






Dispensing Valves/Pumps

Loctite® brand dispensing valves and pumps are value-added, robust, dispensing valves for adhesive or fluid delivery. Each valve is uniquely designed to meet different manufacturing needs. These valves should be combined with a reservoir and/or a controller. Selection of a Loctite® brand valve or pump is based on the chemistry and viscosity of the adhesive or fluid being used, and process requirements.



Monitor and ensure your dispensing quality with a dispensing inspection system. Refer to page 53 for details on the Loctite® Fluid Waveform Analyzer Signature Series and In-Line Flow Monitor.

Loctite® Stationary Applicator Valve **Loctite® Diaphragm Valve** **Loctite® Light Cure Dispense Valve** **Loctite® Cyanoacrylate Dispense Valve** **Loctite® Micro Needle Valve** **Loctite® Shot Miser™ Dispense Valve** **Loctite® Positive Displacement Pump** **Loctite® Delrin® Body Poppet Valve**

								
Item #	97113/97114	97135/97136	98009	98013	98084	98085	983330	986300/983914
Viscosity Range	Low to Medium	Low to Medium	Low to Medium	Low to Medium	Low to Medium	Low to Medium	Medium	Medium to High
Dispense Patterns	DT, DR, B	DT, DR, B	DT, MD, DR, B	DT, MD, DR, B	DT, MD, DR, B	DT, DR, B	DR	B, DR
Used to Dispense	IA, RC, TL, G	IA, RC, TL, LC	LC, RC, TL	IA, RC, TL, G	LC, RC, TL	IA, RC, TL, G	TL, RC	AG, TL, RC
Suck-Back	Yes	No	No	No	No	No	No	Yes
Adjustable Stroke	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Valve Type	P/T	P/T	P/T	P/T	P/T	P/T	P/D	P/T
Wetted Components	Acetal, PTFE Coated Metals	Acetal, Stainless Steel, PTFE Coated Metals	Acetal, UHMW	UHMW	Acetal, PTFE, Stainless Steel	PTFE	Acetal, Stainless Steel, PTFE Coated Metals	Acetal
Inlet	¼" OD / ⅜" OD	¼" OD / ⅜" OD	⅜" NPT	⅜" NPT	¼" NPT	¼" NPT	⅜" OD	⅜" OD
Outlet	¼" UNF Luer-Lok Tip	¼" UNF Luer-Lok Tip	¼" UNF Luer-Lok Tip	¼" UNF Luer-Lok Tip	¼" UNF Luer-Lok Tip	¼" UNF Luer-Lok Tip	¼" OD	Bayonet/ ⅜" NPT Luer-Lok Tip

B = Bead
DR = Drop
DT = Dot
G = Gel Instant Adhesives

IA = Instant Adhesives
LC = Light Cure/Acrylics
MD = Microdots
P/D = Positive Displacement

P/T = Pressure Time Dispense
RC = Retaining Compounds
TL = Threadlockers

Loctite® Stationary Applicator Valves, Items 97113, 97114

Loctite® Stationary Applicator Valves are slim, lightweight, patented seal-less dispense valves, designed for pressure-time applications. These stationary valves are modular in design and consist of a product shut-off valve and valve actuator, providing quick on-line serviceability. These valves have an adjustable suck-back feature to eliminate stringing and dripping. The Loctite® Stationary Applicator Valve (97113) is fitted with a ¼" tube fitting for viscosities up to 15,000 cP. The Loctite® Stationary Applicator Valve (97114) is fitted with a ⅜" tube fitting for viscosities up to 80,000 cP. Both stationary valves are engineered to be a reliable, durable, and accurate way to dispense Loctite® brand products.

Features

- Slim, lightweight, patented seal-less dispense valve
- Modular design of product shut-off valve and valve actuator provides on-line serviceability
- Fail safe – spring assisted close
- Suck-back feature eliminates product stringing
- Double-acting cylinder allows adjustable opening and closing speed for process control
- Cycle rate exceeds 360/minute
- Operational with pressure time applications
- Dispenses fluids up to 15,000 cP (97113) or 80,000 cP (97114)

Theory of Operation

Product flows to the dispense valve from the reservoir. Adjusting the double-acting cylinders allows control of the valve opening and closing rates. Use the adjustable suck-back feature to eliminate dripping and stringing. These valves can be used in both the stationary or advancing modes.

