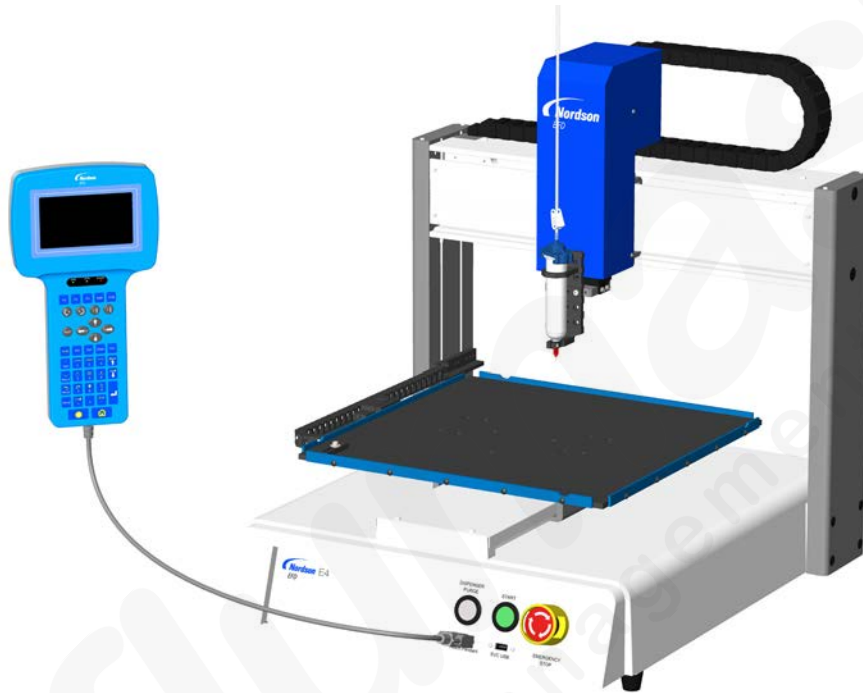


# E Series Automated Dispensing Systems

## Quick Programming Guide

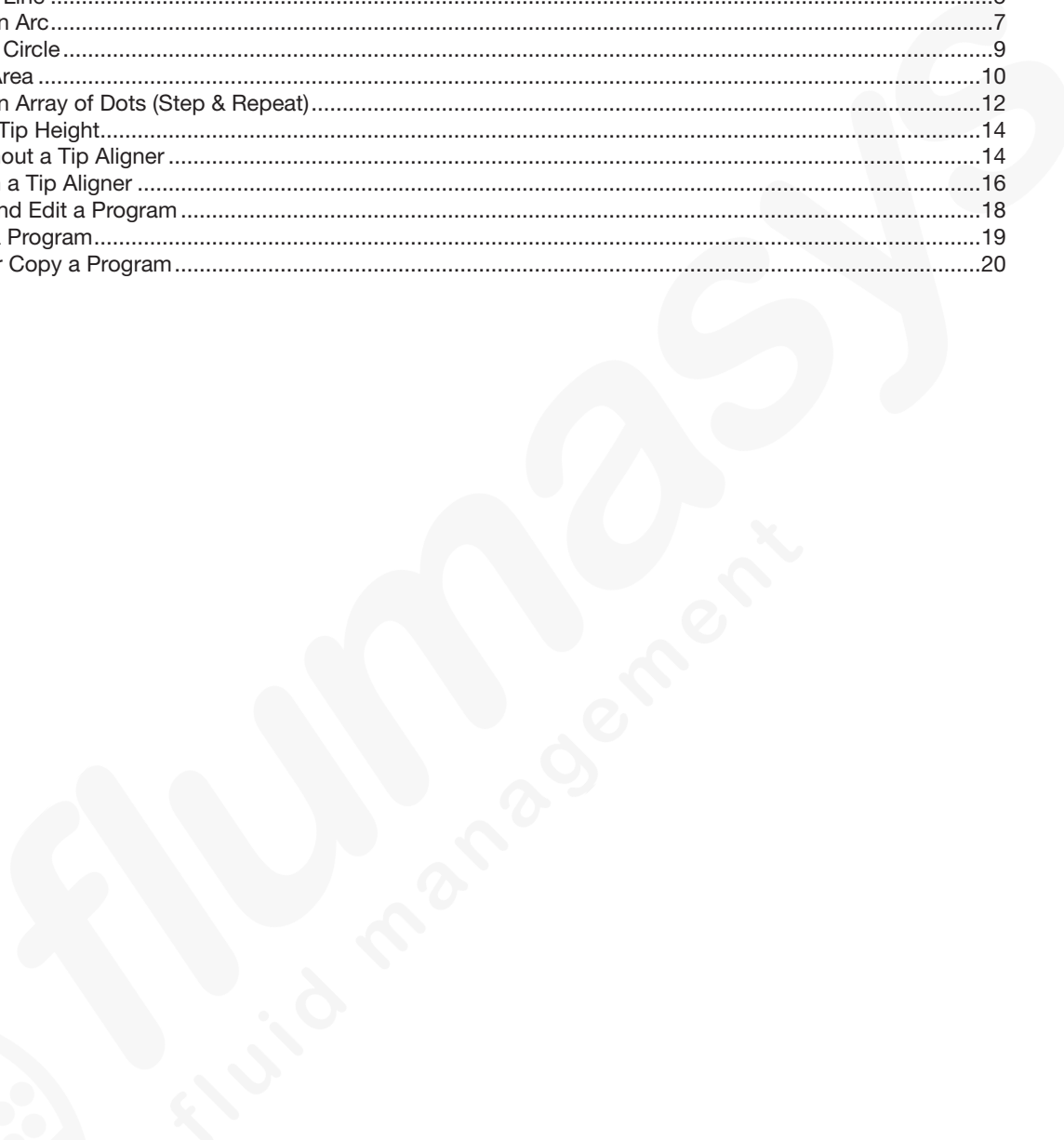


Electronic pdf files of Nordson EFD manuals are also available at [www.nordsonefd.com](http://www.nordsonefd.com)

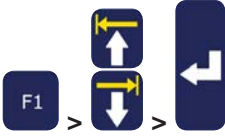
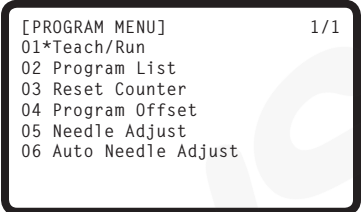

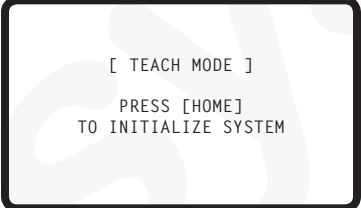


# Contents

Contents .....	2
How to Switch from Run Mode to Teach Mode .....	3
How to Make a Dot .....	4
How to Make a Line .....	5
How to Make an Arc.....	7
How to Make a Circle.....	9
How to Fill an Area .....	10
How to Make an Array of Dots (Step & Repeat).....	12
Calibrating the Tip Height.....	14
Systems without a Tip Aligner .....	14
Systems with a Tip Aligner .....	16
How to Open and Edit a Program .....	18
How to Name a Program.....	19
How to Clear or Copy a Program.....	20



## How to Switch from Run Mode to Teach Mode

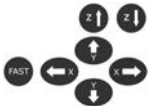

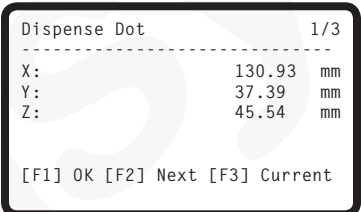

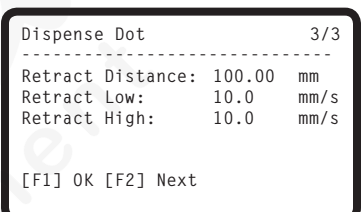


#	Key Press	Step	Teach Pendant Display
1		<ul style="list-style-type: none"> <li>• Press F1.</li> <li>• MOVE UP / DOWN to TEACH/RUN.</li> <li>• Press ENTER.</li> </ul>	
