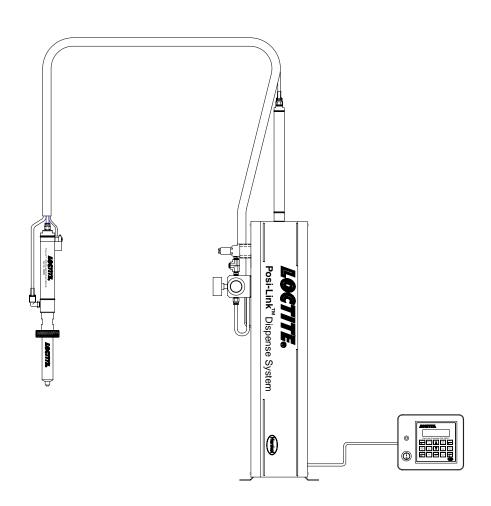


EQUIPMENTOperation Manual



Loctite® Posi-LinkTM Dispense System

Part Numbers

98377 Posi-LinkTM Controller

98378 Posi-LinkTM 5-25 Actuator

98379 Posi-LinkTM 10-50 Actuator

98380 Posi-LinkTM 200-400 Actuator



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Please Observe The Following 1

1.1 **Emphasized Sections**

⚠ Warning!

Refers to safety regulations and requires safety measures that protect the operator or other persons from injury.

Caution!

Emphasizes what must be done or avoided so that the unit or other property is not damaged.

Notice:

Gives recommendations for better handling of the unit during operation or adjustment as well as for service activities.

1.2 Safety



Damage to the power cord can result in injury or damage to the unit

- Check power cord before each use. If power cord is damaged, do not operate! Replace a damaged power cord.
- Observe general safety regulations for the handling of chemicals.
- Always wear goggles when operating with pressurized air.
- For safe and successful operation of the unit, read these instructions completely.

1.3 *Items supplied*

PN# 98377 Posi-LinkTM Controller

Footswitch

Posi-Link TM 5-25 Actuator with Coupled Cylinders PN# 98378

> Power Line Cord **Instruction Manual** (2) Mounting Brackets (4) #6-32 screws

Air pressure gauge

OR

Posi-Link TM 10-50 Actuator with Coupled Cylinders PN# 98379 Power Line Cord

Instruction Manual (2) Mounting Brackets (4) #6-32 screws Air pressure gauge

OR

PN# 98379 Posi-Link TM 200-400 Actuator with Coupled Cylinders
Power Line Cord
Instruction Manual
(2) Mounting Brackets
(4) #6-32 screws

Air pressure gauge

1.4 Field of Application

The Posi-Link™ Dispense System is a programmable positive displacement dispenser specifically designed to dispense Loctite® packaged adhesive. This device can be utilized for handheld, stationary and robotic applications. It can be programmed to dispense small to large drops and to regulate the flow of adhesive for bead dispensing.

The Posi-LinkTM5-25 Actuator is designed to dispense Loctite® adhesives packaged in 5ml, 10ml and 25ml syringes where hand held application is preferred. The Posi-LinkTM10-50 Actuator is designed to dispense 10ml, 25 ml syringes and 50ml 1:1, 50ml 2:1 dual cartridges. The Posi-LinkTM200-400 Actuator is designed to dispense 200 and 400ml cartridges in 1:1, 2:1 and 10:1 mix ratios. An optional mounting bracket is available for each unit to accommodate stationary or robotic mounting.

1.5 Features and Benefits

- Positive displacement dispensing
- Easy to program
- 4 programmable dispense setting
- Directly input dose size
- Teach dose size
- Programmable suck back
- 25 user defined stored programs
- Programmable dispense rate
- Constant pneumatic force up to 122 lb. for Posi-Link™10-50
- Pneumatic force up to 420 lb. for Posi-Link™200-400
- Automatic package engagement
- Manual mode with level indicator
- Manual mode with dose history

- Footswitch or remote start
- Fault sensor for low air pressure, low level, and dispense faults

2 Description

2.1 Description and Theory of Operation

The Posi-LinkTM Dispense System is a positive displacement dispenser specifically designed to dispense Loctite® packaged adhesive. The Posi-LinkTM Dispense System is made up of a controller, an actuator with coupled cylinder assembly, and a package nest.

The controller is used to program the dispense functions and initiate dispense functions in automatic or manual modes. The controller can store up to 25 separate dispense programs. The keypad has 15 keys that are divided into three groups: 6 program keys, 6 run keys and 3 input keys. The LCD screen is used for program inputs and to display information pertaining to package loading and machine run cycles.

The system power switch is located on the front panel of the controller. Also located on the front panel, of the controller, is a LED lamp. This is a three color LED lamp that lights up green when unit is in cycle, amber to indicate a fault, and red when unit is out of adhesive.

The controller is capable of detecting dispense faults. Dispense faults pertain to insufficient pneumatic pressure, clogged needle, or product flow which is not keeping pace with the programmed dispense rate. These faults will cause the LED to shine amber.

The controller warns of a low level adhesive condition by illuminating the amber LED when 5% of the adhesive package remains. When the adhesive package is empty the LED will shine red and the system will stop dispensing.

The actuator is designed to be a freestanding unit allowing the dispense head and controller to be remotely operated. The actuator houses the power supplies, a micro step linear actuator and all associated electronics. The controller connects to the actuator via a communication cable and the stepping cylinder is directly attached to one end of the actuator.

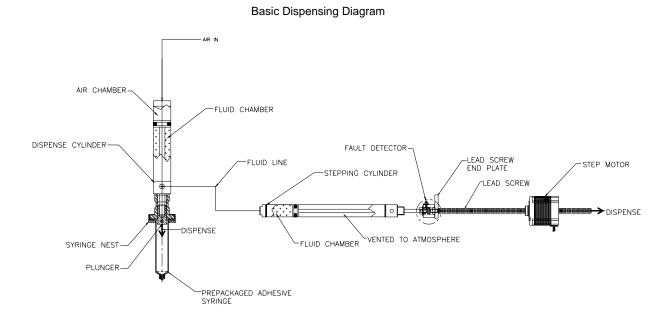
The Posi-Link Dispense System is design to dispense Loctite® adhesives which are packaged in 5, 10, 25 ml syringes and 50, 200, 400 ml dual cartridges. A unique package nest is available for each package size. Loading adhesive into the dispenser is achieved by simply placing the package into the proper package nest and allowing the Posi-Link controller to automatically engage the package and set level indicator. As product is dispensed the level indicator reports the amount of adhesive remaining in the package.

The heart of this dispense system is the coupled cylinder assembly and the stepper motor (see Basic Dispensing Diagram). The coupled cylinder assembly is made up of a dispensing cylinder and a stepping cylinder; both cylinders are double acting, and are hydraulically connected.

Pressurize air is supplied to the dispense cylinder which in turn exerts a force onto the hydraulic fluid. The fluid volume within both cylinders is controlled by the position of the stepper motor. As the motor is moved forward the volume within the stepping cylinder is increased allowing fluid from the dispense cylinder to move into the stepping cylinder, which causes the dispense cylinder rod to displace adhesive from the adhesive package.

Attached to the stepping cylinder is a fault detector. The fault detector is part of a ground fault circuit and is not attached to the stepper motor. The fault detector is forced against the lead screw end plate by the pressurized air being supplied to the dispense cylinder. The fault detector is used to detect and reports to the controller low or insufficient air pressure, auto package engagement, empty adhesive package and clogged dispense tip.

Variations of the pneumatic pressure do not affect the volume being displaced from the adhesive package. The use of a constant force, on the adhesive, eliminates any manufacturing tolerance or variations in the mechanical assembly to insure that the displacement of adhesive is at a level of precision and repeatability which far surpasses other dispenser types.



