

Generator Test Stand

>LMP90IB<

Drive unit and hydraulic power unit



Control console



Measurement cabinet



Inductive and resistance load decade



Switch cabinet



The test stand is developed to test all current manufactures' air and oil- cooled AC generators, VSCF, CSD and IDG up to 30,000rpm without the use of a gearbox.

It is possible to adapt and extend this test stand.

- > 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, ...
- > 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 and IDG
Power: up to 120kVA
and nominal voltage: 200V to 400V,
nominal frequency: between 370Hz and 2kHz
rotational speed: up to 30,000rpm

| Aircraft | Description | CMM | Part number | OEM |
|---------------|-------------|----------|-------------------|------------|
| A320 | IDG | 24-11-79 | 766219 & 740119 | Sundstrand |
| A320 | AUX-GEN | 24-23-51 | 5910047 & 5913667 | BFGoodrich |
| A330 | IDG | 24-11-82 | 752168-series | Sundstrand |
| A330/A340 | AUX-GEN | 24-23-53 | BA04105A-series | BFGoodrich |
| A340 Classic | IDG | 24-11-81 | 752157B-series | Sundstrand |
| A340-600 | IDG | 24-11-88 | 767142B-series | Sundstrand |
| B757/B767 | AUX-GEN | 24-22-03 | 727810A-series | Sundstrand |
| B757 RR | IDG | 24-11-67 | 727792-series | Sundstrand |
| CRJ 100/200 | IDG | 24-21-08 | 755469B-series | Sundstrand |
| CRJ100/200 | Gen-Assy | 24-22-01 | 720845-series | Sundstrand |
| CRJ700/ERJ170 | IDG | 24-21-12 | 766277-series | Sundstrand |
| CRJ700/ERJ170 | APU-GEN | 24-22-13 | 766288 | Sundstrand |
| A320NG | IDG | 24-11-88 | 772181-series | Sundstrand |
| A320NG | AC-GEN | 24-20-72 | BA16501-01 | BFGoodrich |

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 and inductive load decade
- > The generators' drive (dependent on rotational speed) is ensured by two independent high-performance engines, without using a gearbox
- > Quick release latches are fitted to enable easy, quick and secure mounting of UUTs
- > 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
- > A patch filter is 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

TECHNICAL DATA

| | |
|---|--|
| <p>> Hydraulic supply:</p> <p>Main reservoir: Contents appr. 120l (31.7USgal)</p> <p>Medium: MOBIL JET OIL II</p> <p>Flow: max. 85lpm (22.5USgpm)</p> <p>Temperature range: max. 150°C (302°F) (supply line) max. 170°C (338°F) (return)</p> <p>Pressure: max. 27bar (391.6psi)</p> <p>Electrical heater: 28kW</p> <p>Filter (supply line): 10 micron</p> <p>Filter (return): 20 micron</p> <p>Test filter (return): Paper filter element to evaluate the UUT open / closed</p> | <p>> AC load:</p> <p>Voltage: 3 x 200V / 3 x 400V</p> <p>Frequency: 370Hz to 2kHz (to 30kVA) 370Hz to 1kHz (>30kVA)</p> <p>Power: 192kW, 192kVA 50% overload for 10min 100% overload for 10sec</p> |
| <p>> Scavenge:</p> <p>Flow: appr. 100lpm (26.4USgpm)</p> <p>Filter: 20 micron</p> | <p>> Cooling UUT - air:</p> <p>Flow: approx. 1,000m³/h (35,315ft³/h)</p> |
| <p>> Sealing air (for drive motors):</p> <p>Pressure: 0.9 to 1.1bar (13.1 to 16.0psi)</p> | <p>> Closed cooling circuit (for drive motors and frequency converters):</p> <p>Flow: approx. 70lpm (18.5USgpm)</p> <p>Pressure: 3.5bar (50.8psi)</p> <p>Power: 1.1kW</p> <p>Antifreeze: MAINTAIN FRICOFIN G12 PLUS</p> |
| <p>> Oil-mist lubrication (for drive motors):</p> <p>Pressure: 0.8bar (11.6psi)</p> | <p>> Infrastructural requirements:</p> <p><u>Electrical supply:</u> Mains connection: 3/N/PE AC 50Hz 400V Nominal current: 350A Power: 240kVA</p> <p>Computer and maintenance supply are tapped by the mains</p> |
| <p>> Drive motor 1:</p> <p>Power: 330kW</p> <p>Rotational speed: max. 16,000rpm</p> | <p><u>Cooling water supply:</u> Temperature: min. 6°C (42.8°F), max. 20°C (68°F)</p> <p>Flow: 100lpm (26.4USgpm)</p> <p>Pressure: min. 5bar (72.5psi) max. 10bar (145.0psi)</p> <p>Cooling capacity: max. 75kW</p> |
| <p>> Drive motor 2:</p> <p>Power: 120kW</p> <p>Rotational speed: max. 30,000rpm</p> | <p><u>Compressed air supply:</u> Pressure: min. 6bar (87.0psi) max. 10bar (145.0psi)</p> |
| <p>> PMG load:</p> <p>AC load is adjustable in steps (<0.05A at 80V)</p> <p>DC load is continuously variable up to 50ADC</p> | <p><u>Cooling air supply for the load decade:</u></p> <p>Flow: appr. 18,000m³/h (635,664ft³/h)</p> <p>Temperature: min. 0°C (32°F), max. 40°C (104°F) non-condensing</p> |

