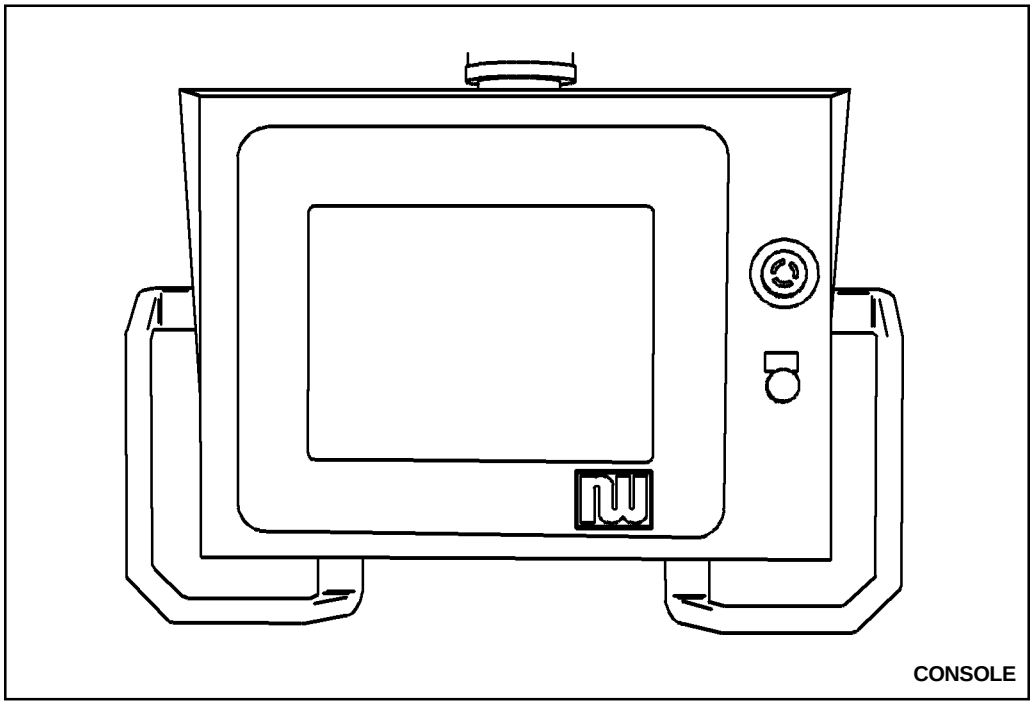
ROPER WHITNEY

ORION CONTROL SYSTEM

Appendix C
Programming Examples



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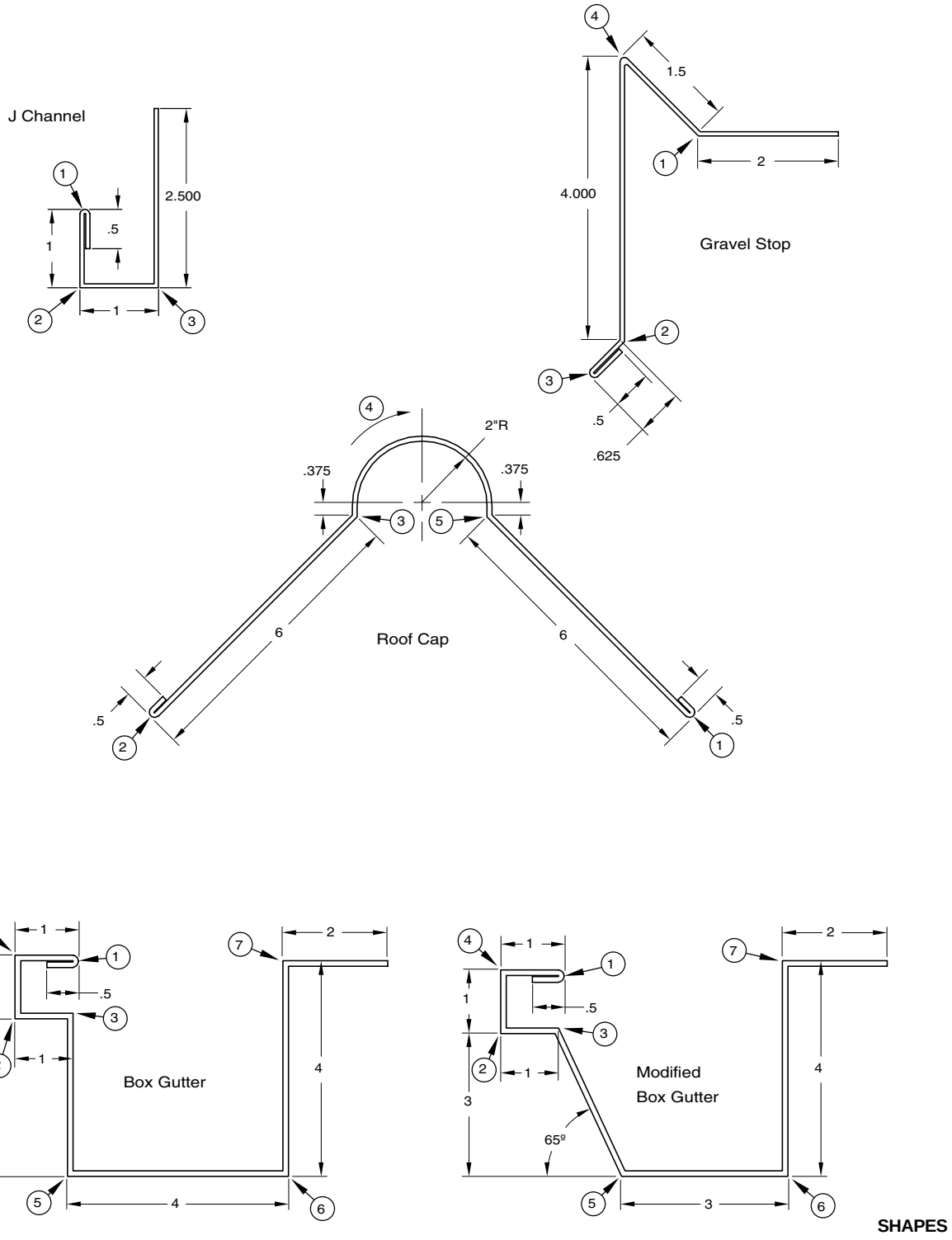


Figure C-1. Dimensions and Bend Order for the profiles Shown in Appendix C

APPENDIX A
PROGRAMMING EXAMPLES

This Appendix contains several programming examples pertaining to the Orion Control System. Each of the programming examples has been included to illustrate certain aspects of the programming process. The descriptions below highlight various aspects of the programming procedure.

MANUAL PROGRAMMING

BASIC PROCEDURE, PAGE 4 The Manual Programming Example shows the general methods used in manual programming, using a simple J Channel as an example. Save procedures for programs are shown.

ATTACHING A DRAWING, PAGE 10 The second Manual Programming Example shows how to create a drawing for an existing manual program using graphic programming methods. The example then shows how to attach the drawing to the program. The simple J Channel is used.

GRAPHIC PROGRAMMING

BASIC PROCEDURE: GRAVEL STOP, PAGE 20 The first Graphic Programming Example features a Gravel Stop. Specific procedures cover the programming for a closed hem, and the programming of an acute angle bend.

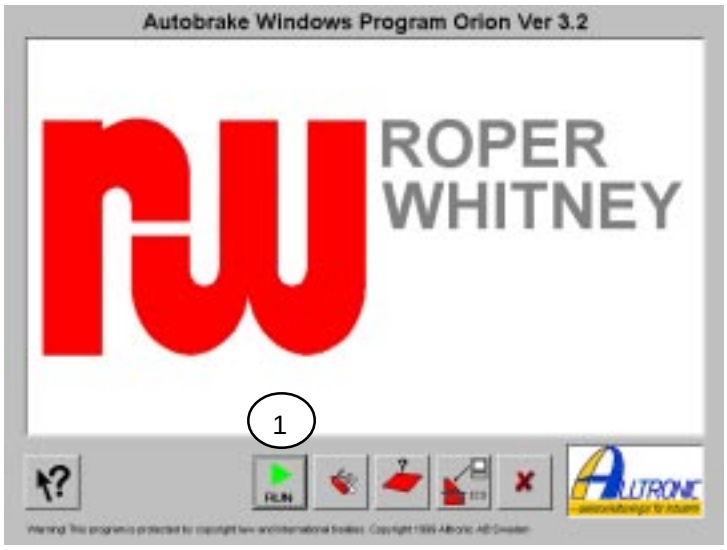
HEMS, RADII: ROOF CAP, PAGE 34 The second Graphic Programming Example features a Roof Cap. Specific procedures cover the programming for an open hem, and the programming for a radius.

REVERSE ANGLES: RAIN GUTTER, PAGE 54 The third Graphic Programming Example features a complicated Rain Gutter. Specific proceddures cover the programming for an open hem, and the handling of “reverse angle” bends.

MODIFYING PROGRAMS: PAGE 72 The final Graphic Programming Example shows how to modify an existing graphic program, using the Rain Gutter as the modified part.

DIMENSIONS AND BEND ORDER

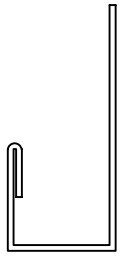
Dimensions and bend order are shown for each of the programming examples in Figure C-1. The bend order for each profile is indicated by the numbers in the cirlces.



MAINSCR

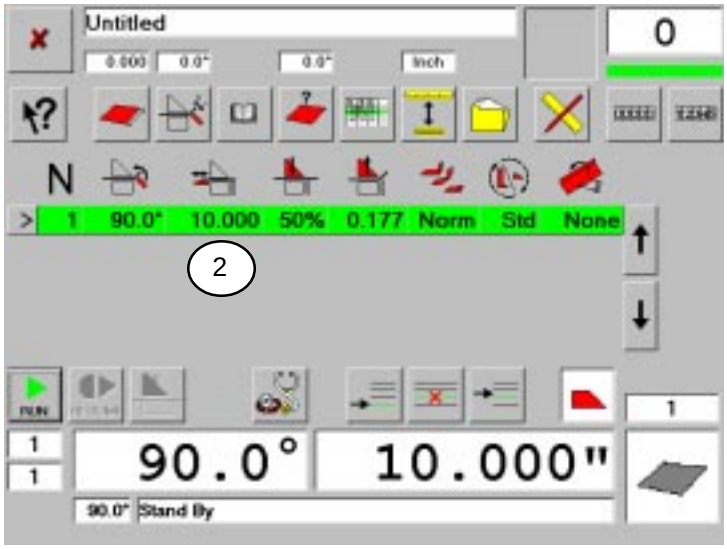
MANUAL PROGRAMMING EXAMPLE

J CHANNEL



JCHANNEL

1. Touch the Run/Programming Touchbutton to bring up the Run/ Programming Screen.

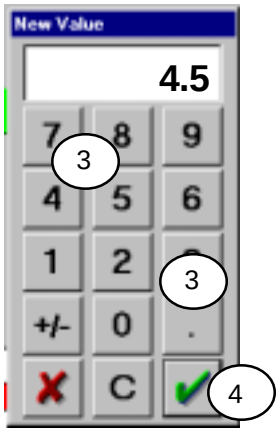


RUNPROG

Programming can begin as soon as the Run/Programming Screen appears. The first operation will appear as a green line across the screen.

The backgauge must be positioned for the first operation.

2. Touch the backgauge column in the first operation row. This will highlight the value in red, and the Numeric Keypas will appear at the side of the screen.



NUMPAD

3. Touch the **4,** the **decimal point,** and the **5** Touchbuttons to enter the desired backgauge position (**4.5**) Be sure the number appears in the box at the top of the display

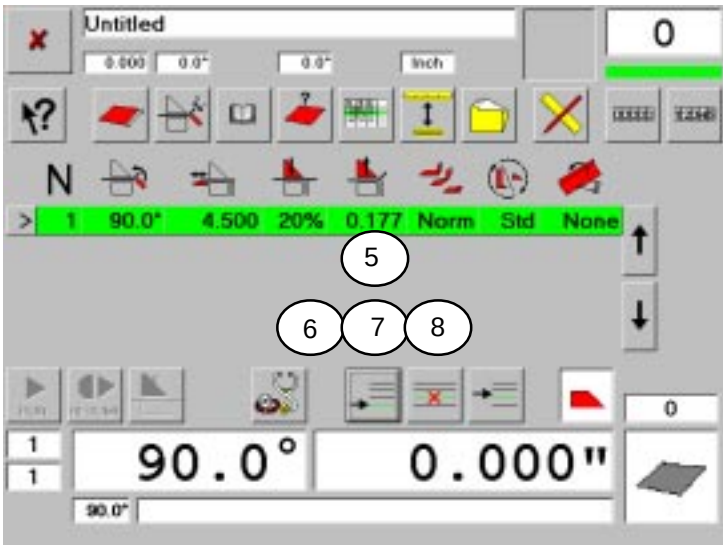
4. Touch the Enter Touchbutton to move the value **4.5** to the backgauge position column in the first operation line.

5. Touch the Open Height Column to change the open height of the clamp beam.

6. Touch the **decimal point** Touchbutton in the Numeric Kepad Popup Display.

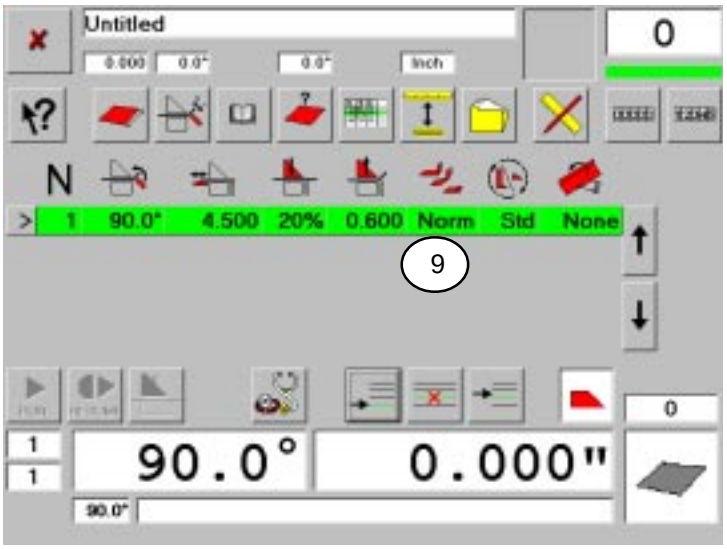
7. Touch the **.6** in the Numeric Kepay Popup Display.

8. Touch the Enter Touchbutton to move the value **.6** to the Open Height Column in the first operation line.



MANPRG02

9. Touch the Hem Column in the program line to bring up the hem Data Pop-Up Display.



MANPRG01

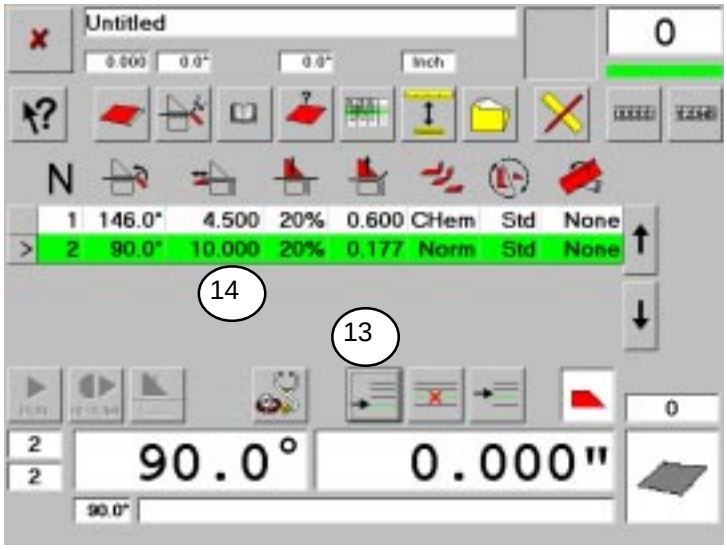
10. Touch the Closed Hem Touchbutton to activate the hem Data Displays.

PRHEM01

11. Examine the closed hem default values. Change the pressure to 100%.

12. Touch the Enter Touchbutton to accept the hem data into the program.

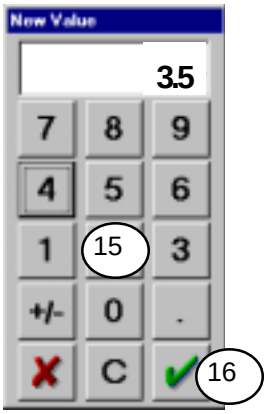
PRHEM03



MANPRG03

13. Touch the Add Program Step Touchbutton to add an operation line for the second operation.

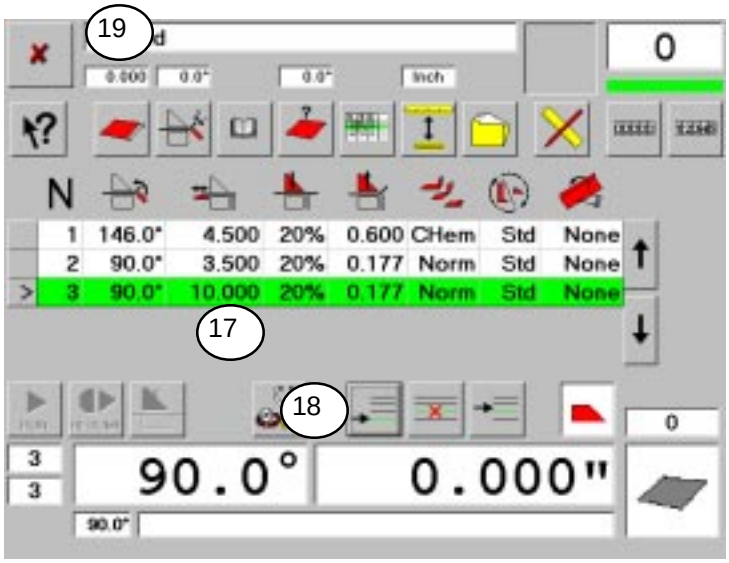
14. Touch the backgauge column in the second operation row.



NUMPAD6

15. Touch the **3,** the **decimal point,** and the **4** Touchbuttons to enter the desired backgauge position (**3.5**) Be sure the number appears in the box at the top of the display

16. Touch the Enter Touchbutton to move the value **3.5** to the backgauge position column in the second operation line.



MANPRG04

17. Touch the backgauge column in the third, operation row, enter **2.5**, and touch the Enter Touchbutton to move the value **2.5** to the backgauge position column in the third operation line.

18. Touch the Add Program Step Touchbutton to add an operation line for the second bend (third operation).

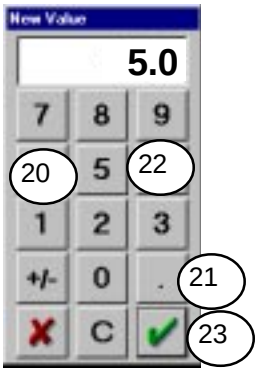
19. Touch the Blank Size Display.

20. Touch the **5** Touchbuttons.

21. Touch the **Decimal Point** Touchbutton.

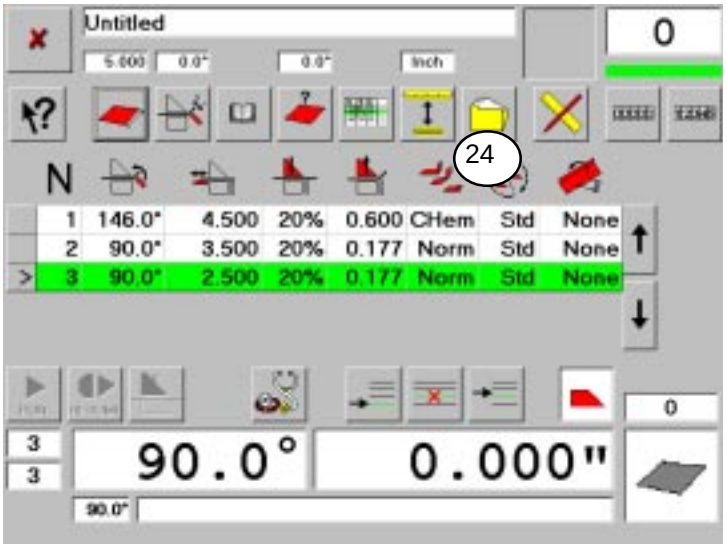
22. Touch the **0** Touchbutton.

23. Touch the Enter Touchbutton to move the value **5.0** to the Blank Size Display.



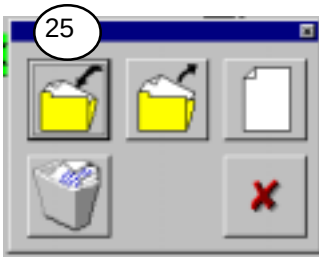
NUMPAD7

24. The program is now ready to be saved. Touch the File Manager Touchbutton to bring up the File Manager Pop-Up Display

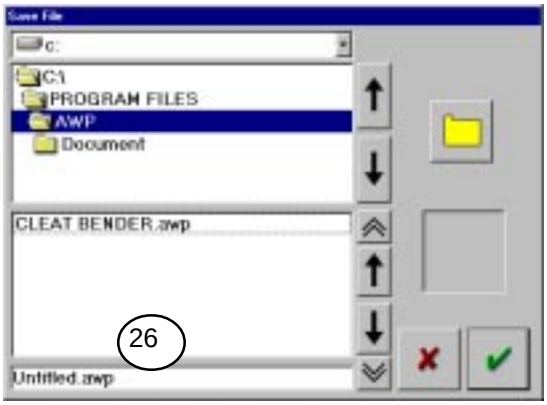


MANPRG05

25. Touch the Save File Touchbutton. This will bring up the File Selection Display.

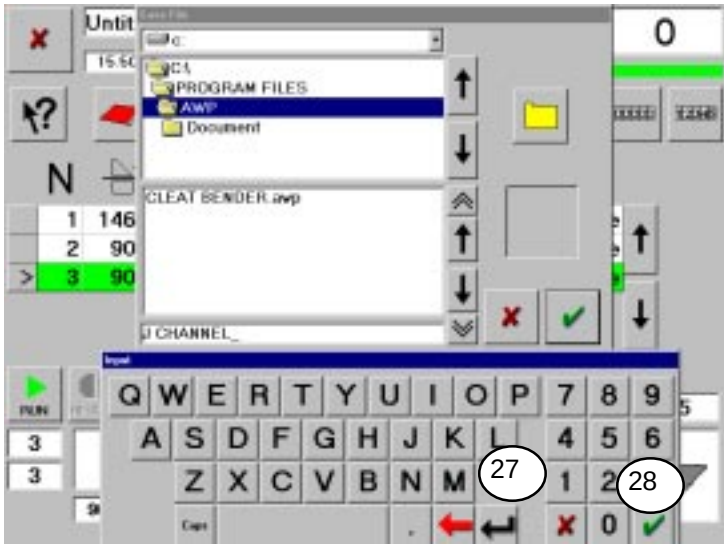


FILEMGR



SAVFIL05

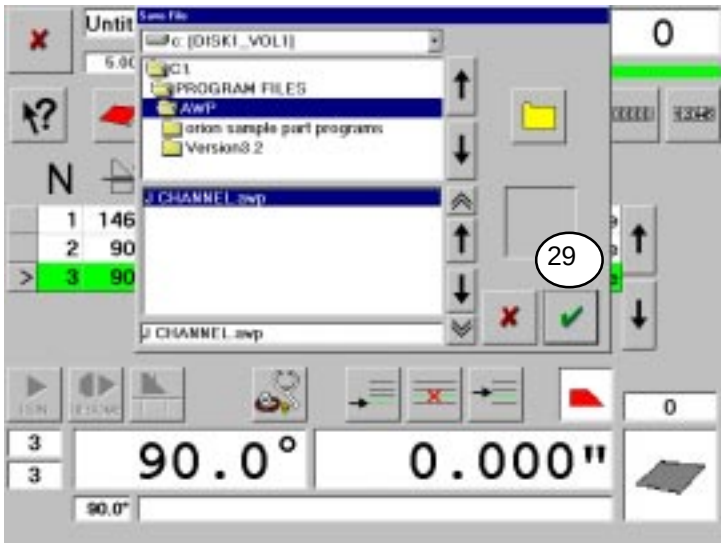
26. Touch the Program Title Display, which reads "**Untitled.adp**". This will bring up the Alpha-Numeric Keypad.



MANPRG06

27. Enter a program name using the Alpha-Numeric Touchjbuttons. As the characters are entered, they will appear in the Program Title Display.

28. When the name has been entered, touch the Enter Touchbutton. The Alpha-Numeric keypad will disappear, and the extension **.awp** will appear behind the name in the Program Title Display. This extension identifies the file as a program file.

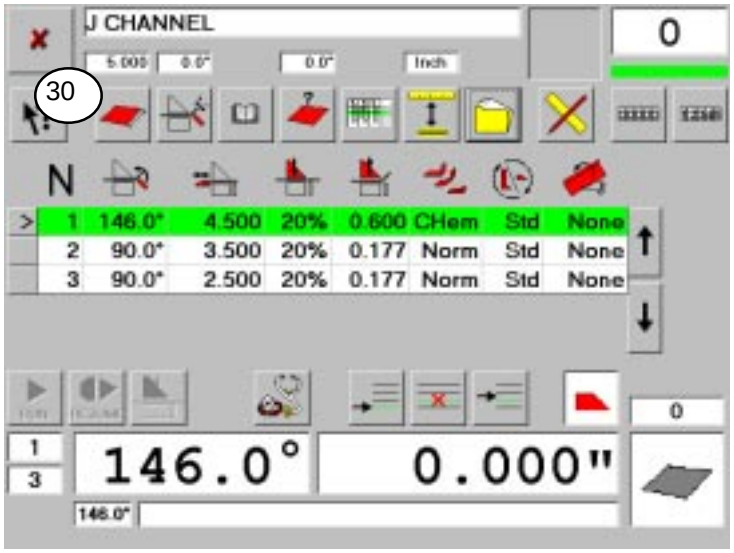


MANPRG09

At this point, the systm is ready for additional programming, or for operation.

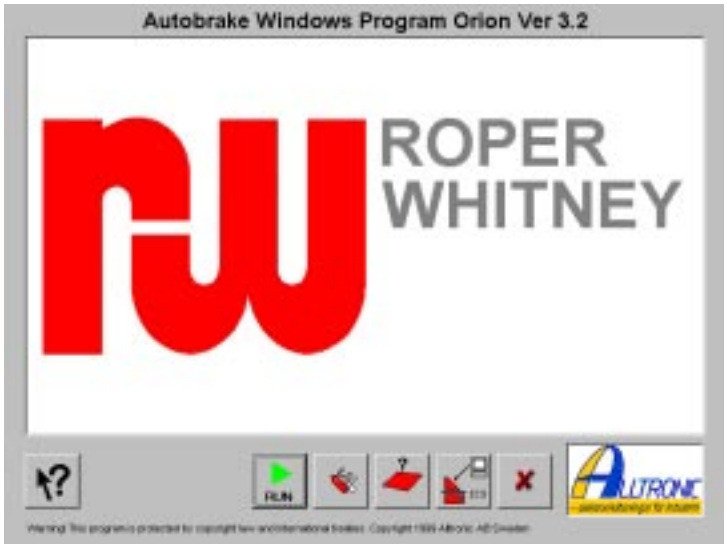
29. Touch the Enter Touchbutton to apply the program name to the completed program.

30. To return to the Main Screen, touch the Cancel Touchbutton.



MANPRG07

At this point, the systm is ready for additional programming, or for operation.



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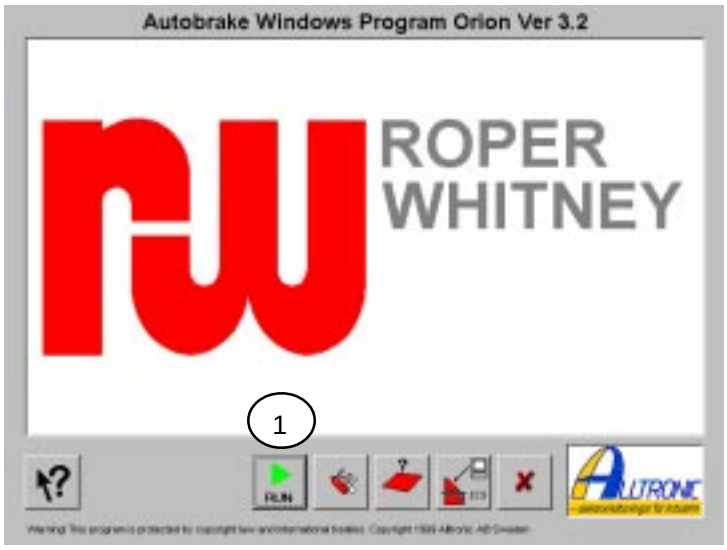
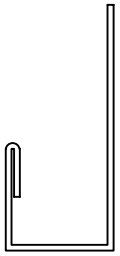


MAINSCR

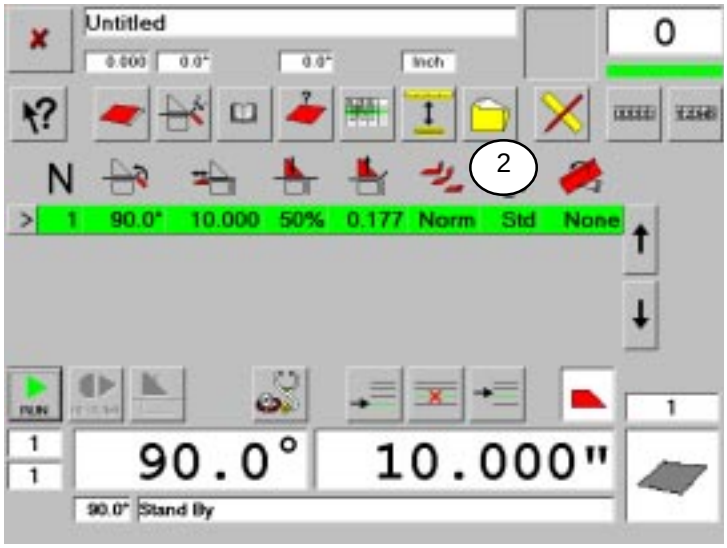
MANUAL PROGRAMMING EXAMPLE

ATTACHING A DRAWING TO AN EXISTING MANUAL PROGRAM

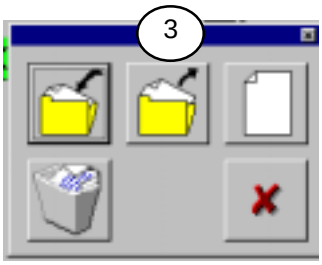


JCHANNEL

1. Touch the Run/Programming Touchbutton to bring up the Run/ Programming Screen.



2. Touch the File Management Touchbutton to bring up the File Management Pop-Up Display.

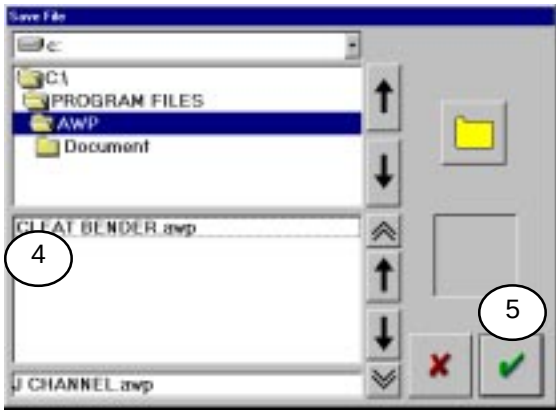


FILEMGR

3. Touch the Open File Touchbutton to bring up the File Selection Display.

4. Select the J Channel.awp program.

5. When the program appears in the Program Title Display, press the Enter Touchbutton to bring up the Run/ Programming Screen with the J Channel program displayed.