2.2 Dispensing Capabilities

Posi-Link 5-25 Dispense System				
Syringe	Minimum	Maximum	Minimum	Max. Product
Size (ml)	Volume (ml)	Dispense Rate	Dispense	Viscosity
		(ml/sec.)	Rate	(cPs)
			(ml/sec.)	
5	.001	.400	.001	30,000
10	.001	.400	.001	10,000
25	.001	.400	.001	5000

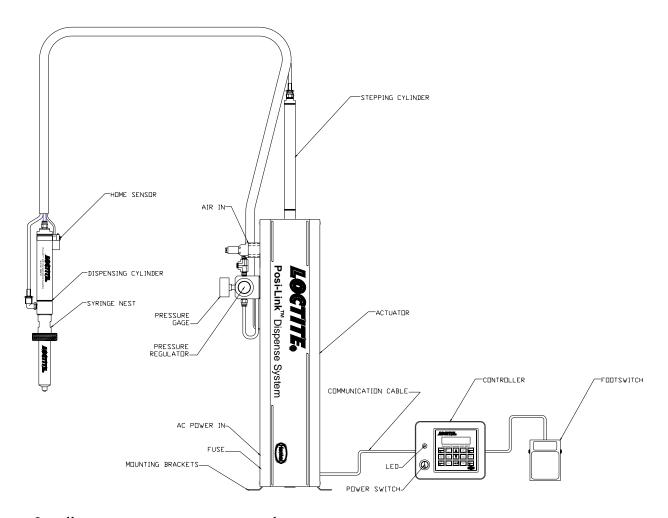
Posi-Link TM 10-50 Dispense System				
Syringe	Minimum	Maximum	Minimum	Max. Product
Size (ml)	Volume (ml)	Dispense Rate	Dispense	Viscosity
		(ml/sec.)	Rate	(cPs)
			(ml/sec.)	
10	.001	.400	.001	All
25	.001	.400	.001	All
50	.001	.400	.001	All

Posi-Link™ 200-400 Dispense System				
Syringe	Minimum	Maximum	Minimum	Max. Product
Size (ml)	Volume (ml)	Dispense Rate	Dispense	Viscosity
		(ml/sec.)	Rate	(cPs)
			(ml/sec.)	
200	.01	1.00	.001	All
400	.01	1.00	.001	All

Notice:

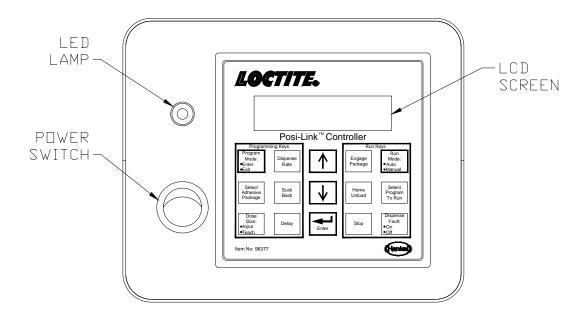
When dispensing very small drops, of two part adhesives, special static mix nozzle may be required.

2.3 Operating Elements and Connections



- Install pressure gage to pressure regulator.
- Connect the communication cable to the back of the controller.
- Connect footswitch to the back of the controller.
- Connect supply air to the actuator as shown.
- Set fuse for proper voltage (115 or 230 volts)
- Connect AC power to actuator

2.4 Display Menus and Keypad Description



The operating panel of the Posi-LinkTM controller contains an LCD text display screen and 15 keys. The keypad is divided into three groups: 6 programming keys, 3 input keys, and 6 run keys. The LCD screen is used to input program information via the programming keys or display program information using the run keys. The first screen to appears after the power switch is turn to the 'on' position is the product identification screen.

Screen #1



2.4.1 'Run Mode' Key

Pressing the 'Run Mode' key will change the screen to the Auto:Home screen. This screen is informing the user that the Posi-Link Dispense System is at home position and is ready to be loaded with an adhesive package.

The 'Run Mode' key is used to select an automatic mode or manual mode. Selecting the auto mode will initiate a selected program, which will run by pressing the footswitch. Pressing the Run Mode key again will switch the screen to the manual mode. The manual mode has two distinct functions: jog and continuous run. Once in manual mode the dispense head can be jogged, either in the forward or reverse direction, using the \tau\tau arrow keys. For continuous mode press the footswitch and product will flow as long as the footswitch is pressed. Upon releasing

the footswitch, the forward motion of the dispense head will stop and programmed suck back and delay will occur. The suck back and delay settings will be that of the program residing in the Auto Mode. The manual mode is typically used for robotic applications. This key is not active in the program mode.

Screen #2



Auto:Home Load New Package

Notice: When starting a new dispensing session, with a new package, always home the dispense head before loading. If a package is engaged, from a previous dispensing session, it is not necessary to home the dispense head.

When a package is loading in the Posi-LinkTM Dispense System pressing the 'Run Mode' key will bring up the following screen:

Screen #3

Auto:PR-A Lev99%
Dose 0.010 ML

This screen informs the user of the status of the controller. The first line states the mode (Auto: = automatic), the program name (PR-A), and the percentage of product within the adhesive package (Lev99%). The second line is the dose, in ml, which is the amount of adhesive that will be displaced from the package when the footswitch is pressed.

Pressing the 'Run Mode' key again will change from 'Auto:' to 'Manual Mode'.

Screen #4

Manual Mode Dose 0.000 Lev 99%

The first line states the mode (Manual Mode). The second line states the dose of the previous dispense (Dose 0.000) and the percentage of product within the adhesive package (Lev99%).

2.4.2 'Select Program To Run' Key

The 'Select Program to Run' key is used to select a pre-assigned program to be run in auto mode or manual mode. The controller can store up to 25 programs. All program names start with 'PR-'. The letters A-Y denote the programs, which can be recalled. To recall a program press 'Select Program To Run' key.

Screen # 5

Select Program to Run

Auto Sel Program PR-A

To scroll through the programs press the arrow $\uparrow\downarrow$ keys and press 'Enter' to accept a different program. The screen will change back to the auto mode screen and will show the selected program name and new dose information. This key is only active in the run mode.

2.4.3 'Dispense Fault' Key

The 'Dispense Fault' key is used to activate or to deactivate dispenses faults. When activated, or in the 'on' position, a dispense fault will disable the footswitch until the fault is cleared. Pressing the enter key will clear the fault. When the dispense fault is deactivated, or in the 'off' position, a dispense fault will not disable the footswitch.

This key is active only in the run mode/auto.

Screen # 6



Dispense Fault On↓↑ Ent

2.4.4 'Home / Unload' Key

The 'Home/Unload' key is used to return the dispense head piston to the fully retracted position. Once the dispense head has returned to the home position the spent adhesive package can be removed and a new package can be installed. This key is active in the run mode.

Screen #7

Home Unload System Homing

2.4.5 'Engage Package' Key

The 'Engage New Package' key is used to prepare a new adhesive product package for dispensing. Pressing this key will cause the dispense head piston to advance until the dispense head plunger is inserted into the syringe barrel piston. When a dual cartridge is used the dispense head plunger will stop when contact is made with package piston. This key is only active in the run mode.

Screen #8

Engage Package

Engaging New Package

Notice: Do not open nozzle end of package until after package has been engaged.

2.4.6 'Stop' Key

The 'Stop' key will stop all movement of the dispensing head. This key will interrupt the following program sequences: a dispense move, a suck back move, a homing move, or a package engage move. This is not an emergency stop. It does not kill power to the unit and does not need to be reset



Notice: If 'Stop' is executed during a 'Home' move or an 'Engage Package' move the 'Home' key must be pressed to reset position information to the PLC.

Notice: If 'Stop' is executed during a dispensing cycle the following dispense will include the unfinished move.

2.4.7 Arrow Keys



The '\'' arrow key is used to scroll up through menu screens or to increase numeric valves of dose size, suck back and dispense rates. The up arrow key is also used to jog the dispense head up in the manual mode or to initiate a dispense in the auto mode. This key is active in both the program mode and the run mode.



