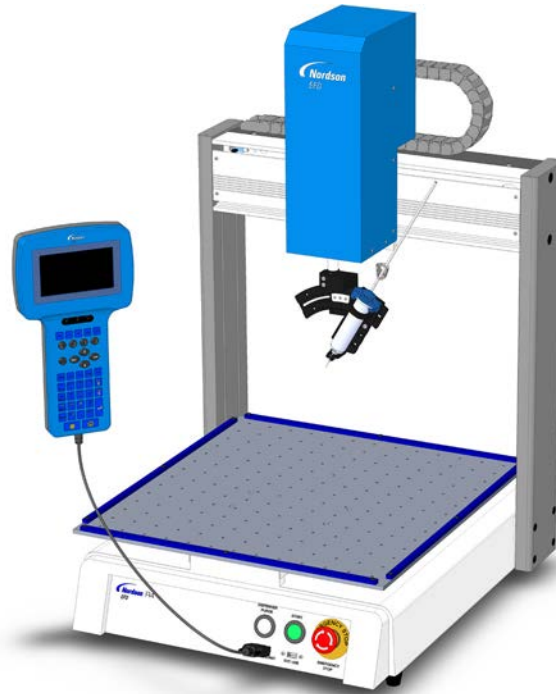


R Series Automated Dispensing Systems

Quick Programming Guide



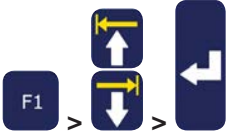
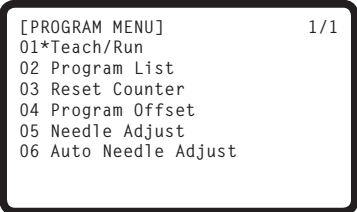

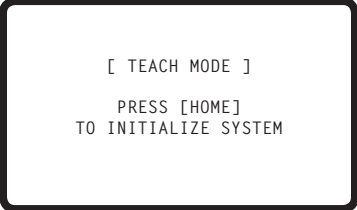
Electronic pdf files of Nordson EFD manuals are also available at www.nordsonefd.com

Nordson
EFD

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
How to Make a Rotating Circle	14
Calibrating the Tip Height.....	16
Systems without a Tip Aligner	16
Systems with a Tip Aligner	18
How to Open and Edit a Program	20
How to Name a Program.....	21
How to Clear or Copy a Program.....	22

How to Switch from Run Mode to Teach Mode

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

How to Make a Dot

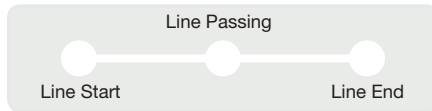


PREREQUISITES

□ 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"> Jog the dispensing tip to the desired XYZR location for the dispense dot. 	
2		<ul style="list-style-type: none"> Press SHIFT > TYPE to open the Dispense Dot screen. Make XYZR coordinate changes as needed. 	
3		<ul style="list-style-type: none"> Press F2 to move through the Dispense Dot parameter screens. Press F1 to save and exit. 	
4		<ul style="list-style-type: none"> Press SHIFT > END to register the end of the program. 	
5		<ul style="list-style-type: none"> Press START to run the program. 	