Technical Specifications

Air Input:	60 psi min.
Product Inlet:	97113: ¼" O.D. Tube 97114: ⅜" O.D. Tube
Fluid Outlet:	¼"-28 UNF, Tip Adapter, Luer-Lok Output Fitting
Wetted Components:	Delrin®, PTFE and PTFE Coated Metals
Max. Product Pressure:	180 psi
Air Cylinder:	Double acting diaphragm cylinder / flow control of both ports / spring return for fail safe function
Air Inlet Port:	¼" Tube Fitting
Size:	7.3" H x 1.4" D
Weight:	0.75 lbs.



Typical Fluids Handled

Cyanoacrylates
Anaerobics
Acrylics

List of Loctite® Brand Parts Supplied

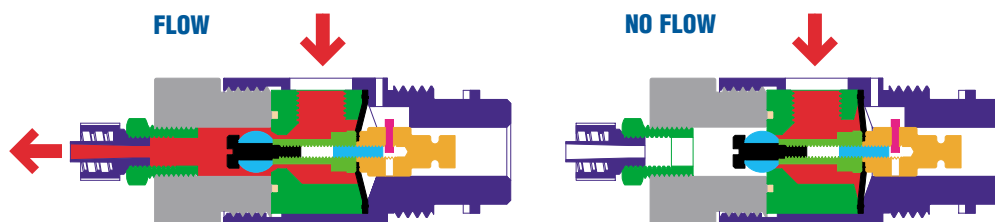
- (1) Dispense Valve
- (1) Accessory Kit (Feed Line, Air Line, Spiral Wrap)
- (1) Needle Kit
- (1) Anti-Bubbler Adapter & Sleeve
- (1) Manual

Options

97007, 97010	Loctite® Integrated Semi-Automatic Controllers
97017, 97020	Loctite® Integrated Semi-Automatic Controllers with Low Level Sensor
97123	Loctite® Single Channel Automatic Controller
97119	Loctite® Electric Rotorspray
98023	Loctite® Dispense Controller
98024	Loctite® Multi-Function Controller
982720, 982723	Loctite® Bond-A-Matic® Reservoirs with Low Level Sensors
982726, 982727	Loctite® Bond-A-Matic® Reservoirs
98022	Loctite® 300 ml Cartridge Pusher
984691	Loctite® Advancing Slide

Additional Information

For Spare Parts and Accessories, see pages 55-56.
For Fluid Compatibility Selector Chart, see page 51.
For Dispense Tips, see page 54.



RED SHOWS FLUID PATH

Loctite® Diaphragm Valve, Items 97135, 97136

The Loctite® Diaphragm Valve is a pneumatically operated dispense valve that utilizes a floating diaphragm. Designed for use with a pressure-time dispense system, the valve can either be mounted or hand held during operation. It is suitable for use with acrylic and anaerobic adhesives (not for use with cyanoacrylate adhesives). The valve is available in both a low viscosity version (97135) for use with adhesives up to 2,500 cP or a medium viscosity version (97136) for use with adhesives up to 5,000 cP.

Features

- Cost effective valve for use with pressure-time dispense systems
- Modular design and floating diaphragm allow for easy cleaning or repair
- Fail safe spring assisted close
- Internal components are made of PTFE to prevent premature curing
- Flow rates can be increased with use of 3/8" feed line
- Available in low viscosity (97135) and medium viscosity (97136) versions

Theory of Operation

Application of adhesive using the Loctite® Diaphragm Valve is achieved in conjunction with a pressure-time controller and adhesive reservoir system. The opening of the diaphragm takes place by pressurizing the internal single-acting cylinder and piston. Initiating a dispense cycle causes the piston to lift from the diaphragm. The adhesive pressure then pushes the diaphragm away from the flow path, allowing the adhesive to flow to the dispense needle. At the end of the dispense time, pressure is released and an internal spring re-seats the diaphragm over the flow path. The amount of adhesive applied is controlled by the dispense time, air pressure, and dispense needle gauge size.

