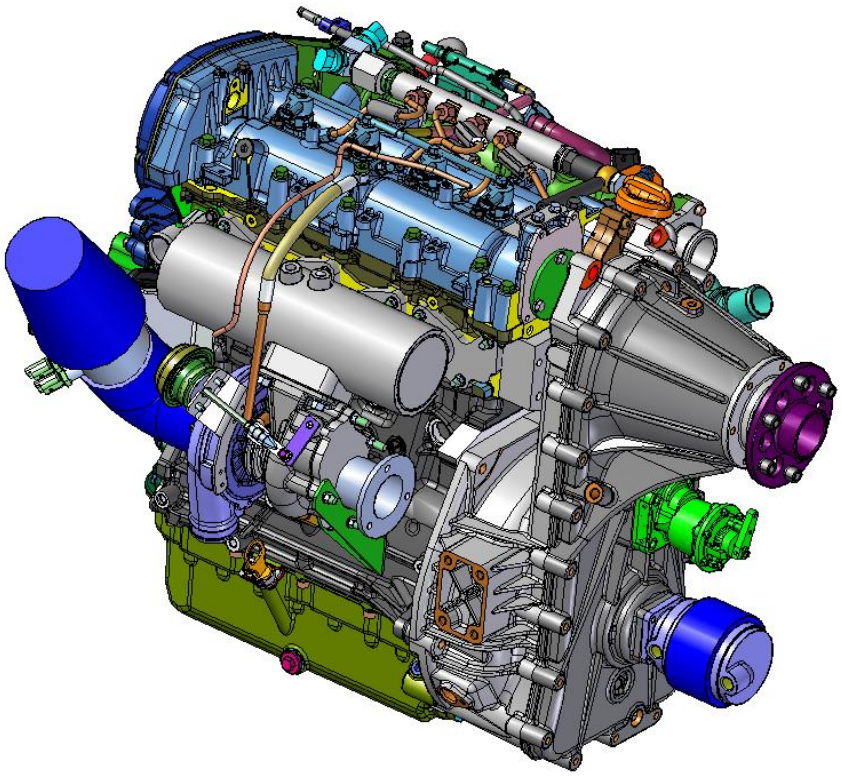
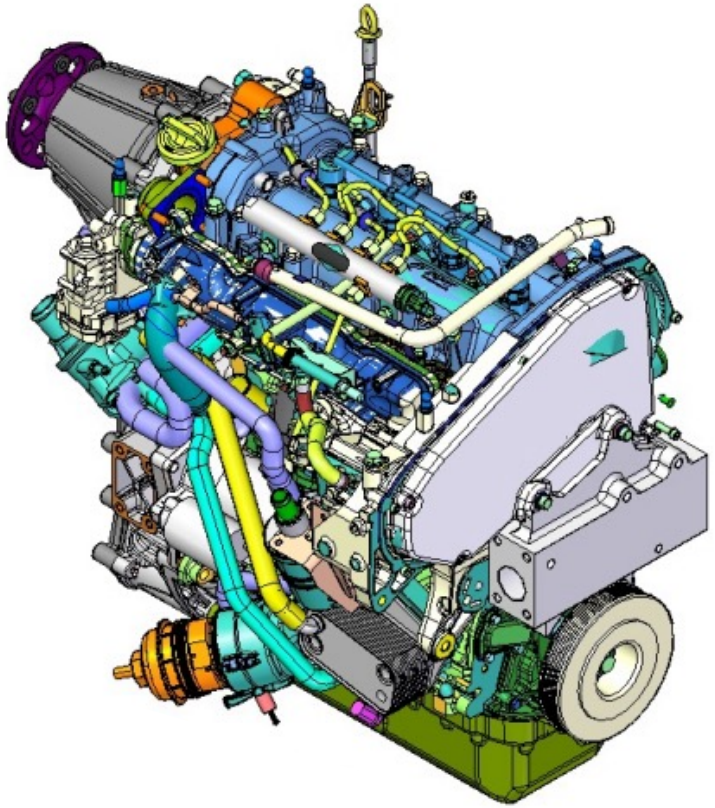
The 2.0 liter 16V Diesel engine



