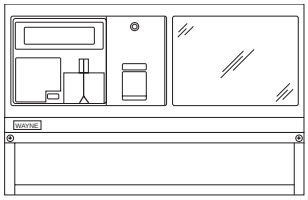
INSTALLATION

Wayne™ Vistacard Retrofit Kit, 80 and 90 Series IGEM Dispensers



DRESSER
Wayne

Installation Manual

Wayne™ Vistacard
Retrofit Kit, 80 and 90 Series
IGEM Dispensers

Table of Contents

Sections

How To Use This Manual

Section 1 includes information on site installation requirements, unpacking and inspection procedures, component return procedures, a list of required tools for installation, and dispenser power ratings.

Section 2 explains how to retrofit dual and single-sided wide body dispensers with VistaCard hardware.

Section 3 explains how to retrofit dual and single-sided narrow body dispensers with VistaCard hardware.

Section 4 describes how to load the printer paper.

Section 5 contains information on how to power up and perform a system test.

Appendix A contains information on additional wiring requirements for a VistaCard retrofit installation.

Appendix B contains an IGEM wiring diagram for a VistaCard retrofit installation.

Section 1

Initial Procedures

1.1 Introduction

This manual describes the installation of the card processing retrofit kit for double- and single-sided Wayne Vista IGEM 90 and 80 series dispensers; this includes Models V390, V395, V399, V490 and V590. The retrofit kit is described in the following table.

Table 1-1 Retrofit Kit

Part Number	Description
889048-xxx	Assy, Kit, Retrofit VistaCard Customer Specific Single and Dual Sided
889049-xxx	Assy, Kit, Retrofit VistaCard Customer Specific Single and Dual Sided

Before retrofitting dispensers, a pair of data wires for added card processing may need to be installed per Appendix A of this manual. Any installation or modification must comply with the requirements of the National Electrical Code (NFPA 70), the Automotive and Marine Service Station Code (NFPA 30A) and any other applicable codes

1.2 Power Rating

Table 1-2 provides the revised power ratings for the VistaCard retrofit system.

Table 1-2 Power Ratings

System Component	Nominal Voltage	Amps
Dispenser Electronic and Lights	120 VAC, 60 Hz	8.0
Dispenser Electronics	120 VAC, 60 Hz	7.4

1.3 Unpacking and Inspection

Complete the following steps:

1. Verify the number of received shipping cartons against the supplied packing list.
2. Inspect shipping cartons for damage that may have occurred during transit. Keep damaged cartons for possible claims.

Caution: When removing electronic components from static packages, make sure you wear an anti-static wrist strap (part no. 916962) with the other end of the wrist strap securely attached to an earth grounding point.

3. Remove all equipment from shipping cartons and carefully inspect for damage. Any damage should be brought to the attention of the carrier and a claim made immediately.
4. Return all equipment to the respective cartons for protection until actual installation.
5. Save all cartons until you are certain that return shipments are not required.

1.4 Returning Components

Parts or components returned to the factory under warranty or for repair are subject to damage if not packaged properly. Complete the following steps to return parts or components to the factory.

1. Place electronic components in an anti-static bag and in the original shipping cartons for return shipment to the factory.

Note: If original shipping cartons are not available use a sturdy cardboard container and suitable packing materials such as anti-static polyethylene foam or bubble pack, to ensure the component is firmly packed.

2. Include a Return Parts Tag with the defective component describing the particular problem with the part.
3. Make sure adequate insurance is provided when returning parts to the factory.

WARNING: If parts or components arrive at our factory in a damaged condition and it is determined that the damage is a direct result of inadequate or improper packaging, the damage will not be covered under the original warranty and the customer or distributor will be held responsible for the cost of repairs necessary to correct or replace the damaged parts.

1.5 Required Tools

The tools listed in the following table are required to install the CAT Retrofit Kit.

Table 1-3 Required Tools

Description	Quantity
1/4 in. NutDriver	1
11/32 in. Nut Driver	1
11/32 in Flat Wrench	1
Phillips Screwdriver (small)	1
Slotted Screwdriver (small)	1
Jeweler's Screwdriver	1
Anti-static Wrist Strap	1

Section 2

Dual and Single Sided Retrofit Installation for Wide Body

2.1 Introduction

The following paragraphs explain how to install the VistaCard IGEM retrofit kit. Before you begin, perform the following:

1. For dispensers being worked on, move the dispenser data link switches to BYPASS.
2. Disconnect the power from the dispenser at the power panel and dispenser junction box. Post a warning sign at the breaker box stating that the equipment is being serviced.

Caution: If other dispensers in the station are to remain operational, AC power will be present at terminals 3, 4, and 5 in the dispenser junction box. Be sure these wires are labeled, disconnected, and isolated before continuing.

2.2 Lowering the Bezels

Complete the following steps to lower the bezel on side A and B of the dispenser into the service position.
.

1. Remove and save any temporary advertisement or instructional attachments from the bezel face.
2. Place an anti-static wrist strap (PN 916962 or equivalent) on your wrist and attach the other end of the wrist strap to an earth grounding point.

3. Unlock the bezels using the bezel key and lower them into the service position .

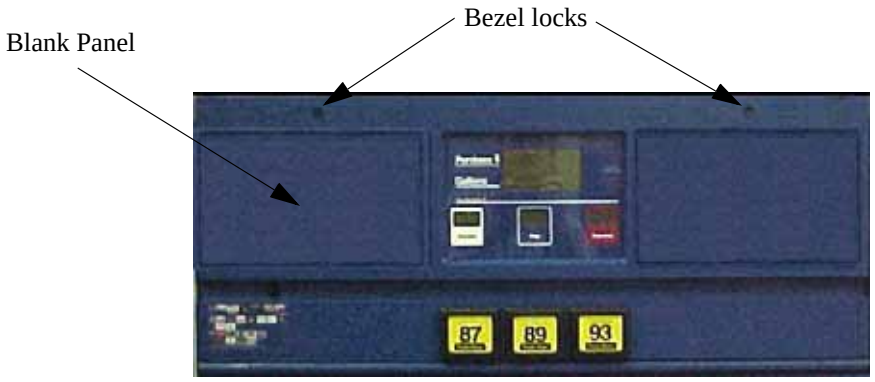


Figure 2.1 Bezel Locks

3. Remove the blank bezel panel on the left side of the Side 1 bezel by unscrewing the 3 retaining screws and setting them aside for later use.
4. Remove any gasket material from the bezel opening that remains after removal of the bezel panel.

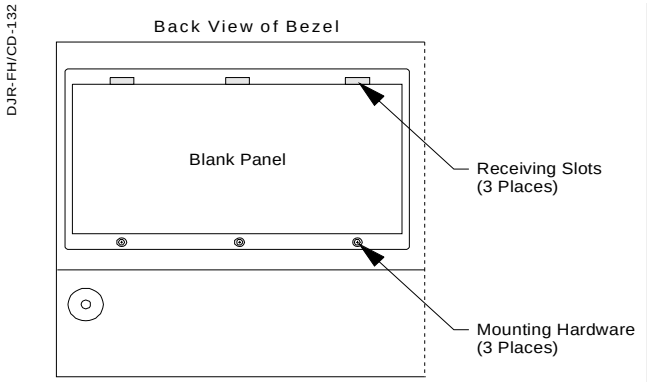


Figure 2-2 Removing the Blank Panel from the Bezel

5. Install the CPM (PN A04100-966) from the kit into the Bezel and secure with the screws removed earlier.
6. Attach the ground strap from the CPM to the ground plate on the Bezel.

Figure 2-3 CPM Module Installation

7. If dispenser is a dual sided dispenser then repeat steps 3, 4, and 5 for Side 2.

2.3 Removing Old Z Bracket

The old style Z Bracket originally installed with the IGEM is not compatible with the CAT retrofit kit. Follow the steps below to remove the old style Z brackets if they look like the one shown in the following example and replace with the ones shipped with the kit.

Figure 2-4 Old Style Z Bracket

1. Remove the power supply, IGEM computer, annunciator, and Wayne VAC board if present from the Z bracket and rest them on the vapor barrier.
2. Remove the old Z brackets and replace them with the two new Z brackets (PN 887654-001) from the kit. The Z brackets install in the same mounting holes that were used to mount the old Z brackets.
3. Re-install the IGEM power supply and Wayne VAC board that was removed earlier.
4. Re-install the IGEM pump computer that was removed earlier. See Figure 2-5.
5. Re-install the annunciator that was removed earlier and reconnect to the IGEM computer.

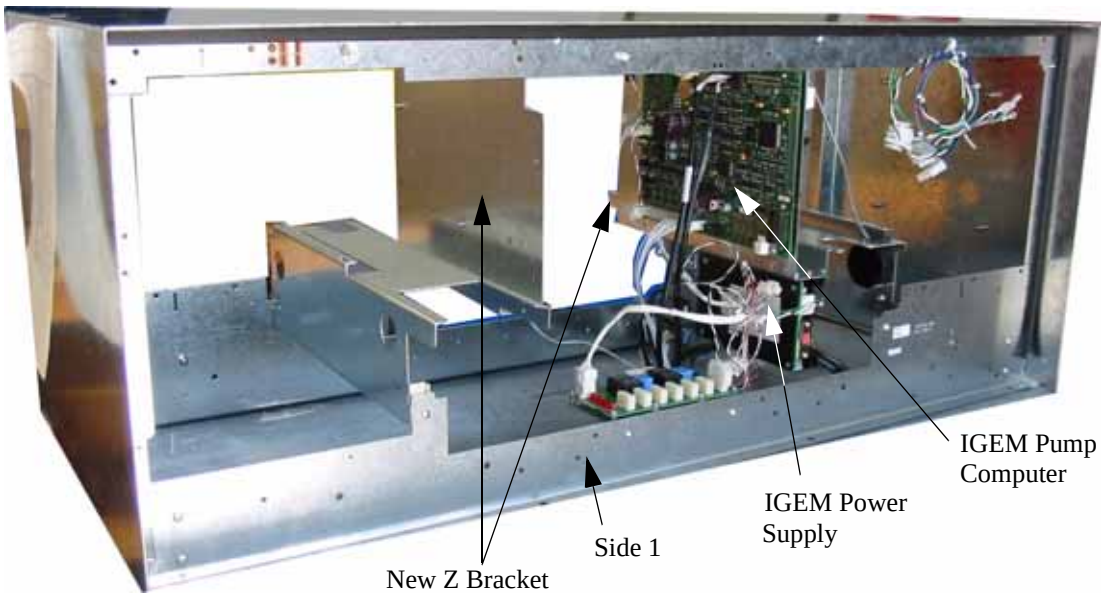


Figure 2-5 IGEM Electronics Head

2.4 Installing the Drain Pan (881138-001)

1. Locate drain pan (part number 881138-001).
2. Slide drain pan into place and fasten to base angle using 2 #8 x 3/8 screws (part number 2-513161) and 2 #8 washers (part number 6011002).
3. Repeat steps 1 through 3 for opposite side of a dual sided dispenser. Refer to Figure 2-6.

Figure 2-6 Drain Pan Installation

2.5 Mounting the Z Bracket with the Dual CAT Board

The Z Bracket (PN 887654-001) with the Dual CAT board must be mounted on Side 1 as shown in Figure 2-7.

