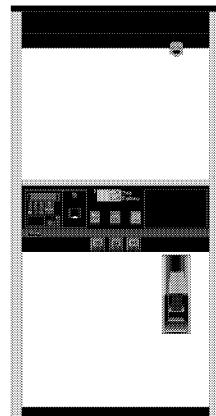


INSTALLATION

Wayne 2/V390/U to 2/V590/U Conversion for Vista Dispensers



Wayne

Installation Manual for 2/V390/U to 2/V590/U Conversion Kit

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How To Use This Manual

This manual describes how to install the 2/V390/U to 2/V590/U Conversion Kit.

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

Section 2 explains how remove the old hardware and rework components that will be re-used.

Section 3 explains how to install the new hardware into the dispenser and complete the conversion.

Section

1

Before You Start

1.1 Introduction

This manual describes how to install the Wayne 2/V390/U to 2/V590/U Conversion Kit in a Vista dispenser without Wayne Trac. Refer to the following table for identification of the retrofit kit.

Table 1-1 2/V390/U TO 2/V590/U Retrofit Kit

Part Number	Kit Description
887920-001-KIT	CNVT 2/V390/U TO 2/V590/U

Before retrofitting dispensers, 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.

WARNING: EQUIPMENT MUST BE SERVICED IN ACCORDANCE WITH NFPA30 AND NFPA30(A) REQUIREMENTS. "LOCKOUT/TAGOUT" REQUIREMENTS OF THE U.S.DEPT. OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) MAY ALSO APPLY. REFER TO TITLE 29, PART 1910 OF THE CODE FEDERAL REGULATIONS (29CFR1910), CONTROL OF HAZARDOUS ENERGY SOURCE (LOCKOUT/TAGOUT).

Important: You must wear an anti-static wrist strap (part number 916962 or equivalent) securely attached to an earth ground when handling circuit boards, electronic components or assemblies, or when reaching into the Site Controller or dispenser computer enclosure. Do not use power tools.

1.2 Kit Overview

Refer to the Parts List Table below make sure you have all the necessary parts.

Also note that an installation drawing may be included.

Table 1-2 887920-001-KIT Parts List

Part No. and Description	Qty.
2-6620-D - Wiring Diagram	1
122438 - Decal	2
122439 - Decal	2
129762 - Washer, Flare	8
1-301022 - Kit, Inlet ID	1
1-301180-HRN - Wreg Prop Valve-GHM	1
2-301142 - Valve, Proportional (Skinner Type 73P1Z)	4
2-301144-HRN - Harn, Wrg, Jbox	1
2-301572 - Tube, Flanged LF	1
2-301573 - Tube, Flanged MF	1
2-301575 - Tube, Flanged LR	1
2-301576 - Tube, Flanged MR	1
2-301598 - Tube, Upper LF	1
2-301599 - Tube, Upper MF/MR	2

Table 1-2 887920-001-KIT Parts List

Part No. and Description	Qty.
2-301603 - Tube, Upper LR	1
5-301176-HRN - Harness, Wiring	1
883474-002 - PCB Assy, V+ SD Blend	1
883577-001 - Select Cable	1
883619-001 - Comp Assy, V+ Blend, 120V	1
886375-001 - PCB Assy, WISB	1
918655 - Plug, Inverted	4
1-921130 - O-Ring	4

1.3 Unpacking and Inspection

Complete the following steps:

1. Before opening any cartons, count the number of cartons and verify the carton count against the supplied packing list.
2. Inspect the cartons for damage made during transit.
3. File claim information with the carrier on the bill of lading.
4. Retain cartons suspected of damage for future claim purposes.

Caution: You must wear an anti-static wrist strap, part number 916962 when removing electronic components from static packages. Attach the wrist strap to an earth grounding point to prevent possible damage from static electricity.

5. Remove all equipment from the shipping cartons and carefully inspect for visible damage.

Important: Any damage should be brought to the attention of the carrier and claims made immediately. Return all equipment to the respective cartons for protection until actual installation is made. Save all cartons until it is certain that return shipments are not required.

6. Check supplied graphics (such as ad panel and dial face graphics) prior to start of installation.

1.4 Returning Damaged 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, then in the original shipping cartons for return shipment to the factory.

