Hydraulic Seal Test Rig

CAPABILITY SHEET · TEST THE SEAL SLOW, FAST AND LONG. · A GLAND, A DRIVE, A FRICTION TRACE AND A W

THE ONE IDEA

PRINCIPLE	Test the seal slow, fast and long.
WHY IT MATTERS	At a crawl a seal sticks and slips and its friction rises. At speed the rod drags a thicker film of oil out through the seal, so leakage shows. Over a long run a seal runs in and then wears. The rig reads all three.

THE RIG

BED AND HEAD	A stiff bed and a test head that holds a changeable test gland square to the ground test rod.
DRIVE	A servo drive that moves the rod from a crawl to full speed, in both directions, while the pressure is stepped and the temperature held.
SENSING	A force sensor and a position sensor read together, so that the friction of each stroke is plotted against the position.
LEAKAGE CATCH	A catch that takes only what passes the seal and weighs it, with a dry run to show that nothing else drips.

THE METHOD

ORDER	Duty, gland and rod, drive and load, measure, run and prove. The long run and the proof of the rig are the two that a quick job skips.
LIMITS	The fluids, the pressures, the speeds and the temperatures come from the duty of the seal, and are not printed here.

CONFIGURATIONS

ROD SEAL	A rod seal rig: a seal on a moving rod, with the friction and the leakage of each stroke read.
PISTON SEAL	A piston seal rig: a seal on a moving piston in a bore, with the leakage across it read as the pressure is stepped.
ENDURANCE	An endurance bank: several test heads run together, each with its own catch, so that a seal can be run on past the knee of the curve.

SCOPE

SCOPE BOUNDARY	It is the hydraulic seal test rig: not a cylinder test bench, not a damper test bench and not a fatigue testing machine.
STATUS	Neometrix engineers hydraulic seal test rigs to order, and no delivered hydraulic seal test rig is claimed.

DEFENCE PROGRAMMES DESK

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