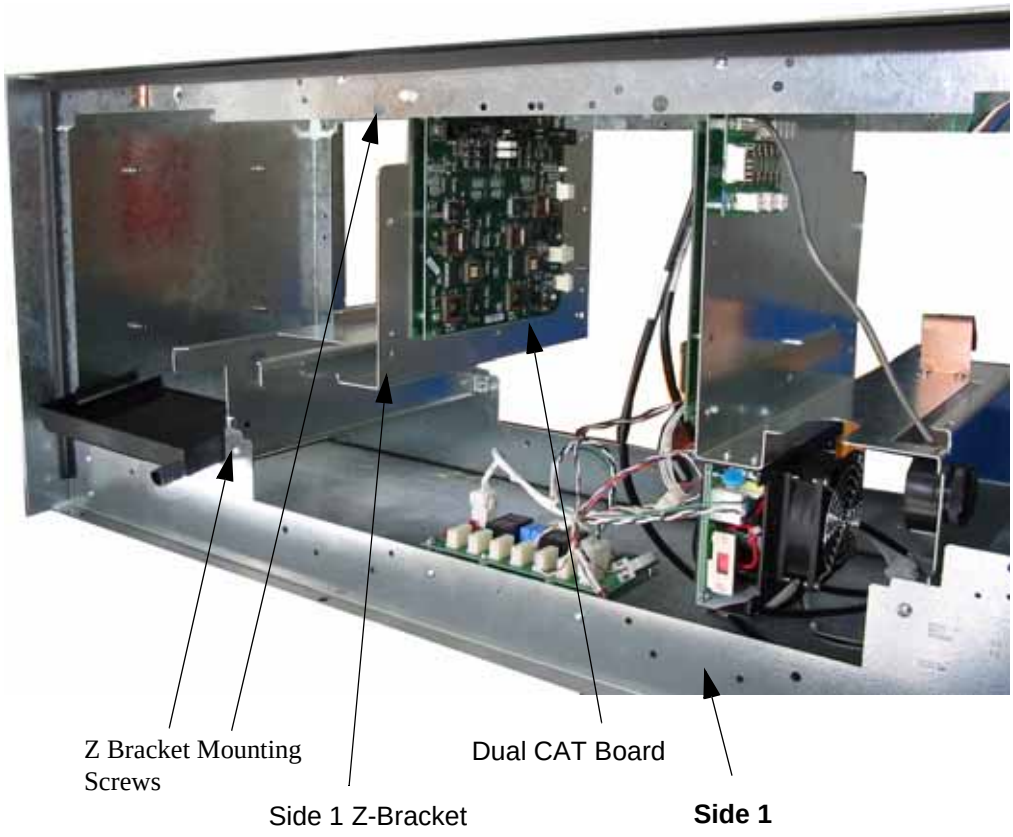


Figure 2-7 CAT Board and Head Mounting Position

2.6 Installing the Printer and Cables

Install the Clamshell Printer (PN 887627-001) on Side 1 first and then mount the second printer if upgrading a dual sided dispenser.

1. Install signal cable 883924-002 from J5 of the Dual CAT to J50 of the Side 1 Clamshell printer.
2. Install power cable 880566-007 from J8 of the Power Distribution Board to J51 of the Side 1 Clamshell printer.

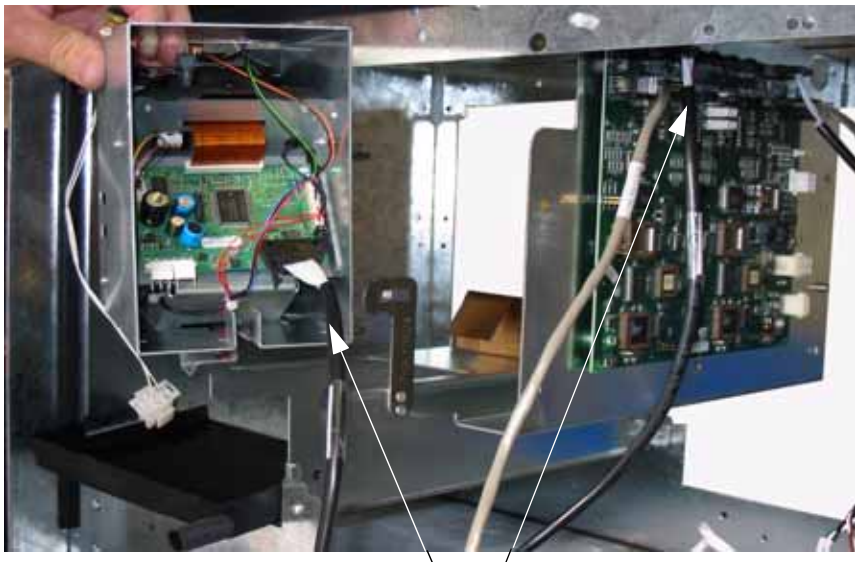


Figure 2-8 Installing the Side 1 Printer Signal Cable

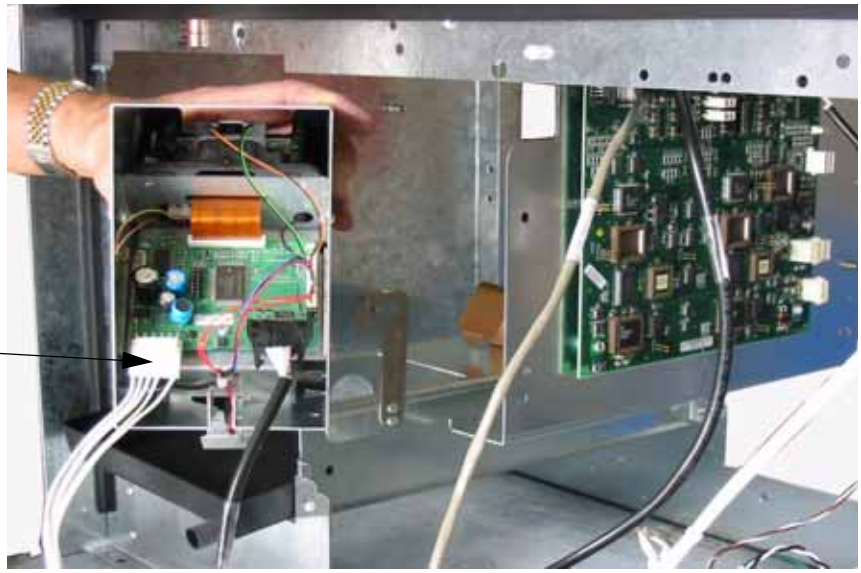


Figure 2-9 Installing the Side 1 Printer Power Cable

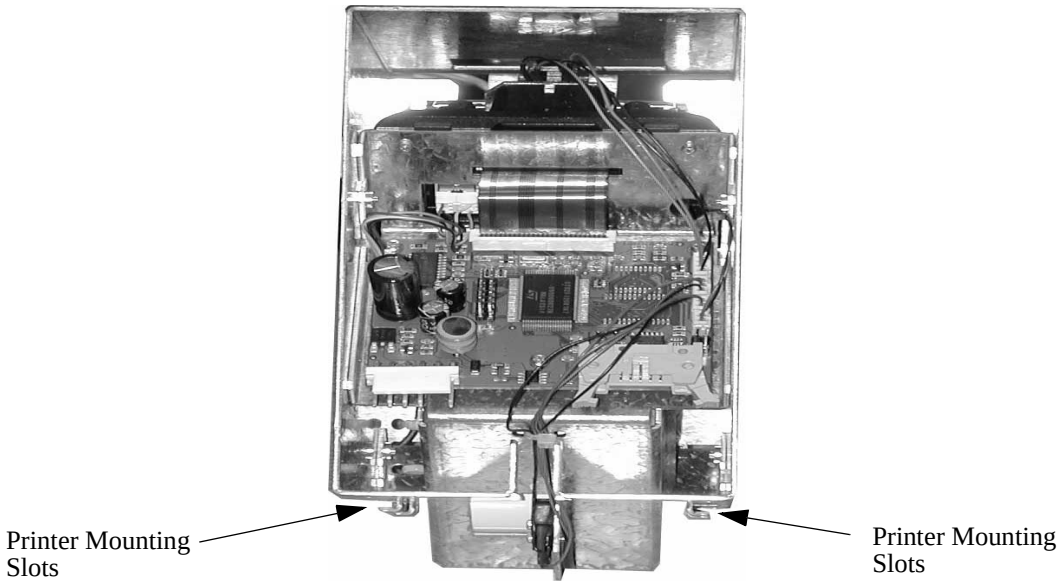


Figure 2-10 Backside of Clamshell Printer

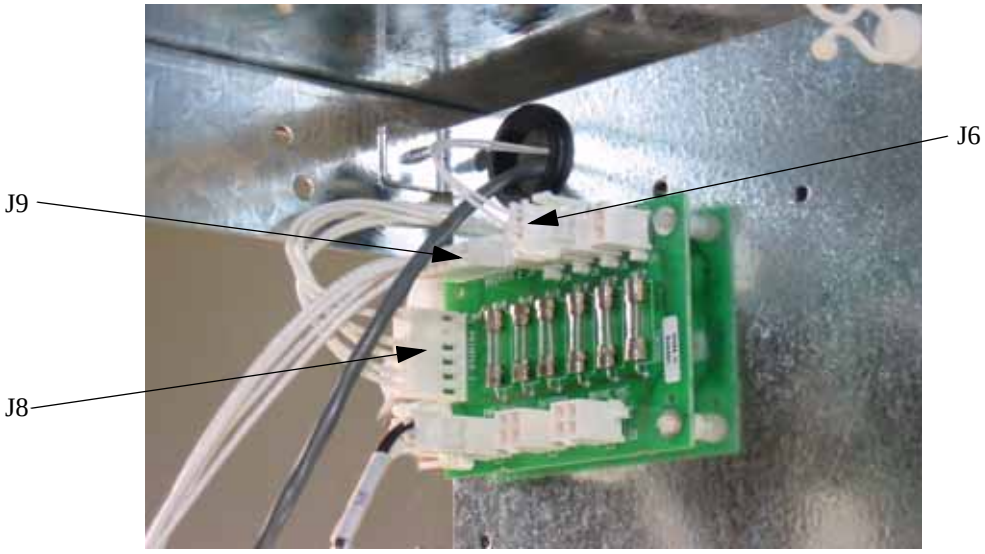


Figure 2-11 24 Volt Power Distribution Board

3. Slide the Clamshell printer into the Z bracket Be sure to match the Printer Mounting Slots with the slots on the Z bracket. See Figure 2-10.
4. Install power cable 887335-001 from J6 of the 24 Volt Power Distribution Board to J3 of the Dual CAT board. Be sure to route all cables from the power distribution board through the rubber grommet in the Z-Bracket.
5. Install cable 886909-001 from J22 of the IGEM computer to J24 of the Dual CAT board.
6. Install cable 883979-006 from J7 of the Dual CAT board to J2 of the Side 1 Bezel Control Board (BCB).

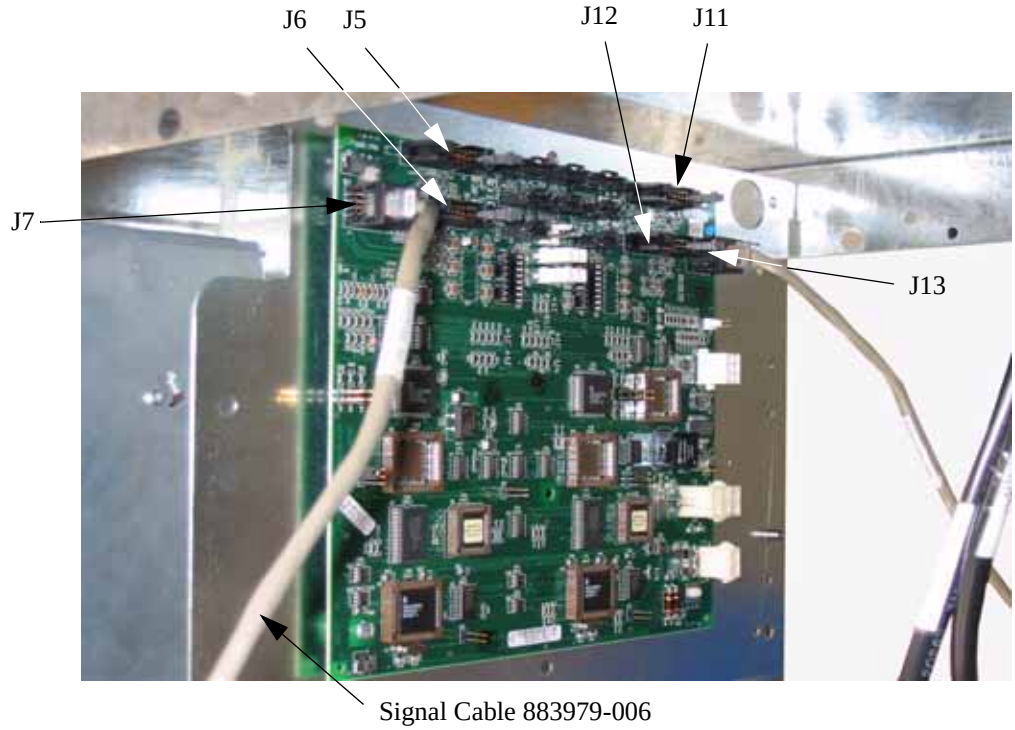


Figure 2-12 BCB Signal Cable Installation

Proceed with steps 7 through 9 if you are upgrading a dual-sided dispenser.

7. Install signal cable 883924-005 from J11 of the Dual CAT to J50 of the Side 2 Clamshell printer.
8. Install power cable 880566-007 from J9 of the Power Distribution Board to J51 of the Side 2 Clamshell printer then slide the printer into position.
9. Install cable 883979-007 from J13 of the Dual CAT board to J2 of the Side 2 Bezel Control Board (BCB).

.

2.7 Installing the Heater Assembly (PN 883798-002)

A heater will need to be installed in the dispenser head to keep the components at the proper operating temperature.

1. Mount the heater assembly into the dispenser in the top of the head at a location between the IGEM Pump Computer and the Dual CAT Board and secure with four 8x3/8 screws . See Figure 2-13.