How to Make a Line



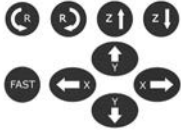

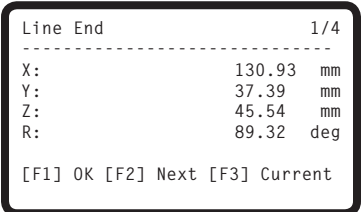

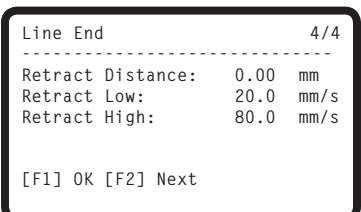


PREREQUISITES

□ 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"> Jog the dispensing tip to an XYZR location for the first dispense point (Line Start). 	
2		<ul style="list-style-type: none"> Press SHIFT > 1 to register the location as a Line Start point. Make XYZR coordinate changes as needed. 	<pre>Line Start 1/2 ----- X: 130.93 mm Y: 37.39 mm Z: 45.54 mm R: 89.32 deg [F1] OK [F2] Next [F3] Current</pre>
3		<ul style="list-style-type: none"> Press F2 to move to the Line Start parameter screen. Press F1 to save and exit. 	<pre>Line Start 2/2 ----- Line Speed: 10.0 mm/s R Speed: 360.0 deg/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"> Jog the tip to the XYZR location of the second point (Line Passing). 	
5		<ul style="list-style-type: none"> Press SHIFT > 2 to register the location as a Line Passing point. Make XYZR coordinate changes as needed. 	<pre>Line Passing 1/2 ----- X: 130.93 mm Y: 37.39 mm Z: 45.54 mm R: 89.32 deg [F1] OK [F2] Next [F3] Current</pre>
6		<ul style="list-style-type: none"> Press F2 to move to the Line Passing parameter screen. Press F1 to save and exit. 	<pre>Line Passing 2/2 ----- Line Speed: 10.0 mm/s R Speed: 360.0 deg/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"> Jog the tip to the XYZR location of for the last dispense point (Line End). 	
8		<ul style="list-style-type: none"> Press SHIFT > 3 to register the location as a Line End point. Make XYZR coordinate changes as needed. 	
9		<ul style="list-style-type: none"> Press F2 to move through the Line End parameter screens. Press F1 to save and exit. 	
10		<ul style="list-style-type: none"> Press SHIFT > END to register the end of the program. 	
11		<ul style="list-style-type: none"> Press START to run the program. 	

How to Make an Arc





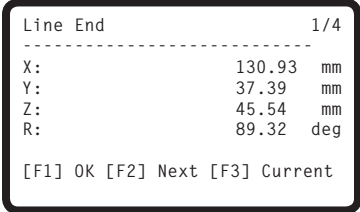


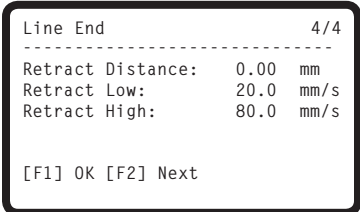



PREREQUISITES

□ 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"> Jog the dispensing tip to an XYZR location for the first dispense point (Line Start). 	
2		<ul style="list-style-type: none"> Press SHIFT > 1 to register the location as a Line Start point. Make XYZR coordinate changes as needed. 	<pre>Line Start 1/2 ----- X: 130.93 mm Y: 37.39 mm Z: 45.54 mm R: 89.32 deg [F1] OK [F2] Next [F3] Current</pre>
3		<ul style="list-style-type: none"> Press F2 to move to the Line Start parameter screen. Press F1 to save and exit. 	<pre>Line Start 2/2 ----- Line Speed: 10.0 mm/s R Speed: 360.0 deg/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"> Jog the tip to the XYZR location of where the top of the arc should be (Arc Point). 	
5		<ul style="list-style-type: none"> Press SHIFT > MENU1 to register the location as an Arc Point. Make XYZR coordinate changes as needed. Press F1 to save and exit. 	<pre>Arc Point ----- X: 130.93 mm Y: 37.39 mm Z: 45.54 mm R: 89.32 deg [F1] OK [F3] Current</pre>
6		<ul style="list-style-type: none"> Jog the tip to the XYZR location where the arc should end (Line End). 	

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How to Make an Arc (continued)





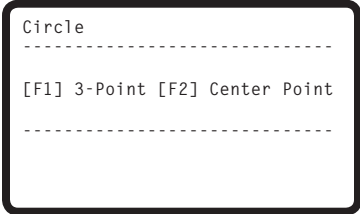
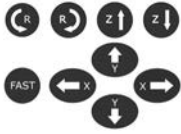


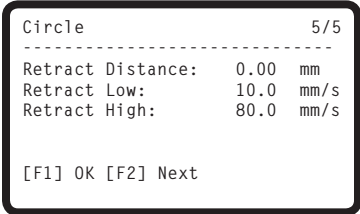



#	Key Press	Step	Teach Pendant Display
7	 > 	<ul style="list-style-type: none"> Press SHIFT > 3 to register the location as a Line End point. Make XYZR coordinate changes as needed. 	 <pre> Line End 1/4 ----- X: 130.93 mm Y: 37.39 mm Z: 45.54 mm R: 89.32 deg [F1] OK [F2] Next [F3] Current </pre>
8	 > 	<ul style="list-style-type: none"> Press F2 to move through the Line End parameter screens. Press F1 to save and exit. 	 <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"> Press SHIFT > END to register the end of the program. 	
10		<ul style="list-style-type: none"> Press START to run the program. 	

