Eurocopter AS 350 IBF

Donaldson Inlet Barrier Filter (IBF) System
Eurocopter AS 350 (B, BA, B2, B3, B3e, D)
(STC and American Eurocopter, Eurocopter Canada, Eurocopter South Africa Factory Option)
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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.

- Pleated barrier filter element provides improved air flow versus inertial separation vortex/swirl tubes typical with IPS/EAPS.

- Compatible with both Turbomeca Arriel and Honeywell LTS Engine Installations.

- Return on Investment (ROI):
  - Less premature engine removals, meet expected engine TBO.
  - 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 improved plenum access.
  - Common Line Replaceable Units (LRU) for mixed IBF fleets.
  - Bleed air system maintenance eliminated with IBF.
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Donaldson IBF Benefits

- **Operational Considerations:**
  - Improved power margin for high/hot operations and confined landing zones. Filter sized for B3 engine airflow.
  - Engine performance retention after barrier filter installation.
  - Inlet air bypass system backup not available with EAPS for added safety margin.
  - Certified for flight in falling and blowing snow IAW helicopter manufacturers flight manual requirements.
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Donaldson IBF Key Features

- Engine IBF System
- Engine Inlet Cowling
- Modify Cutout Size
- Engine Inlet Interface Assembly (different for LTS 101 vs. Arriel installation, LTS shown)
- Bypass System
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Donaldson IBF Key Features

Donaldson Standard Captive Fastener
(standard nutplate receptacle)
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Donaldson IBF Key Features

Flat Filters and Bypass System

- Pleated Face Filter Provides Large Surface Area for Air Flow
- Bypass Door
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Donaldson IBF Key Features
- Arriel Installation

Canted filter design – efficient in all flight regimes
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Donaldson IBF Key Features
- LTS Installation

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Donaldson IBF Key Features
- LTS Installation
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Donaldson IBF Key Features

Filter Maintenance Aid (FMA) Easily Viewed
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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 <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.
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Donaldson IBF System Cockpit Switch


- Easily viewed and accessed cockpit annunciator/switch for bypass operation.

- LED illuminated, momentary push button (Optional NVIS Yellow Class B compatible).

- “FILTER” - indicator illuminated based on signal from differential pressure sensor, Caution - high pressure drop indication.

- “BYPASS” - illuminates whenever the bypass door is open based on door position switch, Caution – Bypass is open.

- “FILTER” - indicator will also extinguish once door opens and pressure drop has been reduced, redundant indication for pilot.
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Donaldson IBF System
Filter Maintenance Aid (FMA)

- Pre and Post flight indication of filter contamination level, maximum pressure drop.

- Allows flexibility for mission planning with predictable service cycles, particularly in high tempo desert environments.

- Verification of post cleaning effectiveness.

- Provides the capability for “On Condition Maintenance,” between established cleaning intervals, eliminating unnecessary service.

- Measures plenum pressure versus ambient, across the filter system.

- Similar FMA used on other AFS IBFs for the Bell 205A, 206B, 206L-1/3/4, 407, 430, AgustaWestland AW119, AW139, Eurocopter AS350, EC130, MD Helicopters MD500.
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Current Donaldson AS350 IBF Operators

- US Customs and Border Protection – Nationwide
- TriState Care Flight – Arizona
- Guardian Flight – Alaska
- Mountain Life Flight – California
- Air Dynasty – Nepal/Mount Everest
- Council for Geoscience – South Africa
- Aeronautic Solutions – South Africa
- Helicopter Express – Georgia/Nationwide
- Brainerd Helicopters – Florida/Nationwide
- Los Angeles County Sheriff - California
- High Terrain Helicopters – British Columbia
- Mountain Air Helicopters – New Mexico/Nationwide
- South Coast Helicopters – California/Nationwide
- Hillsborough County Sheriff – Florida
- Airborne Energy Solutions – Canada
- TVW Aviation – Australia
- Australian Helicopters – Australia
- World Wind Helicopters – Washington
Install Before Flight™

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We appreciate your business!