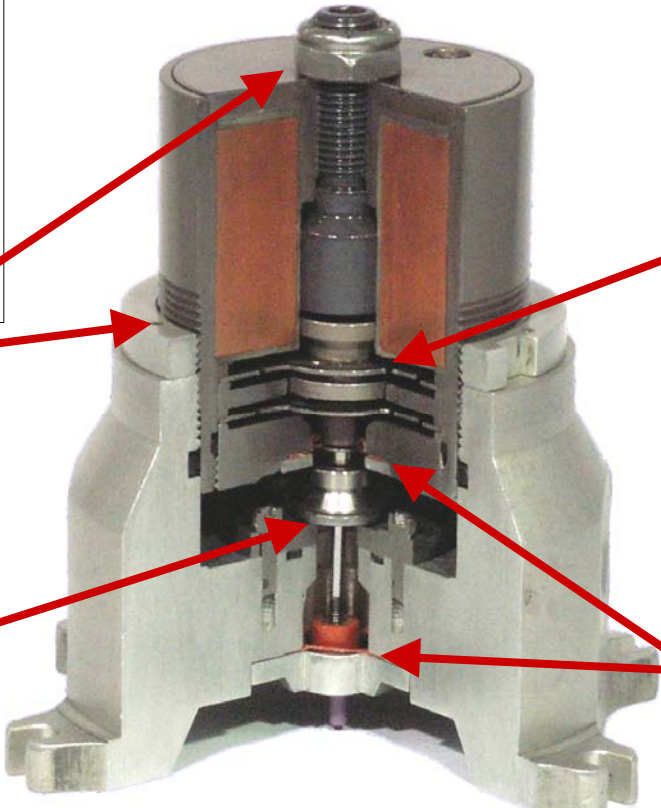
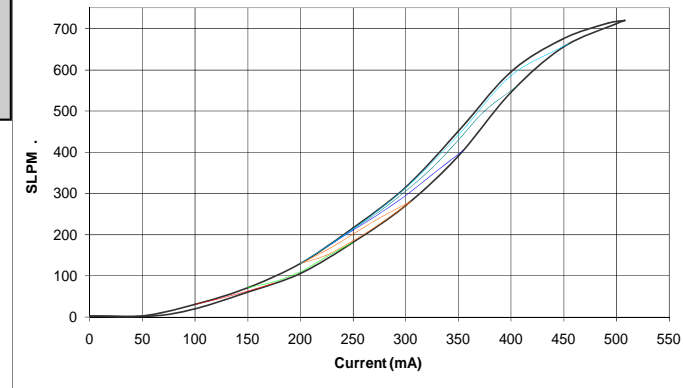
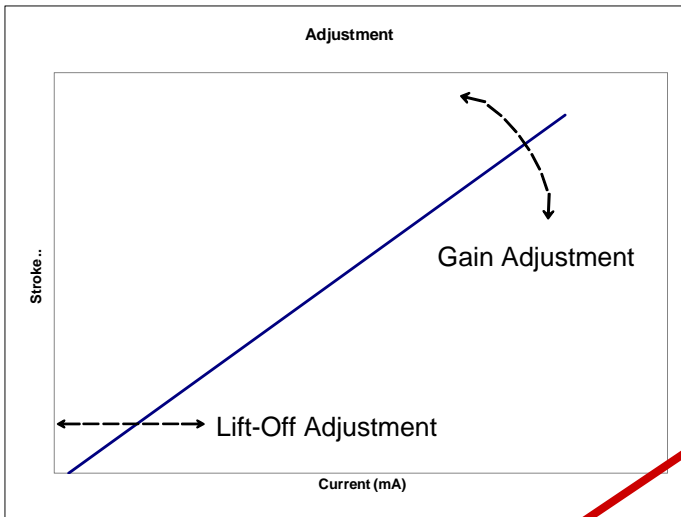


Servoid® Major Features and Benefits

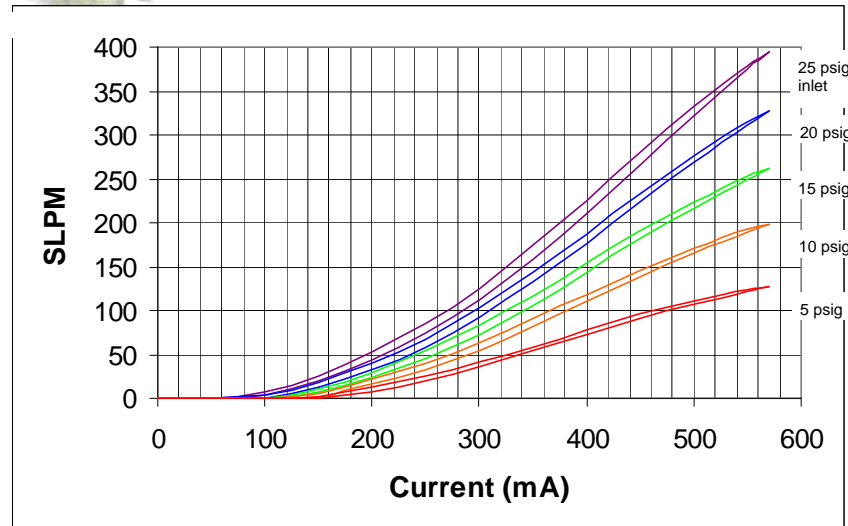
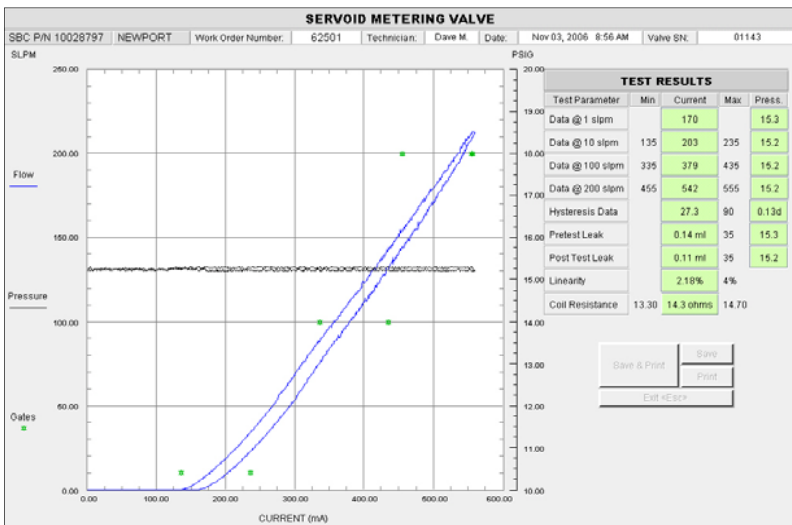