The ' \downarrow ' arrow key is used to scroll down through menu screens or to decrease numeric values of dose size, suck back and dispense rates. The down arrow key is also used to jog the dispense head down in the manual mode. This key is active in both the program mode and the run mode.

2.4.8 'Enter' Key

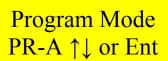


The "Enter' key is used for accepting menu driven choices and data inputs in the program mode. In the auto mode the enter key is used for selecting the program to be run. The enter key is also used clear a fault condition.

2.4.9 'Program Mode' Key

Screen #9





The 'Program Mode' key is used to enter and exit the programming mode. Once in programming mode a program name must be selected. All variable assignments will be saved to this program name. The controller can store up to 25 programs. The letters A-Y denote the program names. To scroll through the program names use the $\uparrow\downarrow$ arrow keys. Once a program name has been selected press the 'Enter' key and the screen will change (see screen # 10) and all programming keys will be enabled. Once programming is complete pressing the 'Program Mode' key will result in existing the programming mode.

Screen # 10

Program:PR-A

2.4.10 'Select Adhesive Package' Key

The 'Select Adhesive Package' key is used to select the adhesive package that will be loaded into the dispense system. The package size is used to determine the volume of material to be dispensed. Use the arrow key to scroll through the list of packages. Screen #11



Program:PR-A 25mlSngleSyringe

Once the correct package is displayed on the screen press the 'Enter' key. Screen # 11 will change to screen #12.

Screen #12

Program:PR-A

2.4.11 'Dose Size' Key

Screen #13



Program:PR-A
Input ↓ or Teach ↑

The 'Dose Size' key is used to input or change the amount dispensed. The dispense amount can be manually inputted by pressing the '\' down arrow key or the user can elect the "teach" the dispense amount by pressing the '\' up arrow key.

Pressing the '\'' down arrow key allows the user to input a dose value using the \\\^\ arrow keys. Once the proper size is displayed on the screen (see screen # 14) the 'Enter' key is pressed to accept the value.

Screen # 14

Program:PR-A Dose 0.000ml Pressing the '\u00e7' up arrow allows the user to 'Teach' the dose volume. This function allows the end user to dispense product by pressing the footswitch and visually determining the desired amount of adhesive. The controller will display the dispensed amount. The volume dispense can be accepted by the 'Enter' key or the user can restart the teach function, by pressing the '\u00e7' up arrow, until the desired volume is achieved. The 'Dose Size' key is active only in the program mode.

Screen # 15

Program:PR-A
Teach ↑

Screen #16

Program:PR-A T Dose: 0.085ml

2.4.12 'Dispense Rate' Key

The 'Dispense Rate' key is used to change or set the dispense rate or speed. The speed setting is changed by pressing the \$\psi\$ arrow keys and the 'Enter' key is used to accept the value. This key is active only in the program mode.

Screen #17

Dispense Rate Program:PR-A Speed: 0.000ml/s

2.4.13 'Suck Back' Key

Screen # 18

Suck Back Program:PR-A SuckBk: 0.000ml

The 'Suck Back' key is used to set the amount of suck back. The end user can change the suck back setting using the $\uparrow\downarrow$ arrow keys and accepting the setting with the 'Enter' key. This key is active only in the program mode.

2.4.14 'Delay' Key

Screen #19



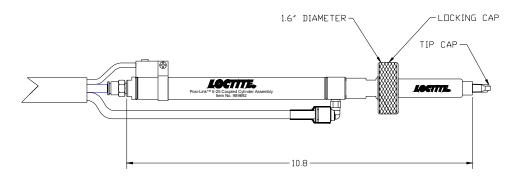
Program:PR-A Delay: 0.00

The 'Delay' key is used to set a dwell time at the end of the forward move of the dispense cycle. The initial setting is zero and time is in seconds. The end user can change the delay time by using the $\uparrow\downarrow$ arrow keys and accepting the setting with the 'Enter' key. This key is active only in the program mode.

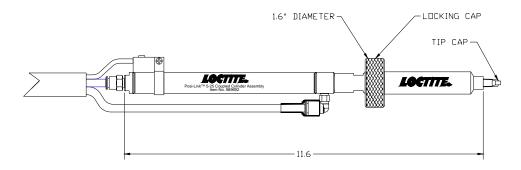
2.5 Package Nest Options for Posi-LinkTM Actuators

2.5.1 Posi-LinkTM 5-25 Actuator Nest Options

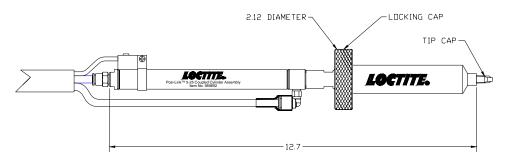
POSI-LINK™ 5-25, 5ML SYRINGE NEST, PN 98643



POSI-LINK™ 5-25, 10ML SYRINGE NEST, PN 98644

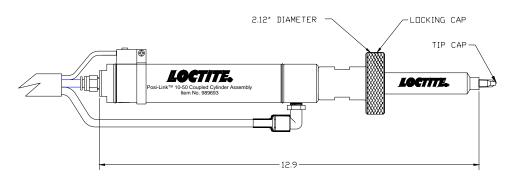


POSI-LINK™ 5-25, 25ML SYRINGE NEST, PN 98645

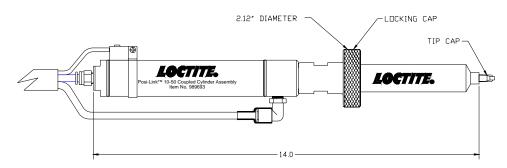


2.5.2 Posi-LinkTM 10-50 Actuator Nest Options

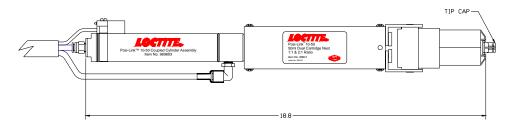
POSI-LINK™ 10-50, 10ML SYRINGE NEST, PN 98639



POSI-LINK™ 10-50, 25ML SYRINGE NEST, PN 98640

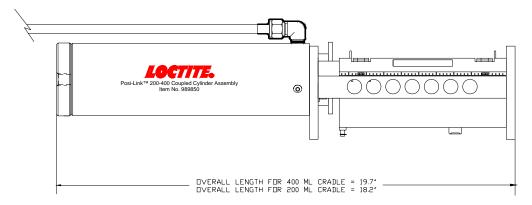


POSI-LINK™ 10-50, 50ML DUAL 1:1 & 2:1 CARTRIDGE NEST, PN 98641



2.5.3 Posi-LinkTM 200-400 Actuator Nest Options

Posi-Link™ 200-400, DUAL CARTRIDGE NEST



3 Technical Data

3.1 Energy Requirements

Power Supply 100-240~VAC, 47-63~Hz Fuse $4A, 5\text{mm} \times 20\text{mm}, 250~\text{Volt}$ Pneumatic Power 40-100~PSI

Air Supply Line Minimum ¹/₄" Air Line

Weight
Controller 3.9 Lbs. [1.8 kg]

