

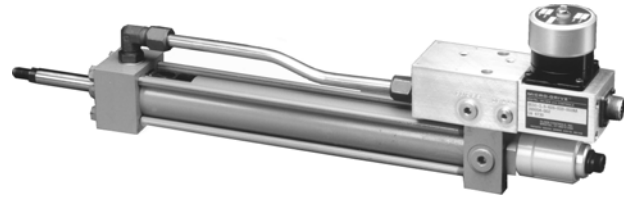


# Victory Controls, LLC

## MICRO-DRIVE™ - Digital Hydraulic Linear Positioner

### MAJOR FEATURES

- ☑ Complete **Integrated** Linear Positioner.
- ☑ **Totally Digital System**, no analog drift or variability.
- ☑ Very high tolerance to contamination **minimizes down time**.
- ☑ Absolute, Non-contact, **wear free** Magnetostrictive feedback.
- ☑ Low friction seals increase **positional accuracy**.
- ☑ Digital Direct Drive, **Single stage** valve for positive operation.
- ☑ Fail safe spring returns valve to adjustable center position.
- ☑ Cylinder conforms to **NFPA/ANSI mounting** specifications.
- ☑ **Field maintainability** reduces factory servicing cost.
- ☑ Up to 3000 PSI operating pressure for **maximum stiffness**.
- ☑ **Two year Warranty** on parts and labor.



**Series DSSC**

### PRODUCT DESCRIPTION

The **MICRO-DRIVE™** Digital Hydraulic Linear Positioner is a major advance in Hydraulic Motion Control using Digital Valves and Magnetostrictive Displacement Transducers (MDT). Long life and low maintenance is assured by incorporating low friction piston and rod seals in a Heavy Duty 3000 PSI cylinder that is compatible with ANSI/NFPA mounting. A **MICRO-DRIVE™** Direct Digital Drive Valve is mounted in a valve/manifold block that is attached directly to the endcap of the cylinder eliminating the need for a subplate and additional plumbing.

By placing the MDT feedback transducer inside of the cylinder it is protected and the package outline is minimized. The MDT is mounted in the rear endcap of the cylinder using a removable adapter. The MDT adapter allows the replacement or exchange of the target magnet which is mounted on the piston. (see page 2).

**MICRO-DRIVE™** Controllers can provide a completely digital, integrated package for the open or closed loop control of the cylinder rod position and velocity. Direct Digital Control has eliminated all of the analog adjustments and the related problems

which they create, such as, controller drift over time and sensitivity to temperature. The need for continual recalibration and the difficulty of initial setup has been eliminated by entering numerical values that are stored in nonvolatile memory.

For closed loop control, a **MICRO-DRIVE™** microprocessor based system records the absolute position of the cylinder rod which is read from the MDT and compares it to the present commanded position that has been stored in the control memory. The difference between these two digital values (position error) is then used by the Closed Loop Software to open or close the Digital Valve in a manner which will reduce the error to zero, which brings the cylinder to a repeatable and accurate set point.

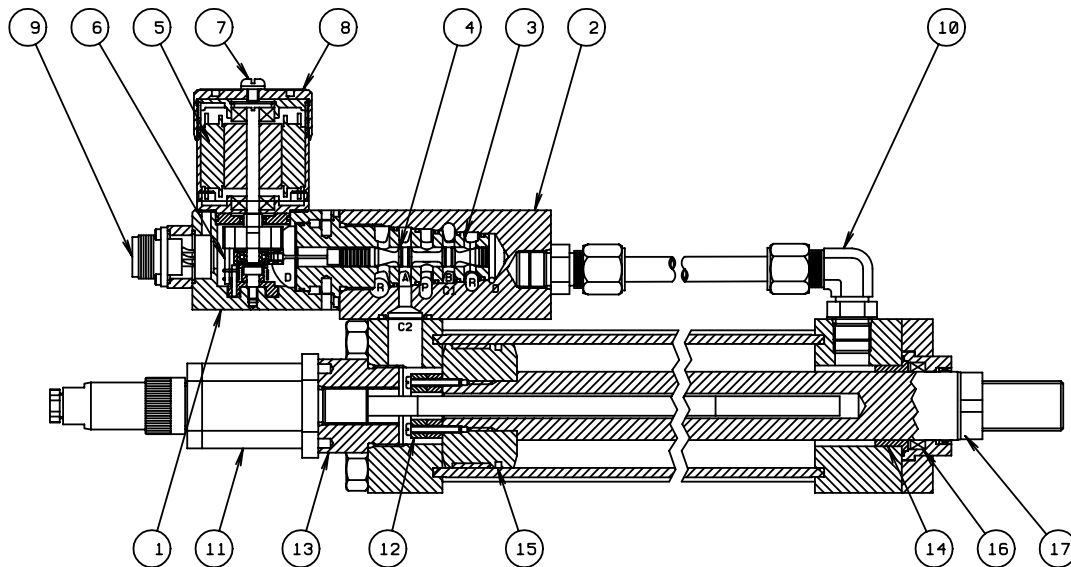
Open Loop Digital Valve Positioners are also available for those applications which already have the required electronic hardware for closing the loop. They will be made more reliable and less apt to have contamination or "hard-over" crashes that are common to two stage analog, proportional or servo valves.

