

Engine Anti-Ice and Bleed-Air Valve Test Rig

CAPABILITY SHEET · HOT AIR · CLAMP · COMMAND · MEASURE · ENGINEERED TO ORDER

THE ONE IDEA

PRINCIPLE	A valve that lives in hot air is not tested until it has been tested in hot air, so the rig makes the hot air and asks the valve the same three questions as in cold air: does it open, how fast, and does it shut tight.
WHY IT MATTERS	A valve is made of parts that grow, harden and soften at different rates as they heat. Seals behave differently when hot, and a difference in expansion can open a leak path that a cold test never sees.

THE RIG

AIR	A compressed air supply, an air heater that is kept in flow so that it never runs without air, pressure and flow regulation, and insulated hot lines.
VALVE	A fixture that holds the valve as it sits on the engine, with a command and position interface, so that the valve is judged by where it goes.
MEASURE	Calibrated instruments for pressure, temperature, flow and time; a sensitive leakage measurement on the far side of the closed valve; and a record logged on one clock.
SAFETY	Insulation, overpressure relief, guards and interlocks, and an exhaust with a silencer directed away from people.

THE TEST

ORDER	Clamp, baseline, heat, command, seal, cycle and record. The valve is run cold first, so that the hot result has something to be compared with.
LIMITS	Every result is set against the limits in the valve's own maintenance documents, which the customer provides.

CONFIGURATIONS

BENCH RIG	One valve type on one fixture, for a workshop that overhauls one kind of valve.
MULTI-VALVE RIG	Fixtures for several valve types on one air supply.
RIG WITH A COLD CHAMBER	The valve is cold outside while hot air runs inside, as it does when ice is forming.

STANDARDS & SCOPE

STANDARDS	ISO 5208 is the public reference for how the pressure testing and leakage of valves is described, and ISO/IEC 17025 for calibration. Compressors, air heaters, regulators, flow meters and transducers are proven catalogue items chosen with the customer.
SCOPE BOUNDARY	This is the rig that tests the valves which take hot air off an engine. It is not a whole environmental control system bench, not hot-oil testing of hydraulic valves, and not a flow-coefficient rig for industrial control valves.
STATUS	Neometrix engineers engine anti-ice and bleed-air valve test rigs to order, and no delivered engine anti-ice and bleed-air valve test rig is claimed.

DEFENCE PROGRAMMES DESK

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Descriptions define the equipment class Neometrix engineers to order and are not a quotation. Valves, air conditions, tests and limits are established against the customer's own requirements at design review. ISO 9001 / ISO 14001. © Neometrix Defence Limited.