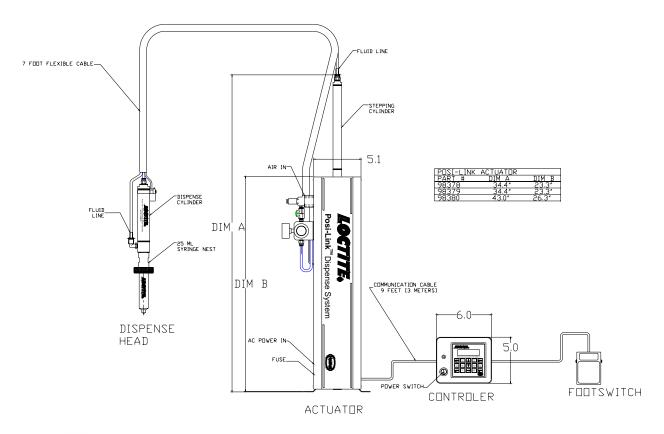
	Actuator	
	98378	12.8 lbs. [5.8 kg]
	98379	12.8 lbs. [5.8 kg]
	98380	19.9 lbs. [9.0 kg]
	Dispense Head	
	98378 + 25ml Syringe Nest	0.7 lbs. [0.3 kg]
	98379 + 25ml Syringe Nest	1.5 lbs. [0.7 kg]
	98379 + 50ml Cartridge Nest	2.5 lbs. [1.2 kg]
	98380 + 200ml Cartridge Nest	7.6 lbs. [3.5 kg]
	98380 + 400ml Cartridge Nest	7.9 lbs. [3.6 kg]
Dimen	sions	
	Controller	5.0" height x 6.0" width x 6.0 depth
	Actuator	
	Posi-Link™5-25	34.4" height x 5.1" width x 3.7 depth
	Posi-Link™10-50	34.4" height x 5.1" width x 3.7 depth
	Posi-Link™200-400	43.0" height x 5.1" width x 3.7 depth
	Dispense Head	See Nest Options

4. Installation

4.1 Space Required

The Posi-Link™ Dispense System is made up of three modular units: controller, actuator with coupled cylinders, and package nest. The dispense nest head can be mounted up to 7 feet [2.13 meters] from the actuator. The actuator should be secured using the mounting brackets. The controller is connected to the actuator with a 9 foot [3 meter] cable.

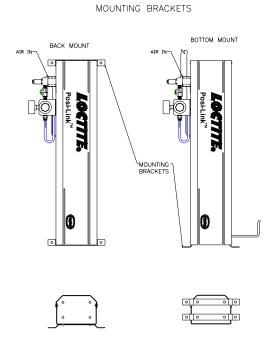
Supply air should be connected to the actuator the 1/8" NPT '1P' port on the manifold located in front of the regulator. Connect the line cord to the actuator at the power module located on the left side of the unit. Connect the communication cable, which is hard wired to the actuator, to the back of the controller. Install footswitch to the controller.



 \triangle Warning! : Do not disconnect fluid line.

4.2 Installing Mounting Brackets

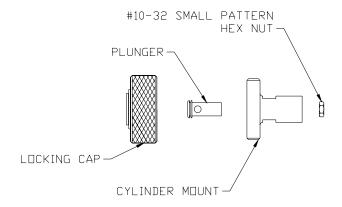
The mounting brackets can be installed to the bottom of the actuator or to the backside. This allows the actuator to be mounted in a vertical or horizontal position, mounted to a bench top or wall.



4.3 Installing Package Nest – Posi-LinkTM 5-25

Part # 98643 Posi-LinkTM 5-25, 5ml Syringe Nest Part # 98644 Posi-LinkTM 5-25, 10ml Syringe Nest Part # 98645 Posi-LinkTM 5-25, 25ml Syringe Nest

The syringe nests are made up of the following components:

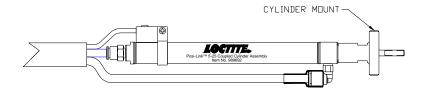


Installation Procedure

- 1. Power up the Posi-LinkTM Dispense System.
- 2. Extend dispense cylinder rod approximately 1.75".
 - a. Press 'Run Mode' key
 - b. Press 'Engage Package' key
 - c. Allow rod to extend 1.8 inches
 - d. Press 'Stop' key
- Notice: Do not extend cylinder by pulling on the rod.
- Notice: The plunger is shipped with a vinyl cap. Remove this cap before installing to cylinder rod.

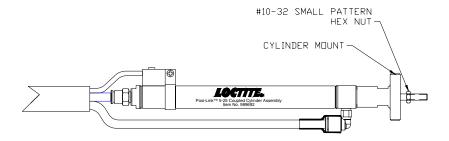


3. Screw cylinder mount onto dispense cylinder and tighten.



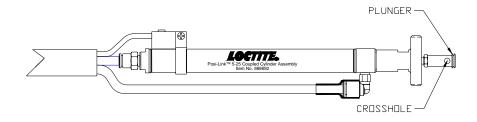
4. Screw #10-32 hex nut onto cylinder rod.

Notice: #10-32 is a small pattern hex nut (5/16" across flats).

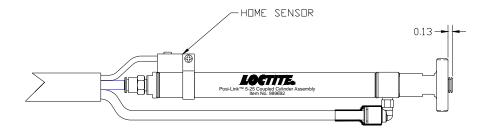


5. Screw plunger onto cylinder rod. Use cross-hole to hold plunger and tighten against #10-32 hex nut.

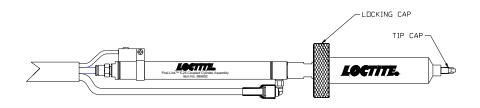
Notice: It is important that the plunger be securely tighten against the hex nut to insure positive dispensing.



6. Retract dispense cylinder rod by pressing the 'Home/Unload' key. The plunger will retract into cylinder mount leaving approximately 1/8" of the plunger exposed.



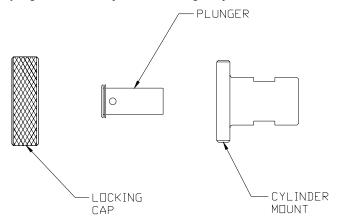
- 7. If less than 1/8" of the plunger is exposed, extend the cylinder rod, loosen the hex nut and unthread the plunger one rotation. Tighten hex nut against plunger and repeat step 6. If plunger extends greater than 3/16" adjust the home sensor. To adjust the home sensor loosen clamping screw and move the sensor toward the back of the dispense cylinder.
- 8. Slide Loctite® product syringe through the center hole in the locking cap. Screw locking cap onto cylinder mount.



- Notice: Leave tip cap on the syringe until package is 'Engaged'
- 4.4 Installing Package Nest Posi-LinkTM 10-50 Syringe

Part # 98639 Posi-LinkTM10-50, 10ml Syringe Nest Part # 98640 Posi-LinkTM10-50, 25ml Syringe Nest

The syringe nest is made up of the following components:



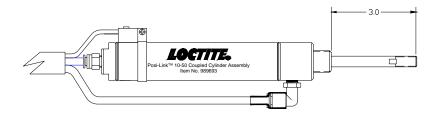
Installation Procedure

- 1. Power up the Posi-LinkTM Dispense System.
- 2. Extend dispense cylinder rod approximately 2.0".
 - a. Pressing 'Run Mode' key

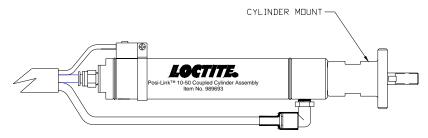
- b. Press 'Engage Package' key
- c. Allow rod to extend 2.0 inches
- d. Press 'Stop' key

Notice: Do not extend cylinder by pulling on the rod.

Notice: The plunger is shipped with a vinyl cap. Remove this cap before installing to cylinder rod.

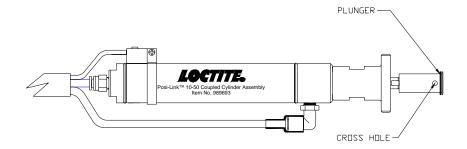


3. Screw cylinder mount onto dispense cylinder.



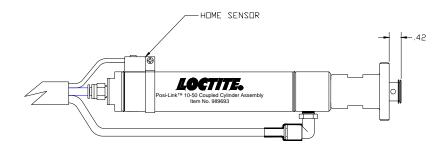
4. Screw plunger onto cylinder rod. Use cross-hole to tighten plunger onto cylinder rod.

Notice: It is important that the plunger be securely tighten onto cylinder rod to insure positive dispensing.

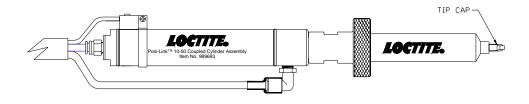


5. Retract dispense cylinder rod by pressing the 'Home/Unload' key. The plunger will retract into cylinder mount leaving approximately 0.42" of the plunger exposed.

