



Lufthansa Technik

World of services

**Mobile Engine
Services
in Asia Pacific**

Mobile Engine Services by Lufthansa Technik offers a broad spectrum of customized repair and maintenance solutions within Asia Pacific. 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 overnight 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 by our Airline Support Team (AST® Engines) to a number of smaller InSTATION events performed at our local repair station at Lufthansa Technik Shenzhen. 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 Asia Pacific.

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

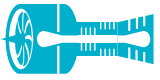
a shop visit at the same time, Lufthansa Technik's Mobile Engine Services has developed a procedure to replace the inner and outer VSV bushings InFIELD at the aircraft's location. With the engine removed, the VSV bushings together with the also often damaged shrouds and seals are replaced. This procedure 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 Shenzhen capability list

	CFM56-5B/-7B		V2500	
Engine 	Engine C-Check (Lufthansa Standard)		Engine C-Check (Lufthansa Standard)	
	QEC Installation		QEC Installation	
	QEC Removal and Inspection		QEC Removal and Inspection	
	Video Borescope Inspection and Report		Video Borescope Inspection and Report	
Fan Module 	Accessory Gearbox Replacement (AGB)		Angle Gearbox Replacement (AGB)	
	Brg. No. 3 Front Seal (270°) Replacement		External Gearbox Carbon Seals Replacement	
	Brg. No. 3 Stationary Air Oil Seal Replacement		Fan Blade Replacement	
	Fan Abradable Liner Replacement		Fan Blade Root Coating Repair	
	Fan Blade Replacement		Fan Blade Wear Pad Replacement	
	Fan Disk Replacement		Fan Case Attrition, Anti-Ice or Acoustic Panel Replacement	
	Fan Frame Bearing Unit Replacement (2BU)		Fan Exit Guide Vane Replacement	
	Inlet Gearbox Replacement (IGB)		Fan Hub Replacement	
	LPC Blade Replacement		Fan Trim Balance	
	LPC Module Replacement		LPC Module Replacement	
	Transfer Gearbox Replacement (TGB)		LPC Stg. 1.5 Blade Replacement	
	VBV Guide Pad Replacement		Main Gearbox Replacement (MGB)	
			N1 Probe/Harness/Vibration Sensor Replacement	
			LPC 2.5 Bleed System Repair-Replacement	
Core Module 	Fuel Nozzle Replacement		Combustor Module Replacement	
	HPC Boro Blend Repair		Combustor Panel Replacement	
	HPC VSV Bushing Repair		Fuel Nozzle Replacement	
	HPT Blade Replacement		HPT Blade Replacement	
	HPT Module Replacement		HPT Single Nozzle Guide Vane (NGV) Replacement	
	HPT NGV Module Replacement			
	HPT Stg. 1 NGV Replacement			
	IGV Actuation Ring Replacement			
	LPT Stg. 1 NGV Replacement			
LPT Module 	LPT Module Replacement		Brg. No. 5 Blind Cap Seal Replacement	
			Brg. No. 5 Oil Coking	



InFIELD (on-wing)



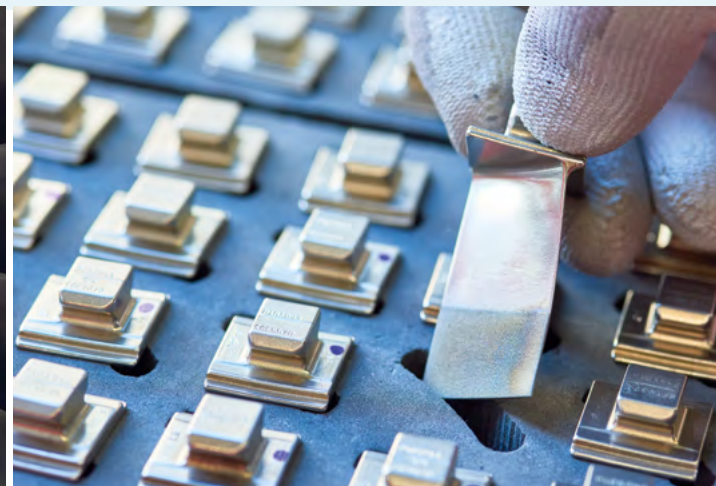
InFIELD (on-site)



Repair station



Mobile Engine Services in Asia Pacific



Lufthansa Technik

Contact

Lufthansa Technik AG
Weg beim Jaeger 193
22335 Hamburg
Germany

General information is available
24/7 via our AST® support.
maintenance-support@lht.dlh.de

lufthansa-technik.com
lufthansa-technik.com/mobile-engine-services

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