards keeping the V2500 family technologically competitive with the TECH56-reinforced CFM56, one of the main aims is to produce the lowest cost of ownership, including fuel burn and maintenance costs. IAE's notional Vista timeline is linked to entry-into-service in the 2010 timeframe, though it is keeping the schedule flexible to meet market-driven requirements for a future 150-seat aircraft. It also plans to "follow" the market to power whatever shrinks and stretches may be developed, and says the rigid confines of the current IAE thrust limitations between 20,000lb and 40,000lb may not apply in future.

V2500

V2500-A1	25,000	-	Turbofan – Airbus A320-100
V2530-A5	31,400	-	Turbofan – Airbus A321-100
V2533-A5	33,000	-	Turbofan – Airbus A321-200
V2527E-A5	25,000	-	Turbofan – Airbus A320
V2525/2528-D5	25,000	-	Turbofan – Boeing MD-90-30

KLIMOV

Klimov's revitalising of its product line appears to be going to plan with active development of new variants and applications. Leading the charge is the 1,120kW (1,500shp) VK-1500 turboshaft which will be produced by VKMS, a joint venture between Klimov and Zaporozh's Motor-Sich. Bench tests are getting under way with first deliveries to Kamov for the Ka-60/62 helicopter in May 2003. The turboprop derivative of the VK-1500, planned for certification by the end of 2002, is aimed at the An-3 (a turboprop Antonov An-2 derivative) and Beriev Be-132 (formerly Be-32K). The VK-1500 builds on technologies developed for the 2,500shp VK-2500 that is replacing the TV3-117 on the Mil Mi-8/17, Mi-24/35 and Ka-27/29/32. The engine was certified in early 2001, and is being pushed for medium helicopter upgrades. It has been selected by an unidentified Asian customer for "dozens" of new-build Mi-17V-5s for delivery starting in 2003. Flight tests of the VK-800 general aviation and helicopter engine are also beginning, with certification of the three-member engine family set for the end of 2003. The low-cost engine (estimated at around \$200,000 per unit) is expected to make Russian-engined Kamov Ka-226s more competitive against Western-powered options. The company is also developing the TV7-117SM, an improved FADEC equipped variant of the turboprop, for a new short-range version of the Ilyushin Il-114. The revised -117SM will weigh 70kg less than the current unit and cost around \$200,000 less per engine, says Klimov. Development of the fifth generation, low-parts count VK-3500 turboprop also continues.

TV7				
TV7-117S	-	2,467	Turboprop – Ilyushin Il-114	
TV2				
TV2-117		1,480	Turboshaft – Mil Mi-8, 38	
TV3				
TV3-117		2,195	Turboshaft – Mil Mi-8, 4, 7	
TV3-117				
TV3-117VMA-02/VK800	-	2,221	Turboshaft – Kamov Ka-32/Ka-226	
TV7-117SM		2,400	Turboprop – Ilyushin Il-114SM	

NPO SATURN (RYBINSK MOTORS JSC)

NPO Saturn (Rybinsk Motors JSC) Saturn, formed from a merger between Rybinsk Motors, Lyulka-Saturn and Ufa Engine Building Association, continues to focus on Stage 3 compliant hushkits for the D-30KU series as well as its recently formed alliance with Snecma on the SM146 for the Russian Regional Jet (RRJ). The hushkit work is split between Saturn's own Stage 3 kit for the D-30KP-powered Ilyushin Il-62 and Il-72, and related work between Saturn's Rybinsk unit and Aviakor on another kit for the D-30KU-powered Tupolev Tu-154M. The -30KU kit is being offered for around \$100,000 per aircraft and will be followed by a low-emission Chapter 4 compliant combustor and hushkit being developed under a \$3.5 million effort for availability in 2005. While certification of the hushkits is progressing, Saturn's big hope remains the RRJ. The consortium faces competition from Pratt & Whitney Canada teamed with Aviadgatel on the PW800, and a decision is due by the end of 2002. The manufacturing plant for the airframe and the development schedule for the RRJ is to be announced in mid-2003. The Rybinsk arm of Saturn is also working on development of the RD-600V turboshaft for the Kamov Ka-60/62. Among the most promising domestic Russian helicopter engine projects, production of the 1,500shp class powerplant is expected to reach 1,500 engines by 2005.

D-30KU				
D-30KU	23,100	-	Turbofan – 154 version on Tu-154M, Ilyushin Il-62M, KP on Il-76	
RD-600V				
RD-600V	-	1,302	Turboshaft – Kaman Ka-62	
TVD-1500				
TVD-1500	-	1,302	Turboprop – Antonov An-38	