Important: 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 the 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. 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

Refer to Table 1-2 for a list of tools required to install the retrofit kit.

Table 1-3 Required Tools

Quantity	Description
1	Phillips Screwdriver (medium and small)
1	Slotted Screwdriver (medium and small)
1	1/4" to 3/4" Combo Wrenches
1	12" Crescent Wrench
1	Channel Locks
1	3/8" Ratchet
1	1/4" to 3/4" 3/8" Drive Sockets
1	3/8" Ratchet Extension
1	Side Cutters
1	1 3/16" Flare Nut Wrench
1	Ladder
1	Metric Allen Wrench Set
1	Electrical Tape
1	Bezel Key

1.6 Power Ratings

Refer to Table 1-3 for power ratings for dispensers equipped with the Conversion kit.

Table 1-4 Power Ratings

Circuits Powered	Nominal Voltage	Amps
Dispenser Electronics	120 VAC, 60 Hz	7.4

Removing Old Hardware

2.1 Introduction

This section explains how to remove the old hardware in preparation for the installation of the conversion kit.

2.2 Removal of Old Components

To remove the old components from the dispenser, perform the following steps.

1. Record all totalizer readings and unit prices on the dispenser.
2. Remove all doors and place in a safe location.
3. Place the anti-static wrist strap on your wrist and attach the other end of the wrist strap to an earth grounding point.
4. Unlock the bezel assemblies and disconnect the CAT power and data cables. Disconnect the grade select cables and any other cables connected to the bezel for each side of the dispenser.
5. Remove bezels and set aside.
6. Remove the top cover and both outer columns and save the hardware for later use. Refer to Figure 2-1.

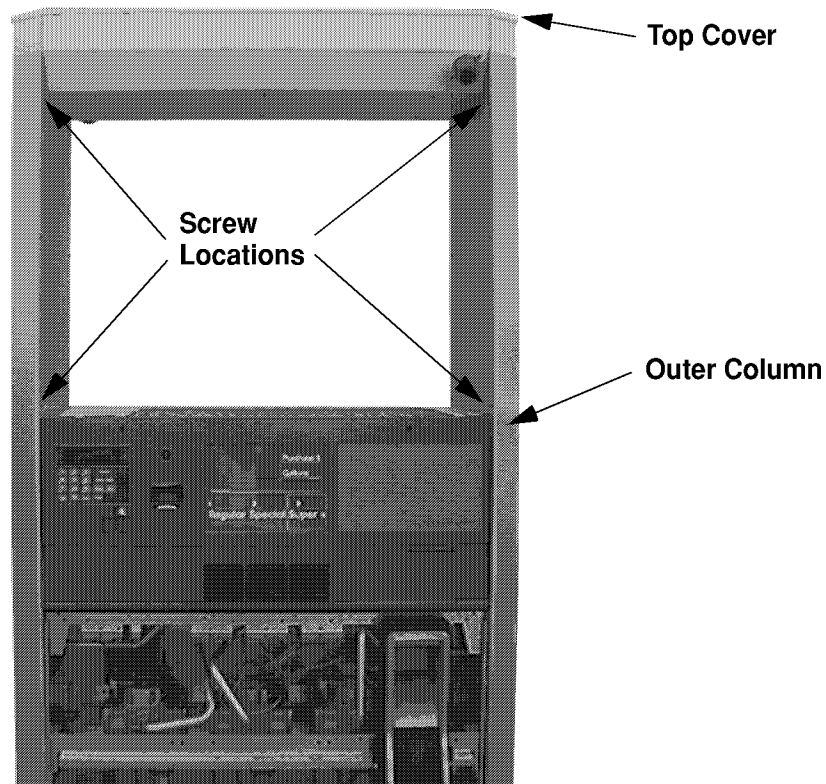


Figure 2-1 Outer Column Screw Locations

7. Close all emergency shut-off valves then try to dispense from each grade on both side 1 and side 2 of the dispenser, verifying that the valves are closed.
8. Turn off power to the dispenser.

Caution: Verify that all power sources have been turned off to the dispenser before proceeding.

