Allen-Bradley

WinABMS Marking System Software

Cat. Nos. 1492-PLSOFT, 1492-PLTKIT, 1492-WPLTUP

User Manual

Rockwell Automation

Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of this control equipment must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes and standards.

The illustrations, charts, sample programs and layout examples shown in this guide are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Allen-Bradley does not assume responsibility or liability (to include intellectual property liability) for actual use based upon the examples shown in this publication.

Allen-Bradley publication SGI-1.1, *Safety Guidelines for the Application, Installation and Maintenance of Solid-State Control* (available from your local Allen-Bradley office), describes some important differences between solid-state equipment and electromechanical devices that should be taken into consideration when applying products such as those described in this publication.

Throughout this manual we use notes to make you aware of safety considerations:

ATTENTION

Identifies information about practices or circumstances that can lead to personal injury or death, property damage or economic loss

Attention statements help you to:

- identify a hazard
- avoid a hazard
- recognize the consequences

IMPORTANT

Identifies information that is critical for successful application and understanding of the product.

European Communities (EC) Directive Compliance

If this product has the CE mark it is approved for installation within the European Union and EEA regions. It has been designed and tested to meet the following directives.

EMC Directive

This product is tested to meet the Council Directive 89/336/EC Electromagnetic Compatibility (EMC) by applying the following standards, in whole or in part, documented in a technical construction file:

- EN 50081-2 EMC — Generic Emission Standard, Part 2 — Industrial Environment
- EN 50082-2 EMC — Generic Immunity Standard, Part 2 — Industrial Environment

This product is intended for use in an industrial environment.

Low Voltage Directive

This product is tested to meet Council Directive 73/23/EEC Low Voltage, by applying the safety requirements of EN 61131-2 Programmable Controllers, Part 2 - Equipment Requirements and Tests. For specific information required by EN 61131-2, see the appropriate sections in this publication, as well as the Allen-Bradley publication Industrial Automation Wiring and Grounding Guidelines For Noise Immunity, publication 1770-4.1.

This equipment is classified as open equipment and must be mounted in an enclosure during operation to provide safety protection.

Custom Marker Card Geometries

Troubleshooting and Maintainance

RS-232 Communications Cable

Marker Card Reference Data

Overview of this Manual

This manual describes how to use components of the Allen–Bradley Marking System Software to create and print markers for Bulletin 1492 Terminal Blocks and accessories.

The following table describes the contents of this manual.

Chapter	Title	Contents
	Preface	Provides an overview of the manual.
1	Marking System Description	Provides a brief overview of the hardware and software. Includes a description of system accessories.
2	Installing WinABMS Software	Describes how to install the Allen–Bradley Marking System (WinABMS) software.
3	Setting Up the Plotter	Describes how to run the WinABMS software and perform basic setup functions.
4	Using WinABMS Software	Describes how to make the basic file element for creating printed markers.
5	Importing Data	Shows how to import files from ABMS 2.0 and how to import .csv and .txt files from other programs.
6	Creating a Custom Marker Card Geometry	Provides assistance in creating custom marker card geometries to be used as templates for the WinABMS software.
7	Troubleshooting and Maintenance	Provides assistance in identifying and correcting common operating problems. Procedures for routine maintenance items are also provided.

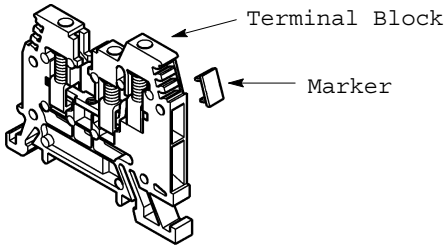
Intended Audience

BasicknowledgeoftheMicrosoftWindows™OperatingSystemisrequiredto operate the Allen–Bradley Marking System Software.

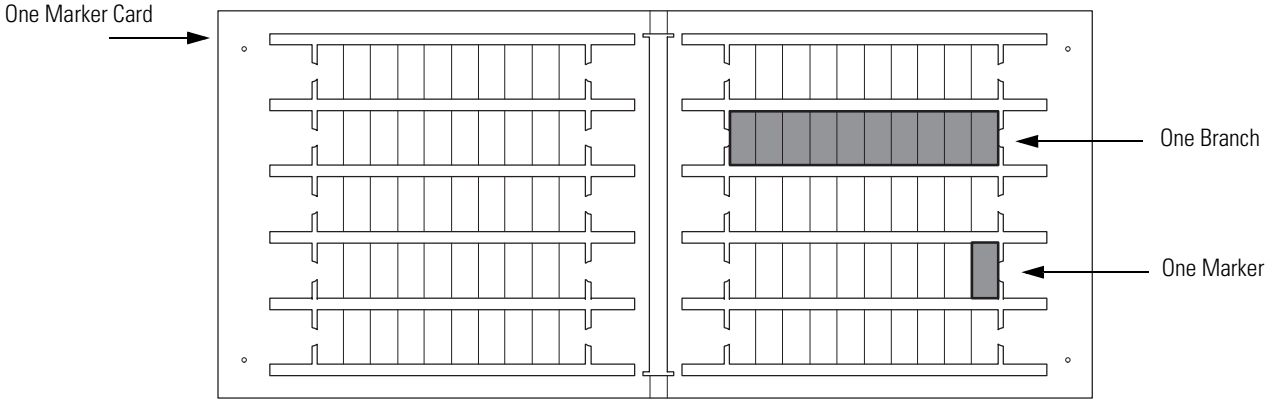
Conventions

This manual uses the following conventions:

- Allen–Bradley Marking System software is referred to as WinABMS.
- Marker refers to the individual tabs that snap onto a terminal block.



- A marker card is a set of 100 markers. For Catalog No. 1492-SMN83, a marker card is a set of 50 markers. See Appendix B for more information on marker cards.



Related Publications

The following publications provide additional information.

Publication Number	Description
1492-SG003A-EN-P	Terminal Block Selection Guide

Marking System Description

Chapter Objectives

This chapter describes:

- Marking System components
- Marker Cards
- Marker types
- Allen–Bradley Marking System (WinABMS) Software
- Accessories

Marking System Components

There are two kits that WinABMS functions with:

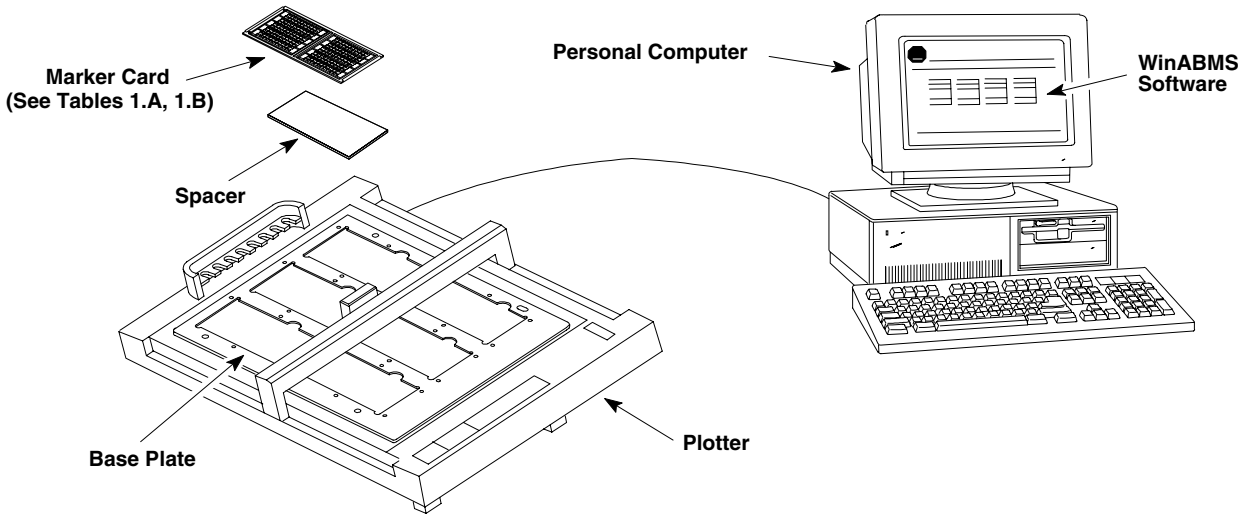
- 1492-PLTKIT Complete plotter kit
- 1492-WPLTUP Update kit

The Terminal Block Marking System kit (Catalog No. 1492–PLTKIT) includes:

- Allen–Bradley Marking System (WinABMS) Software
- Plotter
- Base Plate
- IEC Spacers (6)
- NEMA Spacers (6)
- 5x5 Spacers (6)
- Disposable Pens (4)
- Communications Cable (connects personal computer to plotter)
- Power Cables (2)
- WinABMS User Manual (this document)

In addition, you need:

- Personal computer (see page 2-1 for system requirements)
- Marker Cards (see Tables 1.A and 1.B)



The Terminal Block Marking System Update Package (Catalog No. 1492-WPLTUP) includes:

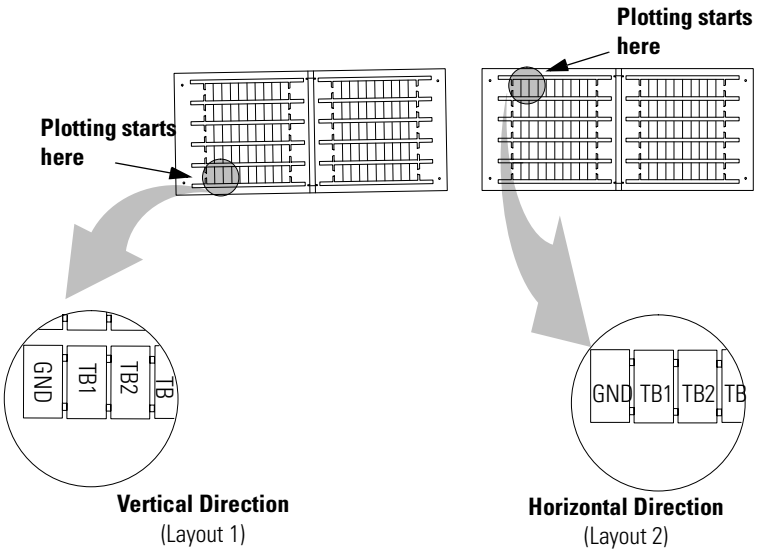
- Allen–Bradley Marking System (WinABMS) Software
- Base Plate
- IEC Spacers (6)
- NEMA Spacers (6)
- 5x5 Spacers (6)
- Disposable Pens (4)
- WinABMS User Manual (this document)

In addition, you need:

