Loctite® Single Rotary Dispense Station

Part Number 98427
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1. Please Observe The Following

1.1 Emphasized Sections

⚠️ **Warning!**
Refers to safety regulations and requires safety measures that protect the operator or other persons from injury or danger to life.

❗ **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.

2. Description

2.1 Operation

The single rotary dispense station is used for repetitive dispensing of circles, arcs and/or dots in a circular pattern that require motion in the z-axis. It is a fully integrated system that will control a syringe, cartridge or dispense valve. No separate dispense controller is required. The programming is menu driven using a multi-line back-light display. Installation and integration with a dispense syringe, cartridge or valve is very simple only requiring a mounting bracket and several pneumatic connections. The rugged all metal construction is designed for harsh manufacturing environments.

2.2 Items Supplied

(1) Single rotary dispense station including: controller, stand assembly and slide assembly
(1) Footswitch
(1) Power cord
(1) Fitting kit for dispenser integration
(1) Manual
2.3 System Components

NOT SHOWN:
983680 POWER CORD
986051 FOOTSWITCH
988497 FITTING KIT
988672 MANUAL
2.4 Overall Dimensions
2.5 Control Panel (Front of Controller)

2.6 Integration Panel (Back of Controller)
3. Technical Data

3.1 Specifications

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dispense Pattern</td>
<td>Circles, Arcs or Dots in Circular Pattern</td>
</tr>
<tr>
<td>Number of Dispense Points</td>
<td>1</td>
</tr>
<tr>
<td>Rotating Speed</td>
<td>0.2 to 100 RPM</td>
</tr>
<tr>
<td>Slide Stroke</td>
<td>0-2”</td>
</tr>
<tr>
<td>Maximum Part Diameter</td>
<td>8.5”</td>
</tr>
<tr>
<td>Maximum Part Height</td>
<td>12”</td>
</tr>
<tr>
<td>Memory</td>
<td># of Programs: 10</td>
</tr>
<tr>
<td></td>
<td># Events/Program: 8</td>
</tr>
<tr>
<td>Dimensions</td>
<td>Width: 14 1/8”</td>
</tr>
<tr>
<td></td>
<td>Depth: 11 9/16”</td>
</tr>
<tr>
<td></td>
<td>Height: 24 14/16 - 28 11/16”</td>
</tr>
<tr>
<td>Weight</td>
<td>26 lb</td>
</tr>
<tr>
<td>Vacuum Range</td>
<td>1-15 inches Hg</td>
</tr>
<tr>
<td>Air Input*</td>
<td>Clean, dry, regulated air at 80-100 psig with a maximum particle size of 50 micron</td>
</tr>
<tr>
<td>Air Output</td>
<td>0-100 psi</td>
</tr>
<tr>
<td>Power Source</td>
<td>110 or 220V</td>
</tr>
<tr>
<td></td>
<td>50-60 Hz</td>
</tr>
</tbody>
</table>

* - If the required air quality is not achieved, install a Loctite filter regulator. In the US order a 5 µm filter using part number 985397. In Europe or Asia, order a 10 µm filter using part number 97120.
4. **Installation**

4.1 **Unpacking and Inspection**

Carefully remove the system from its shipping carton and inspect it for any signs of damage. Any damage should be reported immediately to the carrier. Refer to the list of supplied parts (see page 4) and compare to the contents. Report any missing or damaged parts promptly to the Loctite customer service department at 1-800-LOCTITE (562-8483).

4.2 **Installation**

The Loctite® Single Rotary Dispense Station will arrive completely assembled. To install:

1. Plug the power cord into the back of the controller and into the wall socket.

   **Notice:** This unit has an autoranging power supply that can be used with either 110 or 220V and 50 or 60 Hz.

2. Connect the foot switch to the back of the controller.

3. Connect the air input line using ¼” outer diameter pneumatic tubing (not supplied).

4. Turn on the air input. This must be a minimum of 80 psi and a maximum of 125 psi.

   **Warning!** When the air is connected, the slide may retract. Be sure to keep your hands and other objects clear of the slide before connecting the air.

   **Caution!** Clean, dry, filtered air must be used. If it is not, the solenoids in the controller will be fouled over time. If the required air quality is not achieved, install a Loctite filter regulator. In the US order a 5 µm filter using Part Number 985397. In Europe or Asia, order a 10 µm filter using Part Number 97120.

   **Notice:** If the vacuum setting is open you will hear air leaking from the “VACUUM EXHAUST” on the back panel of the controller. This is normal when using the vacuum suckback feature for syringe dispensing. If you would like to stop the air exhaust, turn the vacuum off by turning the “VACUUM” knob on the controller clockwise until it stops.

4.3 **Dispenser Integration**

The Loctite® Single Rotary Dispense Station is designed to use syringes, cartridges, single acting valves and double acting valves. To integrate these dispense systems please use the following instructions:

4.3.1 **Syringe or Cartridge Dispensing**

   **Warning!** Before integrating any dispensing equipment, please press the “EMERGENCY STOP” button. This will dump the pressure to all pneumatic devices and allow the slide to advance eliminating the potential for pinch points. It will also allow the syringe, cartridge or valve to be installed when the slide is advanced minimizing the potential for crashes.
Must be purchased separately:

<table>
<thead>
<tr>
<th>Accessory</th>
<th>Syringe</th>
<th>Cartridge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting Bracket (required)</td>
<td>98316</td>
<td>98316</td>
</tr>
<tr>
<td>Syringe Adapter (required)</td>
<td>98320</td>
<td>N/A</td>
</tr>
<tr>
<td>Dispense Tip Connectors (required)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Air Line Adapter (required)</td>
<td>97208</td>
<td>97245</td>
</tr>
<tr>
<td>Clear Syringe Barrel Kit (optional)</td>
<td>97207</td>
<td>97244</td>
</tr>
<tr>
<td>Black Syringe Barrel Kit (optional)</td>
<td>97263</td>
<td>97264</td>
</tr>
</tbody>
</table>

