

Dynamic Turret Test Rig

CAPABILITY SHEET · GUN-CONTROL / STABILISATION TEST · ENGINEERED TO ORDER

THE RIG

WHAT	A six-axis (hexapod) motion-platform test rig that tests and tunes the gun-control / stabilisation system of an armoured fighting vehicle's turret - the turret is driven through roll, pitch and bounce while the instrumentation logs how it holds aim.
STATUS	Engineered to order for an Indian defence research establishment. Tilt range, load class, actuator stroke, disturbance profiles and instrumentation are configured to the customer's turret and test programme.
MODEL	The turret and its gun-control system are customer-furnished; Neometrix engineers the platform, actuation, controller, instrumentation and safe cell around an interface frozen jointly at design review.

MOTION PLATFORM

PLATFORM	A moving frame (turret mount) on a concrete-anchored base frame; six-axis motion - roll, pitch and vertical bounce - reproducing the disturbances a vehicle feels on the move.
ACTUATION	Six electromechanical roller-screw linear actuators, each with an inbuilt position sensor, posture locking and a manual override for power-loss recovery; optional pneumatic load-sharing set for peak loads.
CONTROLLER	A real-time controller solves the platform kinematics for a commanded roll / pitch and replays programmable disturbance profiles; adjustable speed and acceleration; inclinometer feedback, limit switches and alarms.

INSTRUMENTATION

DATA ACQUISITION	Logs turret azimuth and gun-elevation speed, acceleration and position, and stabilisation-mode error, over CAN and Ethernet; rugged acquisition unit plus analysis workstation with redundant logging.
ROTARY BASE JUNCTION	A slip-ring data path at the turret base - power, discrete, CAN, Ethernet and video channels - so the turret rotates continuously while its data is logged.
SENSORS	Fixed and portable inclinometers, tilt-frame limit switches, single- and tri-axis accelerometers, turret-speed and load sensing - specified to the measurement set at design.

ENGINEERING & DELIVERY

ANALYSIS	Static, modal and dynamic finite-element analysis of every frame and the concrete foundation, vetted at design review before manufacture; system and software design documents, drawings and calibration certificates.
SAFE CELL	A guarded, conditioned control cabin with toughened glazing, CCTV, safety rails around the rotating envelope, emergency stops inside and outside the zone, warning alarms and indicator lamps.
ENGAGEMENT	Civil works, installation, commissioning, on-site acceptance, operator and software training, and service support. Send your turret interface and test requirement to sales@neometrixgroup.com - matrix in two working days.

DEFENCE PROGRAMMES DESK

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