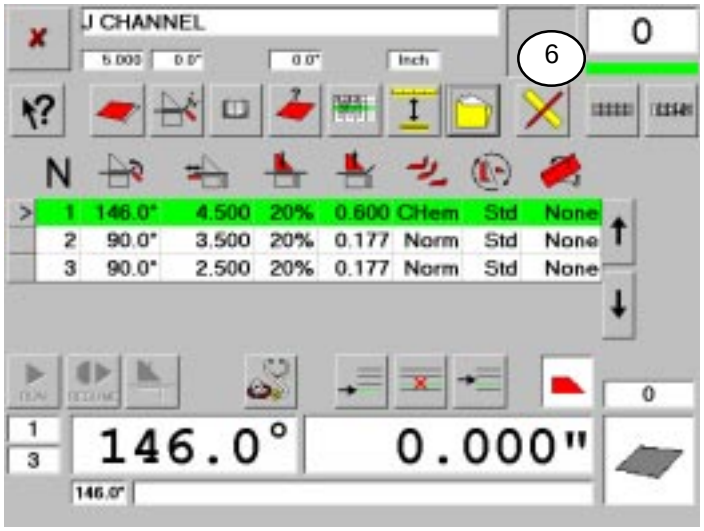


SAVFIL06

NOTE:

The program to which the drawing is to be attached must be opened before the drawing can be attached to it. The remainder of the procedure prepares the drawing and attachs it to the J Channel program.

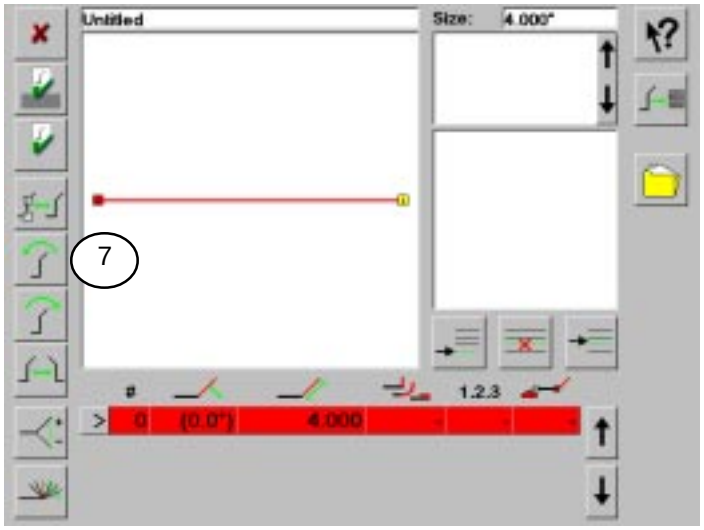
6. Touch the Graphic Programming Touchbutton to bring up the Graphic Programming Screen.



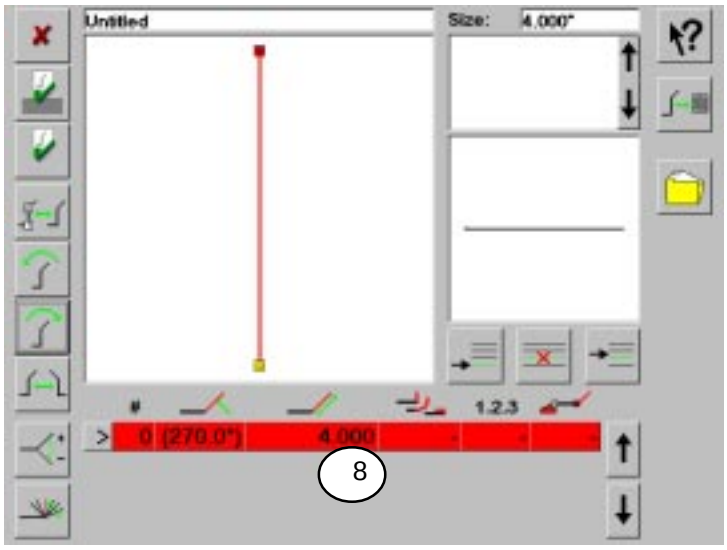
MANPRG07

You want to position the part vertically.

7. Touch the Rotate Counterclockwise Touchbutton twice. This will rotate the part 90º.



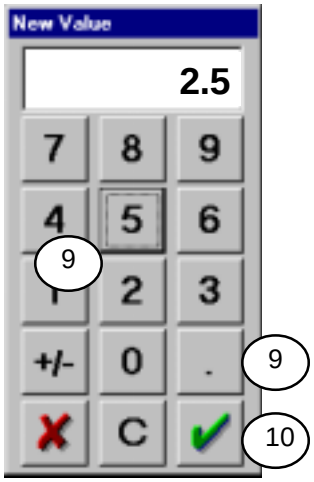
GRPR001



GRPR082

The default line length for the first line segment must be modified.

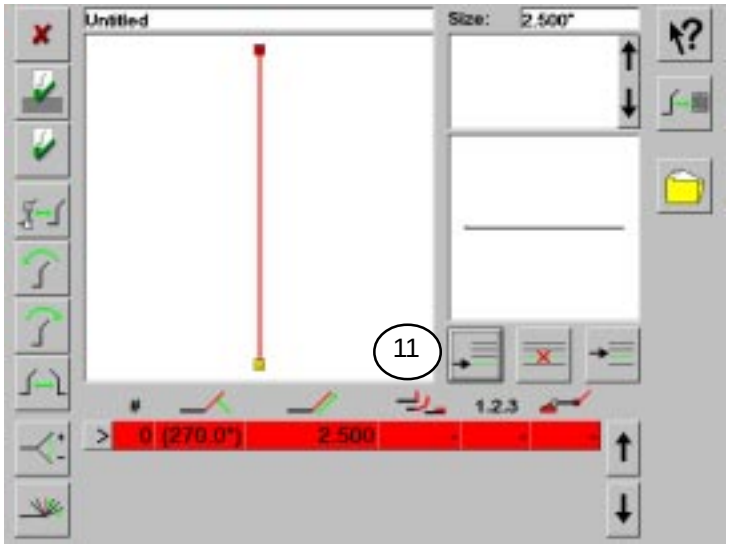
8. Touch the value **4.000** to bring up the Numeric Keypad.



NUMPAD8

9. Touch the **2**, the **decimal point**, and the **5** Touchbuttons to enter the desired line length (**2.5**). Be sure the number appears in the box at the top of the display

10. Touch the Enter Touchbutton to move the value **2.5** to the segment length column of the Graphic Programming Screen.



GRPR083

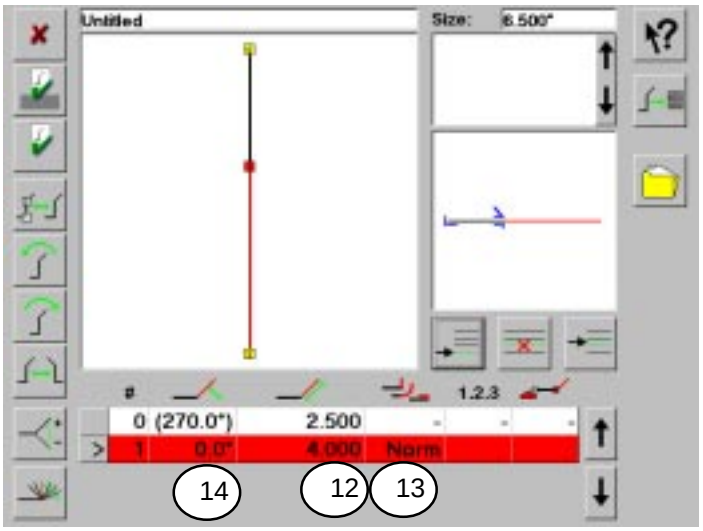
11. Touch the Add Operation Touchbutton to create a new program line.

12. Touch the value **4.000** to bring up the Numeric Keypad.

The default line length for the line segment must be modified.

13. On the Numeric Keypad, Touch the **1**, and the **decimal point** to enter the desired line length (**1.0**). Be sure the number appears in the box at the top of the display. Touch the Enter Touchbutton to move the value **1.0** to the segment length column of the Graphic Programming Screen.

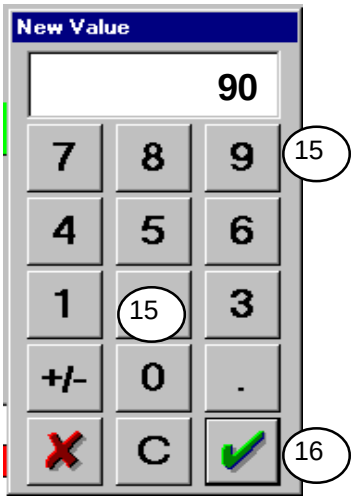
14. The bend angle must be entered. Touch the bend angle block to bring up the Numeric Keypad.



GRPR084

15. Enter **90** using the Numeric Keypad.

16. Transfer the value **90** to the Bend Angle Box in the Programming Screen by pressing the Enter Touchbutton.

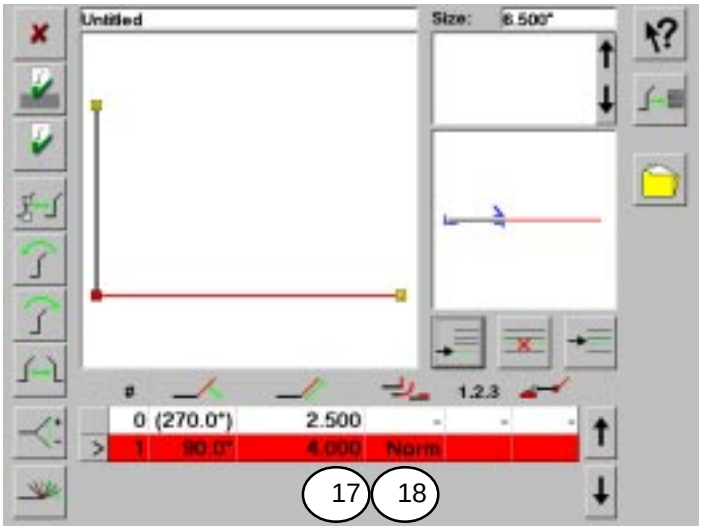


NUMPAD

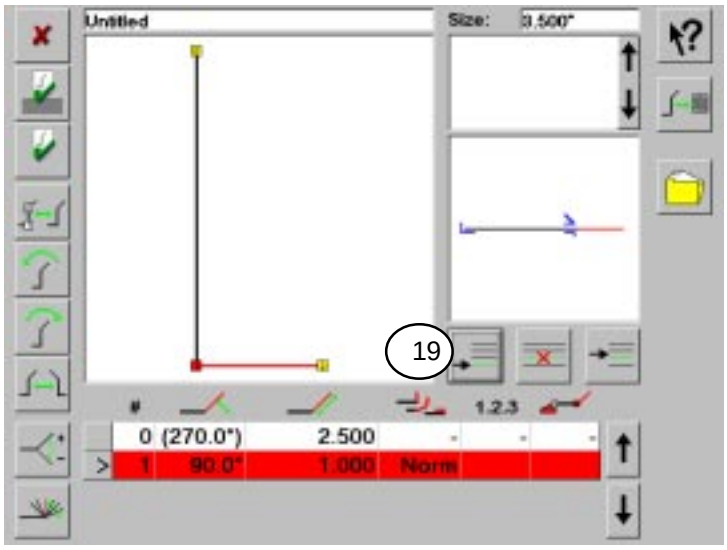
The default line length for the line segment must be modified.

17. Touch the value **4.000** to bring up the Numeric Keypad.

18. On the Numeric Keypad, Touch the **1**, and the **decimal point** to enter the desired line length (**1.0**). Be sure the number appears in the box at the top of the display. Touch the Enter Touchbutton to move the value **1.0** to the segment length column of the Graphic Programming Screen.

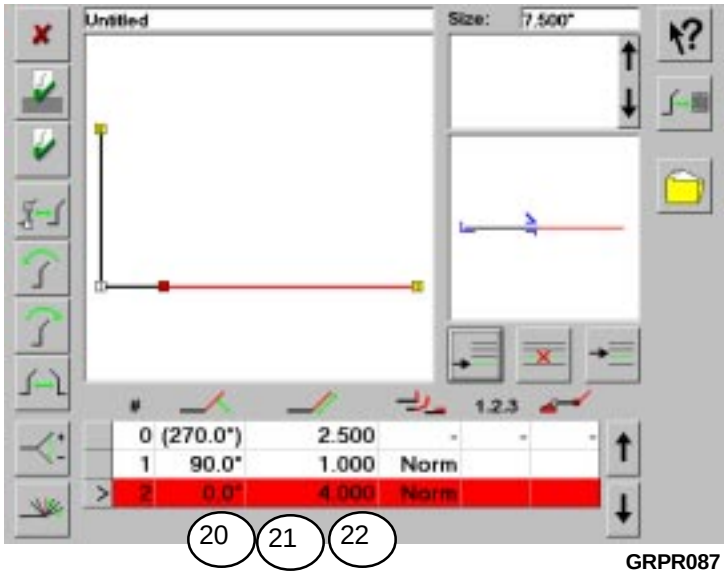


GRPR085



GRPR086

19. Touch the Add Operation Touchbutton to create a new program line.

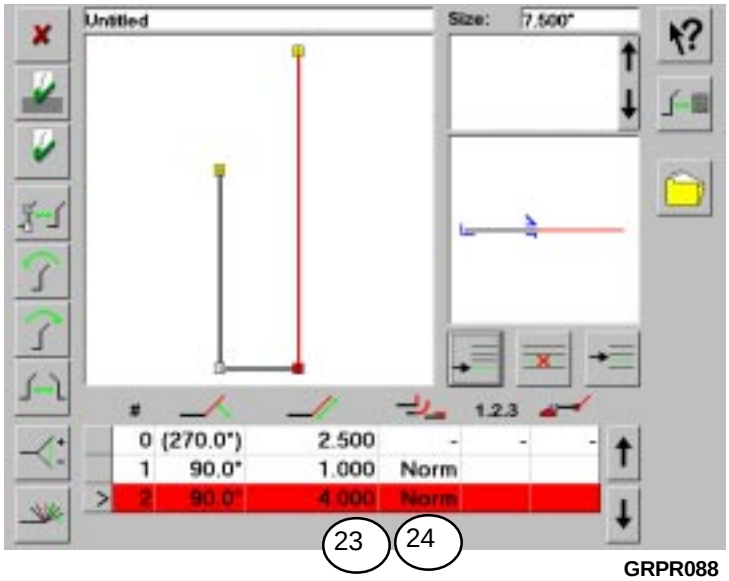


GRPR087

20. The bend angle must be entered. Touch the bend angle block to bring up the Numeric Keypad.

21. Enter **90** using the Numeric Keypad.

22. Transfer the value **90** to the Bend Angle Box in the Programming Screen by pressing the Enter Touchbutton.



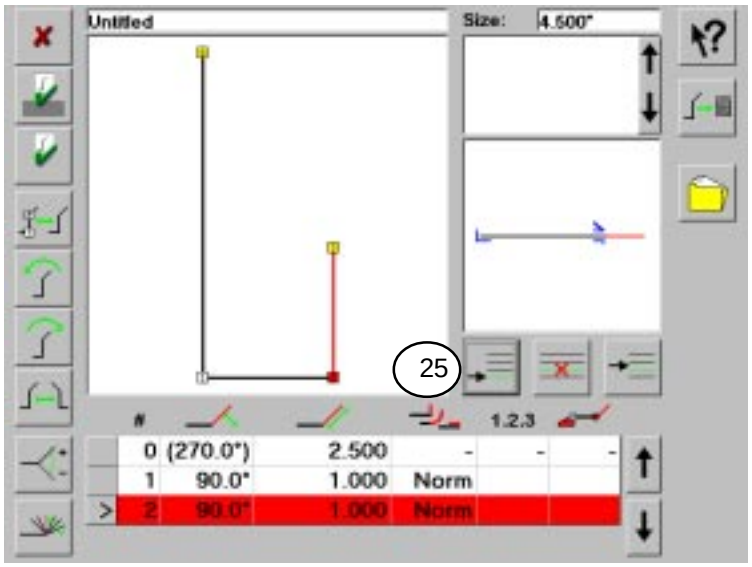
GRPR088

The default line length for the line segment must be modified.

23. Touch the value **4.000** to bring up the Numeric Keypad.

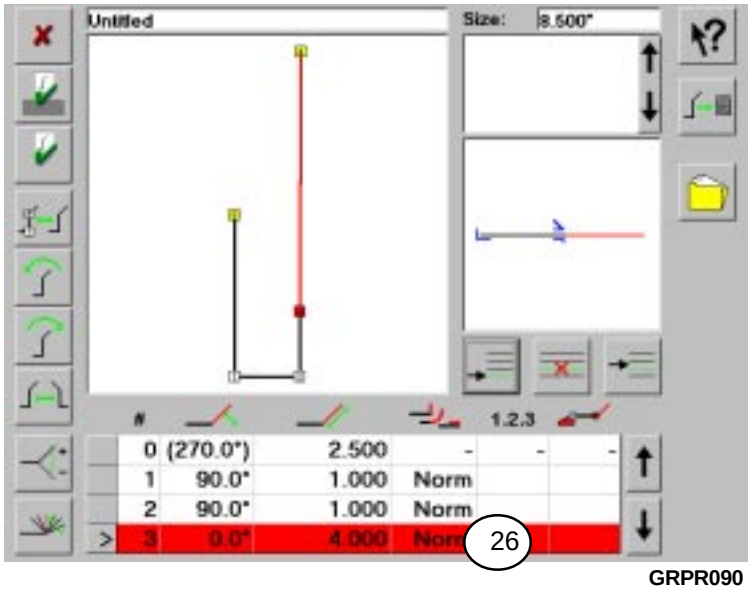
24. On the Numeric Keypad, Touch the **1**, and the **decimal point** to enter the desired line length (**1.0**). Be sure the number appears in the box at the top of the display. Touch the Enter Touchbutton to move the value **1.0** to the segment length column of the Graphic Programming Screen.

25. Touch the Add Operation Touchbutton to create a new program line.



GRPR089

26. Touch the hem Column in the new program line to bring up the Hem Data Pop-Up Display.



GRPR090

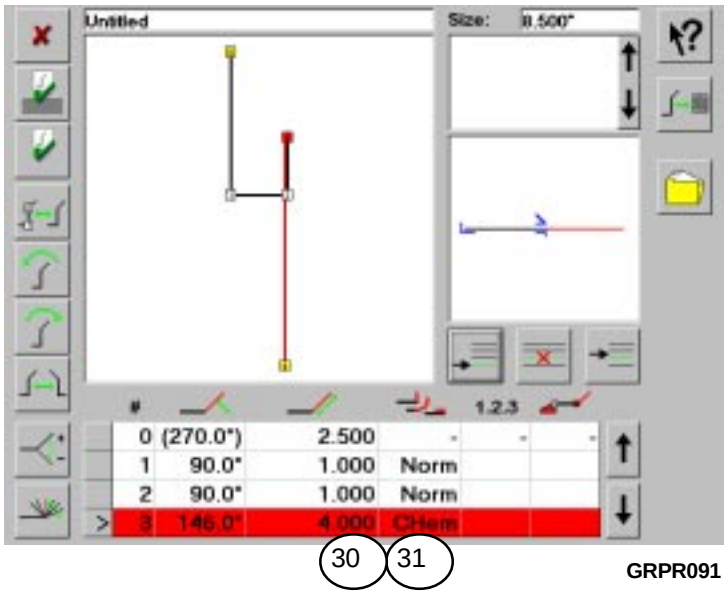
27. Touch the Closed Hem Touchbutton to activate the Hem Data Displays.

PRHEM01

28. It is not necessary to modify the default hem data bacause the drawing will not be used to create a program.

29. Touch the Enter Touchbutton to enter the hem data into the drawing.

PRHEM02

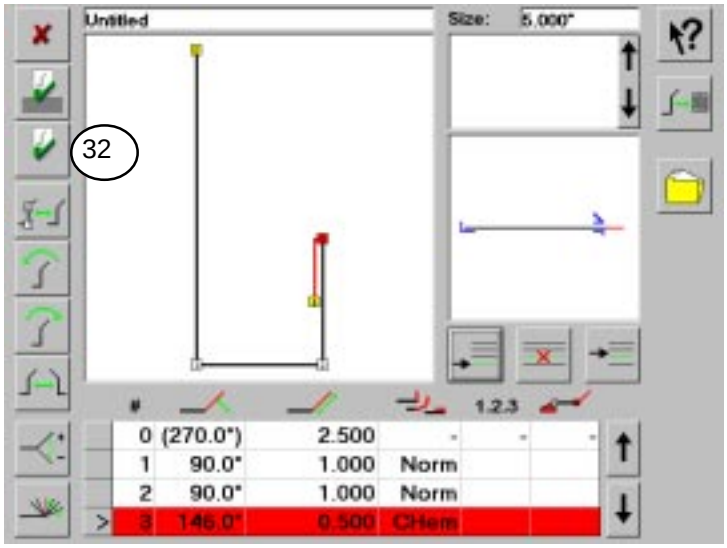


GRPR091

The default line length for the hem line segment must be modified.

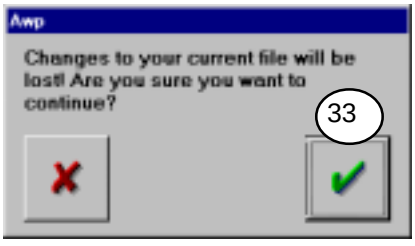
30. Touch the value **4.000** to bring up the Numeric Keypad.

31. On the Numeric Keypad, Touch the the **decimal point** and **5** to enter the desired line length (**0.5**). Be sure the number appears in the box at the top of the display. Touch the Enter Touchbutton to move the value **0.5** to the segment length column of the Graphic Programming Screen.



GRPR092

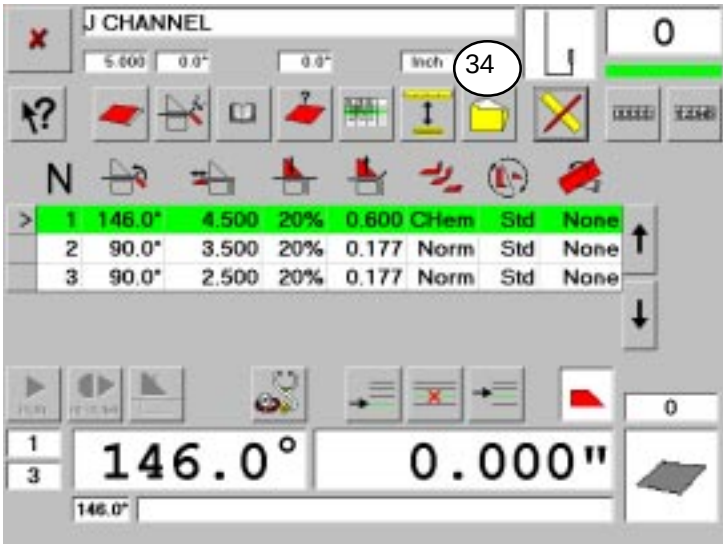
32. Touch the Create Image Touchbutton to attach the drawing to the manual program.



CHNGWARN

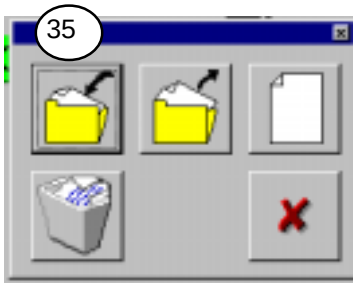
33. When the Lost Changes Warning Display appears, touch the Yes (green check) Touchbutton. This will bring up the Run/Programming Screen containing the J Channel program.

34. Touch the Program Management Touchbutton. This will bring up the Program Management Pop-Up Display.

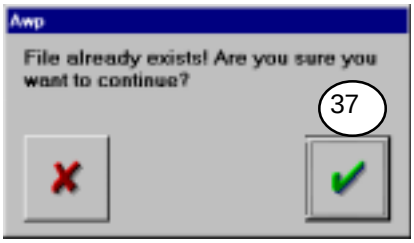


MANPRG08

35. Touch the Save File Touchbutton. This will bring up the Existing Program Warning Display

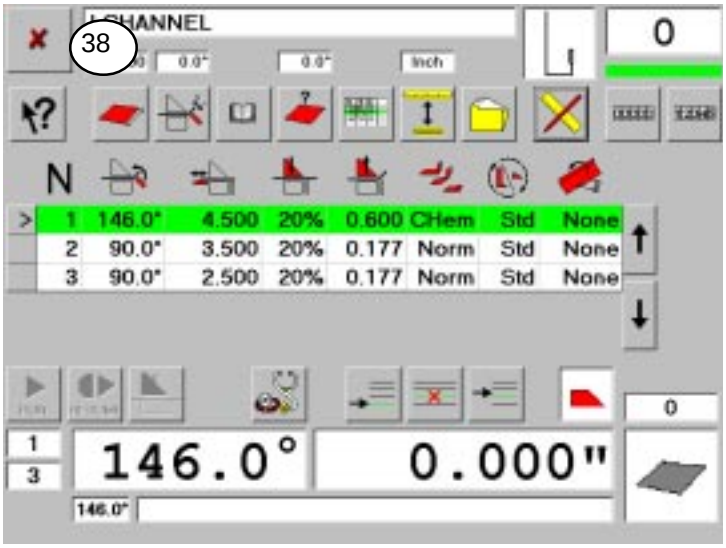


FILEMGR



PROGWARN

37. When the Existing Program Warning Display appears, touch the Yes (green check) Touchbutton.



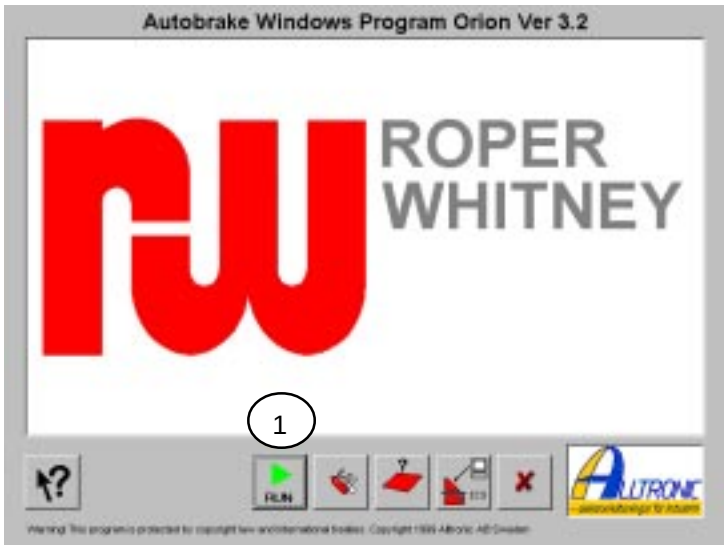
MANPRG08

38. To return to the Main Screen, touch the Cancel Touchbutton.

MAINSCR

At this point, the systm is ready for additional programming, or for operation.

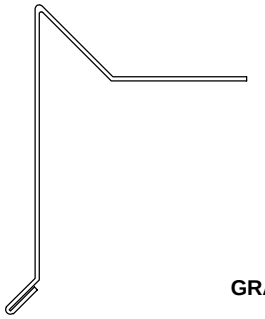
Intentionally blank.
Please continue.



MAINSCR

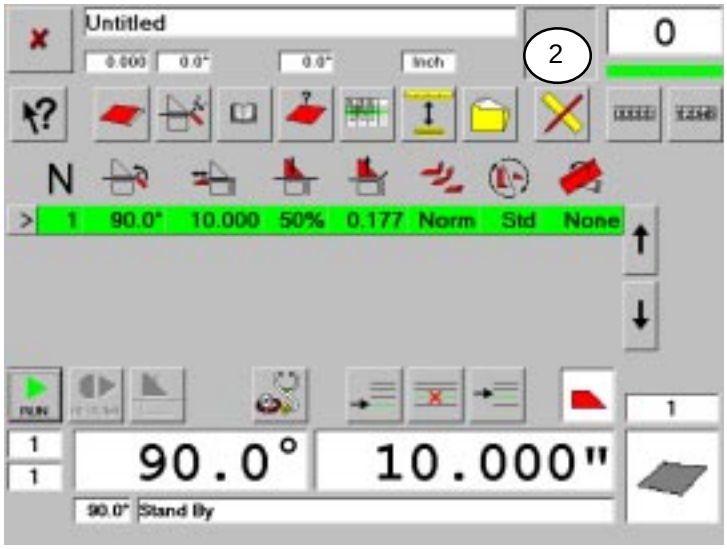
GRAPHIC PROGRAMMING EXAMPLE

GRAVEL STOP



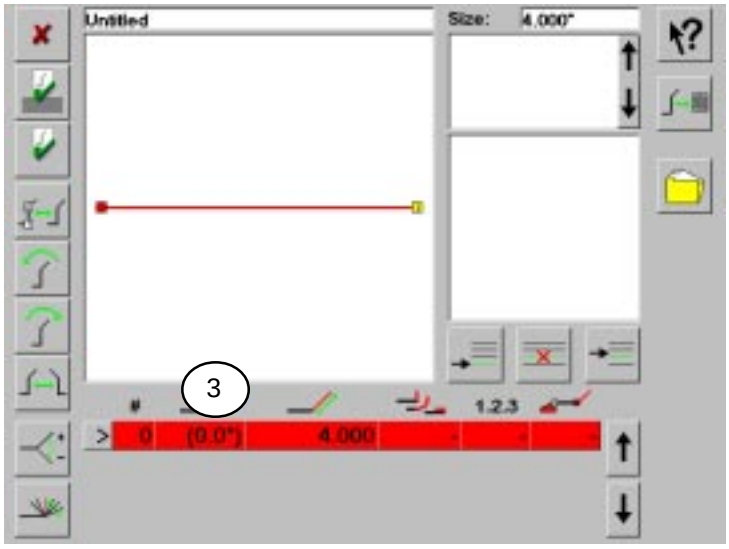
GRAVSTOP

1. Touch the Run/Programming Touchbutton to bring up the Run/ Programming Screen.



RUNPROG

2. Touch the Graphic Programming Touchbutton to bring up the Graphic Programming Screen.



GRPR001

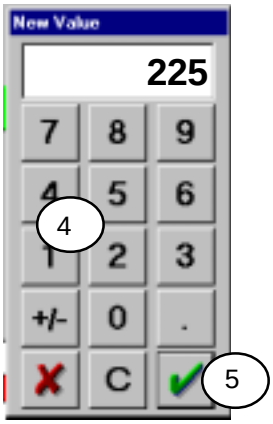
The programmer wishes to start programming with the line at an angle.

3. Touch the value angular value **0.0** to bring up the Numeric Keypad.

4. Touch the **2** twice and the **5** Touchbuttons to enter the desired angle of **225º**. Be sure the number appears in the box at the top of the display.

NOTE:

The desired angle is 45º, but this also "swaps" ends on the line in preparation for the hem operation which follows.

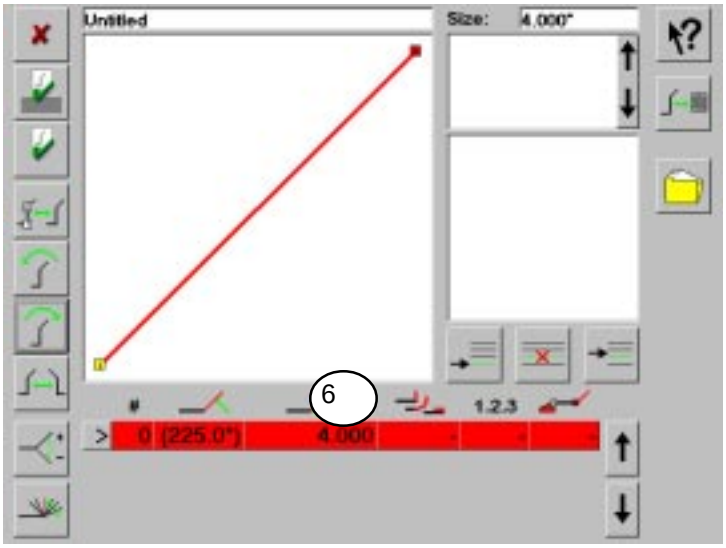


NUMPAD

5. Touch the Enter Touchbutton to move the value **225** to the segment length column of the Graphic Programming Screen.

The default line length for the first line segment must be modified.