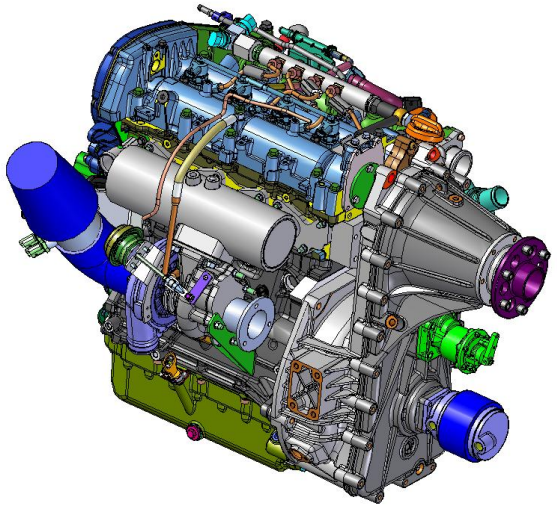


TDA CR 2.0 16V

The 2.0 liter 16V Diesel engine

Architecture	-	4 cylinder in line
Bore	mm	83.0
Stroke	mm	90.4
Displacement	cm3	1955
Valves / cylinder	#	4
Compression ratio	-	16.0
Turbocharger	-	Single Stage - WG
Fuel Injection Sys.	-	Common Rail 1600 bar
Injector Nozzle	-	7 holes x 560 cm3/30 sec
Fuel		Kerosene & Diesel Fuel EN 590
Alternator	volt	28
EECS	-	DUAL FADEC
Weight with gearbox	**Kg**	**205**
Dimensions LxWxH	**mm**	**650 x 659 x 859 with GearBox**
Take Off Power	**kW**	**160 (at propeller shaft) (217 CV)**
Continous Power	**kW**	**142 (at propeller shaft) (193 CV)**
Critical altitude	**ft**	**8700**
Min. BSFC	**g/kWh**	**210 (at propeller shaft)**