1. Insert the ¼” tube x ¼” NPT fitting to the “DISPENSE OFF” connection.
   **Notice:** When installing fittings be sure to hold the silver bulkhead fitting in the back of the unit with one wrench and tighten the fitting being installed with a second wrench.
2. Insert the ¼” tube plug in the “DISPENSE OFF” connection.
3. Insert the large black plastic quick disconnect fitting to the “DISPENSE ON” connection.
4. Insert the air line adapter into the quick disconnect fitting to the “DISPENSE ON” connection.
5. Connect the air line adapter to the syringe or cartridge.
6. Add the dispense tip onto the syringe or cartridge. For the cartridge, it will be necessary to install the cartridge adapter Part No. 982644 and luer lock adapter Part No. 97233 before connecting the dispense tip.
7. Slide the mounting bracket over the mounting rail on the slide assembly and secure it in position with the white nylon thumbscrew.
8. Manually pull the slide down to the fully extended position.
9. Adjust the height and position of the mounting bracket to the approximate position desired. To adjust the position, turn the handle on the clamp blocks counter clockwise, set the position and then secure by turning the handle clockwise.
10. Slide the syringe or cartridge into the mounting bracket and secure it using the black thumbscrews.

**Caution!** It is important to ensure that the dispense tip will not crash with the mounting plate, fixture or part. Please ensure that the height is set to avoid crashes.
11. Set the “POWER” switch to off (in the position marked “0”), the “DISPENSE PRESSURE” to 0 psi (turn the knob counter-clockwise until it stops) and the “VACUUM” off (turn the knob clockwise until it stops).
12. Reset the “EMERGENCY STOP” by rotating it in either direction and pulling it out.

**Warning!** When the emergency stop is reset, the slide may retract. Be sure to keep your hands and other objects clear of the slide before resetting the emergency stop.
13. The single rotary dispense station is now ready to be programmed.

4.3.2 98009 Light Cure and 98013 Cyanoacrylate Dispense Valves

**Warning!** Before integrating any dispensing equipment, please press the “EMERGENCY STOP” button. This will dump the pressure to all pneumatic devices and allow the slide to advance eliminating the potential for pinch points. It will also allow the syringe, cartridge or valve to be installed when the slide is advanced minimizing the potential for crashes.
Must be purchased separately:

- Mounting bracket – P/N 98326
- Pressure Reservoir
  - P/N 982726, Bond-A-Matic reservoir, 0-15 psi for use with adhesives with <3,000 cP viscosity.
  - P/N 982727, Bond-A-Matic reservoir, 0-100 psi for use with adhesives with >3,000 cP viscosity.

1. Insert the $\frac{1}{4}''$ tube x $\frac{1}{4}''$ NPT fitting to the “DISPENSE OFF” connection.

**Notice:** When installing fittings be sure to hold the silver bulkhead fitting in the back of the unit with one wrench and tighten the fitting being installed with a second wrench.

2. Insert the $\frac{1}{4}''$ tube plug in the “DISPENSE OFF” connection.

3. Insert the $\frac{5}{32}''$ tube x $\frac{1}{4}''$ NPT fitting to the “DISPENSE ON” connection.

4. Add the dispense tip onto the valve.

5. Slide the mounting bracket over the mounting rail on the slide assembly and secure it in position with the white nylon thumbscrew.

6. Manually pull the slide down to the fully extended position.

7. Slide the valve into the mounting bracket and secure it using the black thumbscrews.

8. Adjust the height and position of the mounting bracket to the approximate position desired. To adjust the position, turn the handle on the clamp blocks counter clockwise, set the position and secure by turning the handle clockwise.

**Caution!** It is important to ensure that the dispense tip will not crash with the mounting plate, fixture or part. Please ensure that the height is set to avoid crashes.

9. Connect the air inlet on the valve to the “DISPENSE ON” on the back of the controller using the 5/32” air line tubing supplied with the valve.

10. Set the “POWER” switch to off (in the position marked “0”), the “DISPENSE PRESSURE” to 0 psi (turn the knob counter-clockwise until it stops) and the “VACUUM” off (turn the knob clockwise until it stops).

11. Reset the “EMERGENCY STOP” by rotating in either direction and pulling it out.

**Warning!** When the emergency stop is reset, the slide may retract. Be sure to keep your hands and other objects clear of the slide before resetting the emergency stop.

12. The single rotary dispense station is now ready to be programmed.

4.3.3 97113 and 97114 Stationary Valves

**Warning!** Before integrating any dispensing equipment, please press the “EMERGENCY STOP” button. This will dump the pressure to all pneumatic devices and allow the slide to advance eliminating the potential for pinch points. It will also allow the syringe, cartridge or valve to be installed when the slide is advanced minimizing the potential for crashes.

Must be purchased separately:

- Mounting bracket – P/N 98327
- Pressure Reservoir
  - P/N 982726, Bond-A-Matic reservoir, 0-15 psi for use with adhesives with <3,000 cP viscosity.
  - P/N 982727, Bond-A-Matic reservoir, 0-100 psi for use with adhesives with >3,000 cP viscosity.
1. Insert the 5/32” tube x ¼” NPT fittings into the “DISPENSE ON” and “DISPENSE OFF” connections on the back of the controller.

Notice: When installing fittings be sure to hold the silver bulkhead fitting in the back of the unit with one wrench and tighten the fitting being installed with a second wrench.