6 If plunger extends greater than 0.46" or less than 0.38" adjust the home sensor. To adjust the home sensor loosen clamping screw and move the sensor back to decrease the plunger length or forward to increase the plunger length.



7. Slide Loctite® product syringe through the center hole in the locking cap. Screw locking cap onto cylinder mount.

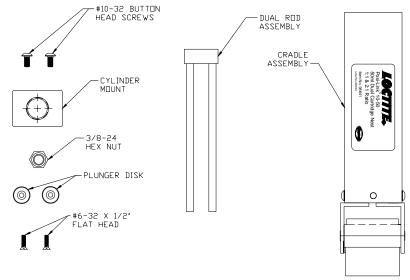


Notice: Leave tip cap on the syringe until package is 'Engaged'

4.5 Posi-LinkTM 50ml Dual 1:1 & 2:1 Cartridge Nest Installation

Part # 98641

The 50ml dual cartridge nest is made up of the following components:



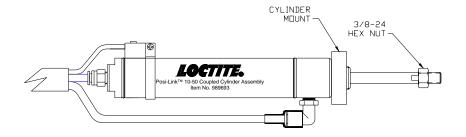
Installation Procedure

- 1. Power up the Posi-LinkTM Dispense System.
- 2. Extend dispense cylinder rod approximately 2.0".
 - a. Pressing 'Run Mode' key
 - b. Press 'Engage Package' key
 - c. Allow rod to extend 2.0 inches
 - d. Press 'Stop' key

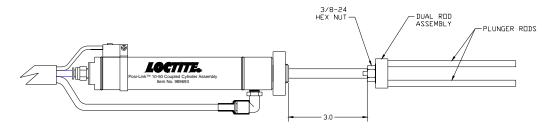
Notice: Do not extend cylinder by pulling on the rod.

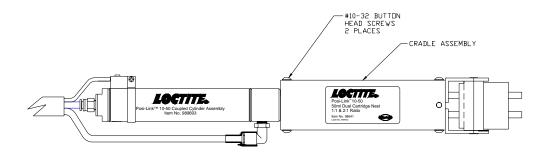


- 3. Screw cylinder mount onto dispense cylinder.
- 4. Screw 3/8" hex nut onto cylinder rod.

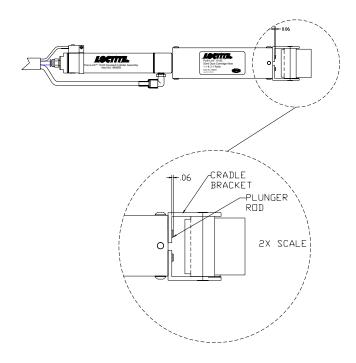


- 5. Screw dual rod assembly onto the cylinder rod and tighten against the 3/8-24 hex nut.
- 6. Slide plunger rods through holes located at base of cradle assembly.
- 7. Slide cradle assembly over cylinder mount.
- 8. Attach cradle assembly to cylinder mount using #10-32 button head screws.

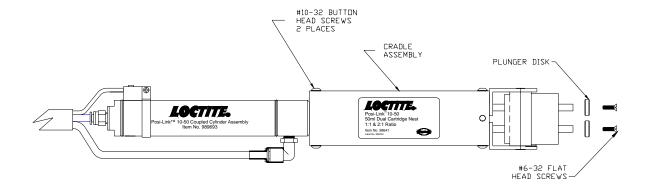




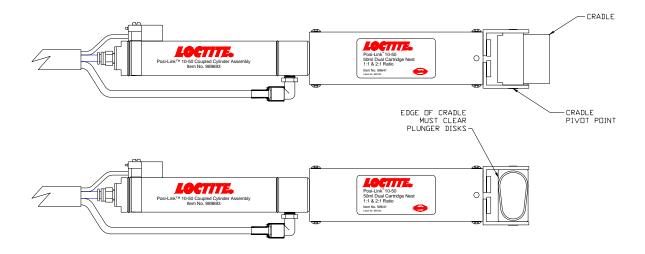
9. Retract dispense cylinder rod by pressing the 'Home/Unload' key. The plunger rods will retract into cradle assembly leaving about 0.02" to 0.06" of the rod exposed. If more than .06 " is exposed adjust home sensor toward top of cylinder. If plunger rods are less than 0.02" adjust home sensor forward.



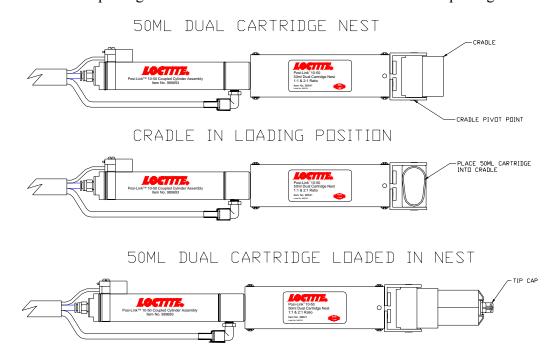
- 10. Once the sensor is adjusted extend the plunger rods about a ¼" and press 'Home/Unload' key to test results of sensor adjustment.
- 11. Extend plunger rods until they are exposed below the cradle.
- 12. Attach the plunger disks using the #6-32 slotted flat head screws.



13. Rotate cradle 90° to insure that the cradle clears the plunger disks. If cradle touches plunger disk adjust home sensor toward top of cylinder.



14. To load a package of adhesive rotate the cradle 90° and slide the package into the cradle.



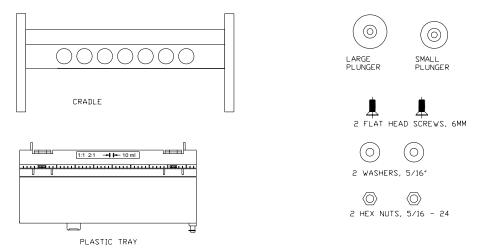
Notice: Tip cap must remain on package until the package has been engaged.

4.6 Posi-LinkTM 200, 400 ml Cartridge Nest Installation

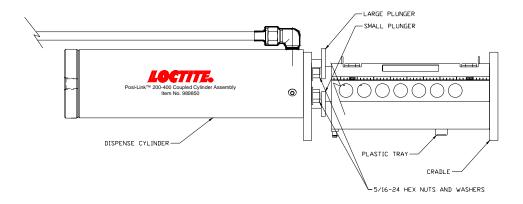
Part Numbers: 98662, 98663, 98664

Product Description

The 200, 400 ml dual cartridge nest is made up of the following components:



DISPENSE CYLINDER AND CRADLE ASSEMBLY



Installation Procedure

- 1. Mount cradle to the dispense cylinder using the 5/16" washers and 5/16 24 hex nuts.
- 2. Install the larger and small plunger, to the cylinder rods, using the 6mm flat head screws. Note: The large plunger must be installed to the upper cylinder rod, see above drawing.
 - Note: For 200ml cradle, plungers must be lined up with package.
- 3. Slide the plastic tray into the cradle until the plastic tray snaps into place.

5. Programming

Programming the Posi-LinkTM Dispense System has been reduced to the following six steps:

- 1. Selecting a program name
- 2. Selecting the adhesive package size
- 3. Inputting the dose size
- 4. Assigning a dispensing speed
- 5. Inputting a suck back volume
- 6. Setting a delay or dwell time at the end of a dispense before the suck back is initiated

5.1 Programming – Using Dose Input

The program mode key can be activated when the unit is first powered up or when the unit is in the 'Run Mode' either auto or manual.

