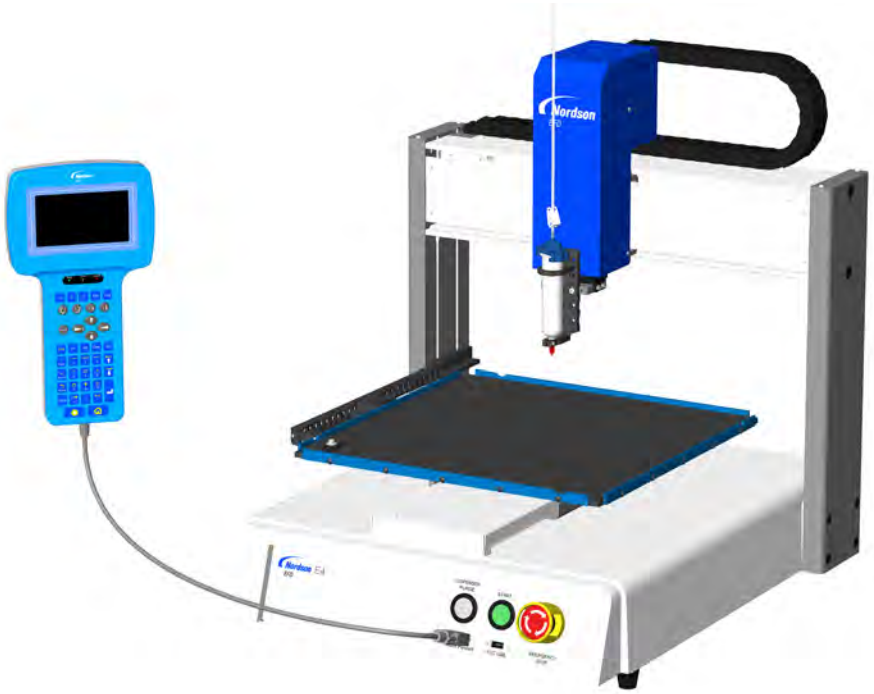
E Series Automated Dispensing Systems

Quick Programming Guide



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

Nordson EFD

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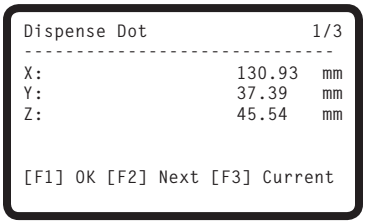
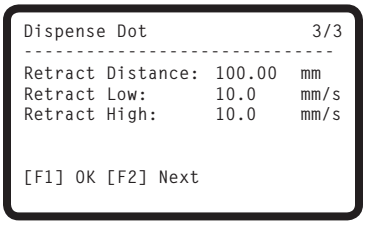
How to Switch from Run Mode to Teach Mode

#	Key Press	Step	Teach Pendant Display
1		• Press F1. • MOVE UP / DOWN to TEACH/RUN. • Press ENTER.	[PROGRAM MENU] 1/1 01*Teach/Run 02 Program List 03 Reset Counter 04 Program Offset 05 Needle Adjust 06 Auto Needle Adjust
2		• Press HOME. If prompted, enter a password.	[TEACH MODE] PRESS [HOME] TO INITIALIZE SYSTEM

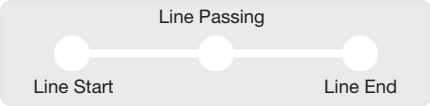
How to Make a Dot

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		• Jog the dispensing tip to the desired XYZ location for the dispense dot.	
2		• Press SHIFT > TYPE to open the Dispense Dot screen. • Make XYZ coordinate changes as needed.	
3		• Press F2 to move through the Dispense Dot parameter screens. • Press F1 to save and exit.	
4		• Press SHIFT > END to register the end of the program.	
5		• 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		• Jog the dispensing tip to an XYZ location for the first dispense point (Line Start).	
2		• Press SHIFT > 1 to register the location as a Line Start point. • Make XYZ coordinate changes as needed.	Line Start 1/2 X: 130.93 mm Y: 37.39 mm Z: 45.54 mm [F1] OK [F2] Next [F3] Current
3		• Press F2 to move to the Line Start parameter screen. • Press F1 to save and exit.	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
4		• Jog the tip to the XYZ location of the second point (Line Passing).	
5		• Press SHIFT > 2 to register the location as a Line Passing point. • Make XYZ coordinate changes as needed.	Line Passing 1/2 X: 130.93 mm Y: 37.39 mm Z: 45.54 mm [F1] OK [F2] Next [F3] Current
6		• Press F2 to move to the Line Passing parameter screen. • Press F1 to save and exit.	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