9. Remove the junction box cover.
10. Disconnect the main wire harness from the terminal strip and from the ground lug in the junction box.
11. Use a slotted screwdriver to loosen two 1/4 turn screws located at the top of the DEM (Display Electronic Module). Lower the DEM in the service position. Repeat this step for the opposite side of the dispenser.
12. Disconnect the main wire harness from its connections inside the electronic head.
13. Disconnect and remove side 1 DEM and set aside.
14. Disconnect the main wire harness from the vapor barrier and remove. Save hardware for later use.
15. Remove the wire harness from the ISB.
16. Detach the ISB from the vapor barrier, disconnect the harness and remove the ISB. See Figure 2-2. Save all hardware for later use.

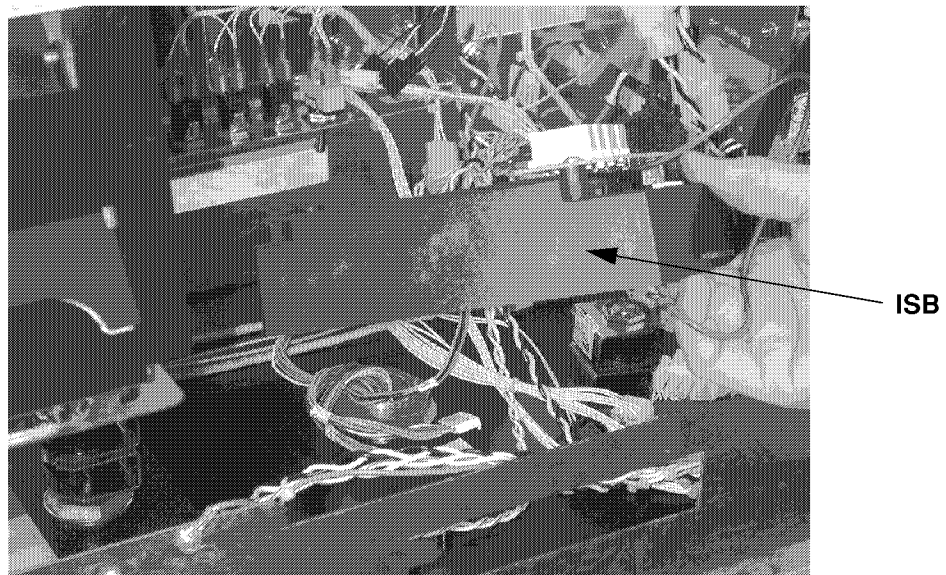


Figure 2-2 Remove the ISB

17. Disconnect the Pulsar/Nozzle switch harness from the pulsers and nozzle switches then remove the harness from the vapor barrier.
18. Disconnect and remove all six of the solenoid coils. See Figure 2-3.
19. Raise Side 2 DEM back into upright position.