6. Touch the value **4.000** to bring up the Numeric Keypad.

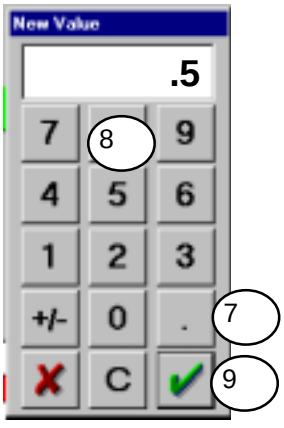


GRPR029

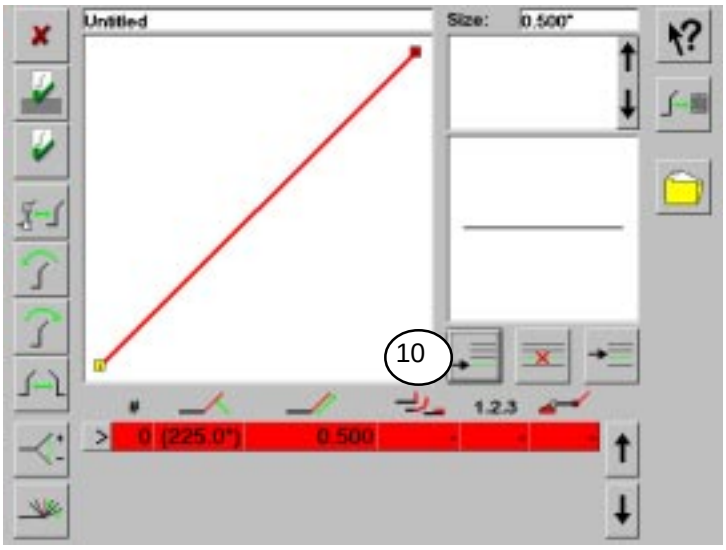
7. Touch the decimal point Touchbutton to enter a decimal point.

8. Touch the 5 Touchbutton to entered the desired line length (**.5**). Be sure the number appears in the box at the top of the display

9. Touch the Enter Touchbutton to move the value **.5** to the segment length column of the Graphic Programming Screen.

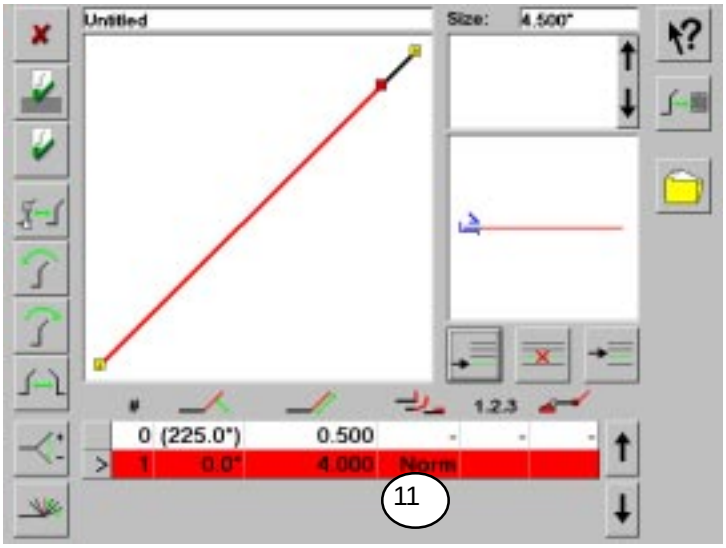


NUMPAD



GRPR030

10. Touch the Add Operation Touchbutton to add a new operation line to the Programming Screen.



GRPR093

11. The part is to have a hem along one edge. Touch the hem Column in the new program line to bring up the hem Data Pop-Up Display.

PRHEM01

12. Touch the Open Hem Touchbutton to activate the hem Data Displays.

PRHEM05

13. Using the Numeric Keypad, Enter **100** in the display box marked **POS** (this changes the maximum pressure used to 100 per cent).

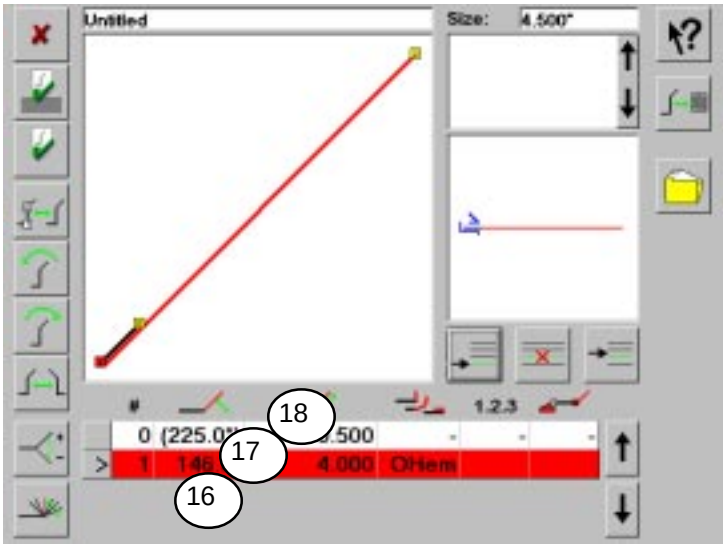
14. The default falue of **0.098** in the display box marked **Move** is acceptable (this sets the backgauge position).

15. Touch the Enter Touchbutton to enter the hem data into the program.

16. Touch the bend angle column in the first bend operation.

17. Using the Numeric Keypad, enter the desired angle of **-148**. This will "swap" ends on the line.

18. Touch the Enter Touchbutton on the Keypad to move the value **-148** to the bend angle column of the Graphic Programming Screen. The results are shown.

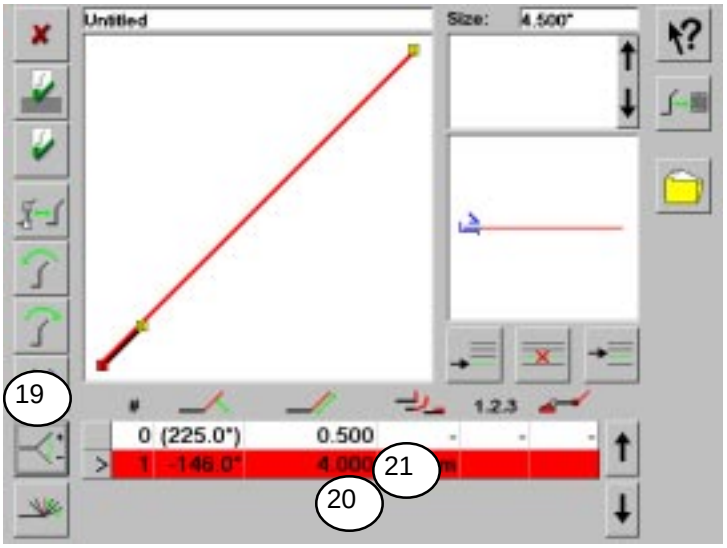


GRPR032

19. Touch the Bend Angle Toggle Touchbutton. This flips the view so that the hem lays on the other side of the drawing line. The results are shown.

20. The line segment length must be changed. Touch the Line Length box in the first bend operation line to bring up the Graphic Keypad.

21. Using the Graphic Keypad, enter **.625** and transfer it to the Line Length Box in the Programming Screen.

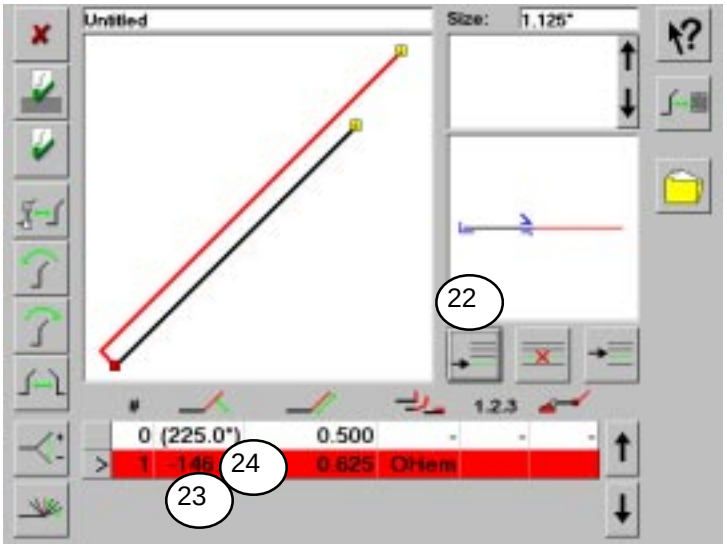


GRPR033

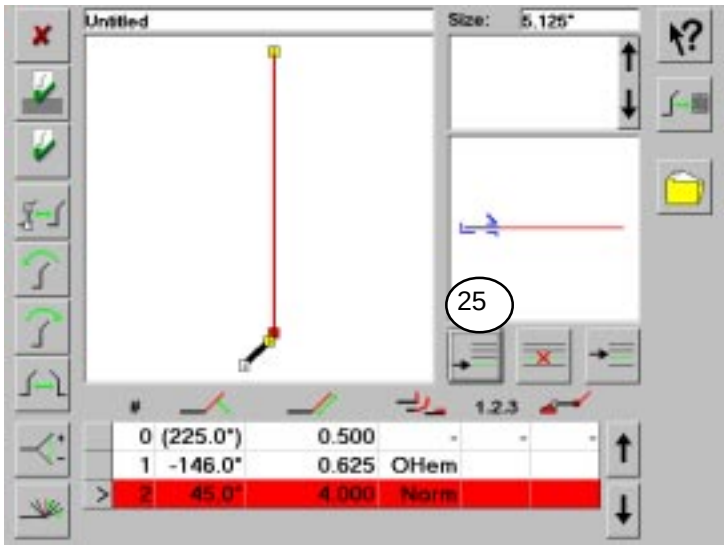
22. Touch the Add Operation Touchbutton to add another operation line to the Programming Screen.

23. The bend angle must be changed. Touch the bend angle box in the new line to bring up the Graphic Keypad.

24. Using the Graphic Keypad, enter **45** and transfer it to the bend angle Box in new line on the Programming Screen.

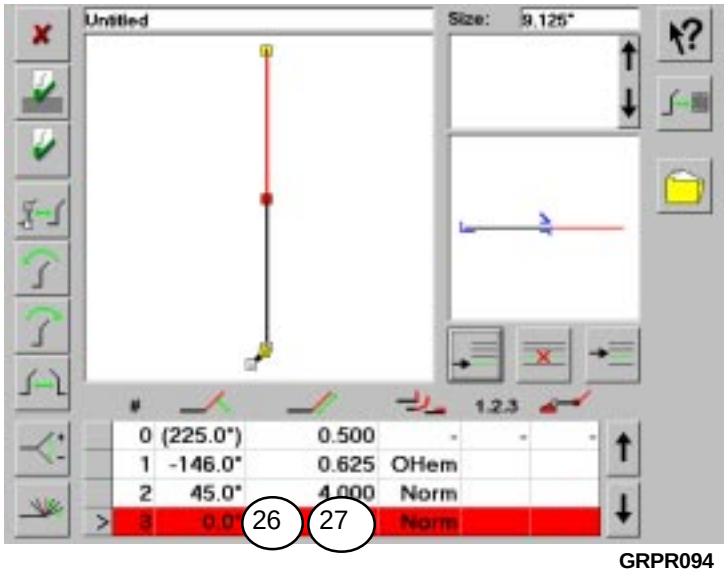


GRPR034



GRPR044

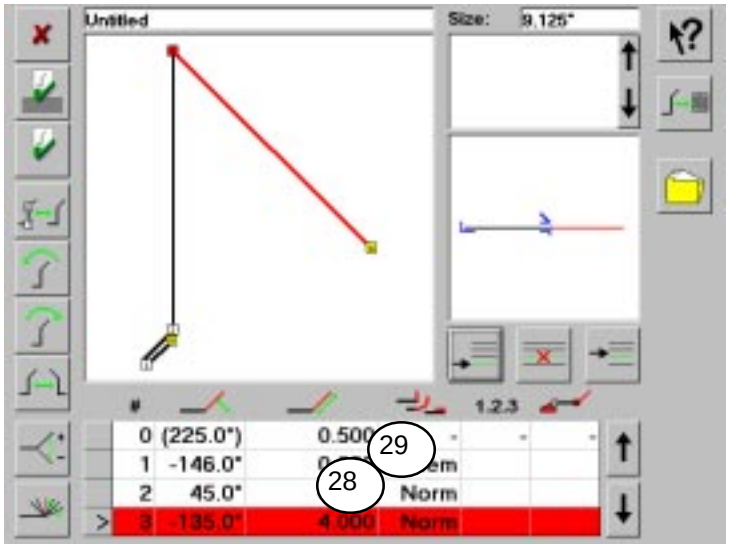
25. Touch the Add Operation Touchbutton to add another operation line to the Programming Screen.



GRPR094

26. The bend angle must be changed. Touch the bend angle box in the new line to bring up the Graphic Keypad.

27. Using the Graphic Keypad, enter the value **-135** and transfer it to the bend angle Box in new line on the Programming Screen.

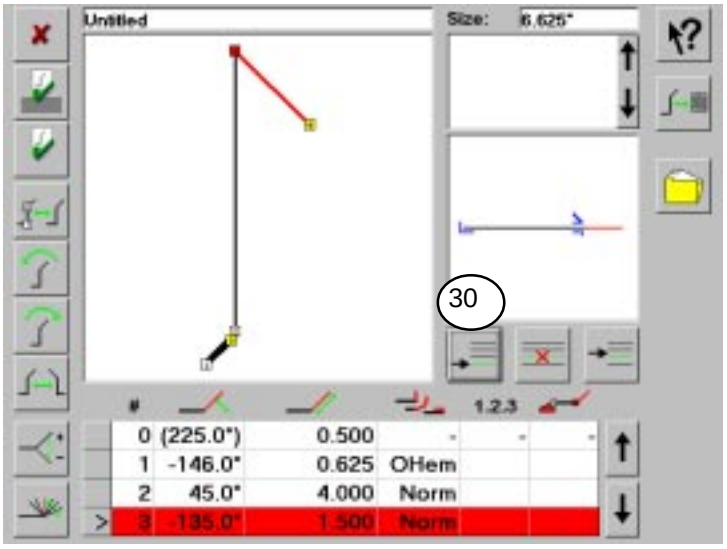


GRPR045

28. The line segment length must be changed. Touch the Line Length box in the first bend operation line to bring up the Graphic Keypad.

29. Using the Graphic Keypad, enter **1.5** and transfer it to the Line Length Box in the Programming Screen.

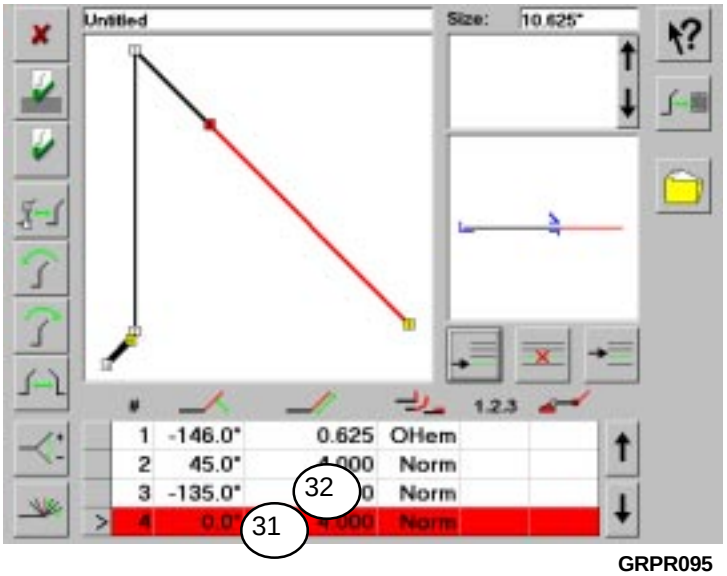
30. Touch the Add Operation Touchbutton to add another operation line to the Programming Screen.



GRPR046

31. The bend angle must be changed. Touch the bend angle box in the new line to bring up the Graphic Keypad.

32. Using the Graphic Keypad, enter the value **45** and transfer it to the bend angle Box in new line on the Programming Screen.



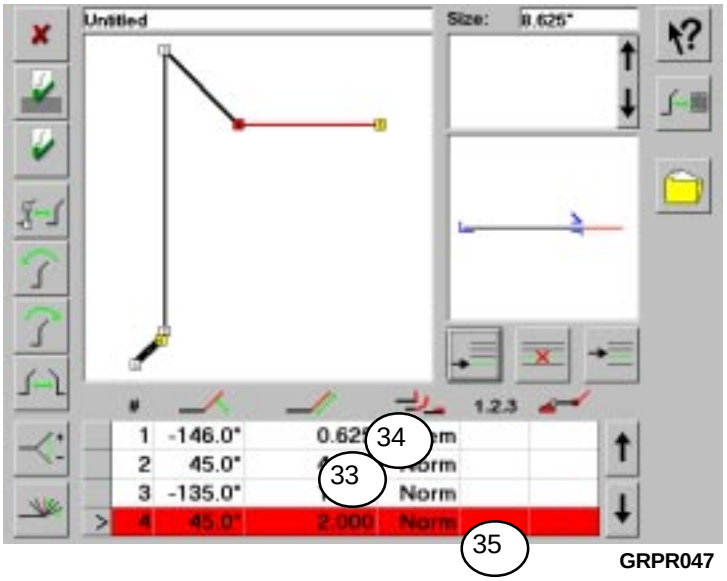
GRPR095

33. The line segment length must be changed. Touch the Line Length box in the bend operation line to bring up the Graphic Keypad.

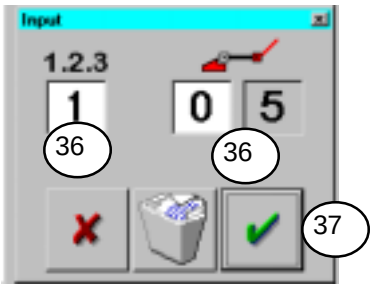
34. Using the Graphic Keypad, enter **2.0** and transfer it to the Line Length Box in the Programming Screen. The results are shown.

Preparation of the part drawing is now complete. The bend order for the part program must now be established.

35. Touch the box in the Operation 4 line under the bend order symbol. The line representing Operation 4 will highlight in red, and the the Bend Order Pop-Up Display will appear.



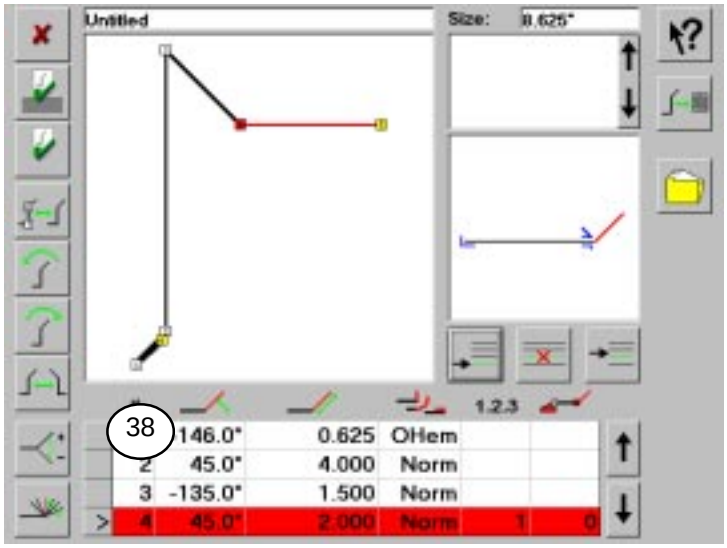
GRPR047



ORDER10

36. The Part Location Pop-Up Display shows that it will set the back gauge position for the part in what will become the first bend operation. It gives alternative location points (against the back gauge) for the operation of **0** or **5**.

37. **0** is highlighted and this is appropriate. Enter the values shown by touching the Enter Touchbutton.

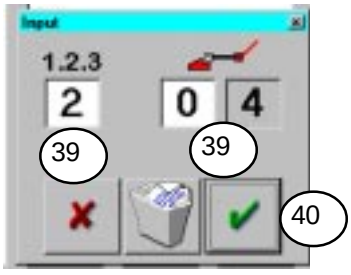


GRPR048

NOTE:

The part profile was generated as a progression, moving from one segment to the next. This doesn't necessarily represent the bend order. The bend order is generated by identifying which line is the first operation, which is the second, etc.

38. Touch the box in the Operation 2 line under the part location symbol. The line representing Operation 2 will highlight in red, and the the Part Location Pop-Up Display will appear

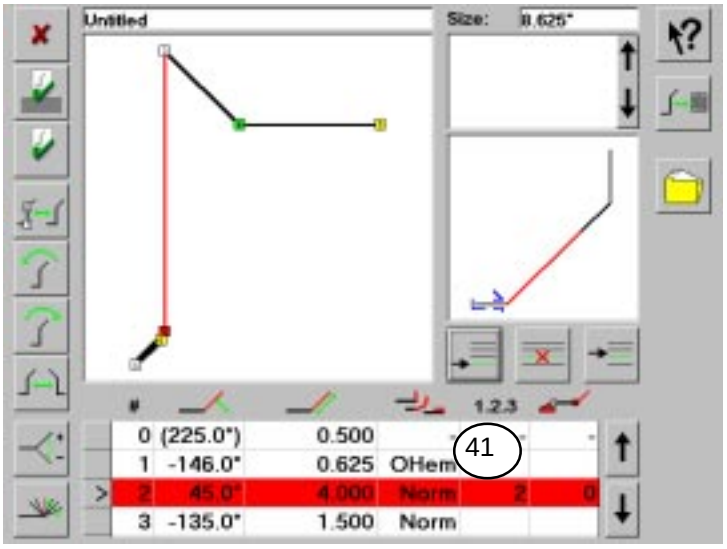


ORDER11

39. The Part Location Pop-Up Display shows that it will set the location for the part in what will become the second bend operation. It gives alternative location points (against the back gauge) for the operation of **0** or **4**.

40. **0** is highlighted and this is appropriate. Enter the values shown by touching the Enter Touchbutton.

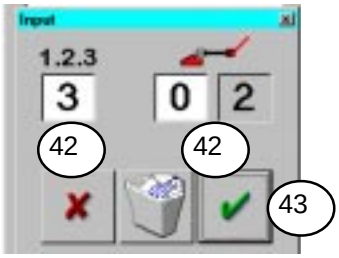
41. Touch the box in the Operation 1 line under the part location symbol. The line representing Operation 1 will highlight in red, and the the Part Location Pop-Up Display will appear



GRPR049

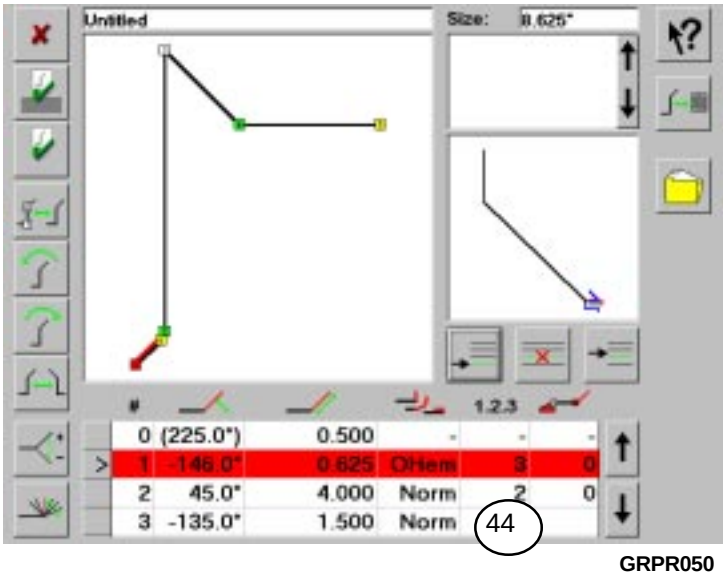
42. The Part Location Pop-Up Display shows that it will set the location for the part in what will become the third bend operation. It gives alternative location points (against the back gauge) for the operation of **0** or **2**.

43. **0** is highlighted and this is appropriate. Enter the values shown by touching the Enter Touchbutton.

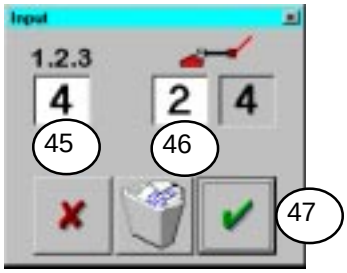


ORDER12

44. Touch the box in the Operation 3 line under the part location symbol. The line representing Operation 3 will highlight in red, and the the Part Location Pop-Up Display will appear



GRPR050

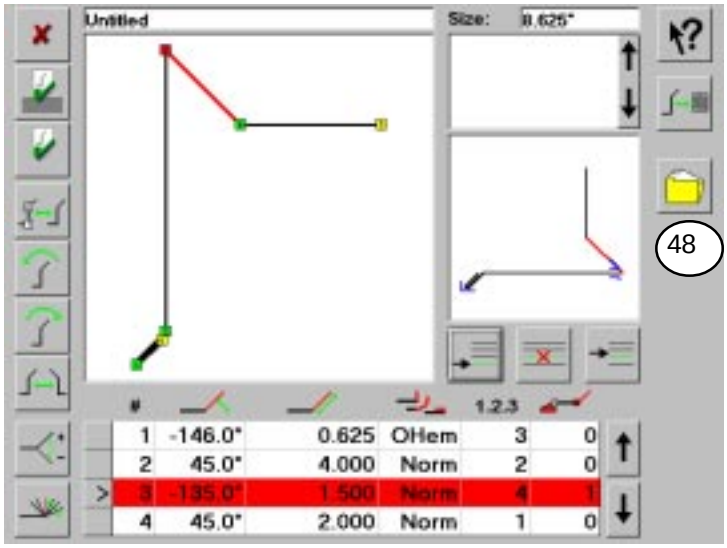


ORDER13

45. The Part Location Pop-Up Display shows that it will set the location for the part in what will become the fourth bend operation. It gives alternative location points for the operation of **2** or **4**.

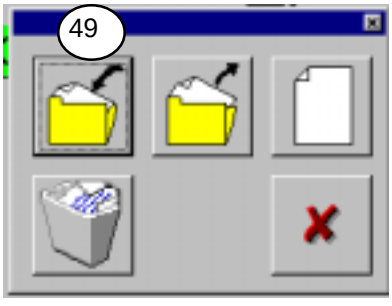
46. **2** is highlighted and neither is appropriate. Touch the box showing 2 for the location, and the Numeric Pop-Up Display will appear. Enter 1 on the display and transfer it to the part Location Pop-Up Display by touching the Enter Touchbutton on the Numeric Pop-Up Display.

47. Enter the values shown by touching the Enter Touchbutton on the Part Location Pop-Up Display..



GRPR051

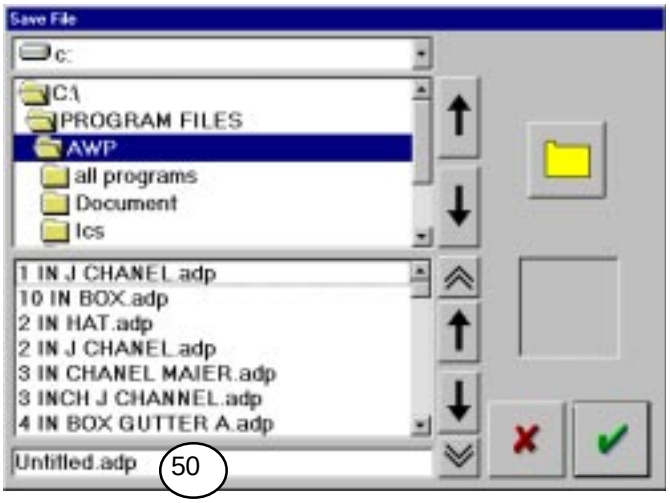
48. The drawing portion of the graphic programming file is now ready to be saved. Touch the File Manager touchbutton in the Graphic Programming Screen. This will bring up the File Manager Pop-Up Display.



FILEMGR

49. Touch the Save File Touchbutton in the File Manager Pop-Up Display. This will bring up the Program Selection Display.

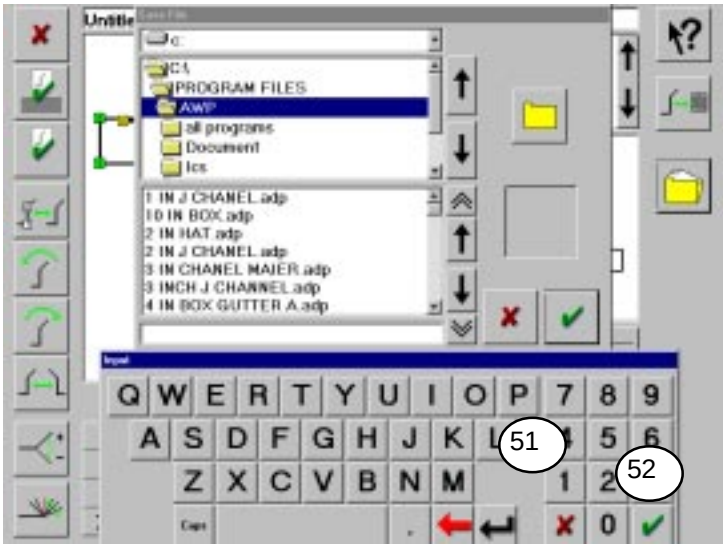
50. Touch the Program Title Display, which reads "**Untitled.adp**". This will bring up the Alpha-Numeric Keypad.



SAVFIL01

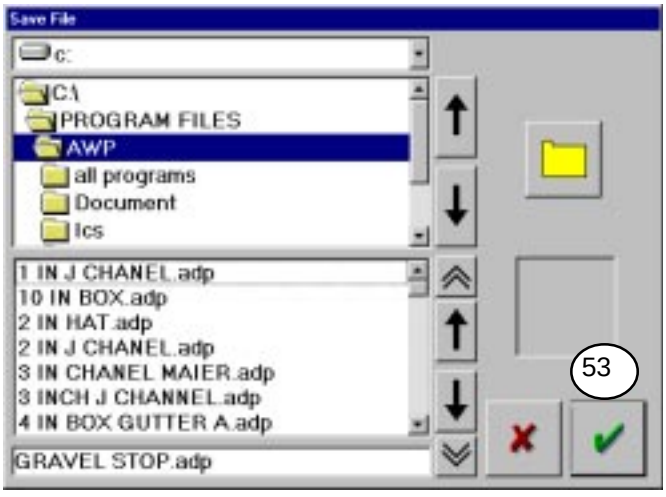
51. Enter a drawing name using the Alpha-Numeric Touchjbuttons. As the characters are entered, they will appear in the Program Title Display.

52. When the name has been entered, touch the Enter Touchbutton. The Alpha-Numeric keypad will disappear, and the extension **.adp** will appear behind the name in the Program Title Display. This extension identifies the file as a drawing file.

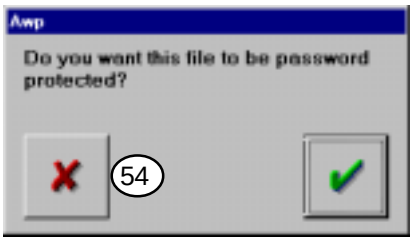


SAVFIL02

53. Touch the Enter Touchbutton in the Program Selection Display. At this point you **may** be asked if you wish to protect the file with a password.

