

FDC/aerofilter™

Sikorsky S-76
Inlet Barrier Filter System





Longer Engine Life

Pure air preserves turbine engine components, greatly extending their service life. You'll find that parts you used to throw away at overhaul will now be returned to service, over and over, saving you a bundle in the process. Moreover, they'll still be giving you 100% performance, even during their last few hours.



Reduced Overhaul Costs

Many years of inspection and overhaul results show, in addition to reduced overhaul costs, a substantial reduction in direct operating costs and increased reliability over any other type of system available.

What you do with the extra power, increased useful load, and the leftover money is your business. Providing you with pure air, peace of mind and unrivaled 24/7 service is ours.



Increased Performance

Even in environments considered relatively clean, an FDC/aerofilter system will reduce your operating temperature, increase fuel efficiency, and give you that extra margin of safety that comes from complete protection from FOD and erosion. With FDC/aerofilter on board, you can get more performance for less money than you're spending right now.

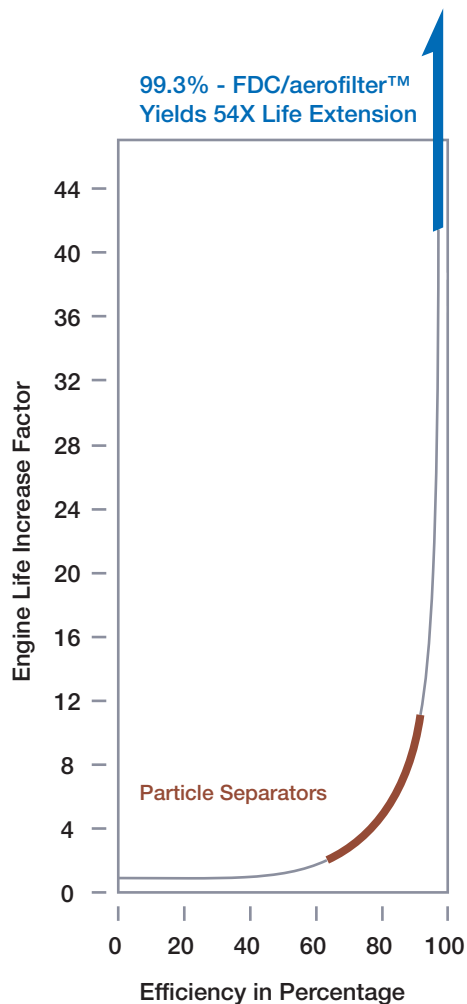


Pure Air in Any Environment

Over 50 years of field experience has shown that performance degradation and premature failure in turbine engine components and accessories are directly related to filtration efficiencies. By nature, rotorcraft operate in low level "nap-of-the-earth" altitudes (1,000 feet AGL or less). Turbine helicopters operating within this environment are unavoidably subjected to high levels of erosive and corrosive airborne particles. The resultant costs of increased maintenance and reduced aircraft productivity can be staggering. FDC/aerofilter provides a proven solution.

The FDC/aerofilter provides superior engine protection, reduced maintenance costs, and greater installed performance.

Hundreds of thousands of flight hours in many environments including mining, agricultural, forestry, law enforcement, military, and air medical have shown excellent results. Inspection and overhaul results show FDC/aerofilter systems deliver a substantial reduction in overhaul costs, hourly operating costs and increased reliability.



Data based on Detroit Diesel Allison 570-K Gas Turbine Installation Manual and Applied Technology Laboratory, Fort Eustis, Virginia

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The Sikorsky S-76

Most S-76 series aircraft have only the factory standard large mesh FOD screen capable of only stopping particles larger than 1/4 inch. The FDC/aerofilter Inlet Barrier Filter System for the Sikorsky S-76 provides a smoothly ducted flow of pure air with minimal pressure losses, and total protection from foreign objects of *any* size.



Material Specifications

The heart of the FDC/aerofilter system is an active barrier media comprised of a blended fabric, pleated between two layers of epoxy coated wire cloth. The media is used to suspend a specially formulated oil which acts as a tacking agent to trap and hold airborne particles. The elements are sealed to a high temperature cured composite duct structure.

All other components are flight-proven, mil-spec hardware.



Proven Solution

FDC/aerofilter has the experience of hundreds of thousands of flight hours in every environment throughout the world.

FDC/aerofilter is the oldest and largest supplier of inlet barrier filters to the commercial, civil government and military markets worldwide.