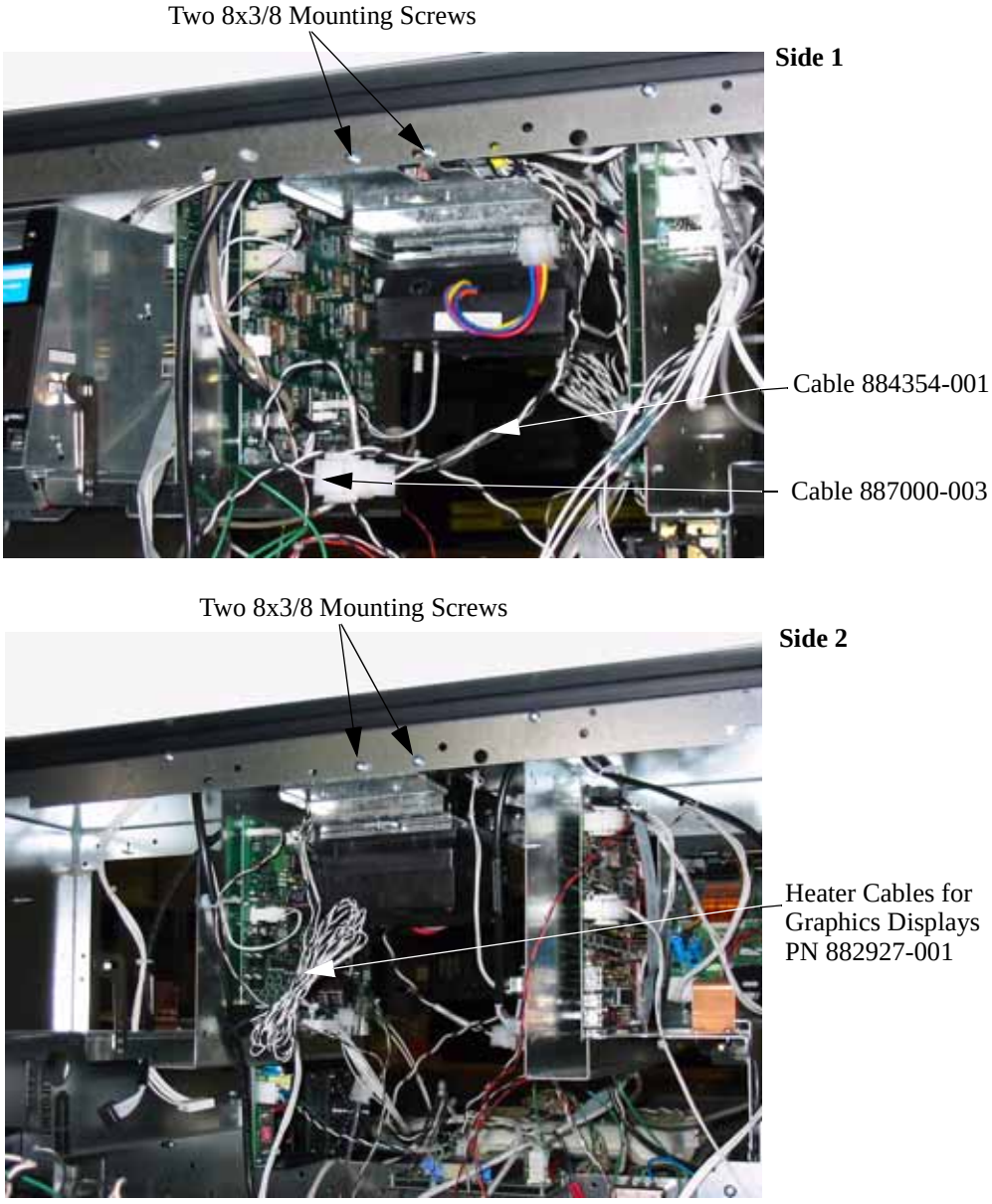


Figure 2-13 Dispenser Heater Installation

2. Plug the Heater power cable PN 884354-001 into the AC power cable PN 887000-003. Plug the free end of 887000-003 into J7 of the AC Distribution board.
3. For a single sided dispenser, route one of the Graphics Display heater cables (PN 882927-001) over to Side 1 of the dispenser and connect to the heater cable which is attached to the Graphics Display assembly.

4. If this is a dual sided dispenser then route the remaining Graphics Display heater cable over to Side 2 of the dispenser and connect to the heater cable which is attached to the Graphics Display assembly.
5. Raise both bezels into the operating position and secure the bezel locks.

Section 3

Dual and Single Sided Retrofit Installation for Narrow Body

3.1 Introduction

The following paragraphs explain how to install the VistaCard IGEM retrofit kit. Before you begin, perform the following:

1. For dispensers being worked on, move the dispenser data link switches to BYPASS.
2. Disconnect the power from the dispenser at the power panel and dispenser junction box. Post a warning sign at the breaker box stating that the equipment is being serviced.

Caution: If other dispensers in the station are to remain operational, AC power will be present at terminals 3, 4, and 5 in the dispenser junction box. Be sure these wires are labeled, disconnected, and isolated before continuing.

3.2 Lowering the Bezels

Complete the following steps to lower the bezel on side A and B of the dispenser into the service position.
.

1. Remove and save any temporary advertisement or instructional attachments from the bezel face.
2. Place an anti-static wrist strap (PN 916962 or equivalent) on your wrist and attach the other end of the wrist strap to an earth grounding point.

3. Unlock the bezels using the bezel key and lower them into the service position .

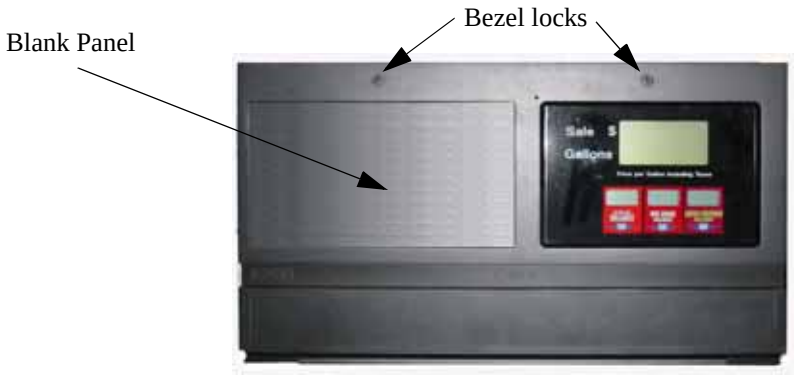


Figure 3.1 Bezel Locks

3. Remove the blank bezel panel on the left side of the Side 1 bezel by unscrewing the 3 retaining screws and setting them aside for later use.

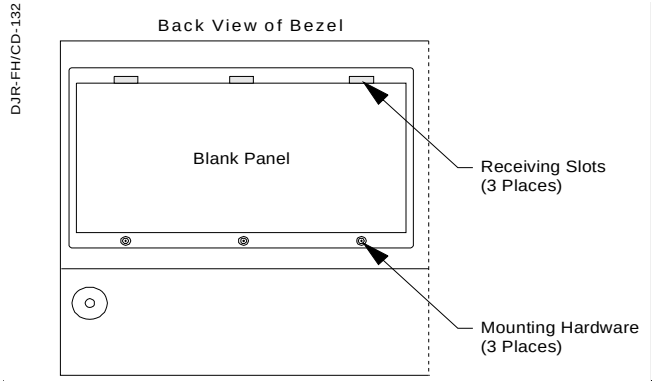


Figure 3-2 Removing the Blank Panel from the Bezel

4. Install the CPM from the kit into the Bezel and secure with the screws removed earlier.
5. Attach the ground strap from the CPM to the ground plate on the Bezel.

Figure 3-3 CPM Module Installation

6. If dispenser is a dual sided dispenser then repeat steps 3, 4, and 5 for Side 2.

3.3 Removing Old Z Bracket

The old style Z Bracket originally installed with the IGEM is not compatible with the CAT retrofit kit. Follow the steps below to remove the old style Z brackets if they look like the one shown in the following example and replace with the ones shipped with the kit.

Figure 3-4 Old Style Z Bracket

1. Remove the power supply, IGEM computer, annunciator, and Wayne VAC board if present from the Z bracket and rest them on the vapor barrier.
2. Remove the old Z brackets and replace them with the two new Z brackets (PN 887655-001) from the kit. The Z brackets install in the same mounting holes that were used to mount the old Z brackets.
3. Re-install the IGEM power supply and Wayne VAC board that was removed earlier.
4. Re-install the IGEM pump computer that was removed earlier. See Figure 3-5.
5. Re-install the annunciator that was removed earlier and reconnect to the IGEM computer.

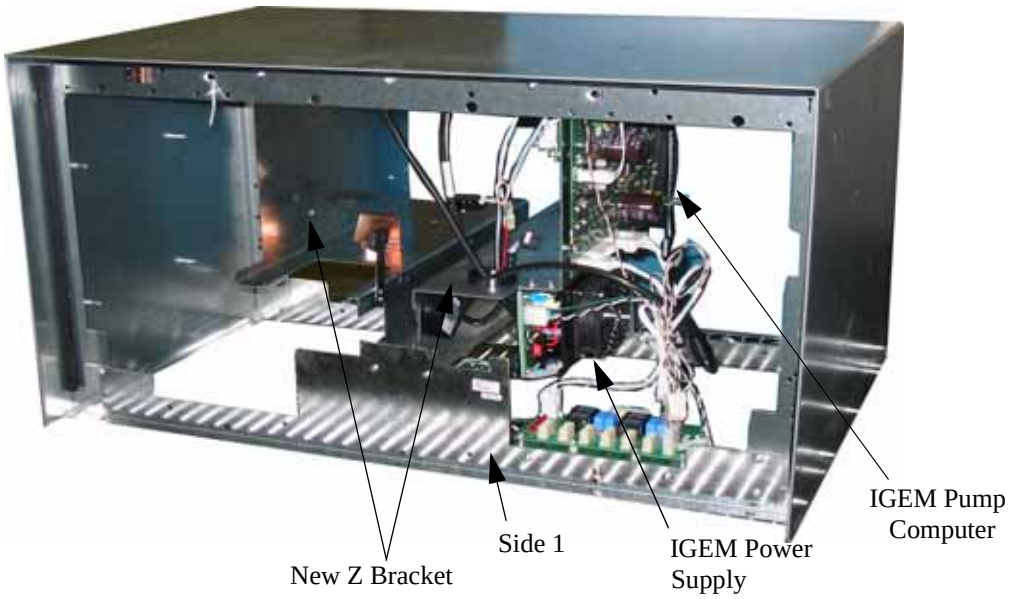


Figure 3-5 IGEM Electronics Head

3.4 Installing the Drain Pan (883366-001)

1. Install Drain Pan on bezel underneath the card reader using one 6-32 x 1/2 machine screw (PN 916075) & one plastic screw (PN 1-921092).
2. Repeat the above step for the opposite side of a dual sided dispenser. Refer to Figure 3-6.

Figure 3-6 Drain Pan Installation

3.5 Mounting the Z Bracket with the Dual CAT Board

The Z Bracket with the Dual CAT board must be mounted on Side 1 as shown in Figure 3-7.

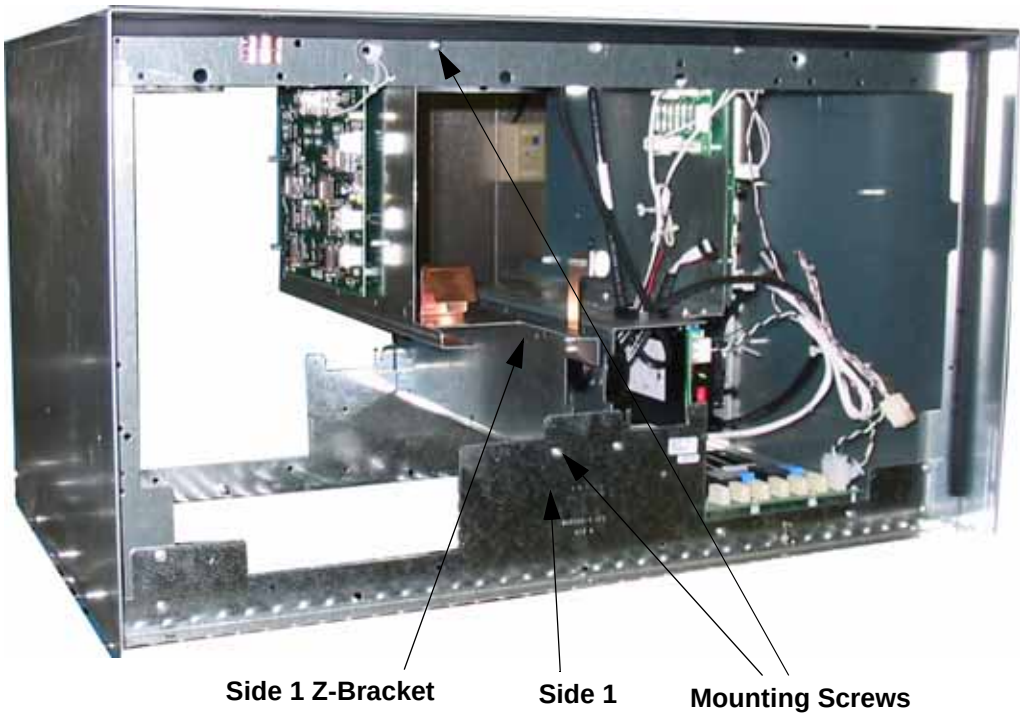


Figure 3-7 Z Bracket with CAT Board Head Mounting Position

3.6 Installing the Printer and Cables

Install the Clamshell Printer on Side 1 first and then mount the second printer if upgrading a dual sided dispenser.

