



Lufthansa Technik

World of services

Mobile Engine Services in the Americas

Mobile Engine Services by Lufthansa Technik offers a broad spectrum of customized repair and maintenance solutions within in the Americas. These specialized solutions keep your engines flying while avoiding costly shop visits. They range from individual borescope inspections to comprehensive engine fleet programs, from scheduled maintenance events at your site to emergency repairs.

Customer advantages

Minimized impact on aircraft operation through short turnaround times

Sustainable reduction of total MRO cost

No shipping cost if event is performed on-wing/on-site

Surgical repair solutions with minimum workscopes

Fast SB and AD implementation

Mobile Engine Services is Lufthansa Technik's fast track to avoid major shop visits. Depending on the requirements of the individual repair solution, the available options range from InFIELD services, provided on-wing or on-site by our engine experts, to a number of smaller InSTATION events performed at our local repair stations in Tulsa (USA), Calgary and Montreal (Canada). A Cycleclean® Engine Wash* at one of the locations of our continuously growing regional Cycleclean® station network is also part of our InOPERATION offering for customers in the Americas.

An exemplary case for the AST® Engines solutions

In standard operation, the variable stator vane (VSV) bushings on several CFM56 engine types start to show signs of wear at 16,000 to 20,000 operating hours. Since an inspection is not required before the 24,000 operating hour limit, the consequences can be drastic – at worst, they can result in an in-flight shutdown (IFSD). To prevent this and to avoid

a shop visit at the same time, Lufthansa Technik's Mobile Engine Services has developed a procedure to replace the inner and outer VSV bushings InFIELD at the aircraft's location. With the engine removed, the VSV bushings together with the also often damaged shrouds and seals are replaced. This procedure takes four days at most and can be carried out during a suitable layover, for example during a C-Check. This preventive measure gives the customer not only an extra exhaust gas temperature (EGT) margin of six to eight degrees Celsius but also the chance to use the engine for its entire potential life. Depending on the respective operator's flight profile, the CFM56 engine has an on-wing life of no less than 30,000 hours.

* For more information about Cycleclean® Engine Wash, please refer to a separate data sheet or visit our website www.lufthansa-technik.com/Cycleclean

Mobile Engine Services: Your solution-oriented approach



Lufthansa Technik capability list

	CFM56-5B/-7B		V2500		LEAP-1B	
Engine 	Engine C-Check (Lufthansa Standard)		Engine C-Check (Lufthansa Standard)		Engine C-Check (Lufthansa Standard)	
	QEC Installation		QEC Installation		QEC Removal and Inspection	
	QEC Removal and Inspection		QEC Removal and Inspection		QEC Installation	
	Video Borescope Inspection and Report		Video Borescope Inspection and Report		Video Borescope Inspection and Report	
	Engine Preservation				Fuel Nozzle Replacement	
					TGB Replacement	
Fan Module 					AGB Replacement	
	Accessory Gearbox Replacement (AGB)		Angle Gearbox Replacement (AGB)		Fan Blade Replacement	
	Brg. No. 3 Front Seal (270°) Replacement		External Gearbox Carbon Seals Replacement		Fan Case Replacement ¹	
	Brg. No. 3 Stationary Air Oil Seal Replacement		Fan Blade Replacement		Booster Module Replacement ¹	
	Fan Abradable Liner Replacement ²		Fan Case Attrition, Anti-Ice or Acoustic Panel Replacement		Outlet Guide Vanes Replacement/ Repair	
	Fan Blade Replacement		Fan Case Replacement		LPC Stg. 1 Replacement	
	Fan Disk Replacement		Fan Exit Guide Vane Replacement			
	Fan Frame Bearing Unit Replacement (2BU)		Fan Hub Replacement			
	Inlet Gearbox Replacement (IGB)		Fan Trim Balance			
	LPC Blade Replacement		LPC Module Replacement			
	LPC Module Replacement		LPC Stg. 1.5 Blade Replacement			
	Transfer Gearbox Replacement (TGB)		LPC 2.5 Bleed System Repair/ Replacement			
	Fan Containment Case Replacement		Main Gearbox Replacement (MGB)			
	Fan Frame Shroud Replacement		N1 Probe/Harness/Vibration Sensor Replacement			
			No.3 Bearing Replacement			
Core Module 	Combustion Chamber Replacement		Combustor Module Replacement		HPC Boro Blend	
	Fuel Nozzle Replacement		Combustor Panel Replacement		HPC Top/Bottom Case (VSV Bushing Repl.) ¹	
	HPC Boro Blend Repair		Fuel Nozzle Replacement			
	HPC Top Case Repair (HPC Blade Replacement)		HPC Module Replacement			
	HPC Top and Lower Case (VSV Bushing Replacement)		HPC Stg. 3-8. Drum Replacement			
	HPT Module Replacement		HPC Top Case Repair (Front Split Cases)			
	HPT Front Rotating Air Seal Replacement		HPT Blade Replacement			
	HPT NGV Module Replacement		HPT Module Replacement			
	HPT Stg. 1 NGV Replacement		HPT T1/T2 Hub Replacement			
	IGV Actuation Ring Replacement		HPT Single Nozzle Guide Vane (NGV) Replacement			
	LPT Stg. 1 NGV Replacement		M-Flange Diff-NGV-HPT Case Replacement			
LPT Module 	LPT Module Replacement		Brg. No. 5 and Carbon Seal Replacement		TRV Replacement	
	Center Vent Tube Replacement		Brg. No. 5 Blind Cap Seal Replacement		LPT Module Replacement ¹	
	TRF Replacement		Brg. No. 5 Oil Coking			
	LPT Stg 4 Blade Replacement					



InFIELD (on-wing)



InFIELD (on-site)

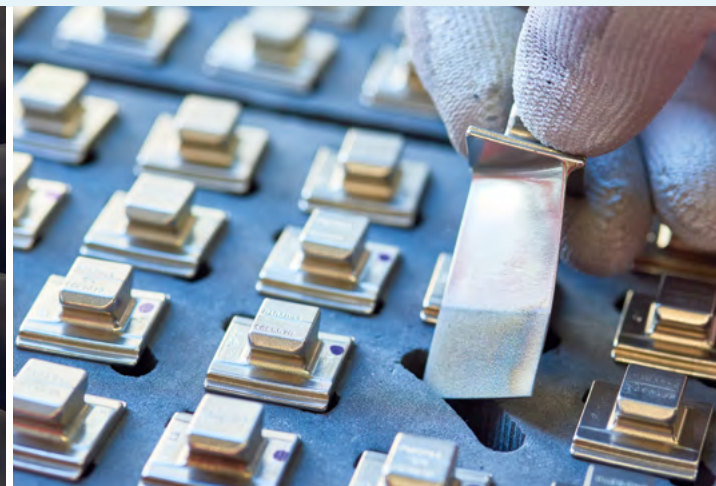


InSTATION

¹(Currently) only to be performed InSTATION (YYC)

²-5B only

Mobile Engine Services in the Americas



Lufthansa Technik

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