Continued on next page

How to Make a Line (continued)

#	Key Press	Step	Teach Pendant Display
7		• Jog the tip to the XYZ location of for the last dispense point (Line End).	
8		• Press SHIFT > 3 to register the location as a Line End point. • Make XYZ coordinate changes as needed.	Line End 1/4 --- X: 130.93 mm Y: 37.39 mm Z: 45.54 mm [F1] OK [F2] Next [F3] Current
9		• Press F2 to move through the Line End parameter screens. • Press F1 to save and exit.	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
10		• Press SHIFT > END to register the end of the program.	
11		• 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		• Jog the dispensing tip to an XYZ location for the first dispense point (Line Start).	
2		• Press SHIFT > 1 to register the location as a Line Start point. • Make XYZ coordinate changes as needed.	Line Start 1/2 --- X: 130.93 mm Y: 37.39 mm Z: 45.54 mm [F1] OK [F2] Next [F3] Current
3		• Press F2 to move to the Line Start parameter screen. • Press F1 to save and exit.	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
4		• Jog the tip to the XYZ location of where the top of the arc should be (Arc Point).	
5		• Press SHIFT > MENU1 to register the location as an Arc Point. • Make XYZ coordinate changes as needed. • Press F1 to save and exit.	Arc Point --- X: 130.93 mm Y: 37.39 mm Z: 45.54 mm [F1] OK [F3] Current
6		• Jog the tip to the XYZ 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	Shift > 3	• Press SHIFT > 3 to register the location as a Line End point. • Make XYZ coordinate changes as needed.	Line End 1/4 X: 130.93 mm Y: 37.39 mm Z: 45.54 mm [F1] OK [F2] Next [F3] Current
8	F2 > F1	• Press F2 to move through the Line End parameter screens. • Press F1 to save and exit.	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
9	Shift > End	• Press SHIFT > END to register the end of the program.	
10		• 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	Shift > 4 > F1 or F2	• 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.	Circle --- [F1] 3-Point [F2] Center Point ---
2		• Follow the directions on the display to enter the XYZ coordinates.	
3	F2 > F1	• Press F2 to move through the Circle parameter screens. • Press F1 to save and exit.	Circle 5/5 --- Retract Distance: 0.00 mm Retract Low: 10.0 mm/s Retract High: 80.0 mm/s [F1] OK [F2] Next
4	Shift > End	• Press SHIFT > END to register the end of the program.	
5		• 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	Shift > 9 > 1	• Press SHIFT > 9 to open the Fill Area menu, then select the Fill Type. • Press 1 RECTANGLE. **NOTE:** This procedure shows how to fill a rectangle.	Fill Area 1/2 ---------- Fill Type: 2 1 Rectangle 5 Circle Out 2 Rectangle In 6 Polygon In 3 Rectangle Out 7 Polygon Out 4 Circle In [F1] OK [F2] Next
2	F2 > xx.xx > F1	• 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.	Fill Area 2/2 ---------- Width: 0.00 mm Band: 0.00 mm [F1] OK [F2] Next
3		• Jog the dispensing tip to the top left corner of the area to be filled.	
4	Shift > 1	• Press SHIFT > 1 to register the location as a Line Start point.	Line Start 1/2 ---------- X: 130.93 mm Y: 37.39 mm Z: 45.54 mm [F1] OK [F2] Next [F3] Current
5	F2 > F1	• Press F2 to move to the Line Start parameter screen. • Press F1 to save and exit.	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
6		• Jog the dispensing tip to the bottom right corner of the area to be filled.	