2. Connect the “DISPENSE ON” and “DISPENSE OFF” from the valve to the back of the controller using the 5/32” air line tubing supplied with the valve.

3. Add the dispense tip to the valve.

4. Slide the mounting bracket over the mounting rail on the slide assembly and secure it in position with the white nylon thumbscrew.

5. Manually pull the slide down to the fully extended position.

6. Slide the valve into the mounting bracket and secure it using the black thumbscrews.

7. Adjust the height and position of the mounting bracket to the approximate position desired. To adjust the position, turn the handle on the clamp blocks counter clockwise, set the position and secure by turning the handle clockwise.

Caution! It is important to ensure that the dispense tip will not crash with the mounting plate, fixture or part. Please ensure that the height is set to avoid crashes.

8. Set the “POWER” switch to off (in the position marked “0”), the “DISPENSE PRESSURE” to 0 psi (turn the knob counter-clockwise until it stops) and the “VACUUM” off (turn the knob clockwise until it stops).

9. Reset the “EMERGENCY STOP” by rotating in either direction and pulling it out.

Warning! When the emergency stop is reset, the slide may retract. Be sure to keep your hands and other objects clear of the slide before resetting the emergency stop.

10. The single rotary dispense station is now ready to be programmed.

4.3.4 983914, 986300 and 982621 Poppet Valves

Warning! Before integrating any dispensing equipment, please press the “EMERGENCY STOP” button. This will dump the pressure to all pneumatic devices and allow the slide to advance eliminating the potential for pinch points. It will also allow the syringe, cartridge or valve to be installed when the slide is advanced minimizing the potential for crashes.

Must be purchased separately:

- Mounting bracket – P/N 98408
- Pressure Reservoir
  - P/N 982726, Bond-A-Matic reservoir, 0-15 psi for use with adhesives with <3,000 cP viscosity.
  - P/N 982727, Bond-A-Matic reservoir, 0-100 psi for use with adhesives with >3,000 cP viscosity.

1. Insert the 1/4” tube x ¼” NPT fittings into the “DISPENSE ON” and “DISPENSE OFF” connections on the back of the control panel.

Notice: When installing fittings be sure to hold the silver bulkhead fitting in the back of the unit with one wrench and tighten the fitting being installed with a second wrench.

2. Connect the “DISPENSE ON” and “DISPENSE OFF” from the valve to the back of the controller using the 1/4” air line tubing supplied with the valve.

3. Add the dispense tip to the valve.
4. Slide the mounting bracket over the mounting rail on the slide assembly and secure it in position with the white nylon thumbscrew.
5. Manually pull the slide down to the fully extended position.
6. Slide the valve into the mounting bracket and secure it using the black thumbscrews.
7. Adjust the height and position of the mounting bracket to the approximate position desired. To adjust the position, turn the handle on the clamp blocks counter clockwise, set the position and secure by turning the handle clockwise.

⚠️ **Caution!** It is important to ensure that the dispense tip will not crash with the mounting plate, fixture or part. Please ensure that the height is set to avoid crashes.

8. Set the “POWER” switch to off (in the position marked “0”), the “DISPENSE PRESSURE” to 0 psi (turn the knob counter-clockwise until it stops) and the “VACUUM” off (turn the knob clockwise until it stops).

9. Reset the “EMERGENCY STOP” by rotating it in either direction and pulling it out.

⚠️ **Warning!** When the emergency stop is reset, the slide may retract. Be sure to keep your hands and other objects clear of the slide before resetting the emergency stop.

10. The single rotary dispense station is now ready to be programmed.
5. Definition of Parameters

5.1 Global Parameters

There are four global parameters that apply to all dispense programs and events. In most applications, these parameters will not need to be modified.

<table>
<thead>
<tr>
<th>Global Parameter</th>
<th>Default Value</th>
<th>Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slew rpm</td>
<td>30 rpm</td>
<td>0.2-100 rpm</td>
<td>This is the maximum speed the unit will rotate at when jogging between events. If the distance to be jogged is short, it may not reach the set slew speed due to the distance required to accelerate to the set speed. It is possible to decrease the cycle time by increasing the slew rpm, however, it can result in more wear on the motor.</td>
</tr>
<tr>
<td>Slew acc/dec</td>
<td>7</td>
<td>1-10</td>
<td>This is the relative rate at which the rotary dispense station will accelerate to and decelerate from the slew speed. Higher values indicate faster acceleration. Increasing the slew acc/dec will reduce cycle times, however, it can result in more wear on the motor.</td>
</tr>
<tr>
<td>Disp acc/dec</td>
<td>7</td>
<td>1-10</td>
<td>This is the relative rate at which the rotary dispense station will accelerate to and decelerate from the event rotating speed. Higher values indicate faster acceleration. Increasing the disp acc/dec will reduce cycle times, however, it can result in more wear on the motor.</td>
</tr>
<tr>
<td>Disp delay</td>
<td>0.5 sec</td>
<td>0-9.99 sec</td>
<td>This is the time between when an event is initiated and when the dispenser turns on. It is designed to allow the slide to fully advance before dispensing starts.</td>
</tr>
</tbody>
</table>

5.2 Programming Parameters

5.2.1 Program Specific Parameters

For each program (1-10), the following variables must be specified:

<table>
<thead>
<tr>
<th>Program Specific Parameter</th>
<th>Default Value</th>
<th>Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td># Events</td>
<td>1</td>
<td>1-8</td>
<td>This is the number of circle, arcs or dots in a program. Each of these patterns is one event. For example, a single program can have two arcs and six dots.</td>
</tr>
<tr>
<td>Auto Repeat Time</td>
<td>10 sec</td>
<td>0-99.9 sec</td>
<td>This parameter is only used in auto repeat mode. When in auto repeat mode, after a program is initiated with the start button or footswitch, it will cycle continuously until the stop button is pressed. The delay between the completion of a program and when it will initiate again is the auto repeat time.</td>
</tr>
</tbody>
</table>
5.2.1 Event Specific Parameters

The five event specific parameters are detailed below. Please refer to the sample programs in Section 6.4 for function diagrams that also graphically demonstrate these definitions.

