

Military Aerospace fan applications

From the earliest days of DAE Systems, the international aerospace industry has provided a major source of extremely diversified business. With applications on all forms of fixed and rotary wing aircraft, missile systems and radar equipment and even space applications.

The Fans offered can be either an existing or a bespoke design, providing a solution that meets the environmental conditions of airborne equipment.

Faced by the most challenging applications and severe operating conditions, the expertise within DAE Systems is a sure guarantee of an optimum solution to any Air Movement problem.

Typical applications in which DAE Systems air moving systems are implemented include:



Avionics & Electronics cooling – used to provide localised cooling to avionic racks and electronics cabinets. With the ever increasing electronic equipment within electrical/electronic installations the heat load increases, electronics are reaching their upper operating temperatures. Forced air cooling and spot cooling is provided within and without individual electronic equipments. This could be in the pressurised cabin or in an unpressurised equipment pod.

Radar & Countermeasures systems – Fans and motors used to provide cooling and high speed/high accuracy movement of gimbals for radar and countermeasures systems designed and manufactured to customer specification.



Environmental Control Systems – High flow, high pressure fans providing additional airflow to aircraft ECS for specific requirements. Fans can be provided with integral non return valves, and speed controllers.

Fan Heaters – DAE Systems can offer Fan Heaters where a source of warm air is required. These units inherently combine a fan with a fixed resistance element that provides the heat source. Used with a controller and safety thermostats these units can provide heating up to 3kw.

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Used for applications such as, reconnaissance pods, camera de-mist and de-ice, heating of equipment bays on UAV's



Specialist Fans –

extreme temperature, fire vibration, conditions, wherever additional cooling is required DAE Systems can provide a bespoke solution.



used in conditions, vibration, gun NBC

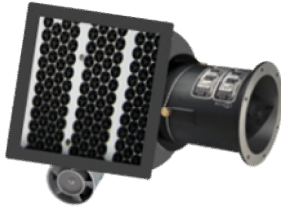


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Helicopter applications – fans designed and adapted specifically for helicopter applications such as: Gearbox Oil Cooling, Engine Oil Cooling, Winch motor fans, Window de mist/de ice, Sand scavenge fans providing air movement to engine air cleaner systems and also equipment bay scavenge.



Fan Types

For all applications the fans are of Axial, Centrifugal or Mixed Flow configuration, where the specified duty point will dictate the type of fan geometry chosen. Fan selection is always going to be a trade off between Performance, Size, Weight, Noise, Efficiency, Cost, and Reliability, but a simple generalisation as follows:



Axial Fans for: **Flow**, best power to weight/size ratio
Sizes: 60mm to 355mm diameter
Airflow: 18 l/s to 3300 l/s

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Centrifugal Fans for: **Pressure**, variable resistance applications, robustness
Sizes: 100mm to 250mm diameter scroll
Pressure: 500Pa to 10 kPa



Mixed Flow Fans for: **Combining Flow and Pressure**, Low noise, versatile, variable resistance, non stalling characteristic
Airflow: 850 l/s
Pressure: 5.25 kPa

For most Aerospace applications the fan will be driven by an electric motor, however some helicopter applications utilises a direct drive from either the engine or gearbox via an output shaft. DAE Systems can provide fans suitable to be driven by the following power supplies:

- AC supply 400Hz, 60Hz, 50Hz
- AC supply Variable frequency
- DC supply 24 - 28V – Brushed and Brushless motors
- DC supply 270V – Brushless
- Hydraulic Drive
- Mechanical Drive (direct from gearbox or engine)

For further information on choosing the right fan for your requirement, please refer to our website, or contact us.

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