FUEL COMPONENT

Fuel Actuator Test Bench

Fuel Actuator test bench is designed and manufactured for testing and evaluation for various types of linear fuel actuators used in aircrafts. These actuators are mainly used for engines' adjustments. Test bench provides three separate hydraulic supplies, two of them are for actuators' hydraulic circuits and the third one specifically designed to simulate actuators endurance test condition. All the actuators' parameters (such as Inlet & Outlet Pressures and Temperatures, Actuator Position and Resolver Angle) are evaluated by related transducers during test period. These data are available on the data acquisition system. 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, 40 A
Hydraulic Power	2 × 1.5 kW, 200 Bar, 5 lpm 1 x 3 kW, 200 Bar, 6 lpm
Operating Fluid	MIL 7024 Type II
Filtration	10 µ on All three lines – 5 µ on Cooling Line
Fuel Inlet Pressure	3 × 0 ~ 100 Bar with accuracy of ± 0.1 % FS
Actuator Position	0 ~ 40 mm with accuracy of ± 0.1 % FS
Resolver Angle	0 ~ 360° with accuracy of ± 0.05°
Oil Temperature	5 ~ 80 °C with accuracy of ± 1 % FS
Data Acquisition	Siemens Simatic S7-1200, 16 AI channels
Dimensions	2.1 m Width × 1.2 m Depth × 1.8 m Height

FUEL COMPONENT

Servo Fuel Injections Test Bench

Servo fuel injector test bench is designed and manufactured for testing and evaluating of various piston engine fuel injectors of commercial aircrafts and helicopters. These injectors are usually used in light weight, training aircrafts. All the related components' characteristics (such as fuel pressures, simulated air pressure and fuel flow) are provided by proper tools and evaluated by related transducers. 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 fuel injector tests are implemented in the data acquisition system and related reports are produced due to the corresponding tests. Explosion proof protection have been implemented on this device, so that the operator can perform the injector calibration by the calibrating fluid of Naphtha or the aircraft alternatively.

Features

Electrical Supply	AC, 3 Ph, 380 V, 50 Hz, 10 A
Compressed Air Supply	5 Bar
Calibrating Fluid	Naphtha
Filtration	10 µ on supply line 25 µ on return line
Fuel Inlet Pressure	Boost and Normal fuel supply conditions 0 ~ 87 psi with accuracy of ± 0.2 % FS
Fuel Flow	0 ~ 161 pph with accuracy of ± 1 % Reading
Low Range Differential Air Pressure	-9 ~ 30 in H2O with accuracy of ± 0.15 % FS
High Range Differential Air Pressure	-9 ~ 60 in H2O with accuracy of ± 0.15 % FS
Differential Fuel Pressure	-100 ~ 100 in Fuel with accuracy of ± 0.15 % FS
Differential Absolute Air Pressure	-9 ~ 30 in Hg with accuracy of ± 0.15 % FS
Data Acquisition	DAQ card, 16 AI channels, 250 kS/s
Dimensions	2.2 m Width × 1 m Depth × 2.2 m Height

FUEL COMPONENT

Fuel Control Unit Tester

Fuel Control Unit Tester is designed and manufactured to perform functional tests on Fuel Control Units. The system consists of four separate units: Mounting Unit, Hydraulic Unit, Data Acquisition Unit and Drive Unit. The Tester has two distinct circuits for oil and fuel and employs two centrifugal boost pumps to deliver required fuel and oil flow. A pneumatic circuit is also integrated into the tester to simulate air condition of the compressor discharge pressure (CDP). A high speed controllable drive also provides the required rotational speed and torque for the FCU pump.

Features	
Drives Power	3 kW & 11 kW
Drives Rotational Speed	12000 rpm & 5000 rpm
Fuel	**MIL-C-7024 TYPE II**
Fuel Boost Flow	8000 pph
Fuel Boost Pressure	60 psi
Fuel Flowmeter Range	4500 pph (Accuracy 0.5% FS)
Fuel Pressure Sensor Range	0-1500 psi (Accuracy 0.5% FS)
Oil	**T15 Hydraulic Oil**
Oil Boost Flow	**10 lit/min**
Oil Boost Pressure	4 bar
Oil Flowmeter Range	0.2-2 lit/min (Accuracy 0.5% FS)
Oil Pressure Sensor Range	0-16 bar (Accuracy 0.5% FS)
Air Regulated Pressure	0-8 bar
Data Acquisition	**16 Analog Channels, 16 Bit, 250 kS/s**

FUEL COMPONENT

Nozzle Manifold Test Bench

Testing of a series of nozzles in a manifold assembly is done by nozzle manifold test bench. Inspecting the uniformity of spraying a series of nozzles in a manifold combination or a half manifold version is done using this test bench.

Features	
Operating Fluid	MIL-C-7024 TYPE II
Electrical Supply	AC, 3 Ph, 380 V, 50 Hz, 30 A
Hydraulic Power	7.5 kW, 1500 psi, 4200 pph
Uniformity system	12 cells
Working Fluid Pressure Range	0 to 1000 psig
Working Fluid Flow Range	0 to 4000 pph
Working Fluid Temperature Range	0 t0 80 °C
Pressure Transducer Accuracy	±0.5 % FS
Flow Transducer Accuracy	±0.1 % FS
Working Fluid Temperature Accuracy	±1 % FS
Filtration	10 µ
Cooling System Requirement	Cold water @ 10 gpm, 20 °C
Data Acquisition	Delta PLC
Dimensions	1.8 m Width × 1.4 m Depth × 1.9 m Height

FUEL COMPONENT

Air Blast & High Pressure Spray Nozzle Tester

The atomization verification system is designed to achieve the qualitative and quantitative atomization characteristics of fuel injection. Qualitative data included the spray quality which is possible to view through the transparent atomization chamber and also may detect with camera. Quantitative data included in the flow rate, pressure temperature, spray angle and spray pattern.

Features	
Operating Fluid	MIL-C-7024 TYPE II
Pattern evaluation system	Six 60-degree Section for all 360-degree atomization
Working Pressure Limit	0 to 700 psig
First Level pressure Transducer Accuracy	±0.5 % FS
Angle pressure Gauge Accuracy of both Path	5 psi
Spray angle Evaluation system	Consist of Mechanical and Optical System
Two-stage Filtration	3 µ
Flow Meter	
Functional Limit	0 to 1300 PPH
Accuracy	±0.3 %FS
Thermometer	
Functional Limit	0 to 70°C
Accuracy	±0.5 %FS
It is Capable of Testing 10 Different Types of Fuel Nozzles such as:	
TAY 650-15 Engine	CF6 Series Engine
GTCP36-150 Engine	LF507/ALF502 Series Engine
JT8D Series engine	PW100 Series Engine