2		<ul style="list-style-type: none"> <li>• Press HOME. If prompted, enter a password.</li> </ul>	

# How to Make a Dot

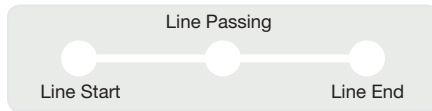


## PREREQUISITES

□ The system is in the Teach Mode. Refer to “How to Switch from Run Mode to Teach Mode” on page 3.

#	Key Press	Step	Teach Pendant Display
1		<ul style="list-style-type: none"> <li>Jog the dispensing tip to the desired XYZ location for the dispense dot.</li> </ul>	
2		<ul style="list-style-type: none"> <li>Press SHIFT &gt; TYPE to open the Dispense Dot screen.</li> <li>Make XYZ coordinate changes as needed.</li> </ul>	
3		<ul style="list-style-type: none"> <li>Press F2 to move through the Dispense Dot parameter screens.</li> <li>Press F1 to save and exit.</li> </ul>	
4		<ul style="list-style-type: none"> <li>Press SHIFT &gt; END to register the end of the program.</li> </ul>	
5		<ul style="list-style-type: none"> <li>Press START to run the program.</li> </ul>	

# How to Make a Line



## PREREQUISITES

□ The system is in the Teach Mode. Refer to “How to Switch from Run Mode to Teach Mode” on page 3.