### GENERAL SPECIFICATIONS

Specifications @ 70 bar (1000 PSI), Tellus 32 Oil, 38° C (100° F)

<p><b>Cylinder</b></p> <p>Type ..... Tie Rod, High Pressure</p> <p>Resolution ..... 0.001 Inch</p> <p>Repeatability ..... +/- 0.001 Inch</p> <p>Pressure ..... up to 3000 PSI Max.</p> <p>Bore Sizes ..... 1.5 to 12.0 Inches</p> <p>Stroke Lengths ..... 1.0 to 120 Inches</p> <p>Rod Diameters ..... 1.0 to 5.5 Inches</p> <p>Rod Ends ..... Male or Female</p> <p>Mounting ..... NFPA / ANSI Compatible</p> <p>Seals ..Buna-N, Polyurethane and/or Viton</p> <p>Operating Temperature ..... 0° to 160° F</p> <p>Oil Compatibility ..... Petroleum Base</p>	<p><b>Valve</b></p> <p>Type ..... <b>MICRO-DRIVE™</b></p> <p>Direct Digital Drive Four-way with hardened and ground spool &amp; sleeve.</p> <p>Flow ..... 2 to 45 GPM</p> <p>Mounting ..Integrated Manifold on rear cap</p> <p>System Pressure .... up to 3000 PSI Max.</p> <p>Return Pressure .... up to 3000 PSI Max.</p> <p>Drain Pressure ..... 50 PSI Max.</p> <p><b>Feedback Transducer</b></p> <p>Type ..... Non-contact Magnetostrictive, Start-Stop Digital RS-422 Interface.</p> <p>Mounting ..... Internal through rear cap.</p>	<p><b>Closed Loop Controllers</b></p> <p>Control Types ...Position, Velocity &amp; Force, Profiled Moves, Position to Force and Position Followers (Flying Cutoff).</p> <p><b>Open Loop Controllers</b></p> <p>Analog Inputs .... 4 to 20 mA, +/-10 VDC</p> <p>Digital Inputs ..... Pulse and Direction</p> <p><b>Control Enclosures</b></p> <p>On-Board Valve (OBE), Stand-alone NEMA or Explosion Proof Boxes, 3U Eurocard (card racks with power supplies &amp; Terminals are available as options).</p>
---	---	---

## CYLINDER PACKAGE CUT- AWAY



*This illustration is presented for the purpose of preliminary consideration in the purchase of this product. The actual product may differ from that shown.*

## PRODUCT FEATURES

1. **MICRO-DRIVE™** Direct Digital Drive Hydraulic Position Control Valve with stepped cartridge design to allow ease of assembly and removal.
2. Integrated valve body on rear cap of cylinder easily allows mounting to most cylinder sizes without additional interface manifold.
3. Hardened and ground steel sleeve which contains the openings that determine the rated flow of the valve and provide long-term high gain pressure characteristics.
4. Hardened and ground, four-land, steel spool positioned by a stepping motor, controls direction and volume of flow from the pressure port to the appropriate control port and from the opposite control port back to the return port.
5. D.C. Stepping Motor used to provide precise and repeatable movement of the valve spool.
6. Adjustable spool positioning mechanism returns to a consistent power-off location for fail-safe operation or valve null.
7. Access to mechanical spool position input. Allows valve operation without electrical input and does not upset adjustable spring loaded spool position.
8. NEMA 4 cover for stepping motor that allows wash down.
9. Mil-Spec Connector that is environmentally sealed with available mating screw-on connector.
10. SAE O-Ring fittings and ports are used for all plumbing and connections to external piping or hoses.
11. Magnetostriuctive non-contact position feedback transducer with digital interface.
12. MDT target magnet, screw mounted to the piston head.
13. Feedback transducer mounting adapter that is removable to allow access to the MDT's target magnet, without dis-assembly of the cylinder.
14. High load capacity, low friction piston rod bearing reduces piston rod break-away and assures long life.
15. Low friction piston seal reduces piston rod break-away.
16. Low friction rod seal reduces pressure sensitivity and piston rod break-away.
17. Wrench flats for easier rod attachment.