<table>
<thead>
<tr>
<th>Program Specific Parameter</th>
<th>Default Value (Event 1)</th>
<th>Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start Pos</td>
<td>0.0 deg</td>
<td>0-890.0 deg</td>
<td>The start position in degrees for an event. The station will normally be programmed to rotate clockwise when dispensing so that the degree position will increase from start position to the end position. It should be noted that it is possible to rotate clockwise, counter-clockwise or both within a given program.</td>
</tr>
<tr>
<td>Timer A</td>
<td>0.5 sec</td>
<td>0-9.9 sec</td>
<td><strong>Circles and arcs:</strong> The amount of time after the rotary dispense station arrives at the start location for that event before the station will start rotating at the specified event speed. This can be used to add a delay in the dispense program that will allow the adhesive to start flowing from the dispense tip before the station starts turning. It could also be used to put a large dot of adhesive at the beginning of the arc or circle event. This normally needs to be equal to or slightly longer than the global dispense delay. <strong>Dots:</strong> The time that the slide will be given a signal to advanced. Since it takes some time for the slide to advance, typically about 0.5 seconds, the actual time advanced will be shorter than Timer A.</td>
</tr>
<tr>
<td>End Pos</td>
<td>360.0 deg</td>
<td>0-890.0 deg</td>
<td>The end position in degrees for an event. When dot dispensing, the end position must exactly equal the start position.</td>
</tr>
<tr>
<td>Timer B</td>
<td>0.25 sec</td>
<td>0-9.9 sec</td>
<td><strong>Circles and arcs:</strong> The amount of time before the dispense tip reaches the end positions that the dispenser will shut off. This can be used to shut the dispenser off early so that excess adhesive that flows after the dispenser is turned off due to residual pressure in the dispense tip does not cause stringing. <strong>Dots:</strong> The dispense time for the dot.</td>
</tr>
<tr>
<td>Rpm</td>
<td>10.0 rpm</td>
<td>0-99.9 sec</td>
<td>The rotating speed for the event. The speed for each arc and circle can vary resulting in different beads being dispensed for each event. This parameter is not used when dispensing dots.</td>
</tr>
</tbody>
</table>

5.3 Resetting All Global and Program Parameters to Factory Defaults

To reset the global and program parameters to the factory default settings:

1. Enter the program mode (refer to section 6.2.5 for detailed instructions).
2. Press the mode button for 2 seconds to enter the global parameters mode (refer to section 6.2.7)
3. Hold both the up and down arrow at the same time for 5 seconds or until you see the following message appear on the display screen, “All program and global parameters reset”.

Once this message appears you are automatically put into auto mode.
6. Operation

6.1 Setting Adhesive Dispense Rate

6.1.1 Syringe or Cartridge Dispensing

Notice: Before turning the power or air on, set the “DISPENSE PRESSURE” to 0 psi by turning the knobs clockwise until it stops and the “VACUUM” off by turning the knobs counter-clockwise it stops. Since the power is off, no pressure will be displayed on the gauge as it is adjusted.

1. Turn the “POWER” on (the position marked “|”). The rocker switch should light up green when the power is on.
2. If necessary, open the valve or regulator that controls the air inlet to supply pneumatic pressure to the system.

Warning! When the air is turned on, the slide may retract. Be sure to keep your hands and other objects clear of the slide before resetting the emergency stop.

3. If you have not already installed a syringe or cartridge, do so now. See Section 4.3.1 for instructions.
4. Turn up the air pressure. You must first unlock the black regulator knob by pulling it away from the controller with light manual pressure. It will click when it is unlocked. To increase the air pressure, turn the knob clockwise. To decrease the pressure, turn the knob counter-clockwise. If the desired pressure is unknown, start with a 5-10 psi for initial shots and increase the pressure as necessary.
5. Test the dispense rate by using the “PURGE” button. The purge button is only displayed when in the “AUTO” and “AUTO REPEAT” modes. Press the left most button on the keypad to cycle through modes. When in the “AUTO” mode, the “PURGE” button will be the button on the right.

Notice: A receptacle should be placed under the dispense tip to capture purged product.
6. Set the “VACUUM” suckback. This feature puts negative pressure on the syringe when it is not dispensing to prevent leaks by pulling the adhesive back in the dispense tip between dispense cycles. It is normally only used for low viscosity adhesives (<3,000 cP) when syringe dispensing. To increase the vacuum, turn the “VACUUM” knob counter clockwise. As the vacuum is increased, more air will be exhausted from the “VACUUM EXHAUST” on the back of the controller. This is normal. The vacuum should be set so that the adhesive pulls back into the dispense tip between dispense cycles, but does not pull all the way back into the syringe or cartridge. Test the vacuum suck back level by using the “PURGE” button.

6.1.2 Valve Dispensing

Notice: Before turning the power or air on, set the “DISPENSE PRESSURE” to 0 psi by turning the knobs clockwise until it stops and the “VACUUM” off by turning the knobs counter-clockwise it stops. Since the power is off, no pressure will be displayed on the gauge as it is adjusted.