Press 'Program Mode' key



Program Mode PR-A ↑↓ or Ent

Press $\uparrow\downarrow$ arrow keys to scroll through a list of letters from A-Y. For this example the letter 'A' will be selected by pressing the 'Enter' key. The screen will change to:

Program:PR-A

Press 'Select Adhesive Package' key



Program:PR-A 25mlSngleSyringe

Press $\uparrow\downarrow$ arrow keys to scroll through a list of packages. For this example the 25ml single syringe will be selected by pressing the 'Enter' key. The screen will change to:

Press 'Dose Size' Key

Program:PR-A

Dose Size Input Teach

Program:PR-A Input ↓ or Teach ↑

Press ↑↓ arrow keys to select either input or teach. For this example press the '↓' down arrow to input a dose size. The screen will change to:

Program:PR-A Dose 0.000ml

Press $\uparrow\downarrow$ arrow keys to increase or decrease dose size. Holding the arrow key down will rapidly change the numbers. Once the proper size is set press the 'Enter' key to save the value. The screen will change to:

Program:PR-A

Press 'Dispense Rate' Key

Dispense Rate Program:PR-A Speed: 0.000ml/s

Press $\uparrow\downarrow$ arrow keys to increase or decrease dispense speed. Holding the arrow key down will rapidly change the numbers. Once the proper speed is set press the 'Enter' key to save the value. The screen will change to:

Program:PR-A

Press 'Suck Back' Key

Suck Back Program:PR-A SuckBk: 0.000ml

Press $\uparrow\downarrow$ arrow keys to increase or decrease suck back value. Holding the arrow key down will rapidly change the numbers. Once the proper suck back is set press the 'Enter' key to save the value. The screen will change to:

Program:PR-A

Press 'Delay' Key



Program:PR-A Delay: 0.00

Press $\uparrow\downarrow$ arrow keys to increase or decrease the delay time. Holding the arrow key down will rapidly change the numbers. Once the delay time is set, press the enter key to save the value. (A delay time is used when dispensing high viscosity products usually from a 50ml dual cartridge.) The screen will change to:

The Posi-Link™ Dispense System is now programmed for dispensing from a syringe package. To exit the program mode:

Press 'Program Mode' Key



Pressing the program mode key will exit the programming mode. All dispense values are saved to the program name. If changes are needed press the 'Program Mode' key and select the program name. Press appropriate key to change or input a new value and exit program mode by pressing the 'Program Mode' key. Only the selected change will be saved all other information will remain the same.

5.2 Programming – Teaching Dose Size

The most efficient way to use teach mode is to first program the Posi-LinkTM to identify the package that will be used.

- Press 'Program Mode' key to exit program mode.
- Press the 'Home/Unload' key. This will enable the PLC to set level indicator for the given package.
- Load package into appropriate nest and press 'Engage Package' key.



Press 'Program Mode' Key



Press 'Enter' key



Press 'Dose Size' Key



Press '\'' up arrow key

- Press footswitch until desired dose is dispensed.
- If dose is acceptable press 'Enter' key, if not press '\' up arrow and repeat teach command.
- Once proper dose size is achieved press 'Enter' key and follow programming sequence in the previous example.

Once the unit has been installed and all connections are made it is time to power up the unit. The power switch is located on the front of the controller. Press the power switch to the 'on' position. After 7 seconds the screen will light up to the product identification screen.

LOCTITE® POSILINK DISPENSE SYSTEM

Press the 'Run Mode' key and the screen will change to the Auto: Home screen:



Auto:Home Load New Package

Press the 'Home/Unload' key to home the unit. The home sensor LED is located at the upper end of the dispense head and will light up when the unit has reached home. The Posi-LinkTM Dispenser is now ready to be loaded with an adhesive package.

5.3 Sample Programs

Posi-Link 5-25 Program Example						
Product	Package Size	Tapered Dispense Tip	Dose Size	Dispense Rate	Suck Back	Delay
3321	25 ml	Grey/16 GA	0.015	0.100ml/sec	0.125 ml	0.0 sec

Posi-Link 10-50 Program Example						
Product	Package Size	Tapered Dispense	Dose Size	Dispense Rate	Suck Back	Delay
		Tip				
3321	25 ml	Grey/16 GA	0.015	0.100ml/sec	0.03 ml	0.0 sec

Posi-Link 10-50 Program Example						
Product	Package	Static Mixer	Dose	Dispense	Suck Back	Delay
	Size		Size	Rate		
E-00NS	50ml Dual	50ml Square	0.300	0.200ml/sec	0.300ml	0.20 sec
	Cartridge	Static Mix				
	1:1	Nozzle				

	Posi-Link 200-400 Program Example						
Product	Package	Static Mixer	Dose	Dispense	Suck Back	Delay	
	Size		Size	Rate		-	
E-60NC	200ml	Square	0.25	0.500ml/sec	0.700ml	0.0 sec	
	Dual	Static Mix					
	Cartridge	Nozzle					
	1:1	984570					

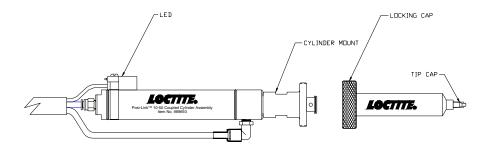
Posi-Link 200-400 Program Example						
Product	Package	Static Mixer	Dose	Dispense	Suck Back	Delay
	Size		Size	Rate		
E-90FL	400ml	Square	0.25	0.250ml/sec	1.00ml	0.1 sec
	Dual	Static Mix				
	Cartridge	Nozzle				
	1:1	984570				

6 Operation/Set-Up

6.1 Loading Adhesive Package - Single Component Syringes

- Remove the barrel cover located at the top of the syringe. **Do not remove tip cap**.
- Pass the syringe through the locking cap
- Screw locking cap onto cylinder mount.

Notice: When loading and adhesive package do not remove the tip cap until after the package is engaged.



Engage Package

Press the 'Engage Package' key and the unit will extend the rod of the dispense head until the plunger is engaged with the syringe piston.





Once engaged the unit will retract the dispense head plunger a short distance to relieve pressure within the syringe barrel. At this point the screen will change to:

Auto:PR-A Lev99%
Dose 0.010 ML

The level indicator is set and program A is loaded and ready to run. Install dispense tip on the end of the syringe package.

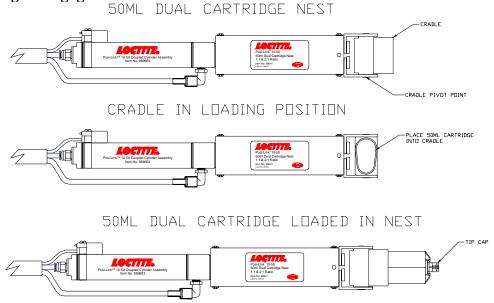
Notice: The syringe package is under pressure. When the tip cap is removed a small amount of product will flow from the syringe. Use a paper towel to catch the excess adhesive before installing the dispense tip.

6.2 Loading Adhesive Package -Dual Cartridge

50 ml Dual Cartridge

- Locate cradle, on 50ml dual cartridge dispense nest, and pivot 90° as shown in diagram.
- Insert 50ml dual cartridge into cradle and turn cradle back to original position.
- Do not remove tip cap.

Notice: When loading and adhesive package do not remove the tip cap until after the package is engaged.



200 ml and 400 ml Dual Cartridge

- Slide adhesive package into plastic tray.
- For 200 ml package check to insure the plungers line up with adhesive package.
- Do not remove tip cap

Notice: When loading and adhesive package do not remove the tip cap until after the package is engaged.

Engage Package

Press the 'Engage Package' key and the unit will extend the rod of the dispense head until the plunger is engaged with the syringe piston.

Engage Package

Engaging New Package

Once engaged the unit will retract the dispense head plunger a short distance to relieve pressure with in the syringe barrel. At this point the screen will change to:

Auto:PR-A Lev99%
Dose 0.010 ML

Notice: Bumping the Dual Cartridge

It is critical that both pistons within a dual cartridge are at the same level. To achieve this it is necessary to bump the pistons. Once the dual cartridge is engaged go to the manual mode by pressing the 'Run Mode' key. This action will change the screen to:



Manual Mode Dose 0.000 Lev 99%

- Remove the tip cap and press the footswitch until product flows for both sides of the package.
- Install a static mix nozzle and prime the nozzle by pressing on the footswitch until the nozzle is fully primed.
- Purge about half of the static mix nozzle and release the footswitch.
- The dual cartridge is ready to begin dispensing.

