

SDMC Digital Control Hydraulic Actuator Components

The SDMC Digital Control Hydraulic Actuator includes a close loop step/servo motor, hydraulic rotation valve, ball bearing screw, hydraulic cylinder, and additional components.

SDMC Digital Control Hydraulic Actuator Working Principal

1. Electrical control system sends required speed and quantity pulses to servo motor. Servo motor rotates the servo valve cartridge to a position in order to open the valve.
2. With the servo valve opened, hydraulic pressure fluid flows out to drive the piston of the cylinder moving forward or backward.
3. The nut linked to the piston turns the screw clockwise or counterclockwise. The screw is linked to the valve jacket, and rotates at the same direction and speed following the servo motor.
4. When the servo motor stops, the piston (linked to the nut which drives the screw) shuts the valve, stopping the hydraulic cylinder

Using the same concept, SDMC's Digital Control Hydraulic Actuator has a new design to convert a traditional hydraulic cylinder to a digital control actuator. We have designed new digital valves with double servo motors. One motor connects to a linear encoder acting as a signal feedback source to drive the jacket of the valve while another motor connects to the cartridge of the valve as the main control.

SDMC Digital Control Hydraulic Actuator Sample

- The sample system has a 2-horsepower hydraulic power pack and 1-3/16" stroke length hydraulic cylinder.
- The digital valve has 2 servo motors. One motor is for feedback with a linear encoder and a resolution of 1/5000". The second servo motor is for control. One revolution of the motor reflects a stroke of 25/32" (both motors are the same).
- The control motor receives the pulse signal, when the servo motor turns 0.1 degree - the stroke resolution is 1/500 inch.