1. Install signal cable 883924-002 from J5 of the Dual CAT to J50 of the Side 1 Clamshell printer.
2. Install power cable 880566-003 from J8 of the 24 Volt Power Distribution Board to J51 of the Side 1 Clamshell printer.

Figure 3-8 Installing the Side 1 Printer Signal Cable

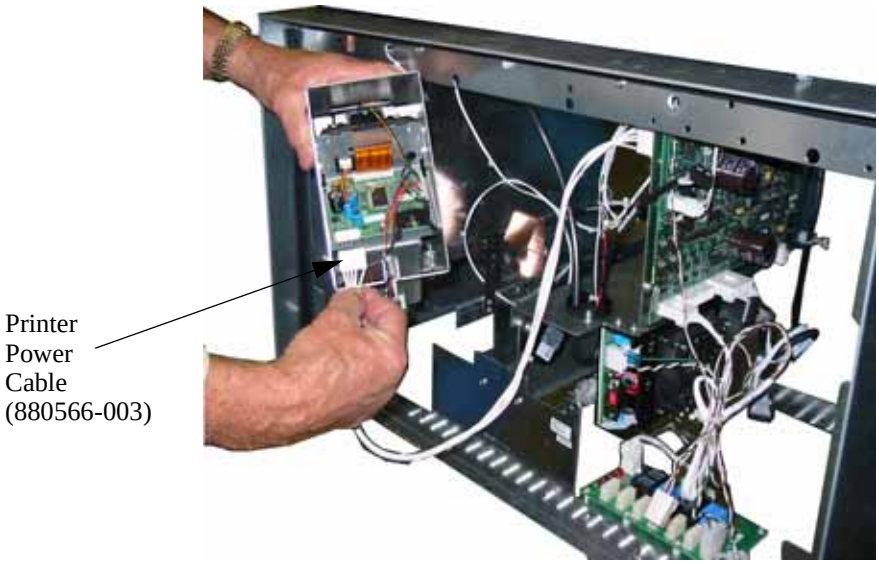


Figure 3-9 Installing the Side 1 Printer Power Cable

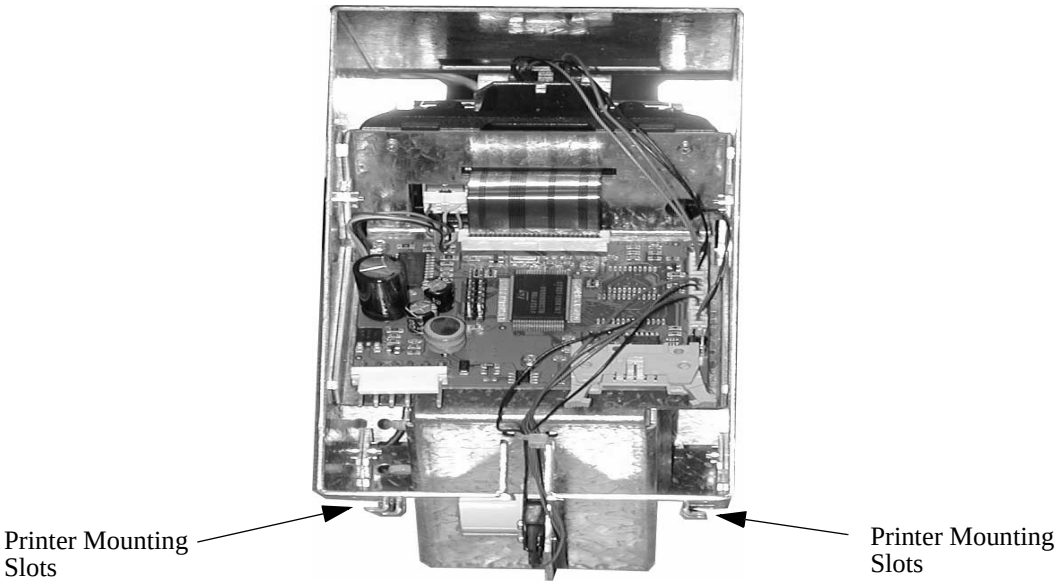


Figure 3-10 Backside of Clamshell Printer

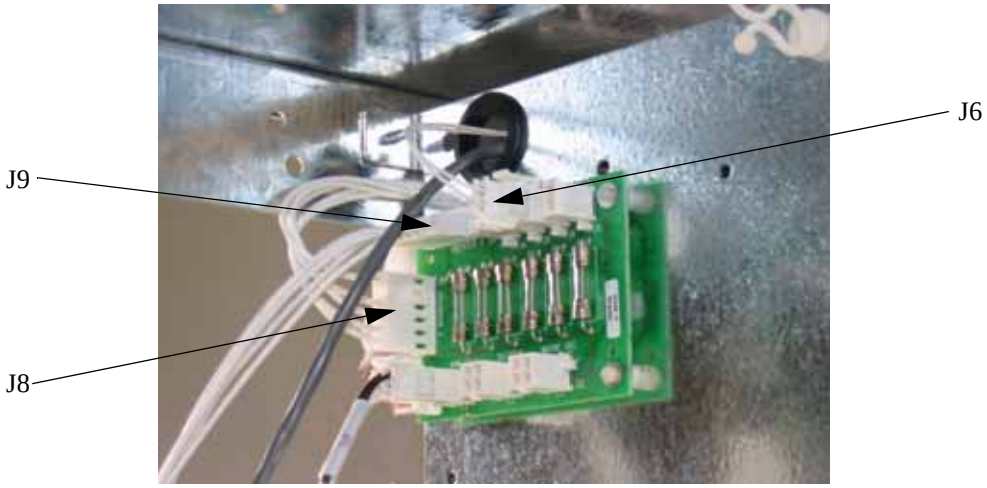


Figure 3-11 24 Volt Power Distribution Board

3. Slide the Clamshell printer into the Z bracket Be sure to match the Printer Mounting Slots with the slots on the Z bracket. See Figure 3-10.
4. Install power cable 887335-002 from J6 of the 24 Volt Power Distribution Board to J3 of the Dual CAT board. Be sure to route all cables from the power distribution board through the rubber grommet in the Z-Bracket.
5. Install cable 886909-001 from J22 of the IGEM computer through grommet to J24 of the Dual CAT board.
6. Install cable 883979-003 from J7 of the Dual CAT board to J2 of the Side 1 BCB.

Figure 3-12 BCB Signal Cable Installation

Proceed with steps 7 through 9 if you are upgrading a dual-sided dispenser.

7. Install signal cable 883924-002 from J11 of the Dual CAT to J50 of the Side 2 Clamshell printer.
8. Install power cable 880566-001 from J9 of the Power Distribution Board to J51 of the Side 2 Clamshell printer then slide the printer into position.
9. Install cable 883979-004 from J13 of the Dual CAT board to J2 of the Side 2 BCB.

3.7 Installing the Heater Assembly

A heater will need to be installed in the dispenser head to keep the components at the proper operating temperature.

1. Mount the heater assembly into the dispenser against the left wall as you face side 1 and secure with four 8x3/8 screws . See Figure 3-13.

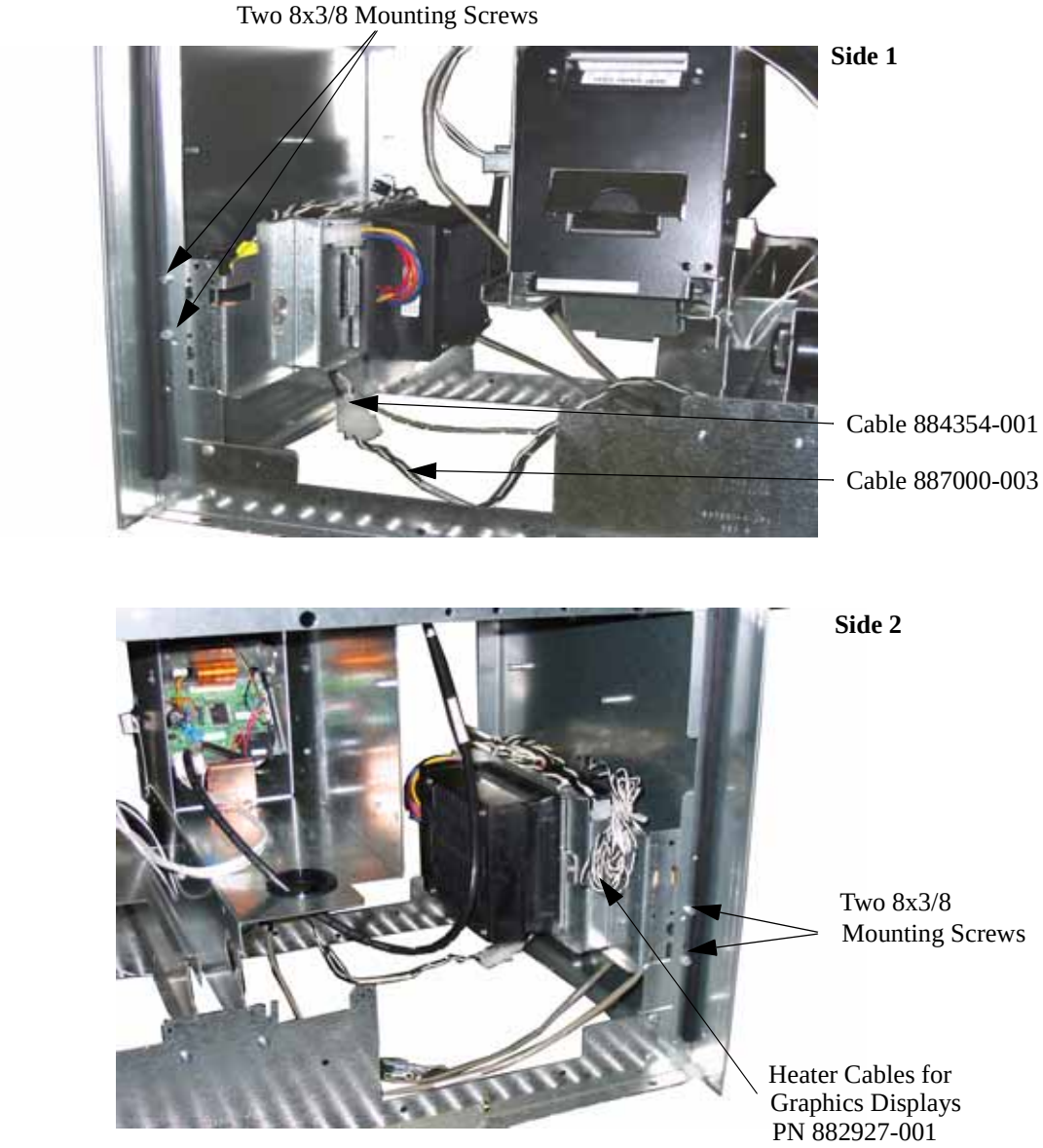


Figure 3-13 Dispenser Heater Installation

2. Plug the Heater power cable PN 884354-001 into the AC power cable PN 887000-003. Plug the free end of 887000-003 into J7 of the AC Distribution board.
3. For a single sided dispenser, route one of the Graphics Display heater cables (PN 882927-001) over to Side 1 of the dispenser and connect to the heater cable which is attached to the Graphics Display assembly.

4. If this is a dual sided dispenser then route the remaining Graphics Display heater cable over to Side 2 of the dispenser and connect to the heater cable which is attached to the Graphics Display assembly.
5. Raise the bezels and secure.

