

ACCURACY. REPEATABILITY. RELIABILITY.

VACUUM ENCAPSULATION • DOMING • DISPENSING • AUTOMATION • BONDING • SYRINGE FILLING • GASKETING • SEALING • POTTING

EPOXIES • URETHANES • SILICONES • ACRYLICS • VACUUM ENCAPSULATION • DOMING • DISPENSING • AUTOMATION • BONDING • SYRINGE FILLING • GASKETING • SEALING • POTTING

# POSIDOT®

A unique patented technology for dispensing  
2-component materials in small shots



**0.005-5cc SHOTS & BEADS**

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# The Uniquely Right Choice For A Wide

Patented PosiDot® metering valves use positive displacement technology to bring more precision than ever before possible to small shot dispensing of 2-component epoxies, urethanes, silicones and most reactive resin systems. This is a technological breakthrough specifically designed to meter, mix and dispense shots from 0.005 to 5 cc's and handle material ratios from 1:1 to 25:1.

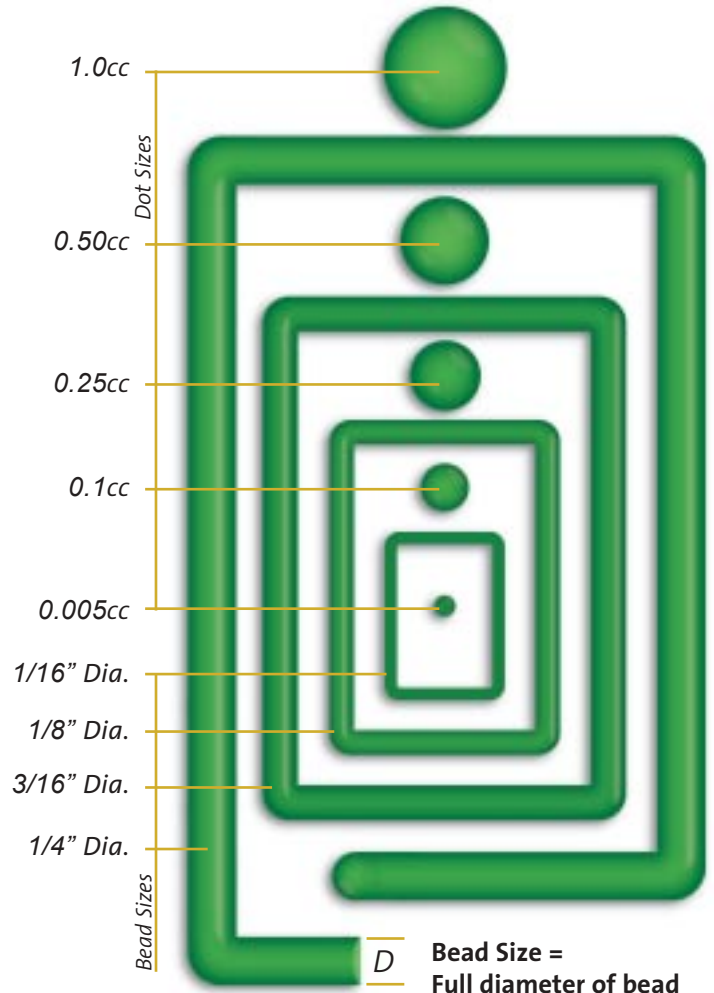
The patented PosiDot metering valve dispenses precisely the right amount of material every time. It is the only totally accurate and repeatable option for dispensing shots of less than 1 cc.