Technical Specifications

Size:	5" L x 1.25" D 127 mm L x 32 mm D
Weight:	10.5 oz. (300 g)
Port Size:	Fluid Inlet – 1/4" Tubing or upgrade to 3/8" (Item # 97220)
Air Inlet:	5/8" Tubing
Fluid Pressure:	7-58 psi (.5-4 bar)
Pneumatic Supply:	Minimum – 73 psi (5 bar) Maximum – 100 psi (7 bar)

Typical Fluids Handled

Anaerobic and acrylic adhesives.

List of Loctite® Brand Parts Supplied

- (1) Diaphragm Valve
- (1) Product Feed Line, 1/4" inch
- (1) Needle Variety Kit
- (1) Manual

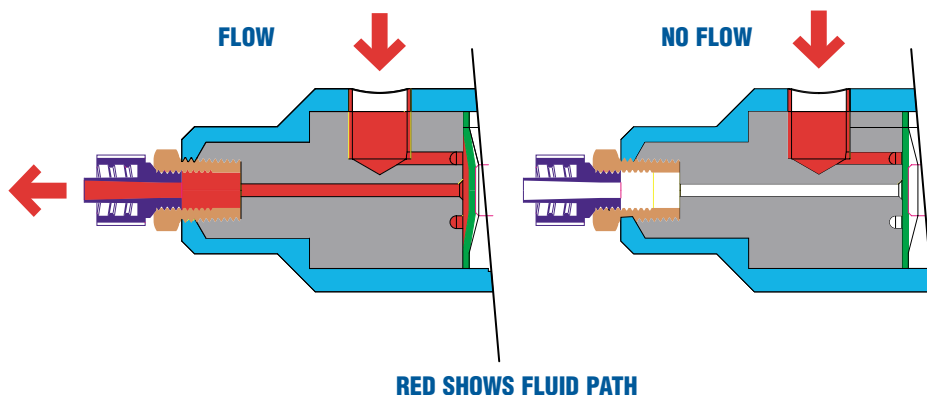


Options

98090	Loctite® Shot Miser™ Reservoir
98079	Loctite® Shot Miser™ Controller
97123	Loctite® Single Channel Automatic Controller
97115	Loctite® Electric Rotorspray
97118, 97119	Loctite® Advancing Slides
97007, 97010	Loctite® Integrated Semi-Automatic Controllers
97017, 97020	Loctite® Integrated Semi-Automatic Controllers with Low Level Sensor
98023	Loctite® Dispense Controller
98024	Loctite® Multi-Function Controller
982720, 982723	Loctite® Bond-A-Matic® Reservoirs
982721, 982724	
982726, 982727	

Additional Information

For Spare Parts and Accessories, see pages 55-56.
For Fluid Compatibility Selector Chart, see page 51.
For Dispense Tips, see page 54.



Loctite® Light Cure Dispense Valve, Item 98009

Loctite® Cyanoacrylate Dispense Valve, Item 98013

The Loctite® Light Cure Dispense Valve and the Loctite® Cyanoacrylate Dispense Valve are normally closed, diaphragm valves that provide high-resolution stroke adjustment resulting in consistent flow control and bubble-free, no-drip dispensing. These valves are suitable for all low to medium viscosity adhesives as specified in the Typical Fluids Handled section below. Both valves have a small profile with a 0.9" diameter and 2.5" length, and have a modular design to facilitate field repairs. These valves are designed for pressure time applications and must be used in conjunction with a controller and product reservoir.

Features

- Compact size and weight
- Adjustable fluid flow control
- Fail safe, air to open, spring close
- Positive shutoff, no seals
- Bubble-free, no-drip dispensing
- Field serviceable
- Easy cleaning without valve de-mounting
- Cycle rate exceeds 500/minute

Theory of Operation

Product flows to the dispense valve from the reservoir. Flow rate is adjusted by turning the flow control dial on top of the valve. The valves can be used in both the stationary or advancing modes.

