



## ENGINES

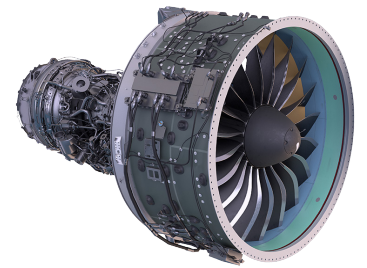
### VAST EXPERIENCE

Moog supplies engine controls for over 100 engines powering more than 800 different aircraft types the world over. Our critical controls are integrated into the latest military and commercial aero engines and APUs including the F135, PW1100G, Trent XWB Engine and CF6 Engine. Our expertise in addressing challenging engine controls requirements makes us your low risk partner to develop the most challenging engine controls solutions.

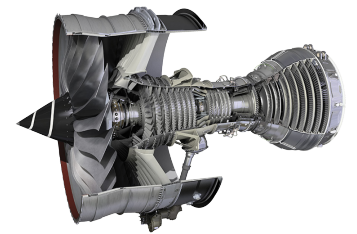
### UNMATCHED SOLUTIONS

Moog started supplying critical controls for military and commercial aero engines and APUs in 1980. With 40 years of experience, we are uniquely qualified to design and develop high quality controls for the extreme temperature, high vibration, and low life cycle cost required for today's engine controls. With this experience and our vast product portfolio, Moog is the only choice for the next generation of engine controls development.

Our engine controls portfolio focuses on position and flow control applications. Our products include Single and Two-Stage Electrohydraulic Servovalves (EHSVs), Fuelhydraulic Servoactuators, and Servo Manifold Assemblies. These components are integrated into wide range of mission and safety critical applications including fuel metering, bypass, guide vane, turbine clearance and nozzle controls.



Pratt & Whitney PW1100G



Rolls Royce Trent XWB Engine



GE F414 Engine



Auxilliary Power Unit

# MILITARY AND COMMERCIAL ENGINE CONTROLS

## MILITARY ENGINES

For military engines, Moog's engine nozzle vectoring and variable geometry experience has delivered unparalleled capability, most notably on the F414, F119 and F135 engines.

Moog also supplies the full suite of fuel hydraulic three bearing swivel duct and convergent nozzle actuation for the F-35B aircraft and engine.

- 5000 psi VEN servovalve with shutoff feature and EHSV for Variable Exhaust Nozzle System
- Fan and Compressor Variable Geometry Controls
- Next generation, variable cycle engine servo-valves, actuators and manifolds for use in high pressure, high vibration, high temperature environments.

## COMMERCIAL ENGINE CONTROLS

For high bypass commercial engines Moog provides the fuel metering, variable bypass control, Low Pressure and High Pressure turbine clearance control, and variable stator vane control servovalves.

- 767/A330 CF6 engine fuel management servovalves
- A320 NEO PW1100G Overspeed/Thrust Control Malfunction and Active Clearance Control servovalves
- A350 Trent XWB Variable Stator Vane Actuator and Thrust Control Malfunction servovalves
- A320/737 APU load compressors light weight Inlet Guide Vane Actuators with integrated two-stage servovalve and LVDT
- SaM146 Actuation Control Unit (ACU) consolidates 3 servovalves to power engine actuation functions

## AIRCRAFT CONTROL COMPONENTS FACILITIES

For inquiries about Aircraft Control Components, please contact [ACC@moog.com](mailto:ACC@moog.com) to connect with one of our ACC specialists.

### EAST AURORA PRODUCT DEVELOPMENT AND SUPPORT CENTER

Moog Aircraft Group  
East Aurora Operations

East Aurora, New York 14052  
USA

### TEWKESBURY PRODUCT DEVELOPMENT AND SUPPORT CENTER

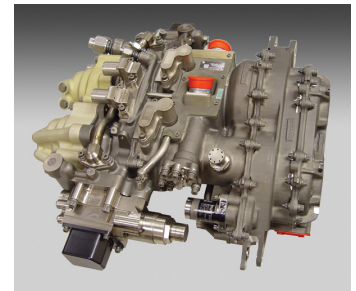
Moog Aircraft Group  
Tewkesbury Operations

Ashchurch, Tewkesbury,  
Gloucestershire UK

### BAGUIO GLOBAL MANUFACTURING CENTER

Moog Aircraft Group  
Baguio Operations

Baguio City, 2600  
Philippines



F-35B 3 Bearing Swivel Module



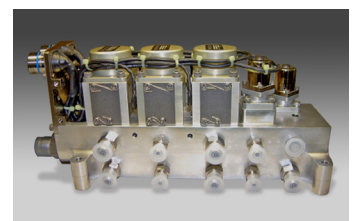
F414 Variable Exhaust Nozzle Valves



CF6 Fuel Management Valves



Guide Vane Actuators



SaM146 Actuation Control Unit

**MOOG**  
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