

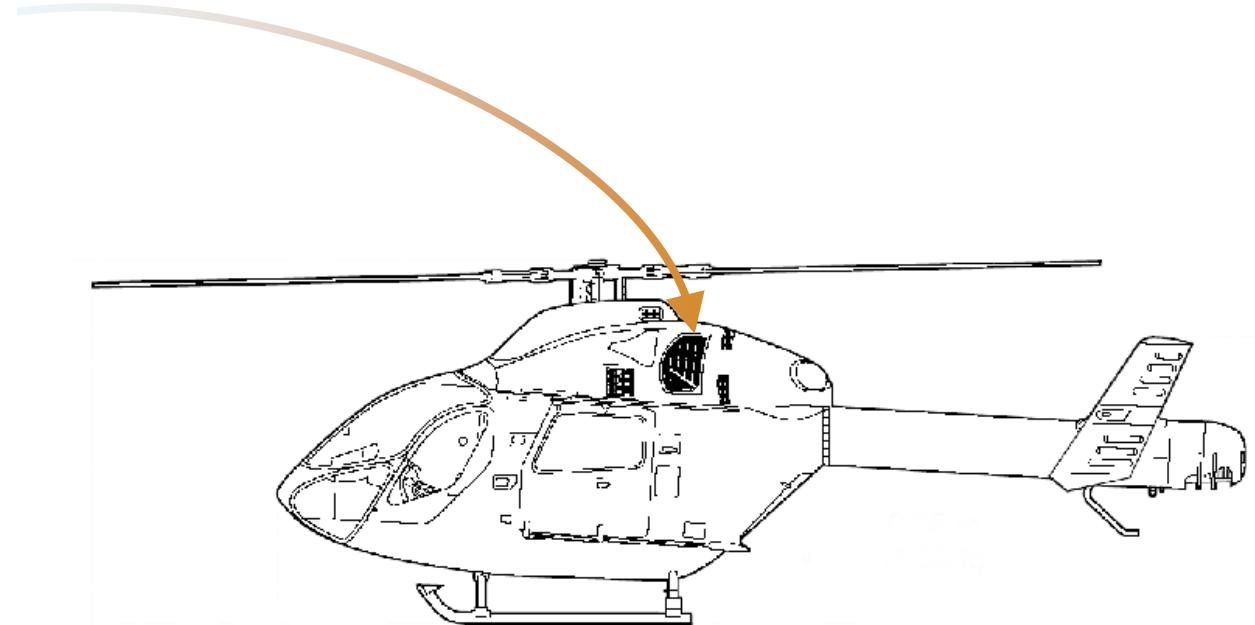
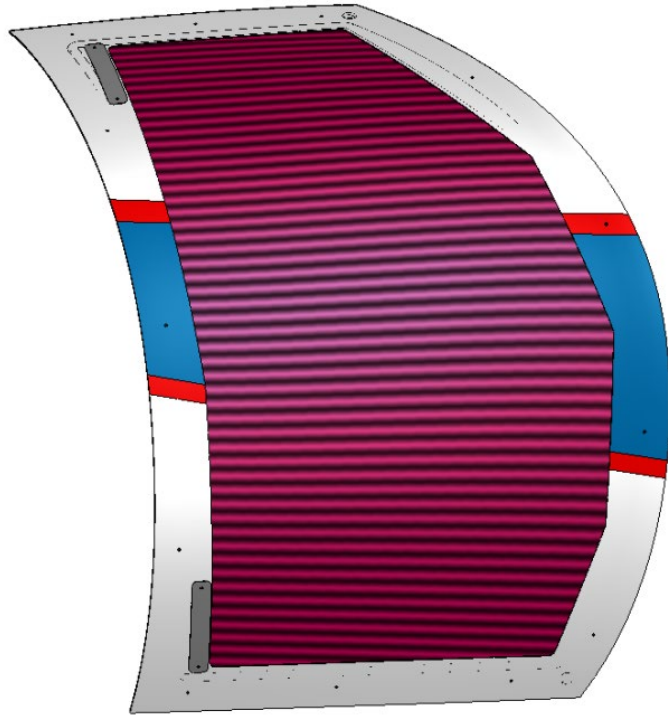
Donaldson MD 900 IBF