Section 4

Loading Printer Paper

4.1 Installing the Paper and Testing the Clamshell Printer

1. Restore power to the pump head by turning the DCPT power switch to ON.
2. Open the Clamshell printer door and drop the paper roll in with the paper leader feeding from the top of the roll. See Figure 4-1 and Figure 4-2.

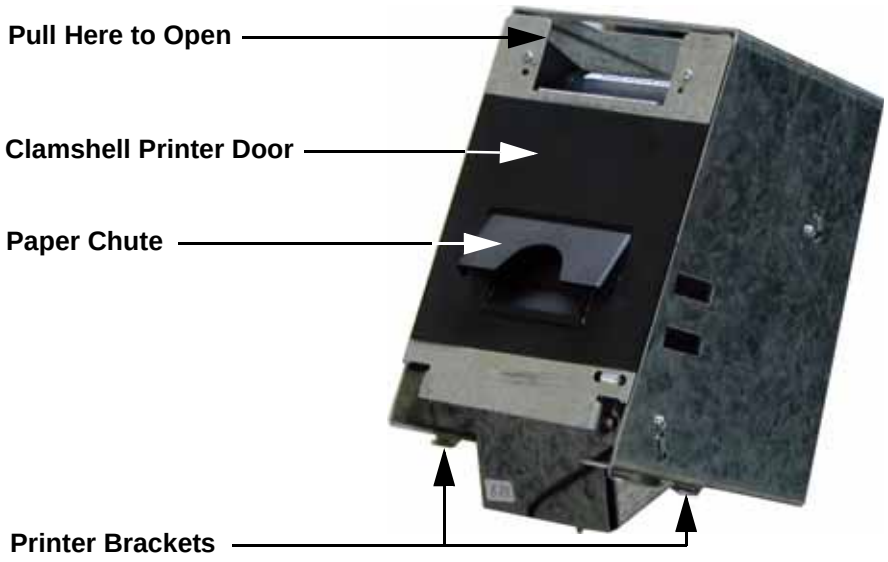


Figure 4-1 Clamshell Printer Door

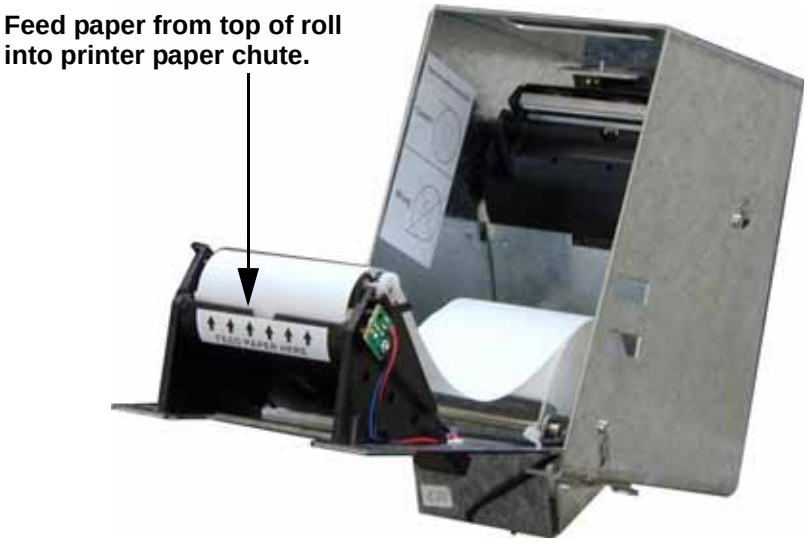


Figure 4-2 Clamshell Printer Paper Add

3. Close the Clamshell printer door. A printer test receipt should print. See Figure 4-3.
4. Repeat for the opposite side of the pump.

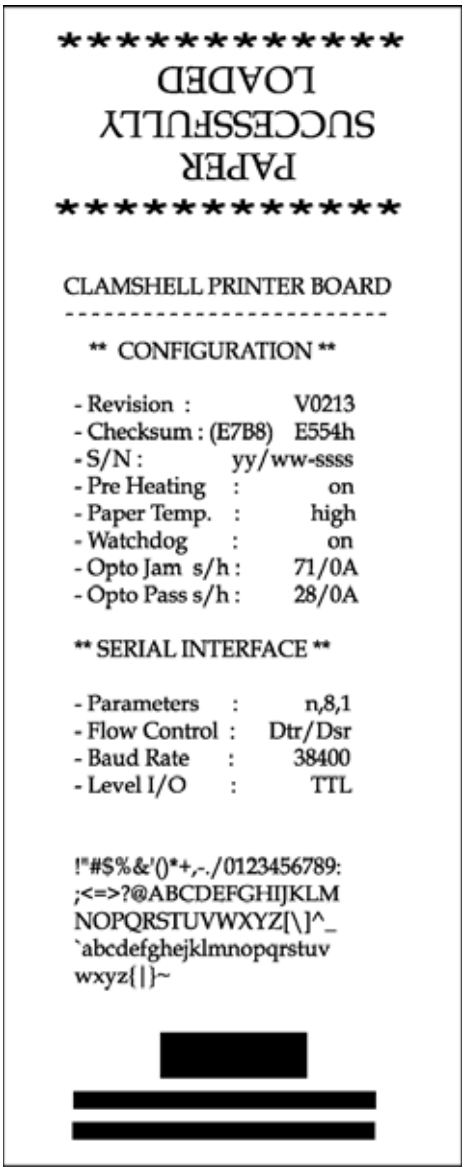


Figure 4-3 Clamshell Printer Test Receipt

Section 5

Power-up and System Test

5.1 Introduction

The following paragraphs provide instructions for applying power and testing the Customer Activated Terminal (CAT) retrofit unit.

5.2 System Power-Up

Complete the following steps.

1. To add power to the system, turn power **ON** at the control power circuit breaker.

Note: If the CAT retrofit unit does not respond to power up, check all connections. Replace any defective components.

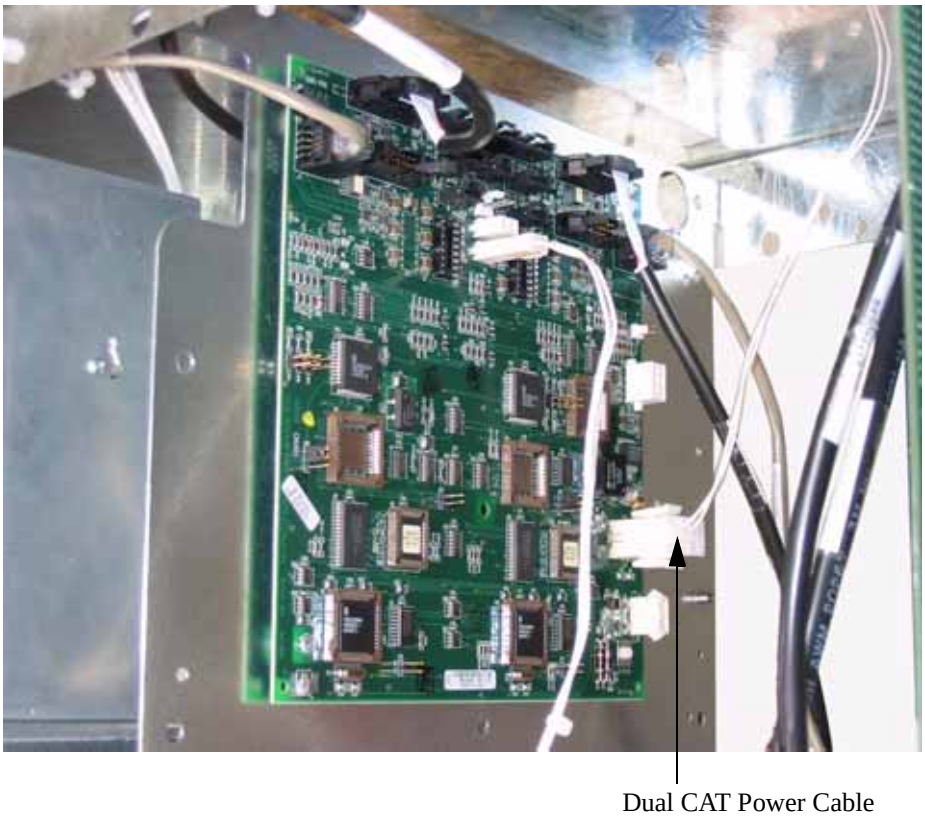


Figure 5-1 CAT Power Cable (PN 887335-001)

5.3 CAT System Self-Test

The following paragraphs provide instructions for testing and setting the address of the CAT. During the self-test, the system is designed to pause 25 seconds for a response to self-test prompts. When the 25 second time limit expires, the system automatically advances to either the next self-test or returns to the on-line mode.

5.3.1 Entering Self-Test Mode

Step 1 Power down the Dual CAT by removing the power cable from J3 for 10 seconds.

Step 2 Replace the CAT Power cable while holding down any key on the keypad until the alternating message below appears on the display.

Step 3 Press the indicated key or press ENTER to continue to the next screen prompt.

CONTRAST ADJUST PRESS NEXT TO EXIT	YES = DARKER NO = LIGHTER

5.3.2 Software Revision Level and Data Link Address

Step 1 Continue holding the key down until the “REV” message below appears on the display, then release. Once the system displays the “REV” message, the module has successfully entered the self-test mode.

REV XXX MM/DD/YY ADDRESS = YY

The top row of information in the “REV” message display represents the module software revision. The bottom row is the current terminal address for the data link. Data link addresses are assigned to the module using the same number as the fueling point.

Step 2 If the CAT’s data link address is correct, press the **ENTER** key. To change the address, enter the correct address number on the keypad and press **ENTER** (if the CAT is equipped with a DES keypad, the keypad revision will be displayed).

Step 3 Verify that the Keypad revision and BCB revision levels are displayed on the screen. The BCB revision displayed will be the software revision of the BCB board or the QCAT board whichever applies.

Step 4 Press ENTER to continue.

KEYPAD REV __

BCB REV __

5.3.3 Configure Card Reader

When the system displays the prompt below, proceed as follows:

*CONFIGURE CARD READER (Y/N)

Answering **YES** to the prompt causes the screen to display the prompt below

or

Press **NO** on the keypad and the system automatically proceeds to the "Offline msg" prompt.

TRACK 1 OR 3 (1/3)

To answer the “Track 1 or 3" prompt, perform the following steps:

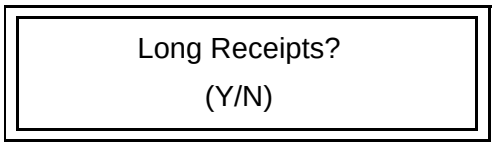
Step 1 Press **1** on the keypad.

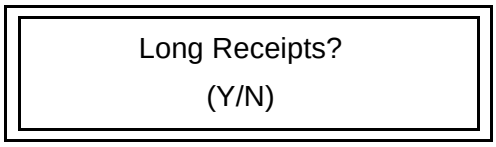
Step 2 Press the **ENTER** key and the following prompt will be displayed.

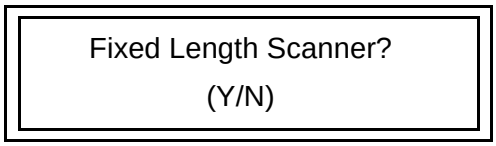
Offline msg: Out of Service (Y/N)

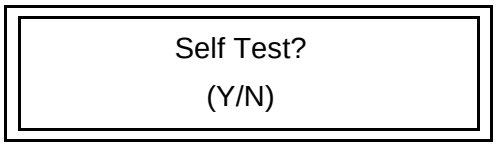
Step 3 Answer **NO** to the above prompt.

Step 4 Answer the following prompts as they appear:



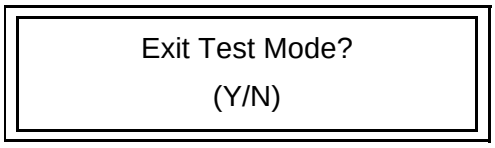






Answering YES to the above prompt will begin the display, printer and card reader self test as discussed on the following pages.

Answering NO to the above prompt will display the Exit Prompt shown below.



Answering YES to the above prompt to exit and return the CAT to normal operation.

Answering NO to the above prompt to return to the beginning of the Self Test mode.

5.3.4 Display Self-Test

A series of actions appear on the screen for the display self-test. Two rows of black squares followed by numbers and letters scroll from right to left across the screen during the display self-test.

5.3.5 Printer Self-Test

The message shown below appears continuously on the display screen during the printer self-test.

The printer self-test performs the following actions in sequence:

1. Advance the paper one half inch.
2. Print CAT information (ROM version, processor type, etc.)
3. Print five rows of characters followed by five more rows of slashes (\ and /).
4. Advance the paper one inch and cut the paper.

Once the paper is cut, the system automatically activates the card reader self-test.