Factory Calibration
Fully adjustable to meet the most demanding applications

Completely Supported Armature
No Mechanical Hysteresis
10,000:1 Turn-Down Ratio!

Self-Aligning Metal Seats
Reliable and Repeatable
Low Flow Characteristics
100+ million cycle life

Pressure Balanced — changes in upstream and downstream pressure do not affect poppet position



Media: Gases and Liquids. (Solids tend to not flow very well)
 Pressure Ranges: Vacuum to 100 PSIG inlet
 Flow Rates: 0-1400 SLPM (0-50 SCFM) in some configurations. Typical rates 0-200 SLPM.
 Turn Down Ratio: up to 10,000:1
 Cycle Life: Hundreds of Millions
 Response Time: 20 ms typical 0-90% Full Scale
 Current: 0-550, 0-600, 0-1000 mA in typical configurations. Others available.
 Power: Typically 5-8 watts at 68°F.
 Linearity: 4% Full Scale typical
 Hysteresis: 3% Full Scale typical

Life Cycle Results: 0 to 151,000,000 Cycles

Pressure Drop: Any valve requires a pressure drop to operate. If the pressure is equal on both sides of an orifice then there will be no flow through the orifice. In our literature "Pressure Drop" indicates the required difference in pressure between the inlet and outlet in order to initiate flow. It does not indicate the pressure drop that the valve will cause to the system.

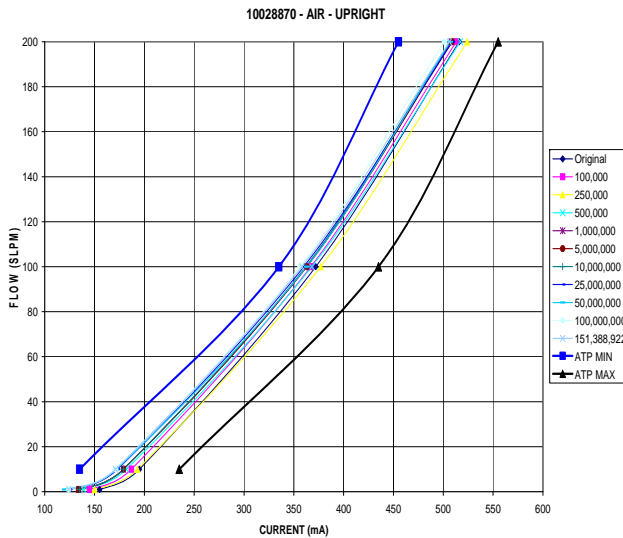
Hysteresis: Hysteresis is the variation in position of the poppet when it is moving in an opening direction versus the position of the poppet at the same current value when moving in a closing direction. Servoid Valves feature no sliding friction. The only moving part in a Servoid valve is the poppet which is suspended between two flat, helical springs. Pressure balanced Servoids also have balancing diaphragms. These springs and diaphragms flex to allow poppet motion, hence there is no mechanical friction and no mechanical hysteresis. The only hysteresis that exists is the magnetic effects of the changing field strength. Servoid Valves feature very low hysteresis levels.

Repeatability: Repeatability is the variation in flow rate from one energizing cycle to another when energized to identical current levels. In other words, Repeatability is the tolerance on the flow value that will be delivered when the valve is energized to a given level. Servoid Valves have very high Repeatability, which means a very tight tolerance.

Turn Down Ratio: Turn Down Ratio is the ratio of the highest controllable flow rate to the lowest controllable flow rate (how much you can "turn down" the flow and still retain control). For example, a valve that has a maximum controllable flow rate of 120 SLPM and a minimum controllable flow rate of .1 SLPM would have a Turn Down Ratio of 120/.1 or 1200:1. Higher Turn Down Ratios generally indicate better flow control on the low end rather than larger flow numbers on the high end.

Leakage: Servoid Valves feature metal-on-metal sealing surfaces. This gives precise, repeatable flow and crisp lift-off points. This precision and performance comes at a price, however. There is nearly always some degree of leakage across a metal-on-metal seat. For bubble-tight sealing you need an elastomeric seat, and elastomers tend to take a set over time which causes an unwanted shift in Servoid calibration and repeatability.

Calibration: Calibration involves adjusting the valve for the specified flow at the specified current level and inlet and outlet pressures, adjusting the lift-off point and the leakage level. Calibration must be performed under the application input/output pressure conditions and is media dependant. A valve that is calibrated to one set of parameters will perform with excellent repeatability for millions of cycles under those circumstances. However a valve calibrated to one set of specifications cannot be guaranteed to perform properly under different specifications.



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SOUTH BEND CONTROLS

Servoid[®] Proportional Solenoid Valves