Technical Specifications

Max. Input Fluid Pressure:	70 psi
Fluid Inlet:	1/8" NPT
Fluid Outlet:	1/4"-28 UNF, Tip Adapter, Luer-Lok Output Fitting
Fluid Viscosity Range:	Low to Medium Viscosity Fluids
Air Cylinder:	Single Acting, Spring Return, Stroke Control, Aluminum, Hard Coated Finish
Air Inlet Port:	1/4" Tube Fitting
Wetted Components:	98009 Chamber: Acetal Copolymer Diaphragm: Ultra High Molecular Weight Irradiated Polyethylene
	98013 Chamber: Ultra High Molecular Weight Polyethylene Diaphragm: Ultra High Molecular Weight Irradiated Polyethylene
Air Input:	70-90 psi
Size:	3.090" x 1.060" diameter
Mounting Hole:	(1) 10-32 UNF
Weight:	4.5 oz. (128 grams)

Typical Fluids Handled

98009:	Light Cure Adhesives Anaerobic Retaining Compounds Anaerobic Threadlockers
98013:	Cyanoacrylate Adhesives Cyanoacrylate Gel Adhesives Anaerobic Retaining Compounds Anaerobic Threadlockers



List of Loctite® Brand Parts Supplied

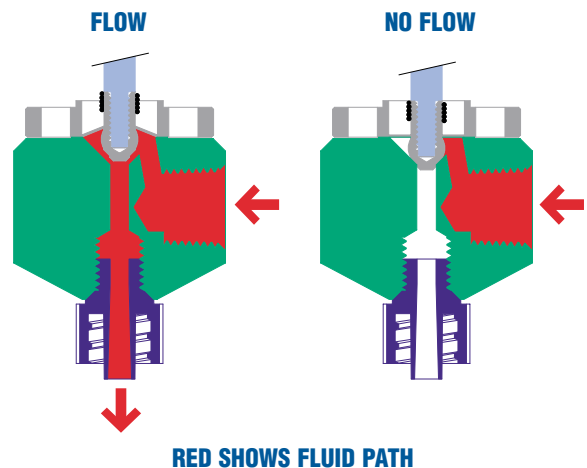
- (1) Valve Assembly
- (1) 5 ft. Air Line Tubing (attached to valve)
- (1) 6 ft. Product Tubing, 1/4" O.D., PTFE Lined
- (1) Valve Mount Screw
- (1) Needle Kit
- (1) Manual

Options

97007, 97010	Loctite® Integrated Semi-Automatic Controllers
97017, 97020	Loctite® Integrated Semi-Automatic Controllers with Low Level Sensor
97123	Loctite® Single Channel Automatic Controller
98023	Loctite® Dispense Controller
98024	Loctite® Multi-Function Controller
982720, 982723	Loctite® Bond-A-Matic® Reservoirs with Low Level Sensors
982726, 982727	Loctite® Bond-A-Matic® Reservoirs
98022	Loctite® 300 ml Cartridge Pusher
984691	Loctite® Advancing Slide

Additional Information

For Spare Parts and Accessories, see pages 55-56.
For Fluid Compatibility Selector Chart, see page 51.
For Dispense Tips, see page 54.



RED SHOWS FLUID PATH

Loctite® Micro Needle Valve, Item 98084

The Loctite® Micro Needle Valve is an adjustable opening, needle-and-seat valve designed to dispense shot sizes as small as 0.0005 grams. Intended for use with a pressure-time dispense system, the valve dispenses low-to-medium viscosity light curing acrylic adhesives using a short opening stroke that provides extremely fast positive shut-off. The valve's external stroke control adjustment facilitates shot size adjustment. The product's compact design provides mounting flexibility and easy integration into automated applications. The Loctite® Micro Needle Valve may be connected to syringe barrels of 5 to 30 ml. By changing the luer fitting to a tube fitting, any size pressure reservoir may be used.

