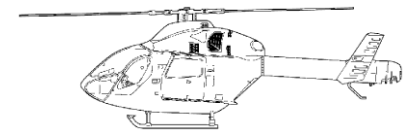


MD 900 Series IBF



Donaldson Inlet Barrier Filter (IBF) System
MD Helicopters MD900/902
(STC and MD Helicopter Factory Option)



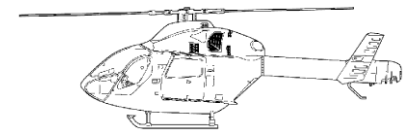
Donaldson.
FILTRATION SOLUTIONS
AEROSPACE & DEFENSE



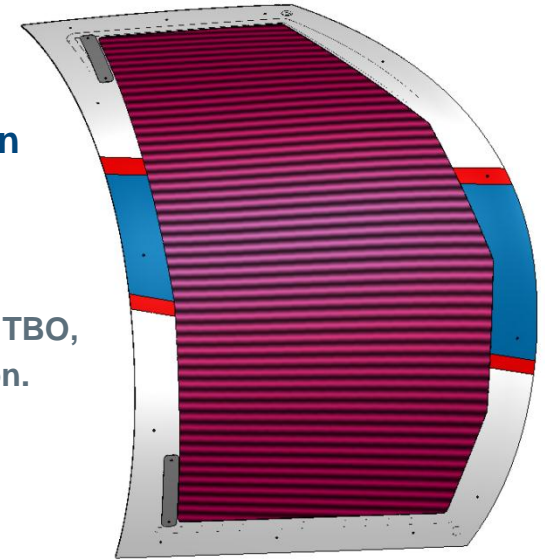
Donaldson.
FILTRATION SOLUTIONS
AEROSPACE & DEFENSE

MD 900 Series IBF

Donaldson IBF Benefits

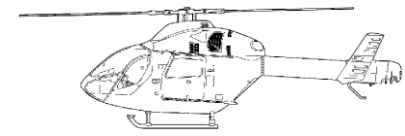


- **Maximum engine debris/FOD protection which allows consistent flight operations and extends engine time on wing. Improved protection over an inertial design and significantly better protection than a FOD screen.**
- **Dual entry pleated barrier filter elements provides improved air flow versus standard inertial separation vortex/swirl tubes typical with EAPS.**
- **Return on Investment (ROI):**
 - Less premature engine removals, meet expected engine TBO, expect engine performance retention after IBF installation.
 - Long-life filter assemblies, 4,500 hour (15 - 300 hour intervals).
 - Reduction in corrosive salt air entering engine.
 - Engine overhaul cost reduction due to elimination of erosion and contamination on all rotating and pneumatic components.
 - Reduced maintenance time with elimination of EAPS bleed air system.



MD 900 Series IBF

Donaldson IBF Benefits

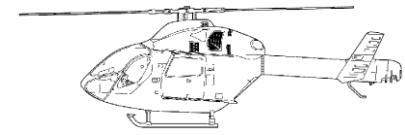


- **Operational Considerations:**

- Improved power margin for high/hot operations and confined landing zones.
- Eliminates current EAPS and Mist Eliminator driven maintenance.
- Reduction in turbine operating temperature results in increases power available and will translate into improved cruise performance.
- Includes use of existing MD900 bypass system and cruise door.
- Certified for flight in falling and blowing snow IAW helicopter manufacturers flight manual requirements.

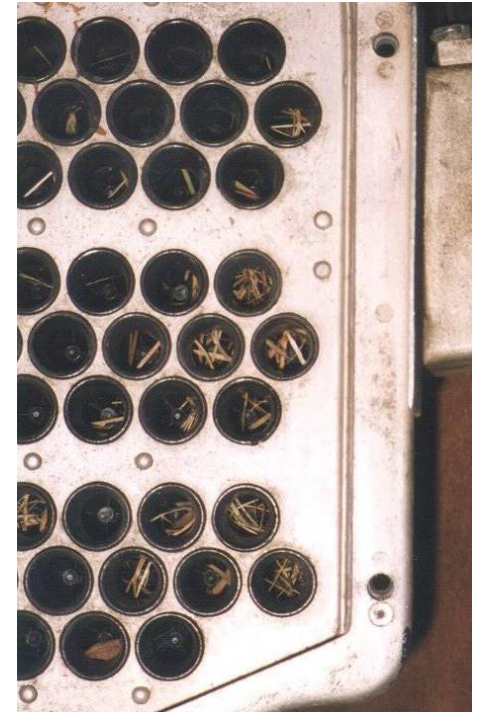


MD 900 Series IBF



Donaldson IBF System Considerations

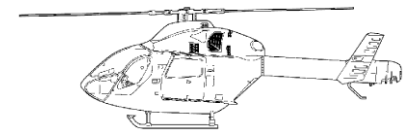
- EAPS utilize traditional inertial particle separation technology, barrier filter uses current technology and state of the art integration.
- Barrier filter does not require the use of engine bleed air as the EAPS does which reduces engine power available.
- Inertial separation vortex/swirl tubes routinely become clogged with straw, leaves and bugs degrading performance, barrier filter is immune to this type debris and operates without degradation.
- Barrier filters have significantly higher separation efficiency than inertial separators. Barrier filter typically >99% capture efficiency on ISO Coarse & Fine dust, inertial separator typically $\leq 96\%$ capture efficiency on ISO Coarse dust and far less on ISO Fine dust.
- Barrier filters are effective regardless of engine power setting, inertial separators only effective when they have adequate engine bleed air typically available above flight idle power setting.
- Significant decrease in fine sand ingestion reduces engine erosion damage, offsite landings in unprepared sites no longer a concern.
- Engine bleed air system maintenance eliminated along with chance of engine stall margin reduction from leaking valves and lines.