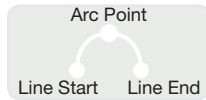
#	Key Press	Step	Teach Pendant Display
1		<ul style="list-style-type: none"> <li>Jog the dispensing tip to an XYZ location for the first dispense point (Line Start).</li> </ul>	
2		<ul style="list-style-type: none"> <li>Press SHIFT &gt; 1 to register the location as a Line Start point.</li> <li>Make XYZ coordinate changes as needed.</li> </ul>	<pre> Line Start                1/2 ----- X:                        130.93 mm Y:                         37.39 mm Z:                         45.54 mm  [F1] OK [F2] Next [F3] Current </pre>
3		<ul style="list-style-type: none"> <li>Press F2 to move to the Line Start parameter screen.</li> <li>Press F1 to save and exit.</li> </ul>	<pre> Line Start                2/2 ----- Line Speed:                10.0 mm/s Pre-move Delay:            0.00 s Settling Distance:        0.00 mm Dispenser Off(0)/On(1):   1  [F1] OK [F2] Next </pre>
4		<ul style="list-style-type: none"> <li>Jog the tip to the XYZ location of the second point (Line Passing).</li> </ul>	
5		<ul style="list-style-type: none"> <li>Press SHIFT &gt; 2 to register the location as a Line Passing point.</li> <li>Make XYZ coordinate changes as needed.</li> </ul>	<pre> Line Passing              1/2 ----- X:                        130.93 mm Y:                         37.39 mm Z:                         45.54 mm  [F1] OK [F2] Next [F3] Current </pre>
6		<ul style="list-style-type: none"> <li>Press F2 to move to the Line Passing parameter screen.</li> <li>Press F1 to save and exit.</li> </ul>	<pre> Line Passing              2/2 ----- Line Speed:                10.0 mm/s Node Time:                  0.00 s Dispenser Off(0)/On(1):   1  [F1] OK [F2] Next </pre>

*Continued on next page*

## How to Make a Line (continued)

#	Key Press	Step	Teach Pendant Display
7		<ul style="list-style-type: none"> <li>Jog the tip to the XYZ location of for the last dispense point (Line End).</li> </ul>	
8		<ul style="list-style-type: none"> <li>Press SHIFT &gt; 3 to register the location as a Line End point.</li> <li>Make XYZ coordinate changes as needed.</li> </ul>	<pre>Line End 1/4 ----- X:          130.93 mm Y:          37.39 mm Z:          45.54 mm  [F1] OK [F2] Next [F3] Current</pre>
9		<ul style="list-style-type: none"> <li>Press F2 to move through the Line End parameter screens.</li> <li>Press F1 to save and exit.</li> </ul>	<pre>Line End 4/4 ----- Retract Distance: 0.00 mm Retract Low:      20.0 mm/s Retract High:     80.0 mm/s  [F1] OK [F2] Next</pre>
10		<ul style="list-style-type: none"> <li>Press SHIFT &gt; END to register the end of the program.</li> </ul>	
11		<ul style="list-style-type: none"> <li>Press START to run the program.</li> </ul>	

# How to Make an Arc





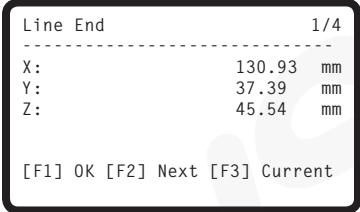


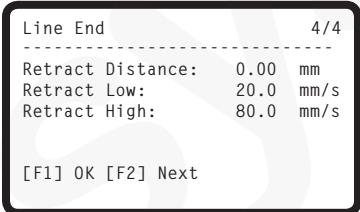



## PREREQUISITES

□ The system is in the Teach Mode. Refer to “How to Switch from Run Mode to Teach Mode” on page 3.

#	Key Press	Step	Teach Pendant Display
1		<ul style="list-style-type: none"> <li>Jog the dispensing tip to an XYZ location for the first dispense point (Line Start).</li> </ul>	
2		<ul style="list-style-type: none"> <li>Press SHIFT &gt; 1 to register the location as a Line Start point.</li> <li>Make XYZ coordinate changes as needed.</li> </ul>	<pre> Line Start ----- 1/2 X:                130.93 mm Y:                37.39 mm Z:                45.54 mm  [F1] OK [F2] Next [F3] Current </pre>
3		<ul style="list-style-type: none"> <li>Press F2 to move to the Line Start parameter screen.</li> <li>Press F1 to save and exit.</li> </ul>	<pre> Line Start ----- 2/2 Line Speed:       10.0 mm/s Pre-move Delay:   0.00 s Settling Distance: 0.00 mm Dispenser Off(0)/On(1): 1  [F1] OK [F2] Next </pre>
4		<ul style="list-style-type: none"> <li>Jog the tip to the XYZ location of where the top of the arc should be (Arc Point).</li> </ul>	
5		<ul style="list-style-type: none"> <li>Press SHIFT &gt; MENU1 to register the location as an Arc Point.</li> <li>Make XYZ coordinate changes as needed.</li> <li>Press F1 to save and exit.</li> </ul>	<pre> Arc Point ----- X:                130.93 mm Y:                37.39 mm Z:                45.54 mm  [F1] OK           [F3] Current </pre>
6		<ul style="list-style-type: none"> <li>Jog the tip to the XYZ location where the arc should end (Line End).</li> </ul>	