- Personal computer (see page 2-1 for system requirements)
- Plotter Kit (Catalog No. 1492–WPLTKIT)
- Marker Cards (see Table 1.A and 1.B)

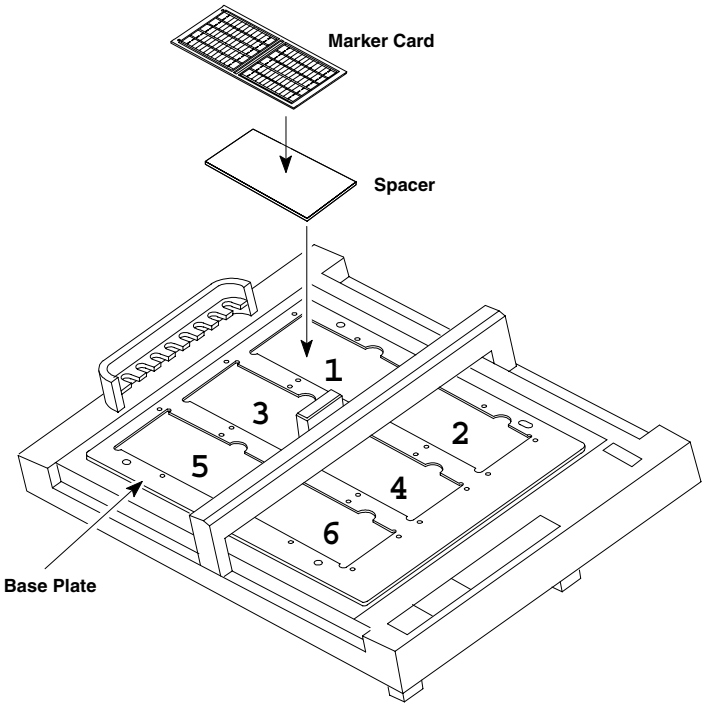
Marker Cards

Allen–Bradley markers and some competitive markers can be printed in either a horizontal or vertical direction. The WinABMS software displays a view of the markers as they would appear on the plotter. Each marker card consists of 10 rows of 10 markers (100 total markers), except Catalog No. 1492–SMN83, which has 10 rows of 5 markers (50 total markers).



Plotting always starts in the upper left corner of the marker card when you are holding it so that the marking is readable. This results in a different starting point for vertical (Layout 1) and horizontal (Layout 2) plotting.

The plotter base plate has spaces for 6 marker cards. Number 1 is the top left, number 2 is top right, number 3 is middle left, number 4 is middle right, number 5 is bottom left, and number 6 is bottom right.



Marker Types

The marking system supports a variety of marker types.

Table 1.A
Allen–Bradley Markers

Marker/Label Catalog No.	Spacer Part No.	Use With These Allen-Bradley Terminal Blocks and Accessories
1492–SM5X5	42165-188-53	1492-WM3, 1492-WMD1, 1492-CP4, Point I/O
1492–SM5X9	42165-188-52	1492-WR3, 1492-WD3, 1492-W3TW, 1492-WKD3..., 1492-WTC3..., 1492-WTF3..., 1492-WTS3..., 1492-R3, 1492-R3T, 1492-R3Q, 1492-RC3, 1492-RKD3, 1492-RTS2, 1492-RTSG2, 1492-RG3, 1492-RD3..., 1492-W3Q, 1492-RTF2, 1492-RG3T, 1492-RG3Q, 1492-R10❹, 1492-RG10❹
1492–SM5X12	42165-188-52	1492-W3, 1492-R3❶, 1492-R3T❶, 1492-R3Q❶, 1492-RC3❶, 1492-RKD3❶, 1492-RG3, 1492-RD3…❶, 1492-RG3T, 1492-RG3Q
1492–SM6X9	42165-188-52	1492-FP4...,1492-WM4, 1492-WD4..., 1492-WD4P..., 1492-WDG4P..., 1492-WMG4, 1492-WDG4N..., 1492-WFB4... ❷, 1492-R4, 1492-R4T, 1492-R4Q, 1492-R4P, 1492-R4DJ, 1492-RFB4❷, 1492-RD4, 1492-RG4, 1492-W4TW, 1492-RDFBG2, 1492-RDG2, 1492-RG4T, 1492-RG4Q, 1492-R16❹, 1492-RG16❹, 1492-RAFB4❷,1492-WNC…
1492–SM6X12	42165-188-52	1492-EA35, 1492-W4, 1492-W6, 1492-W16, 1492-W16S, 1492-W35, 1492-W70, 1492-WD6, 1492-WG4, 1492-WG6, 1492-WG10, 1492-WG16, 1492-WG35, 1492-WLD10, 1492-W4P..., 1492-WKD6, 1492-WLD10C, 1492-R4❶, 1492-R4T❶, 1492-R4Q❶, 1492-R4P❶, 1492-R4DJ❶, 1492-RG4, 1492-RG4T, 1492-RG4Q, 1492-W4ND, 1492-W6ND
1492–SM8X9	42165-188-52	1492-R6, 1492-R6T, 1492-RAFB4❸, 1492-RFB4❸, 1492-RG6, 1492-ER35, 1492-H4, 1492-H5, 1492-H6, 1492-H7, 1492-RG6T, 1492-R10, 1492-RG10
1492–SM8X12	42165-188-52	1492-WFB4...❸, 1492-W10, 1492-WG10S, 1492-R6❶, 1492-R6T❶, 1492-RAFB4❷, 1492-RG6, 1492-ER35, 1492-H4, 1492-H5, 1492-H6, 1492-H7, 1492-RG6T, 1492-RFB4…
1492–SMN81	42165-188-51	1492-HM1, 1492-HM2, 1492-HM2..., 1492-HM3, 1492-WFB10...
1492–SMN83	42165-188-51	1492-WFB10...❷, 1492-CB..., 1492-GH..., 1492-GS...

❶ Covers the center jumper area
❷ Handle Marker size
❸ Base Marker size
❹ 2 Markers in each marker location

Table 1.A
Allen–Bradley Markers

Marker/Label Catalog No.	Spacer Part No.	Use With These Allen-Bradley Terminal Blocks and Accessories
1492-MR9	N/A	1492-R3..., 1492-R4..., 1492-R6..., 1492-R10, 1492-R16, 1492-R4P, 1492-RC3, 1492-RD3..., 1492-RD4, 1492-RKD3, 1492-RTS2…, 1492-RTSG2,1492-RG3, 1492-RG3T, 1492-RG3Q, 1492-RG4, 1492-RG4T, 1492-RG4Q, 1492-RG6, 1492-RG6T, 1492-RG10, 1492-RG16, 1492-RFB4…, 1492-RAFB4…, 1492-RTF2, 1492-R2T
1492-MR15	N/A	1492-R3...❶, 1492-R4...❶, 1492-R6...❶, 1492-R10❶, 1492-R16❶ , 1492-R4P❶ , 1492-RC3❶ , 1492-RD3…❶, 1492-RKD3❶, 1492-RG3, 1492-RG3T, 1492-RG3Q, 1492-RG4, 1492-RG4T, 1492-RG4Q, 1492-RG6, 1492-RG6T, 1492-RG10, 1492-RG16, 1492-R2T❶
1492-AL9	N/A	1492-R3..., 1492-R4..., 1492-R6..., 1492-R10, 1492-R16, 1492-R4P, 1492-RC3, 1492-RD3..., 1492-RD4, 1492-RKD3, 1492-RTS2…, 1492-RTSG2,1492-RG3, 1492-RG3T, 1492-RG3Q, 1492-RG4, 1492-RG4T, 1492-RG4Q, 1492-RG6, 1492-RG6T, 1492-RG10, 1492-RG16, 1492-RFB4…, 1492-RAFB4…, 1492-RTF2, 1492-R2T
1492-AL15	N/A	1492-R3...❶, 1492-R4...❶, 1492-R6...❶, 1492-R10❶, 1492-R16❶ , 1492-R4P❶ , 1492-RC3❶ , 1492-RD3…❶, 1492-RKD3❶, 1492-RG3, 1492-RG3T, 1492-RG3Q, 1492-RG4, 1492-RG4T, 1492-RG4Q, 1492-RG6, 1492-RG6T, 1492-RG10, 1492-RG16, 1492-R2T❶
1492-N5	N/A	1492-C…, 1492-F., 1492-H., 1492-CJCW5, 1492-CJCW6
1492-N43	N/A	1492-N41, 1492-N45, 1492-N901

❶ Covers the center jumper area

Table 1.B
Additional Markers Supported

Accessory Plate	Marker Type
Entrelec	RC55, RC510, RC65, RC610 (67 x 110mm only), RC810
Phoenix	ZB5, ZB6, ZB8, ZB10, ZBM5, ZBM6
Wieland	Marker Sizes (mm): 5 x 8.3, 6 x 8.3, 5 x 14, 6 x 14, 8 x 8.3
Wago	WSB 209-501, 209-701, 248-501
Weidmüller	DEK 5/5 MC, 5/6 MC, 5/6.5 MC WS8/5 MC, WS10/5 MC, WS12/5 MC, WS12/6 MC, WS12/6.5 MC, WS15/5 MC, MF10/5 MC, MF10/6 MC, PT-H21 MC, TM-I15 MC, ZS10/5 MC, ZS12/6 MC, ZS15/5 MC, SF 3/21 MC, SF 2/21 MC
Murrplastik	KSS 20 x 9, KSP 17 x 10

Marker geometries are subject to change without notice from the manufacturers.

All marker types in Table 1.B are compatible with the corresponding kits in Table 1.C at the time of printing.

WinABMS Software

WinABMS software is a Microsoft Windows-based program that creates files containing marker card layouts. These files contain all the information to print multiple base plates full of marker cards. Table 1.C lists the available marking system accessories.

