



NACELLE ACTUATION SYSTEMS

HIGHLY RELIABLE, SAFETY CERTIFIED

Business, regional and long-range commercial applications

Collins Aerospace is at the forefront of technology development for the design, development and certification of complete integrated thrust reverser actuation systems (TRAS) as well as powered and unpowered door opening systems (P-DOS) to the latest certification.

Our continuing investment in research and development enables us to offer customers a wide portfolio of certified in-service products. These range from 3,000 and 5,000 psi hydraulic systems to 230 VAC variable-frequency electrical TRAS on business jet, regional and long-range commercial aircraft applications.

In addition to our extensive TRAS experience, we also have vast product experience in nacelle door opening

systems – both self-contained electro-hydraulically operated, as well as simple hydraulic actuators capable of being operated by ground-supplied power sources.

Our capabilities are underpinned with extensive technical experience to support end-to-end system integration, development and certification, from complex simulation and modeling to fully integrated system test rigs.

Thanks to extensive investment in research and development, Collins Aerospace offers proven in-service nacelle actuation system solutions featuring the latest technologies in both system and product designs as well as advanced manufacturing means and methods.

We have more than 30 years' experience in the production and in-service support of TRAS, accumulating over 600 million flight hours. Our customers can count on highly reliable products certified to the latest system safety requirements.

Over
600
million
flight hours



An extensive array to meet your needs

Nacelle actuation system and power door opening systems capabilities include:

- Proven system integration and test capability
- Electric/hybrid solutions
- 3,000 psi and ultra-low flow 5,000 psi hydraulic solutions
- Minimum weight system architectures and product solutions
- Low manufacturing cost



3,000 psi hydraulic TRAS



5,000 psi hydraulic TRAS



Electro-mechanical TRAS



P-DOS power pack with piston pump



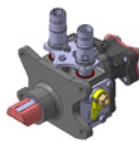
P-DOS C-duct actuator, including track lock



Fan cowl actuator



Switch control box



Track lock



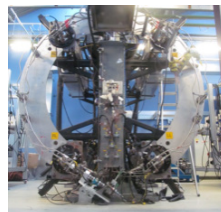
P-DOS test rig



P-DOS test rig



TRAS test rig



TRAS test rig



A350 TRAS test rig



A350 TRAS actuator test rig

OTHER ACTUATION SYSTEMS CAPABILITIES

Primary – fixed wing

- Elevator
- Aileron
- Rudder
- Spoiler
- Flaperon
- Butterfly
- In-line poppet
- Pressure regulating
- Engine bleed

Primary – rotorcraft

- Main rotor actuator
- Tail rotor actuator

THSA/HSTA

- Trimmable horizontal stabilizer actuator

High lift

- Power drive unit
- Wing tip brake
- Flap and slat actuators
- Transmission shafts
- Gearbox
- Electronics and lever

Composites

- Transmission shafts
- Fuel pipes
- Fuel and hydraulic isolators
- Tie rods and struts

Utility actuation

- Weapon bay door drive system
- Wing fold/rotate
- Refuel probe actuator
- Canopy actuator

Missile actuation

- Control actuation system
- Thrust vector actuator

Aftermarket

- 24/7/365 customer support



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