*Continued on next page*

## How to Make an Arc (continued)

#	Key Press	Step	Teach Pendant Display
7	 > 	<ul style="list-style-type: none"> <li>Press SHIFT &gt; 3 to register the location as a Line End point.</li> <li>Make XYZ coordinate changes as needed.</li> </ul>	
8	 > 	<ul style="list-style-type: none"> <li>Press F2 to move through the Line End parameter screens.</li> <li>Press F1 to save and exit.</li> </ul>	
9	 > 	<ul style="list-style-type: none"> <li>Press SHIFT &gt; END to register the end of the program.</li> </ul>	
10		<ul style="list-style-type: none"> <li>Press START to run the program.</li> </ul>	





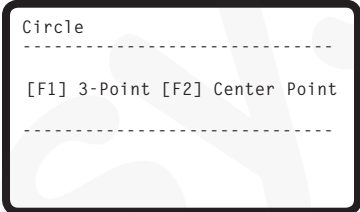



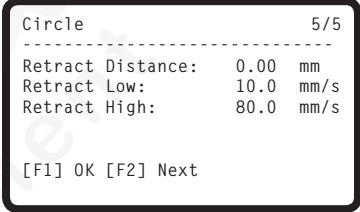





# How to Make a Circle



## PREREQUISITES

□ The system is in the Teach Mode. Refer to “How to Switch from Run Mode to Teach Mode” on page 3.




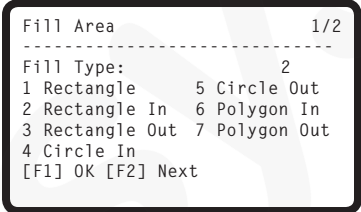


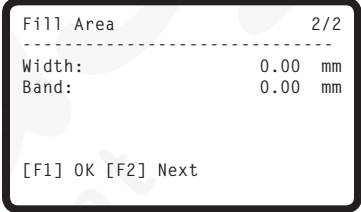
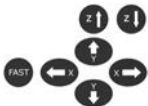


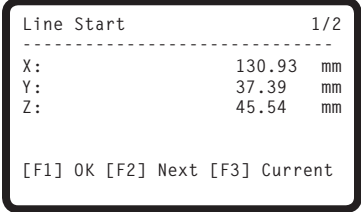


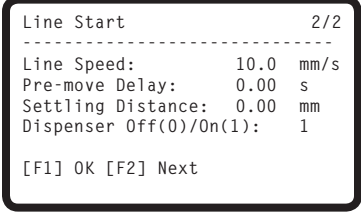

#	Key Press	Step	Teach Pendant Display
1	 >  >  or 	<ul style="list-style-type: none"> <li>Press SHIFT &gt; 4 to open the Circle menu.</li> <li>Press F1 to make a circle by selecting three points on the diameter of the circle.</li> <li>Press F2 to make a circle by entering the center point of the circle.</li> </ul>	
2		<ul style="list-style-type: none"> <li>Follow the directions on the display to enter the XYZ coordinates.</li> </ul>	
3	 > 	<ul style="list-style-type: none"> <li>Press F2 to move through the Circle parameter screens.</li> <li>Press F1 to save and exit.</li> </ul>	
4	 > 	<ul style="list-style-type: none"> <li>Press SHIFT &gt; END to register the end of the program.</li> </ul>	
5		<ul style="list-style-type: none"> <li>Press START to run the program.</li> </ul>	

## How to Fill an Area





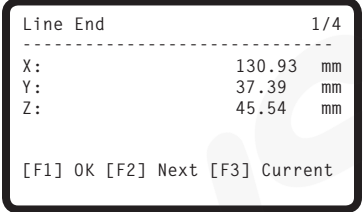


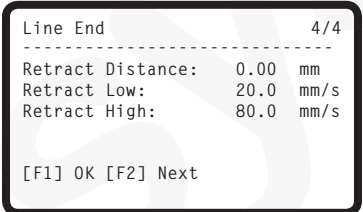



### PREREQUISITES

□ The system is in the Teach Mode. Refer to “How to Switch from Run Mode to Teach Mode” on page 3.