Accessories

Table 1.C Accessories

Item	Catalog No.	Description
Disposable Pen	1492–DISPEN	Disposable ink pens
Cleaning Kit	1492–PLCLEAN❶	Cleaning pot for 1492-PLPEN
Plotter Pen	1492–PLPEN❷	Refillable pen for permanent ink
Ink	1492–PLINK❷	Permanent drawing ink
Cleaning Solution	1492–PLSOLN❶	Cleaning solution for 1492-PLPEN
Disbosable Ink Cartridge	1492–PLINKCART❸	Ink cartridge for refillable pens
Entrelec Marking Kit	1492–PLTENTR❹ 1492-WPLTENTR❺	Base Plate
Phoenix Marking Kit	1492–PLTPHX❹ 1492-WPLTPHX❺	Base Plate, Holders/Spacers
Wieland Marking Kit	1492–PLTSSWIEL❹ 1492-WPLTSSWIEL❺	Base Plate, Holders/Spacers
Wago Marking Kit	1492–PLTWAGO❹ 1492-WPLTWAGO❺	Base Plate, Holders/Spacers
Weidmüller Marking Kit	1492–PLTWEID❸ 1492-WPLTWEID❹	Base Plate
Murrplastik Marking Kit	1492-PLTMURR❸ 1492-WPLTMURR❹	Base Plate, Spacers
Marking Rod Marking Kit	1492-PLTMR❹ 1492-WPLTMR❺	Base Plate
Adhesive Label/ Paper Marking Kit	1492-PLTDINA3❹ 1492-WPLTDINA3❺	Base Plate, Magnets

❶ Recommended for maintaining refillable pen. 1492-PLSOLN can be used to unclog disposable pens
❷ The Plotter Pen and the Ink are required for a complete refillable pen
❸ For use with 1492-PLPEN
❹ For use with 1492-PLTKIT
❺ For use with 1492-WPLTKIT

Installing WinABMS Software

Chapter Objectives

This chapter covers:

- System requirements
- Installation of WinABMS Software

System Requirements

The following is a list of recommended hardware and software needed to install and run the WinABMS software:

- Personal computer using 80486 or higher processor
- Microsoft® Windows version 95 or later and NT or later.
- 8 MB hard disk space
- CD drive or internet access.
- Monitor supported by Windows (VGA or better)
- 1 open serial communication port (COM1 through COM4) for printing markers
- Plotter Kit (Catalog No. 1492–PLTKIT) or (Catalog No. 1492-WPLTKIT plus Catalog No. 1492–WPLTUP)

Installing WinABMS Software

This section describes how to install WinABMS software on your hard disk.

As a precaution, copy the contents of the installation files to back–up disks. Store the installation disks in a safe place. Use the back–up disks to perform the installation.

To install WinABMS from CD:

1. Insert CD into the drive.
2. Run **ABMSINST.EXE**

Note: Installation program will prompt you for the default language and the installation directory.

3. Remove CD from drive.
4. Installation is now complete.

To install WinABMS from internet:

1. Go to the website http://www.ab.com/industrialcontrols/products/t_blocks/markingsystem/index.html
2. Select "**WinABMS software**."

3. Select "**Download WinABMS software**."

Note: You may be prompted to register prior to downloading the software.

4. Select "**Download**."

Note: You will be prompted for the download directory.

5. Run **ABMSINST.EXE**

Note: Installation program will prompt you for the default language and the installation directory.

6. Installtion is now complete.

Initial Setup

Chapter Objectives

This chapter shows how to:

- Set up the Plotter
  - Cat. No. 1492–WPLTKIT
  - Cat. No. 1492–PLTKIT
- Start WinABMS
- Select a language
- Select a COM Port
- Calibrate the Plotter

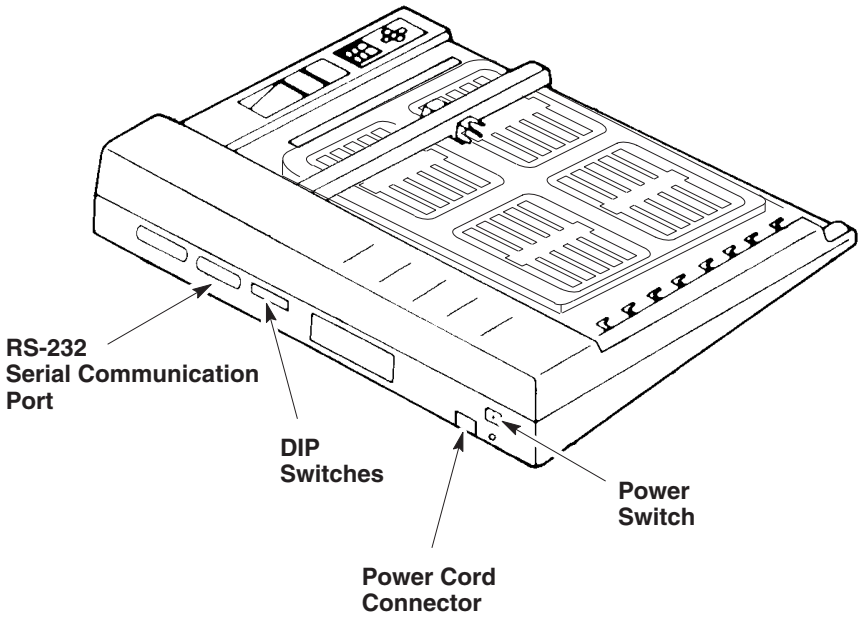
Setting Up the Plotter

To setup the Cat. No. 1492-WPLTKIT plotter:

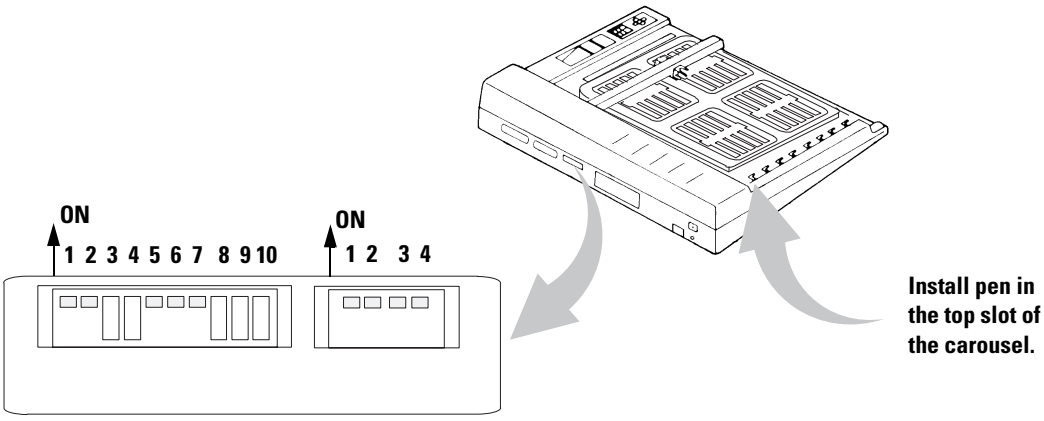
Note: If your system is already set up and running ABMS (DOS) software, go to section on Selecting a COM Port.

1. Use the communications cable (provided with Catalog No. 1492-WPLTKIT) to connect the computer RS–232 port to the serial communication connector on the plotter.

   If you are making your own cable, refer to Appendix A. You may need a 25–to–9 pin converter if your computer has a 9–pin connector.



2. Verify that the plotter DIP switches are set as shown below. The switches that must be on (up position) are indicated by a red mark on the end.



DIP Switches

10-Position Switch	4-Position Switch
1 ON	1 ON
2 ON	2 ON
3 OFF	3 ON
4 OFF	4 ON
5 ON	
6 ON	
7 ON	
8 OFF	
9 OFF	
10 OFF	

3. Plug the power cord into the plotter. The plotter accepts 100/120V AC, 50/60 Hz.

ATTENTION

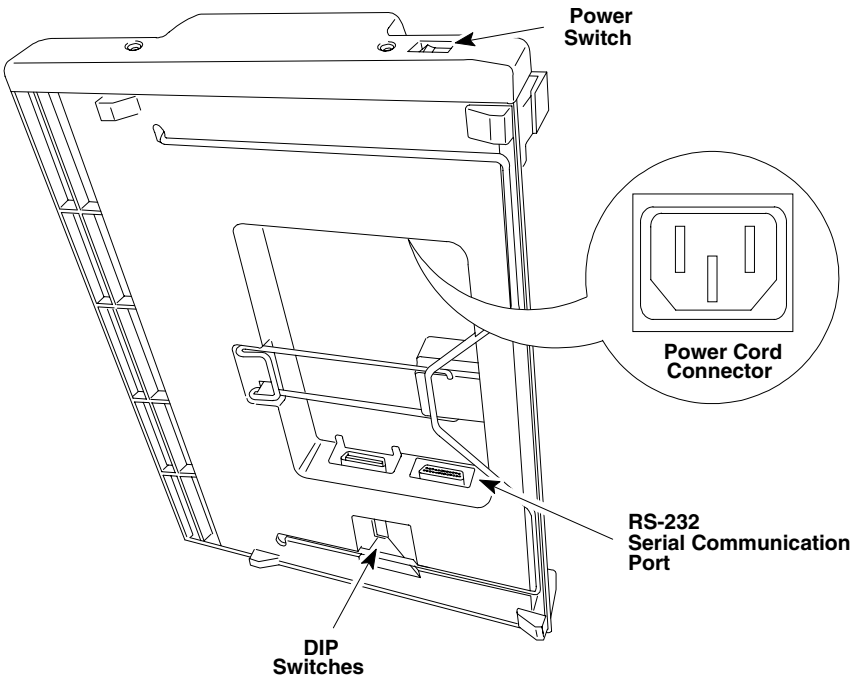
The power cord supplied with the plotter is shielded. Do not use other power cords. Failure to use the supplied power cord may result in electromagnetic interference with other equipment.

4. Replace aluminium base plate and holders with the blue composite base plate. Attach blue composite base plate to the plotter by inserting the 2 locating pins into the holes in the plotter bed.

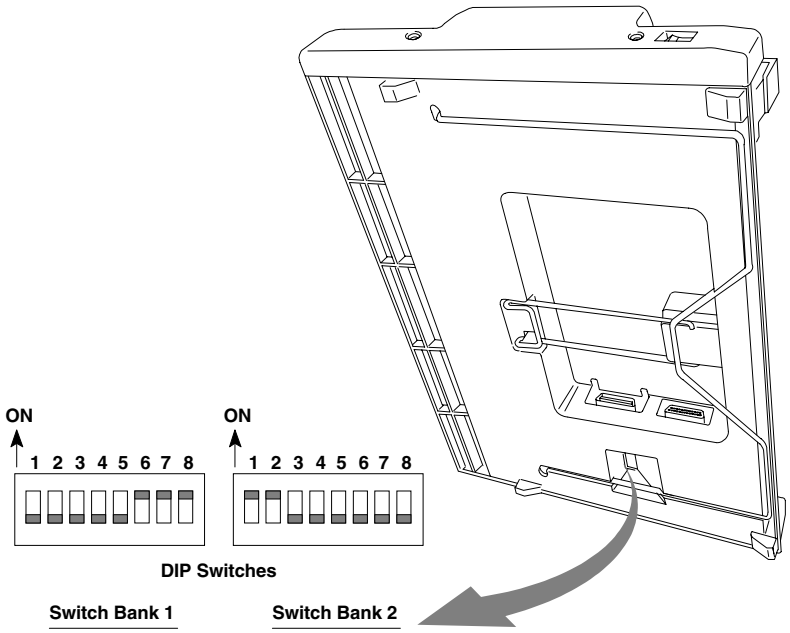
5. Install pen in the top slot of the carousel.