Features

- Dispenses low-to-medium viscosity UV curing products down to a fraction of a microliter
- Short opening stroke provides extremely fast, positive shut-off
- External stroke control adjustment makes it easy for operator to fine tune shot sizes
- Compact design allows for mounting flexibility and easy integration into automated applications
- Capable of connecting to syringe barrels as small as 5 ml to 30 ml
- Change the luer fitting to a tube fitting and any size pressure reservoir can be used

Theory of Operation

Application of adhesive using the Loctite® Micro Needle Valve is achieved in conjunction with a pressure-time controller and adhesive reservoir system. The controller directs the pressurized air to the actuator of the valve through the inlet air port for a pre-determined period of time. This causes the normally closed, needle rod assembly to retract from the seat inside the dispensing tip, allowing the adhesive to flow from the material inlet to the dispensing tip. At the end of the cycle, the controller releases the input air pressure, allowing the spring to return the needle rod back to its original closed position.

Technical Specifications

Size:	5" L x 1.1" D 127 mm L x 28.5 mm D
Weight:	8 oz. (227 g)
Port Size:	Fluid Inlet – 1/8" NPT, Air Inlets - 10-32 UNF-2B Male Luer-Lok
Max Fluid Pressure:	100 psi (7 bar)
Pneumatic Supply:	Minimum – 60 psi (4.8 bar) Maximum – 100 psi (7 bar)

Typical Fluids Handled

Light curing acrylic adhesives



List of Loctite® Brand Parts Supplied

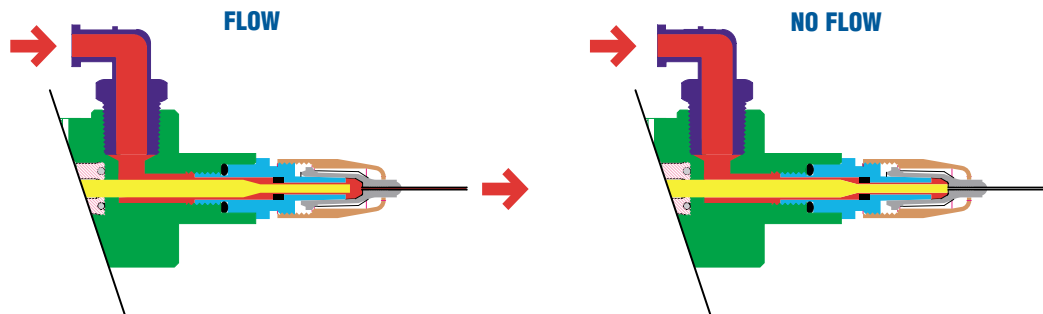
- (1) Micro Needle Valve
- (1) Product Feed Line, 1/4"
- (1) Air Line Tubing, 5 ft.
- (1) Fluid Fitting, 1/8" NPT x 1/4" Tube
- (1) Needle Variety Kit
- (1) Manual

Options

97123	Loctite® Single Channel Automatic Controller
98099	Loctite® Precision Filter and Regulator (required for use with all pressure-time dispense controllers, other than 97123)
985281	Loctite® Bracket
97208	Loctite® 10 ml Syringe Air Line Adapter
97245	Loctite® 30 ml Syringe Air Line Adapter
984691	Loctite® Advancing Slide
997569	Loctite® Silicone Grease
97007, 97010	Loctite® Integrated Semi-Automatic Controllers
97017, 97020	Loctite® Integrated Semi-Automatic Controllers with Low Level Sensor
98023	Loctite® Dispense Controller
98024	Loctite® Multi-Function Controller
982720, 982723	Loctite® Bond-A-Matic® Reservoirs
982721, 982724	
982726, 982727	

Additional Information

For Spare Parts and Accessories, see pages 55-56.
For Fluid Compatibility Selector Chart, see page 51.
For Dispense Tips, see page 54.



RED SHOWS FLUID PATH

Loctite® Shot Miser™ Dispense Valve, Item 98085

This low-cost, automatic dispense valve is designed for dispensing single component liquids with viscosities ranging from 0-80,000 cP. All wetted components are inexpensive and disposable, resulting in low maintenance cost and minimal downtime. The valve is designed for integration with semi-automatic and fully-automatic dispense systems. It is also sold with the Loctite® Shot Miser™ Dispense System 98116 (refer to page 7).