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.




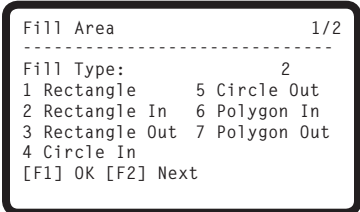


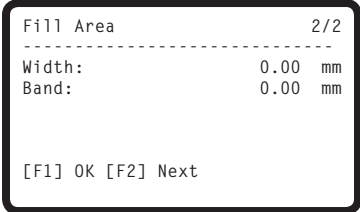



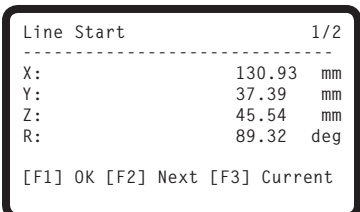


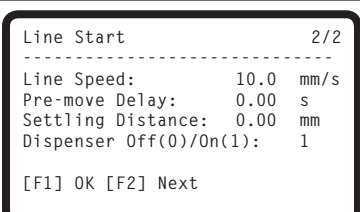

#	Key Press	Step	Teach Pendant Display
1	 >  >  or 	<ul style="list-style-type: none"> Press SHIFT > 4 to open the Circle menu. Press F1 to make a circle by selecting three points on the diameter of the circle. Press F2 to make a circle by entering the center point of the circle. 	
2		<ul style="list-style-type: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

How to Fill an Area





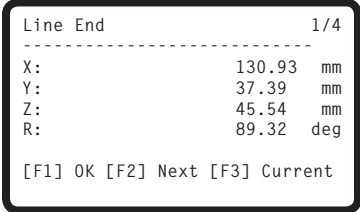


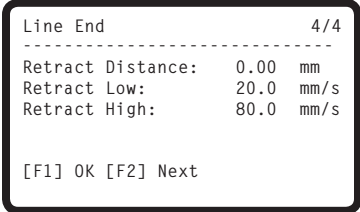



PREREQUISITES

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

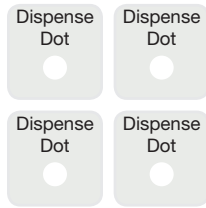
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How to Fill an Area (continued)

#	Key Press	Step	Teach Pendant Display
7	 > 	<ul style="list-style-type: none"> Press SHIFT > 3 to register the location as a Line End point. 	 <pre> Line End 1/4 ----- X: 130.93 mm Y: 37.39 mm Z: 45.54 mm R: 89.32 deg [F1] OK [F2] Next [F3] Current </pre>
8	 > 	<ul style="list-style-type: none"> Press F2 to move through the Line End parameter screens. Press F1 to save and exit. 	 <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"> Press SHIFT > END to register the end of the program. 	
10		<ul style="list-style-type: none"> Press START to run the program. 	

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.

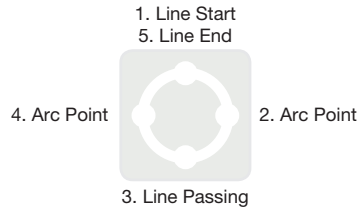
#	Key Press	Step	Teach Pendant Display
1		<ul style="list-style-type: none"> Press SHIFT > 8 to open the Label screen. Enter a Label number (in this example, the number 2). Press F1 to save and exit. 	
2		<ul style="list-style-type: none"> Jog the dispensing tip to the desired XYZR location for the first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

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"> Press F2 to move to the next screen. 	<pre> Step & Repeat 2D 1/2 ----- Direction X(1)/Y(2): 1 X Offset: 1.00 mm Y Offset: 1.00 mm [F1] OK [F2] Next </pre>
7	  > 	<ul style="list-style-type: none"> Enter 2 in the Column field. Enter 2 in the Row field. Enter the label number from step 1 for Goto Label (in this example, 2). Press F1 to save and exit. 	<pre> Step & Repeat 2D 2/2 ----- Column (X): 2 Row (Y): 2 Path S(1)/N(2): 1 Goto Label: 2 [F1] OK [F2] Next </pre>
8	 > 	<ul style="list-style-type: none"> Press SHIFT > END to register the END of the program. 	
9		<ul style="list-style-type: none"> Press START to test the program. 	