#	Key Press	Step	Teach Pendant Display
1	 >  > 	<ul style="list-style-type: none"> <li>Press SHIFT &gt; 9 to open the Fill Area menu, then select the Fill Type.</li> <li>Press 1 RECTANGLE.</li> </ul> <p><b>NOTE:</b> This procedure shows how to fill a rectangle.</p>	
2	 > <b>xx.xx</b> > 	<ul style="list-style-type: none"> <li>Press F2 to move to the Fill Area parameter screen.</li> <li>Enter the Width and Band settings for the area to be filled, then press F1 to save the setting and return to the program.</li> </ul>	
3		<ul style="list-style-type: none"> <li>Jog the dispensing tip to the top left corner of the area to be filled.</li> </ul>	
4	 > 	<ul style="list-style-type: none"> <li>Press SHIFT &gt; 1 to register the location as a Line Start point.</li> </ul>	
5	 > 	<ul style="list-style-type: none"> <li>Press F2 to move to the Line Start parameter screen.</li> <li>Press F1 to save and exit.</li> </ul>	
6		<ul style="list-style-type: none"> <li>Jog the dispensing tip to the bottom right corner of the area to be filled.</li> </ul>	

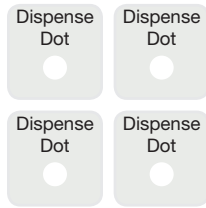
*Continued on next page*

## How to Fill an Area (continued)

#	Key Press	Step	Teach Pendant Display
7	 > 	<ul style="list-style-type: none"> <li>Press SHIFT &gt; 3 to register the location as a Line End point.</li> </ul>	 <pre> Line End                               1/4 ----- X:                                     130.93 mm Y:                                     37.39 mm Z:                                     45.54 mm  [F1] OK [F2] Next [F3] Current </pre>
8	 > 	<ul style="list-style-type: none"> <li>Press F2 to move through the Line End parameter screens.</li> <li>Press F1 to save and exit.</li> </ul>	 <pre> Line End                               4/4 ----- Retract Distance: 0.00 mm Retract Low:      20.0 mm/s Retract High:     80.0 mm/s  [F1] OK [F2] Next </pre>
9	 > 	<ul style="list-style-type: none"> <li>Press SHIFT &gt; END to register the end of the program.</li> </ul>	
10		<ul style="list-style-type: none"> <li>Press START to run the program.</li> </ul>	

## How to Make an Array of Dots (Step & Repeat)

Use Step & Repeat to dispense the same pattern on multiple workpieces in an array.




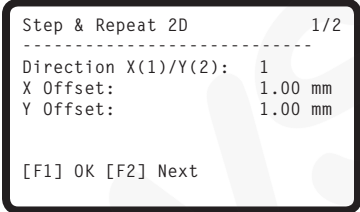


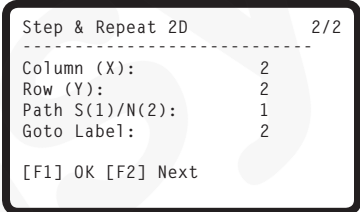



### PREREQUISITES

- ❑ The system is in the Teach Mode. Refer to “How to Switch from Run Mode to Teach Mode” on page 3.
- ❑ Multiple workpieces are properly positioned on the fixture plate.

#	Key Press	Step	Teach Pendant Display
1		<ul style="list-style-type: none"> <li>• Press SHIFT &gt; 8 to open the Label screen.</li> <li>• Enter a Label number (in this example, the number 2).</li> <li>• Press F1 to save and exit.</li> </ul>	
2		<ul style="list-style-type: none"> <li>• Jog the dispensing tip to the desired XYZ location for the first dispense dot.</li> </ul>	
3		<ul style="list-style-type: none"> <li>• Press SHIFT &gt; TYPE to open the Dispense Dot screen.</li> <li>• Make XYZ coordinate changes as needed.</li> </ul>	
4		<ul style="list-style-type: none"> <li>• Press F2 to move through the Dispense Dot parameter screens.</li> <li>• Press F1 to save and exit.</li> </ul>	
5		<ul style="list-style-type: none"> <li>• Press SHIFT &gt; 5 to open the Step &amp; Repeat menu.</li> <li>• Press F1.</li> </ul>	

*Continued on next page*

## How to Make an Array of Dots (Step & Repeat) (continued)

#	Key Press	Step	Teach Pendant Display
6		<ul style="list-style-type: none"> <li>Press F2 to move to the next screen.</li> </ul>	
7	 > 	<ul style="list-style-type: none"> <li>Enter 2 in the Column field.</li> <li>Enter 2 in the Row field.</li> <li>Enter the label number from step 1 for Goto Label (in this example, 2).</li> <li>Press F1 to save and exit.</li> </ul>	
8	 > 	<ul style="list-style-type: none"> <li>Press SHIFT &gt; END to register the end of the program.</li> </ul>	
9		<ul style="list-style-type: none"> <li>Press START to test the program.</li> </ul>	

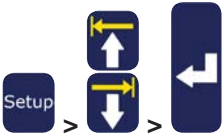
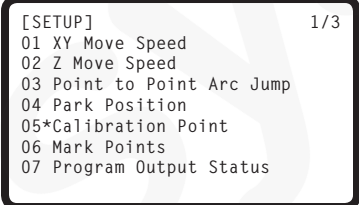
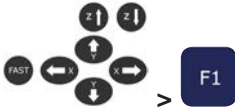
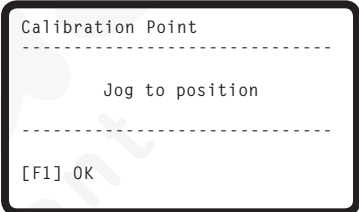
# Calibrating the Tip Height

## Systems without a Tip Aligner

### Set a Calibration Point (Initial Setup for Needle Adjust)

#### PREREQUISITES

□ The system is in the Teach Mode. Refer to “How to Switch from Run Mode to Teach Mode” on page 3.