1. Turn the “POWER” on (the position marked “|”). The rocker switch should light up green when the power is on.
2. If necessary, open the valve or regulator that controls the air inlet to supply pneumatic pressure to the system.
Warning! When the air is turned on, the slide may retract. Be sure to keep your hands and other objects clear of the slide before resetting the emergency stop.

3. If you have not already installed the valve, do so now. See Sections 4.3.2 through 4.3.4 for instructions.

4. Connect the dispense valve to the product reservoir following the instructions in valve and reservoir manuals. It may be desirable to use a ¼” tee fitting (not supplied) to split the air in to supply both the controller for the advancing slide dispense station and the product reservoir.

5. Turn up the pressure using the “DISPENSE PRESSURE” knob. This will be the pressure that opens and closes the valve. To adjust the pressure, you must first unlock the black regulator knob by pulling it away from the controller with light manual pressure. It will click when it is unlocked. To increase the air pressure, turn the knob clockwise. To decrease the pressure, turn the knob counter clockwise. This pressure should be set at 80 psi for most valves. Check the valve manual for the specific actuation pressure.

6. Turn up the air pressure on the dispense reservoir. This pressure will control the amount of adhesive dispensed by the valve. If the desired pressure is unknown, start with a 5-10 psi for initial shots and increase the pressure as necessary.

7. Test the dispense rate by using the “PURGE” button. The purge button is only displayed when in the “AUTO” mode. Press the left most button on the keypad to cycle through modes. When in the “AUTO” mode, the “PURGE” button will be the button on the right.

Notice: A receptacle should be placed under the dispense tip to capture purged product.

Notice: Vacuum suckback should not be used when valve dispensing.
6.2 Operating Modes

6.2.1 Overview of Modes

Before programming the rotary dispense station, it is essential that one understands the different operating modes of the system. There are five possible modes of operation:

- **Auto Mode** - allows you to run a program, initialize the rotary dispense station’s home position and purge the dispenser. In addition, the current program number is displayed.

- **Set Up Mode** - is used to determine the location of the specific start and end points before entering a new program or editing a program. The rotary dispense station can be manually jogged either clockwise (left) or counterclockwise (right) and the slide can be advanced or retracted to facilitate determining the program’s specific start and end points. The position of the station is displayed in tenths of a degree in the upper right hand corner of the display and should be manually recorded by the user for each start and end position before entering a new program or editing a program.

- **Program Mode** - is used to select the current program, add a new program or edit an existing program.

- **Auto Repeat Mode** - allows you to continuously cycle a program without any input from the operator (i.e. the system will continuously operate without the operator pushing a start button or pressing the foot switch).

⚠ **Warning!** Operating in the “AUTO REPEAT” mode poses a greater safety risk to the operator. This should only be used by highly trained operators.

- **Global Parameters Mode** - allows you to modify the global parameters for the rotary dispense station. These are the slew speed, slew acc/dec, disp acc/dec and dispense delay. “Slew” is the rotation that occurs when the rotary dispense station jogs between events. It is also possible to reset the unit to the factory default programming.
6.2.2 Changing Operating Modes

Auto Mode > Set Up Mode > Program Mode

The three modes that will be used the most frequently are auto mode, set up mode and programming mode. Pressing the button indicated below will toggle through these modes in that order.

⚠️ Warning! When exiting the setup mode, the slide may retract. Be sure to keep your hands and other objects clear of the slide when changing modes.

Auto Repeat Mode

To enter the auto repeat mode, you must first go to auto mode then press the mode button for two seconds. When you release the mode button, “Repeat” will be displayed to the right of “Auto” on the display. When it is desired to return to other modes, you can exit the auto repeat mode by pressing the mode button that will return you to the auto mode.

Global Parameters Mode

To enter the global parameters mode, you must first go to the program mode then press the mode button for two seconds. When you release the mode button, “Gbl Mode” will be displayed above the mode button. When it is desired to return to other modes, you can exit the global mode by pressing the mode button that will return you to the auto mode.

⚠️ Notice: You can exit any mode at any time by pressing the mode button. If you are in the program or global parameters mode, any changes that you have made will be saved when returning to auto mode by quickly pressing the mode button.
6.2.3 Auto Mode

Overview

The auto mode is used to run a program, initialize the rotary dispense system’s home position and purge the valve or syringe. When the rotary dispense station is in the auto mode, it will display “Auto Mode” on the left side of the display and the program number in the upper right hand side of the display.

Notice: If “Repeat” is displayed to the right of “Auto”, the rotary dispense system is actually in auto repeat mode. Please use caution as the unit will cycle continuously without input from the operator in auto repeat mode.

Notice: If it is desired to change the program number while in “Auto” mode, you must enter the programming mode by pressing the mode button twice. If you are in “Auto Repeat” Mode you will need to press the mode button three times to enter the programming mode.

Key Definition

MODE – to cycle between different modes. Pressing the button quickly in auto mode will bring you to set up mode. Pressing the button for 2 seconds will bring you to auto repeat mode.

START – to run the current program. The program can also be initiated using a foot switch.

HOME - If the rotary dispense station is knocked out of position, it will be necessary to initialize the system resetting its home position using this button.

PURG - can be used to dispense adhesive at any time. This will typically be used during set up to set the adhesive dispense rate or to purge the unit during extended down times when using reactive adhesives.
6.2.4 Set up Mode

Overview

Set up mode is used to determine the location of the specific start and end points in a program before entering the programming mode. When the rotary dispense station is in the set up mode, it will display “Setup Mode” on the left side of the display and the rotary dispense station position in tenths of a degree in the upper right hand side of the display.

Key Definition

MODE – to cycle between different modes. Pressing the button in set up mode will bring you to program mode.

⚠️ Warning! When exiting the setup mode, the slide may retract. Be sure to keep your hands and other objects clear of the slide when changing modes.