To setup the Cat. No. 1492-PLTKIT plotter:

1. Use the communications cable (provided with Cat. No. 1492-PLTKIT) to connect the computer RS–232 port to the serial communication connector on the plotter. COM1 through COM4 are supported



2. Verify that the plotter DIP switches are set as shown below. The switches are located on the bottom of the plotter.



3. Plug the appropriate power cord into the plotter. The plotter accepts 100/240V AC, 50/60 Hz.

ATTENTION

The power cord supplied with the plotter is shielded. Do not use other power cords. Failure to use the supplied power cord may result in electromagnetic interference with other equipment.

4. Attach blue composite base plate to the plotter by placing the 2 pins on the plotter bed into the holes in the base plate.

5. Install pen in the top slot of the carousel.

Starting WinABMS

To start WinABMS:

1. Locate the WinABMS icon and double click.

Selecting a Language

You can run the software in one of five languages:

- English
- French
- German
- Italian
- Spanish

The default language is English.

To change the language:

1. Click on **Language** under the **Options** heading.
2. Then click on the language you desire.

Selecting a COM Port

This section shows how to select a computer COM port for communicating with the plotter.

To select a serial COM port:

1. Click on **Plotter** under the **Options** heading, then click on **Port**.
2. Click on the appropriate COM Port (the one into which the communication cable is plugged)

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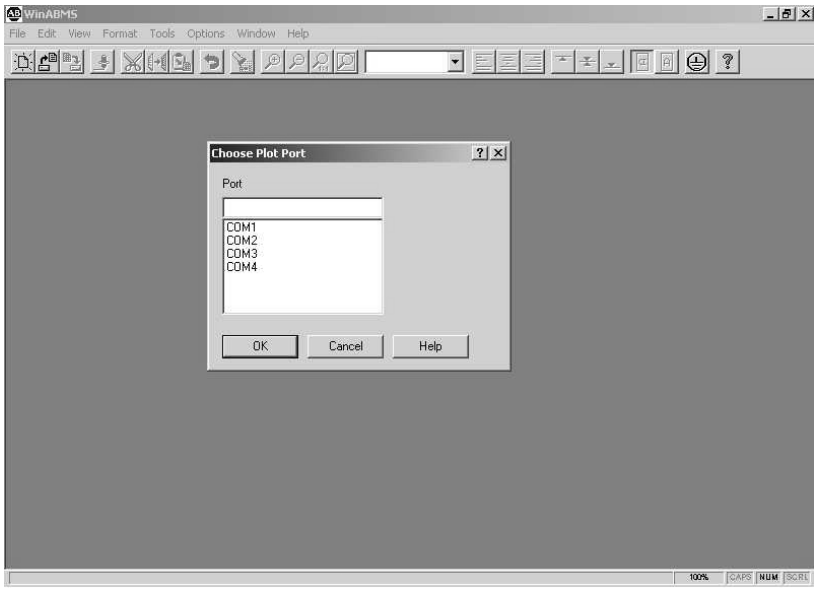


Calibrating the Plotter

Use the calibrate plotter function to align the marking pen with the marker cards. If the pen calibration is not set correctly, the printed text will not be positioned correctly on the marker card.

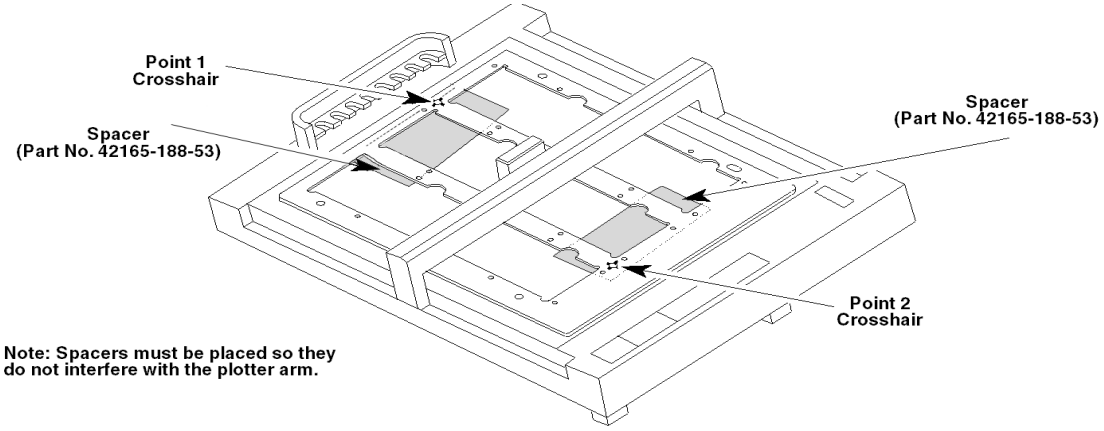
Note: These procedures assume that the communications cable between the plotter and computer is connected, all communication settings have been made, and that the pen has been installed.

To calibrate the plotter:

1. Slide a Spacer (Part No. 42165-188-53) under left and right edges of the base plate. This will temporarily lift the base plate making it easier to check the calibration.

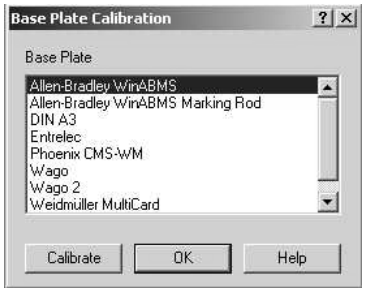
Note: Make sure that the spacers do not lift the base plate so high that the pins are pulled out of the holes.

Note: Spacers must be placed so they do not interfere with the plotter arm.



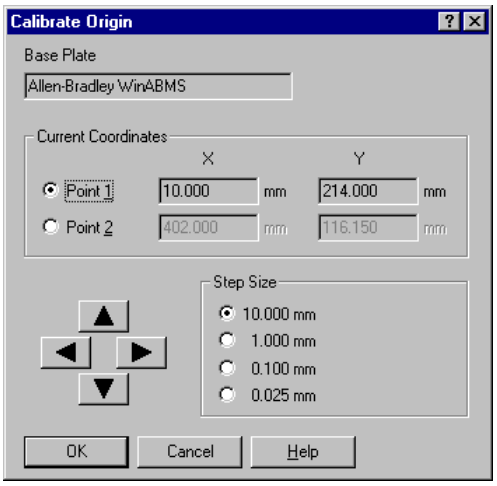
2. Click on **Plotter** under the **Options** heading, then click on **Calibrate**.

3. When the **Base Plate Calibration Menu** appears, select the appropriate base plate and click on **Calibrate**.



Note: Click on **Calibrate,** not on **OK**.

4. When the **Calibrate Origin Menu** appears, click on **Point 1** to set the first calibration point.



5. Click the movement arrows to move the pen until it is over the "crosshair" located in the upper left area of the base plate. Use your finger to lightly press the pen down. When the pen tip drops into the pin hole located in the "crosshair", then the first point has been calibrated correctly.

Note: Clicking on one of the **Step Size** boxes will allow you to move the pen in smaller increments.

6. Once the first point has been calibrated correctly, calibrate the second point by clicking on **Point 2**.

7. Click the movement arrows to move the pen until it is over the "crosshair" located in the lower right area of the base plate. Use your finger to lightly press the pen down. When the pen tip drops into the pin hole located in the "crosshair", then the second point has been calibrated correctly.

Note: Clicking on one of the **Step Size** boxes will allow you to move the pen in smaller increments.

8. Once both points have been calibrated, click **OK**.

9. Remove the 2 spacers from under the base plate.

Note: Plotter will not function properly if the 2 spacers are not removed from under the base plate.

10. Remove and properly store the pen.

Plotter is now calibrated. Future calibration need only be done if plotter or pen has been jarred or if text is not positioned correctly on the marker. If calibration is correct and plotting is still not correctly positioned on the marker, a manual adjustment must be made.

If the plotter is ever out of calibration, turn the plotter off for 30 seconds, then turn it back on. Now retest the calibration. Often, the plotter arm has been

jarredandthispowerdownandupwillre-zerotheplotter.Ifcalibrationisstill off, repeat the entire calibration process.

To Manually Adjust the Plotter Calibration

Note: Manual adjustment should only be made if plotting is consistently shifted in the same direction for all 6 base plate locations. If, for example, plotting is high in position 1 but low in position 2, manual adjustment will not help. In this case the plotter bed, or the base plate, is out of tolerance, and must be corrected.

1. Make a test plot from positions 1, 2, 5, and 6. Type "MMM" in the markers at each corner of each half of a marker card. There are 8 such markers on each marker card.

2. Identify each marker card with its base plate position, i.e., 1, 2, 5, 6.

3. Ensure visually that plotting is shifted in the same direction for all base plate positions.

4. Measure in the X and Y directions from the edge of the marker to the edge of the printing to determine fow far the plotting is from center. Use millimeters since this is the units of the calibration function.

5. Click on **Plotter** under the **Options** heading, then click on **Calibrate**.

6. When the **Base Plate Calibration Menu** appears, select the appropriate base plate and click on **Calibrate**.

7. When the **Calibrate Origin Menu** appears, click on **Point 1** to set the first calibration point.

8. Click the movement arrows to move the pen the amount you calculated in step 4. You may have to move in the X and Y directions.

Note: Clicking on one of the Step Size boxes will allow you to move the pen in smaller increments.

9. Once the first point has been manually adjusted, repeat for the second point by clicking on **Point 2**.

10. Click the movement arrow to move the pen the amount you calculated in Step 4. You may have to move in the X and Y directions.

Note: Clicking on one of the **Step Size** boxes will allow you to move the pen in smaller increments.

11. Once both points have been manually adjusted, click OK.

12. Repeat Step 1. If marking is centered on the marker, you have successfully adjusted the calibration. If marking is not centered, continue with steps 2 through 12.