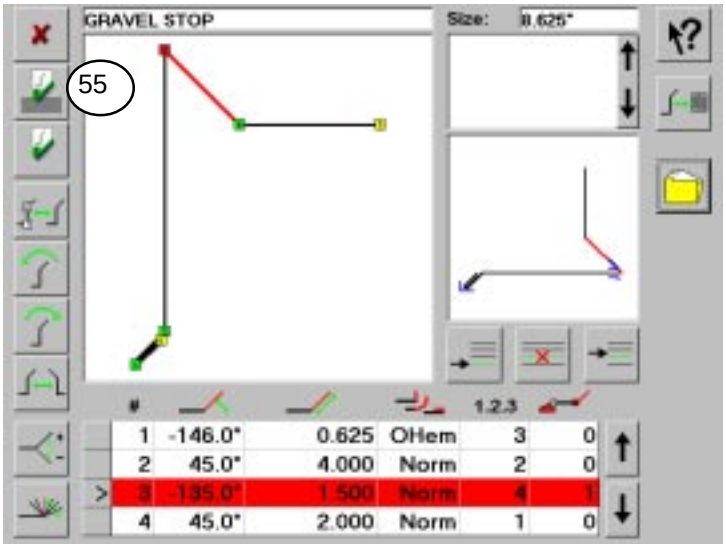


SAVFIL07



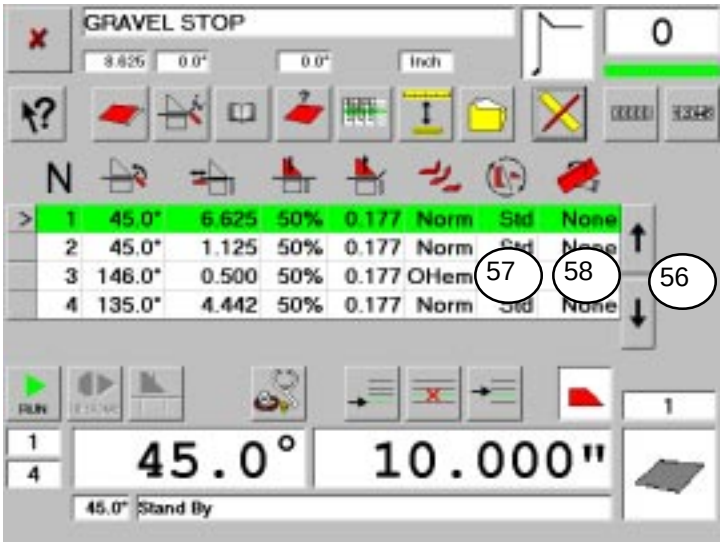
PASPROT1

54. Normally files are not password protected. Touch the Cancel Touchbutton to proceed with programming without assigning a password.



GRPR052

55. The program must now be completed by specifying tooling and material handling, and by adjusting any other details generated by the automatic programming features of the graphic programming system. Touch the Create Program Touchbutton to bring up the Run/Programming screen.



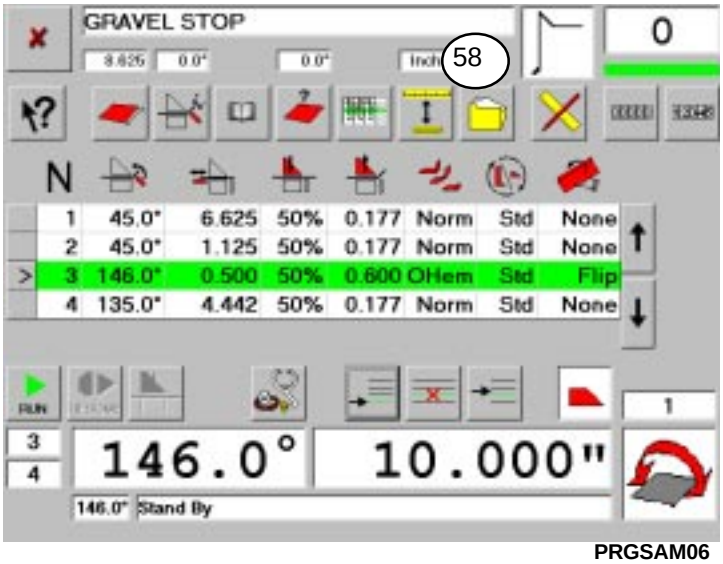
PRGSAM05

56. Scroll through the program steps.

57. At each step, touch the box under the Tooling Symbol to bring up the Tooling Selection Pop-Up Display, and, if necessary, select the proper tooling for the operation. Normally a Gravel Stop will use standard tooling throughout.

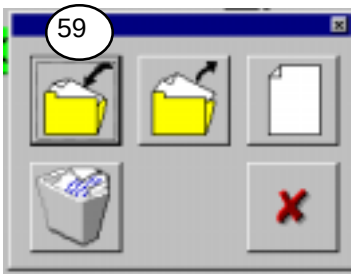
ROOLSEL

58. The program is now ready for its final save. Touch the File Manager Touchbutton to bring up the File Manager Pop-Up Display

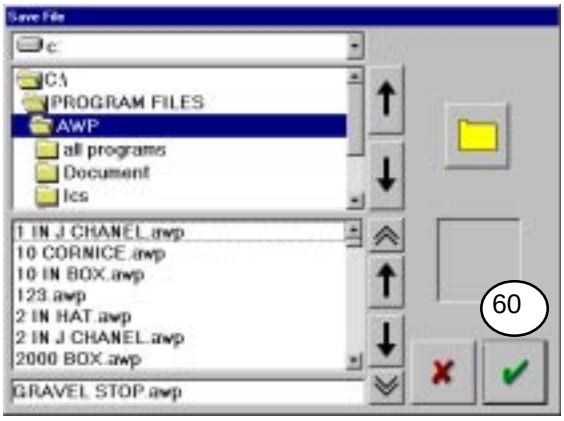


PRGSAM06

59. Touch the Save File Touchbutton. This will bring up the File Selection Display.

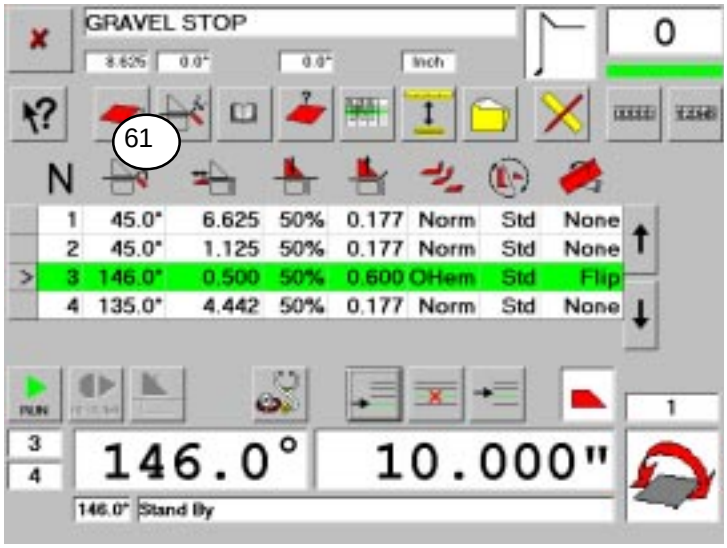


FILEMGR



SAVFIL08

60. Touch the Enter Touchbutton. This will add the **.awp** extension to the file name and save the file to the hard drive. The **.awp** extension indicates that the file is a finished program.



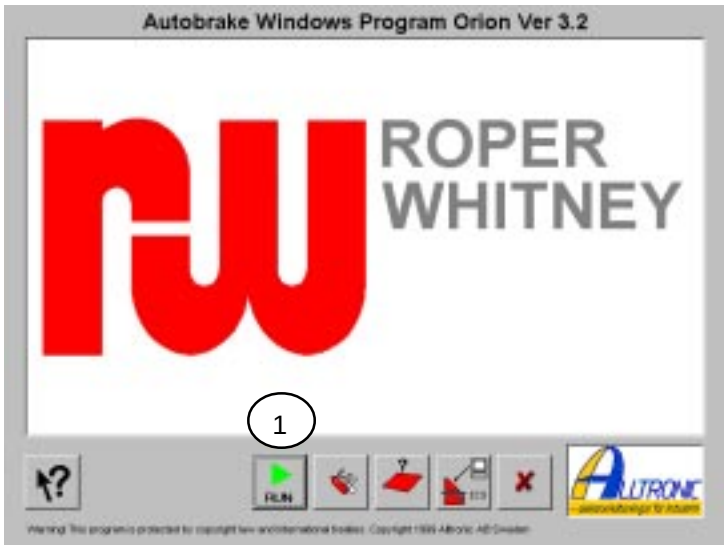
PRGSAM06

61. To return to the Main Screen, touch the Cancel Touchbutton.

MAINSCR

At this point, the systm is ready for additional programming, or for operation.

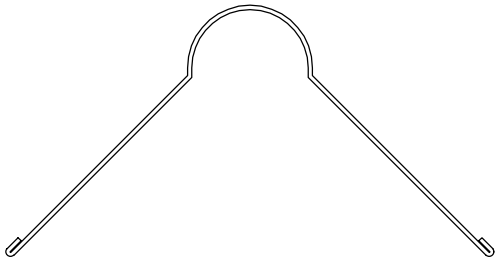
Intentionally blank.
Please continue.



MAINSCR

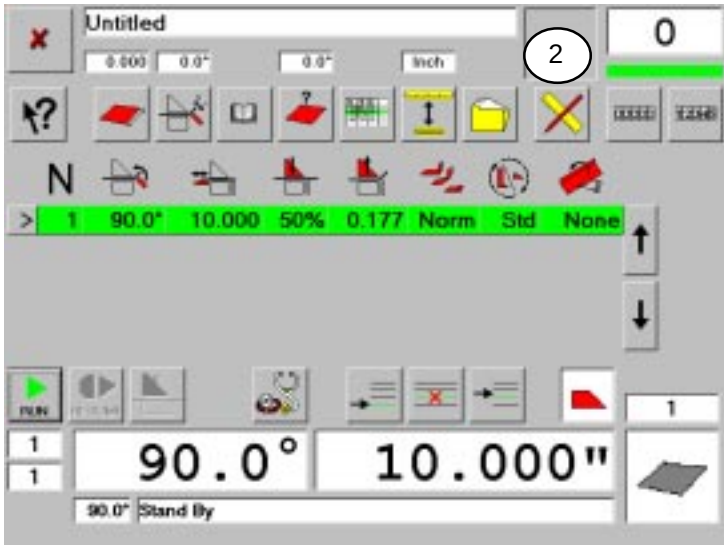
GRAPHIC PROGRAMMING EXAMPLE

ROOF CAP



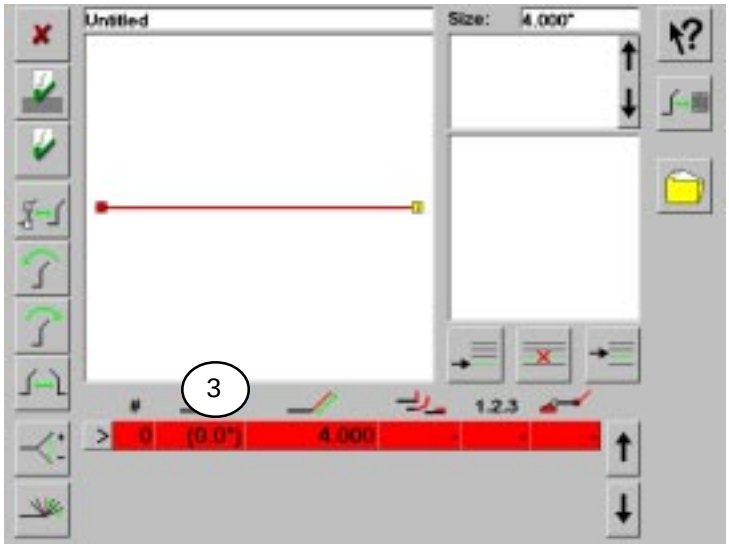
ROOFCAP

1. Touch the Run/Programming Touchbutton to bring up the Run/ Programming Screen.



RUNPROG

2. Touch the Graphic Programming Touchbutton to bring up the Graphic Programming Screen.



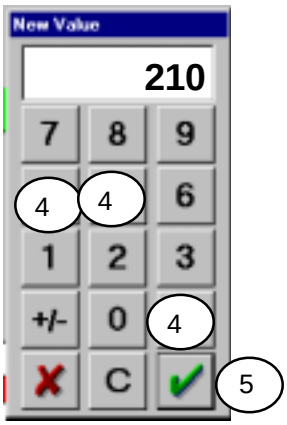
GRPR001

The programmer wishes to start progrmming with the line at an angle.

3. Touch the angular value **0.0** to bring up the Numeric Keypad.

4. Touch the 2, 1, and 0 Touchbuttons to enter the desired angle (**210º**). Be sure the number appears in the box at the top of the display. This also swaps ends in preparation for making a hem at the edge of the material.

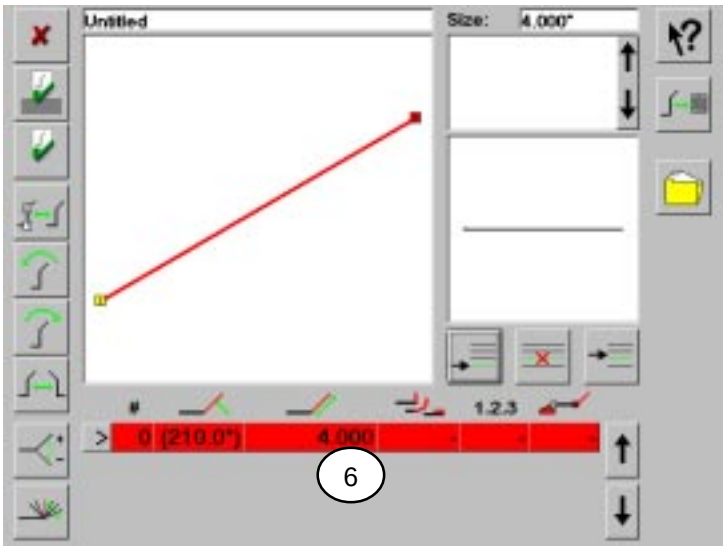
5. Touch the Enter Touchbutton to move the value **210** to the bend angle column column of the Graphic Programming Screen.



NUMPAD

The default line length for the first line segment must also be modified.

6. Touch the value **4.000** to bring up the Numeric Keypad.

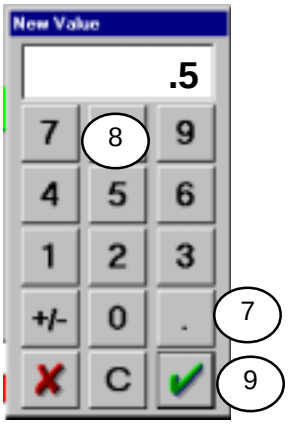


GRPR053

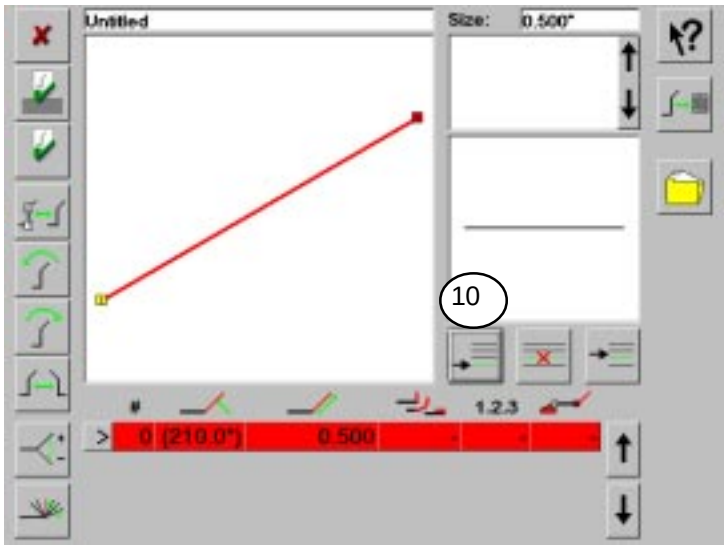
7. Touch the decimal point Touchbutton to enter a decimal point.

8. Touch the 5 Touchbutton to entered the desired line length (**.5**). Be sure the number appears in the box at the top of the display

9. Touch the Enter Touchbutton to move the value **.5** to the segment length column of the Graphic Programming Screen.

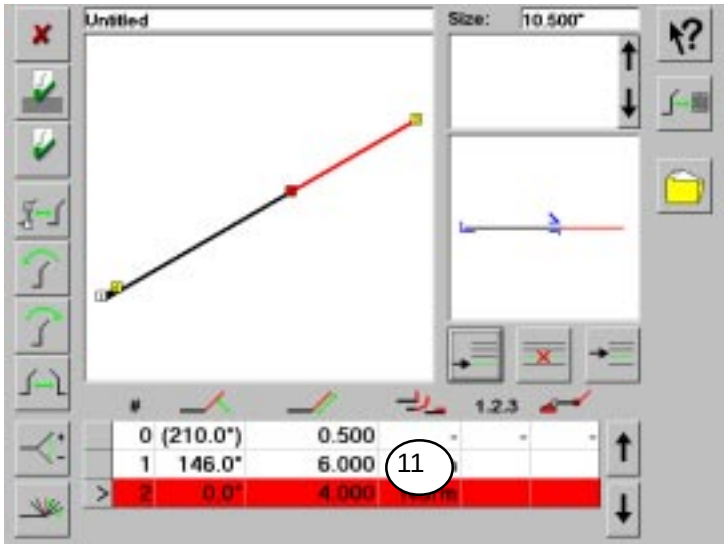


NUMPAD



GRPR054

10. Touch the Add Operation Touchbutton to create a second program line. The part is to have a hem along one edge



GRPR096

11. Touch the hem Column in the second program line to bring up the hem Data Pop-Up Display.

PRHEM01

12. Touch the Open Hem Touchbutton to activate the hem Data Displays.

PRHEM04

13. Using the Numeric Keypad, Enter **.098** in the display box marked **POS** (this sets the open height of the hem).

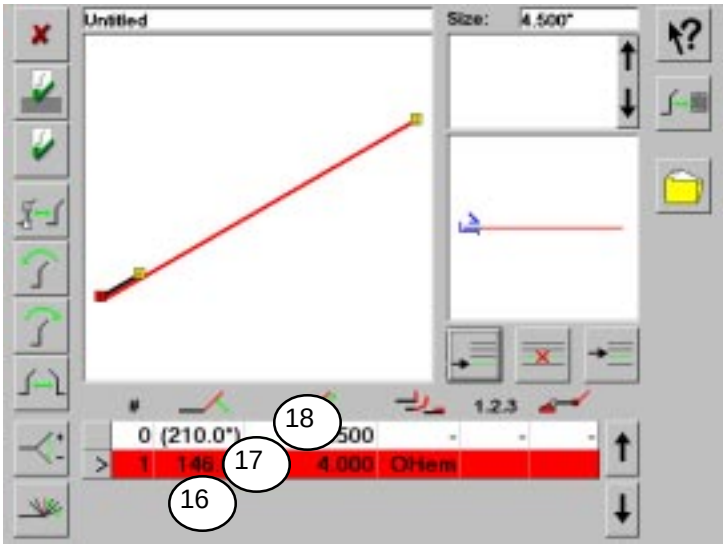
14. Enter **.079** in the display box marked **Move** (this sets the backgauge position).

15. Touch the Enter Touchbutton to enter the hem data into the program.

16. Touch the bend angle column in the first bend operation.

17. Using the Numeric Keypad, enter the desired angle of **146**. This will “swap” ends on the line.

18. Touch the Enter Touchbutton on the Keypad to move the value **146** to the bend angle column of the Graphic Programming Screen. The results are shown.

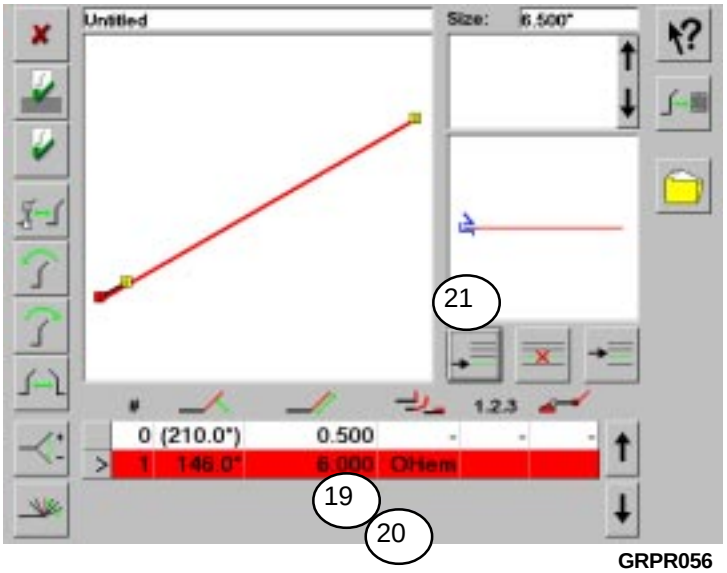


GRPR055

19. The line segment length must be changed. Touch the Line Length box in the hem operation line to bring up the Graphic Keypad.

20. Using the Numeric Keypad, enter **6.000** and transfer it to the Line Length Box in the Programming Screen.

21. Touch the Add Operation Touchbutton to add another operation to the Programming Screen. This will be the first bending operation after forming the hem.

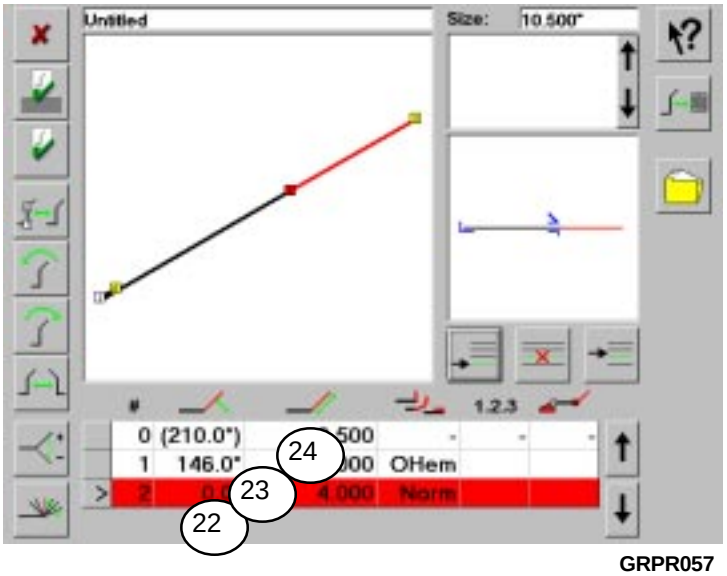


GRPR056

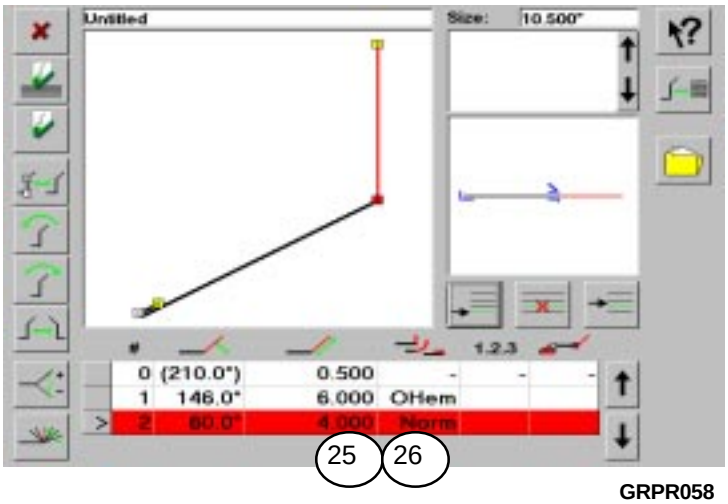
22. Touch the Bend Angle Box in the new operation line. This will bring up the Numeric Keypad again,. this time to enter the bend angle.

23. Enter **60** using the Numeric Keypad.

24. Transfer the value **60** to the Bend Angle Box in the Programming Screen by pressing the Enter Touchbutton.



GRPR057



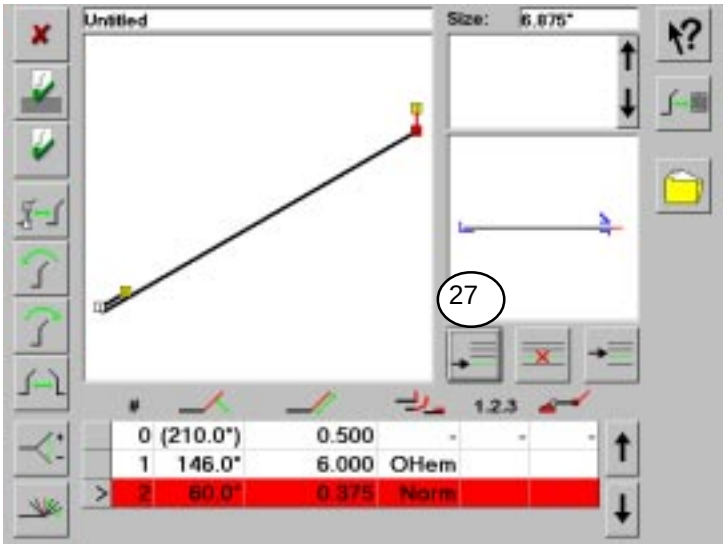
GRPR058

25. Touch the Line Length Box in the operation line to bring up the Graphic Keypad.

26. Enter **.375** on the Graphic Keypad and transfer it to the Line Length Box by touching the Enter Touchpad.

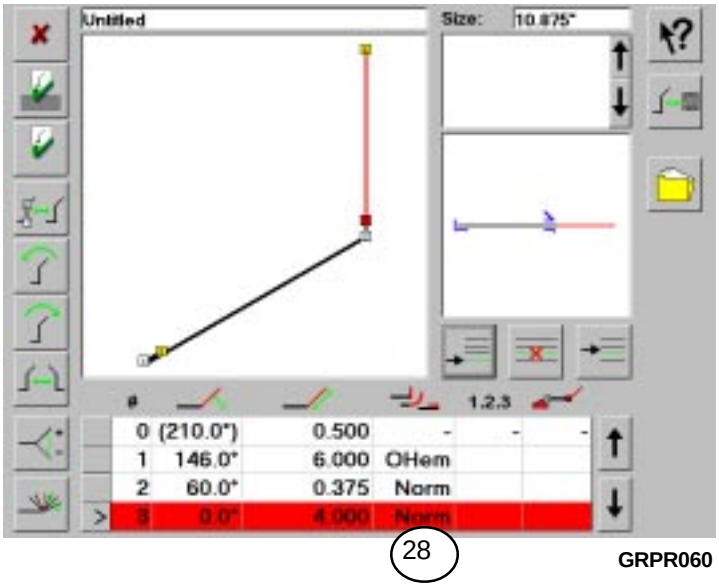
NOTE:

This line segment provides the necessary “starter” line segment for the next line segment, which will become the radius bend which follows.



GRPR059

27. Touch the Add Operation Touchbutton to add another operation to the Programming Screen.



GRPR060

28. Touch the hem Column in the second program line to bring up the Hem Data Pop-Up Display.

29. Touch the Bump Bending Touchbutton to activate the Radius Data Displays.

PRHEM01

30. Using the Numeric Keypad, Enter **2** in the display box marked **Radius** (this identifies the radius dimension for the bend).

31. Enter **30** in the display box marked **Steps** (this sets the numbr of bend steps used in forming the radius).

32. Touch the Enter Touchbutton to enter the radius data into the program.

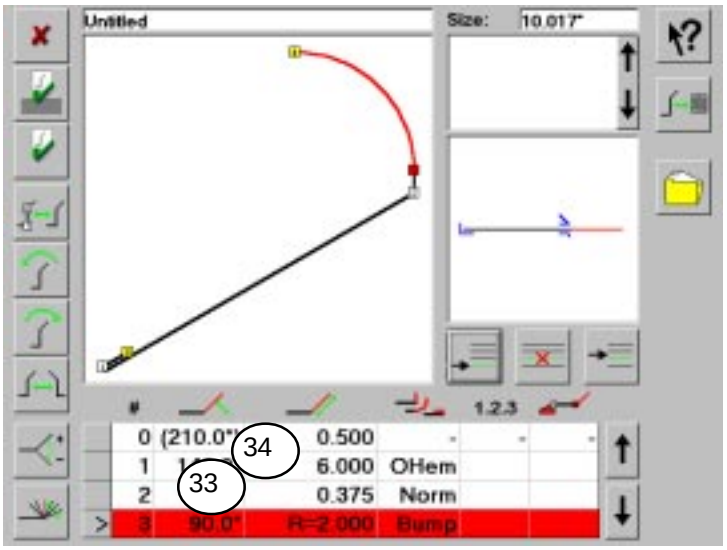
PRRAD01

NOTE:

At this point the radius is neither complete nor in the right direction. Correct each deficiency separately.

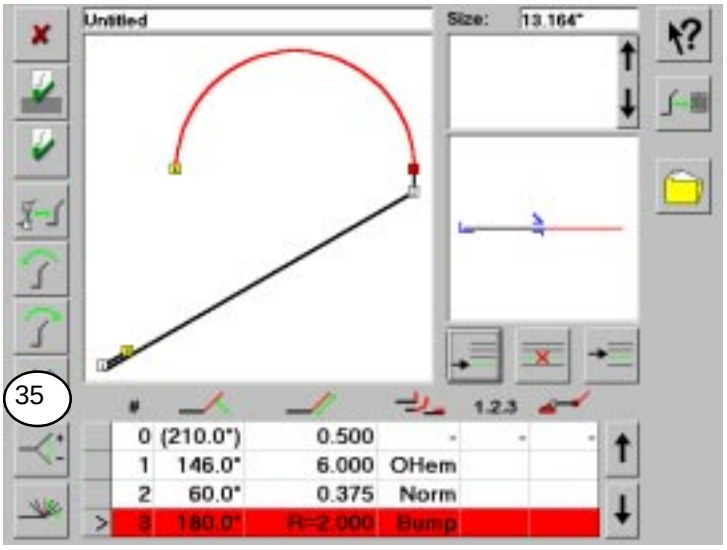
33. Touch the Bend Angle Box in the radius bend operation line.

34. Using the Graphic Keypad, enter **180** in the Bend Angle Box .

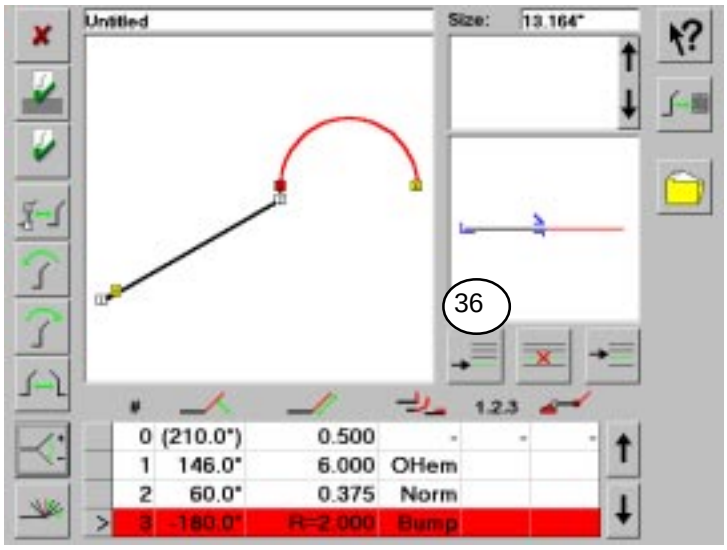


GRPR061

35. With the rdius bend line highlighted, touch the Bend Angle Toggle Touchbutton. This flips the radius so that it lays on the other side of the drawing.