Features

- Pneumatically actuated automatic dispense valve
- Pinch-tube disposable fluid path for fast, easy, and low cost maintenance
- Dispenses dots or beads
- ¼" diameter product feed tube
- Adjustable valve stroke for enhanced shot size control
- Replaceable pneumatic actuator
- Integral Luer-Lok fitting accepts all Loctite® brand dispense needles

Theory of Operation

Application of adhesive using the Loctite® Shot Miser™ Dispense Valve is achieved in conjunction with a pressure-time controller and adhesive reservoir system. The opening and closing of the valve is controlled by the system's timer controls. When the dispense cycle is initiated, the piston pulls away from the pinch tube channel in the valve, opening the flow path, and allowing adhesive to pass. At the end of the dispense cycle, pressure is then reapplied to the piston, closing the flow path. The amount of dispensed adhesive is controlled by adjustment of air pressure, valve open time, and the size of the dispensing needle.

Typical Fluids Handled

All Loctite® brand adhesives, sealants, primers, activators, lubricants.

Technical Specifications

Fluid Pressure: 100 psi max.
 Size: 5" W x 1.7" L x 6" H
 Weight: 0.5 lbs.

List of Loctite® Brand Parts Supplied

- (1) Dispense Valve with ¼" diameter Product Feed Tube
- (1) Valve Air Line
- (1) Dispense Needle Sample Kit
- (1) Manual

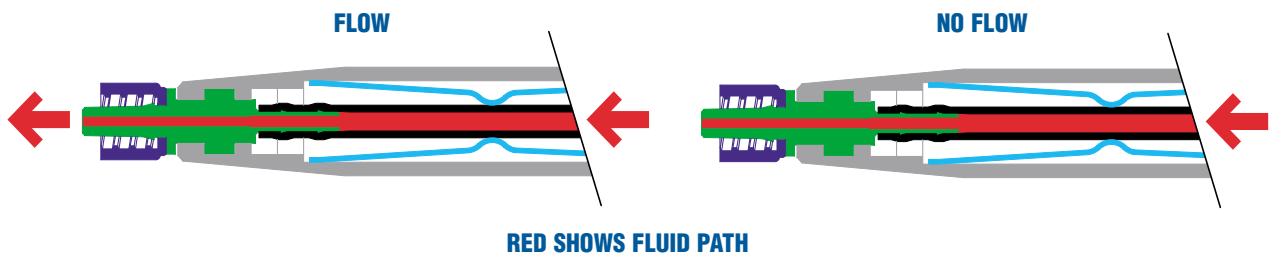


Options

97007, 97010	Loctite® Integrated Semi-Automatic Controllers
97017, 97020	Loctite® Integrated Semi-Automatic Controllers with Low Level Sensor
97123	Loctite® Single Channel Automatic Controller
98023	Loctite® Dispense Controller
98024	Loctite® Multi-Function Controller
982720, 982723	Loctite® Bond-A-Matic® Reservoirs with Low Level Sensors
982726, 982727	Loctite® Bond-A-Matic® Reservoirs
98022	Loctite® 300 ml Cartridge Pusher
984691	Loctite® Advancing Slide

Additional Information

For Spare Parts and Accessories, see pages 55-56.
 For Fluid Compatibility Selector Chart, see page 51.
 For Dispense Tips, see page 54.



Loctite® Positive Displacement Pump, Item 983330

The Loctite® Positive Displacement Pump features a patented displacement chamber and seal-less design. It is specifically designed for use with the Loctite® Rotospray 9000 System. The system is made up of a Loctite® 4 Liter Gravity Feed Reservoir, Loctite® Positive Displacement Pump, and a Loctite® Rotospray Centrifugal Force Dispensing Head. The positive displacement pump applies a metered amount of Loctite® brand anaerobic product to a rotorspray head. This gravity feed, self-priming pump has a dispense range capability of 0.02 - 0.4 cc, and a modular design for easy maintenance.