5.3.6 Card Reader Self-Test

Any type of valid credit card can be used for the card reader test. The card reader self-test begins with the screen prompt shown below.

Step 1 Insert the card.
Once the credit card is inserted into the card reader, the CAT computer reads data from the card.

Step 2 Remove the credit card in one smooth continuous motion when the above prompt appears on the display screen. A series of digits appear on lines 1 and 2 of the display screen. This information is the card data.

Step 3 Press the **NEXT** key and continue to the keypad self-test.

If either of the following prompts appear on the display screen, "TRACK READ ERROR" or "CARD READ ERROR", the credit card is invalid. Depending on the type of invalid credit card, one or two rows of digits may appear on the display screen. To complete the card reader self-test, select a different credit card and repeat procedure. If the error message continues to be displayed, the card reader may need replacing.

5.3.7 Keypad Self-Test

Testing the CAT keypad requires the operator to select keys on the keypad and verify the information on the display screen. Refer to the Keypad Test table on the following page.

Complete the following steps to test the keypad.

Step 1 Press a key listed under the column heading Native Mode Key.

Step 2 Verify the two digit number on the display screen with the number listed under the column heading Keypad Coordinate.

The screen does not display a two digit number when the NEXT key is pressed. This key remains functional during the keypad self-test.

Step 3 Repeat Steps 1 and 2 until all of the keys are tested.

Step 4 Press the **NEXT** key to proceed to the memory self-test.

1.7 KEYPAD SELF-TEST, continued

KEYPAD TEST

Native Mode Key	Keypad Coordinate
CLEAR	00

KEYPAD TEST (CONTINUED)

Native Mode Key	Keypad Coordinate
7	01
4	02
1	03
0	10
8	11
5	12
2	13
ENTER	20
9	21
6	22
3	23
CANCEL	30
NO	32
YES	33
NEXT	Proceed to memory test.

5.3.8 System Memory Self-Test

A successful memory self-test will display the message below.

An unsuccessful memory self-test will display one of the following: “BIT 0" through “BIT 7".
A BIT error message is an indication of a defective board in the CAT system. An example of a
BIT error message that may appear on the display screen is shown below.

5.3.9 Exit Self-Test Mode

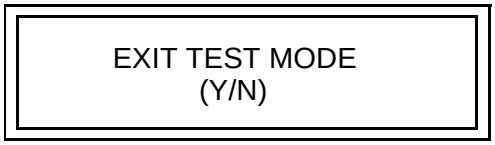
Once the system successfully completes the memory self-test, the exit prompt shown below appears on the screen.

Complete one of the following steps:

Press the **YES** key to exit the self-test mode,

or

Press the **NO** key to begin the self-test mode again.



Appendix A

Additional Wiring Requirements

A.1 Introduction

The Vistacard retrofit may require new wiring to handle pump control and card processing data. Wiring trough, conduits, and wire are to be installed by a qualified electrician.

Note: All equipment must be installed and used in accordance with state, local and NFPA number 30, 30A and 70 codes and regulations.

A.2 Pulling New Data Wires

A pair of data wires may need to be added to the conduit running from each dispenser to the site controller (or distribution box for sites with 12 or more dispensers) inside the station. The following instructions explain the method for running these data wires during a typical installation.

Note: For specific dispenser installation and assembly information, see the instructions furnished with individual dispensers.

1. Remove the lower dispenser door from the side of the dispenser installed with the Model and Serial Number decal. Set the door aside for re-installation later.
2. Remove the bolts securing the junction box cover to the junction box. Set the cover and hardware aside for re-installation later.
3. Disconnect and label power and communication wires to the dispensers located inside the station.
4. Label terminal strips before removing wire for ease of re-installation at dispenser.
5. Remove the conduit sealing fitting from both junction boxes (at dispenser and in station). Refer to Figure A- 1.

6. Remove existing wires from conduit.
7. Install new conduit sealing fittings and reseal each fitting per article 501-5 of the National Electric Code (NEC) handbook (1990 edition).
8. Pull the listed gas and oil resistant wires of appropriate gauge through the existing conduit. To determine the maximum number of wires to pull through the conduit, refer to Table A-2.

Table A-2 Dispenser Model And Minimum Wiring

Dispenser Model	Min. No. Of Wires
390 Series	10
395 Series	10
490 Series	11
580 Series	9
585 Series	9
590 Series	9

Note: The number of relay selects determines the maximum number of wires. Power and pump control operation use up to eleven (11) of the wires identified in Table A-3.

Table A-3 Wire Distribution

Number Of Wires	Description
2	Control Power (hot and neutral)
Up to 4	Relay Select
1	Earth Ground
2	Pump Control Data
2	CAT Data

9. Connect all wires to the appropriate terminals in both junction boxes.

Figure A- 1 illustrates general conduit location. Refer to the following figure.

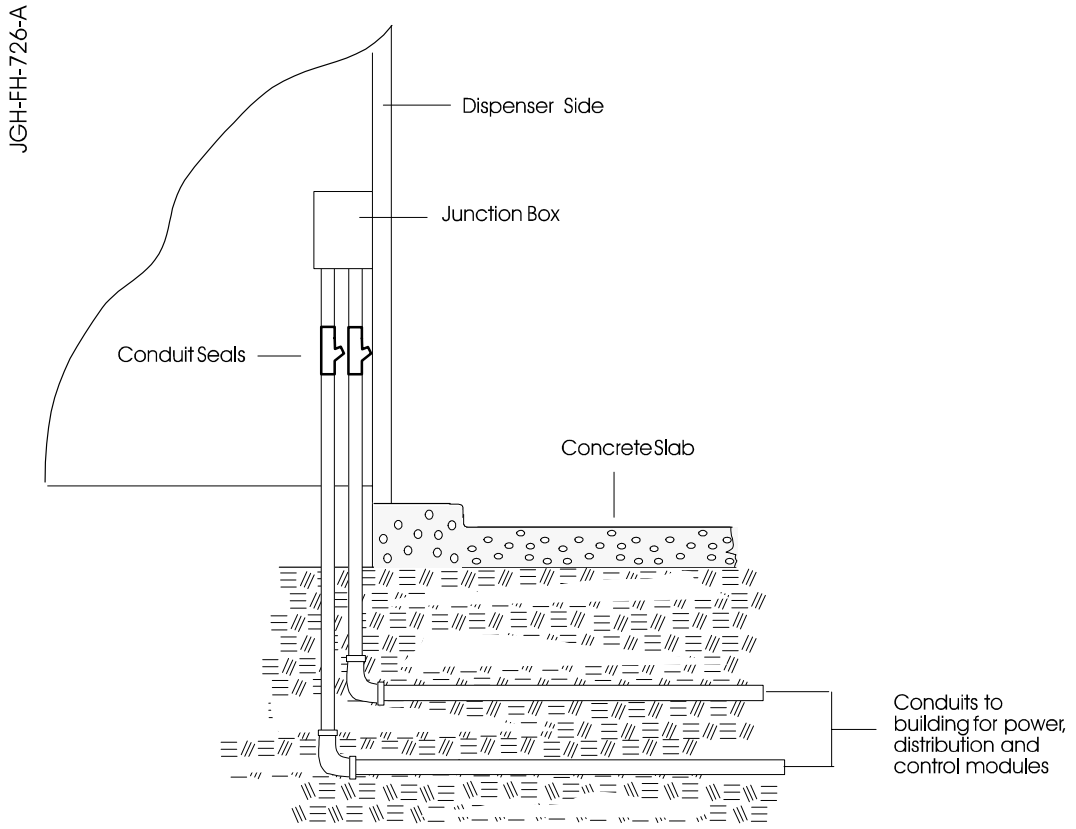


Figure A- 1 Data and Power Conduit Location

A.3 Junction Box Data Link Connections

The dispenser junction box is located inside the dispenser hydraulics cabinet. The existing data link connections in the junction box may already be set up for card processing. However, it may be necessary to make connections at the box.

Figure A- 2 illustrates an example of typical junction box connections.

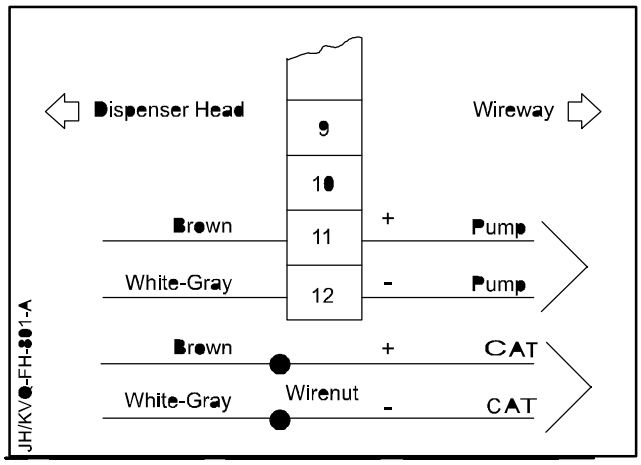


Figure A- 2 Example of Typical Junction Box Connections

A.4 WP/186 And WP/386 CAT Comm Channel Wiring Requirements

Station sites may be configured with either the Wayne Plus/186 (WP/186) or the Wayne Plus/386 (WP/386) system. In order to accelerate system performance, each system must include the following CAT comm channel wiring requirements.

Wayne Plus/186 System. When wiring CATs for a WP/186 system, use up to three (3) comm channels. Each channel supports a maximum of eight (8) fueling points. To enhance system performance, make sure each channel is fully wired with at least 8 fueling points before you begin wiring the next comm channel.

For example, station sites configured with twelve (12) fueling points must use only two (2) comm channels. The first comm channel is wired with eight (8) and the second comm channel is wired with four (4). Do not evenly distribute the twelve fueling points between two or three comm channels.

Wayne Plus/386 System. When wiring CATs for a WP/386 system, use all four (4) comm channels. Each channel supports a maximum of six (6) fueling points. To enhance system performance, make sure you wire each channel evenly.

For example, station sites configured with sixteen (16) fueling points must use all four (4) comm channels. Wire each comm channel with four (4) fueling points.

A.4.1 Indoor Wiring Requirements for Wayne Plus/386 Systems

Each of the four Vistacard CAT data channels (5, 6, 7, and 8) supports up to three two-sided dispensers (six fueling points), giving a total capacity of 12 dispensers (24 fueling points). All Vistacard data pairs for a given channel can be parallel-connected (in the wireway) back to the same terminals on Terminal Block 5 (TB5) in the site controller.

A.4.1.1 Data Wiring CAT Channels for Wayne Plus/386 Systems

Evenly distribute the data wiring among the four Dispenser Card Processing Terminal communication (CAT comm) channels (numbered 5, 6, 7, and 8). The following information in Table A-4 provides an example for even distribution of data wires.

Table A-4 Example Of WP/386 Data Channel Assignments

Channel	5	6	7	8	5	6
Fueling Point No.	1,2	3,4	5,6	7,8	9,10	11,12
Dispenser No.	1	2	3	4	5	6

Channel	7	8	5	6	7	8
Fueling Point No.	13,14	15,16	17,18	19,20	21,22	23,24
Dispenser No.	7	8	9	10	11	12

A.4.1.2 Terminal Number Assignments for Wayne Plus/386 Systems

Table A-5 is an example that identifies the arrangement of wire connections to the terminals on Terminal Block 5 (TB5) in the site controller cabinet.

Important: For station sites connecting the MSM (Master Security Module), use channel 7.

Table A-5 Example Of WP/386 TB5 Terminal Number Assignments

Disp #	F.P. #	Channel #	TB5 Terminal #	
1	1,2	5	1+	2-
2	3,4	6	5+	6-
3	5,6	7	9+	10-
4	7,8	8	13+	14-
5	9,10	5	1+	2-
6	11,12	6	5+	6-
7	13,14	7	9+	10-
8	15,16	8	13+	14-
9	17,18	5	1+	2-
10	19,20	6	5+	6-
11	21,22	7	9+	10-
12	23,24	8	13+	14-

A.4.1.3 CAT Wire Connections for WP/386 Systems

Figure A- 3 on the following page provides a typical arrangement of the wire connections in the data distribution cabinet and the site controller cabinet to accommodate card processing.