UP/DN– will move the slide up or down (whatever position it is not currently in).

LEFT - will rotate the dispense station clockwise.

RGHT - will rotate the dispense stations counter-clockwise.
6.2.5 Program Mode

Overview

Program Mode is used to create new programs and/or edit existing programs. When the rotary dispense station is in the programming mode it will display “Prog Mode” on the left side of the display and the program number on the upper right side.

Key Definition

MODE – to cycle between different modes. Pressing the button quickly in program mode will bring you to auto mode. Pressing the mode button and holding it for 2 seconds in program mode will bring you to global parameters mode.

NEXT – proceeds into editing program parameters for the indicated program.

UP ARROW – increases the program number.

DOWN ARROW – decreases the program number.
6.2.6 Auto Repeat Mode

Overview

Auto Repeat Mode is used to continuously run a program without any operator involvement (i.e. pushing of the start button or the foot switch). To enter the auto repeat mode, you must first go to auto mode then press the mode button for two seconds. When you release the mode button, “Repeat” will be displayed to the right of “Auto” on the display as shown below.

Key Definition

MODE – to cycle between different modes. Pressing the button in auto repeat mode will bring you to auto mode.

START – will start the program selected and will run it continuously without any operator input until the stop button is pressed.

STOP – will stop the repetitive running of the selected program at the end of the next complete program.

PURG - can be used to dispense adhesive at any time. This will typically be used during set up to set the adhesive dispense rate or to purge the unit during extended down times when using reactive adhesives.
6.2.7 Global Parameters Mode

**Overview**

Global parameters mode allows the user to: 1.) modify the factory set global parameters and 2.) reset the rotary dispense station to its factory default setting for the global parameters and all programs.

**Key Definition**

MODE – to cycle between different modes. Pressing the button in global parameters mode will bring you to auto mode.

NEXT - which allows you to toggle between the four global parameters.

UP ARROW – increases the value for a global parameter.

DOWN ARROW – decreases the value for a global parameter.

**Notice:** If it is desired to return to the factory default settings for the global parameters and all programs, hold both the up and down arrow at the same time for 5 seconds or until you see the following message appear on the display screen, “All program and global parameters reset”. Once this message appears you are automatically put into auto mode.
6.3 Entering/Editing a Program

1. Turn the “POWER” on (the position marked “i”). The rocker switch should light up green when the power is on. The rotary dispense system automatically defaults to the auto mode. For more information on the auto mode, please see section 5.2.2.

2. Change the mode to set up mode by pressing the mode button. See section 5.2.1 for detailed instructions on changing modes and section 5.2.3 for more information on the set up mode.

⚠️ Warning! When changing modes, the slide with valve/syringe may automatically retract.

3. Note all the start and end positions in degrees for the arcs, circles and/or dots in the program. The current position is displayed in the top right hand corner of the display to the nearest tenth of a degree. Use the “Up/Dn” button to advance or retract the slide. Advance the slide to record the current position and retract it to clear obstructions. Using the “Left” and “Right” buttons move the rotary table clockwise and counter clockwise, respectively.

4. Once all points have been noted, use the mode button to change to program mode. Please refer to section 5.2.4 for more detailed information on program mode.

5. Select the desired program number (1-10) using the up and down arrows then select “Next”.

6. Enter the number of events in the program (1-8) using the up and down arrows then select “Next”. An “event” is a circle, arc or points.
7. Enter the auto repeat time (0 to 99.9 seconds) using the up and down arrows then select “Next”. The auto repeat time is the time between when a dispense cycle ends and the next dispense cycle is automatically initiated when in the auto repeat mode.

Notice: The auto repeat time is only used in auto repeat mode.

Notice: The longer you hold the up and down arrow keys the faster the numbers will scroll. Release the button before reaching the desired time and toggle in on the final time.

8. Enter the start position for event #1 in degrees (0 to 890 degrees) using the up and down arrows then select “Next”. The start position and end positions must be determined in the set up mode before entering a program. If this has not be done, please see section 5.2.4 for instructions and do so now.
9. Enter the Timer A (0 to 9.99 seconds) for Event #1 using the up and down arrows then select “Next”. The definition for Timer A varies depending on the dispense pattern. For a circle or arc, Timer A is the amount of time after the rotary dispense station arrives at the start location for that event before the station will start rotating at the specified speed. This can be used to add a delay in the dispense program that will allow the adhesive to start flowing from the dispense tip before the station starts turning. It could also be used to put a large dot of adhesive at the beginning of the arc or circle event. When dispensing dots, Timer A equals the time the slide is advanced.

10. Enter the end position for event #1 in degrees (0 to 890 degrees) using the up and down arrows then select “Next”.

Notice: For a dot, the end position must exactly equal the start position.
Notice: Although the station normally dispenses counter-clockwise, it is acceptable for the station to turn clockwise, counter-clockwise or both within one program.
11. Enter the Timer B (0 to 9.99 seconds) for Event #1 using the up and down arrows then select “Next”. The definition for Timer B varies depending on the dispense pattern. For a circle or arc, Timer B indicates the amount of time before the dispense tip reaches End Position 1 that the dispenser will shut off. This can be used to shut the dispenser off early so that excess adhesive that flows after the dispenser is turned off does not cause stringing. When dispensing dots, Timer B equals the dispense time for the dot.

12. Enter the rotating speed (0.2 to 100 rpm) for Event #1 using the up and down arrows then select “Next”.

Notice: When dispensing a dot, there is no rotation within the event, hence, this value is not used.