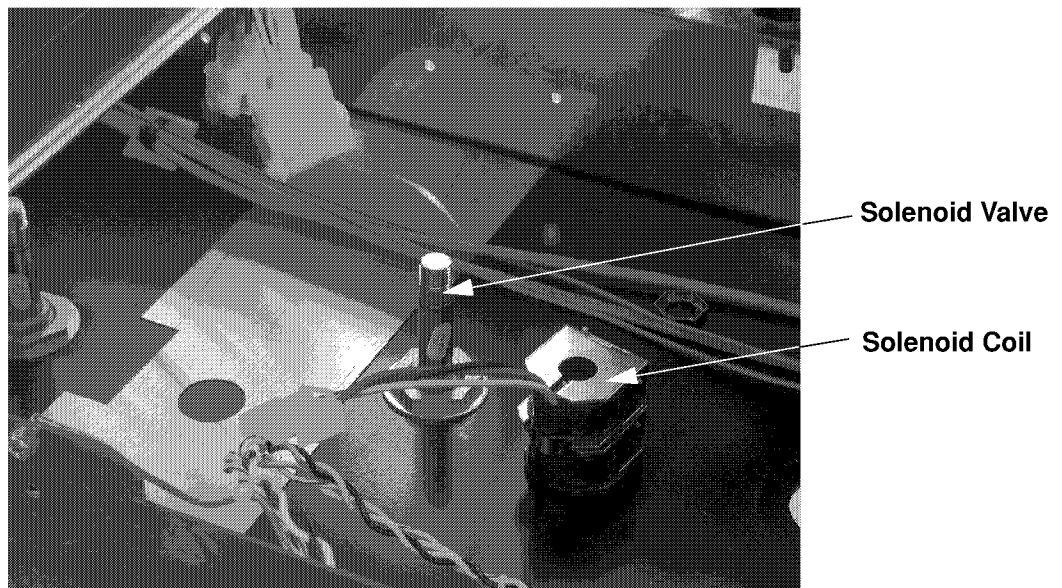


Figure 2-3 Remove the Solenoid Coils

2.3 Removal of Fluid Tubes

To remove the old fluid tubes from the dispenser, perform the following steps.

Important: Be sure that excess product is captured when removing fluid tubes and disposed of properly.

1. Disconnect the tube stabilizer bracket and remove. Save hardware for later use.
2. Disconnect all upper fluid tubes from the outlet assemblies and solenoid valves, then remove. See Figures 2-4 and 2-5.