TDA CR 2.0 16V



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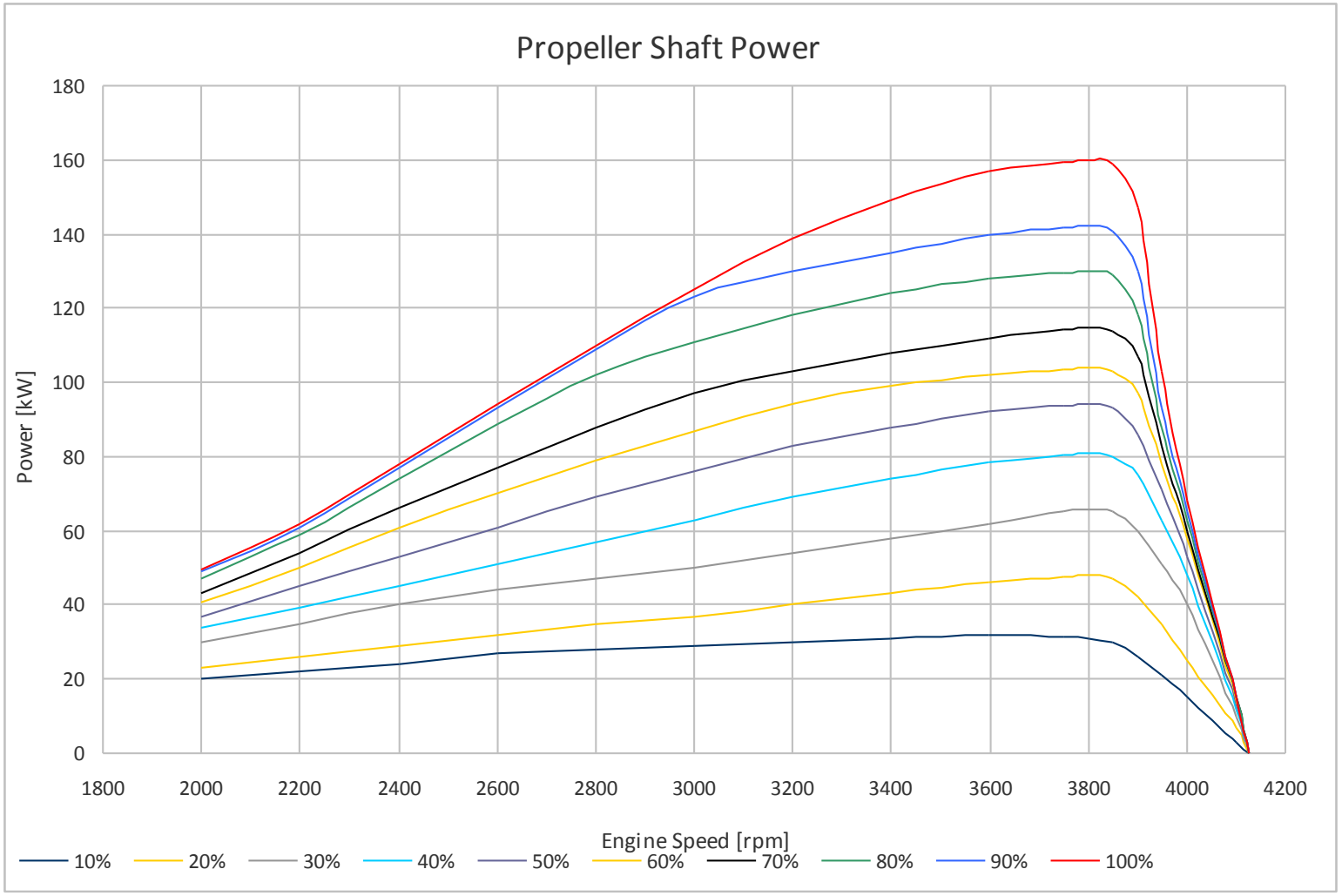
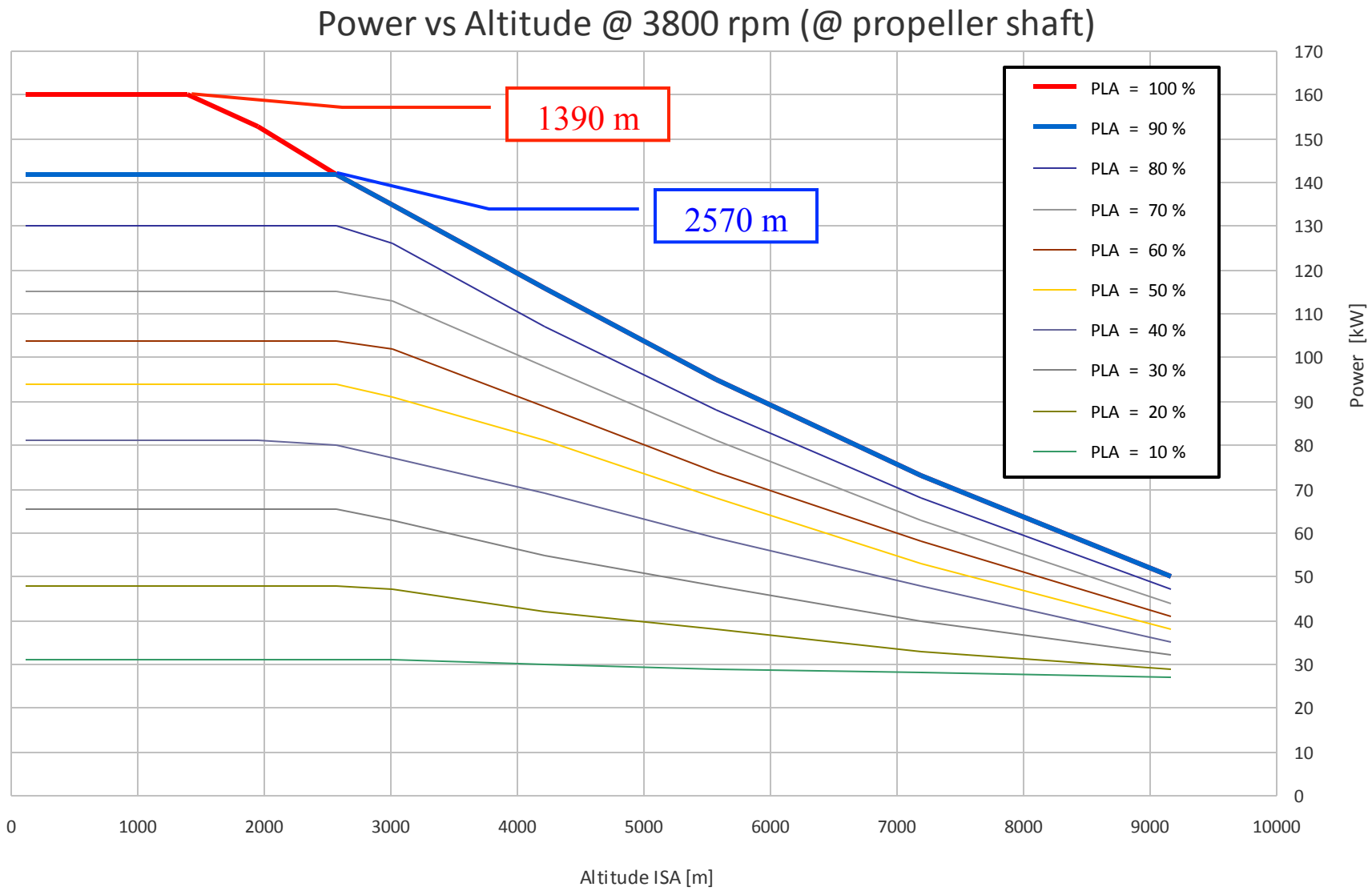
The 2.0 liter 16V Diesel engine