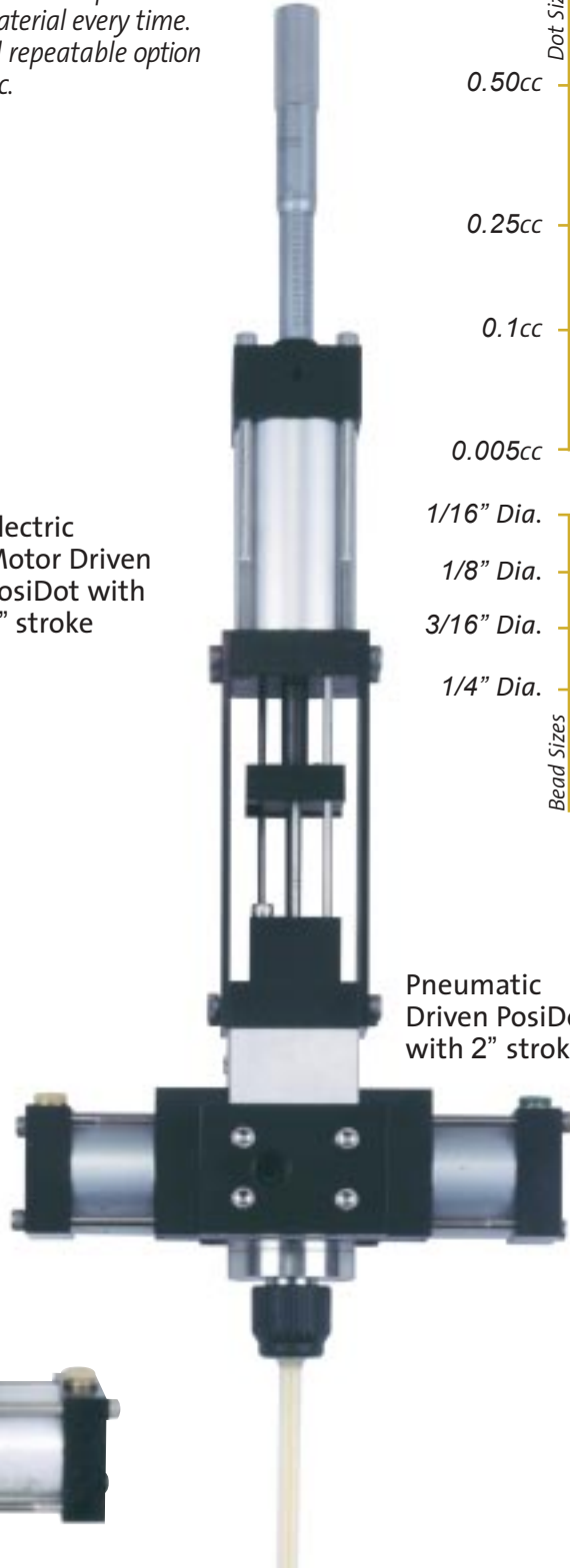
To determine dot volume:

$$\text{Volume} = \frac{D^3 \times 0.5236}{2}^*$$

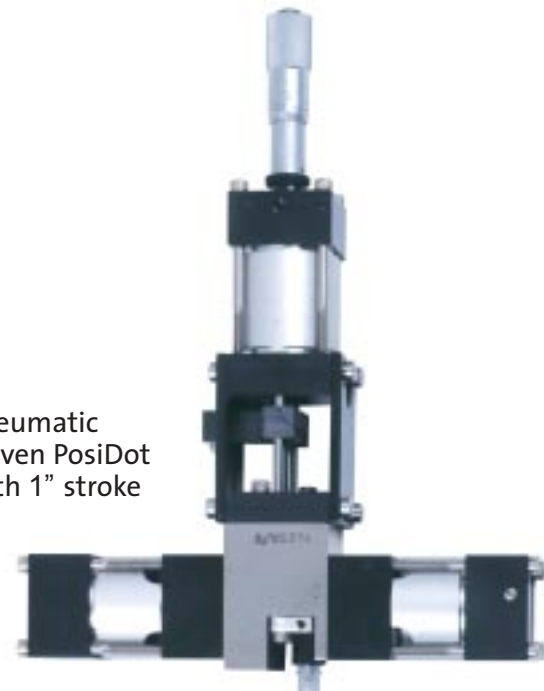
\* 1/2 the volume of a sphere



Electric Motor Driven PosiDot with 2" stroke



Pneumatic Driven PosiDot with 2" stroke



Pneumatic Driven PosiDot with 1" stroke

# Variety Of Small Shot Applications

## Features and Benefits

- Rod Positive Displacement Metering**  
Precise mix ratio and shot repeatability
- Balanced inlet/outlet spool assemblies**  
No material displacement when actuated
- 2-component materials remain separated within the valve**  
Eliminates cleaning and potential hardening of materials in the valve
- No material hoses between rod pump outlets and mixer inlet**  
Eliminates potential ratio or shot size problems due to hose expansion or contraction
- Micrometer or Programmable shot size controls**  
Assures precise and repeatable shot sizes
- Handles low to paste viscosity materials**  
Handles most reactive resin systems
- Compact size and light weight**  
Easily adaptable to programmable X-Y-Z tables, robot arms and work stations
- Uses disposable Posimixer® motionless mixers**  
Eliminates solvent purging and associated hazardous waste disposal problems
- Fixed ratio design**  
Accurate ratio control