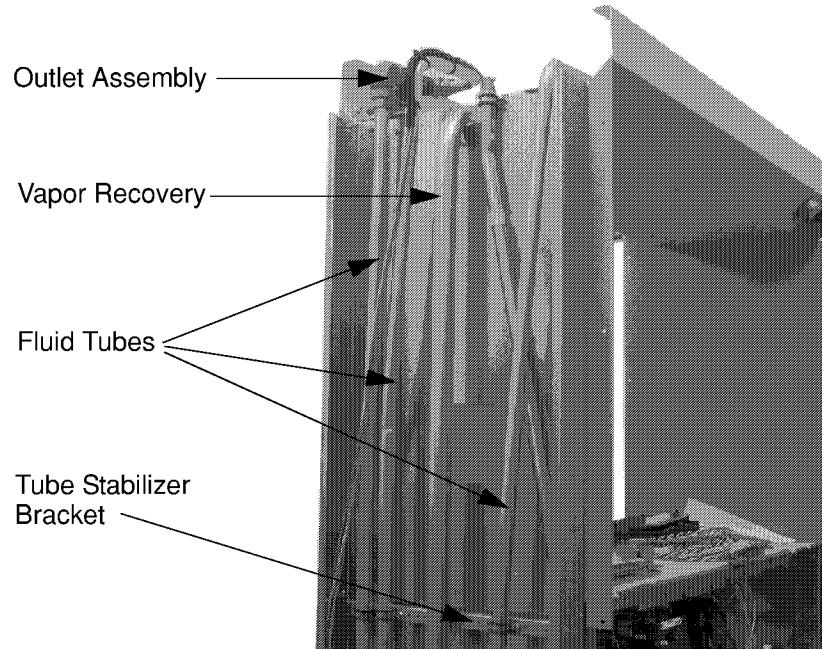


Figure 2-4 Upper Fluid Tubes - Left

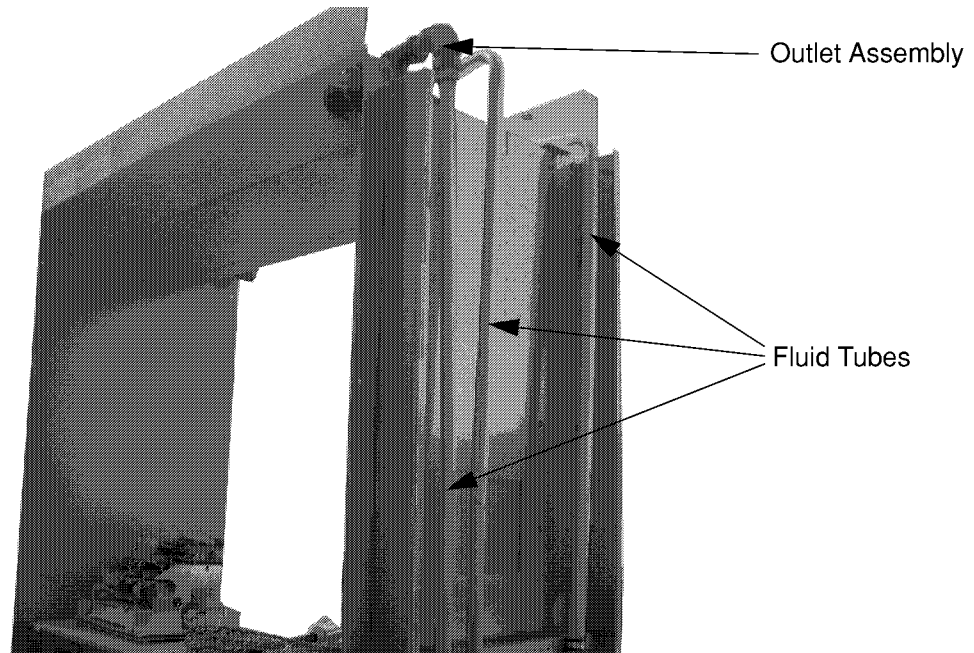


Figure 2-5 Upper Fluid Tubes - Right

3. Disconnect and remove fluid tubes between left meter & solenoid valves and middle meter & solenoid valves (left and middle meters are referenced from side 1).
4. Remove the solenoid valves that were attached to the left and middle meter. Save machined nuts and washers for later use.
5. Leave the solenoid valves installed that are connected to the right meter. The outlets from these solenoid valves will be plugged in a later step.

2.4 Modify Old Parts to be Reused

1. Remove the old duplex computer from the side 1 DEM. Save hardware for later use.
2. Install the new new duplex computer from the kit PN 883619-001 into the side 1 DEM and reconnect cables which were removed earlier.
3. Install the new solenoid drive board from the kit PN 883474-002 onto the new duplex computer using the hardware from the old duplex computer. See Figure 2-6.
4. Connect cable 889578-001 from the power supply to J4 on the solenoid drive board.

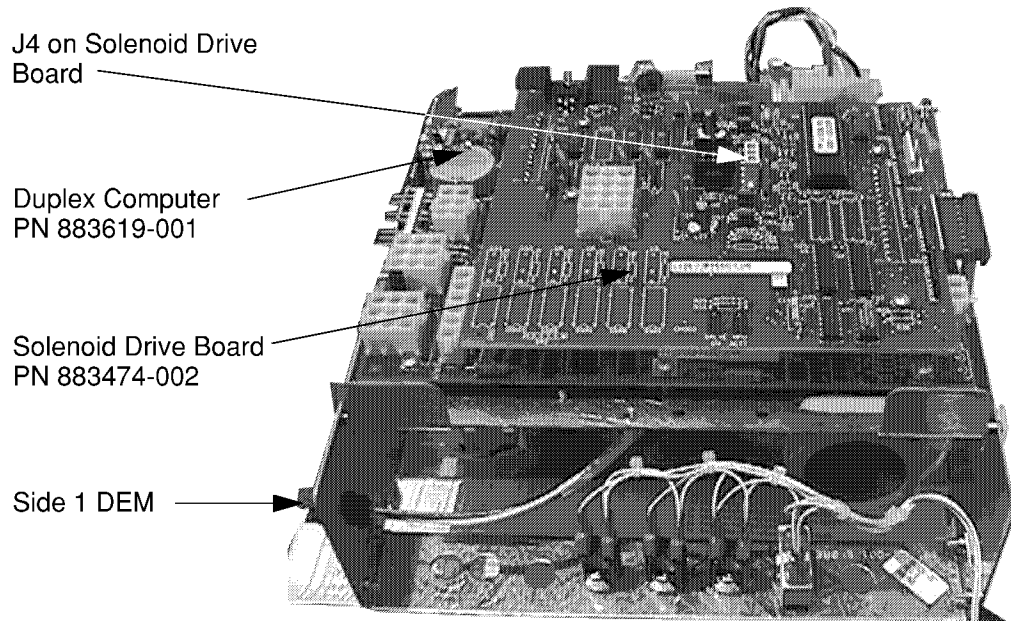


Figure 2-6 DEM

5. Remove the old interface board from the ISB and install the new interface board included in the kit PN 886375-001 using the existing hardware.
6. Install the flare washers PN 129762 into both sides of the new proportional valves from the kit PN 2-301142. See Figure 2-7.