13. Repeat steps 8-12 for each event in the program.
6.4 Example Programs

6.4.1 A Single 360 Degree Circle

Program Data:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td># Events</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Auto Repeat Time</td>
<td>Seconds</td>
<td>10.0</td>
</tr>
<tr>
<td>Start Position 1</td>
<td>Degrees</td>
<td>0.70</td>
</tr>
<tr>
<td>Timer A1</td>
<td>Seconds</td>
<td>0.0</td>
</tr>
<tr>
<td>End Position 1</td>
<td>Degrees</td>
<td>360.0</td>
</tr>
<tr>
<td>Timer B1</td>
<td>Seconds</td>
<td>0.25</td>
</tr>
<tr>
<td>Rotating Speed 1</td>
<td>RPM</td>
<td>30.0</td>
</tr>
</tbody>
</table>

Function timing diagram and illustration of dispense pattern:

1. Dispense Delay (Global)
2. Timer A
3. Start Position
4. Timer B
5. End Position
6.4.2 A Single 90 Degree Arc

Program Data:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td># Events</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Auto Repeat Time</td>
<td>Seconds</td>
<td>20.0</td>
</tr>
<tr>
<td>Start Position 1</td>
<td>Degrees</td>
<td>90.0</td>
</tr>
<tr>
<td>Timer A1</td>
<td>Seconds</td>
<td>0.60</td>
</tr>
<tr>
<td>End Position 1</td>
<td>Degrees</td>
<td>180.0</td>
</tr>
<tr>
<td>Timer B1</td>
<td>Seconds</td>
<td>0.25</td>
</tr>
<tr>
<td>Rotating Speed 1</td>
<td>RPM</td>
<td>20 rpm</td>
</tr>
</tbody>
</table>

Function timing diagram and illustration of dispense pattern:

1. Slew RPM (Global)
2. Dispense Delay (Global)
3. Timer A
4. Start Position
5. Timer B
6. End Position
6.4.3 A Single Dot

Program Data:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td># Events</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Auto Repeat Time</td>
<td>Seconds</td>
<td>15.0</td>
</tr>
<tr>
<td>Start Position 1</td>
<td>Degrees</td>
<td>90.0</td>
</tr>
<tr>
<td>Timer A1</td>
<td>Seconds</td>
<td>0.50</td>
</tr>
<tr>
<td>End Position 1</td>
<td>Degrees</td>
<td>90.0</td>
</tr>
<tr>
<td>Timer B1</td>
<td>Seconds</td>
<td>0.25</td>
</tr>
<tr>
<td>Rotating Speed 1</td>
<td>RPM</td>
<td>25.0</td>
</tr>
</tbody>
</table>

Function timing diagram and illustration of dispense pattern:

1. Slew RPM (Global)
2. Timer A
3. Timer B
6.4.4 One Arc and Two Dots

Program Data:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Units</th>
<th>Value</th>
<th>Event #1</th>
<th>Event #2</th>
<th>Event #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Repeat Time</td>
<td>Seconds</td>
<td>10.0</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Start Position</td>
<td>Degrees</td>
<td>90.0</td>
<td>235.0</td>
<td>270.0</td>
<td></td>
</tr>
<tr>
<td>Timer A</td>
<td>Seconds</td>
<td>0.70</td>
<td>0.50</td>
<td>0.50</td>
<td></td>
</tr>
<tr>
<td>End Position</td>
<td>Degrees</td>
<td>180.0</td>
<td>235.0</td>
<td>270.0</td>
<td></td>
</tr>
<tr>
<td>Timer B</td>
<td>Seconds</td>
<td>0.25</td>
<td>0.25</td>
<td>0.25</td>
<td></td>
</tr>
<tr>
<td>Rotating Speed</td>
<td>RPM</td>
<td>20.0</td>
<td>20.0</td>
<td>20.0</td>
<td></td>
</tr>
</tbody>
</table>

Function timing diagram and illustration of dispense pattern:
6.5 Template for Practice Programming

The following templates can be used to practice programming the rotary dispense station. To do so:

1. Photocopy this page.
2. Cut out the templates from the photocopy.
3. Go to Auto Mode by pressing the mode button.
4. Press the “Home” button.
5. Affix the template to the rotary dispense station next using tape. The zero degree mark on the template should be aligned with the dispense tip in the home position.
6. The template can now be used to practice programming the rotary dispense station.
6.6 Slide Adjustments

6.6.1 Slide Speed Control Adjustment

The speed controls on the slide can be adjusted to increase or decrease the speed that the slide advances or retracts. It is recommended for the speed controls to be set so that the slide moves at a controlled rate. The factory default is for the full slide stroke to take approximately 0.5 seconds. This may need to be adjusted to account for more weight on the slide or to change the slide advance / retract time.
6.6.2 Slide Stroke Adjustment

The factory default for the slide stroke is the 2” (which is the maximum stroke). When setting up a new process, it is recommended that dispense tip be positioned using the clamps on the stand, not by adjusting the slide stroke. This will ensure that dispense tip is as far away from the part as possible when retracted to avoid collisions when loading and unloading parts.

The slide stroke should only be adjusted when the time required to advance and retract the slide results in an unacceptable cycle time. This should be a rare occurrence. To minimize the slide advance and retract times, the speed controls should first be adjusted (see Section 5.2.6). If this does not reduce the cycle time sufficiently, the slide stroke can be reduced using the following procedure.

1. Press the “EMERGENCY STOP” button.
2. Remove the red slide guard by removing the two pan head socket screws.
3. Loosen the set screws on the two stop collars on the slide shafts.
4. Manually push the slide up as shown below.
5. Adjust the first stop collars to the desired position and tighten the set screw.
6. Push the slide down so that it is fully advanced and the stop collar that has been tightened is seated against the slide block.
7. Seat the second stop collar on the slide block and tighten the set screw.
8. Replace the slide guard.
9. Reset the “EMERGENCY STOP” by rotating it in either direction and pulling it out.