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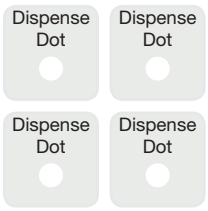
How to Fill an Area (continued)

#	Key Press	Step	Teach Pendant Display
7		• Press SHIFT > 3 to register the location as a Line End point.	Line End 1/4 --- X: 130.93 mm Y: 37.39 mm Z: 45.54 mm [F1] OK [F2] Next [F3] Current
8		• Press F2 to move through the Line End parameter screens. • Press F1 to save and exit.	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
9		• Press SHIFT > END to register the end of the program.	
10		• 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	Shift > 8 > 2 > F1	• Press SHIFT > 8 to open the Label screen. • Enter a Label number (in this example, the number 2). • Press F1 to save and exit.	Label --- Label: 2 [F1] OK
2		• Jog the dispensing tip to the desired XYZ location for the first dispense dot.	
3	Shift > Type	• Press SHIFT > TYPE to open the Dispense Dot screen. • Make XYZ coordinate changes as needed.	Dispense Dot 1/3 --- X: 130.93 mm Y: 37.39 mm Z: 45.54 mm [F1] OK [F2] Next [F3] Current
4	F2 > F1	• Press F2 to move through the Dispense Dot parameter screens. • Press F1 to save and exit.	Dispense Dot 3/3 --- Retract Distance: 100.00 mm Retract Low: 10.0 mm/s Retract High: 10.0 mm/s [F1] OK [F2] Next
5	Shift > 5 > F1	• Press SHIFT > 5 to open the Step & Repeat menu. • Press F1.	Step & Repeat --- [F1] Step & Repeat 2D [F2] Step & Repeat 3D ---

Continued on next page

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

#	Key Press	Step	Teach Pendant Display
6		• Press F2 to move to the next screen.	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
7		• 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.	Step & Repeat 2D 2/2 --- Column (X): 2 Row (Y): 2 Path S(1)/N(2): 1 Goto Label: 2 [F1] OK [F2] Next
8		• Press SHIFT > END to register the end of the program.	
9		• Press START to test the program.	

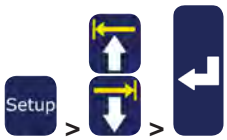
Calibrating the Tip Height

Systems without a Tip Detector

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		• Press SETUP. • MOVE UP / DOWN to CALIBRATION POINT. • Press ENTER.	[SETUP] 1/3 01 XY Move Speed 02 Z Move Speed 03 Point to Point Arc Jump 04 Park Position 05*Calibration Point 06 Mark Points 07 Program Output Status
2		• Jog the tip down until it is as close to the fixture plate surface as possible. • Press F1 to save the setting.	Calibration Point --- Jog to position --- [F1] OK

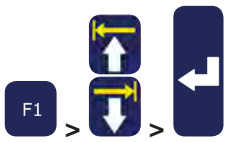
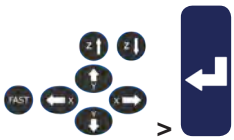
Calibrating the Tip Height (continued)

Systems without a Tip Detector (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		• Press F1. • MOVE UP / DOWN to NEEDLE ADJUST. • Press ENTER.	[PROGRAM MENU] 1/1 01 Teach/Run 02 Program List 03 Reset Counter 04 Program Offset 05*Needle Adjust 06 Auto Needle Adjust
2		• Press ENTER. The dispensing tip moves to the user-defined calibration point. **NOTE:** The tip will be 5 mm (0.2") higher than the calibrated point to prevent possible crushing of the tip.	Needle Adjust --- Press [ENTER] to begin ---
3		• Jog the tip until it is centered over the calibration point. • Press ENTER. The system adjusts the dispense program to the recalibrated tip height.	Needle Adjust --- Jog tip over calibration point --- [ENTER]

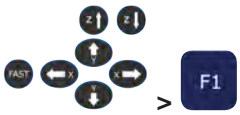
Calibrating the Tip Height (continued)

Systems with a Tip Detector

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		• Press SETUP. • MOVE UP / DOWN to NEEDLE DETECT SETUP. • Press ENTER.	[SETUP] 2/3 08 Pause Status 09 Auto Purge 10 Pre-cycle Initialize 11 Pre-dispense Wait Time 12 Default Dispense Port 13*Needle Detect Setup 14 Run Limit
2		• Jog the tip to the tip detector and lower the tip until it is as close to the crosshairs (cross point) as possible • Press F1. The Needle Detect Setup screen appears.	Needle Detect Setup --- Jog tip to needle detect device cross point --- [F1] OK
3		• Press F1. The system begins the calibration.	Needle Detect Setup --- Press [F1] to search for needle position ---
4		• Press F1 to accept the calibration. **NOTE:** Press F2 to cancel the calibration.	Needle Detect Setup --- Reset position? --- [F1] Yes [F2] No