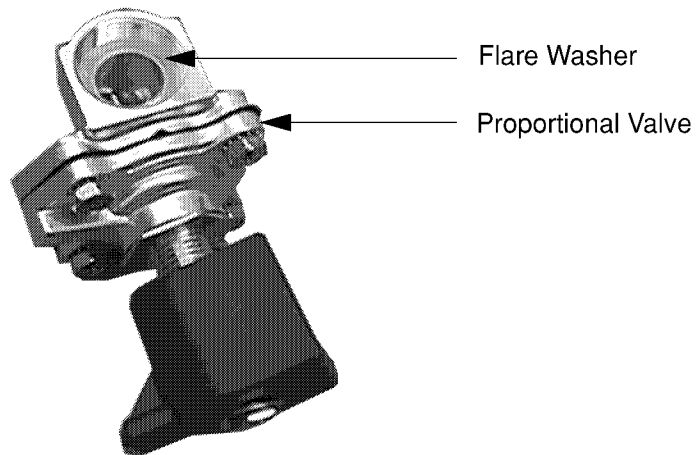


Figure 2-7 Proportional Valve Washer

Installing New Hardware

3.1 Introduction

This section explains how to install the new hardware from the conversion kit into the dispenser and electronic head.

3.2 Installation of the New Hardware

To install the new components from the conversion kit, perform the following steps.

1. Remove the coils from the 4 proportional valves from the conversion kit PN 2-301142 and install the valves into the vapor barrier ensuring the proper alignment of the inlet and outlet sides of the valve. Align according to the fluid flow indicator stamped on the side of the

proportional valve. The fluid flow should always be pointed away from the meters. Re-install the washers above and below the vapor barrier which were removed during the removal of the old valves. Use a wrench and tighten the nuts wrench tight. See Figure 3-1.

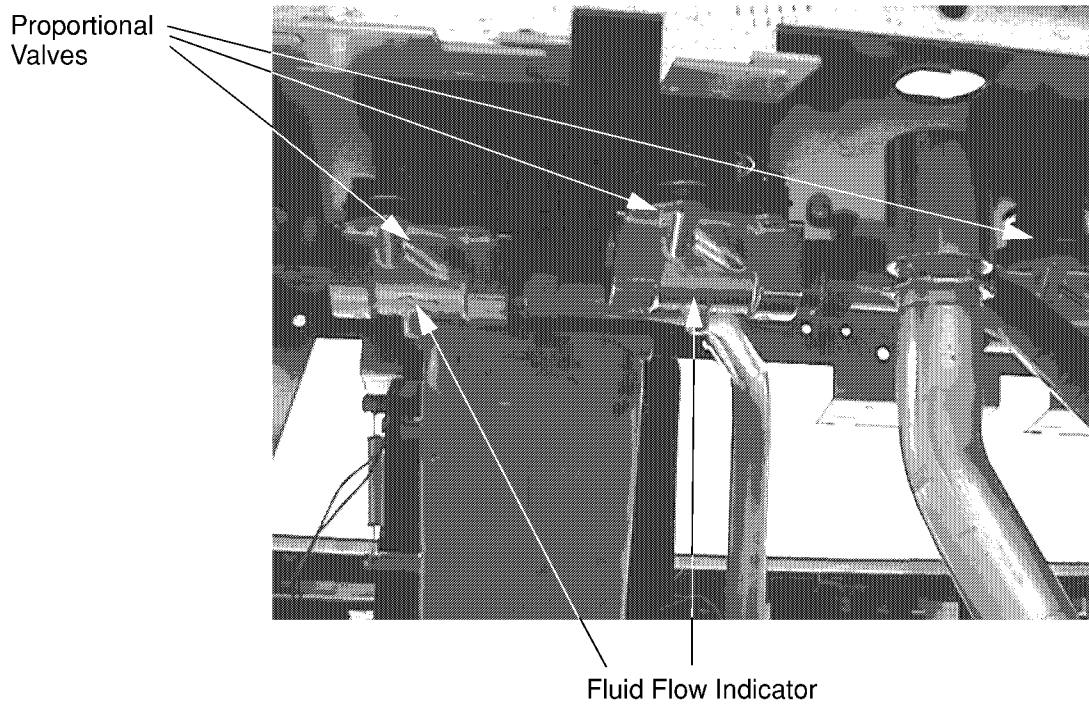


Figure 3-1 Proportional Valve View from Side 1

2. Lubricate the O-Rings from the kit PN 1-921130 with vasoline and install onto the collars of the meter tubing. See Figure 3-2.