Features

- Positive displacement
- Pneumatically operated
- Designed for compatibility with Loctite® brand Rotospray workstations
- Modular design of product shut-off valve and valve actuator provides on-line serviceability
- Cycle rate for low viscosity products exceeds 120/minute
- Small, easy-to-use design
- Adjustable stroke to control the amount of material dispensed
- Compatible with a wide range of fluids
- Repeatable and consistent delivery of product

Theory of Operation

Use the Loctite® Positive Displacement Pump for rotorspraying low to medium viscosity fluids. Typically, this unit is used in conjunction with a gravity feed reservoir. The gravity feed reservoir will transfer the material from the storage tank to the pump, which supplies material to the dispensing area.

Technical Specifications

Air Input:	60-90 psi
Product Feed Line:	3/8" OD before pump, 1/4" OD after pump
Wetted Components:	Delrin®, Stainless Steel, and PTFE Coated Metals
Size:	9.15" H x 1.88" D (max), 4.2" W (with connections)
Weight:	1.7 lbs.
Fluid Capacity:	0.02-0.40 cc per shot
Cycle Speed:	2 cycles per second maximum (adjustable)



Typical Fluids Handled

Low to medium viscosity anaerobic threadlockers
 Low to medium viscosity anaerobic retaining compounds
 Any single-component, non moisture-curing, low to medium viscosity fluid (<100,000 cP)

List of Loctite® Brand Parts Supplied

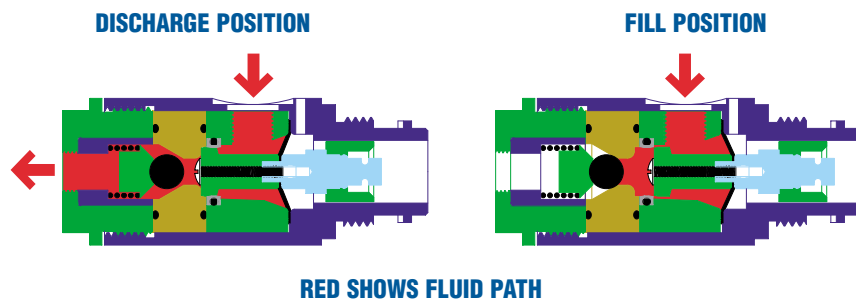
- (1) Positive Displacement Pump
- (1) Mounting Bracket
- (1) Feed Line Accessory Kit
- (1) Air Line Kit
- (1) Manual

Options

98024	Loctite® Multi-Function Controller
982880	Loctite® 4 Liter Gravity Feed Reservoir
	Loctite® Rotospray 9000 Applicator (see photo)

Additional Information

For Spare Parts and Accessories, see pages 55-56.
 For Fluid Compatibility Selector Chart, see page 51.
 For Dispense Tips, see page 54.



Loctite® Rotospray 9000 Applicator

The Loctite® Rotospray 9000 Applicator is a pneumatically powered applicator used for applying 360 degree beads of a fluid on the inside diameter of any surface or threaded hole. Common materials applied are retaining compounds, threadlockers, activators/primers, and oils. Common applications are engine cup plug sealing, bearing retaining, and motor magnet bonding. Rotospray applicators can be used in a variety of applications and configurations, and are typically used in conjunction with the Loctite® Positive Displacement Pump (983330) and Gravity Feed Reservoir (982880). If you have an application requiring an internal 360 degree bead, contact the Henkel technical information department at 1-800-LOCTITE, for the right rotorspray applicator for your application.

Loctite® Delrin® Body Poppet Valves, Items 986300, 983914

The Loctite® Poppet Valves are designed to dispense Loctite® brand high viscosity anaerobic form-in-place gasketing products and structural acrylics. It features a suck-back capability and can operate at fluid pressures up to 625 psi. Item 986300 uses dispense nozzles with a bayonet style mounting that improves nozzle end location and can withstand the high fluid pressures required of high viscosity fluid dispensing. Item 983914 comes with a 1/8" NPT outlet for Luer-Lok and standard needle dispensing. Though both have stroke adjustment capability, 983914 is fitted with an adjustment knob, 986300 is not. Both valves are made of high strength plastic material treated with a proprietary Loctite® brand cleaning process to prevent premature adhesive curing. The poppet valve can be used in conjunction with a positive displacement pump or a pressure time system. This valve is engineered to be a reliable, durable, and accurate way to dispense medium to high viscosity fluids.