The 2.0 liter 16V Diesel engine



The 2.0 liter 16V Diesel engine

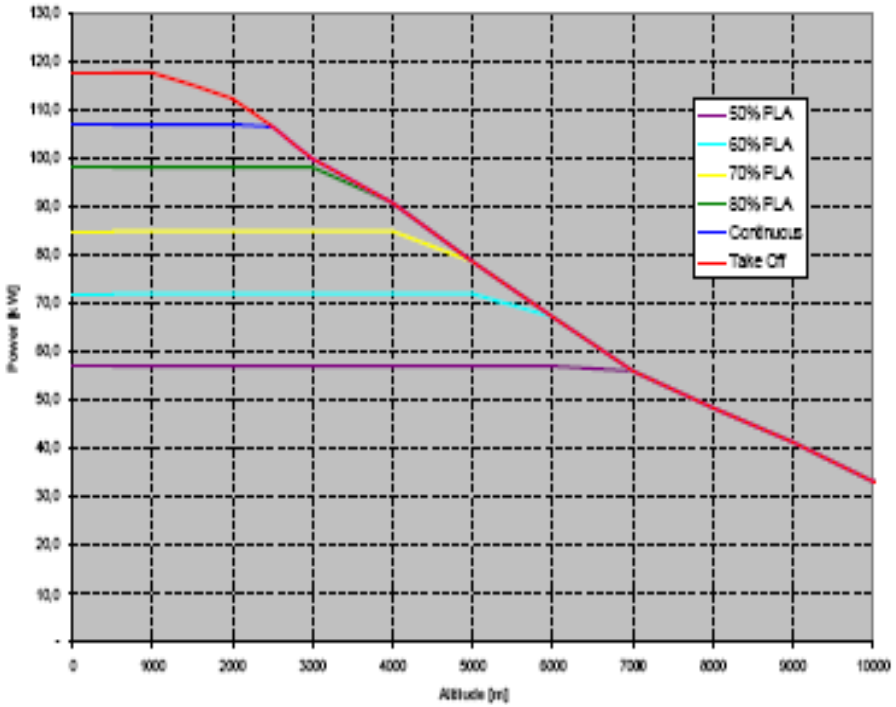
Modifications of TDA CR 2.0 16V versus TDA CR 1.9 8V

