

Heat Exchanger Test Bench

CAPABILITY SHEET · HEAT BALANCE · STEADY STATE · PROBE AT EVERY PORT · ENGINEERED TO ORDER

THE ONE IDEA

PRINCIPLE	Trust it when both sides agree.
WHY IT MATTERS	The heat the hot side gives up must equal the heat the cold side takes up, so the two duties check each other and the bench reports the balance with every result.

THE BENCH

HOT LOOP	A heater, a circulation pump and a flow meter hold oil or fuel at a set temperature and flow, with a probe in the stream at each port.
COLD LOOP	A chiller or an air duct, with a pump or a fan and a flow meter, holds coolant or air at a set temperature and flow.
CONTROL	A controller holds the flows and temperatures, waits for steady state by a written rule, and logs every reading.
PRESSURE	Pressure drop is measured across each side, and the oil temperature is written beside it, because a bare drop is not a result.

THE METHOD

ORDER	Specify, connect, condition, hold, balance and prove. Waiting for steady state, and checking that the two sides balance, are what a quick order skips.
LIMITS	Tolerances, temperatures and flows come from the standard the customer names and from the unit, and are not printed here.

CONFIGURATIONS

LIQUID-TO-LIQUID BENCH	Oil or fuel against coolant, for oil coolers, fuel coolers and plate or shell-and-tube exchangers.
AIR-SIDE BENCH	A metered air stream through the unit, for radiators, intercoolers and air-to-air coolers.
PROOF AND LEAK STATION	A proof pressure test and a leak check with no heat, before or after service.

STANDARDS & SCOPE

STANDARDS	Public reference: ASME PTC 12.5 for performance testing of single-phase heat exchangers; it leaves out condensing and vaporising units.
SCOPE BOUNDARY	It is the heat exchanger test bench: not a cooling system for electronics, not a pump and fuel cooler rig, not a dryer test bench, and not a condenser test.
STATUS	Neometrix has quoted against successive heat exchanger and oil cooler test requirements, and no delivered heat exchanger test bench is claimed.

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