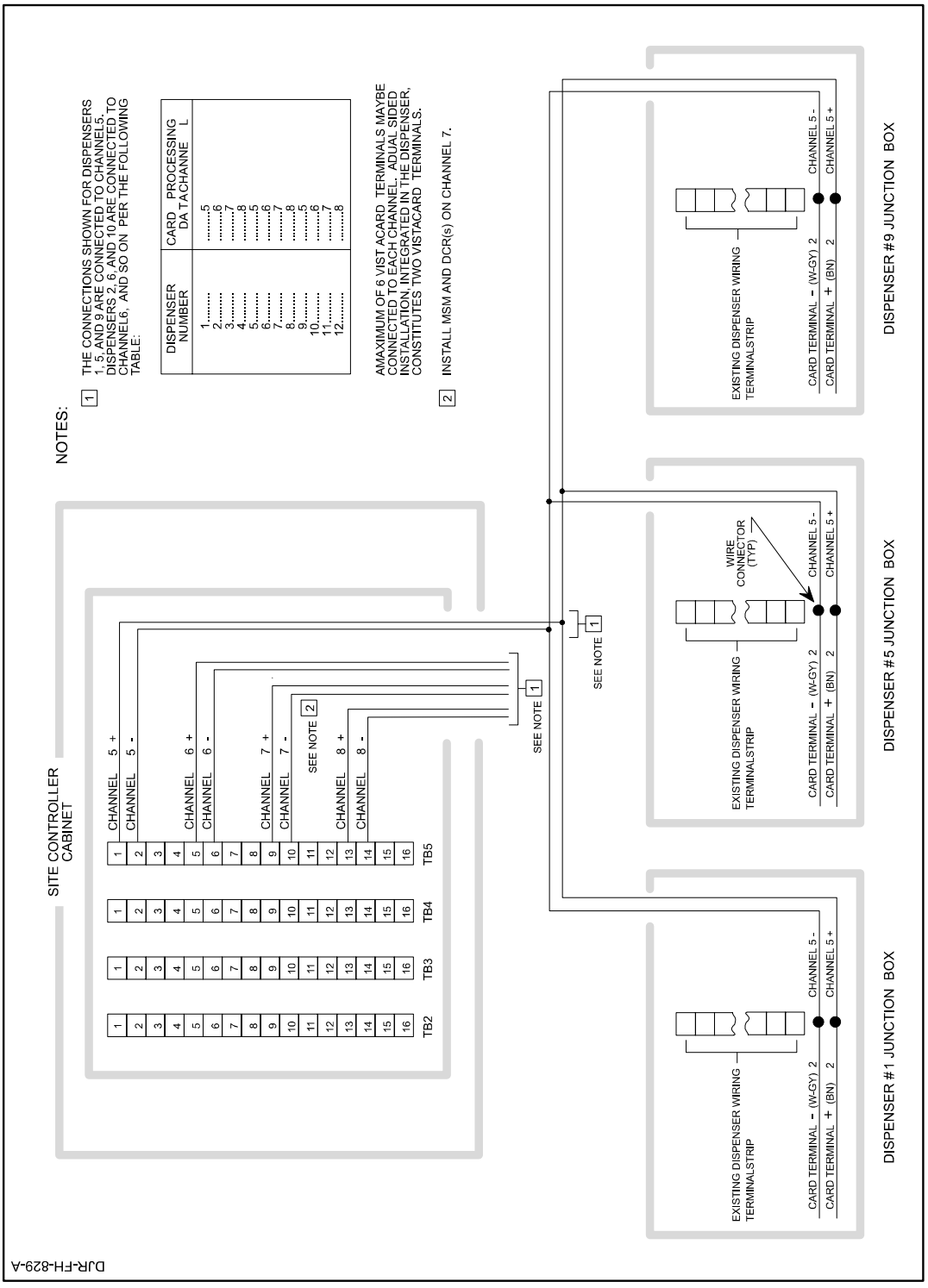


FIGURE A-3. INDOOR WIRING FOR VISTACARD RETROFIT (WP/386 SYSTEM)

Figure A- 3 Indoor Wiring For Vistacard Retrofit (WP/386 System)

A.4.2 Indoor Wiring Requirements for Wayne Plus/186 Systems

Each of the three Vistacard CAT data channels (5, 6, and 7) support up to four two-sided dispensers (eight fueling points), giving a total capacity of 12 dispensers (24 fueling points). All Vistacard data pairs for a given channel can be parallel-connected (in the wireway) back to the same terminals on Terminal Block 5 (TB5) in the site controller.

A.4.2.1 Data Wiring CAT Channels for Wayne Plus/186 Systems

Distribute the data wiring among the three CAT comm channels (numbered 5, 6, and 7). Refer to Table A-6 for an example of data wire distribution.

Table A-6 Example Of WP/186 Data Channel Assignments

Channel	5	5	5	5	6	6
Fueling Point No.	1,2	3,4	5,6	7,8	9,10	11,12
Dispenser No.	1	2	3	4	5	6

Channel	6	6	7	7	7	7
Fueling Point No.	13,14	15,16	17,18	19,20	21,22	23,24
Dispenser No.	7	8	9	10	11	12

A.4.2.2 Terminal Number Assignments for WP/186 Systems

Table A-7 is an example that identifies the arrangement of wire connections to the terminals on Terminal Block 5 (TB5) in the site controller cabinet.

Important: For station sites connecting the MSM (Master Security Module), use channel 7.

Table A-7 Example Of WP/186 TB5 Terminal Number Assignments

Disp #	F.P. #	Channel #	TB5 Terminal #	
1	1,2	5	1+	2-
2	3,4	5	1+	2-
3	5,6	5	1+	2-
4	7,8	5	1+	2-
5	9,10	6	5+	6-
6	11,12	6	5+	6-
7	13,14	6	5+	6-
8	15,16	6	5+	6-
9	17,18	7	9+	10-
10	19,20	7	9+	10-
11	21,22	7	9+	10-
12	23,24	7	9+	10-

A.4.2.3 CAT Wire Connections for WP/186 Systems

Figure A- 4 on the following page provides a typical arrangement of the wire connections in the data distribution cabinet and the site controller cabinet to accommodate card processing.

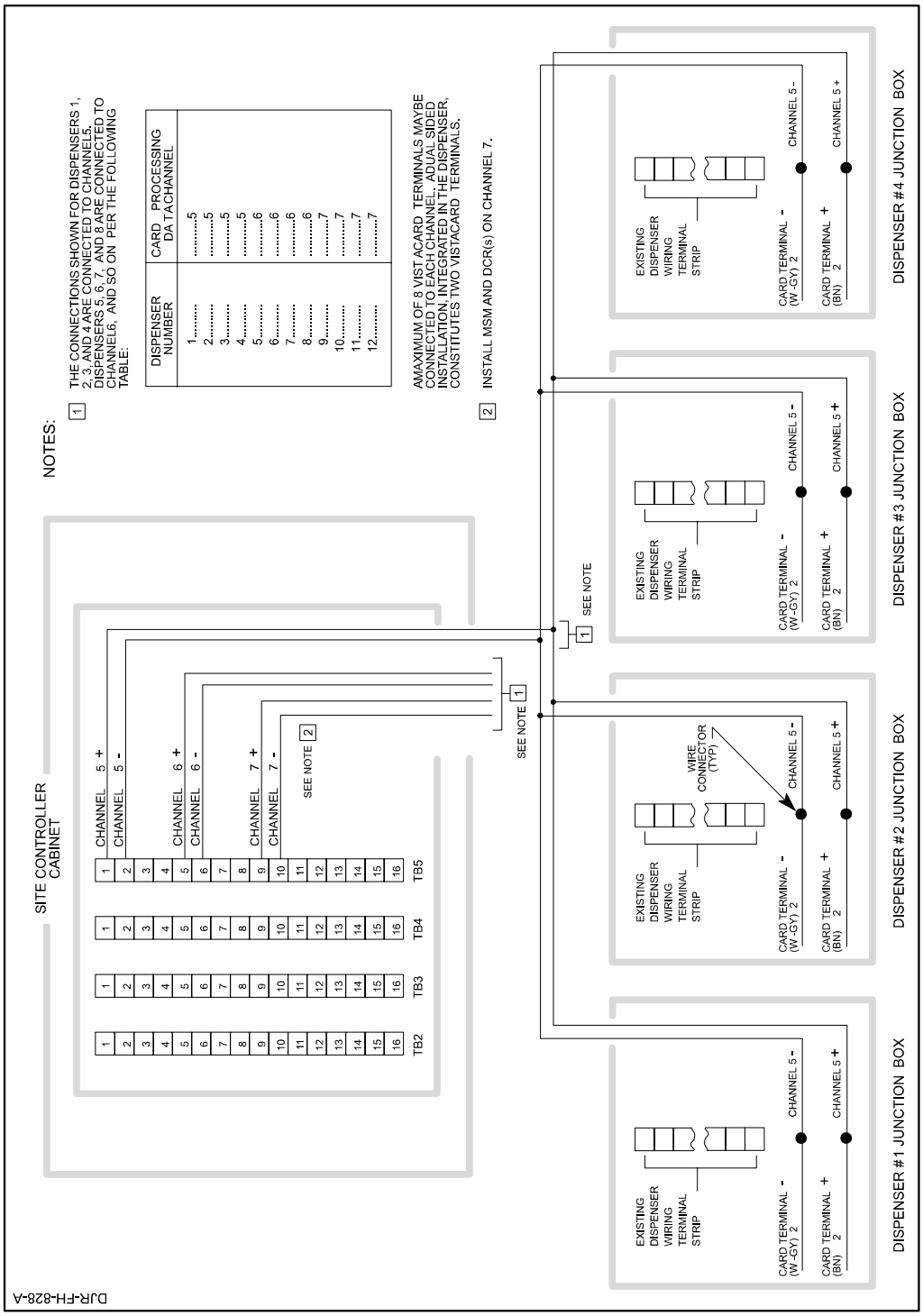


Figure A- 4 Indoor Wiring For Vistacard Retrofit (WP/186 System)

A.5 Re-Installing Dispenser Door And Junction Box Cover

Complete the following steps to re-install the dispenser door and junction box cover.

1. Re-install the junction box cover on the junction box and secure with the mounting bolts removed in step 2 of paragraph A.2.
2. Re-install the lower door to the dispenser.

