

Linear Servo Hydraulic Actuators Test Bench

Linear Servo Hydraulic Actuator test bench is designed and manufactured for testing and evaluation of various types of linear servo hydraulic actuators used in aircrafts. These actuators are used to adjust the aircraft wings' angle.

Test bench provides two separate hydraulic supplies for the two actuators' hydraulic circuits, and one high pressure line for proof pressure tests.

A Complicated load mechanism is designed and implemented in the test bench using huge springs and relevant links to provide the resisting force for testing actuators. All the actuators' parameters (such as Inlet & Outlet Pressures, Oil Flows, Actuator position & speed, Command current and voltages, Actuator load) are evaluated by related transducers during test period. All test data are available on the data acquisition system, so the operator can simulate all the flying condition.

Relevant actuator tests are implemented in the data acquisition system and related reports are produced due to the corresponding tests.



Features

Electrical Supply	AC, 3 Ph, 380 V, 50 Hz, 125 A
Hydraulic Power	2 × 18.5 kW, 3200 psi, 10 gpm
High Pressure Hydraulic Line	2.2 kW, 4500 psi, 1.5 gpm
Cooling System Requirement	Cold water @ 25 gpm, 20 °C
Operating Fluid	MIL-PRF-5606
Filtration	5 μ on All three lines

Instrumentation

Fuel Inlet Pressure	2 × 0 ~ 3500 psi with accuracy of ±0.1 % FS
Fuel Outlet Pressure	2 × 0 ~ 400 psi with accuracy of ±0.1 % FS
Fuel Flow	2 × 0 ~ 15 gpm with accuracy of ±0.5 % FS
Leakage Flow	0 ~ 5 gpm with accuracy of ±0.5 % FS
Actuator Command	3 × ±150 mA with accuracy of ±0.1 % FS
Actuator Command Types	Steady, Sinusoidal, Ramp, Step
Actuator Displacement	100 mm with accuracy of ±0.1 % FS
Actuator Speed	0 ~ 150 mm/s with accuracy of ±1 % FS
Actuator Force	0 ~ 20,000 kg with accuracy of ±0.5 % FS
Temperature	0 ~ 120 °C with accuracy of ±1 % FS
Data Acquisition	DAQ card, 48 AI channels, 1 MS/s
Dimensions	Power Unit: 2.2 m Width × 1.7 m Depth × 2.1 m Height Test Bench: 4.4 m Width × 3.6 m Depth × 2.1 m Height

Linear Hydro-Mechanical Actuators Test Bench

Linear hydro-mechanical actuators test bench is designed and manufactured for testing and evaluation of various types of linear actuators used in aircrafts. These actuators are used to adjust the aircraft wings' angle. Test bench provides two separate hydraulic supplies for the two actuators' hydraulic circuits. An adjustable force system is implemented in the test bench using five huge springs and relevant links to provide the means of load vs. linear displacement of the corresponding actuators. All the actuators' parameters (such as Inlet & Outlet Pressures, Oil Flows, Actuator position & speed, Command handle displacement, Actuator & Command handle forces) are evaluated by related transducers during test period. These data is available on the data acquisition system, so the operator can simulate all the flying conditions on the ground and perform any test procedure on the component to satisfy its proper operation during flight. Relevant actuator tests are implemented in the data acquisition system and related reports are produced due to the corresponding tests.



Features

Electrical Supply	AC, 3 Ph, 380 V, 50 Hz, 100 A
Hydraulic Power	2 × 7.5 kW, 210 Bar, 16 lpm
High Pressure Hydraulic Line	2.2 kW, 315 Bar, 1.5 lpm
Chiller Cooling Capacity	5 ton
Operating Fluid	MIL-PRF-5606
Filtration	MIL-PRF-5606
Fuel Inlet Pressure	10 μ on All three lines
Fuel Outlet Pressure	2 × 0 ~ 250 Bar with accuracy of ± 0.5 % FS
Fuel Flow	2 × 0 ~ 25 Bar with accuracy of ± 0.5 % FS
Leakage Flow	2 × 0 ~ 20 lpm with accuracy of ± 1 % FS
Command Handle Displacement	0 ~ 1000 cc/min with accuracy of ± 0.5 % FS
Actuator Displacement	30 mm with accuracy of ± 0.2 % FS
Actuator Speed	150 mm with accuracy of ± 0.2 % FS
Command Handle Force	0 ~ 150 mm/s with accuracy of ± 1 % FS
Actuator Force	0 ~ 100 kg with accuracy of ± 0.5 % FS
Oil Temperature	0 ~ 7000 kg with accuracy of ± 0.5 % FS
Oil Temperature	5 ~ 80 °C with accuracy of ± 1 % FS
Data Acquisition	DAQ card, 16 AI channels, 250 kS/s Test Bench: 4.4 m Width × 3.6 m Depth × 2.1 m Height