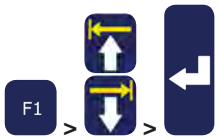
Calibrating the Tip Height (continued)

Systems with a Tip Detector (continued)

Recalibrate the Tip (Auto Needle Adjust)

PREREQUISITES

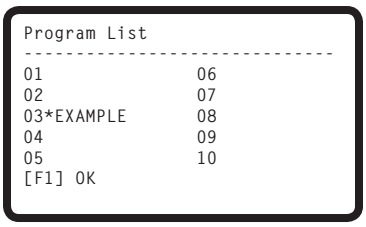
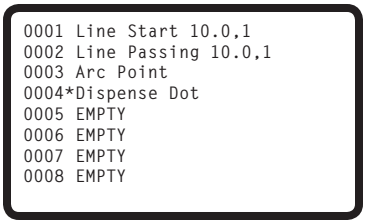
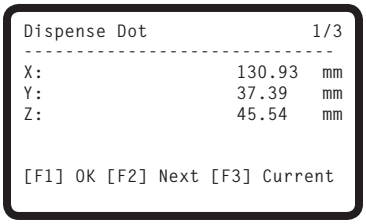
☐ The needle detect position is calibrated. Refer to “Set a Calibration Point (Initial Setup for Auto Needle Adjust)” on page 16.

#	Key Press	Step	Teach Pendant Display
1		• Press F1. • MOVE UP / DOWN to AUTO NEEDLE ADJUST. • Press ENTER.	[PROGRAM MENU] 1/1 01 Teach/Run 02 Program List 03 Reset Counter 04 Program Offset 05 Needle Adjust 06*Auto Needle Adjust
2		• Press ENTER. The system automatically checks the tip height using the tip detector and displays the offset updates needed to calibrate the tip height.	Auto Needle Adjust --- Press [ENTER] to begin ---
3		• After the search is complete, press F1 to accept the calibration.	Auto Needle Adjust --- Searching for tip... ---

How to Open and Edit a Program

PREREQUISITES

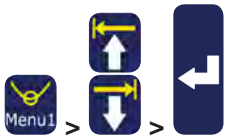
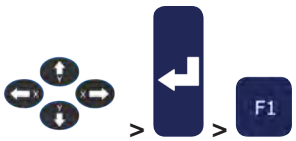
☐ The system is in the Teach Mode. Refer to “How to Switch from Run Mode to Teach Mode” on page 3.

#	Key Press	Step	Teach Pendant Display
1		• Press F1. • MOVE UP / DOWN to PROGRAM LIST. • Press ENTER.	
2		• MOVE UP / DOWN to select the desired program. • Press ENTER. The selected program becomes the current program and remains open until another program number is selected.	
3		• MOVE UP / DOWN to select the command line to edit. • Press ENTER.	
4	*xxxxx* or	• 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.	
5		• 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		• Press MENU1. • MOVE UP / DOWN to PROGRAM NAME. • Press ENTER.	[MENU 1] 1/2 01 Group Edit 02 Ex. Step & Repeat 03*Program Name 04 Axis Limit 05 Initialize Output 06 Jog Acceleration 07 Teach Move Z Clearance
2		• 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.	Program Name ---------- EXAMPLE ---------- 0123456789-._ ABCDEFGHIJKLM NOPQRSTUVWXYZ [F1] OK

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		• Press MENU1. • MOVE UP / DOWN to UTILITY MENU. • Press ENTER.	[MENU 1] 2/2 08*Utility Menu 09 Diagnostic
2		• MOVE UP / DOWN to PROGRAM. • Press ENTER.	[UTILITY] 1/1 01*Program 02 Memory 03 Key Beep 04 Online Signals 05 Barcode Scanner 06 System Lockout
3		• Press 1 CLEAR to empty all addresses in the current program. • Press 2 COPY to copy the current program. • Press F1 to continue.	Program Utility Program 1 ---------- 1 Clear 2 Copy Select: _ [F1] OK
4		• If you pressed 1 (Clear), the system prompts for confirmation. • Press F1 to accept the clear or F2 to cancel the clear.	Program Utility ---------- Clear Program 1 [F1] Yes [F2] No
5		• 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. **NOTE:** If the destination program is not empty, the program contents are overwritten by the copied program.	Program Utility ---------- Copy Program 1 To: _ [F1] OK

Notes

Nordson EFD

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