Using WinABMS Software

Chapter Objectives

This chapter describes how to use WinABMS Software:

- Explaining the Tool Bar
- Using the Zoom Tool
- Creating a New File
- Opening a File
- Editing a File
- Saving a File
- Plotting a File
- Deleting a File

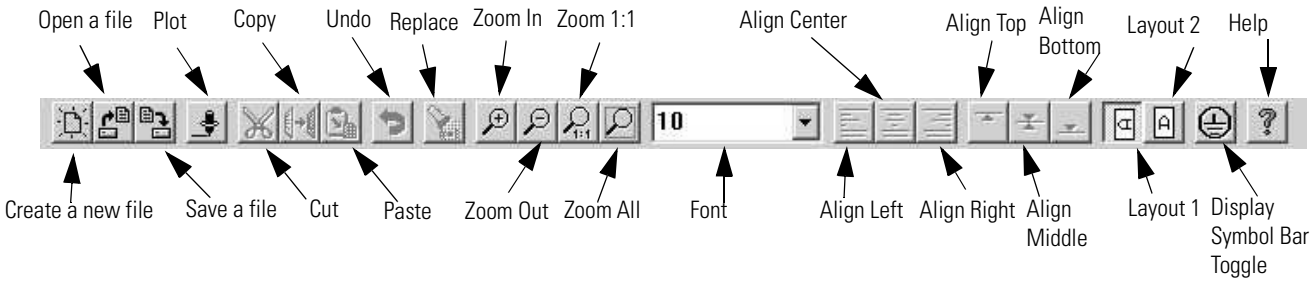
The Tool Bar

The WinABMS software has a Tool Bar that can be used as shortcuts for the following commands.

- Create a new File
- Open a File
- Save a File
- Plot
- Cut
- Copy
- Paste
- Undo
- Replace
- Zoom In
- Zoom Out
- Zoom 1:1 (Shows markers approximate actual size)
- Zoom All (Shows entire base plate)
- Font
- Align Left
- Align Center
- Align Right
- Align Top
- Align Middle
- Align Bottom
- Layout 1 (Vertical Printing)
- Layout 2 (Horizontal Printing)
- Display Symbol Bar Toggle

- Help

The Tool Bar is shown below.



The Zoom Tools

The WinABMS software has Zoom Tools that allow you to view the markers in larger or smaller sizes.

1. Clicking on the **Zoom In Tool** will cause the markers to appear larger on the monitor.
2. Clicking on the **Zoom Out Tool** will cause the markers to appear smaller on the monitor.
3. Clicking on the **Zoom All Tool** will allow you to view all of the marker cards on the current base plate.
4. Clicking on the **Zoom 1:1 Tool** will allow you to view the marker card in its actual size at 800 x 600 monitor resolution.
5. Clicking on **Zoom** under the **View** heading will allow you to zoom in or out by percentages.

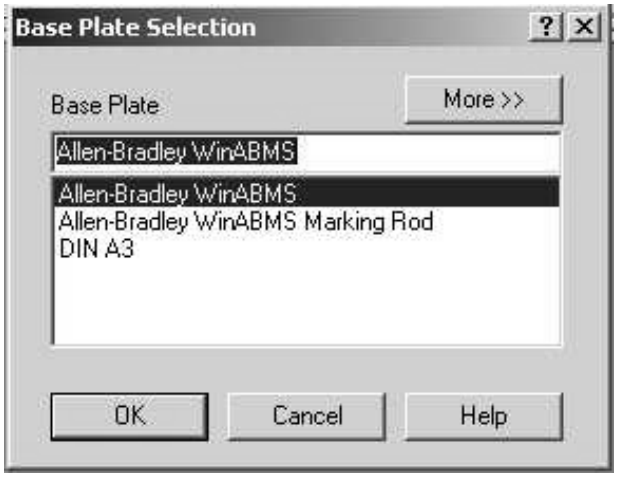
Creating a New File

This section shows how to create a new file.

To create a new file:

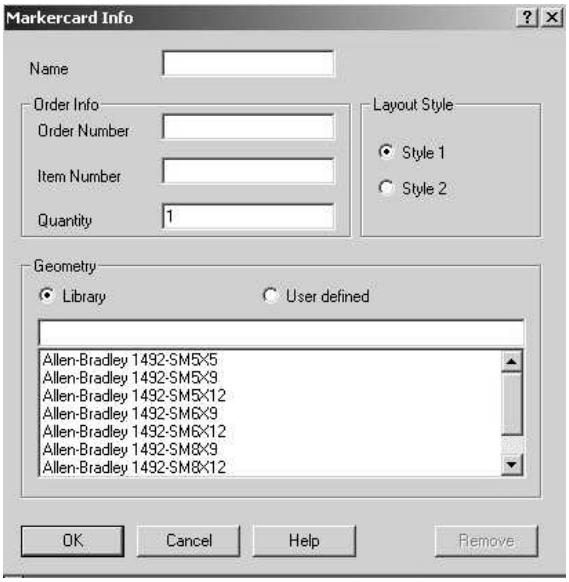
1. Click on **New** under the **File** heading or click on the **New File Tool**.
2. When the **Base Plate Selection Menu** appears, select the desired Base Plate.

Note: Click on **More** to view additional base plate selections.



3. Click on one of the marker areas then click on **MarkerCard** under the **Format** heading or double click on one of the marker areas.

4. When the **Markercard Info Menu** appears, enter a name for the markercard (optional), add the order information (optional), select a layout style (style 1 is vertical, and style 2 is horizontal), and select a geometry from the library.



5. Click **OK**.

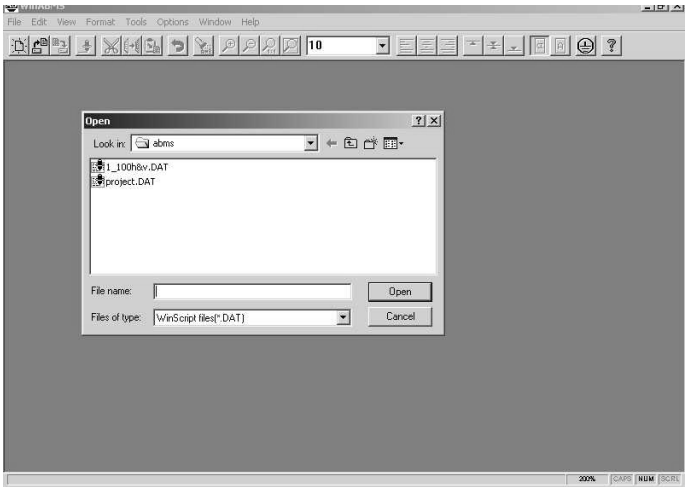
Opening a File

This section shows how to open an existing file.

To open a file:

1. Click on **Open** under the **File** heading or click on the **Open File Tool**.

2. When the **Open Menu** appears, select the drive and folder in which the desired file is placed, then select the desired file.



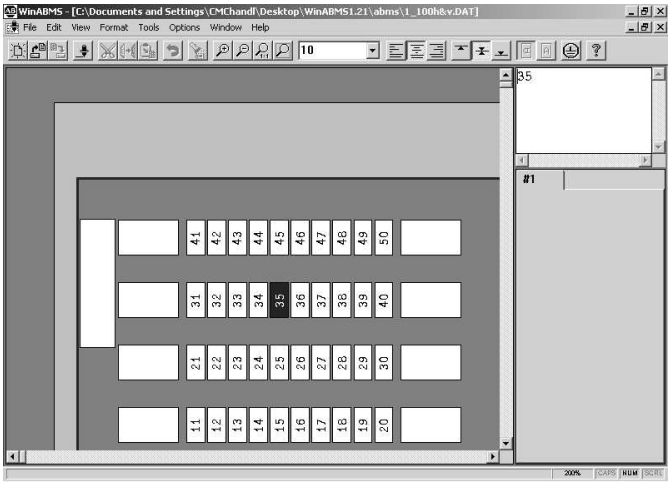
3. Click **OK**.

Editing a File

This section shows how to edit a file.

Editing Marker Text

After opening the file, double click on the marker you wish to edit. The text for the current marker (highlighted in blue) will appear in the text window located in the upper right corner.



The text can be deleted, added to, or replaced with new text in the text window. The text position can also be shifted from top, center, or bottom and from left, center, or right by use of the appropriate tools.

Additional lines of text can be added by pressing the **Enter/Return** key.

To enter marker text:

1. Double click on the marker where you wish to enter text.
2. Enter the text in the text window located in the upper right corner.

   Use the **BACKSPACE** key to delete a single character.
3. When done, select another marker by double clicking on it or by pressing **Tab** to go to the next marker.

To adjust font size and width:

1. Select the markers you wish to adjust, then click on **Marker** under the **Format** heading.
2. When the **Format Text Dialog Box** appears, enter the font size and width you desire.

Note: It is recommended that you use a font size of 6 pt or greater, and a font width of 70% or greater.

3. Click on **OK**.

   OR

1. Select the markers you want to adjust, then select the pop-up triangle on the tool bar.
2. When the different font sizes appear, either select the pre-assigned number or type in the font size.

   OR

1. Select the markers you want to adjust, then right click.
2. When the **Format Text Dialog Box** appears, enter the font size and width you desire.

To delete marker text:

1. Select the markers with the text you wish to delete.
2. Click on **Delete** under the **Edit** heading, click on the **Cut Tool**, or use the **DELETE** key.

To clear marker text:

Clearing marker text will delete the text as well as any adjustments to the font size and width.

1. Select the markers you wish to clear.
2. Click on **Clear All** under the **Edit** heading.

To search and replace marker text:

1. Select the flashlight icon on the toolbar or select **Replace** under the edit heading.
2. Type in the appropriate search and replace data.

To enter special characters:

1. Double click on the marker where you wish to enter the special character.
2. Click on **Symbol Bar** under the **View** heading or click on the **Display Symbols Tool**.

3. Click on the symbol you wish to enter into the marker. The selected character is entered on the marker. Special characters occupy two character positions.

To copy marker text:

1. Select the markers you wish to copy by clicking on the first marker and dragging to the last marker.
2. Click on **Copy** under the **Edit** heading or click on the **Copy Tool**.
3. Select the location where you want the copied data to start.
4. Click on **Paste** under the **Edit** heading or click on the **Paste Tool**.

   The text is copied to the new location.

   It is also possible to copy and paste between different files.

To enter a series of numbers/letters:

1. Click on the marker onto which you want the range to start.

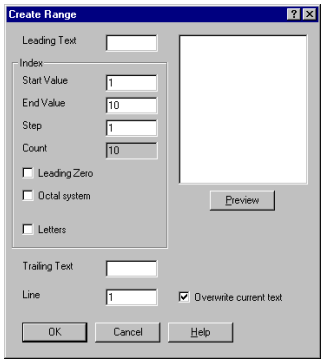
2. Click on **Range** under the **Tool** heading.

3. When the **Create Range Menu** appears, enter the leading text and trailing text.

   Leading Text is the text that will appear at the beginning of each marker in the range, and is constant for each marker in the range.