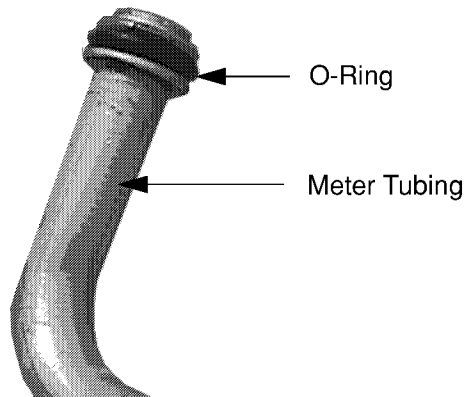


Figure 3-2 Meter Tubing with O-Ring

3. Install the meter tubing onto the meters according to the following table.

Note: The meter tubing position on the dispenser is determined from Side 1 of the dispenser.

Table 3-1 Meter Tubing Positions

Meter Tubing Part Number	Meter Outlet Position
2-301572	Left Front
2-301573	Middle Front
2-301575	Left Rear
2-301576	Middle Rear

4. Install 2 plugs PN 918655 from the kit into the unused upper tube connections for the Right Front and Right Rear valves.

5. Install the upper tubing from the valves to the outlet assemblies according to the following table. See also Figures 3-3 and 3-4.

Note: The upper tubing position on the dispenser is determined from Side 1 of the dispenser.

Table 3-2 Upper Tubing Positions

Upper Tubing Part Number	Meter Outlet Position
2-301598	Left Front
2-301599	Middle Rear
2-301603	Left Rear
2-301599	Middle Front