#	Key Press	Step	Teach Pendant Display
1		<ul style="list-style-type: none"> <li>Press SETUP.</li> <li>MOVE UP / DOWN to CALIBRATION POINT.</li> <li>Press ENTER.</li> </ul>	
2		<ul style="list-style-type: none"> <li>Jog the tip down until it is as close to the fixture plate surface as possible.</li> <li>Press F1 to save the setting.</li> </ul>	

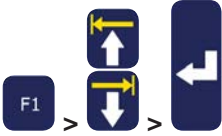
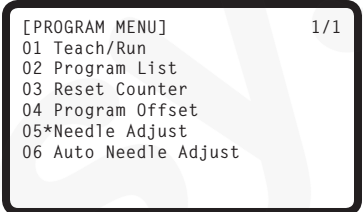

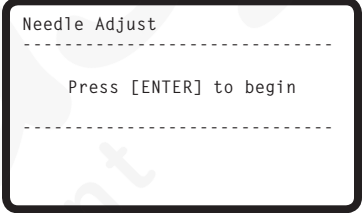
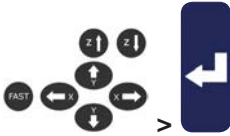
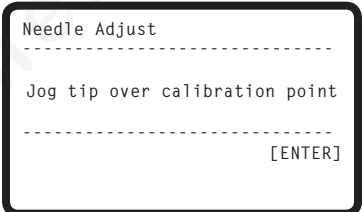
# Calibrating the Tip Height (continued)

## Systems without a Tip Aligner (continued)

### Recalibrate the Tip (Needle Adjust)

#### PREREQUISITES

□ The tip height is calibrated. Refer to “Set a Calibration Point (Initial Setup for Needle Adjust)” on page 14.

#	Key Press	Step	Teach Pendant Display
1		<ul style="list-style-type: none"> <li>Press F1.</li> <li>MOVE UP / DOWN to NEEDLE ADJUST.</li> <li>Press ENTER.</li> </ul>	
2		<ul style="list-style-type: none"> <li>Press ENTER.</li> </ul> <p>The dispensing tip moves to the user-defined calibration point.</p> <p><b>NOTE:</b> The tip will be 5 mm (0.2") higher than the calibrated point to prevent possible crushing of the tip.</p>	
3		<ul style="list-style-type: none"> <li>Jog the tip until it is centered over the calibration point.</li> <li>Press ENTER.</li> </ul> <p>The system adjusts the dispense program to the recalibrated tip height.</p>	

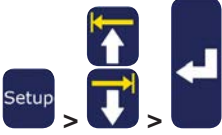
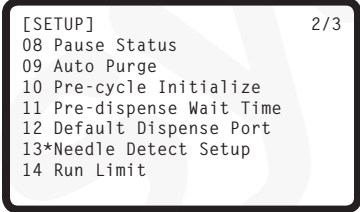
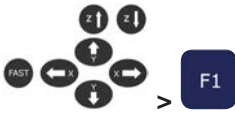
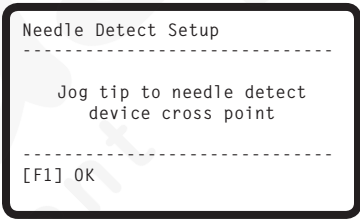

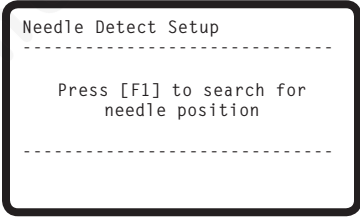

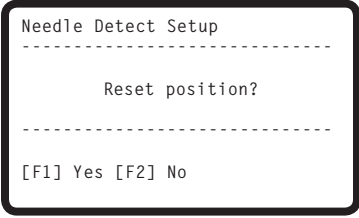
# Calibrating the Tip Height (continued)

## Systems with a Tip Aligner

### Set a Calibration Point (Initial Setup for Auto Needle Adjust)

#### PREREQUISITES

□ The system is in the Teach Mode. Refer to “How to Switch from Run Mode to Teach Mode” on page 3.