   Trailing Text is the text that will appear at the end of each marker in the range, and is constant for each marker in the range.

   Octal System will allow octal counting. For example:
   0, 1, 2, 3, 4, 5, 6, 7, 10, 11, 12, 13, 14, 15, 16, 17, 20,....



4. Enter a **Start Value**. The Start Value is the letter or number that will begin the series such as 0 or a.

5. Enter an **End Value**. The End Value is the letter or number that will end the series such as 10 or J.

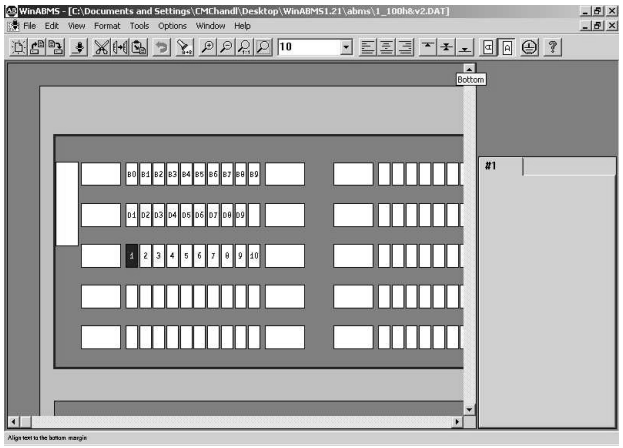
6. Enter a **Step**. The Step is the increment between one value and the next.

   For example, if the step is 5 and the initial value is 0 and the final value is 20, the following characters appear in the series: 0, 5, 10, 15, and 20. A step of 1 includes all values between the initial and final values in the series.

   Clicking on **Preview** will show you the range before you enter it on the markers.

7. Click **OK**.

   The series is automatically entered:



To duplicate a marker card

1. Select the card that will be duplicated.
2. Select the duplicate card under the edit heading.

Note: The duplicate card will be placed in the next open holder location.

Saving a File

To save a file:

1. Click on **Save** under the **File** heading or click on the **Save Tool**.

To save a file under a new name:

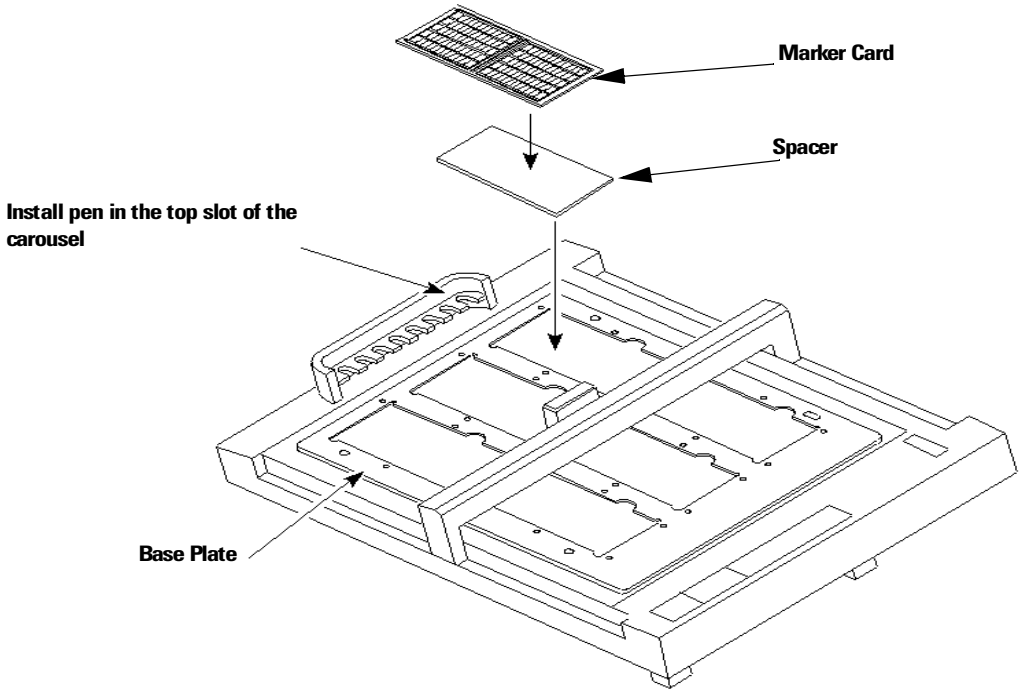
1. Click on **Save As** under the **File** heading.
2. When the **SaveAsMenu** appears, name the file and select the drive and folder into which you wish to save the file.
3. Click **OK**.

Plotting a File

To plot an entire file:

1. Insert the appropriate spacers in the baseplate locations where you wish to plot.
2. Insert the marker card on top of the spacer.

Note: Insert the 2 middle pins first, then insert the 4 corner pins. To remove marker cards, pull up the 4 corners first, then pull up the 2 middle pins.



3. Make sure the ink is flowing properly from the pen tip by drawing some test lines (refer to the instructions included with the pen).

4. Install pen in the top slot of the carousel.

5. Click on **Plot** under the **File** heading or click on the **Plot Tool**.

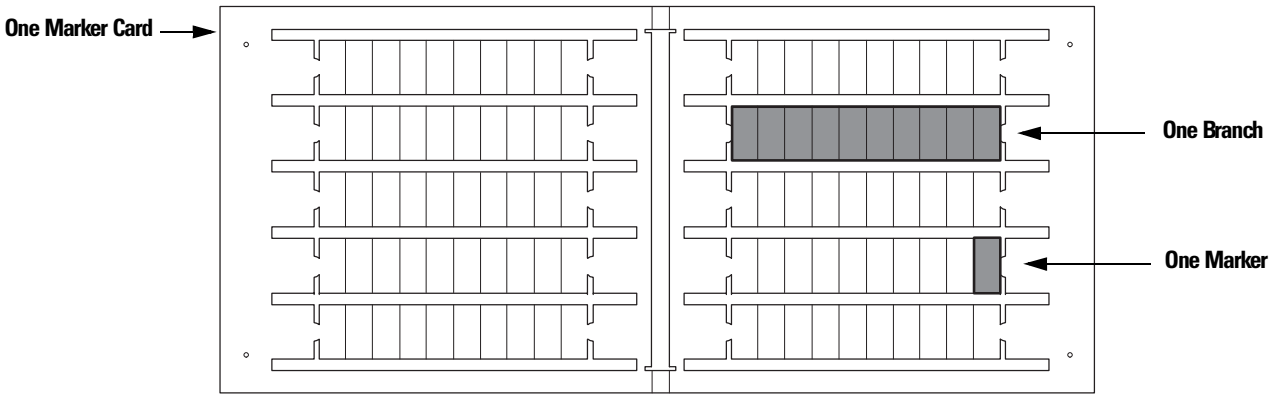
To plot one marker card:

1. Repeat steps 1-4 under **To Plot An Entire File.**

2. Select the card that will be plotted, then click on **Plot Card** under the **File** heading.

Note: Markers plotted with disposable ink pens can be handled in 5 minutes. For best results, the markers should not be installed for 24 hours.

Note: Remove the entire branch from the marker card before retrying to remove individual markers. Once the branch is free, then separate the individual markers.



Note: Use thumbs and index fingers to apply pressure to "snap" the markers free. **Never** twist the markers to break them free. Twisting will result in uneven breaks.

Deleting a File

To delete a File:

1. Use the **Windows File Manager** to delete files.

Importing Data

Chapter Objectives

This chapter describes how to:

- Import Data from Other Sources
- Convert a Project File from ABMS 2.0 (DOS)

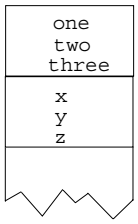
Importing Data from Other Sources

You can generate a program to create a WinABMS file with a software program that supports **.txt** or **.csv** files (CAD, Microsoft Word, Excel). When you import this text file to WinABMS, the code is automatically converted to a WinABMS formatted file.

Creating a Program Source File

You must follow specific rules and conventions when creating the program file on the source system.

- Each file must be a **.txt** or **.csv** file.
- The **.txt** files must contain line breaks. These line breaks indicate that the following text will go onto the next marker in WinABMS. To create separate lines of text on a single marker, place a "," after the text to represent a line break. If the first line of the file is "**one,two,three**", and the second line is "**x,y,z**", then the first two markers will appear as:



- Each row in the **.csv** files will appear as a separate marker in WinABMS. To create separate lines of text on a single marker, place the lines of text in different columns. If three columns are created all with the word "**one**" in the first row and the word "**two**" in the second row, then the first two markers will appear as:

Spreadsheet

one	one	one
two	two	two

Markercard

one
one
one

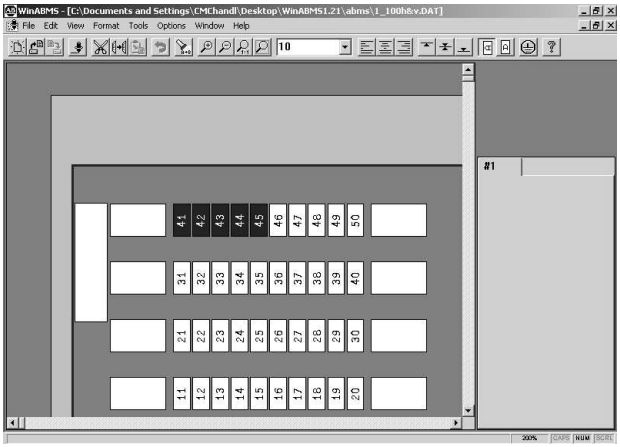
two
two
two

To import a source program file:

1. Select (highlight) the marker where you would like the imported data to start. The imported data will start at that marker, then flow in sequence into the markers following the one you selected.

Note: If more than one marker is selected, then the imported information will only appear in the markers selected. If 5 markers are selected, but the imported program file has 8 cells of information, then only the first 5 cells will be imported.

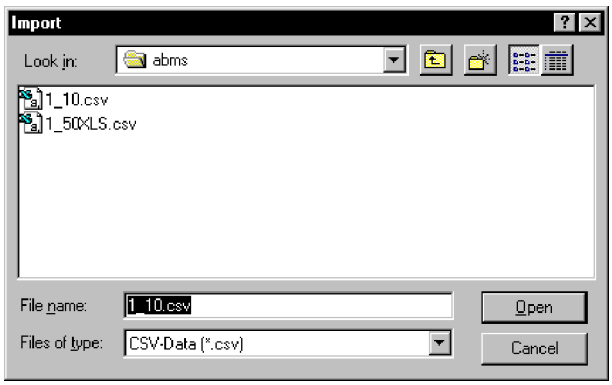
Note: Data can be imported for a maximum of 100 markers at a time.