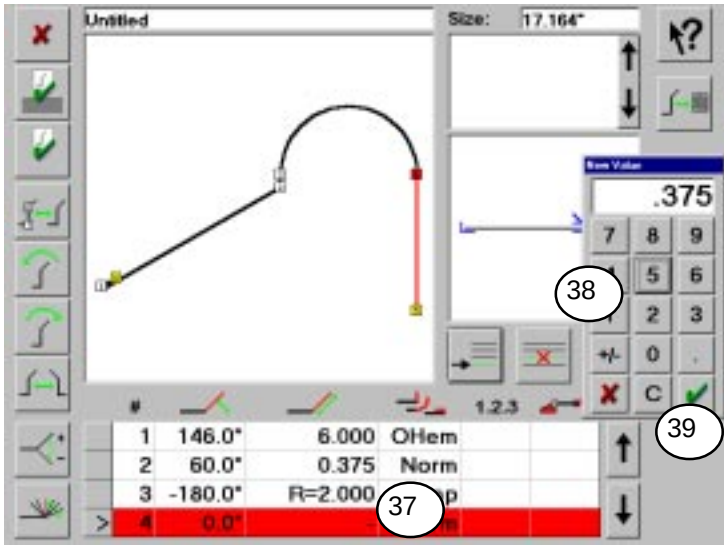


GRPR062



GRPR063

36. Touch the Add Operation Touchbutton to add another operation to the Programming Screen.

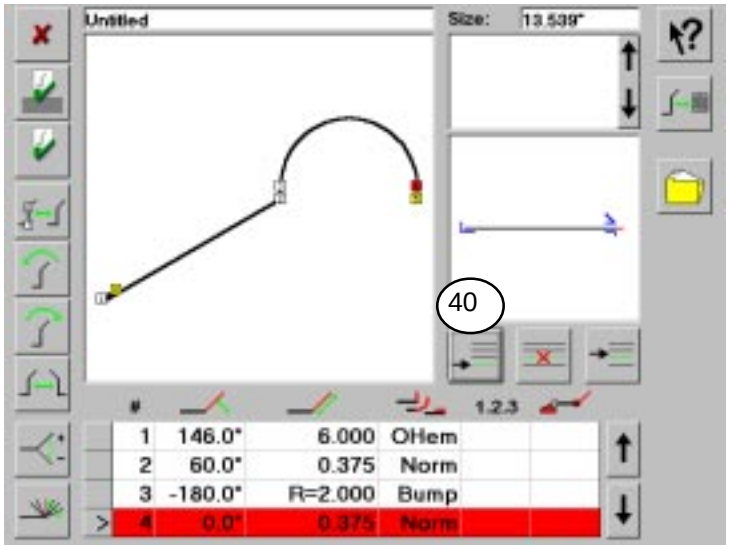


GRPR064

37. Touch the Line Length Box in the new operation line to bring up the Graphic Keypad.

38. Enter **.375** on the Graphic Keypad.

39. Ttransfer the value **.375** to the Line Length Box by touching the Enter Touchpad.



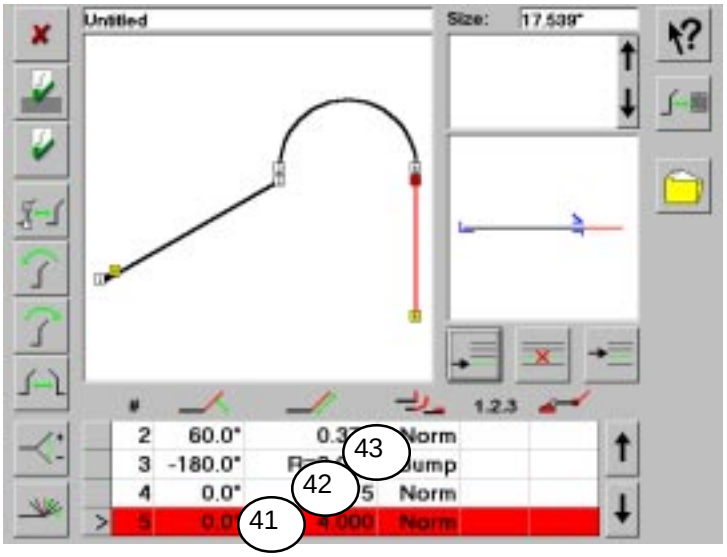
GRPR065

40. Touch the Add Operation Touchbutton to add another operation to the Programming Screen.

41. Touch the Bend Angle box in the new operation.

42. Enter **60** using the Numeric Keypad.

43. Transfer the value **60** to the Bend Angle Box in the Programming Screen by pressing the Enter Touchbutton.

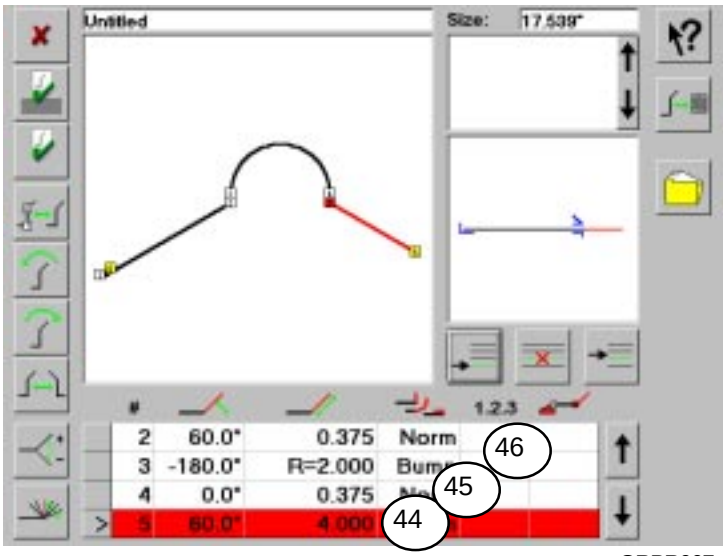


GRPRO66

44. Touch the Line Length Box in the new operation line to bring up the Graphic Keypad.

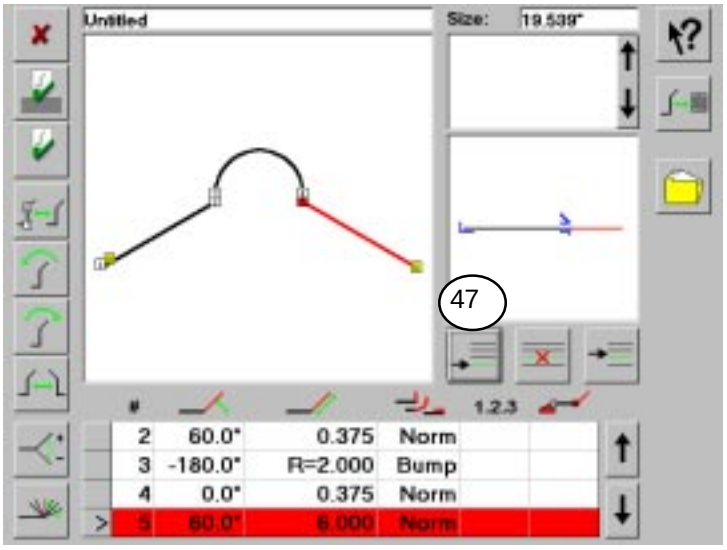
45. Enter **6** on the Graphic Keypad.

46. Ttransfer the value **6** to the Line Length Box by touching the Enter Touchpad.

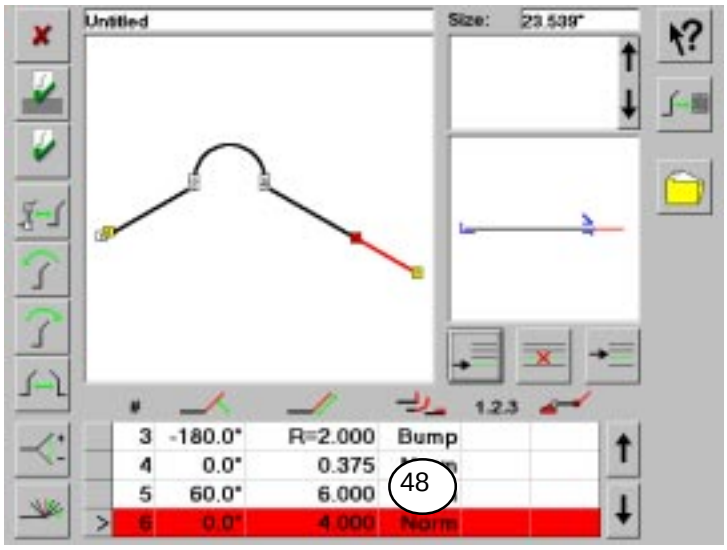


GRPR067

47. Touch the Add Operation Touchbutton to add another operation to the Programming Screen.



GRPR068



GRPR069

48. Touch the hem Column in the new program line to bring up the hem Data Pop-Up Display.

PRHEM01

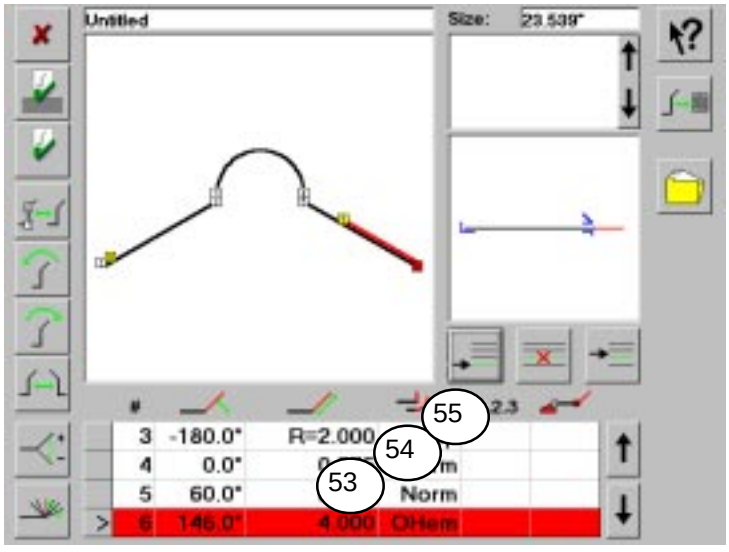
49. Touch the Open Hem Touchbutton to activate the hem Data Displays.

PRHEM04

50. Using the Numeric Keypad, Enter **.098** in the display box marked **POS** (this sets the open height of the hem).

51. Enter **.079** in the display box marked **Move** (this sets the backgauge position).

52. Touch the Enter Touchbutton to enter the hem data into the program.



GRPR070

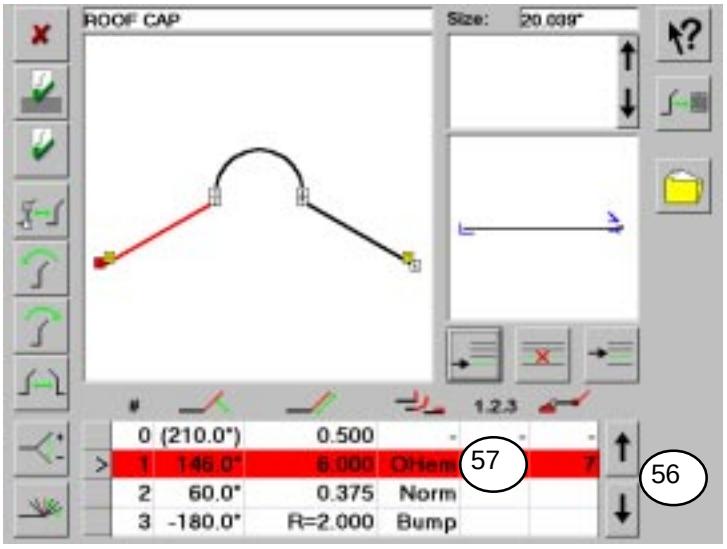
53. Touch the Line Length Box in the new operation line to bring up the Graphic Keypad.

54. Enter **.5** on the Graphic Keypad.

55. Ttransfer the value **.5** to the Line Length Box by touching the Enter Touchpad.

56. Scroll upward through the operation lines to bring operation 1 into view.

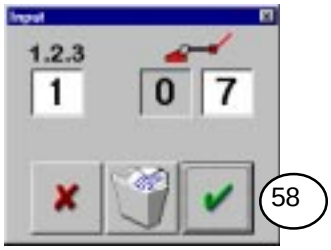
57. Touch the box in the Operation 1 line under the Bend Order symbol. The line representing Operation 1 will highlight in red, and the the Part Location Pop-Up Display will appear.



GRPR071

NOTE:

The part profile was generated as a progression, moving from one segment to the next. This doesn't necessarily represent the bend order. The bend order is generated by identifying which line is the first operation, which is the second, etc.

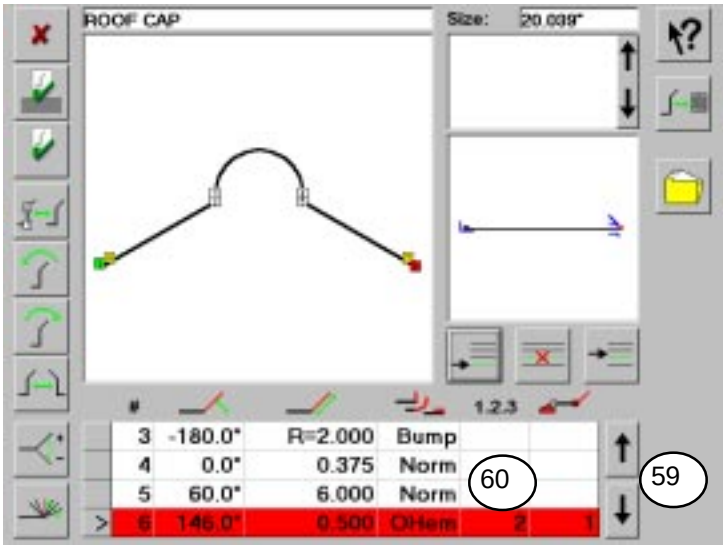


ORDER14

58. Location 7 is a suitable location point for the first bending operation. Enter it by touching the Enter Touchbutton.

59. To establish the second bend operation, scroll downward through the operation lines to bring operation 6 into view.

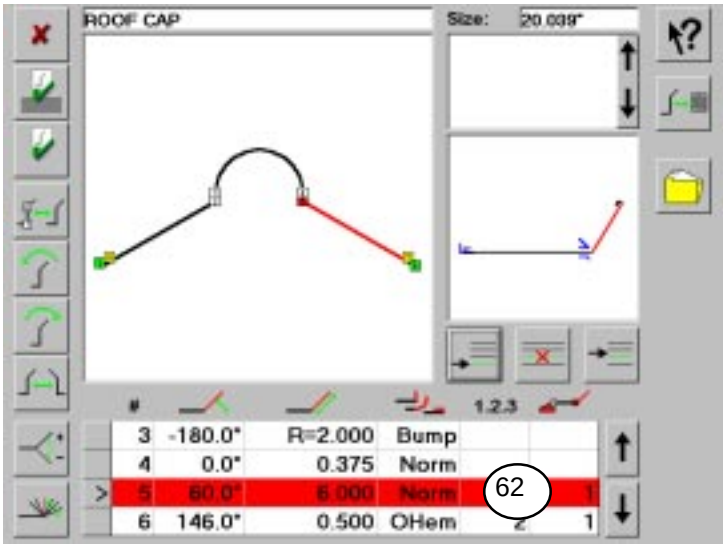
60. Touch the box in the Operation 6 line under the Bend Order symbol. The line representing Operation 6 will highlight in red, and the the Part Location Pop-Up Display will appear.



GRPR072

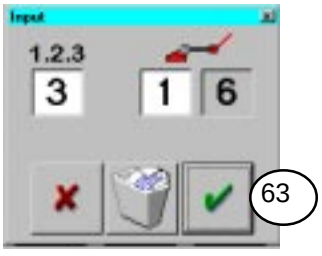
ORDER15

61. Location 1 is a suitable location point for the first bending operation. Enter it by touching the Enter Touchbutton.



GRPR073

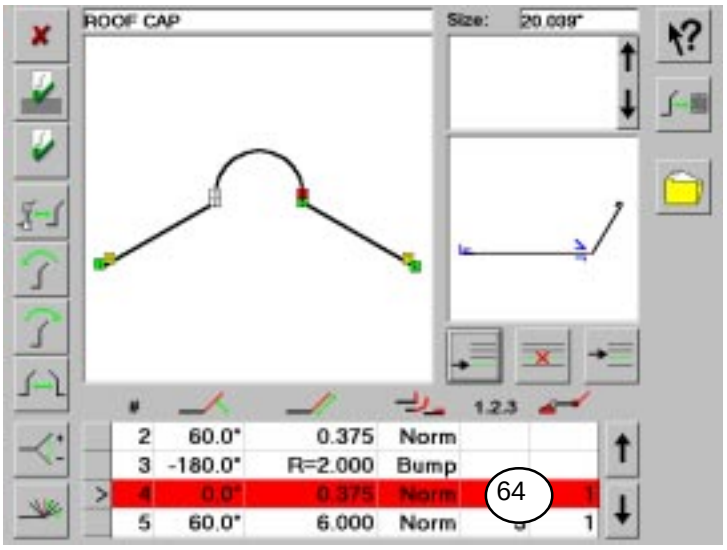
62. Touch the box in the Operation 5 line under the Bend Order symbol. The line representing Operation 5 will highlight in red, and the the Part Location Pop-Up Display will appear.



ORDER16

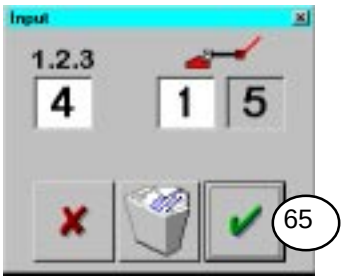
63. Location 1 is a suitable location point for the third bending operation. Enter it by touching the Enter Touchbutton.

64. Touch the box in the Operation 4 line under the Bend Order symbol. The line representing Operation 4 will highlight in red, and the the Part Location Pop-Up Display will appear.



GRPR074

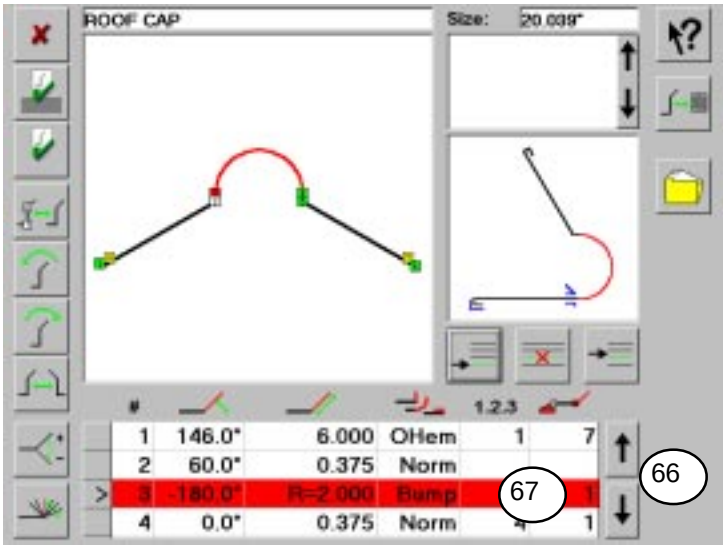
65. Location 1 is a suitable location point for the fourth bending operation. Enter it by touching the Enter Touchbutton.



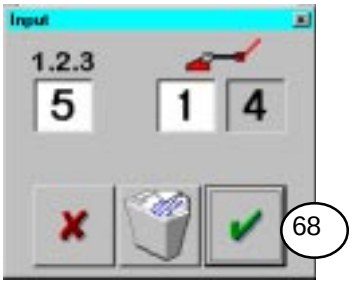
ORER17

66. Scroll upward through the operation lines to bring Operations 2 and 3 into view.

67. Touch the box in the Operation 3 line under the Bend Order symbol. The line representing Operation 3 will highlight in red, and the the Part Location Pop-Up Display will appear.

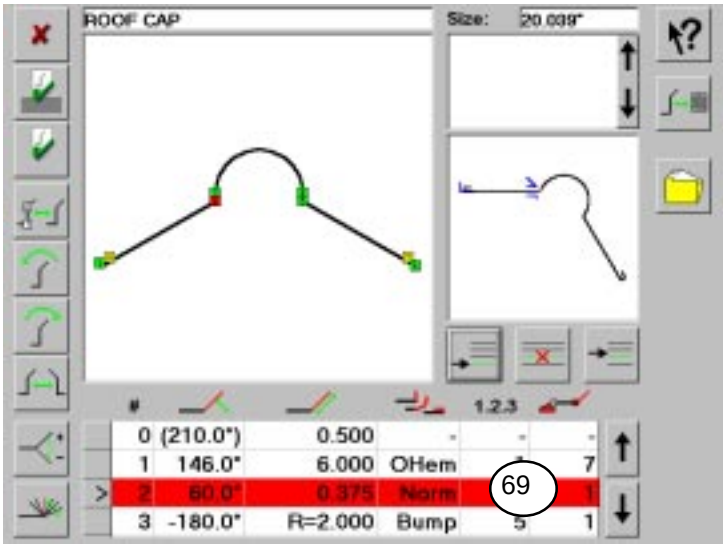


GRPR075



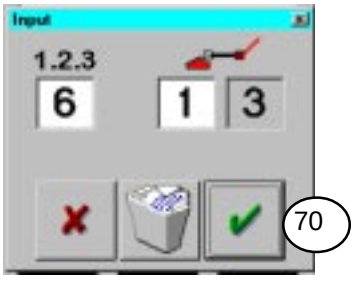
ORDER18

68. Location 1 is a suitable location point for the fifth bending operation. Enter it by touching the Enter Touchbutton.



GRPR076

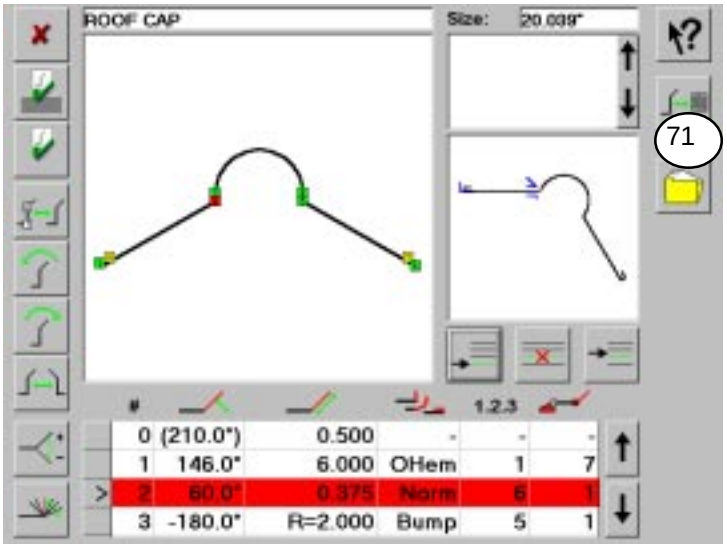
69. Touch the box in the Operation 2 line under the Bend Order symbol. The line representing Operation 2 will highlight in red, and the the Part Location Pop-Up Display will appear.



ORDER19

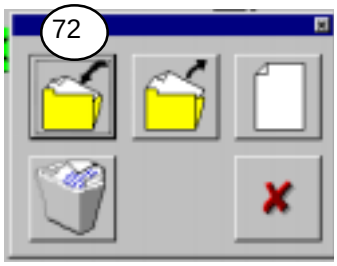
70. Location 1 is a suitable location point for the sixth bending operation. Enter it by touching the Enter Touchbutton.

71. The drawing portion of the graphic programming file is now ready to be saved. Touch the File Manager touchbutton in the Graphic Programming Screen. This will bring up the File Manager Pop-Up Display.



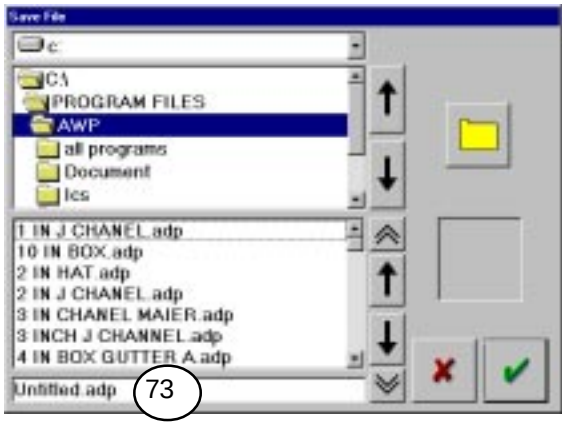
GRPR076

72. Touch the Save File Touchbutton in the File Manager Pop-Up Display. This will bring up the Program Selection Display.

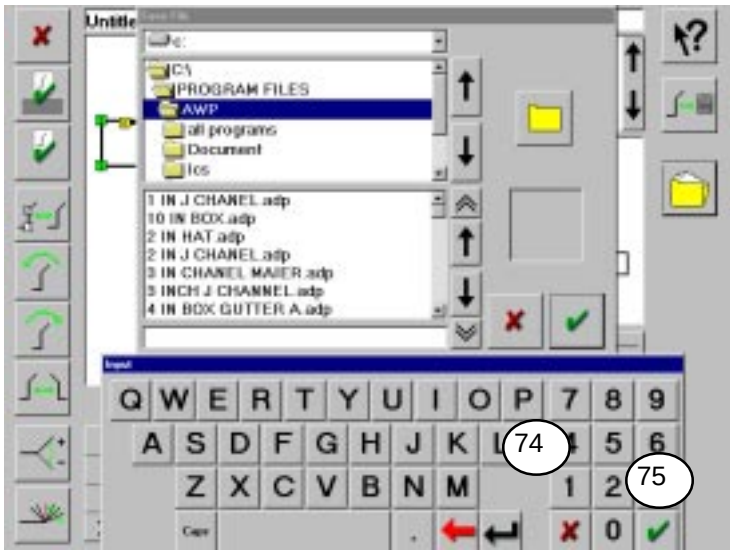


FILEMGR

73. Touch the Program Title Display, which reads "**Untitled.adp**". This will bring up the Alpha-Numeric Keypad.



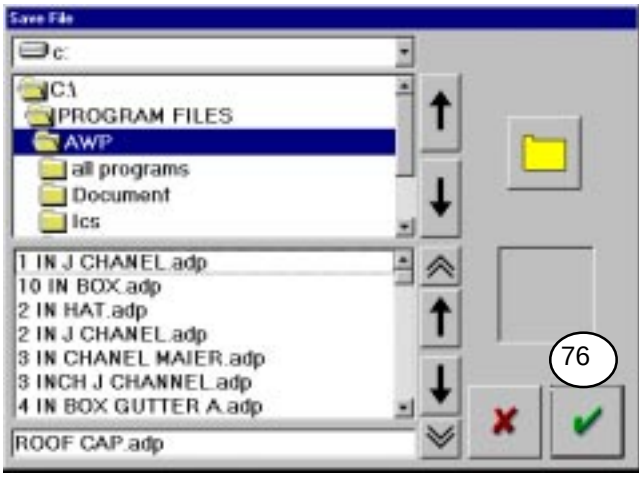
SAVFIL01



SAVFIL02

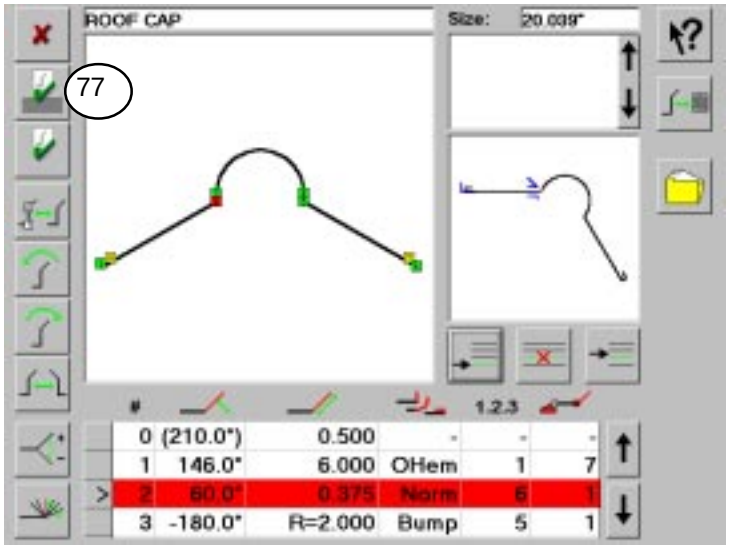
74. Enter the drawing name **ROOF CAP** using the Alpha-Numeric Touchjbuttons. As the characters are entered, they will appear in the Program Title Display.

75. When the name has been entered, touch the Enter Touchbutton. The Alpha-Numeric keypad will disappear, and the extension **,adp** will appear behind the name in the Program Title Display. This extension identifies the file as a drawing file.



SAVFIL09

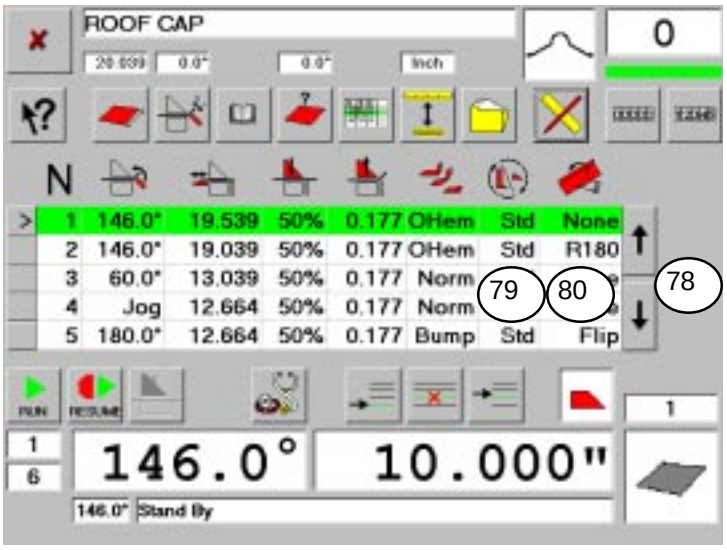
76. Touch the Enter Touchbutton in the Program Selection Display.



GRPR076

77. The program must now be completed by specifying tooling and material handling, and by adjusting any other details generated by the automatic programming features of the graphic programming system. Touch the Create Program Touchbutton to bring up the Run/Programming screen.

78. Scroll through the program steps.

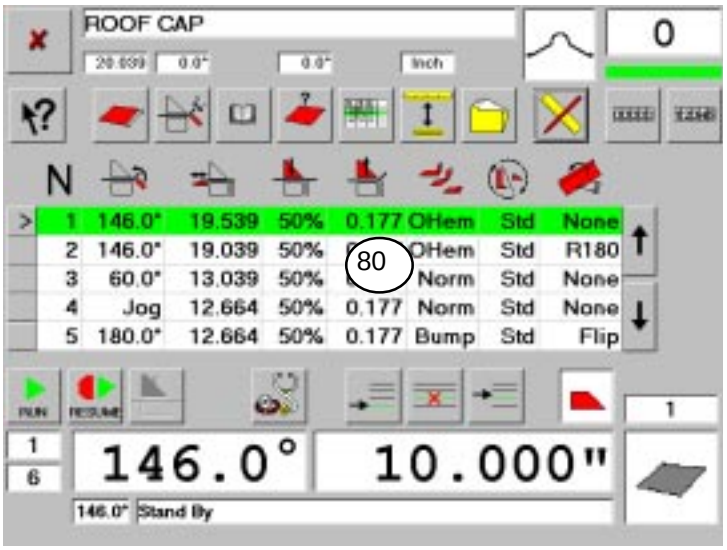


PRGSAM09

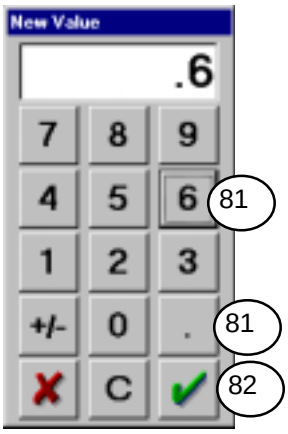
79. At each step, touch the box under the Tooling Symbol to bring up the Tooling Selection Pop-Up Display, and, if necessary, select the proper tooling for the operation.

TOOLSEL

80. The clamping jaws must open wider to accomodate the hem on the edge of the material. Touch the box in the open height column in Operation 1. This will highlight the operation, and will bring up the Numerical Keypad.



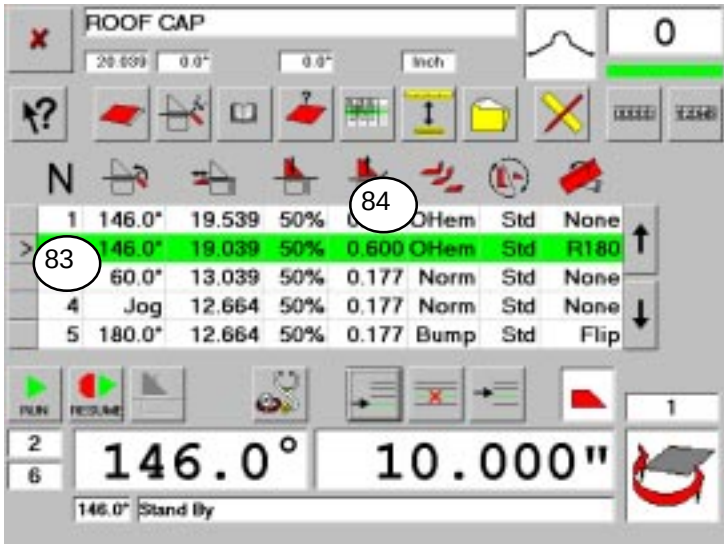
PRGSAM09



NUMPAD4

81. Using the Numerical keypad, enter the value **.6**.

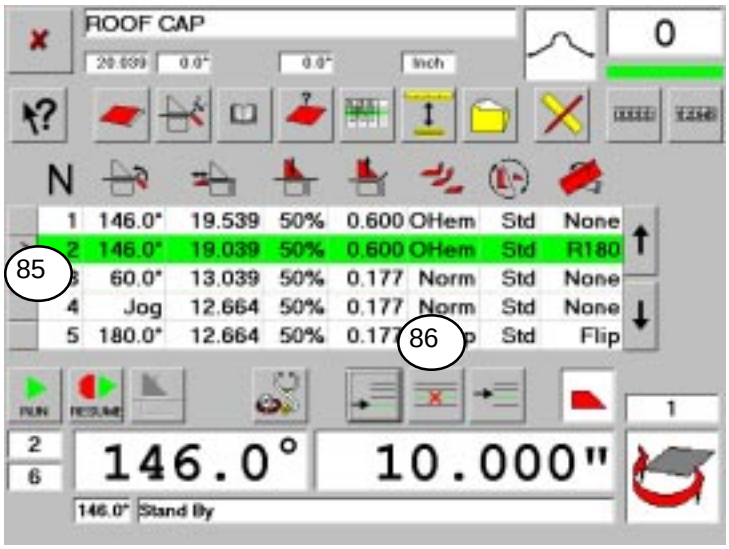
82.Transfer the value to the program data by touching the Enter Touchbutton.