Return to auto mode by pressing the 'Run Mode' key.

6.3 Run Mode Checklist

Once the adhesive is loaded and engaged the Posi-LinkTM Dispensing System is ready to dispense. For a quick review of your dispensing setting:

• Press 'Run Mode' key until the Auto screen appears.

Auto:PR-A Lev99% Dose 0.010 ML

• Check Screen for program name (PR-A). To change program press 'Select Program to Run' key and use arrow keys to scroll through program list.

• Check dispense fault setting, press 'Dispense Fault' key and use arrow keys to turn fault 'on' or 'off'. If dispense fault is 'on' the dispense system will not cycle when a fault is registered. If the dispense fault is in the 'off' position the unit will continue to cycle even when the system detects a fault. The LED will continue to light when a fault is detected.

Notice: All operating parameters for 'Manual Mode' operation are stored in the program listed in the auto mode screen. The manual mode will only bypass the dose size listed in the program. The package size, dispense rate, suck back and delay, listed in the program, will be utilized by the manual mode.

6.4 Dispensing/Auto Mode

The Posi-LinkTM Dispensing System is now ready to start dispensing. Remove tip cap and install a dispense tip. Press the foot switch to cycle the unit and fill the dispensing tip. If Posi-LinkTM is programmed to dispense small doses (less than 0.01ml) it may be quicker to go to the manual mode and hold footswitch until dispense tip is primed. Once the dispense tip is primed cycle the unit and make the following observations:

- 1. Is the drop size correct?
- 2. Is the suck back correct?
- 3. Is the cycle time acceptable?

6.4.1 Changing the Dose Size

To change the dose size enter the program mode by:

- 1. Press the 'Program Mode' key.
- 2. Press the 'Enter' key to select the program name.
- 3. Press 'Dose Size' key
- 4. Press the ↓ down arrow key to select 'Input'
- 5. Press ↓↑ arrow to increase or decrease dose size.
- 6. Press 'Enter' key to store new dose value.
- 7. Press 'Program Mode' key to exit the programming mode.

6.4.2 Evaluating Suck Back

A theoretically perfect suck back setting is achieved when the dispensed adhesive cuts of cleanly at the end of the dispense tip. Excessive suck back is when the adhesive is sucked back into the dispense needle. If the adhesive is sucked back greater than .050" into the needle this will increase the tolerance range of the dose when dealing with meduim to high viscosity adhesives. When dealing with very low viscosity adhesive excessive suck back can introduce air into the package or cause curing of adhesive in the needle.

The variables that need to be consider when setting suck back are the viscosity of the product, the size of the dose and the size of the needle. High viscosity products will need larger suck back settings than low viscosity products. Large dispensing tips will need greater suck back

settings than small dispense tips. The example below deals with the maximum viscosity recommended for the Posi-LinkTM 5-25 (5000cP) when dispensing from a 25ml syringe utilizing a large dispensing tip (16 GA.) When dispensing from a 5 or 10 ml syringe using a Posi-LinkTM 5-25 a good starting point is to set the suck back at approximately 1.5 to 3 times the dose size. Experiment with the settings until the desired results are achieved.

A good starting point for setting the suck back for the Posi-LinkTM 10-50 systems is approximately 1 to 3 times the dose size. For water like viscosities the settings may be lower. Again experimentation is needed to determine the optimum settings.

The Posi-Link™ 200-400 system applies a pneumatic force only during the actual dispensing cycle. Once the dispense cycle is completed the air pressure is relieved from the dispense cylinder and the plungers retract a small distance. This action allows the pistons within the adhesive package to also retract thus causing a small amount of suck back. Additional suck back may be needed and a good starting point is 2 to 3 time the dispense volume. Experimentation is needed to determine the optimum settings

Posi-Link 5-25 Program Example						
Product	Package	Tapered	Dose	Dispense	Suck	Delay
	Size	Dispense Tip	Size	Rate	Back	
3321 (5000cP)	25 ml	Grey/16 GA	0.015	0.100ml/sec	0.125 ml	0.0 sec

Posi-Link 10-50 Program Example						
Product	Package	Tapered	Dose	Dispense	Suck	Delay
	Size	Dispense Tip	Size	Rate	Back	
3321 (5000cP)	25 ml	Grey/16 GA	0.015	0.100ml/sec	0.03 ml	0.0 sec

Posi-Link 10-50 Program Example						
Product	Package	Static Mixer	Dose	Dispense	Suck	Delay
	Size		Size	Rate	Back	
E-00NS	50ml	50ml Square				
Resin:	Dual	Static Mix				
375,000cP	Cartridge	Nozzle	0.300	0.200ml/sec	0.300ml	0.20 sec
Hardener:	1:1					
2,800cP						

Posi-Link 200-400 Program Example						
Product	Package	Static Mixer	Dose	Dispense	Suck Back	Delay
	Size		Size	Rate		
E-60NC	200ml	Square	0.25	0.500ml/sec	0.700ml	0.0 sec
Resin:	Dual	Static Mix				
6,200cP	Cartridge	Nozzle				
Hardener:	1:1	984570				
13,000cP						

6.4.3 Changing the Suck Back Setting

To change the suck back setting enter the program mode by:

- 1. Press the 'Program Mode' key.
- 2. Press the 'Enter' key to select the program name.
- 3. Press 'Suck Back' key
- 4. Press ↓↑ arrow to increase or decrease the suck back setting.
- 5. Press 'Enter' key to store new value.
- 6. Press 'Program Mode' key to exit the programming mode.

6.4.4 Changing the Dispense Rate

Most adhesives will be dispensed at approximately 0.100 to 0.300 ml/sec. Dispense rates are available up to 0.400ml/sec but as the speed increases the tolerance of the dose size will increase owing to the expansion of the plastic package. Recommended dispense rates for small dose sizes being dispense from a 25ml syringe are approximately 0.100 to 0.200ml/sec.

To change the dispense rate setting enter the program mode by:

- 1. Press the 'Program Mode' key.
- 2. Press the 'Enter' key to select the program name.
- 3. Press 'Dispense Rate' key
- 4. Press ↓↑ arrow to increase or decrease the dispense rate setting.
- 5. Press 'Enter' key to store new value.
- 6. Press 'Program Mode' key to exit the programming mode.

6.4.5 When to Use the Delay Setting

The delay setting should be used only when dispensing product from a 50ml dual cartridge. The purpose of the delay is to allow the product time to flow through the static mixer. Typical settings for most adhesives are 0.1 to 0.5 seconds. The sequences of events are as follows:

- 1. The system is actuated
- 2. The dose is displaced
- 3. At the end of the dose displacement the delay time occurs.
- 4. Once the delay time has expired the suck back cycle is initiated.

To change the delay setting enter the program mode by:

- 1. Press the 'Program Mode' key.
- 2. Press the 'Enter' key to select the program name.
- 3. Press 'Delay' key
- 4. Press ↓↑ arrow to increase or decrease the delay time.
- 5. Press 'Enter' key to store new value.
- 6. Press 'Program Mode' key to exit the programming mode.

Notice: The program can be modified at any time. At the end of a modification the controller will return to the auto mode and dispensing can continue. If the package size is

changed the controller will recognize the new setting but the level indicator will not be set to the new package size until the Posi-LinkTM is returned to home position.

Notice: Always cap the adhesive package when homing the unit or when engaging a package.

6.5 Dispensing/Manual Mode

The manual mode is used primarily for bead applications. A benefit of the Posi-LinkTM is the ability to control the rate of which the adhesive will flow from the package. The dispense rate is in ml/sec and can be adjusted from 0.001ml/second to 0.400ml/second.