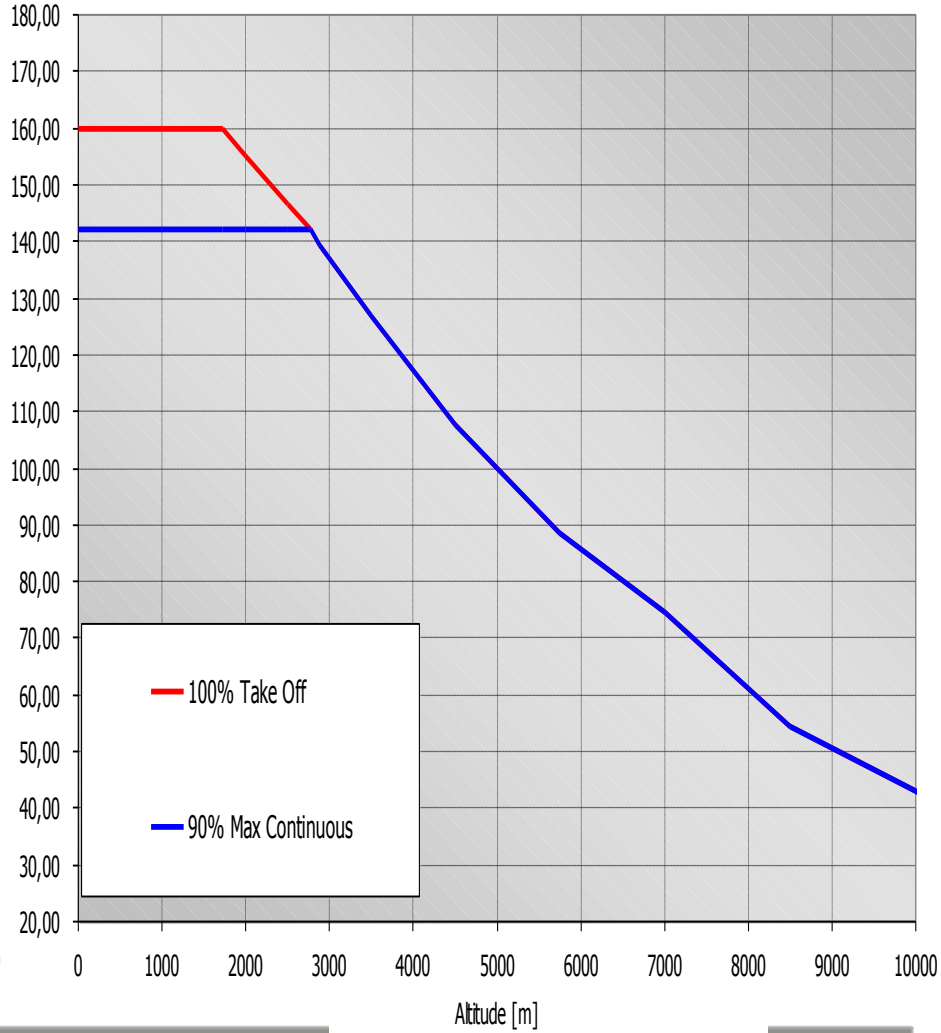
- Substitution of head, valves & camshafts with automotive parts, from the 16V engine version
- Minimum displacement increase to 1956 mm^3 (bore + 1 mm)
- Additional pressure sensors (air filter and turbocharger inlet)
- Substitution of boost pressure and camshaft sensors
- Substitution of injectors
- FADEC minor variant (additional electrical I/O channels, minor adjustment of some I/O channels, diagnostic improved, RS422 high level protocol)
- Improvement of application SW (new sensors management, glow plug control for start, optional governor control)
- No interface modifications to aircraft mechanical installation
- Power increase about 30% with engine weight increase of 2-3%

The 2.0 liter 16V Diesel engine

TDA CR 2.0 16V Power Increase

+ 37 %

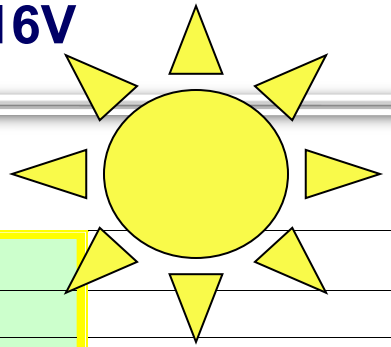




TDA CR 1.9 8V

TDA CR 2.0 16V

Key Features of TDA CR 2.0 16V



Item	TDA CR 2.0 16V	Notes
Displacement	1955 cm^3	
Configuration	16 Valve	
Weight	205 (kg)	Dry & with alternator, without intercooler and radiator
Length	859 mm	
Height	659 mm	
Width	650 mm	
Volume	0.299 m^3	
Maximum Power	160 kW @ 3800 rpm	Up to 160 kW of emergency extra power are expected
Power/Weight ratio	0.78	kW/kg About 1,1 Cv/kg
Operative Altitude	35000 ft	
Propeller Control	HW provisions available SW to be developed	
FADEC reliability	no critical events for prototypes	Many prototype flight data are available for TDA 16V
Mechanical reliability	HP pump with treatment for Jet A1 fuel Very sound gear box design	At least 1000 hours operating life demonstrated for TDA. 2000 hours expected for TDA before overhaul