

Dynamic Actuator System

CAPABILITY SHEET · FORCE IS EASY; SPEED IS FLOW · A REACTION FRAME THAT CARRIES THE FORCE · ENGI

THE ONE IDEA

PRINCIPLE	Force is easy; speed is flow.
WHY IT MATTERS	The force comes from the oil pressure and the area of the piston, but the speed comes from the flow of oil, so the valve and the accumulators are sized for the speed and the frame for the force and the stiffness.

THE SYSTEM

ACTUATOR & VALVE	A servo-hydraulic actuator with a servo valve, a load cell and a displacement transducer, and swivel heads and fixtures for the specimen.
POWER UNIT	A hydraulic power unit with pumps, filtration and cooling, and an accumulator bank with manifolds and hoses sized for the peak flow.
CONTROL	A closed-loop controller that holds the force or the displacement to the command, with the load cell checked in motion as well as at rest.
REACTION FRAME	A strong floor and reaction wall or a self-reacting frame, stiff as well as strong, with guards and interlocks round the specimen.

THE METHOD

ORDER	Specify, size, frame, build, test and prove. Sizing the valve and the accumulators for the speed, and running the system at speed before any specimen, are what a quick order skips.
LIMITS	Forces, speeds, strokes and tolerances come from the method the customer names and from the specimens, and are not printed here.

CONFIGURATIONS

SINGLE ACTUATOR, SELF-REACTING	A strong frame, one actuator, a power unit and a controller for beams, columns and joints.
MULTI-ACTUATOR RIG	Several actuators on a strong floor and reaction wall, run by one controller from a common command.
POWER UNIT AND CONTROLLER	A power unit with an accumulator bank and a controller for actuators a laboratory already owns.

STANDARDS & SCOPE

STANDARDS	Public reference: ISO 7500-1 for the verification of static uniaxial testing machines and their force-measuring systems.
SCOPE BOUNDARY	It is the dynamic actuator system: not a servo-hydraulic fatigue test system, not a bridge expansion joint test facility and not a jacking system.
STATUS	Neometrix has quoted against successive dynamic actuator system requirements, and no delivered dynamic actuator system is claimed.