

Hydraulic Dynamometer Engine Test Cell

CAPABILITY SHEET · WATER BRAKE · TORQUE AT THE CASING · WATER FIRST · ENGINEERED TO ORDER

THE ONE IDEA

PRINCIPLE	The engine's power has to go somewhere. In a water brake it goes into the water, so the water is the machine and the cell is designed around it.
WHY IT MATTERS	The brake only turns power into heat. Every unit of that heat must leave the cell in the circulating water, and a brake starved of water overheats and its load becomes unstable.

THE CELL

ABSORBER	A robust water brake chosen with the customer, on a trunnion base plate with the casing free to swing. It suits high-power steady and slowly changing load, and it can only absorb.
LOAD	Set by the amount of water in the brake through an electric servo water-inlet valve, and held by the control system.
MEASUREMENT	Torque is read at the casing by a load cell on a torque arm and proved by dead-weight calibration on a calibration arm; speed is sensed on the shaft.
WATER SYSTEM	Supply, outlet and either an open drain or a closed circuit with heat rejection, with water treatment and filtration, sized for the full power of the engine.
SAFETY BASIS	A guarded coupling, an isolated foundation, and controls that prove the water flow before the engine is loaded and unload the engine on any water fault.

CONFIGURATIONS

DYNAMOMETER SKID	The brake with its torque measurement, water valve and speed sensing, for fitting into an existing cell.
ENGINE TEST CELL	The brake with its water system, engine services, foundation, control system and data acquisition, engineered as one cell.
TEST FACILITY	Several cells sharing one water and heat-rejection plant and a common control room.

STANDARDS & SCOPE

STANDARDS	ISO 3046-1 for engine performance and test methods and IEC 60204-1 for the electrical equipment of machines are the public references this class is designed against.
SCOPE BOUNDARY	This is a water-brake cell for high-power, steady or slowly changing load. It is not an eddy-current dynamometer rig, not a transient bench that can also drive the engine, and not a vehicle-on-rolls machine.
STATUS	Neometrix engineers hydraulic dynamometer engine test cells to order, and no delivered hydraulic dynamometer test cell is claimed.

DEFENCE PROGRAMMES DESK

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Descriptions define the equipment class Neometrix engineers to order and are not a quotation. Engine, test programme, water source and site constraints are established against the customer's own specification at design review. ISO 9001 / ISO 14001. © Neometrix Defence Limited.