#	Key Press	Step	Teach Pendant Display
1		<ul style="list-style-type: none"> <li>Press SETUP.</li> <li>MOVE UP / DOWN to NEEDLE DETECT SETUP.</li> <li>Press ENTER.</li> </ul>	
2		<ul style="list-style-type: none"> <li>Jog the tip to the tip aligner and lower the tip until it is as close to the crosshairs (cross point) as possible</li> <li>Press F1.</li> </ul> <p>The Needle Detect Setup screen appears.</p>	
3		<ul style="list-style-type: none"> <li>Press F1.</li> </ul> <p>The system begins the calibration.</p>	
4		<ul style="list-style-type: none"> <li>Press F1 to accept the calibration.</li> </ul> <p><b>NOTE:</b> Press F2 to cancel the calibration.</p>	



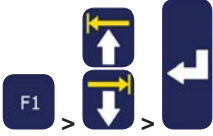
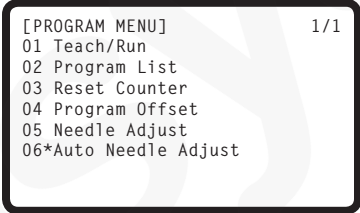

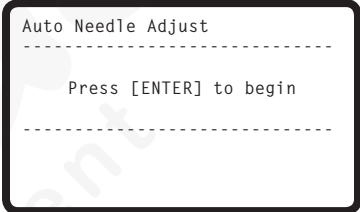

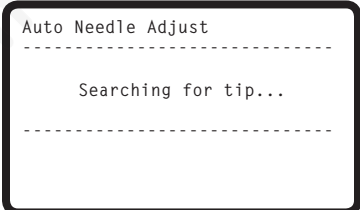
# Calibrating the Tip Height (continued)

## Systems with a Tip Aligner (continued)

### Recalibrate the Tip (Auto Needle Adjust)

#### PREREQUISITES

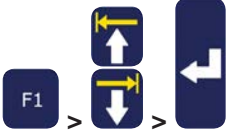
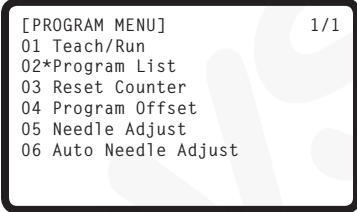
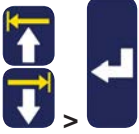
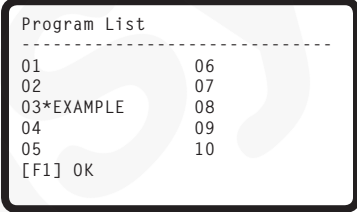
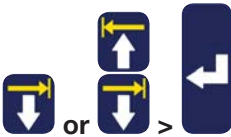
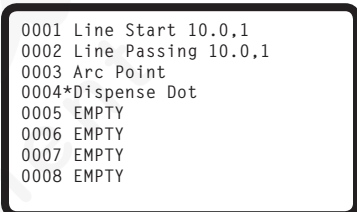

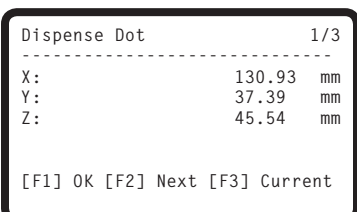

- The needle detect position is calibrated. Refer to “Set a Calibration Point (Initial Setup for Auto Needle Adjust)” on page 16.

#	Key Press	Step	Teach Pendant Display
1		<ul style="list-style-type: none"> <li>• Press F1.</li> <li>• MOVE UP / DOWN to AUTO NEEDLE ADJUST.</li> <li>• Press ENTER.</li> </ul>	
2		<ul style="list-style-type: none"> <li>• Press ENTER.</li> </ul> <p>The system automatically checks the tip height using the tip aligner and displays the offset updates needed to calibrate the tip height.</p>	
3		<ul style="list-style-type: none"> <li>• After the search is complete, press F1 to accept the calibration.</li> </ul>	

# How to Open and Edit a Program

## PREREQUISITES

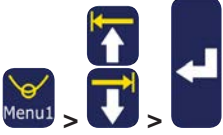
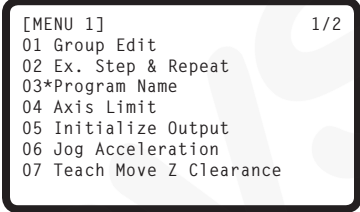
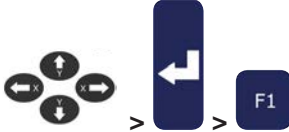
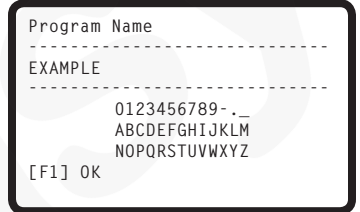
□ The system is in the Teach Mode. Refer to “How to Switch from Run Mode to Teach Mode” on page 3.