(Rear side of MD500 EAPS)



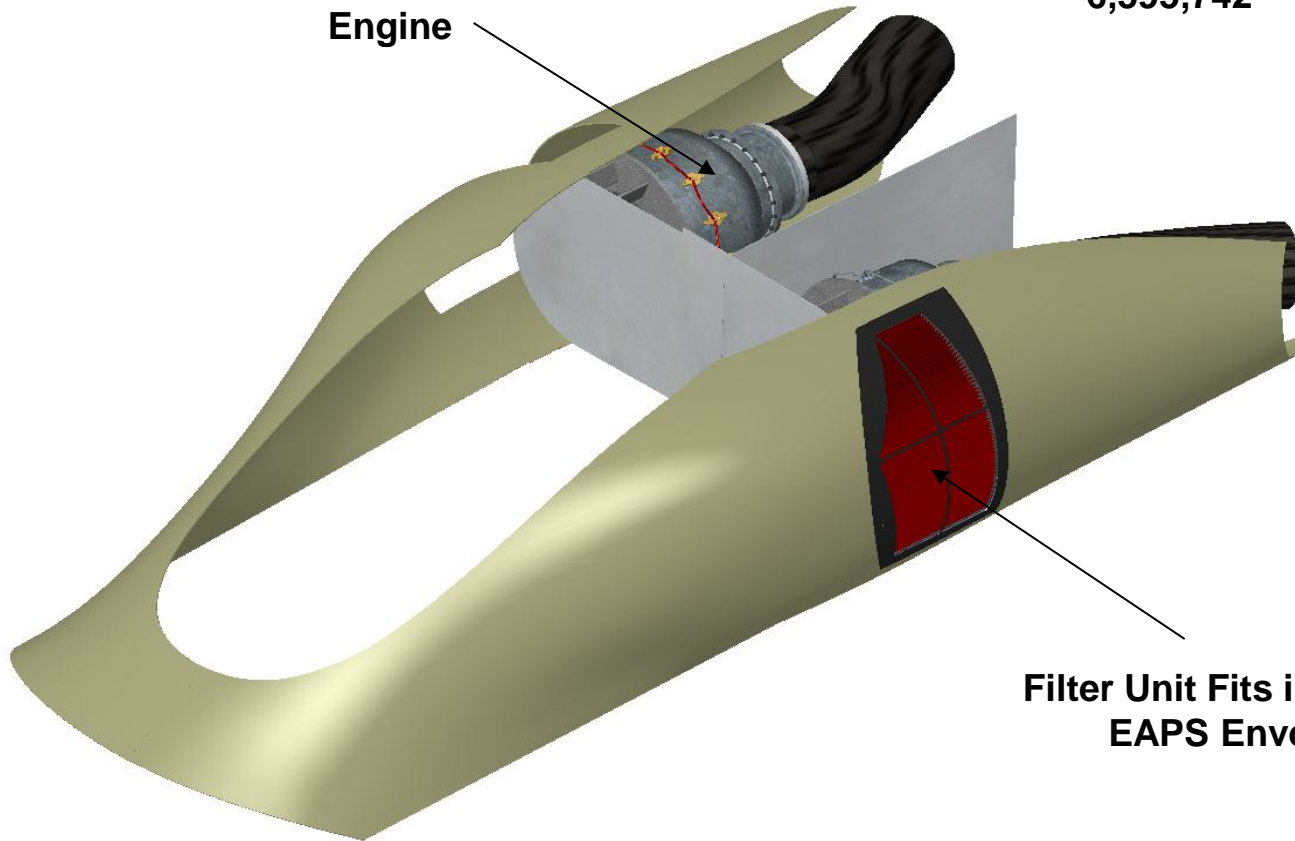
MD 900 Series IBF



Donaldson IBF System Description

PW 206/207
Engine

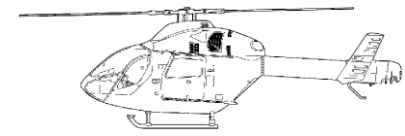
US Patent
6,595,742



Filter Unit Fits in Existing
EAPS Envelope



MD 900 Series IBF

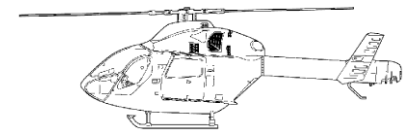


Donaldson IBF System Operators

- MD Helicopters Inc., Arizona
- CALSTAR, California
- Papillon Grand Canyon Helicopters, Arizona
- ADM Corporation, Texas
- Gulf Aviation, Qatar
- Tata Power, India
- Tata Steel, India
- United Aviation, Kuwait
- Vulcan Aviation, Washington



MD 900 Series IBF



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