PRGSAM07

83. The clamping jaws must also open wider to accomodate the hem on the opposite edge of the material. Touch the box in the open height column in Operation 2. This will highlight the operation, and will bring up the Numerical Keypad.

84. Using the Numerical keypad, enter the value **.6**. Transfer the value to the program data by touching the Enter Touchbutton on the Numerical keypad.



PRGSAM07

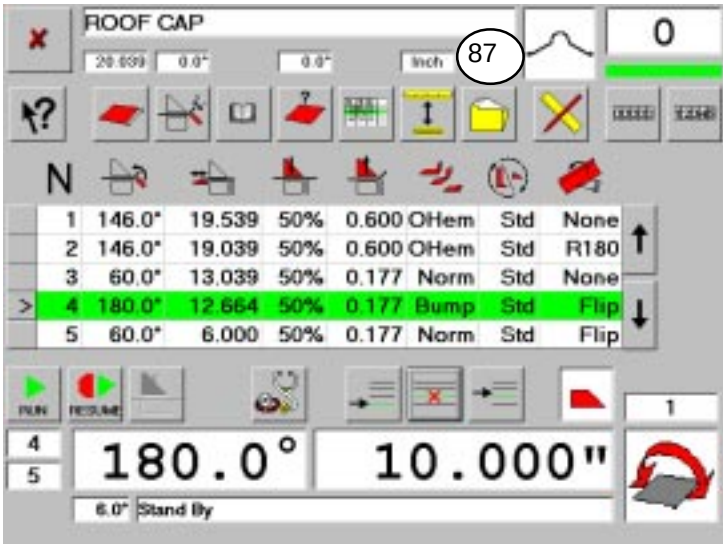
NOTE:

The jog operational line sets the backgauge but requires no bend. It must be femoved from the program.

85. Touch the line indicator for Operational Step 4.

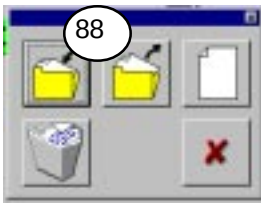
86.Touch the Delete Touchbutton to delete Operational Step 4.

87. The program is now ready for its final save. Touch the File Manager Touchbutton to bring up the File Manager Pop-Up Display



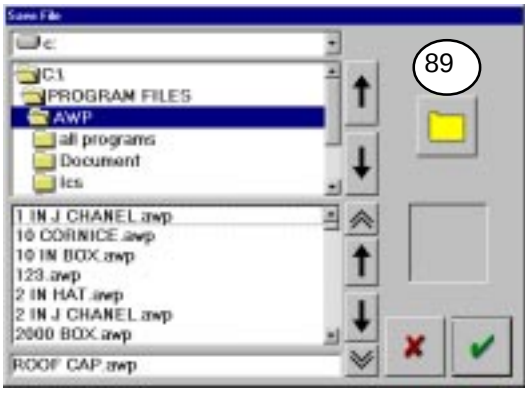
PRGSAM08

88. Touch the Save File Touchbutton. This will bring up the File Selection Display.

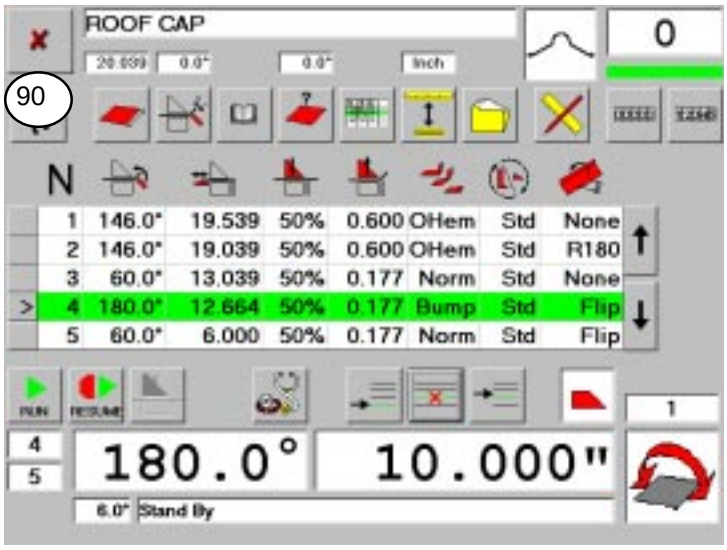


FILEMGR

89. Touch the Enter Touchbutton. This will add the **.awp** extension to the file name and save the file to the hard drive. The **.awp** extension indicates that the file is a finished program.

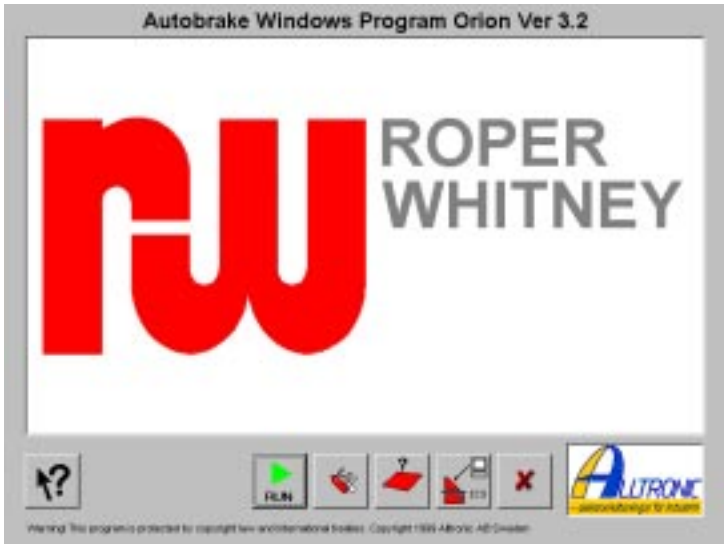


SAVFIL10



PRGSAM08

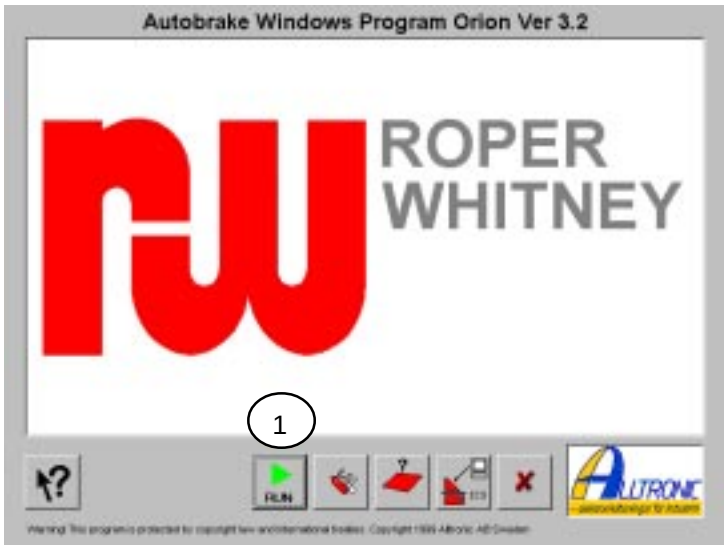
90. To return to the Main Screen, touch the Cancel Touchbutton.



MAINSCR

At this point, the systm is ready for additional programming, or for operation.

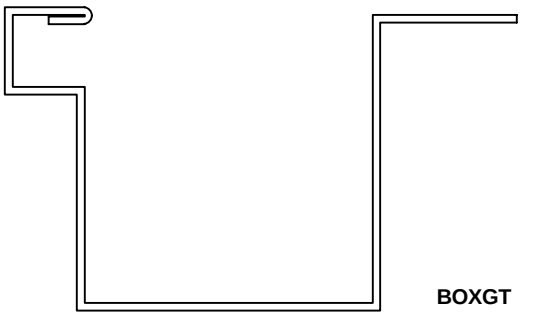
Intentionally blank.
Please continue.



MAINSCR

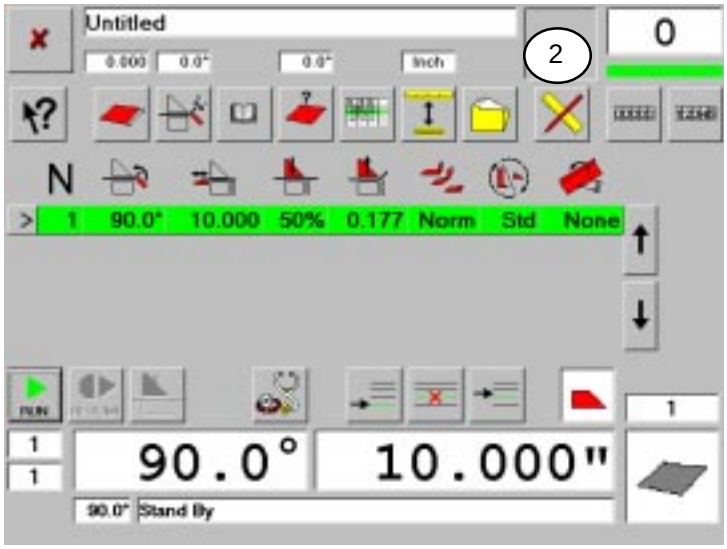
GRAPHIC PROGRAMMING EXAMPLE

4.000-INCH BOX GUTTER



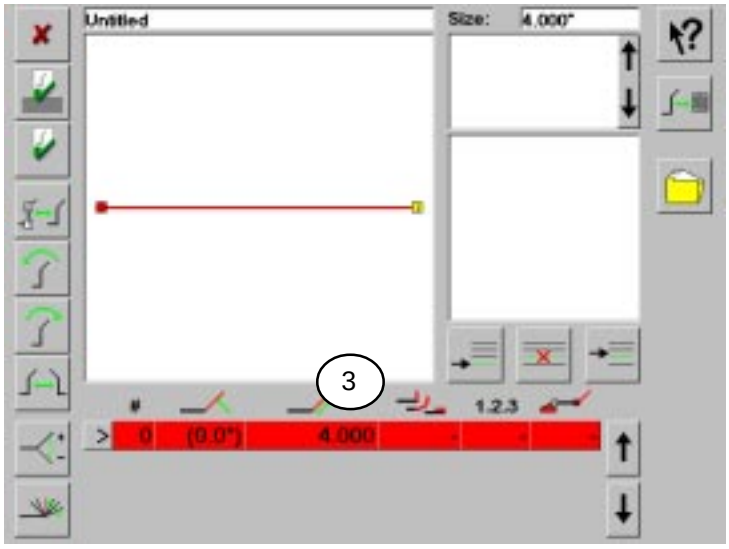
BOXGT

1. Touch the Run/Programming Touchbutton to bring up the Run/ Programming Screen.



RUNPROG

2. Touch the Graphic Programming Touchbutton to bring up the Graphic Programming Screen.



GRPR001

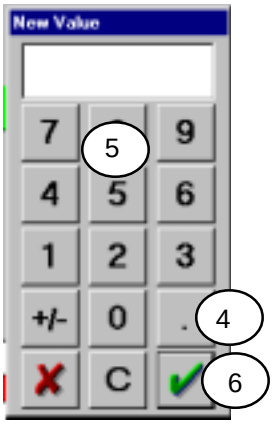
The default line length for the first line segment is not correct and must be modified.

3. Touch the value **4.000** to bring up the Numeric Keypad.

4. Touch the decimal point Touchbutton to enter a decimal point.

5. Touch the 5 Touchbutton to enter the desired line length (**.5**). Be sure the number appears in the box at the top of the display

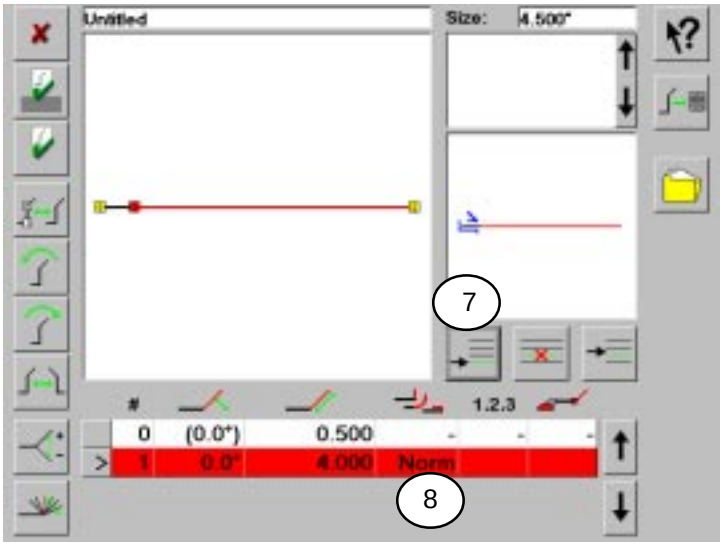
6. Touch the Enter Touchbutton to move the value **.5** to the segment length column of the Graphic Programming Screen.



NUMPAD

7. Touch the Add Operation Touchbutton to create a second program line. The part is to have a hem along one edge.

8. Touch the hem Column in the second program line to bring up the hem Data Pop-Up Display.



GRPR002

9. Touch the Closed Hem Touchbutton to activate the hem Data Displays.

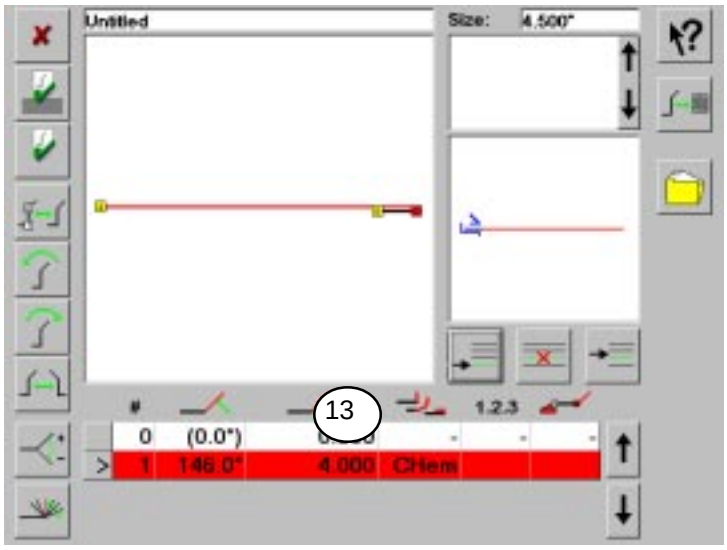
PRHEM01

10. Using the Numeric Keypad, Enter **100** in the display box marked **PR** (this changes the maximum pressure used to 100 per cent).

11. Enter **0.118** in the display box marked **Move** (this sets the backgauge position).

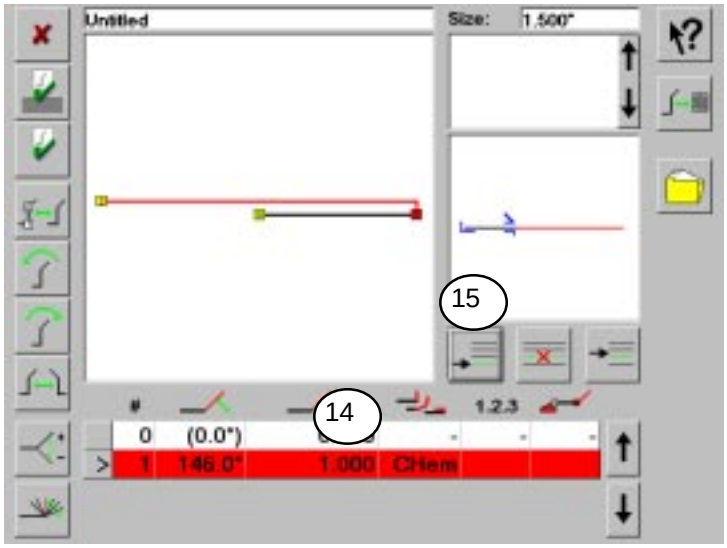
12. Touch the Enter Touchbutton to enter the hem data into the program.

PRHEM02



GRPR003

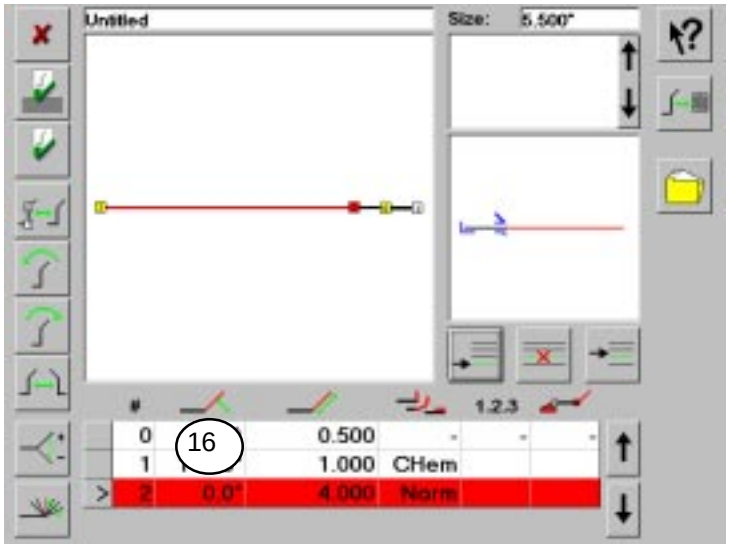
13. The line segment length must be changed. Touch the Line Length box in the hem operation line to bring up the Graphic Keypad.



GRPR004

14. Using the Graphic Keypad, enter **1.000** and transfer it to the Line Length Box in the Programming Screen.

15. Touch the Add Operation Touchbutton to add another operation to the Programming Screen. This will be the first bending operation after forming the hem.

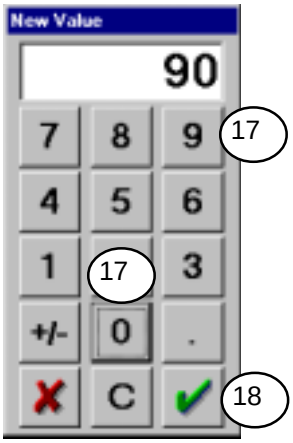


GRPR005

16. Touch the Bend Angle Box in the next operation line. This will bring up the Numeric Keypad again, this time to enter the bend angle.

17. Enter **90** using the Numeric Keypad.

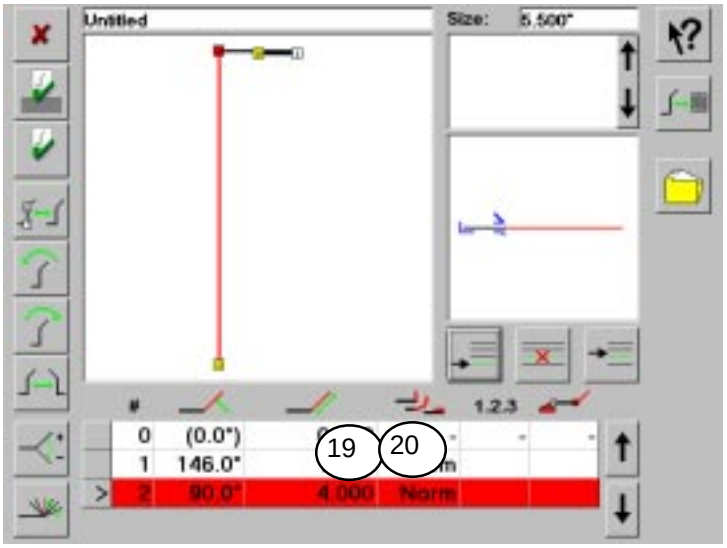
18. Transfer the value **90** to the Bend Angle Box in the Programming Screen by pressing the Enter Touchbutton.



NUMPAD2

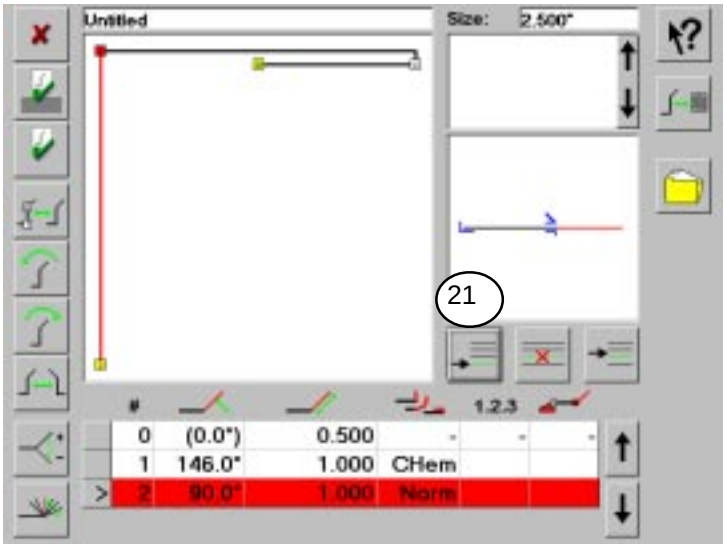
19. Touch the Line Length Box in the operation line to bring up the Graphic Keypad.

20. Enter **1.000** on the Graphic Keypad and transfer it to the Line Length Box by touching the Enter Touchpad.

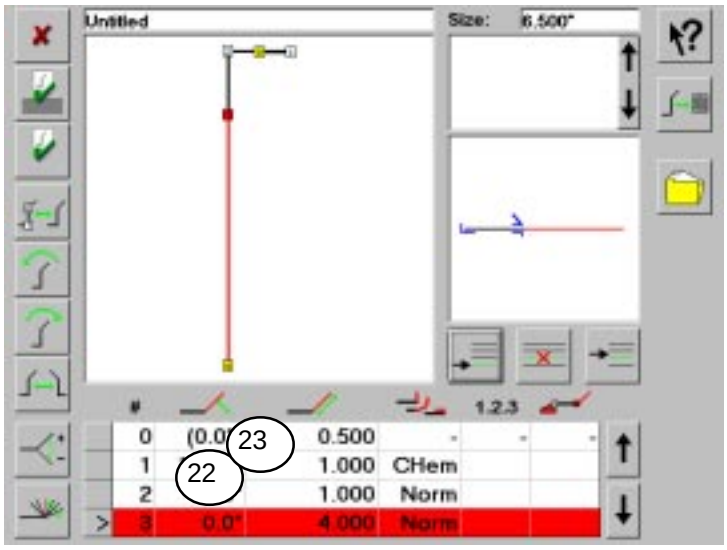


GRPR006

21. Touch the Add Operation Touchbutton to add another operation to the Programming Screen.



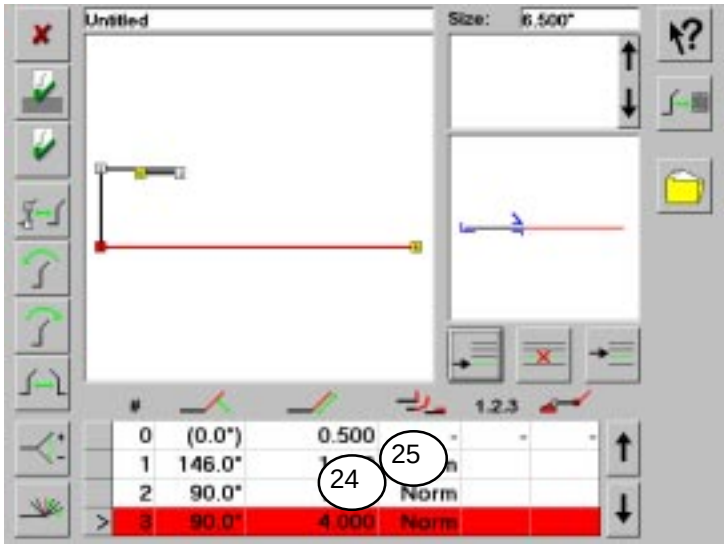
GRPR007



GRPR008

22. Touch the Bend Angle Box in the next operation line.

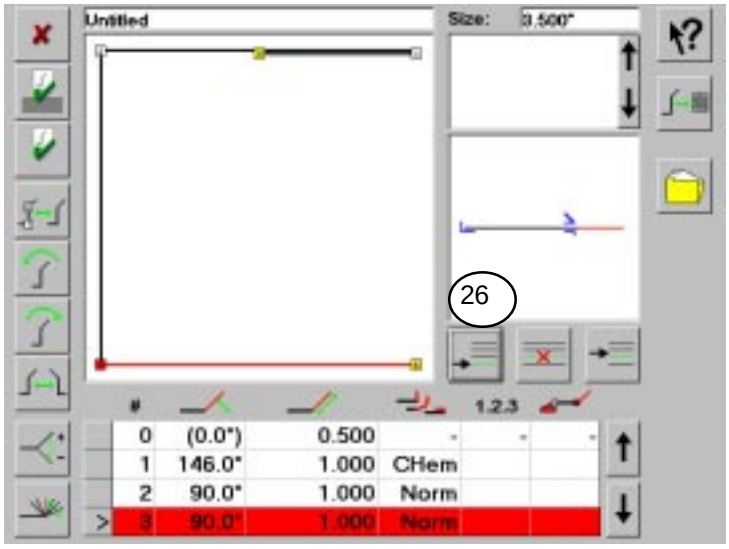
23. Using the Graphic Keypad, enter **90** in the Bend Angle Box .



GRPR009

24. Touch the Line Length Box in the next operation line.

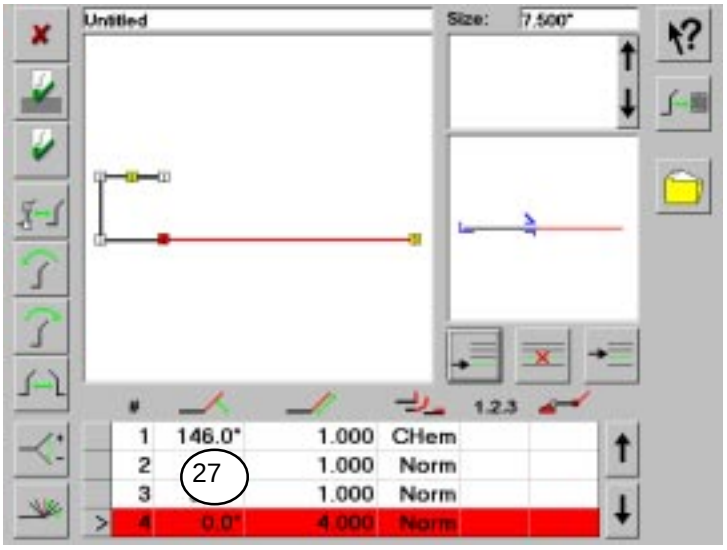
25. Using the Graphic Keypad, enter **1.000** in the Line Length Box .



GRPR010

26. Touch the Add Operation Touchbutton to add another operation to the Programming Screen. Note that the program line identified by **"0"** disappears from the screen.

27. Touch the Bend Angle Box in the next operation line. This will bring up the Numeric Keypad to enter the bend angle.

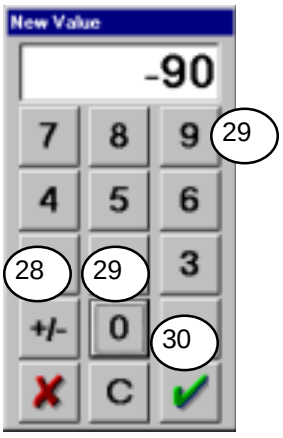


GRPR011

28. Touch the **+/-** Touchbutton to indicate that the bend has a negative (counterclockwise) value.

29. Enter **90** using the Numeric Keypad.

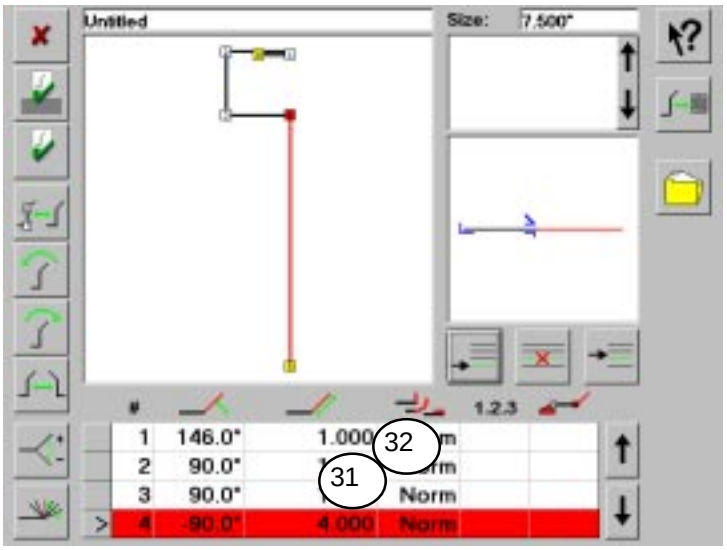
30. Transfer the value -**90** to the Bend Angle Box in the Programming Screen by pressing the Enter Touchbutton.



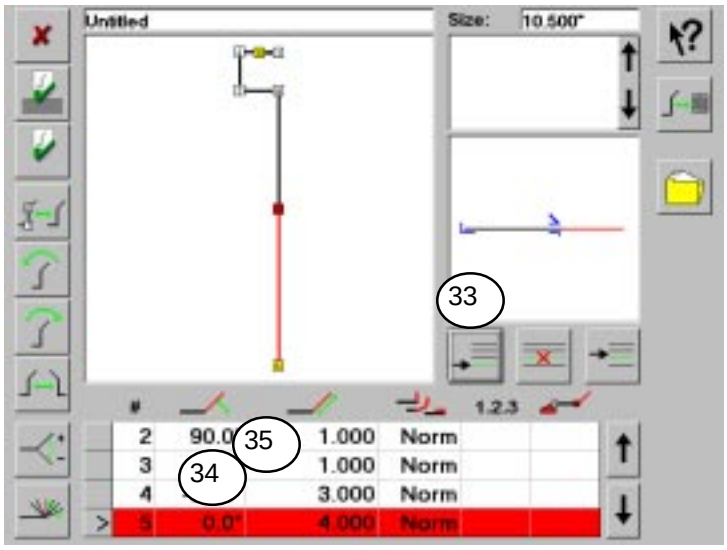
NUMPAD3

31. Touch the Line Length Box in the operation line to bring up the Graphic Keypad.

32. Enter **3.000** on the Graphic Keypad and transfer it to the Line Length Box by touching the Enter Touchpad.



GRPR013

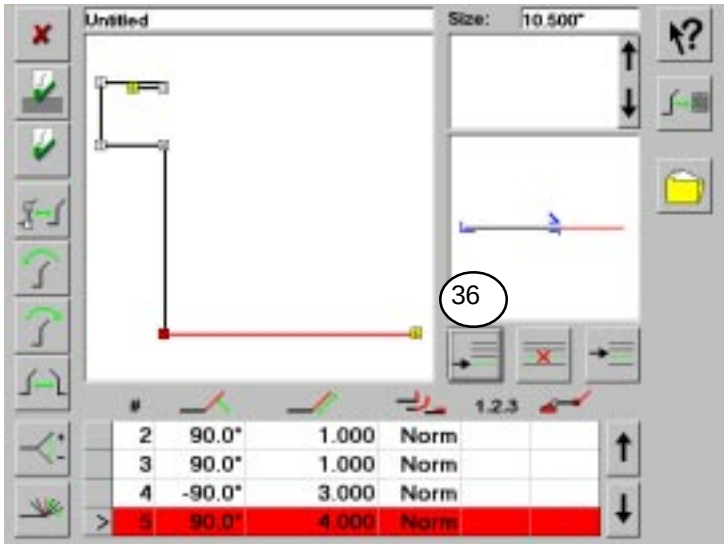


GRPR014

33. Touch the Add Operation Touchbutton to add another operation to the Programming Screen.

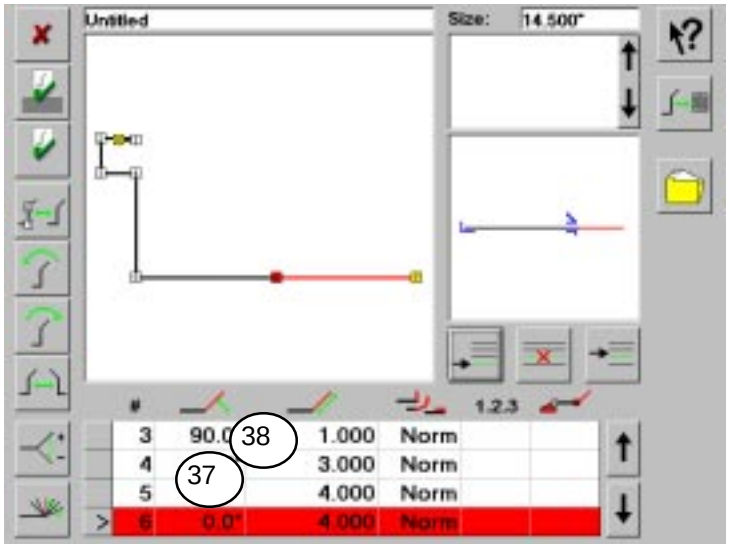
34. Touch the Bend Angle Box in the next operation line. This will bring up the Numeric Keypad to enter the bend angle.