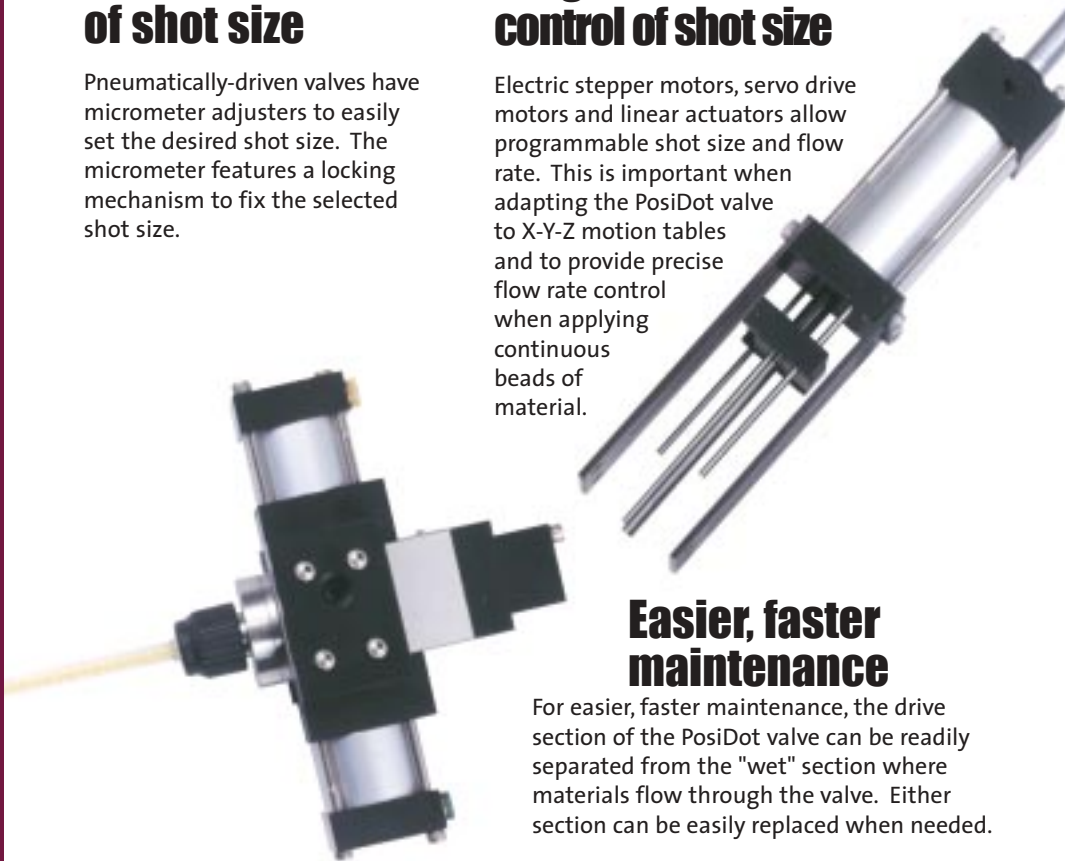
### Manual control of shot size

Pneumatically-driven valves have micrometer adjusters to easily set the desired shot size. The micrometer features a locking mechanism to fix the selected shot size.



### Programmable control of shot size

Electric stepper motors, servo drive motors and linear actuators allow programmable shot size and flow rate. This is important when adapting the PosiDot valve to X-Y-Z motion tables and to provide precise flow rate control when applying continuous beads of material.



### Easier, faster maintenance

For easier, faster maintenance, the drive section of the PosiDot valve can be readily separated from the "wet" section where materials flow through the valve. Either section can be easily replaced when needed.



