

Valves

Valve bodies shall be two or three way globe, ball or contoured ball and selected to match the required control characteristics of the mechanical equipment that they serve. Three way valves shall be bottom ported. Full or reduced port ball valves shall be used only in two position applications. Globe or contoured port ball valves shall be used in all modulating flow control applications.

Contoured port ball valves shall be of the floating ball type. The geometry of the ball shall be machined to provide for equal percentage flow characteristics. Characterized disc inserts or ball shields will not be permitted. When required, ball valves will be provided with integral sweat or NPT union ends.

At a minimum, valve body ratings shall match the piping and pressure requirements of the installation. Valve bodies in ½in. to 2in. shall be bronze rated for 250 PSI operating pressure. Valves shall be selected to provide for specified fluid or gas flows, without excessive pressure drop, and must close off against system pressures.

Valve bodies shall be factory coupled directly to their actuators without the use of external linkages or jackshafts. Integral thermal barriers will be supplied for valves that are used in steam applications.

Actuators For Valves

Actuators shall be of a single manufacturer. Ball valve actuators shall be of the rotational type designed for coupling to the valve shaft. Actuator gear housing shall be of all metal construction. Globe valve actuators will be engineered to produce a linear stroke. Actuators will have provisions for direct conduit and wiring termination. Integral auxiliary switches will be provided when required.

The actuators shall be manufactured with torques ranging from 50inlb to 4000inlb; each actuator shall be selected to meet the torque and timing requirements of its application. Failsafe operation will be accomplished without the use of springs or batteries. Failsafe torque will be equivalent to operating torque and constant over the full failsafe stroke. A tamper resistant de-clutching mechanism will allow for manual emergency positioning of the actuator.

Actuators shall be electric driven accepting a 24 vac or 120 vac power source. On board programmable electronics will permit the actuator to accept all standard control inputs (two-position, three point floating, pulse width modulation, 0 – 10vdc, or 4–20 ma). Proportional actuators must be capable of producing full rotation over a selected portion of its input signal to allow for sequencing with other actuators. The direction of operating and fail safe rotation shall be individually selectable through the on board programmable electronics. Actuators will be programmed utilizing self-contained electronics without the requirement of special or proprietary tools.

Actuators shall be of the non - stall type. On board electronics shall allow the actuator to determine the minimum and maximum extent of rotational travel allowing for a bumpless stop prior to reaching the mechanical limit of its stroke. Adjustable electronic limits not mechanical stops shall be used to stop rotation.

Valves and actuators will be Neptronic or approved equal.