When setting up the Posi-LinkTM for manual mode program the unit the same as you would for auto mode. The controller will disregard the dose size setting but will use the package size, dispense rate, suck back and delay settings. Once the unit is programmed press the 'Run Mode' key to the auto screen.

Auto:PR-A Lev99% Dose 0.010 ML

The 'Select Program To Run' key and the 'Dispense Fault' are active only in the auto mode. Set the program that will be run in manual mode. Set dispense fault to the desired position (same as auto mode) and press 'Enter'. Press the 'Run Mode' key and the screen will change to the manual mode.

Manual Mode Dose 0.000 Lev 99%

After a bead has been dispensed the history of that dose will appear on the screen. The level indicator will track the content of the package the same as in auto mode.

7 Care, Cleaning and Maintenance

The Posi-LinkTM Dispense System requires no special maintenance. The package nest and the plunger should be kept clean and free of adhesive.

Notice: Do not disconnect the fluid line that joins the coupled cylinders. These connections are sealed. If fluid line becomes damaged and fluid is lost the coupled cylinder must be return to Henkel to be refilled.

8 Troubleshooting

Type of Malfunction	Possible Cause	Correction
The digital display does not light.	No power voltageCommunication cable not connected	 Check power Connect communication cable to controller
Run keys not responding	 Product ID screen is visible Unit is in program mode 	 Press 'Run Mode' key Press 'Program Mode' key to exit
Pressing the 'Engage Package' key causes a short cycle	No air pressure or low air pressure	Connect air pressure and set at 60 PSI
'Package Empty' fault is on but package is not empty	 Home sensor needs adjusting Package size was changed after system was Homed 	 Adjust homing sensor forward / see Installing nest procedure Home unit to set package size
Dose size is not in tolerance	 Dispense rate is too fast Delay time is too long Suck back setting to large Air entrapped in product 	 Reduce dispense rate Reduce delay time Reduce suck back setting Purge air out of product package. Turn dispense head and package upside down and actuate dispense cycle several times.

9 Accessories

Posi-LinkTM 10-50 Nest Options

98639 10ml Syringe Nest 98640 25ml Syringe Nest 98641 50ml Dual Cartridge 1:1, 2:1 98642 50ml Dual Cartridge 10:1

Posi-LinkTM 5-25 Nest Options

98643 5ml Syringe Nest 98644 10ml Syringe Nest 98645 25ml Syringe Nest

Posi-LinkTM 200-400 Nest Options

98662 200 ml Cartridge Nest 1:1, 2:1 98663 400 ml Cartridge Nest 1:1, 2:1 98664 400 ml Cartridge Nest 10:1

Optional Mounting Bracket:

Posi-LinkTM 10-50

98646 Universal Syringe Bracket 98647 Dual Cart. Bracket

Posi-LinkTM 5-25

98646 Universal Syringe Bracket

Posi-LinkTM 200-400

98670 Mounting Bar Kit 929541 Posi-LinkTM 200-400 Robot Z-Bracket

Optional Dispense Valve:

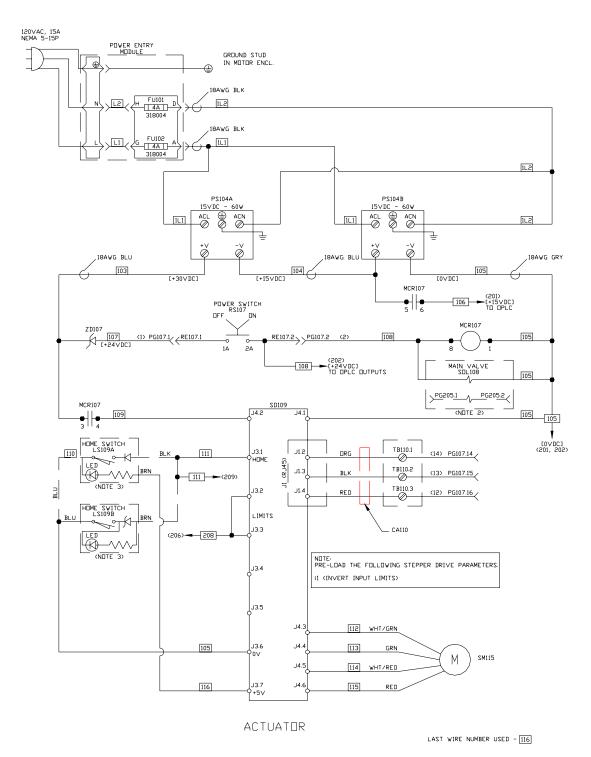
97141 Loctite Pinch Tube Valve

97541 Replacement Tube Inserts (10 pack)

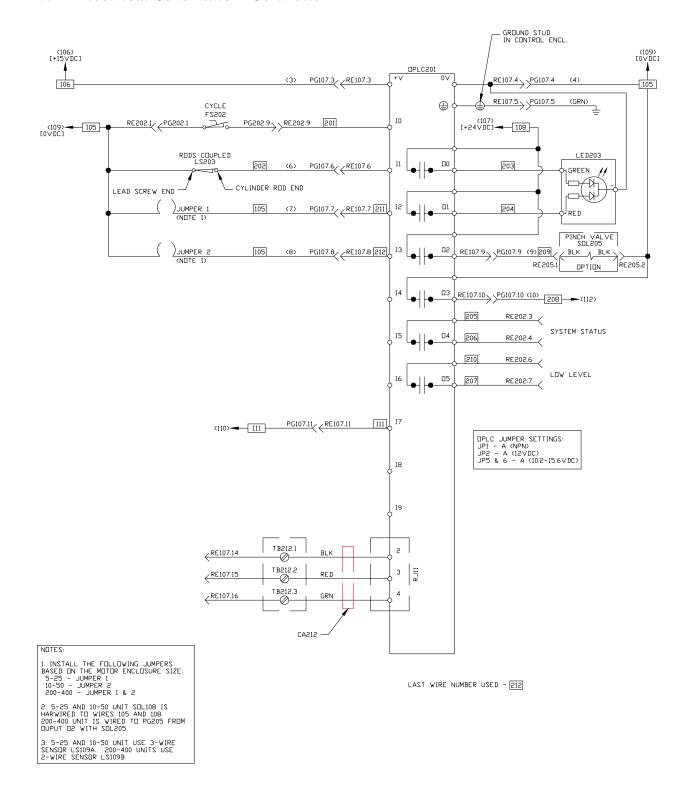
To integrate a pinch tube valve with a **Posi-Link**TM **10-50** an additional solenoid valve is needed. **Solenoid Valve PN 98671**

10 Appendix

10.1 Electrical Schematic – Actuator



10.2 Electrical Schematic – Controller



11 Warranty

WARRANTY

Henkel expressly warrants that all products referred to in this Instruction Manual for (Posi-Link™ Dispense System 98377,98379,98378) (hereafter called "Products") shall be free from defects in materials and workmanship. Liability for Henkel shall be limited, as its option, to replacing those Products which are shown to be defective in either materials or workmanship or to credit the purchaser the amount of the purchase price thereof (plus freight and insurance charges paid therefor by the user). The purchaser's sole and exclusive remedy for breach of warranty shall be such replacement or credit.

A claim of defect in materials or workmanship in any Products shall be allowed only when it is submitted in writing within one month after discovery of the defect or after the time the defect should reasonably have been discovered and in any event, within (12) months after the delivery of the Products to the purchaser. This warranty does not apply to perishable items, such as (fuses). No such claim shall be allowed in respect of products which have been neglected or improperly stored, transported, handled, installed, connected, operated, used or maintained. In the event of unauthorized modification of the Products including, where products, parts or attachments for use in connection with the Products are available from Henkel, the use of products, parts or attachments which are not manufactured by Henkel, no claim shall be allowed.

No Products shall be returned to Henkel for any reason without prior written approval from Henkel. Products shall be returned freight prepaid, in accordance with instructions from Henkel.

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