2. Click on **Import** under the **File** heading.

3. When the **Import Menu** appears, select the file you wish to import.

Note: Select **All files** from the **Files of type** box when you wish to import **.txt** files.



4. Click on Open.

Converting an ABMS Project File

This section shows how to convert a project file from the ABMS software into WinABMS.

Note: If multiple types of markercards were saved in the ABMS file, then WinABMS will open a separate file for each markercard type found in the ABMS file.

To convert a project file from ABMS:

1. Click on **Convert** under the **File** heading.
2. When the **Convert Menu** appears, select the file you wish to convert.
3. Click on Open.

Note: Subscript and superscript will be converted to standard numbers.

Custom Marker Card Geometries

Chapter Objectives

This chapter describes how to:

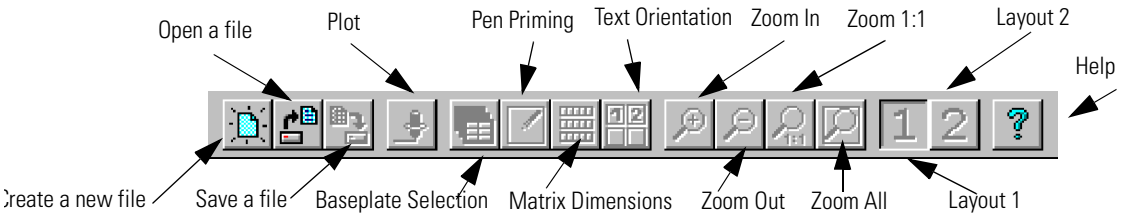
- Use the Tool Bar
- Create a Custom Marker Card Geometry
- Open an existing Custom Marker Card Geometry
- Edit a Custom Marker Card Geometry
- Save a Custom Marker Card Geometry
- Test Plot Custom Marker Card Geometry
- Delete a Custom Marker Card Geometry

The Tool Bar

The GeoEdit software has a Tool Bar that can be used for shortcuts for the following commands.

- New Geometry
- Open Geometry
- Save Geometry
- Plot
- Base Plate
- Pen Priming
- Matrix
- Playout
- Zoom In
- Zoom Out
- Zoom 1:1
- Zoom All
- Layout 1
- Layout 2
- Help

The Tool Bar is shown below.



Creating a Custom Marker Card Geometry

This section describes how to create a Custom Marker Card Geometry.

To create a Custom Marker Card Geometry:

1. Double Click on the **GeoEdit** icon.

Note: You must completely exit from **WinABMS** before starting **GeoEdit**.

2. Click on **New** under the **File** heading or click on the **New Geometry Tool**.

Note: To modify this new geometry, refer to section on **Editing a Custom Marker Card Geometry**.

Opening a Custom Marker Card Geometry

This section describes how to open an existing Custom Marker Card Geometry. Geometries are grouped in two databases: **Geometry Database** and **Geometry Library Database.** The **Geometry Database** is empty at start up and is used for storage of all the geometries you create. The **Geometry Library Database** contains read-only geometries for Allen-Bradley and other selected brands of marker cards. The names of these geometries correspond to catalog numbers of the matching marker cards. You can modify a geometry from the **Geometry Library Database,** but first you must click on **Save As** from the **File** heading, which will save it under a new name into the **Geometry Database**.

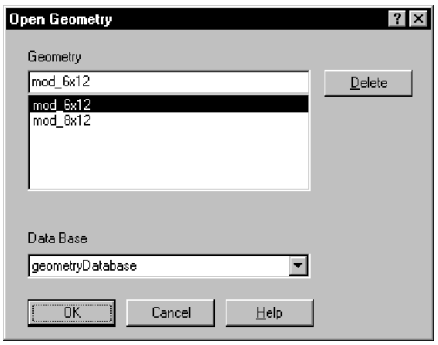
To open an existing Custom Marker Card Geometry:

1. Double Click on the **GeoEdit** icon.

Note: You must completely exit from **WinABMS** before starting **GeoEdit**.

2. Click on **Open** under the **File** heading or click on the **Open Geometry Tool**.

3. When the **Open Geometry Menu** appears click on the database which contains the desired geometry.



4. Click on the desired geometry.

5. Click **OK**.

Editing a Custom Marker Card Geometry

This section describes how to edit a Custom Marker Card Geometry.

To edit a Custom Marker Card Geometry:

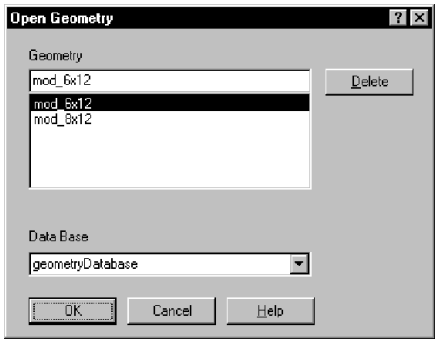
1. Double Click on the **GeoEdit** icon.

Note: You must completely exit from **WinABMS** before starting **GeoEdit**.

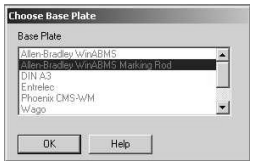
2. Click on **Open** under the **File** heading or click on the **OpenGeometry Tool**.

3. When the **OpenGeometryMenu** appears click on the databasewhich contains the desired geometry

.



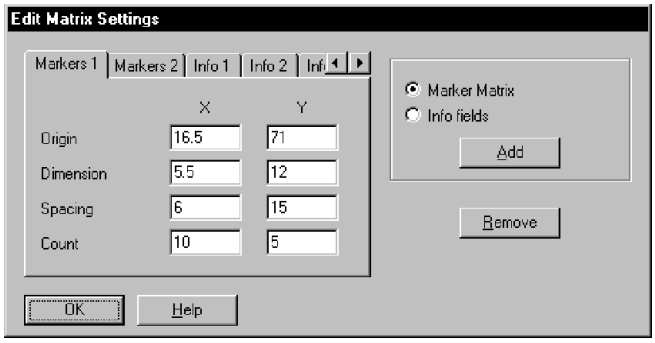
4. Click on the desired geometry.
5. Click **OK**.
6. Click on **Base Plate** under the **Edit** heading or click on the **Base Plate Tool** if you desire to change the base plate (new geometries will have **Allen-Bradley WinABMS** as their default base plate setting).
7. When the **Choose Base Plate Menu** appears, select the desired base plate.



8. Click **OK**.
9. Click on **Matrix** under the **Edit** heading or click on the **Edit Matrix Tool**.
10. When the **EditMatrixSettingMenu** appears enter the desired Origin settings for the X and Y coordinates. The Origin setting is the location of the upper left corner of the upper left marker on the geometry.

Note: All measurements in the **EditMatrixSettingMenu** are in millimeters

.



11. Enter the desired dimensions for the markers. The dimensions are the height and width of each marker.

12. Enter the desired spacing for the markers. The spacing is the measurement from the beginning edge of one marker to the beginning edge of the next marker.

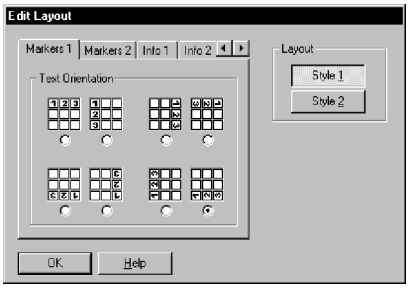
Example: If the dimensions for a marker are X=10mm and Y=10mm, and the spacings are X=11mm and Y=11mm, then there would be a space of 1mm between each marker. If the spacings were smaller than the dimensions, then the markers would overlap.

Note: Add Matrices and/or Info fields for each unique region of the marker card. Info fields have the same function as Matrices, but are intended for project identification.

13. Enter the desired Count for the markers. The Count is the number of markers in a given direction on the geometry.

14. Click on **Layout** under the Edit heading or click on the **Layout Tool**.

15. When the **Edit Layout Menu** appears, select the desired text orientation.



16. Click on **Pen Priming** under the **Edit** heading or click on the **Pen Priming Tool**.

Note: The plotter will draw the pen priming line ten times to ensure that ink is flowing before plotting the markers.

17. Select the coordinates for the line.

Note: This line should be placed outside of the matrices and info fields so it will not interfere with any marker text.

18. Click on **OK**.

Saving a Custom Marker Card Geometry

This section describes how to save a Custom Marker Card Geometry. Geometries will be saved in the **Geometry Database**.

To save a Custom Marker Card Geometry:

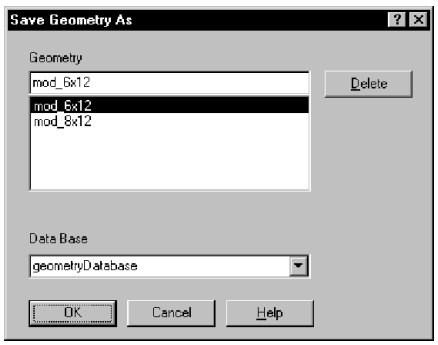
1. Click on **Save** under the **File** heading or click on the **Save Geometry Tool**.

To save a Custom Marker Card Geometry under a new name:

1. Click on **Save As** under the **File** heading.

2. When the **Save Geometry As Menu** appears, name the geometry

.



3. Click **OK**.

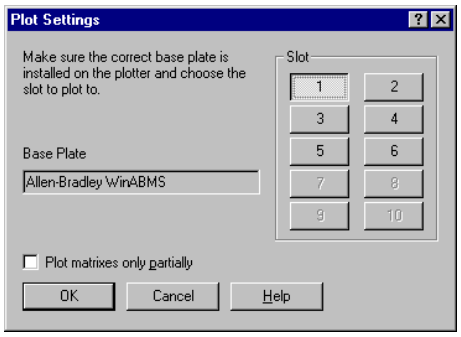
Test Plotting a Custom Marker Card Geometry

This section describes how to test plot a Custom Marker Card Geometry. This is used to see whether matrix settings need to be adjusted.

To test plot a Custom Marker Card Geometry:

1. Click on **Plot** under the **File** heading or click on the **Plot Tool**.

2. When the **Plot Settings Menu** appears click on the baseplate slot where you would like to test plot your marker card.



3. Click on the **Plot Matrices Only Partially** box if you only wish to plot the perimeter markers for the selected marker area.

4. Click **OK**.

Deleting a Custom Marker Card Geometry

This section describes how to delete a Custom Marker Card Geometry.

