

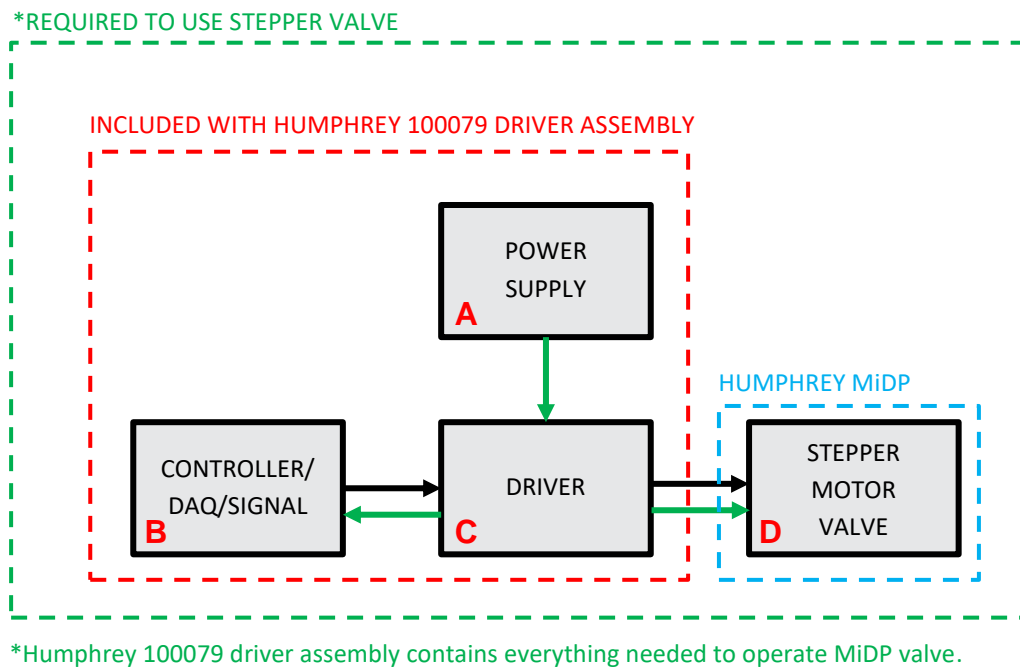
Operational Guidelines: MiDP Stepper Motor Valve

Overview

Humphrey MiDP is a proportional valve utilizing a stepper motor as its operator. All stepper motors require an appropriate driver to function properly. A third-party driver or Humphrey Products' stepper motor driver assembly, part number 100079, may be used.

Stepper motor / driver combinations require an initialization cycle, at application temperature, to ensure the stepper valve performs as intended. This cycle sets the seat position with appropriate preload for valve shut off. The initialization cycle is critical regardless of using the Humphrey driver assembly or third-party stepper motor driver.

Without a proper initialization cycle, the MiDP valve can 1) be damaged, 2) remain in open position when not desired, or 3) not function as intended.



Humphrey MiDP driver assembly

The control box (C) may be driven with either an external 0-5VDC control power signal, or with the supplied pendant (B) that provides an internal 0-5VDC supply. Connect pendant to box via color-coded banana plugs.

The pendant knob will adjust the valve stem's lift in 0.0004 inch increments (steps) and for a total movement of 0.024 inches. The initialization cycle sets the seat with 0.002" to 0.004" of preload on the valve seat (minimum lift required to start flow).

Sequence of operation:

1. With power and pressure off, connect valve to controller.
2. With pressure off, and knob rotated fully to stopped counter - clockwise position (or external voltage set to 0), turn on the control unit. The initialization cycle will begin, setting valve to its seated condition.
3. Apply pressurized media to valve. Turn knob clockwise to desired flow rate.
4. Adjust valve flow (modulate) with the knob or with variable control voltage, taking care not to exceed 5.0VDC.

CAUTION: When hooking up, disconnecting, or changing valves, make sure the power is off. Failure to do so may risk damage to the drive circuitry. If using an external voltage supply, max voltage must be no greater than 5.2 VDC or risk damage to the microprocessor.

Operational considerations using other valve drivers

System Set Up

1. Set media pressure to zero PSI at valve inlet for best results. Otherwise, seat depth will be impacted when initializing against pressure.
2. Begin initialization cycle, setting position of the seat.
Recommended initialization current: 350 mA
3. Apply pressurized media to valve. Move valve stem to desired position.
Recommended moving current: 600 mA
4. Hold valve stem at desired position.
Recommended hold current: 100 mA

Driver Settings

- Max Speed – 150 steps per second
- Acceleration – 50 steps per second²
- Deceleration – 50 steps per second²

Follow driver manufacturer's instructions, with our valve specifications and capabilities in consideration.