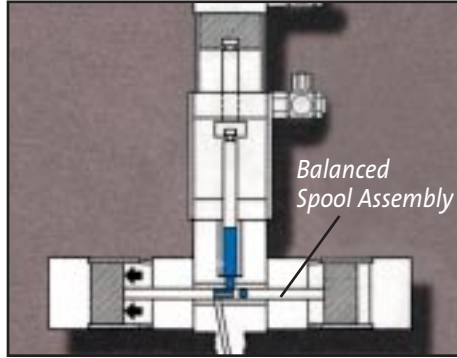
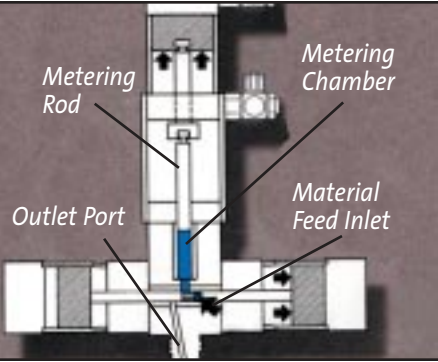
The reactive components are mixed in disposable Posimixer motionless mixers that attach to the outlet of the PosiDot metering valve. Standard Bell Mouth or Luer Lock Posimixers can be adapted depending on the shot size, viscosity and reactivity of the material being dispensed.



# How It Works

## Catalyst never meets resin until the time is right

A key feature of the patented PosiDot® valve design is the balanced inlet/outlet spool assemblies that do not displace material during shifting from the reload to the dispense position. This important feature allows pressure feeding of the “A” and “B” components up to 1200 psi during reloading while divorcing the materials from the mixer inlet. Upon shifting to the dispense position without any material displacement, an accurate volume of “A” and “B” components is injected into the disposable mixer inlet by rod displacement metering technology.



### 1 Reload

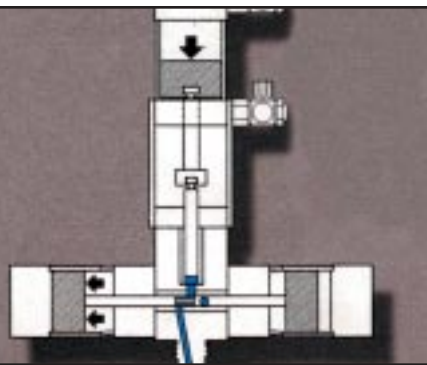
As spools shift to the right:

- Material feed inlets are opened.
- Materials are transferred into the metering chamber by a pressurized feed system.
- Outlet ports are blocked.
- Metering rod is retracted to a precisely set position determining the volume of each material.

### 2 Shift

Next the balanced spool assemblies shift to the dispense position:

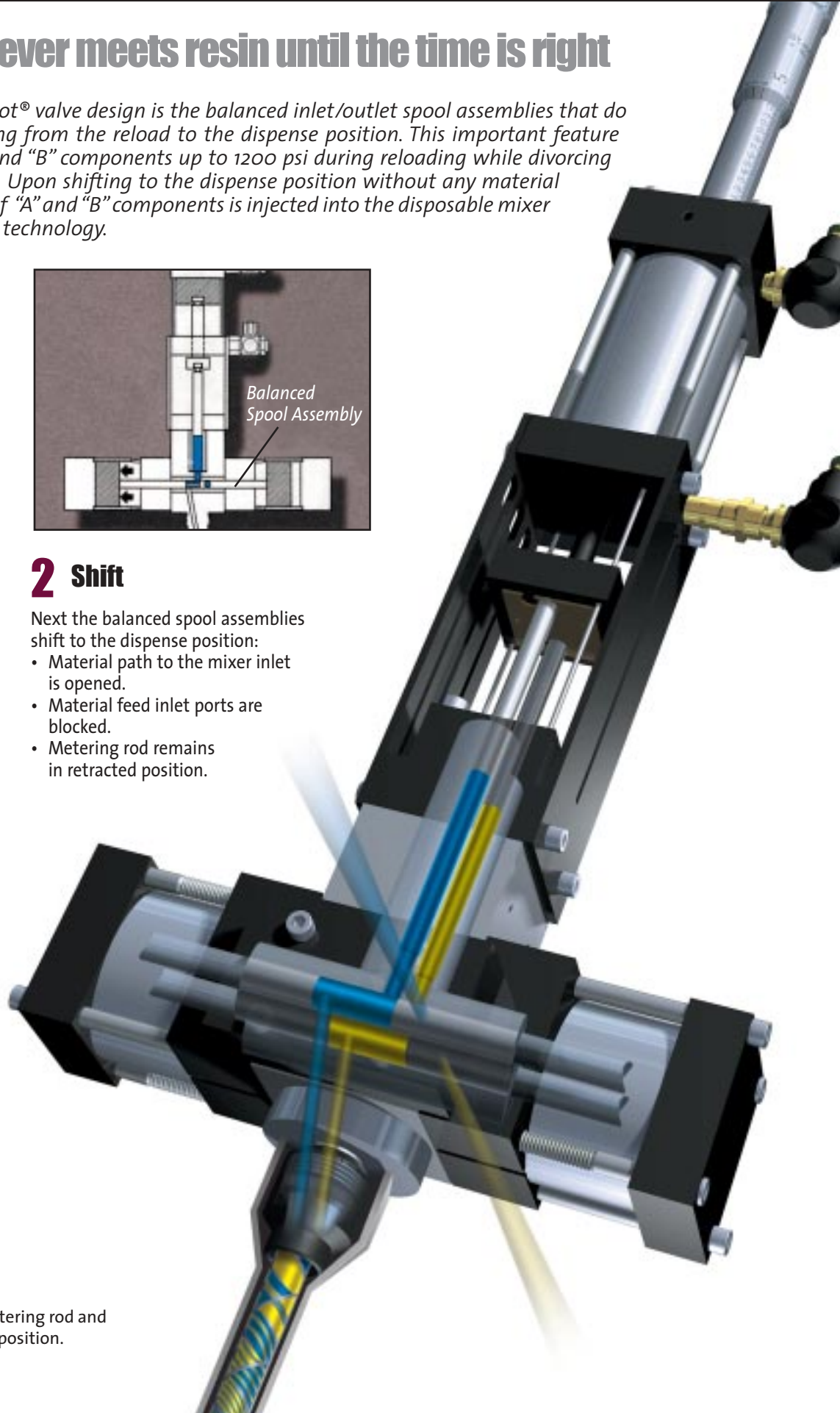
- Material path to the mixer inlet is opened.
- Material feed inlet ports are blocked.
- Metering rod remains in retracted position.



