Heated & Cold Fuel Supply Rig

CAPABILITY SHEET · COLD SOAK · HOT FUEL · HELD STEADY · ENGINEERED TO ORDER

THE ONE IDEA

PRINCIPLE	Fuel is not one liquid. It is a different liquid at every temperature, so the temperature is part of the supply.
WHY IT MATTERS	A test run on room-temperature fuel proves only the comfortable middle. Cold fuel thickens and can throw wax that plugs strainers; hot fuel that carries dissolved oxygen oxidises and can leave deposits that foul heat exchangers.

THE RIG

CONDITIONING	Insulated, jacketed vessels, a heating system and a chilling system with heat exchangers, pumps suited to thick cold fuel and thin hot fuel, and insulation and heat tracing that leave no cold spots or hot spots.
THE SOAK	The fuel circulates until the whole tank and loop agree on the temperature, and the control system confirms it. Flow does not reach the unit under test before then.
DELIVERY	Fuel is delivered at a held pressure and flow, measured by mass because fuel density moves with temperature, with temperature logged beside it, and returned to the vessel with sampling.
SAFETY BASIS	A nitrogen blanket keeps oxygen out of the hot fuel. Because hot fuel can give off flammable vapour, the whole rig is designed as a flameproof installation: electrics, venting and interlocks together.

CONFIGURATIONS

SINGLE-LOOP SKID	One temperature at a time, for bench-scale and component tests.
DUAL-LEG RIG	A hot leg and a cold leg that can be sequenced or blended, for tests that move between the cold end and the hot end.
CELL-INTEGRATED	Fed from bulk fuel, with return, sampling and a data link to the test cell's own controls.

STANDARDS & SCOPE

STANDARDS	ASTM D1655 for aviation turbine fuel, ASTM D3241 for the thermal oxidation stability of jet fuel, ASME Section VIII for pressure vessels, and the IEC 60079 series for equipment in hazardous areas are the public references this class is designed against.
SCOPE BOUNDARY	This is the temperature-conditioned fuel source for a unit under test. It is not an ambient-temperature fuel delivery skid and not a bench built to validate one particular set of engine components.
STATUS	Neometrix engineers heated and cold fuel supply rigs to order, and no delivered heated and cold fuel supply rig is claimed.

DEFENCE PROGRAMMES DESK

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