

Wind Tunnel Pressure Regulation System

CAPABILITY SHEET · RAMP · HOLD · RECORD · ENGINEERED TO ORDER

THE ONE IDEA

PRINCIPLE	A blowdown tunnel runs on a falling supply, so something has to hold the pressure the model sees.
WHY IT MATTERS	One pressure all run means one run is one condition, and the data from it can be relied on.

THE SYSTEM

VALVE TRAIN	A regulating valve with its actuator, isolation and bypass, sized to keep margin until the tank is nearly spent.
CONTROL	A closed-loop controller that runs the ramp and the hold from a stored profile, tuned on the real valve.
SENSING AND SAFETY	Pressure sensing at the settling chamber and the supply, relief valves and vent silencers, filters and a dryer.
RECORD	Set-point, chamber pressure and valve position on one clock, one record for each run.

THE METHOD

ORDER	Set up, charge, ramp, hold, close and record. The ramp and the hold are what a bench test never meets.
LIMITS	Pressure, flow and run length are set by the tunnel's designer and are not printed here.

CONFIGURATIONS

REGULATOR RETROFIT	A valve train, controller and sensing fitted to an existing tunnel supply.
REGULATION STATION	A new valve train with isolation and bypass on the supply line, with its own controller.
SUPPLY AND REGULATION	Dryer, storage link and regulator on one control, so the air arrives clean, dry and steady.

STANDARDS & SCOPE

STANDARDS	Public references: IEC 60534 for industrial-process control valves and ASME BPVC Section VIII for pressure vessels.
SCOPE BOUNDARY	It regulates the supply to a tunnel. It is not a regulator bench, a valve rig, a reducing panel, a water tunnel or the tunnel itself.
STATUS	Neometrix engineers wind tunnel pressure regulation systems to order, and no delivered wind tunnel pressure regulation system is claimed.

DEFENCE PROGRAMMES DESK

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