Generator Test Stand

>LMP250<

Drive unit and
hydraulic power unit

Control console

Measurement cabinet

Switch cabinet

Load system

The function of a generator test stand is testing the generators for aircraft like IDG, VSCF, CSD, VFSG, ASG, VFG, APU generators, AC/generators, DC/generators etc. in accordance with their CMM.

For these tests the generators are demounted from the aircraft and adapted to the test stand. Depending on the UUT, the nominal power of such generators are 7kVA to 250kVA, speeds are up to 30,000rpm.

- The test stand acquires and records measurement data for voltage, current, frequency, power, rotational speed, vibration, pressure, temperature, flow, PMG, excitation, solenoid, sensor technology (UUT), servo valve, CT, magnetic trim, etc.
- In order to fulfil UUT test requirements the following features are provided: open and closed hydraulic circuits, lubrication ports, scavenge connections and return connections as well as cooling of the UUT.
- Tests can be carried out manually or automatically. The test stand is operated by a control console which is located in a separate control room.

RANGE OF APPLICATION

> Air- and oil-cooled AC generators, VSCF, CSD, IDG, VFSG, ASG, VFG and APU generators

Power: up to 250kVA

Nominal voltage: 200V to 408V

Nominal frequency: between 370Hz and 3kHz

Rotational speed: up to 30,000rpm

GENERAL INFORMATION

> The test stand consists of a drive unit with hydraulic power unit, a control console, switching and measuring cabinets as well as an ohmic, inductive, capacitive and DC-load system

> The generators' drive (dependent on rotational speed) is ensured by two independent high-performance engines. No gearbox is necessary!

> Quick release latches are fitted to enable easy, quick and secure mounting of UUTs

> A universal voltage regulator (instead of a test GCU) is available

> The provided heater enables heating of test medium up to a max. of 150°C

> Delta P - measuring and control circuit to simulate contamination of filters in the UUT

> Patch filters are fitted in the lubricating oil circuit of the UUT

> A wide range of accessories e.g. mechanical adapters, test hoses and cables complete this test equipment

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TECHNICAL DATA

> Hydraulic supply:

Main reservoir:	Contents appr. 120l (31.7USgal)
Medium:	MOBIL JET OIL II
Flow:	max. 85lpm (22.5USgpm)
Temperature range:	max. 150°C (302°F) (supply line) max. 170°C (338°F) (return)
Pressure:	max. 27bar (391.6psi)
Electrical heater:	28kW
Filter (supply line):	10 micron
Filter (return):	20 micron
Test filter (return):	Paper filter element to evaluate the UUT
Circuit:	open / closed

> Scavenge:

Flow:	appr. 100lpm (26.4USgpm)
Filter:	20 micron

> Drive motor 1:

Rated Power:	332kW at 14,000rpm
Max. Power:	470kW at 14,000rpm
Rotational speed:	max. 16,000rpm

> Drive motor 2:

Rated Power:	165kW at 23,000rpm
Max. Power:	248kW at 23,000rpm
Rotational speed:	max. 30,000rpm

> Cooling UUT - air:

Flow:	approx. 1,000m³/h (35,315ft³/h)

> PMG load:

AC load is adjustable in steps (<0.05A at 80V)
DC load is continuously variable up to 50ADC

> AC load:

Voltage:	3 x 200V / 3 x 400V
Frequency:	370Hz to 3kHz (up to 30kVA) 370Hz to 1kHz (>30kVA)
Power:	288kW, 288kVAr, total 407kVA 50% overload for 5min 100% overload for 10sec

> Closed cooling circuit (for drive motors and frequency converters):

Flow:	approx. 70lpm (18.5USgpm)
Pressure:	3.5bar (50.8psi)
Power:	1.1kW
Antifreeze:	Maintain FRICOFIN G12 PLUS

> Infrastructural requirements:

Electrical supply:

Mains connection:	3/N/PE AC 50Hz 400V
Nominal current:	315A to 630A (depending on version)

If other supplies are necessary, it is possible to use a transformer

Computer and maintenance supply are tapped by the mains

Cooling water supply:

Temperature:	min. 6°C (42.8°F), max. 20°C (68°F)
Flow:	100lpm (26.4USgpm)
Pressure:	min. 5bar (72.5psi) max. 10bar (145.0psi)
Cooling capacity:	max. 75kW

Compressed air supply:

Pressure:	min. 6bar (87.0psi) max. 10bar (145.0psi)

Cooling air supply for the load system:

Flow:	appr. 36,000m³/h
Temperature:	min. 0°C (32°F), max. 40°C (104°F) non-condensing

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