How to Make a Rotating Circle











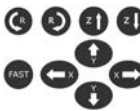







PREREQUISITES

□ 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		<ul style="list-style-type: none"> Jog the dispensing tip to the first XYZR dispense location (1. Line Start). 	
2		<ul style="list-style-type: none"> Press SHIFT > 1 to register the location as a Line Start point. Rotate to 0 for coordinate R. 	<pre>Line Start 1/2 ----- X: 130.93 mm Y: 37.39 mm Z: 45.54 mm R: 0 deg [F1] OK [F2] Next [F3] Current</pre>
3		<ul style="list-style-type: none"> Press F2 to move to the Line Start parameter screen. Press F1 to save and exit. 	<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"> Jog the dispensing tip to the second XYZR dispense location (2. Arc Point). 	
5		<ul style="list-style-type: none"> Press SHIFT > MENU1 to register the location as an Arc Point. Rotate to 90 for coordinate R. Press F1 to save and exit. 	<pre>Arc Point ----- X: 130.93 mm Y: 37.39 mm Z: 45.54 mm R: 90.00 deg [F1] OK [F3] Current</pre>
6		<ul style="list-style-type: none"> Jog the dispensing tip to the third XYZR dispense location (3. Line Passing). 	

Continued on next page

How to Make a Rotating Circle (continued)

#	Key Press	Step	Teach Pendant Display
7	 > 	<ul style="list-style-type: none"> Press SHIFT > 2 to register the location as a Line Passing point. Enter 180 for coordinate R. 	<pre> Line Passing 1/2 ----- X: 130.93 mm Y: 37.39 mm Z: 45.54 mm R: 180.00 deg [F1] OK [F2] Next [F3] Current </pre>
8	 > 	<ul style="list-style-type: none"> Press F2 to move to the Line Passing parameter screen. Press F1 to save and exit. 	<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>
9		<ul style="list-style-type: none"> Jog the dispensing tip to the fourth XYZR dispense location (4. Arc Point). 	
10	 >  > 	<ul style="list-style-type: none"> Press SHIFT > MENU1 to register the location as an Arc Point. Enter 270 for coordinate R. Press F1 to save and exit. 	<pre> Arc Point ----- X: 130.93 mm Y: 37.39 mm Z: 45.54 mm R: 270.00 deg [F1] OK [F3] Current </pre>
11		<ul style="list-style-type: none"> Jog the dispensing tip to the fifth dispense location (5. Line End). 	
12	 > 	<ul style="list-style-type: none"> Press SHIFT > 3 to register the location as a Line End point. Enter 360 for coordinate R. 	<pre> Line End 1/4 ----- X: 130.93 mm Y: 37.39 mm Z: 45.54 mm R: 360.00 deg [F1] OK [F2] Next [F3] Current </pre>
13	 > 	<ul style="list-style-type: none"> Press F2 to move through the Line End parameter screens. Press F1 to save and exit. 	<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>
14	 > 	<ul style="list-style-type: none"> Press SHIFT > END to register the END of the program. 	
15		<ul style="list-style-type: none"> Press START to test the program. 	

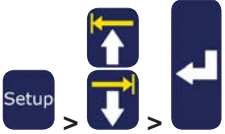
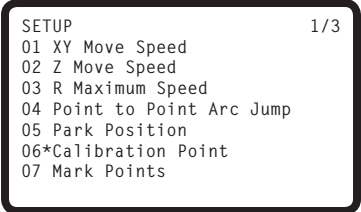
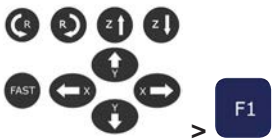
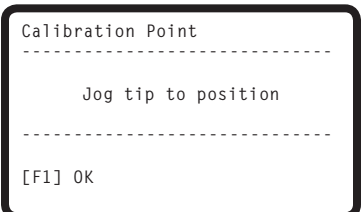
Calibrating the Tip Height

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.