⚠️ Warning! When the emergency stop is reset, the slide may retract. Be sure to keep your hands and other objects clear of the slide before resetting the emergency stop.
## 7. Troubleshooting

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible Corrective Action(s)</th>
</tr>
</thead>
</table>
| The green “POWER” switch does not light. | 1. Plug the unit in  
2. Set the “POWER” button in the “|” position  
3. Confirm that the fuse is functional  
4. Confirm that the “EMERGENCY STOP” button is not depressed |
| The system is running continuously without the operator pressing the foot switch. | The system is in auto repeat mode (see section 6.2.6). Press the stop button to stop cycling or press the mode button to return to enter auto mode. |
| The system will not pressurize. | 1. Confirm that the “AIR IN” is connected  
2. Confirm that the air supply is 80-100 psi.  
3. Confirm that the “DISPENSE ON” and “DISPENSE OFF” fittings are properly connected or plugged. |
| The syringe or cartridge is leaking adhesive between dispense cycles. | Increase the “VACUUM” by turning the knob counter clockwise. You will hear a louder hissing from the “VACUUM EXHAUST” as it is increased. |
| Adjusting the “DISPENSE PRESSURE” does not effect dispense quantity when valve dispensing. | The “DISPENSE PRESSURE” controls the pressure supplied to the “DISPENSE ON” and “DISPENSE OFF”. Dispense on controls the dispense pressure when using a syringe or cartridge. For valve dispensing, the dispense on and off control the valve actuation and should be set at the recommended pressure for the valve, normally 80 psi, and the dispense quantity will be controlled using the reservoir connected to the valve. |
| The slide is advancing or retracting too fast or slow. | The slide advance and retract rate should be set so that the slide moves at a controlled rate. The factory default is for the full slide stroke to take approximately 0.5 seconds. If this needed to be adjusted, see Section 6.7 for instructions. |
8. Care and Maintenance

8.1 Care

This unit should be stored in a level, dry location at ambient condition out of direct sunlight.

8.2 Maintenance

To minimize wear of the slide assembly, periodically apply several drops of light machine oil to the slide rods, manually advance and retract the slide several times then remove the excess lubricant using a rag.

⚠️ Warning! Be sure to press the “EMERGENCY STOP” button before lubricating the slide rods.

Clean, dry, filtered air must be used. If it is not, the solenoids in the controller will be fouled over time.

⚠️ Notice: If the required air quality is not achieved, install a Loctite filter regulator. In the US order a 5 μm filter using Part Number 985397. In Europe or Asia, order a 10 μm filter using Part Number 97120.
9. Documentation

9.1 Electrical Schematic

[Diagram of electrical schematic]
9.2 Pneumatic Schematic

FLOW CONTROLS

EXHAUST BULKHEAD FITTING

AIR CYLINDER

BULKHEAD CONNECTION

DISPENSE OFF BULKHEAD FITTING

DISPENSE ON BULKHEAD FITTING

CYLINDER EXT. & RET. VALVE

DUMP VALVE

GAGE 100 PSI

VACUUM GENERATOR

AIR IN BULKHEAD FITTING

NEEDLE VALVE
9.3 Foot Switch Schematic

9.4 Spare Parts List

For information on spare parts, please call:

USA       (1) 860-571-5174
Germany   (49) 89-9268-0
Singapore (65) 6482-3881

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slide assembly with horizontal clamp</td>
<td>988424</td>
</tr>
<tr>
<td>Stand assembly with vertical clamp</td>
<td>988423</td>
</tr>
<tr>
<td>Controller</td>
<td>988427</td>
</tr>
<tr>
<td>Power cord</td>
<td>983680</td>
</tr>
<tr>
<td>Footswitch</td>
<td>986051</td>
</tr>
<tr>
<td>Fuse</td>
<td>988476</td>
</tr>
<tr>
<td>Fitting kit</td>
<td>988497</td>
</tr>
</tbody>
</table>
10. Warranty

Henkel expressly warrants that all products referred to in this Instruction Manual for the Single Rotary Dispense Station 98427 (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 work surface pad, fuses, etc. 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.

NO WARRANTY IS EXTENDED TO ANY EQUIPMENT WHICH HAS BEEN ALTERED, MISUSED, NEGLECTED, OR DAMAGED BY ACCIDENT, OR IF THE SYSTEM WAS USED TO DISPENSE ANY LIQUID MATERIAL OTHER THAN HENKEL PRODUCTS.

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11. Contact Loctite

11.1 Internet

Equipment information: equipment.loctite.com

General information: www.loctite.com

11.2 Phone

USA   (1) 860-571-5174
Germany (49) 89-9268-0
Singapore (65) 6482-3881

11.3 Mail

USA (Industrial)  
Henkel Corporation  
1001 Trout Brook Crossing  
Rocky Hill, CT  06067-3910

USA (Automotive)  
Henkel Corporation  
Automotive Technology Center  
2455 Featherstone Road  
Auburn Hills, Michigan  48326

Canada  
Henkel Canada Corporation  
2225 Meadowpine Boulevard  
Mississauga, Ontario  L5N 7P2

Mexico  
Henkel Capital, S.A. de C.V.  
Calz. de la Viga, s/n, Fracc. Los Laureles  
Loc. Tulpetlac, Ecatepec Edo. de Mexico  
RFC: HCA000314-IC0

Brazil  
Henkel Ltda. Brazil  
Av. Prof. Vernon Kriible, 91  
06690-11-Itapevi  
Sao Paulo, Brazil

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