

# NEOMETRIX

## TEST EQUIPMENT FOR PUMP AND FUEL COOLER

### About

The purpose of Integrated Test Rig is to assess performance of Fuel Cooled Oil Cooler (FCOC), HP Pump & Oil Pump prior to fitment on Aero Engine. The design of rig is such that it can cater to individual testing of individual LRU or integrated testing of all the LRU's installed together (in combination). The pumps under test shall be mounted directly on the high-speed electric motor flange through adapter quill shaft assembly. Variable speed drives shall be provided for all the pumps under testing. The rig shall cater for real time monitoring and recording of performance parameters.



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## Technical Details

S.No.	UUT	FLUID TYPE	INLET PRESSURE (bar-g)	FLOW RATE OF PUMP (lpm)	OUTLET PRESSURE (bar-g)	MAX SPEED (rpm)
1	LP PUMP	Aero Engine	2±0.1	70 (RATED) 90 (MAX)	4.5 (RATED) 10 (MAX)	8000 (RATED) 12000 (MAX)
2	HP PUMP	Aero Engine	2±0.1	70 (RATED) 90 (MAX)	75 (RATED) 90 (MAX)	8000 (RATED) 12000 (MAX)
3	OIL PUMP	AVIATION TURBINE OIL (OX-27)	0.3±0.05	17.5 (RATED) 20 (MAX)	5 (RATED) 20 (MAX)	10500 (RATED) 15000 (MAX)
4	FCOC	OIL: OX-27 FUEL: ATF JET-A1	OIL: 4.5 FUEL: 4.5	OIL: 16 (RATED) FUEL: 45 (RATED)		



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## KEY FEATURES

Key features of this Rig are as follows: -

1. It has separate power packs for both the fluids i.e. ATF Power pack for ATF Fluid, OX Power Pack for OX-27 Oil.
2. This Rig is designed for high temperature Application. It works on 200 deg. Celsius.
3. Two Dedicated heating systems have been integrated with this Rig to raise the temperature of OX-27 Oil.
4. In both Power Packs insulated tanks are being used, which is good for safe operation and safety of operator.
5. This rig is designed in such a way, that it's OX power pack is in its left side, ATF Power pack is in right Side and test bed is in Centre.
6. A big Test bed has been provided for smooth testing of UUT's.
7. All piping is being insulated for safe operation and maintenance.
8. It comprises with DAQ System.
9. This rig can test several components at a time, together or separately.



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## Application

All the UUT's are mounted on HTFE-25 Engine after successful performance testing of those. Application of this Rig is as follows: -

1. One of its applications is to test LP Pump of HTFE-25. It is designed for functional testing of LP Pump.
  - a. Free Flow Test
  - b. Load Test
2. It is used to test HP Pump of HTFE-25. It is designed for functional testing of HP Pump.
  - a. Free Flow Test
  - b. Load Test
3. It is used to test Oil Pump of HTFE-25. It is designed for functional testing of Oil Pump.
4. It is used to test FCOC of AIRCRAFT.