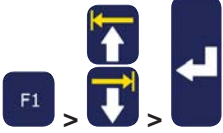
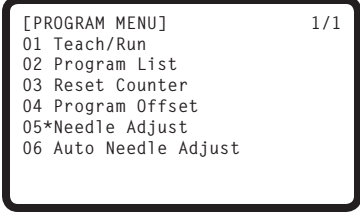

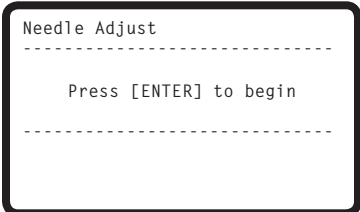
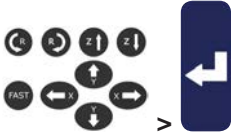
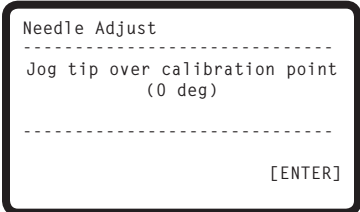
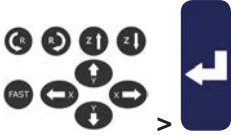
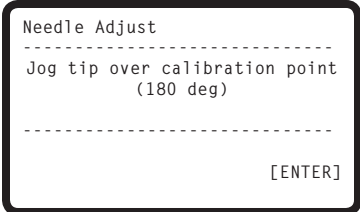

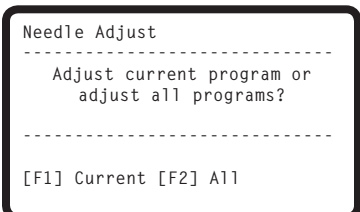
#	Key Press	Step	Teach Pendant Display
1		<ul style="list-style-type: none"> • Press SETUP. • MOVE UP / DOWN to CALIBRATION POINT. • Press ENTER. 	
2		<ul style="list-style-type: none"> • Jog the tip down until it is as close to the fixture plate surface as possible. • Press F1 to save the setting. 	

Calibrating the Tip Height (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 16.

#	Key Press	Step	Teach Pendant Display
1		<ul style="list-style-type: none"> Press F1. MOVE UP / DOWN to NEEDLE ADJUST. Press ENTER. 	
2		<ul style="list-style-type: none"> Press ENTER. <p>The dispensing tip moves to the user-defined calibration point.</p> <p>NOTE: 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"> Jog the tip until it is centered over the calibration point. Press ENTER. <p>The needle automatically rotates to 180 degrees.</p>	
4		<ul style="list-style-type: none"> Jog the tip over the calibration point. Press ENTER. 	
5		<ul style="list-style-type: none"> Press F1 to adjust only the currently open dispense program for the re-calibrated tip height. or Press F2 to adjust all dispense programs for the re-calibrated tip height. 	

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.

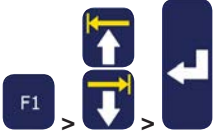
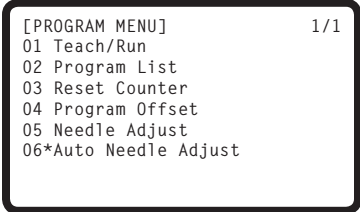

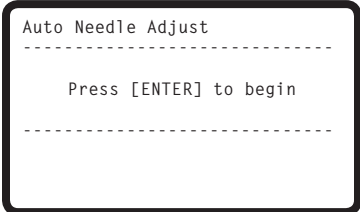

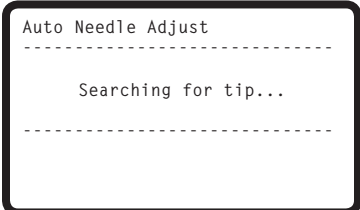
#	Key Press	Step	Teach Pendant Display
1		<ul style="list-style-type: none"> Press SETUP. MOVE UP / DOWN to NEEDLE DETECT SETUP. Press ENTER. 	
2		<ul style="list-style-type: none"> Jog the tip to the tip aligner and lower the tip until it is as close to the crosshairs (cross point) as possible Press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

Calibrating the Tip Height (continued)

Recalibrate the Tip (Auto Needle Adjust)

Prerequisites

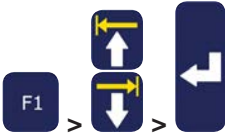
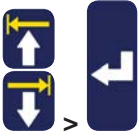
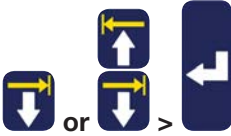


- The needle detect position is calibrated. Refer to “Set a Calibration Point (Initial Setup for Auto Needle Adjust)” on page 18.

