

TWO STEP - DRIBBLE CONTROL

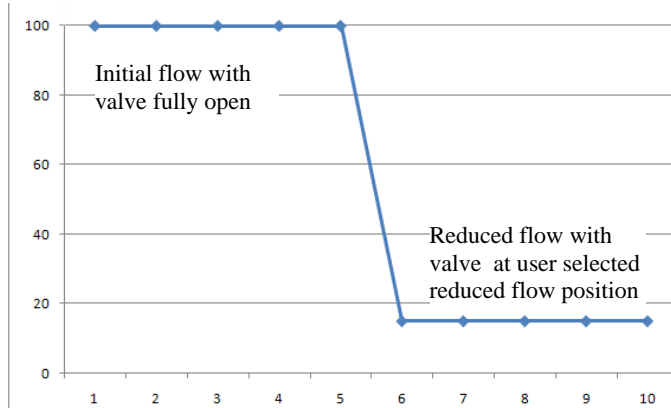
QTRCO '2 Step' Actuator

Concept: Batch fill operations often require that the rate of fill be maximized while assuring against spill. One effective method to safely accomplish high fill rate is to use the largest possible valve, allowing full flow until a selected level is reached, then throttling the valve to a much reduced flow, then fully closing the valve when the desired fill is achieved.

The QTRCO '2 Step'™ actuator employs a tandem piston approach to provide a simple, yet assured means to actuate and control the described valve.

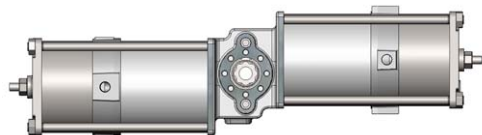
Initially, controlled by separate solenoid valves, supply pressure is applied to both a primary and a tandem piston, with the primary piston causing full actuator and valve travel. When a user determined fill level is achieved, pressure is exhausted from the primary piston and actuator springs cause closure, up to the point when the tandem pistons acts as a travel stop. At this point the valve has moved to a low flow position. When full fill is achieved, pressure is exhausted from the tandem piston and the actuator springs cause full valve closure.

Two position flow control



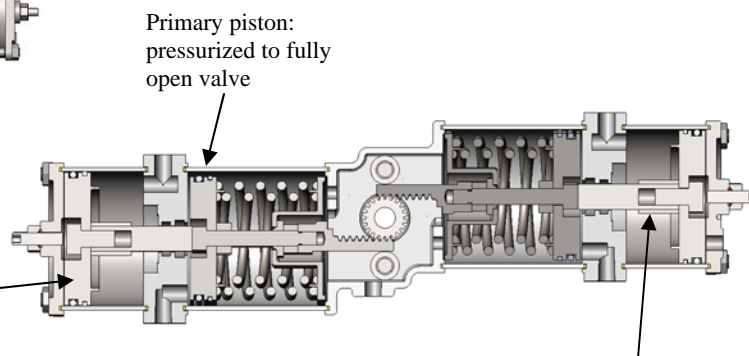
Typical '2 Step' actuator with twin solenoid valve control.

Shown with clear cylinders for viewing purposes.



Shown: QS/QD05SP

Tandem piston and push rod: pressurized to push against the primary piston and to thereby establish the minimum flow position



Collar - limits inward travel of tandem piston - according to user specified, reduced flow, valve position

- Available on all QTRCO actuator types and sizes
- Two, three (and more) position control is available
- Rapid transition from full to reduced flow
- Tamper proof, low flow rate is user specifiable and changeable