To delete a Custom Marker Card Geometry:

1. Click on **Open** under the **File** heading or click on the **Open Geometry Tool**.

2. Select the geometry to be deleted.

3. Click on **Delete**.

Troubleshooting and Maintenance

Chapter Objectives

This chapter describes how to:

- Troubleshoot the marking system
- Perform routine maintenance
- Clean the plotter pens

Using the Troubleshooting Chart

Table 7.A is a troubleshooting chart. This chart lists the most common operating problems, probable causes, and steps to correct the problem. If you encounter a problem that is not listed in the table, contact Allen-Bradley Technical Support at (440)646-5800.

Equipment Required

A voltmeter is required for verifying that the correct voltage is supplied to the plotter. The voltmeter is also required for verifying the correct communications cable configuration.

Troubleshooting Chart

Table 7.A Troubleshooting Chart

Problem	Probable Cause(s)	Corrective Action(s)
Plotter does not power up.	1. Plotter not plugged in. 2. Improper connection to power source.	1. Verify that plotter is plugged in. 2. Verify 110/220 VAC, 50/60 Hz voltage at power source.
No communications between plotter and computer.	1. Plotter DIP switches not set properly. 2. Faulty communications cable. 3. Wrong COM port selected.	1. Verify DIP switch settings. See Chapter 3. 2. Check cable connections. If you are using your own cable, refer to Appendix A. 3. Verify cable is plugged into COM port selected in WinABMS. 4. If steps 1-3 do not restore communications, turn off plotter, unhook communications cable, reboot computer, hookup communicatons cable, turn on plotter, and start WinABMS.
Plotter does not properly align text on markers.	1. The Plotter is not calibrated correctly.	1. Check that plotter is calibrated as described in Chapter 3.
Marker text quality is poor.	1. Dirty marker pen (for reusable pens). 2. Defective marker pen (for disposable pens). 3. Incorrect spacer used. 4. Plotting speed is too fast. 5. Baseplate out of tolerance. 6. Plotter height out of tolerance.	1. Clean pen using cleaning kit (Cat. No. 1492–PLCLEAN). See Cleaning Pens in this chapter. 2. Replace marker pen. 3. Use correct spacer. 4. Reduce plotting speed. Must have v.1.12.00 or higher. Edit plotter.ini to speed=3. If skipping continues, try speed=2, or 1. 5. Inspect baseplate for flatness. No area should exceed 1 mm above any other area. If flatness exceeds 1 mm, plate should be replaced. Contact Technical Support at (440) 646-5800. 6. Verify items 1 through 5 have been corrected. Typically when plotter height is out of tolerance, the pen will not be parked properly. Note this or any other unusual syptoms and contact Technical Support at (440) 646-5800.
If several xxx.dat files are open, the computer crashes if the last xxx.dat file is closed	1. Files were not in WinABMS program folder or one of its subfolders when last installation occurred.	1. Create a folder under the WinABMS program folder called "MARKER FILES." 2. Move all of your xxx.dat files into "MARKER FILES" subfolder. 3. Run "UPDATER.EXE", and this will update all your xxx.dat files to the latest version. "UPDATER.EXE" is located in the WinABMS Program folder.

For any other problems, call Technical Support at (440) 646-5800.

Plotter Maintenance

The plotter has several sliding surfaces. These surfaces **do not** require any lubrication. However, dust and lint may adversely affect plotter performance. Use a dust cover to keep the plotter as clean as possible.

To clean the plotter:

1. If necessary, clean the plotter with a soft lint–free cloth slightly dampened with a neutral detergent. **DO NOT** use abrasives.

ATTENTION

Do not use aerosol cleaners, household wall cleaners, or anything containing solvents since these may damage certain components.

2. To remove ink on plotter surfaces, use a clean cloth slightly dampened with a weak solution of neutral detergent (approximately 1 part detergent to 100 parts water). Squeeze out excess water and gently scrub the affected area. Make sure no water drips into the plotter.

Pen Maintainance

For refillable ink pen users only. Clean pens at the end of every work day if possible. Daily cleaning is essential to prevent build up of dried ink within the nib or breathing channel. Daily cleaning assures that the pen will function properly during normal use.

Pens should be capped and stored **horizontally** if they will not be used for more than 15 minutes.

For best results, use 1492–PLSOLN and 1492-PLCLEAN.

To clean refillable plotter pens:

1. Remove ink well. (**Note:** 1492-PLINKCART, disposable ink cartridge is neither cleanable nor refillable.)
2. Remove gray pen sleeve.
3. Open cleaning pot (1492-PLCLEAN).
4. Place pen tip, pen sleeve, and ink well into 1492-PLCLEAN.
5. Add cleaning solution (1492-PLSOLN).
6. Close 1492-PLCLEAN and shake.
7. Open 1492-PLCLEAN.
8. Remove ink cartridge, pen sleeve, and pen tip then thoroughly dry these items.

Note: Diagram included with 1492-PLCLEAN.

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RS-232 Communications Cable

This appendix shows the communications cable configuration for the plotter system. Use the appropriate cable configuration diagram if you want to create your own cable.

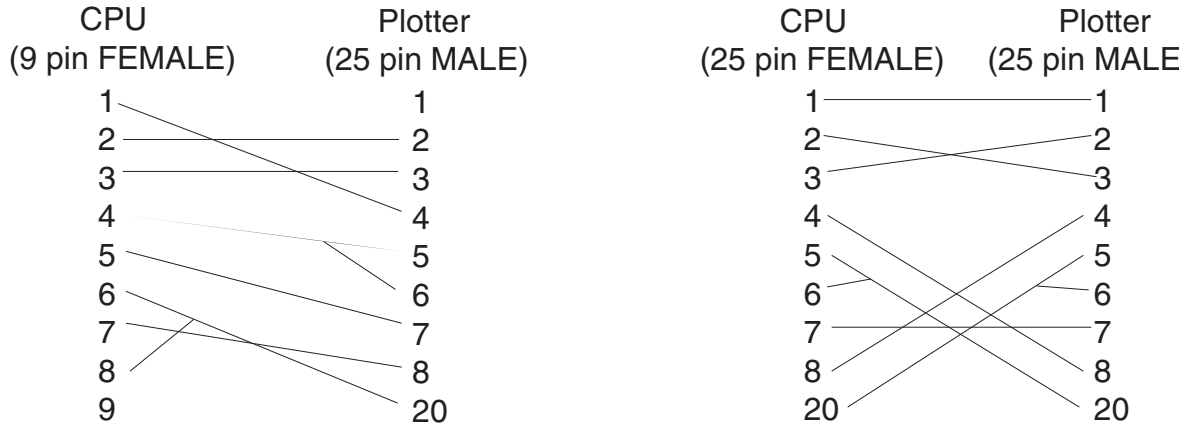
Table A.1 Cable Configuration (9-25 pin)

CPU (9-pin FEMALE)	Plotter (25-pin MALE)
1	4
2	2
3	3
4	5, 6
5	7
6, 8	20
7	8

Table A.2 Cable Configuration (25-25 pin)

CPU (25-pin FEMALE)	Plotter (25 pin-MALE)
1	1
2	3
3	2
4	8
5, 6	20
7	7
8	4
20	5, 6

Graphical Cable Configuration



Marker Card Reference

Note: The stated Maximum Characters and Maximum Rows are recommendedvaluesusingasixpointfont.Thesevaluescanbeexceeded,but legibility will be diminished.

Maximum Marking Parameters*

				Marker Orientation			
				Horizontal		Vertical	
Cat. No.	Number of Markers	Width	Height	Rows	Characters per row	Rows	Characters per row
1492-SM5X5	100	5	5	2	4	2	4
SM5X9	100	5	9	4	4	2	8
SM5X12	100	5	12	5	4	2	10
SM6X9	100	6	9	4	5	2	8
SM6X12	100	6	12	5	5	2	10
SM8X9	100	8	9	4	7	3	8
SM8X12	100	8	12	5	7	3	10
SMN81	100	6	10	4	5	2	9
SMN83	50	10	10	4	8	4	9
1492-MR9, -AL9 (5 mm)	48, 1200	5	9	3	4	2	7
1492-MR9, -AL9 (6 mm)	40, 1000	6	9	3	5	2	7
1492-MR9, -AL9 (8 mm)	30, 750	8	9	3	7	3	7
1492-MR9, -AL9 (10mm)	24, 600	10	9	3	8	4	7
1492-MR9, -AL9 (12mm)	20, 500	12	9	3	10	5	7
1492-MR15, -AL15 (5mm)	48, 1344	5	15	6	4	2	12
1492-MR15, -AL15 (6mm)	40, 1120	6	15	6	5	2	12
1492-MR15, -AL15 (8mm)	30, 840	8	15	6	7	3	12
1492-MR15, -AL15 (10mm)	24, 672	10	15	6	8	4	12

* Assumes 6 pt font

				Marker Orientation			
				Horizontal		Vertical	
Cat. No.	**Number of Markers**	**Width**	**Height**	**Rows**	**Characters per row**	**Rows**	**Characters per row**
1492-MR15, -AL15 (12mm)	20, 560	12	15	6	10	5	12
1492-N5 (5mm)	940	5	9	4	4	2	8
1492-N5 (6mm)	800	6	9	4	5	2	8
1492-N5 (6.1mm)	800	6, 1	9	4	5	2	8
1492-N5 (8.73mm)	540	8.73	9	4	7	3	8
1492-N5 (10.31mm)	460	10.31	9	4	9	4	8
1492-N43	132	4.7	30	13	4	2	27

active — The window (application file or screen) or object that is currently selected. Only one window can be active at a time. If a window is active, its title bar is highlighted to differentiate it from other windows. If an object is active, it has handles. Windows or objects that are not selected are inactive.

alphanumeric — The character set containing letters, numbers, punctuation marks and symbols.

base plate — A plate that is attached to the top of the plotter. It is used to hold the marker cards in place on the plotter. The WinABMS base plate is blue and retains up to six marker cards during plotting.

clipboard — A temporary storage file used to transfer projects between marker files.

cursor — A line or set of lines that indicates a location or selection on the computer terminal.

DIP — An acronym for Dual Inline Package. The plotter uses DIP switches for setup.

file — A collection of related information that can be accessed using a unique name.

geometry — Information that determines the location of marker text blocks on a marker card.

marker — An individual tab that snaps onto a terminal block. This tab usually has markings that indicate the function of terminal block connection.

marker card — A set of markers that consists of 5 or 10 rows of 10 markers (50 or 100 total markers).

plotter — A device similar to a printer but that uses a drafting pen to draw images and text.

RS–232 — An electrical standard for data communications.

WinABMS — An acronym for Windows-based Allen–Bradley Marking System software

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