35. Enter **90** using the Numeric Keypad. Transfer the value **90** to the Bend Angle Box in the Programming Screen by pressing the Enter Touchbutton.



GRPR015

36. The default value of 4.000 is acceptable as a line length. You may proceed to the next opertion. Touch the Add Operation Touchbutton to add another operation to the Programming Screen.



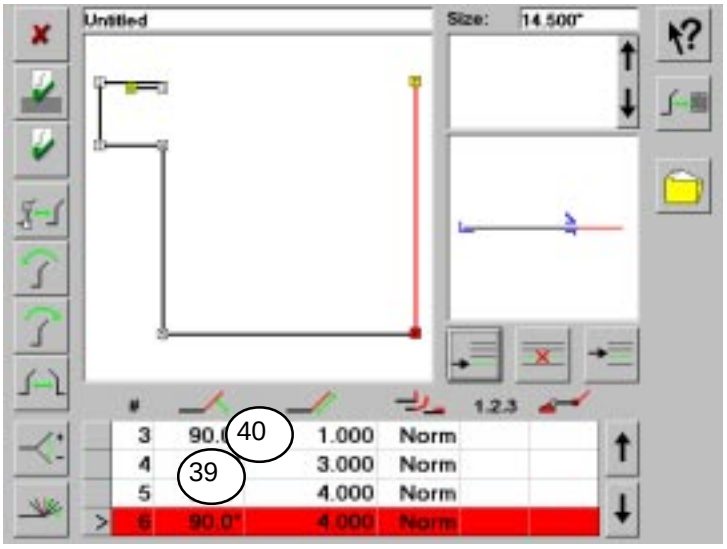
GRPR016

37. Touch the Bend Angle Box in the next operation line. This will bring up the Numeric Keypad to enter the bend angle.

38. Enter **90** using the Numeric Keypad. Transfer the value **90** to the Bend Angle Box in the Programming Screen by pressing the Enter Touchbutton.

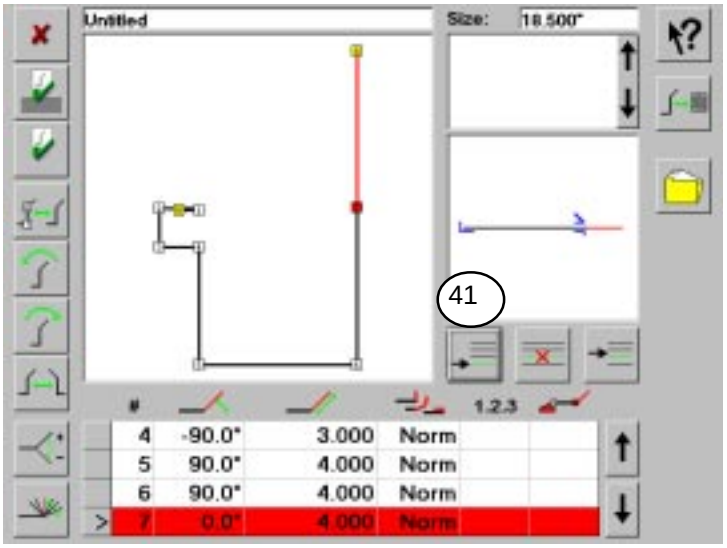
39. Touch the Bend Angle Box in the next operation line. This will bring up the Numeric Keypad to enter the bend angle.

40. Enter **90** using the Numeric Keypad. Transfer the value **90** to the Bend Angle Box in the Programming Screen by pressing the Enter Touchbutton.



GRPR017

41. The default value of 4.000 is acceptable as a line length. You may proceed to the next opertion. Touch the Add Operation Touchbutton to add another operation to the Programming Screen.



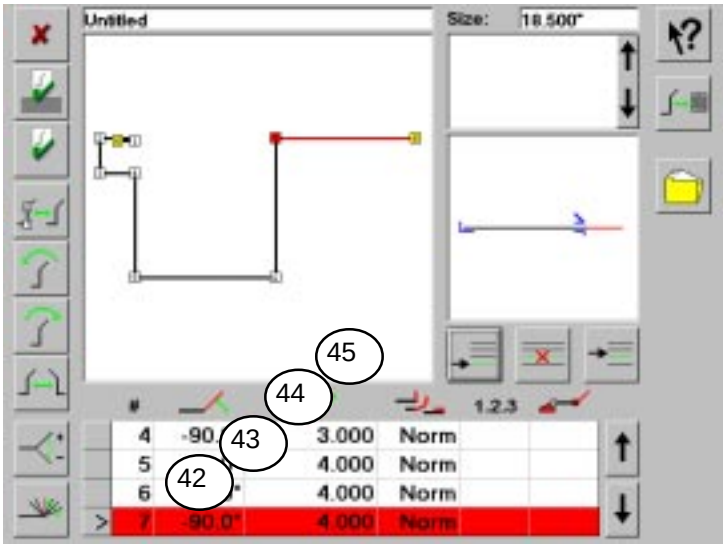
GRPR018

42. Touch the Bend Angle Box in the next operation line. This will bring up the Numeric Keypad to enter the bend angle.

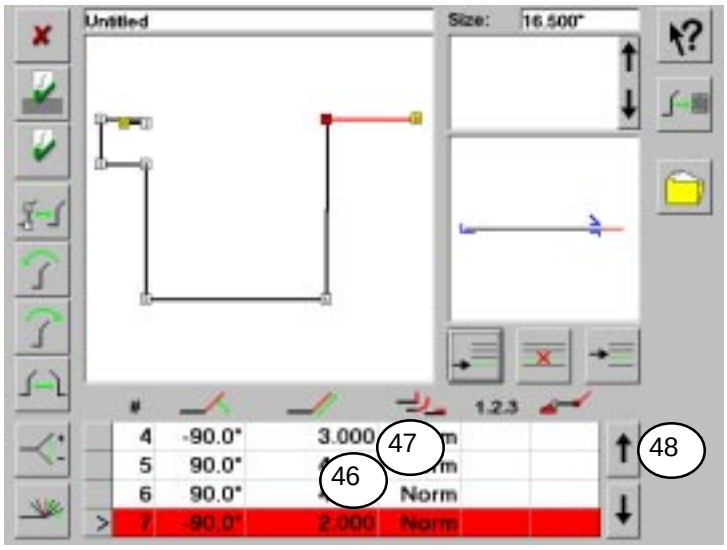
43. Touch the **+/-** Touchbutton to indicate that the bend has a negative (counterclockwise) value.

44. Enter **90** using the Numeric Keypad.

45. Transfer the value -**90** to the Bend Angle Box in the Programming Screen by pressing the Enter Touchbutton.



GRPR019

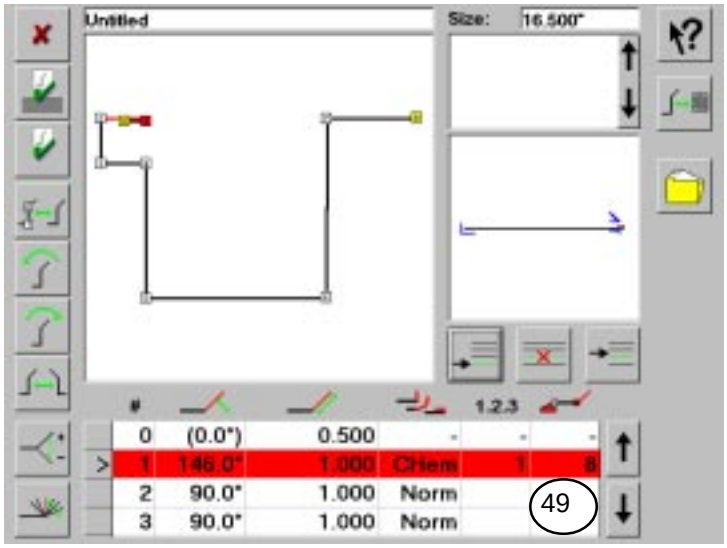


GRPR020

46. Touch the Line Length Box in the operation line to bring up the Graphic Keypad.

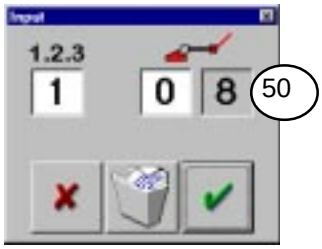
47. Enter **2.000** on the Graphic Keypad and transfer it to the Line Length Box by touching the Enter Touchpad.

48. Scroll upward through the operation lines to bring operation line 1 into view.

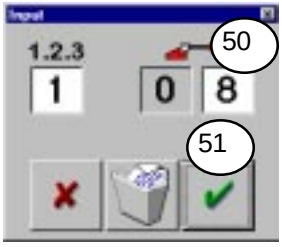


GRPR021

49. Touch the box in the Operation 1 line in the bend order column. The line representing Operation 1 will highlight in red, and the the Part Location Pop-Up Display will appear.



ORDER01



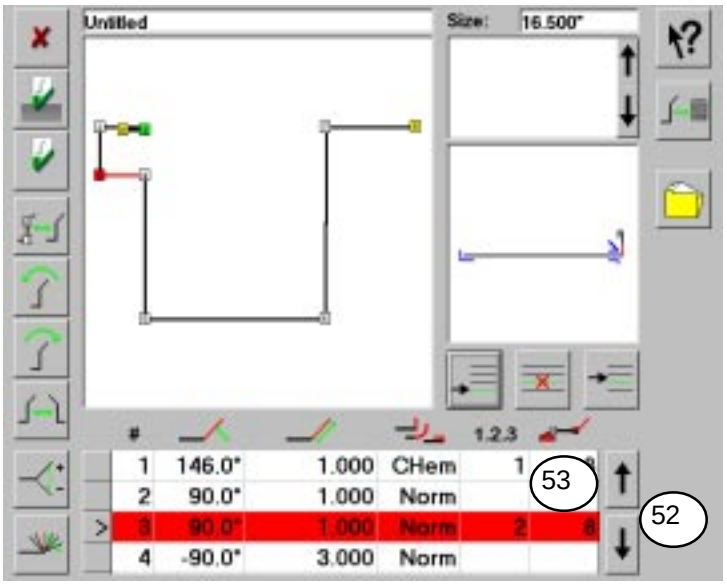
ORDER02

50. The Part Location Pop-Up Display shows that it will set the location for the part (against the back gauge) in Operation 1. It gives alternative location points for the operation of O or 8. Touch 8 to highlight it.

51. Accept that location by touching the Enter Touchbutton.

52. Scroll downward through the operation lines to bring operation line 3 into view.

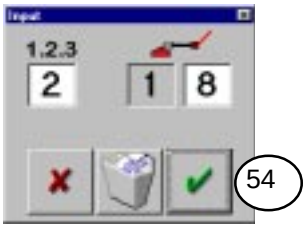
> **NOTE:**
>
> The part profile was generated as a progression, moving from one segment to the next. This doesn't necessarily represent the bend order. The bend order is generated by identifying which line is the first operation, which is the second, etc.



GRPR022

53. Touch the box in the Operation 3 line under the part location symbol. The line representing Operation 3 will highlight in red, and the the Part Location Pop-Up Display will appear.

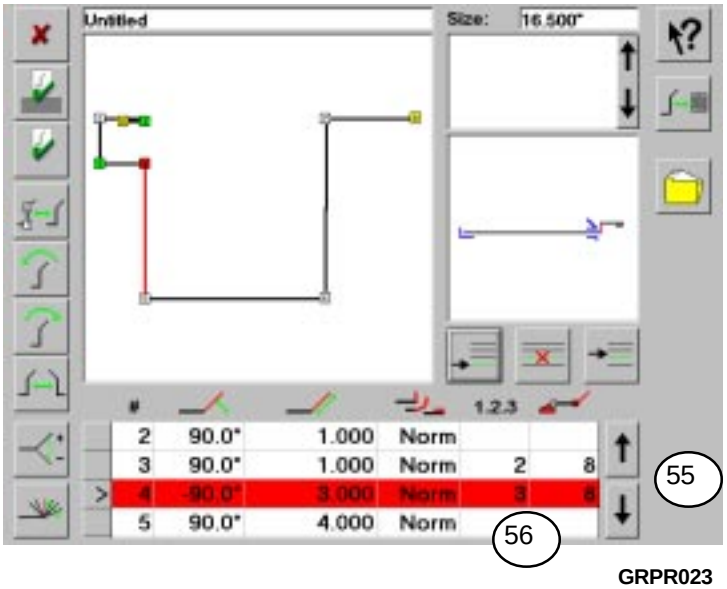
54. Location 8 is a suitable location point. Accept it by touching the Enter Touchbutton.



ORDER03

55. Scroll downward through the operation lines to bring Operation 3 into view.

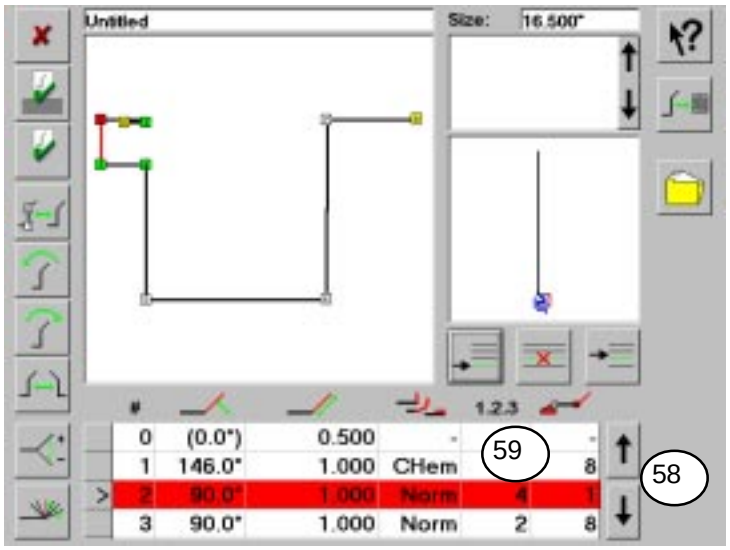
56. Touch the box in the Operation 3 line under the part location symbol. The line representing Operation 4 will highlight in red, and the the Part Location Pop-Up Display will appear.



GRPR023

57. Location 8 is a suitable location point. Accept it by touching the Enter Touchbutton.

ORDER04

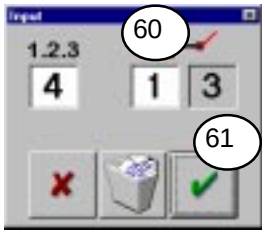


GRPR024

58. Scroll upward through the operation lines to bring Operation line 2 into view. (This will become bend 4.)

59. Touch the box in the Operation 3 line under the part location symbol. The line representing Operation 2 will highlight in red, and the the Part Location Pop-Up Display will appear.

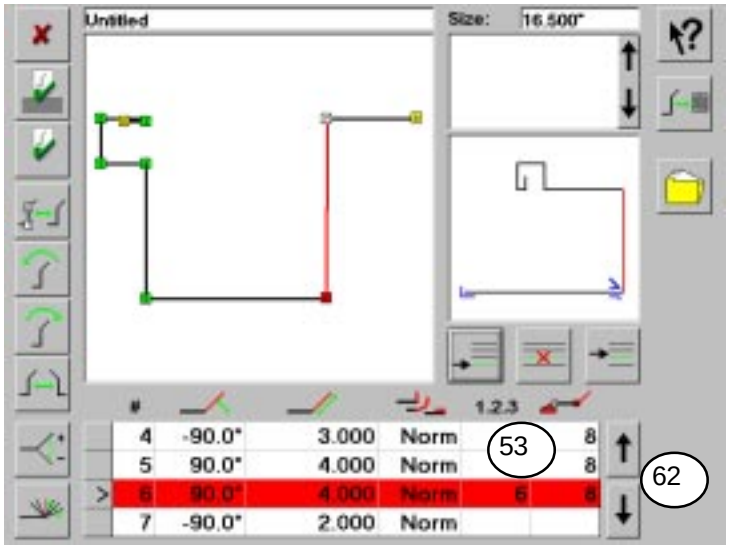
ORDER05



ORDER06

60. The Part Location Pop-Up Display shows that it will set the location for the part (against the back gauge) in Operation line 2. It gives alternative location points for the operation of 1 or 3. Touch 1 to highlight it.

61. Accept that location by touching the Enter Touchbutton.



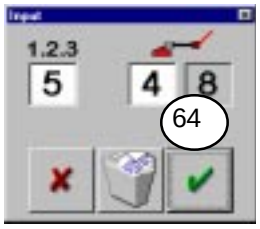
GRPR025

62. Scroll downward through the operation lines to bring Operation line 5 into view.

NOTE:

Even though the operation sequence will not change for the last three operations, each must be checked to be sure that the location points are correct.

63. Touch the box in the Operation 5 line under the part location symbol. The line representing Operation 5 will highlight in red, and the the Part Location Pop-Up Display will appear.



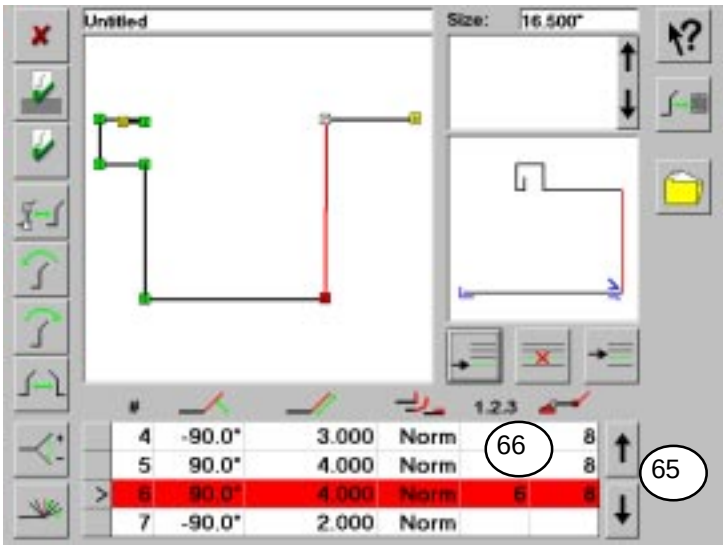
ORDER07

ORDER20

64. Location **4** is not a suitable location point (against the back gauge). Touch 9 **8** to change the location. Accept it by touching the Enter Touchbutton.

65. Scroll downward through the operation lines to bring Operation 6 into view.

66. Touch the box in the Operation 6 line under the part location symbol. The line representing Operation 6 will highlight in red, and the the Part Location Pop-Up Display will appear.



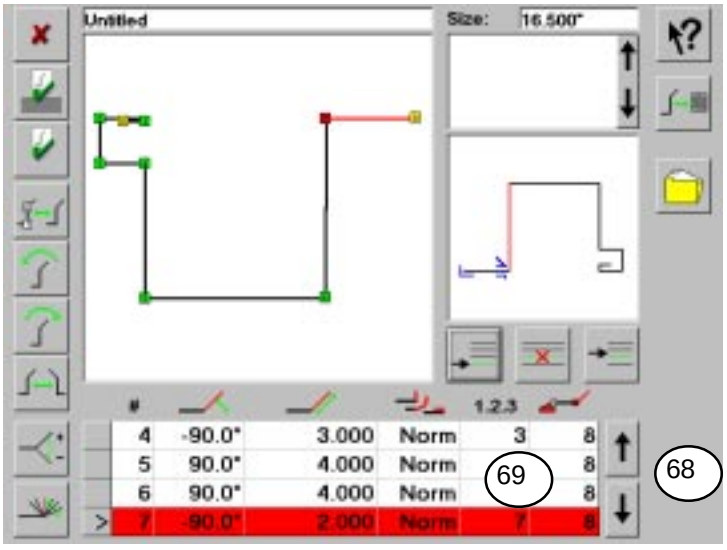
GRPR028

67. Location 8 is a suitable location point (against the back gauge). Accept it by touching the Enter Touchbutton.

ORDER08

68. Scroll downward through the operation lines to bring Operation 7 into view.

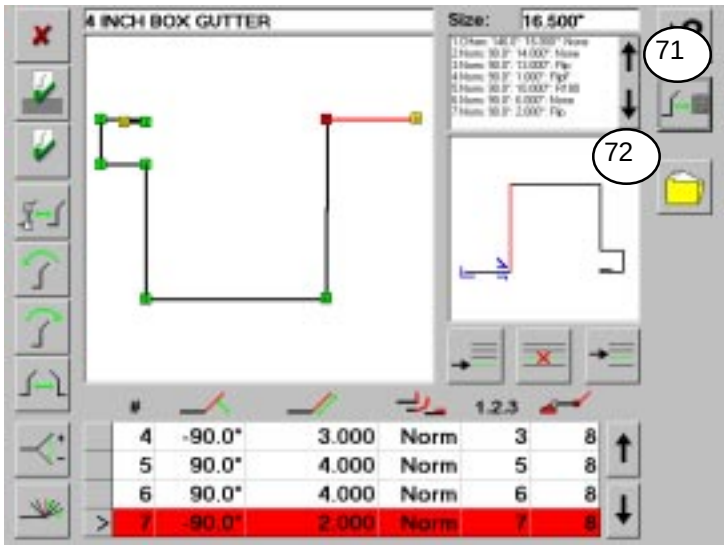
69. Touch the box in the Operation 7 line under the part location symbol. The line representing Operation 7 will highlight in red, and the the Part Location Pop-Up Display will appear.



GRPR027

70. Location 8 is a suitable location point (against the back gauge). Accept it by touching the Enter Touchbutton.

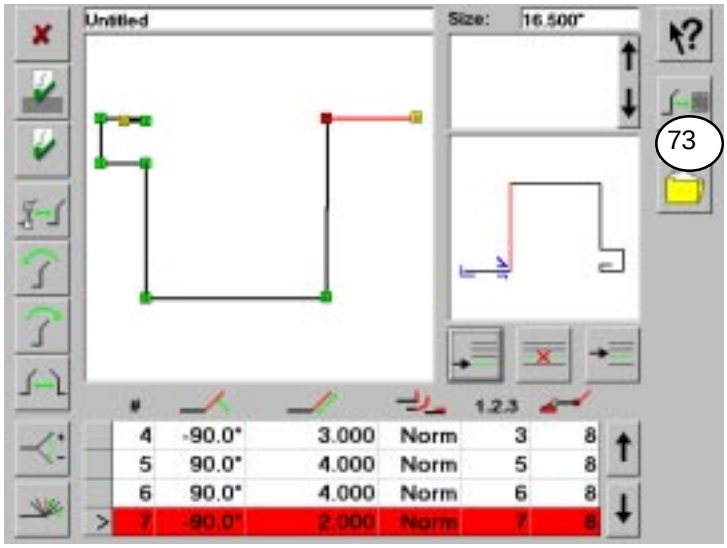
ORDER09



CKPRG

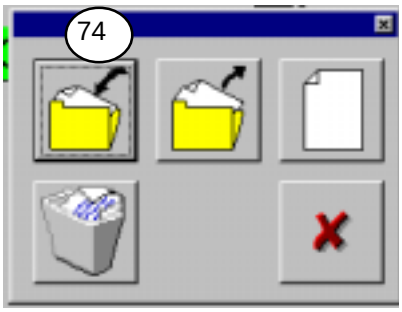
71. Prior to saving, preview the operation order. Touch the Preview Touchbutton. The program steps will appear in order in the program Preview Display.

72. Using the scroll Arrows, Scroll through the program steps to see that they are arranged as desired.



GRPR027

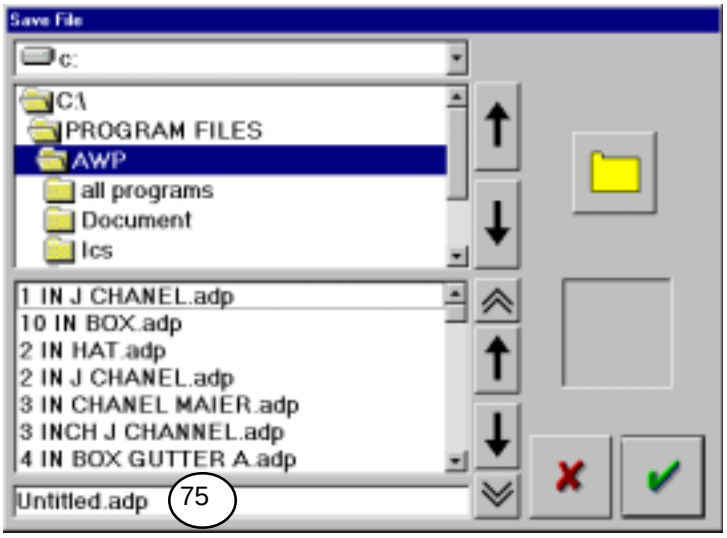
73. The drawing portion of the graphic programming file is now ready to be saved. Touch the File Manager touchbutton in the Graphic Programming Screen. This will bring up the File Manager Pop-Up Display.



FILEMGR

74. Touch the Save File Touchbutton in the File Manager Pop-Up Display. This will bring up the Program Selection Display.

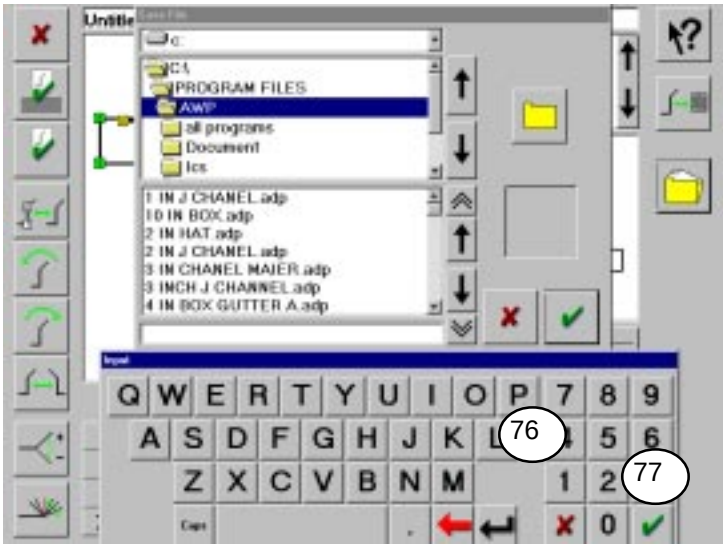
75. Touch the Program Title Display, which reads "**Untitled.adp**". This will bring up the Alpha-Numeric Keypad.



SAVFIL01

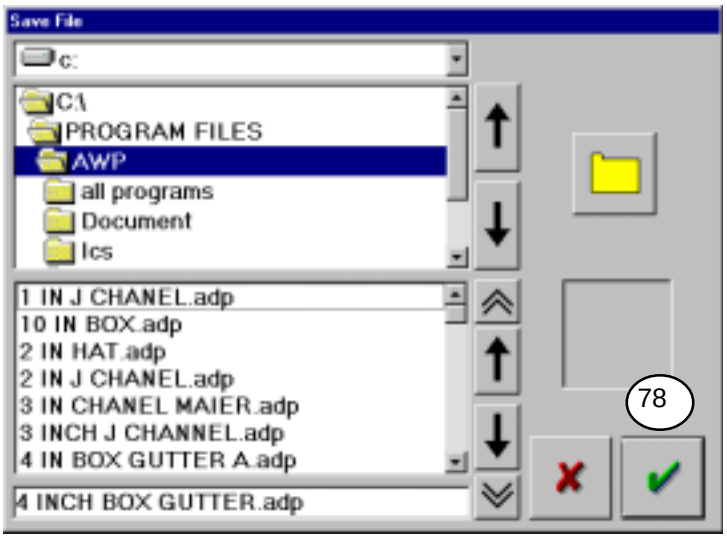
76. Enter a drawing name using the Alpha-Numeric Touchbuttons. As the characters are entered, they will appear in the Program Title Display.

77. When the name has been entered, touch the Enter Touchbutton. The Alpha-Numeric keypad will disappear, and the extension **.adp** will appear behind the name in the Program Title Display. This extension identifies the file as a drawing file.

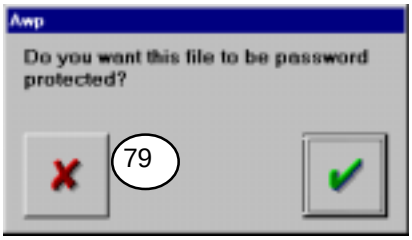


SAVFIL02

78. Touch the Enter Touchbutton in the Program Selection Display. At this point you **may** be asked if you wish to protect the file with a password.

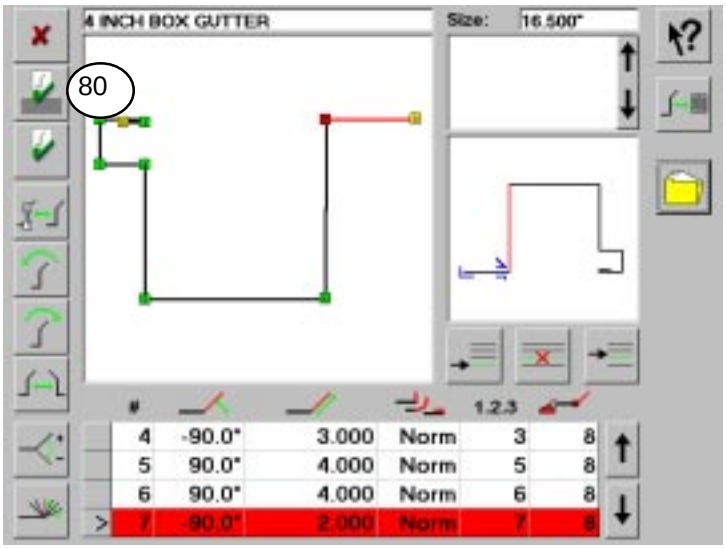


SAVFIL03



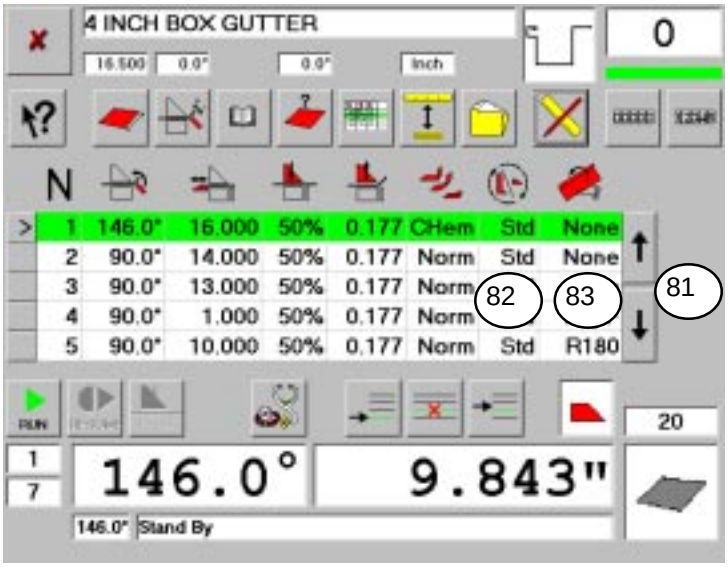
PASPROT1

79. Normally files are not password protected. Touch the Cancel Touchbutton to proceed with programming without assigning a password.