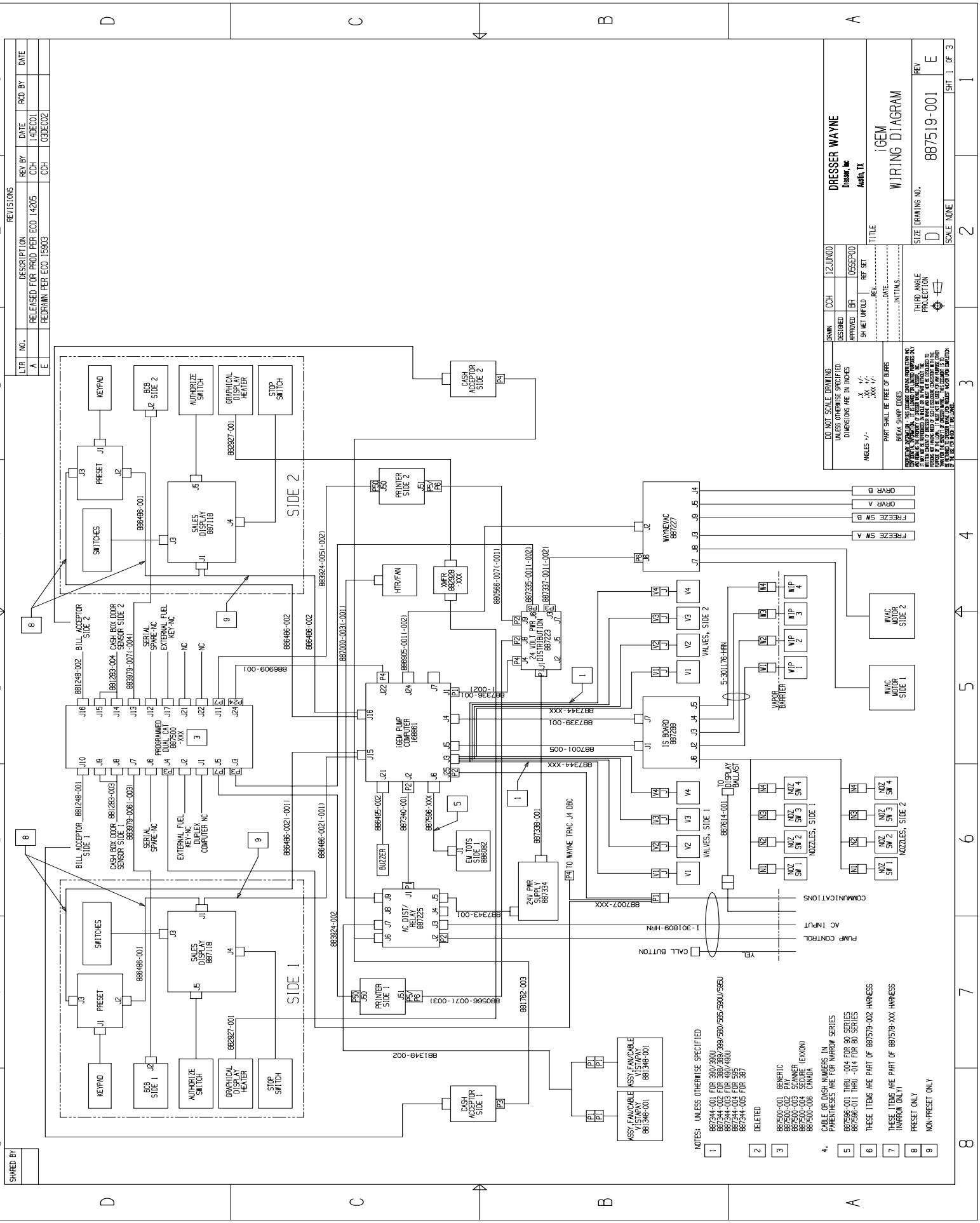
Appendix B

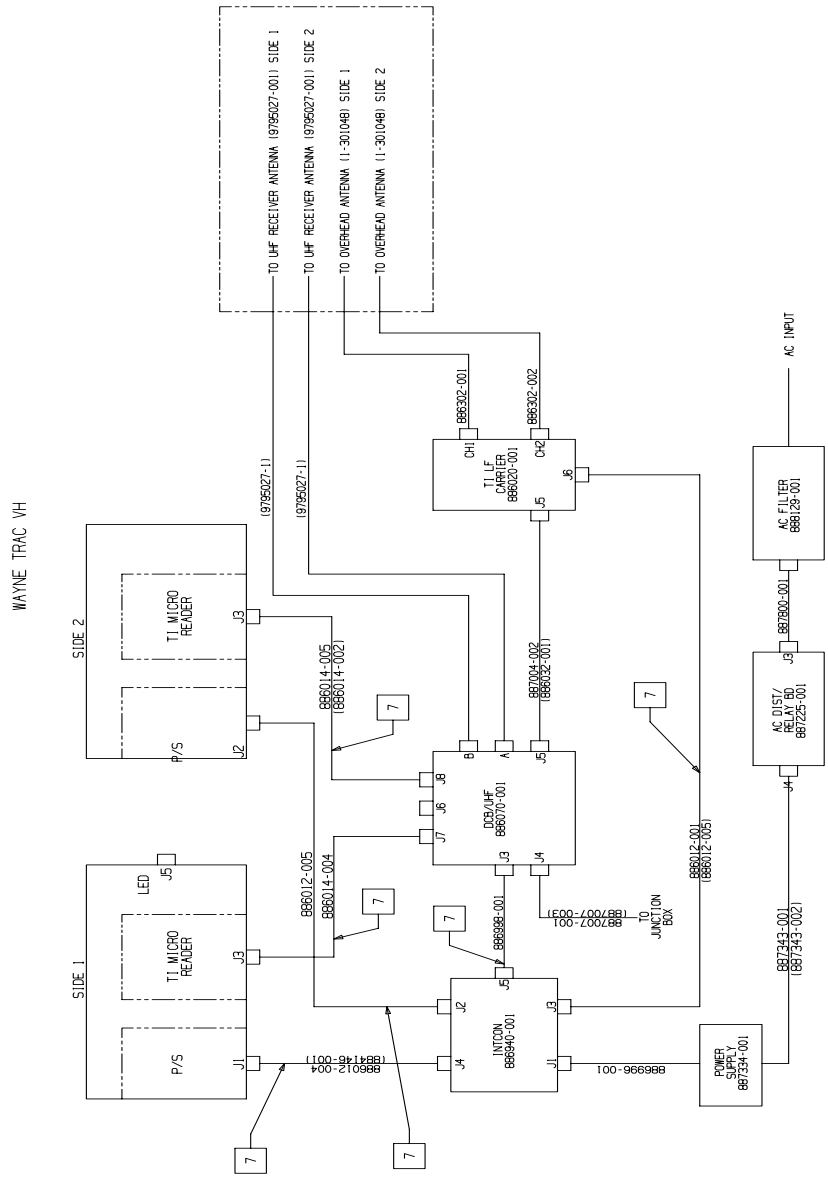
Appendix B: Interconnection Diagrams

B.1 Introduction

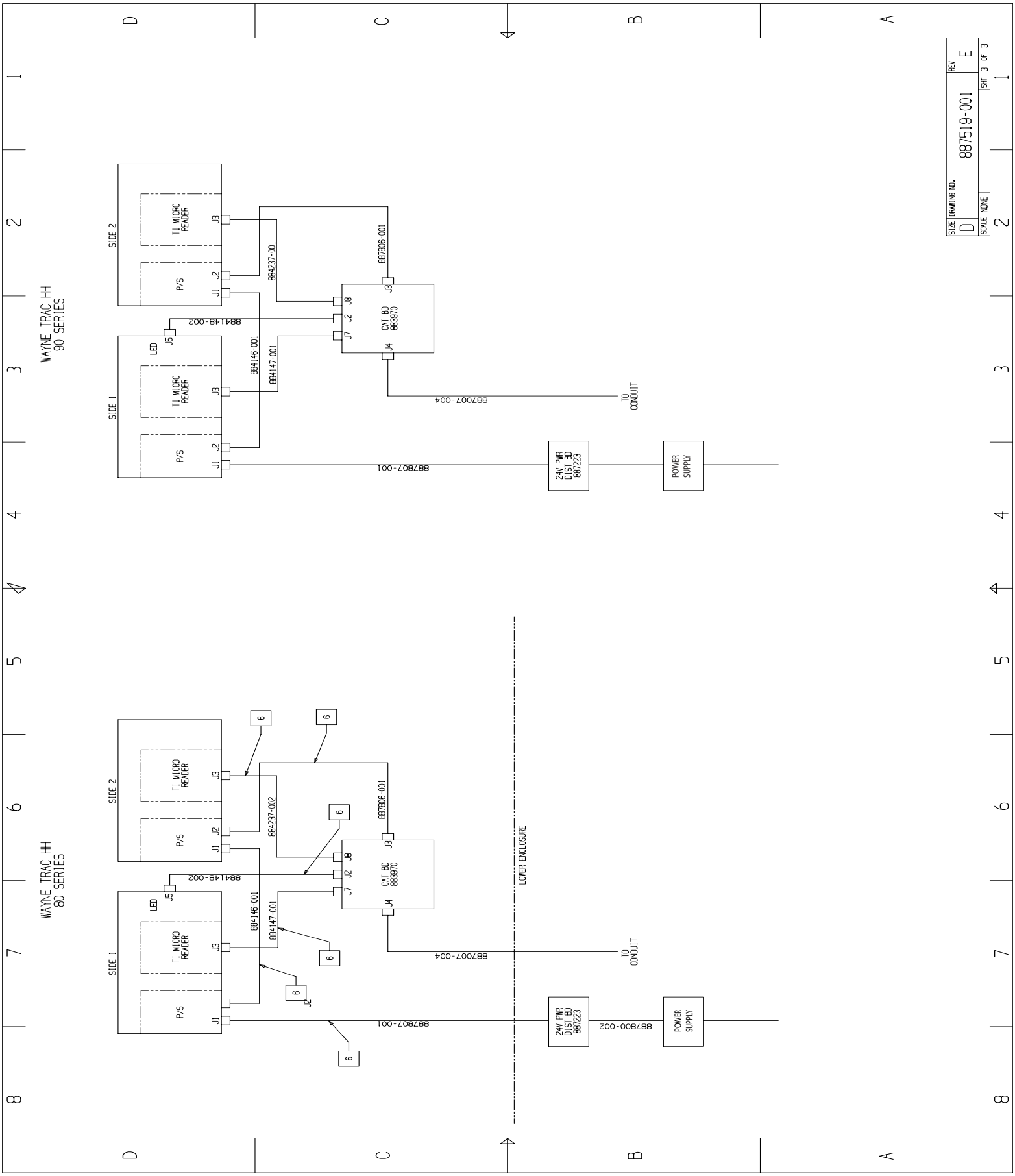
This appendix updates the existing Interconnection Diagrams for dual and single-sided applications shown in the following fold-out drawings. Refer to the appropriate chapter for specific instructions.

The following is an IGEM wiring diagram PN 887519-001.


REVISIONS
LTR NO. DESCRIPTION REV BY DATE ROD BY DATE
A RELEASED FOR PROD PER ECO 14205 CCH 14DEC01
E REDRAWN PER ECO 15903 CCH 03DEC02
DRESSER WAYNE
Dresser, Inc
Austin, TX
TITLE
iGEM
WIRING DIAGRAM
SIZE D
DRAWING NO. 887519-001
REV E
SCALE NONE
SHT 1 OF 3
DRAWN CCH 12JUN00
DESIGNED
APPROVED BR 05SEP00
SH MET UNFOLD
REF SET
DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
ANGLES +/-
X +/-
.XX +/-
.XXX +/-
PART SHALL BE FREE OF BURRS
BREAK SHARP EDGES
THIRD ANGLE PROJECTION
SIDE 1
SIDE 2
iGEM PUMP COMPUTER 188861
IS BOARD 887288
AC DIST/ RELAY 887225
24V PWR SUPPLY 887334
24V PWR SUPPLY 887335-001(-002)
DISTRIBUTION 887223
WAYNEVAC 887227
HTR/FAN
XMFR 882928-XXX
PRINTER SIDE 1
PRINTER SIDE 2
SALES DISPLAY 887118
KEYPAD
BOB SIDE 1
BOB SIDE 2
AUTHORIZE SWITCH
GRAPHICAL DISPLAY HEATER
STOP SWITCH
PRESET
SWITCHES
CASH ACCEPTOR SIDE 1
CASH ACCEPTOR SIDE 2
BILL ACCEPTOR SIDE 1
BILL ACCEPTOR SIDE 2
CASH BOX DOOR SENSOR SIDE 1
CASH BOX DOOR SENSOR SIDE 2
PROGRAMMED DIAL CAT 887500-XXX
EM TOTS SIDE 1 886082
BUZZER
ASSY FAN/CABLE W/STAPPY 881348-001
VALVES, SIDE 1
VALVES, SIDE 2
NOZZLES, SIDE 1
NOZZLES, SIDE 2
WMC MOTOR SIDE 1
WMC MOTOR SIDE 2
VAPOR BARRIER
TO DISPLAY BALLAST
CALL BUTTON
COMMUNICATIONS
PUMP CONTROL
AC INPUT
TO WAYNE TRAC J4 DEC
DRVR B
DRVR A
FREEZE SW B
FREEZE SW A
SHARED BY
NOTES: UNLESS OTHERWISE SPECIFIED
1 887344-001 FOR 380/390U
887344-002 FOR 280/285/289/290/580/585/590U/595U
887344-003 FOR 490U
887344-004 FOR 595
887344-005 FOR 387
2 DELETED
3 887500-001 GENERIC
887500-002 PAY
887500-003 SCANNER
887500-004 SECURE (EXXON)
887500-006 CANADA
4. CABLE OR DASH NUMBERS IN PARENTHESES ARE FOR NARROW SERIES
5 887596-001 THRU -004 FOR 80 SERIES
887596-011 THRU -014 FOR 80 SERIES
6 THESE ITEMS ARE PART OF 887579-002 HARNESS
7 THESE ITEMS ARE PART OF 887578-XXX HARNESS (NARROW ONLY)
8 PRESET ONLY
9 NON-PRESET ONLY



SIZE D | DRAWING NO. 887519-001 | REV E | SCALE NONE | SHT 2 OF 3


WAYNE TRAC HH
90 SERIES
SIDE 2
T1 MICRO READER
P/S
SIDE 1
LED
J1
J2
J3
J4
J5
J7
J8
CAT BD 883970
884237-001
884148-002
884146-001
884147-001
887806-001
887007-004
TO CONDUIT
887807-001
24V PWR DIST BD 887223
POWER SUPPLY
WAYNE TRAC HH
80 SERIES
884237-002
887800-002
LOWER ENCLOSURE
6
SIZE D
DRAWING NO. 887519-001
REV E
SHT 3 OF 3
SCALE NONE

INSTALLATION MANUAL
WAYNE VISTACARD RETROFIT KIT, 80 AND 90 SERIES

Written and illustrated by Tom Sigmon

Special thanks to Kimberly Krause and Bill Ryan for their review and technical assistance.

This manual was produced using Adobe Framemaker® on a Dell® PC.

Page design uses a 1-column format set at 11/10 using Times New Roman and Arial.

Mechanicals were printed on a HP5000 at 600 dpi then produced commercially.

"NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense."

DresserWayne, Dresser, Inc. 3814 Jarrett Way, Austin, TX 78728-1212, (512) 388-8311
Part No. 920667 Rev. A 01/03 XX/01/03