### 3 Dispense

Metering rods driven down:

- A and B materials are simultaneously dispensed from the metering chamber into the disposable mixer.
- Each component is dispensed at the predetermined ratio.



Upon completion of the rod travel, the metering rod and spool assemblies shift back to the reload position.

# The System Is The Solution ...

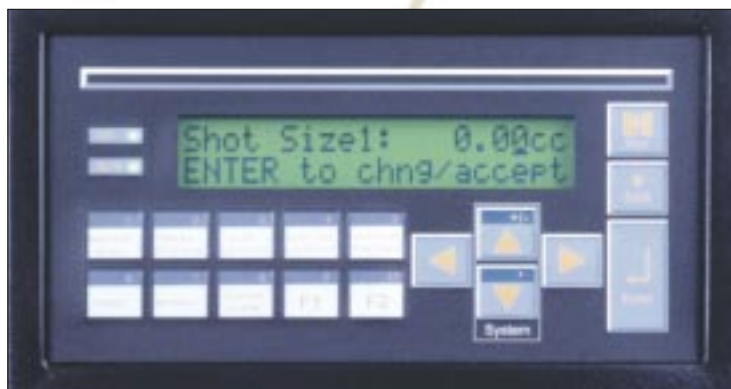


## Advanced PLC Controls and Operator Interface for ease of use

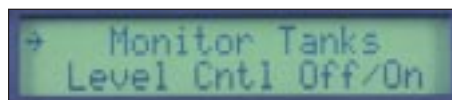
*PosiDot® systems are engineered to meet specific application and process requirements. Each system is accurate, repeatable and reliable.*

## Be in control

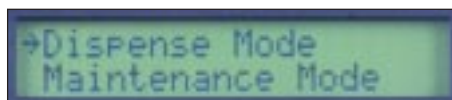
The integrated control system combines a PLC controller, an operator interface, I/O and networking, into one seamless solution with Windows® based software for unparalleled ease of use. The operator interface panel features a large, bright monochrome display screen and system/function keypad.



