



The servo actuator test bench mainly meets the test requirements of static and dynamic characteristics of various servo actuators of C919 aircraft's main flight control system. The test objects include aileron actuator, elevator actuator, rudder actuator and multifunctional spoiler actuator, etc. And the test items include lap resistance test, insulation resistance test, polarity test, hydraulic oil leakage test, circulation and hydraulic oil leakage test, mode selection valve test, inlet check valve test, return pressure reducing valve test, stroke test, LVDT gain test, EHSV LVT test and zero offset test, threshold test, hysteresis test, no-load speed test, pressure sensor test, actuator gap test, etc.

The functions of the test bench:

- The system has the function of measuring parameters, including pressure, flow, linear displacement, angular displacement, force, speed, voltage, current, temperature, etc., and the measured parameters can be collected by the computer can be displayed on the computer interface;
- The system has manual, semi-automatic and automatic test function;

- The test process and parameter settings can be freely configured on the software configuration interface. During the test, you can select all or part of the test process. After the test is complete, the test data can be automatically recorded in the test report.
- The test bench has the function of driving the actuator under test normally, including the cable joint and pipeline joint connected with the actuator under test;
- The test bench has the loading function of the actuator under test. And the mode is divided into active loading and passive loading, including fast connection/disconnect tooling with the tested actuator;
- The computer data acquisition system can carry out data analysis and processing, data display and playback, drawing graphs, generating tables, data import and export, data retrieval, automatic generation of test reports, and analysis of test unqualified causes.

Basic indicators:

- Test system medium: phosphate ester flame retardant hydraulic oil, SAE AS1241, Type IV Class 1 fluid;
- Loading system medium: No.15 aviation red oil;
- Oil pollution level:
 - Purple oil oil pollution level: better than SAE AS4059 Class 5;
 - Red oil oil pollution level: better than SAE AS4059 Class 6;
- Working liquid filtration accuracy: 2um, using in/out multistage filtration, to ensure filtration quality and fast;
- Oil supply pressure can be continuously adjustable, and oil return can be pressure loading;
- With pressure, flow, linear displacement, angular displacement, force, speed, voltage, current, temperature and other data acquisition and processing capabilities;
- Maximum output stroke;
- Speed detection;
- Sine wave, triangle wave input signal frequency;
- Maximum output force;
- Signal conditioning performance indicators:

Linearity: 0.05%;

Operating temperature: 0°C~50°C.