August 1, 2020

MD 900/902



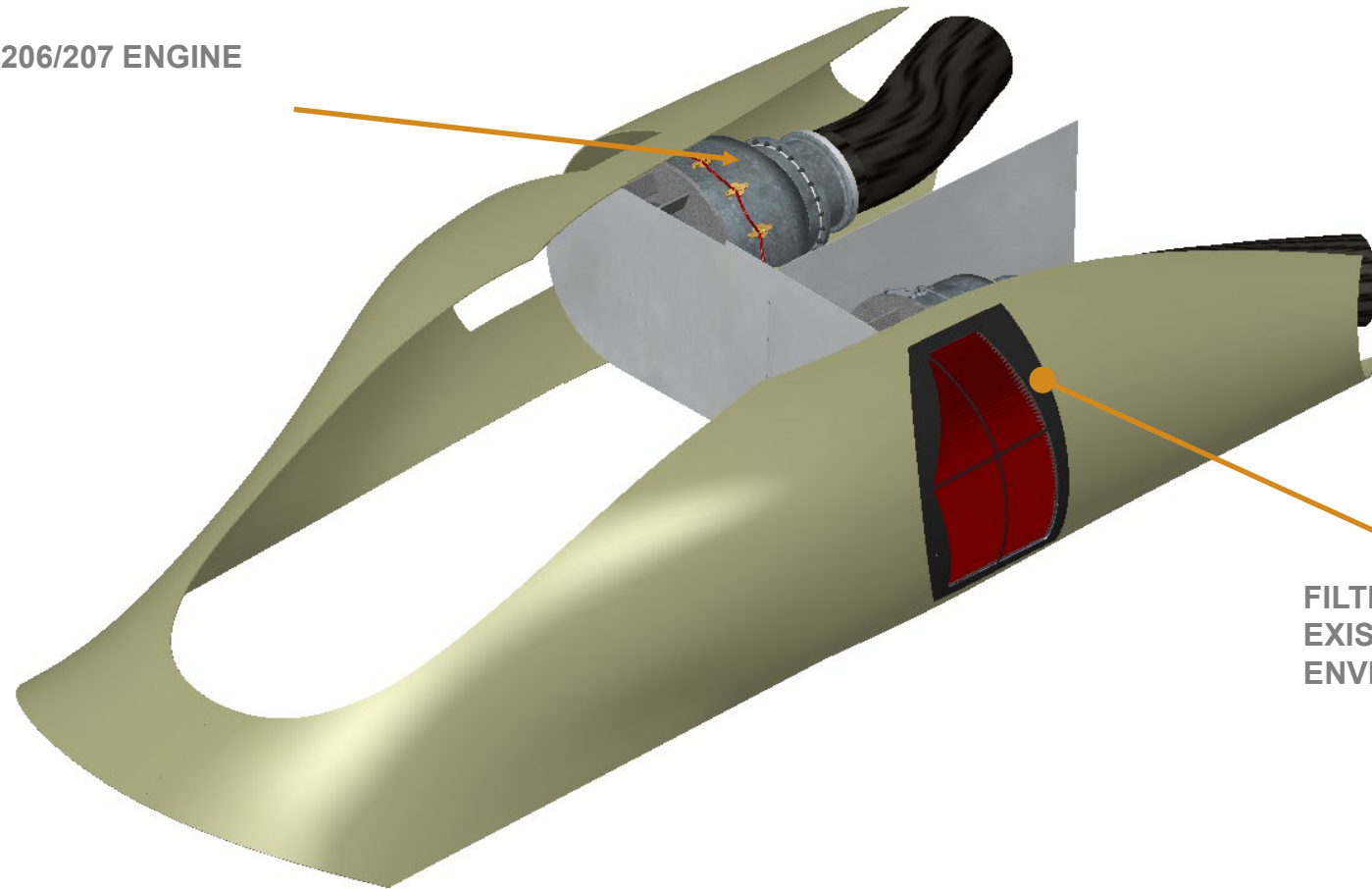
MD 900 IBF SYSTEM DESIGN



US Patent 6,595,742

MD 900 IBF SYSTEM DETAILS

PW 206/207 ENGINE



FILTER UNIT FITS IN
EXISTING EAPS
ENVELOPE

IBF BENEFITS: PERFORMANCE

MAXIMUM ENGINE DEBRIS/FOD PROTECTION

Allows consistent flight operations and extends engine time on wing. Improved protection over an inertial design and significantly better protection than a FOD screen.

IMPROVED AIRFLOW

Dual entry pleated barrier filter element provides improved air flow versus inertial separation vortex/swirl tubes typical with EAPS.



IBF BENEFITS: VALUE

RETURN ON INVESTMENT (ROI)

- Less premature engine removals, meet the expected engine TBO
- Long-life 4,500 flight hour filter assemblies (15 cleanings; 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
- Reduction in corrosive salt air entering the engine
- Reduced maintenance time with elimination of EAPS bleed air system



IBF 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 MD 900 bypass system and cruise door.
- Certified for flight in falling and blowing snow IAW helicopter manufacturer's flight manual requirements.



IBF COMPARATIVE BENEFITS

- Engine Air Particle Separators (EAPS) utilize traditional inertial particle separation technology. Barrier Filters (BF) use current technology and state of the art integration.
- BF does not require the use of engine bleed air. EAPS does require engine bleed air which reduces engine power available.
- Engine bleed air system maintenance is eliminated. Reduced chance of engine stall from leaking valves and lines.
- Inertial separation vortex/swirl tubes routinely become clogged with straw, leaves and bugs degrading performance; Barrier filter immune to this type debris clogging and operates without degradation.



IBF COMPARATIVE BENEFITS

- Barrier Filters (BF) have significantly higher separation efficiency than inertial separators. BF typically >99% capture efficient on ISO Coarse & Fine dust, inertial separator typically <96% capture efficiency on ISO Coarse dust and far less on ISO Fine dust.
- BF are effective regardless of engine power setting; inertial separators (PS) are only effective when they have adequate engine bleed air; PS adequacy typically available above flight idle power setting.
- Significant decrease in fine sand ingestion reduces engine erosion damage from offsite landings/unprepared sites; BF virtually eliminate concern about ramp FOD ingestion.



Thank You

Donaldson Company, Inc.
Aerospace & Defense Group

www.DonaldsonAerospace-Defense.com

North America +1-877-314-9640
aerospace.americas@donaldson.com
Europe +33 1 30866698
aerospace.emea@donaldson.com



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