# Vacuum Generator Test Bench

The Vacuum Generator Test Bench B004 is designed for MRO maintenance stations looking for a test solution for aeronautical vacuum generators (VacGen) used in waste and wastewater management systems on Airbus A319, A320, A321 (CMM 38-31-81 / PN 14330-375) and Airbus A380 (CMM 38-38-16 P/N 38000-001-201/203 ).

It is used to carry out so-called functional tests, during which the operating performance of the equipment is verified. To do this, it has test pipes (INLET/OUTLET) instrumented with devices for measuring pressure, flow and temperature, and suction flow regulation.
Electrical parameters such as current, frequency or voltage at the equipment input are also measured, as well as the vibration level of the VacGen (using an accelerometer).
The bench is controlled from a PC equipped with dedicated software that allows the VacGen to be controlled, all the measurements to be viewed, the suction flow rate to be automatically adjusted and the measurements to be used in real time by applying the equations described in the CMMs and processing the accelerometer signal using FFT.
The software records the results and automatically issues a certificate at the end of the tests.

The B004 can also be supplied with an additional test station, enabling leak tests to be carried out on VacGen A320s (please contact us for more information).

## KEY STRENGTHS

- Turnkey test solution
- Control software with automatic test sequences and results evaluation
- Precision instrumentation

## USES

| | |
|---|---|
| X | MRO |
| | R&D TEST |
| | Calibration |
| | Production |
| | Other |

## KEY WORDS

- Aircraft Vacuum Generator Assy PN 14330-375
- Vacuum Toilet System

# TECHNICAL SPECIFICATIONS

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|---|---|---|---|---|
| Test capacity | Vacuum Generator Assembly<br>CMM 38-31-81 P/N 14330-375 MONOGRAM/MAG AVIATION<br>CMM 38-38-16 P/N 38000-001-201/203 MONOGRAM | | | |
| Tests performed | Section "Testing and Fault Isolation"<br>- Functional Test<br>- Break-in & Self-Inductance Vibration Test<br>- External Leakage Tests *<br>- External Pressure Test *<br>*(*)only with Leak Test Station (optional)* | | | |
| Equipment connection | - Mechanical support for Vacuum Generator with retaining strap<br>- Connection sleeve for INLET and OUTLET ports<br>- Electrical harness for connecting the VacGen to the bench | | | |
| Measurement chains | Flow<br>Measurement range:<br>Precision: | 0 – 315 CFM<br>< ± 0.3 SCFM | | |
| | Pressure<br>Measurement range:<br>Precision: | Inlet Port<br>-500 ... 0 mbar G<br>< ± 1.2mbar | Outlet Port<br>0 .... 1100 mbar A<br>< ±0.1% EM | Ambient<br>0 ... 1100mbar A<br>< ±2,5 mbar |
| | Température<br>Measurement range:<br>Precision: | Inlet Port<br>+20 ... +100°C<br>±1°C | Ambient<br>-25 ... +100°C<br>±1°C | |
| | Current<br>Measurement range:<br>Precision: | 0 ... 100 A<br>< 0.5% EM | | |
| | Frequency<br>Measurement range:<br>Precision: | 1 ... 440 Hz<br><±0.2% | | |
| | Current<br>Measurement range:<br>Precision: | 0 ... 600VAC<br>< 0.3% EM | | |
| | Vibration<br>Type:<br>Sensibility :<br>Measuring range:<br>Frequency range: | Piezoelectric accelerometer<br>10 pC/g<br>± 2000 g pk<br>9000 Hz | | |
| Software functions | - Display of test circuit measurements with unit conversion *(pressure, flow, temperature, etc.)*<br>- Vaccum Generator control<br>- Automatic flow regulation on the INLET port<br>- Thermal-switches monitoring<br>- FFT analysis of accelerometer signal with determination of peaks and maximum amplitudes<br>- Real-time processing of measurements with calculation according to CMM equations (*static pressure, air density, corrected current, phase imbalance*).<br>- Integrated test sequence with display of the sequence of stages, recording of results and automatic generation of a certificate at the end of the tests. | | | |
| HMI | Desktop PC supplied with dedicated test software | | | |
| Options and additional accessories | OPTION: Leak Test Station<br>- Only for *External Leakage Test* & *External Pressure test* | | | |

| TECHNICAL SPECIFICATIONS | |
|---|---|
| Power Supply | Mains 200-240VAC ±10%; 50/60Hz - 15A (110V 60Hz compatibility optional)<br>IEC C14 socket connection |
| | Mains 115V 400Hz 3P+N+T - 30A (*protected upstream against overvoltage and overcurrent*)<br>Connection to bench terminal block |
| Dimensions | 1500 x 500 x 2200 mm (L x W x H) |
| Installation constraints | Installed in an enclosed, soundproofed room with presence detector and access lock.<br>Remote control PC outside the room |
| Operating temperature | +10 to +40°C |
| Storage temperature | +5 to +50°C |
| Mass | < 200kg |
| Supplied accessories | Electrical connection harness Bench <> PN 14330-375<br>Electrical connection harness Bench <> PN 38000-001-201/203 |

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