GRPR028

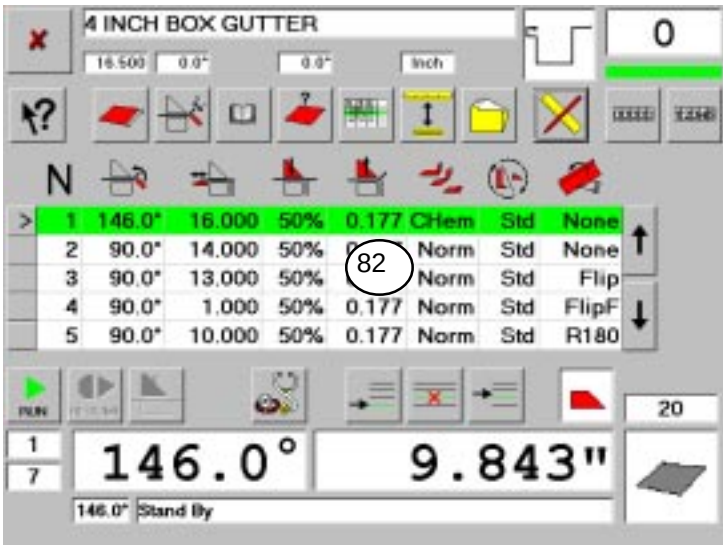
80. The program must now be completed by adjusting any other details generated by the automatic programming features of the graphic programming system. Touch the Create Program Touchbutton to bring up the Run/Programming screen.



PRGSAM01

81. Scroll through the program steps.

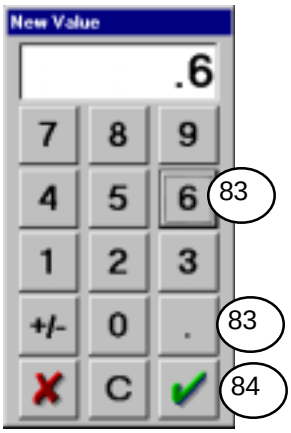
82. The clamping jaws must open wider to accomodate the hem on the edge of the material. Touch the box in the open height column in Operation 1. This will highlight the operation, and will bring up the Numerical Keypad.



PRGSAM01

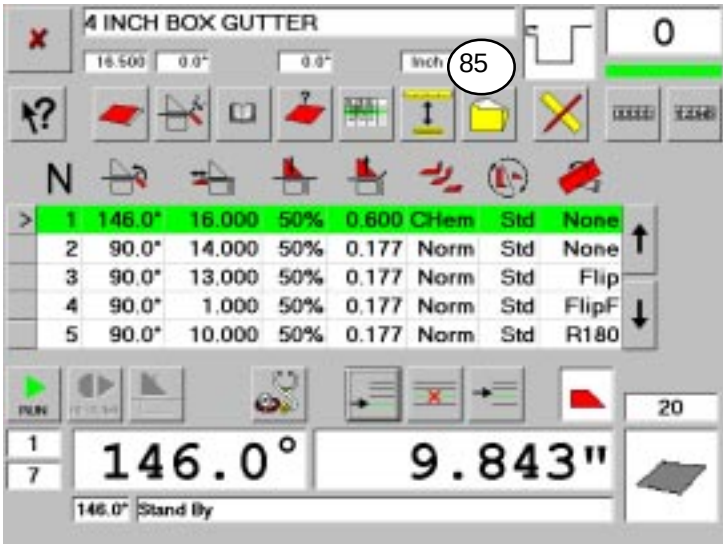
83. Using the Numerical keypad, enter the value **.6**.

84.Transfer the value to the program data by touching the Enter Touchbutton.

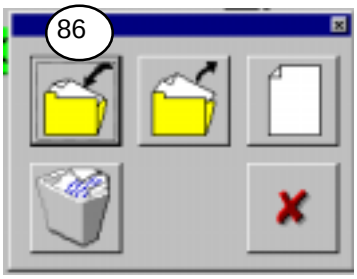


NUMPAD4

85. The program is now ready for its final save. Touch the File Manager Touchbutton to bring up the File Manager Pop-Up Display

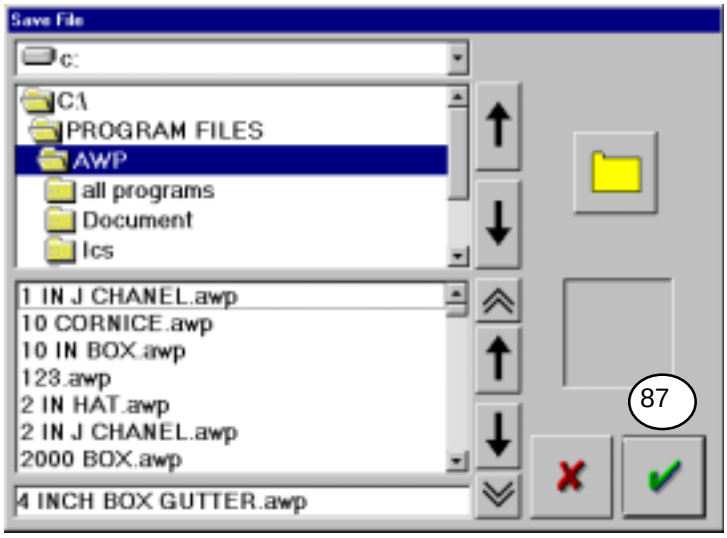


PRGSAM02



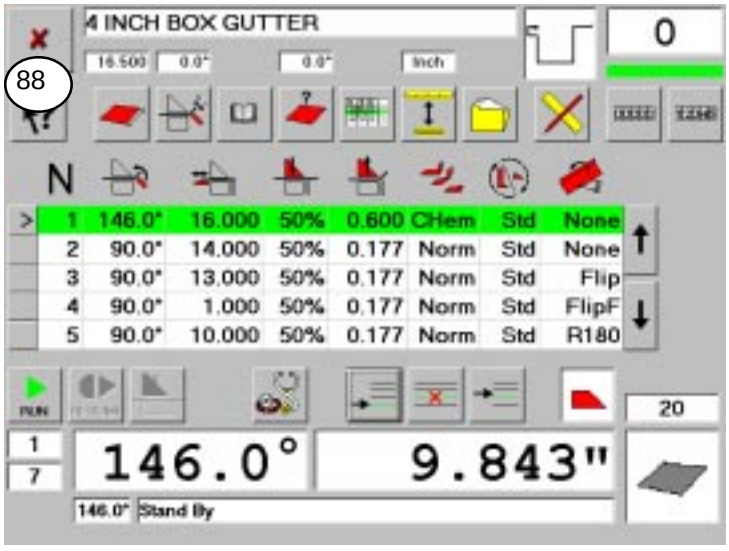
FILEMGR

86. Touch the Save File Touchbutton. This will bring up the File Selection Display.



SAVFIL04

87. Touch the Enter Touchbutton. This will add the **.awp** extension to the file name and save the file to the hard drive. The **.awp** extension indicates that the file is a finished program.

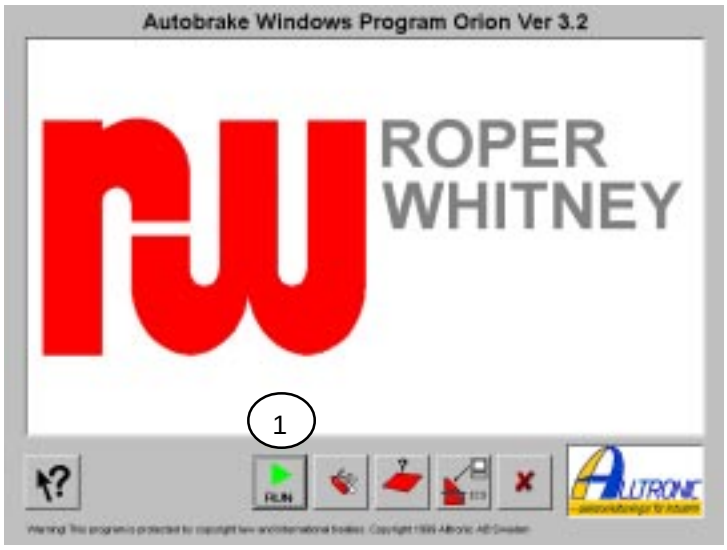


PRGSAM02

88. To return to the Main Screen, touch the Cancel Touchbutton.

At this point, the systm is ready for additional programming, or for operation.

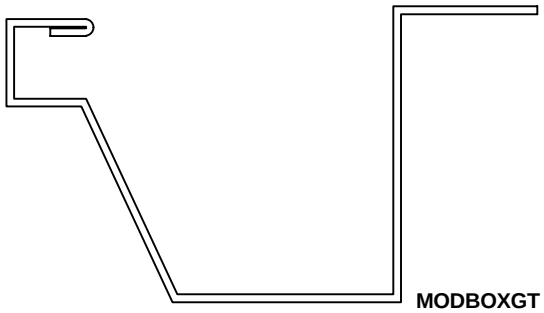
MAINSCR



MAINSCR

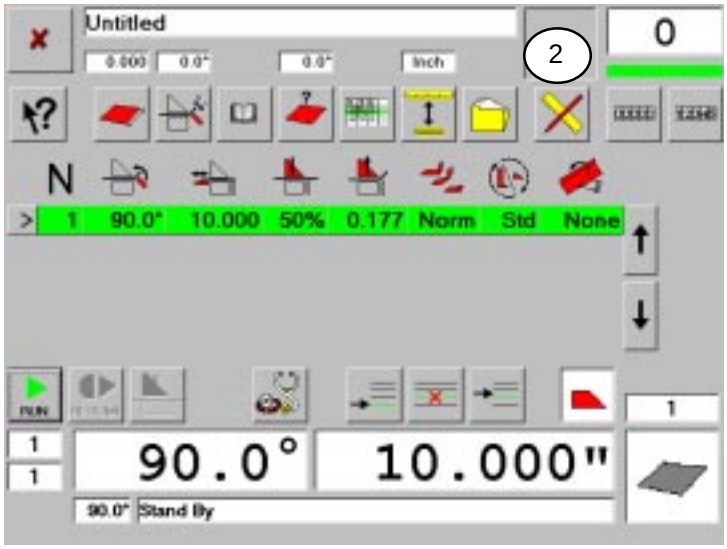
GRAPHIC PROGRAMMING EXAMPLE

MODIFYING A GRAPHIC PROGRAM



MODBOXGT

1. Touch the Run/Programming Touchbutton to bring up the Run/ Programming Screen.



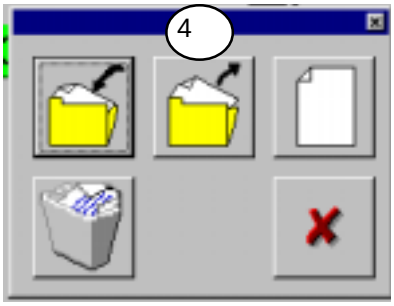
RUNPROG

2. Touch the Graphic Programming Touchbutton to bring up the Graphic Programming Screen..

GRPR001

3. Touch the File Management Touchbutton to bring up the File Management Pop0Up Display.

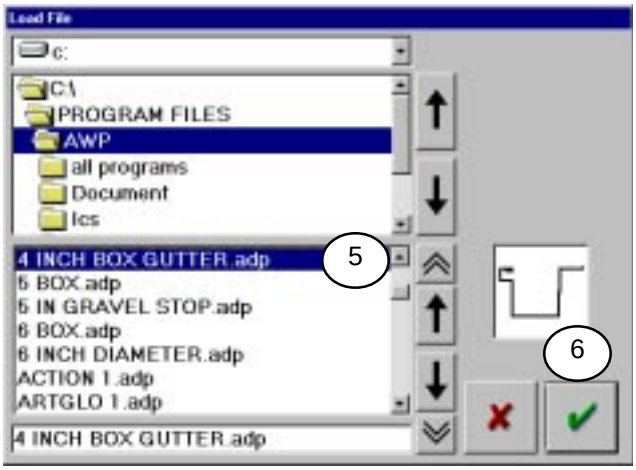
4. Touch the Open File Touchbutton to bring up the Program Selection Display.



FILEMGR

5. From the list of drawing files select **4 INCH BOX GUTTER.adp**.

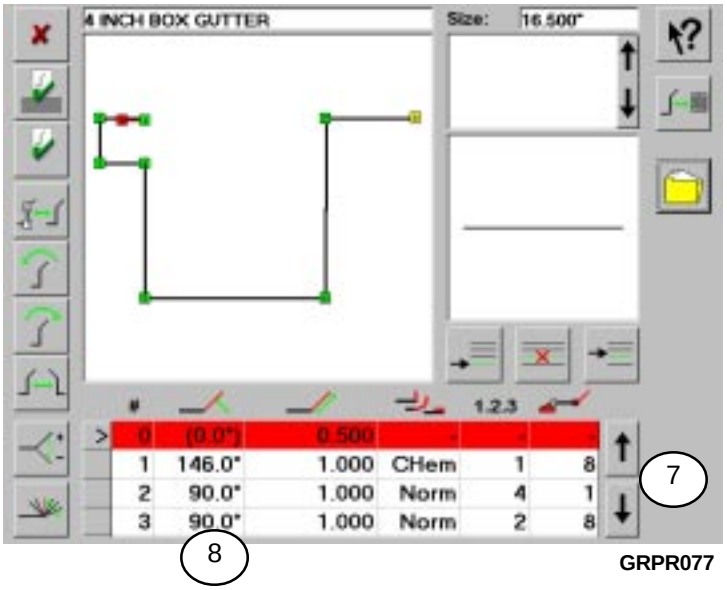
6. Touch the Enter Touchbutton to bring up a graphic programming screen containing the drawing file selected.



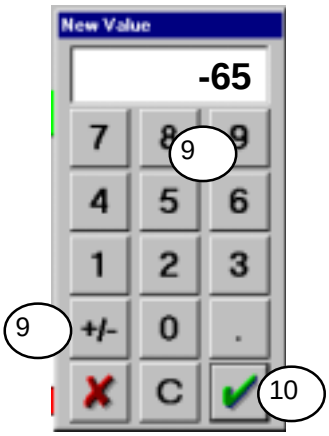
SAVFIL11

7. Scroll down the program lines to expose Operational Line 4.

8. Touch the Bend Angle Box in Line 4 to bring up the Numeric Keypad.



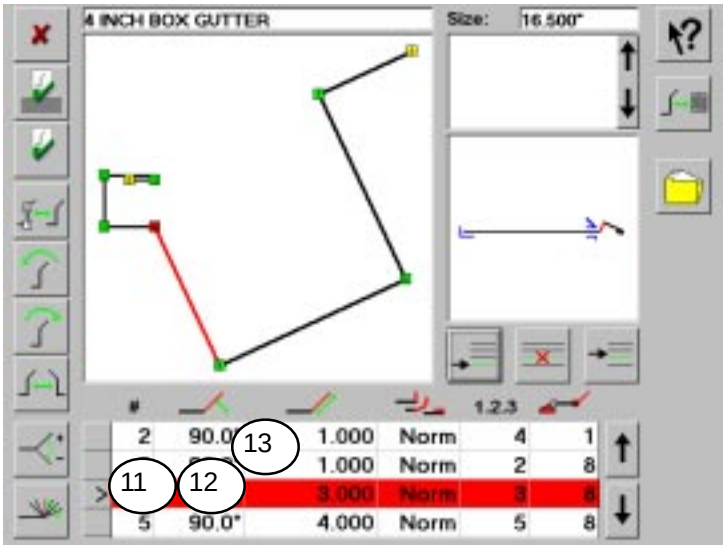
GRPR077



NUMPAD

9. Enter **-65** using the Numeric Keypad.

10. Transfer the value **-65** to the Bend Angle Box in Operational Line 4 of the Programming Screen by pressing the Enter Touchbutton.

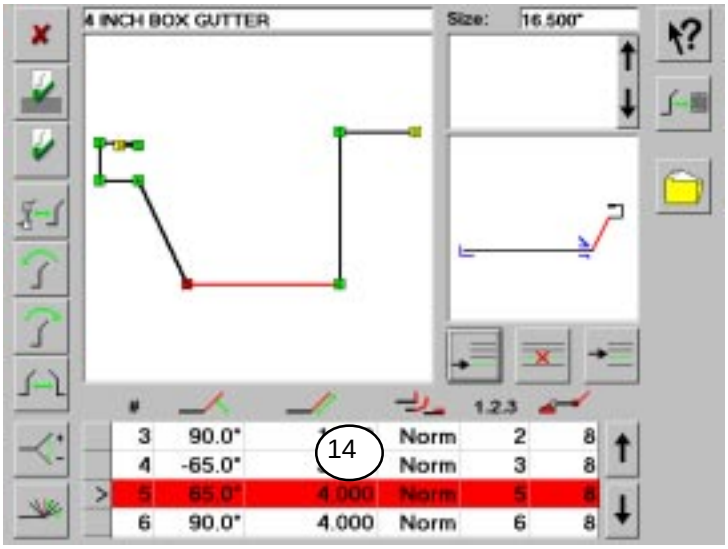


GRPR078

11. Touch the Operation Number box for Line 5.

12. Touch the Bend Angle Box in Line 5 to bring up the Numeric Keypad.

13. Using the Numeric Keypad, enter the bend angle value **65** in Operational Line 5 of the Programming Screen



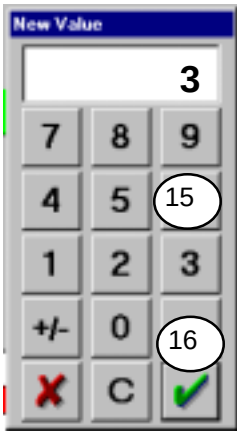
GRPR079

The length of the line segment defined by Operation line 5 must be modified.

14. Touch the value **4.000** to bring up the Numeric Keypad.

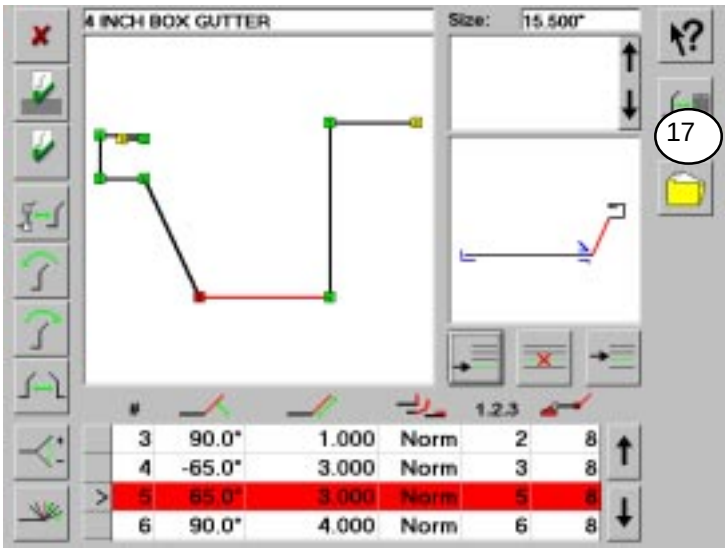
15. Touch the 3 Touchbutton to entered the desired line length (**3**). Be sure the number appears in the box at the top of the display

16. Touch the Enter Touchbutton to move the value **3** to the segment length column of the Graphic Programming Screen.



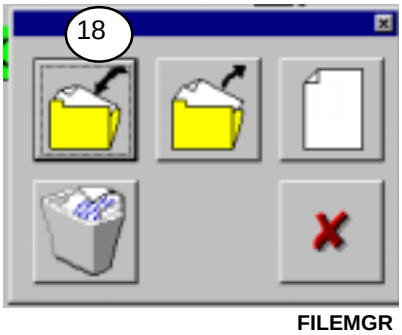
NUMPAD

17. The modified drawing of the graphic program file is now ready to be saved. Touch the File Manager touchbutton in the Graphic Programming Screen. This will bring up the File Manager Pop-Up Display.

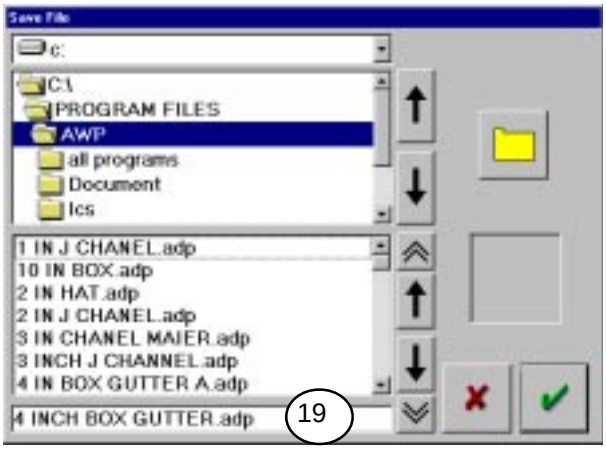


GRPR080

18. Touch the Save File Touchbutton in the File Manager Pop-Up Display. This will bring up the Program Selection Display.

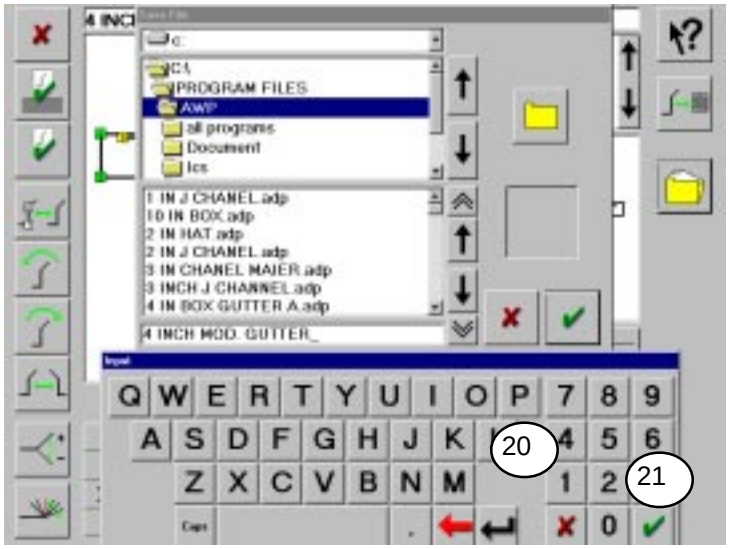


FILEMGR



SAVFIL02

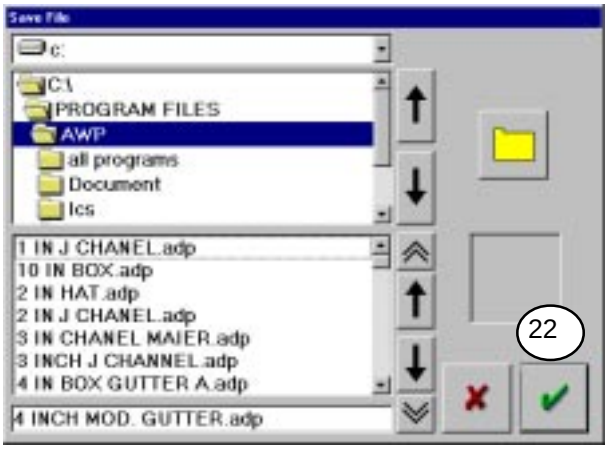
19. Touch the Program Title Display, which reads "**4 INCH BOX GUTTER.adp**". This will bring up the Alpha-Numeric Keypad.



SAVFIL12

20. Enter the new drawing name **"4 INCH MOD GUTTER"** using the Alpha-Numeric Touchbuttons. As the characters are entered, the old title will disappear and the new one will appear in the Program Title Display.

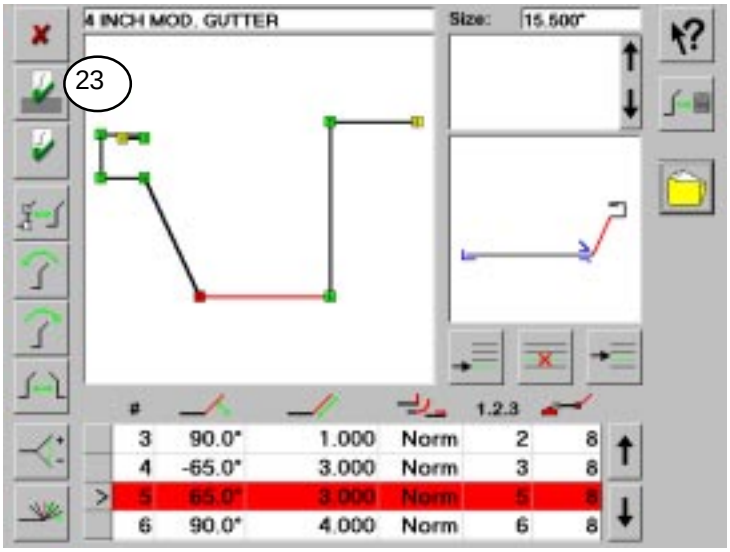
21. When the name has been entered, touch the Enter Touchbutton. The Alpha-Numeric keypad will disappear, and the extension **.adp** will appear behind the name in the Program Title Display. This extension identifies the file as a drawing file.



SAVFIL13

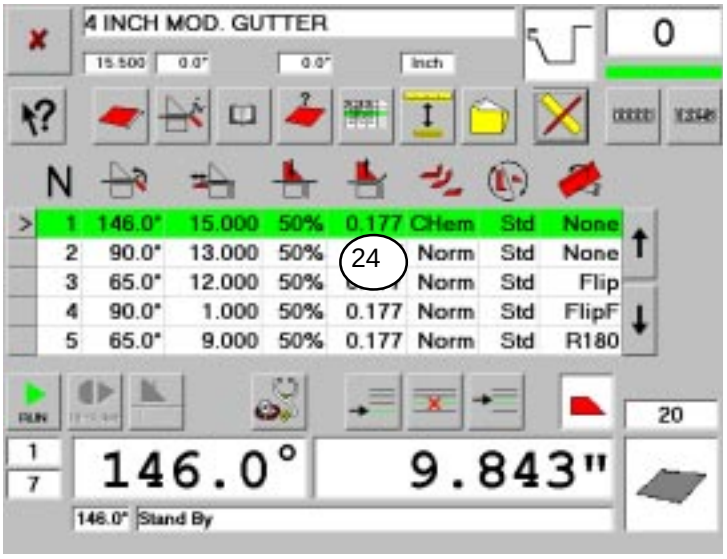
22. Touch the Enter Touchbutton in the Program Selection Display.

23. The program must now be completed by by adjusting any program details in the original completed program. Touch the Create Program Touchbutton to bring up the Run/Programming screen.



GRPR081

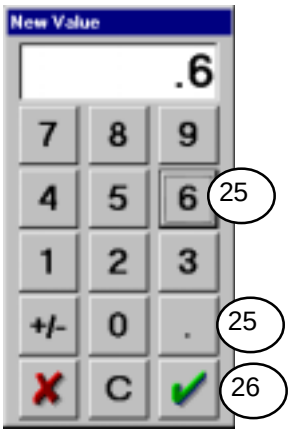
24. The clamping jaws must open wider to accomodate the hem formed on the edge of the material in Operation 1. Touch the box in the open height column in Operation 1. This will highlight the operation, and will bring up the Numerical Keypad.



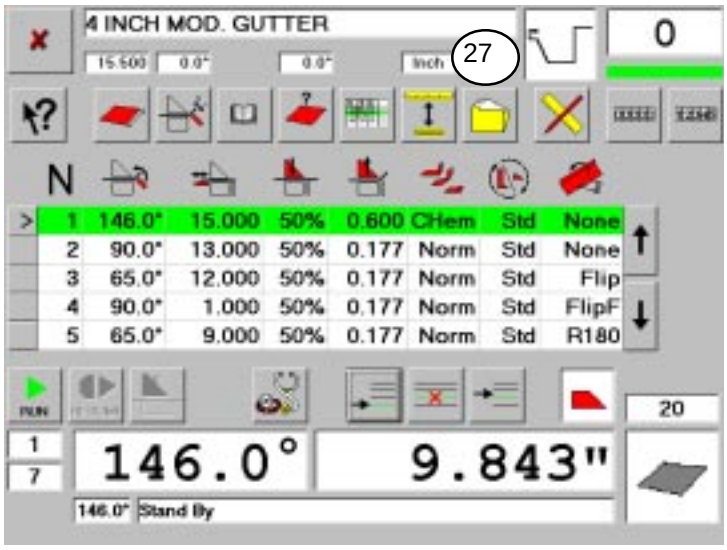
PRGSAM10

25. Using the Numerical keypad, enter the value **.6**.

26. Transfer the value to the program data by touching the Enter Touchbutton.

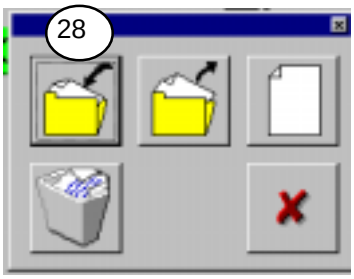


NUMPAD4



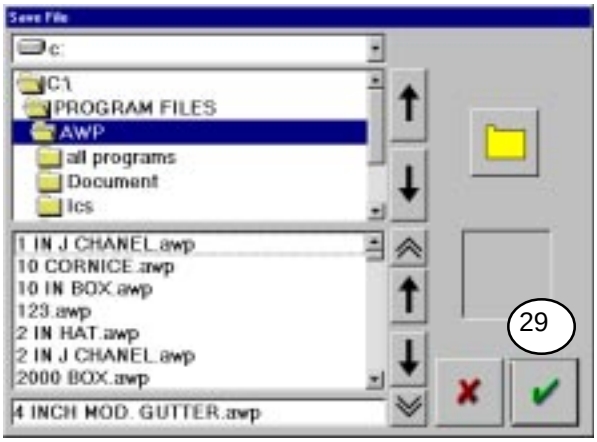
PRGSAM11

27. The program is now ready for its final save. Touch the File Manager Touchbutton to bring up the File Manager Pop-Up Display



FILEMGR

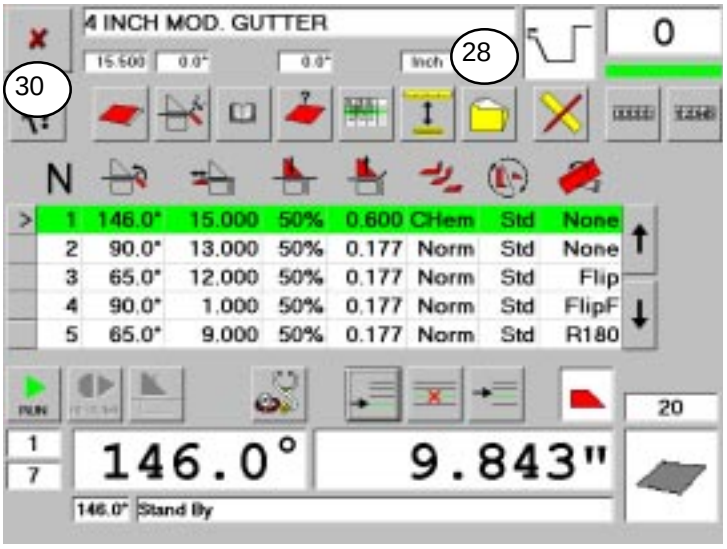
28. Touch the Save File Touchbutton. This will bring up the File Selection Display.



SAVFIL14

29. Touch the Enter Touchbutton. This will add the **.awp** extension to the file name and save the file to the hard drive. The **.awp** extension indicates that the file is a finished program.

30. To return to the Main Screen, touch the Cancel Touchbutton.



PRGSAM11

At this point, the systm is ready for additional programming, or for operation.

MAINSCR

ROPER WHITNEY
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