FDC/aerofilter also offers the largest line of certified inlet barrier filters in the world.

Maintenance Monitor

The S-76 IBF system features FDC/aerofilter's Filter Maintenance Monitor System to display current filter health flag key checkpoints. Two differential pressure transducers provide a continuous signal to the monitor LED bar graph. When alert levels are reached, latched relays echo a signal to the master caution panel. Because you don't have to guess the condition of the filter, the monitor improves flight safety and increases operational readiness.



fig. 1 - lamps indicate a clear filter

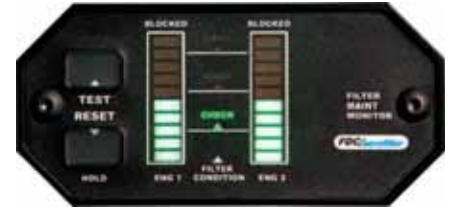


fig. 2 - filter still within tolerance



fig. 3 - time for maintenance



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Bolt-on Installation

Installation of the S-76 Inlet Barrier Filter Kit is straight forward, with only minor drilling, alignment, and rerouting of existing wiring and plumbing. No major airframe modifications are required. Estimated installation time is 32 hours.

The kit consists of mounting plates (2), differential pressure transducers (2), filter maintenance monitor (dzus panel mounted), pre-built electrical wiring harness, and a water wash kit.

No special tools are required for the installation and it can be performed in a standard hangar with standard equipment. The fully appointed kit comes with all necessary hardware to complete the job.



Quick Element Servicing

The elements are serviced at regular intervals, typically 100 hours. A water based emulsifier is sprayed into the element to break down the oil and then rinsed with water, washing away the oil and the dirt. The element is then allowed to dry, re-oiled and returned to service. Element replacement is typically at 1500 hours.

Key Benefits



Elimination of Compressor/Turbine Blade Erosion

Airborne particles and debris kicked up by the rotor downwash erodes compressor and turbine wheels reducing aerodynamic efficiency. FDC/aerofilter's Inlet Barrier Filter System eliminates erosion completely, maintaining blade profile for the overhaul life of each component.

Lower Operating Temperatures (TOT)

When aerodynamic tolerances are maintained, your engine produces more power with less effort, resulting in lower operating temperatures.

Increased Available Power

When the engine operates at maximum efficiency, you have more power available longer, often times giving new power assurance levels until overhaul.

Decreased Fuel Burn

Additionally, when the engine operates at its maximum possible efficiency fuel burn is decreased. Over the life of the engine, the savings are significant.

Prevents Centrifugal Coating

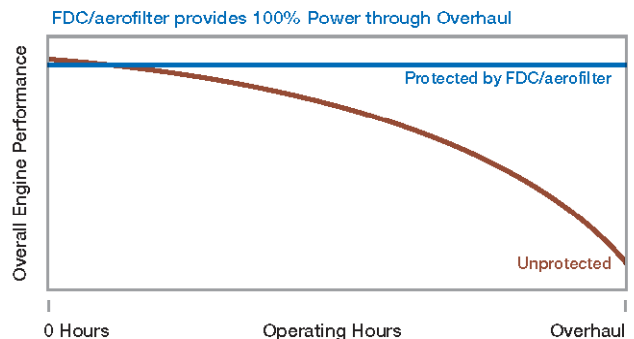
Fine particles that are centrifugally deposited to rotating components eventually build up and cause imbalance, resulting in premature bearing wear, requiring very costly repairs. With FDC/aerofilter on board this concern is no longer a factor.

Decreased Wear in Oil Path/Bearings

Where air and oil meet, abrasive dirt is absorbed into the oil and is circulated throughout the lubrication system. FDC/aerofilter keeps the dirt on the outside of your engine.

Additional Benefits

Because only clean air enters the engine, fuel nozzles, labyrinth seals and air-cooled components stay clean too. Installation of the FDC/aerofilter prevents "ash" compaction on turbine wheels and resulting hotspots, as well as hot corrosion due to ingestion of airborne salt nuclei present in coastal operations.



Model	Part Number	System Weight	Eligible for Installation
S-76 Turbomeca	1076T-1	Total system weight 41 lbs.	S76 C+
	1076T-5	Total system weight 43 lbs.	S76 A+, A++, C

Engine Inlet Barrier Filtration Systems for Pure Air in Any Environment.



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