#	Key Press	Step	Teach Pendant Display
1		<ul style="list-style-type: none"> • Press F1. • MOVE UP / DOWN to AUTO NEEDLE ADJUST. • Press ENTER. 	
2		<ul style="list-style-type: none"> • Press ENTER. <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"> • After the search is complete, press F1 to accept the calibration. 	

How to Open and Edit a Program

PREREQUISITES

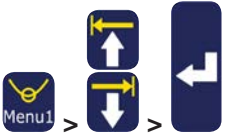
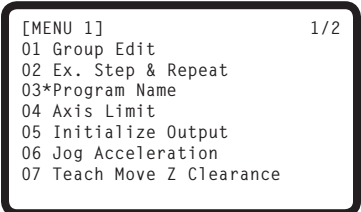
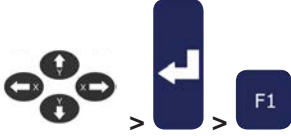
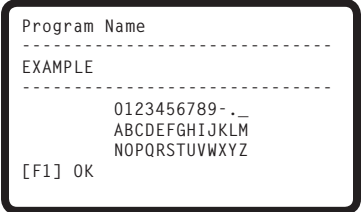
□ The system is in the Teach Mode. Refer to “How to Switch from Run Mode to Teach Mode” on page 3.

#	Key Press	Step	Teach Pendant Display
1		<ul style="list-style-type: none"> Press F1. MOVE UP / DOWN to PROGRAM LIST. Press ENTER. 	<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"> MOVE UP / DOWN to select the desired program. Press ENTER. <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"> MOVE UP / DOWN to select the command line to edit. Press ENTER. 	<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"> Enter the new coordinates manually. or Press F3 to update the XYZ values to the current tip location. Press F1 to save and exit or ESC to cancel the changes. 	<pre>Dispense Dot 1/3 ----- X: 130.93 mm Y: 37.39 mm Z: 45.54 mm R: 89.32 deg [F1] OK [F2] Next [F3] Current</pre>
5		<ul style="list-style-type: none"> Make other changes as needed. Press F1 to save and exit. 	

How to Name a Program

PREREQUISITES

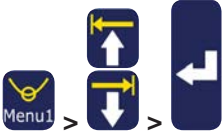
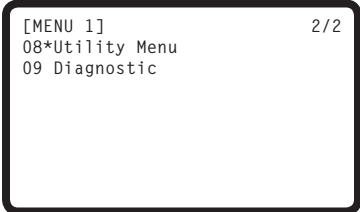
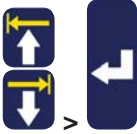
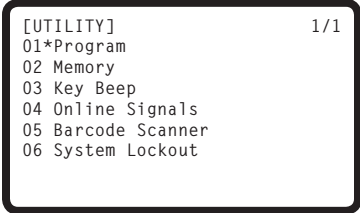

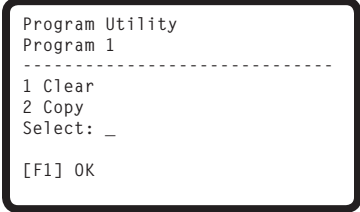

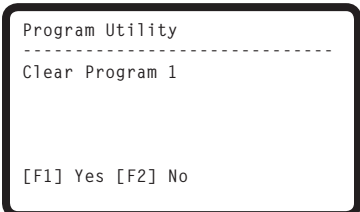

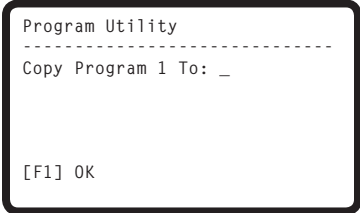
□ The system is in the Teach Mode. Refer to “How to Switch from Run Mode to Teach Mode” on page 3.

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

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 20.

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



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