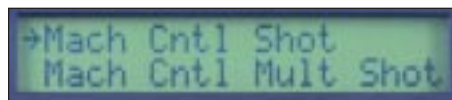
*Shot sizes can be readily programmed.*



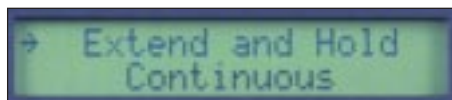
*Tank material levels are monitored.*



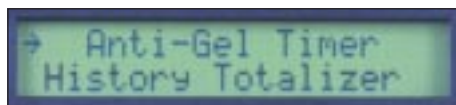
*Machine control modes are easily selected.*



*Single or multiple shots can be programmed.*



*Valve operation functions are readily selected.*



*Timers and counters can be programmed to monitor total machine cycles, provide maintenance reminders, set multiple shots, set timer alarms and purge times, etc.*

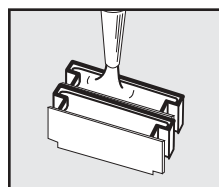
Other control panel features include:

- Power On/Off Buttons.
- Emergency Stop Palm Button.
- Air Regulator and Gauge for pneumatic driven PosiDots.
- Customer I/O connections for integration with auxiliary equipment.

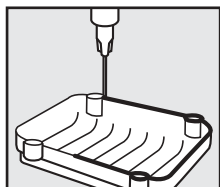
## Monitor the process

Sensors in the valve monitor the position of the spool assemblies and metering rods. These sensors interface with the PLC in the control panel to assure proper valve operation.

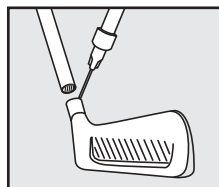
## For a variety of applications



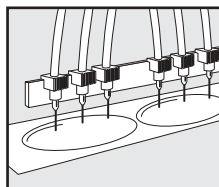
*Potting*



*Sealing*



*Bonding*



*Doming*

PosiDot systems can help you save material and labor costs for a variety of dispensing applications, whether you are using manual, semi-automated or automated manufacturing processes.



# Feed Systems

**Different Materials.  
Different Ratios.  
Different Solutions.**



## Cartridge Feed Systems

Cartridges of various sizes can be placed in pressurized retainers to allow low to medium viscosity materials to be transferred to the PosiDot valve.



## Pressure Tanks

Various size pressurized tanks can be used to transfer low to medium viscosity materials to the PosiDot valve.



## Transfer Pumps and Rams

Low to high viscosity materials can be pumped directly from bulk containers using pail and drum rams, transfer pumps and feed hoses as required.

The new generation controller provides easy menu-driven operation of the entire system, including monitoring material levels in the feed system.



*The versatility of the PosiDot system allows for different feed systems to handle a wide variety of material viscosities.*

# A variety of configurations ...

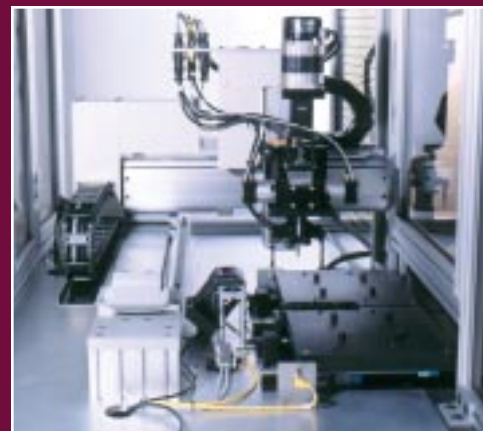
**Manual**



**Semi-Automated**

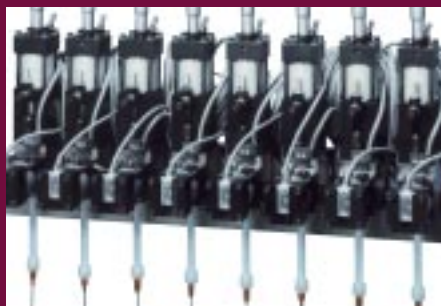


**Automated**



*PosiDot® metering valves fit any process requiring small shot dispensing. Bench top configurations are available for manual and semi-automated systems. PosiDot valves also readily adapt to automated motion systems including programmable X-Y-Z tables. They make any process more precise and cost-efficient. A variety of options are available to tailor a PosiDot system to your precise manufacturing needs.*

## and a variety of options to fit the system to your process



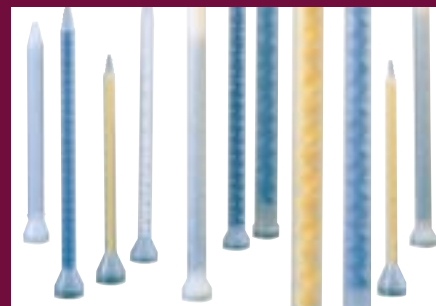
### Multiple Shots

Small 1" stroke PosiDot valves can be mounted on 1" centerlines and fed from a common manifold for dispensing multiple shots simultaneously.