MEASUREMENT RANGE

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|---|---|
| <p>> Temperature sensor (11-off):</p> <p>Range: 0 to 100°C (32 to 212°F) Tolerance: ±1.0°C abs. (±1.8°F) to Range: 0 to 200°C (32 to 392°F) Tolerance: ±2.0°C abs. (±3.6°F)</p> | <p>> Direct current (11-off):</p> <p>Range: -200 to +200mADC Tolerance: ±1mADC abs. to Range: 0 to 30ADC Tolerance: ±0.25% of full scale</p> |
| <p>> Pressure sensor (8-off):</p> <p>Range: 0 to 100mbar (0 to 1.5psi) Tolerance: ±0.25% of full scale to Range: 0 to 40bar (0 to 580.2psi) Tolerance: ±0.25% of full scale</p> <p>Range: 0 to 4bar abs. (0 to 58.0psi abs.) Tolerance: ±0.25% of full scale</p> | <p>> Alternating current (16-off):</p> <p>Range: 0 to 10AAC Tolerance: ±0.25% of full scale to Range: 0 to 1,500AAC Tolerance: ±0.5% of full scale</p> |
| <p>> Rotational speed (1-off each):</p> <p>Range: 0 to 16,000rpm Tolerance: ±10rpm abs.</p> <p>Range: 0 to 35,000rpm Tolerance: ±15rpm abs.</p> | <p>> Effective power (6-off):</p> <p>Range: 0 to 50kW Tolerance: ±0.5% of full scale to Range: 0 to 175kW Tolerance: ±0.5% of full scale</p> |
| <p>> Flowmeter and volume (1-off each):</p> <p>Range: 0 to 100lpm (0 to 26.4USgpm) Tolerance: ±0.45% of full scale</p> <p>Range: 0 to 30Nlpm (0 to 1.1scfm) Tolerance: ±2% of full scale</p> <p>Range: 0 to 50l (0 to 13.2USgal) Tolerance: ±0.5% of full scale</p> | <p>> Apparent power (6-off):</p> <p>Range: 0 to 50kVA / phase Tolerance: ±0.5% of full scale to Range: 0 to 175kVA / phase Tolerance: ±0.5% of full scale</p> |
| <p>> Direct current voltage (12-off):</p> <p>Range: -20 to +20VDC Tolerance: ±0.25% of full scale to Range: -600 to +600VDC Tolerance: ±0.5% of full scale</p> | <p>> Resistance (12-off):</p> <p>Range: 0 to 2000hm Tolerance: ±0.25% of full scale to Range: 0 to 200kOhm Tolerance: ±0.25% of full scale</p> |
| <p>> Alternating current voltage (26-off):</p> <p>Range: 0 to 1VAC Tolerance: ±0.5% of full scale to Range: 0 to 500VAC Tolerance: ±0.2% of full scale</p> <p>Range: 0 to 10Vrms Tolerance: ±0.5% of full scale</p> <p>Range: 0 to 40Vpp Tolerance: ±0.5% of full scale</p> | <p>> Frequency (4-off):</p> <p>Range: 200 to 2,000Hz Tolerance: ±0.1Hz abs. to Range: 200 to 20,000Hz Tolerance: ±1Hz abs.</p> |
| | <p>> Vibration (3-off each):</p> <p>Range: 0 to 5ips rms Tolerance: ±0.0104ips rms +3% of full scale</p> <p>Range: 0 to 5mils pk-pk Tolerance: ±0.028mils pk-pk +3% of full scale</p> <p>Range: 0 to 10g rms Tolerance: ±0.027g rms +3% of full scale</p> |

OPTIONS

A wide range of options is available to fulfil our customer's requirements.
e.g.: Adaption for a variety of UUTs, test program requirements, dimensioning,...

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Technical data are subject to change!