Features

- Poppet design gives valve “suck-back” feature
- Bayonet type mounting of nozzles provides end location repeatability
- Handles product pressures up to 625 psi
- Positive mounting surface
- High strength plastic material specially treated to be inert to Loctite® brand products

Theory of Operation

Use the Loctite® Poppet Valve to apply product in drops and beads with a semi or fully automatic dispensing system. The valve can be used in both the stationary or advancing modes. It may be used with the Loctite® Pump-A-Bead™ II, Press Pak™, or any other dispense system that can provide a source of pressurized product and a 4-way pneumatic valve.

Technical Specifications

Max. Product Pressure Limit:	Should not exceed 625 psi
Air Input:	60 psi
Fluid Viscosity Range:	Medium to high viscosity anaerobic, silicone, and structural acrylic products
Inlet:	3/8" diameter
Wetted Components:	Delrin® treated with a proprietary Loctite® brand process
Size:	5.28" H x 2.00" D
Weight:	1.3 lb. (0.59 kg) valve plus fittings and tubing
Outlet:	
983914	1/8" NPT for Luer-Lok Tip
986300	Bayonet Style



Typical Fluids Handled

Anaerobic Form-In-Place Gasketing Products
Structural Acrylics

List of Loctite® Brand Parts Supplied

- (1) Delrin® Body Poppet Valve with:
- (2) 4' control air tubing
- (1) 4' product supply tubing

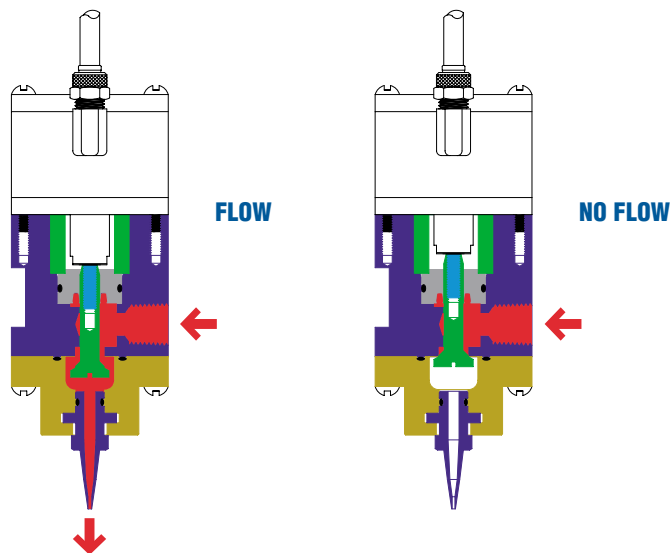
- (1) Accessory Kit
- (1) Manual

Options

986000	Loctite® Pump-A-Bead™
98006	Loctite® Press Pak™
984691	Loctite® Advancing Slide









Additional Information

For Spare Parts and Accessories, see page 55.
For Fluid Compatibility Selector Chart, see page 51.
For Dispense Tips, see page 54.



RED SHOWS FLUID PATH

Loctite® Brand Valves and Pumps Fluid Compatibility Selector Chart

								
Item #	97113/ 97114	97135/ 97136	98009	98013	98084	98085	983330	986300/ 983914
Accelerators			●	●		●		
Acrylics	●	●	●		●	●		●
Activators			●	●		●		
Anaerobics	●	●	●	●	●	●	●	●
Cyanoacrylates	●			●		●		
Gasketing Anaerobics								●
Non-Abrasive Greases								●
Inks	●	●	●	●	●	●		
Lubricants								●
Oils	●	●	●	●	●	●		
One-Part Epoxies	●							●
Paints	●	●	●	●	●	●		
Primers			●	●		●		
Reagents			●	●		●		
Solvents			●	●		●		
UV & Light Cure Fluids	●	●	●		●	●		
UV Anaerobics	●	●	●		●	●		
Water		●	●	●	●	●		

● - Compatible