### Heater Controls

Heating systems can be supplied, complete with programmable temperature controllers and digital readouts, to heat valves, material supply hoses and feed reservoirs.



### Disposable mixers

Posimixer disposable motionless mixers are available in a variety of sizes to thoroughly blend 2 component resin systems. Disposable Luer Lock needles are also available to adapt to the mixer outlet.



### Mounting Stand

Adjustable height stands mount PosiDot® valves in a convenient work station.



### Pinch Valve

Pneumatically actuated pinch valves can be adapted to the mixer outlet for positive shutoff of materials that tend to drool or string.



### Level Controls

Level control sensors and alarms can be adapted to most feed systems to monitor low and high material levels in the reservoirs.



# PosiDot<sup>®</sup> Specifications

- **“A” and “B” Metering Rods** - A wide selection of standard size metering rods are available depending on the ratio and shot sizes desired. Custom size metering rods can be machined to accommodate most any material ratio. The standard construction of the main body is 303/304 stainless steel. The metering rods are available in nitralloy hardened steel, stainless steel and tungsten carbide. The metering sleeves are available in nitralloy hardened steel and UHMW polyethylene.
- **Ratio Range** - 1:1 to 25:1 by volume depending on the size of the metering rods selected.
- **Shot Size Capability** - 0.005 cc's to 5.0 cc's depending on the size of the metering rods selected. The minimum stroke length of any size PosiDot valve is 0.050 inches. Maximum stroke is 1 or 2 inches depending on the model Posidot.
- **Cycle Rate** - 1 to over 60 cycles per minute, depending on the length of the stroke, size of metering rods, material viscosity, mixer, outlet needle employed and any back pressure or flow limitations created by the product into which material is being dispensed.
- **Balanced Inlet/Outlet Spool Assemblies** - The pneumatically actuated spool assemblies keep the "A" and "B" materials separate in the valve and divorce the material inlets from the outlets to the mixer. The standard construction of the spool rods are nitralloy hardened steel with stainless steel or tungsten carbide available optionally. The spool sleeves are available in nitralloy hardened steel or UHMW polyethylene
- **Material Feed System** - Pressure feed systems including cartridges, tanks and transfer pumps, can be employed to feed "A" and "B" components up to 1200 PSI. The appropriate selection of feed equipment is dependent on material viscosity and processing requirements.
- **Accessories** such as heaters, level controls, agitators, follower plates, vacuum degassing, nitrogen blanketing, etc. are readily available.
- **Mixers** - Disposable Posimixers are available in sizes from 1/8" to 1/2" in diameter and in various number of elements to provide thorough blending of most any reactive resin system. Lab tests may be required to determine the specific mixer required for a particular application.
- **Disposable Needles and Pinch Tubing** - A variety of Luer Lock needle sizes from 14 gauge to 30 gauge are available to adapt to the Posimixer outlets. Pinch tubing can be provided with Luer Lock adapters or preassembled to the Posimixer in various sizes and materials of construction.
- **Machine Drives** - Air cylinder drives are provided standard with an option to adapt electric stepper or servo motors and linear actuators. A linear transducer is available for programmable shot size control on pneumatic driven PosiDots.
- **Machine Controls** - A pneumatic/electric control panel with an operator interface screen/plc provides for total valve operation and function. Standard features include an emergency stop button, air regulator and gauge, power-on light and foot pedal actuator.
- **Service Requirements** - Normal industrial compressed air supply - 0.1 to 2.5 SCFM at 80 PSI. Electric - 120/240V, 50/60Hz.

LOOK  
WHAT CAN  
BE DONE



**Liquid Control Corp.**

*Plural Component Dispensing Equipment*

8400 Port Jackson Ave., N.W. • North Canton, Ohio 44720

Phone: 330.494.1313 • Fax: 330.494.5383 • [www.liquidcontrol.com](http://www.liquidcontrol.com) • E-mail: [salesinfo@liquidcontrol.com](mailto:salesinfo@liquidcontrol.com)