#	Key Press	Step	Teach Pendant Display
1		<ul style="list-style-type: none"> <li>Press F1.</li> <li>MOVE UP / DOWN to PROGRAM LIST.</li> <li>Press ENTER.</li> </ul>	 <pre>[PROGRAM MENU] 1/1 01 Teach/Run 02*Program List 03 Reset Counter 04 Program Offset 05 Needle Adjust 06 Auto Needle Adjust</pre>
2		<ul style="list-style-type: none"> <li>MOVE UP / DOWN to select the desired program.</li> <li>Press ENTER.</li> </ul> <p>The selected program becomes the current program and remains open until another program number is selected.</p>	 <pre>Program List ----- 01          06 02          07 03*EXAMPLE 08 04          09 05          10 [F1] OK</pre>
3		<ul style="list-style-type: none"> <li>MOVE UP / DOWN to select the command line to edit.</li> <li>Press ENTER.</li> </ul>	 <pre>0001 Line Start 10.0,1 0002 Line Passing 10.0,1 0003 Arc Point 0004*Dispense Dot 0005 EMPTY 0006 EMPTY 0007 EMPTY 0008 EMPTY</pre>
4		<ul style="list-style-type: none"> <li>Enter the new coordinates manually. or</li> <li>Press F3 to update the XYZ values to the current tip location.</li> <li>Press F1 to save and exit or ESC to cancel the changes.</li> </ul>	 <pre>Dispense Dot 1/3 ----- X:          130.93 mm Y:          37.39 mm Z:          45.54 mm  [F1] OK [F2] Next [F3] Current</pre>
5		<ul style="list-style-type: none"> <li>Make other changes as needed.</li> <li>Press F1 to save and exit.</li> </ul>	

# How to Name a Program

## PREREQUISITES

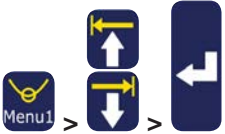

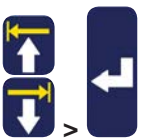
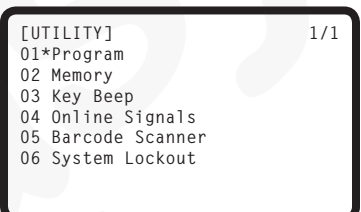

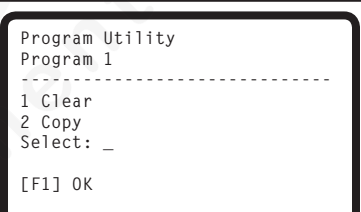

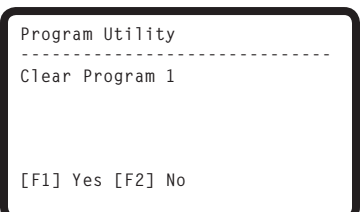

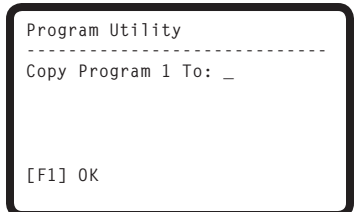
□ The system is in the Teach Mode. Refer to “How to Switch from Run Mode to Teach Mode” on page 3.

#	Key Press	Step	Teach Pendant Display
1		<ul style="list-style-type: none"> <li>• Press MENU1.</li> <li>• MOVE UP / DOWN to PROGRAM NAME.</li> <li>• Press ENTER.</li> </ul>	
2		<ul style="list-style-type: none"> <li>• Press the X jog buttons to move left / right and the Y jog buttons to move up / down through the characters.</li> <li>• Press ENTER to select characters.</li> <li>• Press CLEAR to delete characters.</li> <li>• Press F1 to save and exit.</li> </ul>	

## How to Clear or Copy a Program

### PREREQUISITES

- ❑ The system is in the Teach Mode. Refer to “How to Switch from Run Mode to Teach Mode” on page 3.
- ❑ The program you want to clear or copy is currently open. Refer to “How to Open and Edit a Program” on page 18.

#	Key Press	Step	Teach Pendant Display
1		<ul style="list-style-type: none"> <li>• Press MENU1.</li> <li>• MOVE UP / DOWN to UTILITY MENU.</li> <li>• Press ENTER.</li> </ul>	
2		<ul style="list-style-type: none"> <li>• MOVE UP / DOWN to PROGRAM.</li> <li>• Press ENTER.</li> </ul>	
3		<ul style="list-style-type: none"> <li>• Press 1 CLEAR to empty all addresses in the current program.</li> <li>• Press 2 COPY to copy the current program.</li> <li>• Press F1 to continue.</li> </ul>	
4		<ul style="list-style-type: none"> <li>• If you pressed 1 (Clear), the system prompts for confirmation.</li> <li>• Press F1 to accept the clear or F2 to cancel the clear.</li> </ul>	
5		<ul style="list-style-type: none"> <li>• If you pressed 2 (Copy), the system prompts for the program number to copy to (program number 1–99).</li> <li>• Press F1 to copy all program contents to the selected program number.</li> </ul> <p><b>NOTE:</b> If the destination program is not empty, the program contents are overwritten by the copied program.</p>	



flumasys  
fluid management



Flumasys s.r.o.  
info@flumasys.com