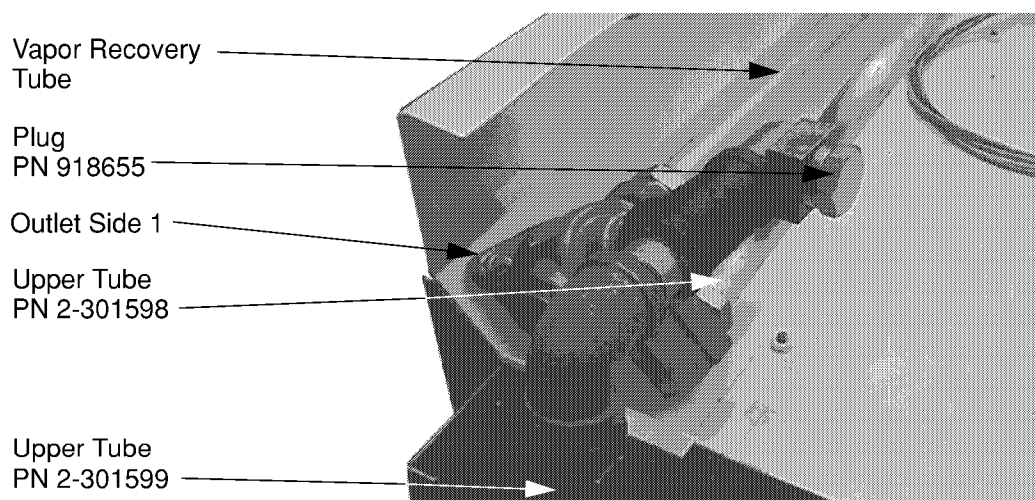


Figure 3-3 Upper Tube Connections Side 1

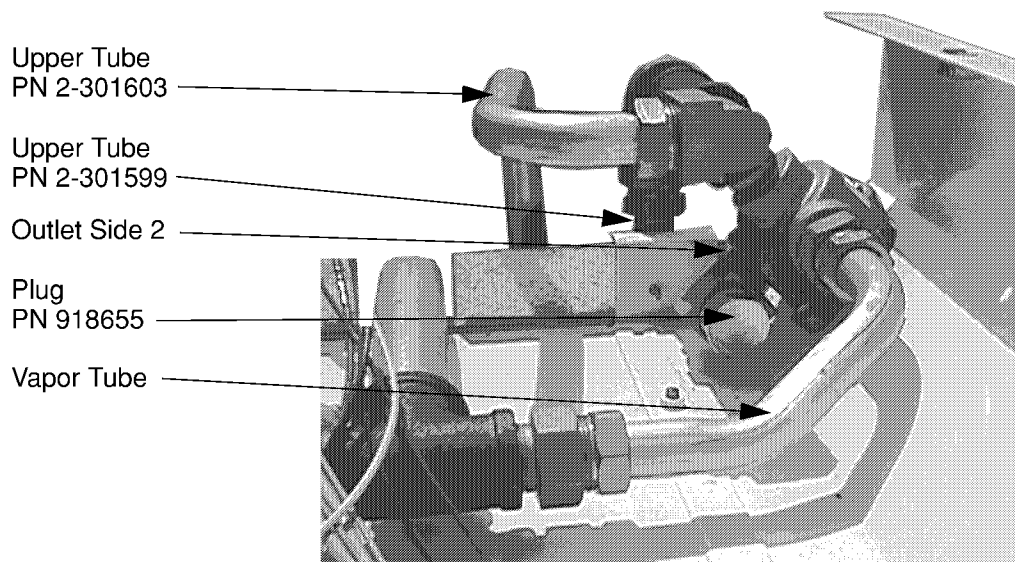


Figure 3-4 Upper Tube Connections Side 2

6. Install 2 plugs PN 918655 from the kit into the unused tube connections on the outlets for side 1 and side 2. See Figures 3-3 and 3-4.
7. Install the new pulser/nozzle switch harness PN 5-301176-HRN into the vapor barrier. See Figure 3-5. Reuse hardware that was removed earlier and ensure that a washer is used above and below the vapor barrier.

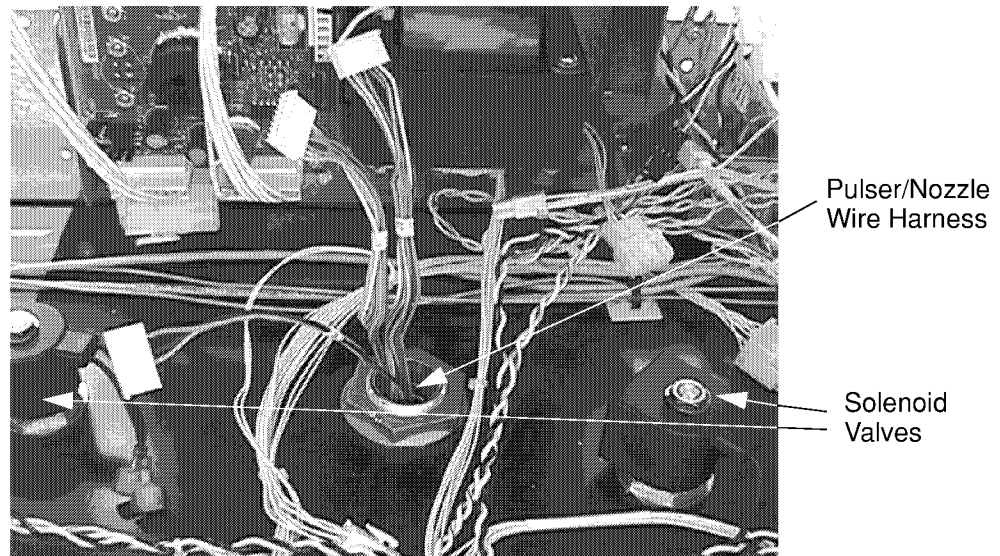


Figure 3-5 Pulser/Nozzle Wire Harness View From Side 1

8. Connect the new pulser/nozzle switch harness cable labelled HI to the middle pulser and the cable labelled LO to the left pulser. Re-use grommet and cover removed earlier. See Figure 3-6.

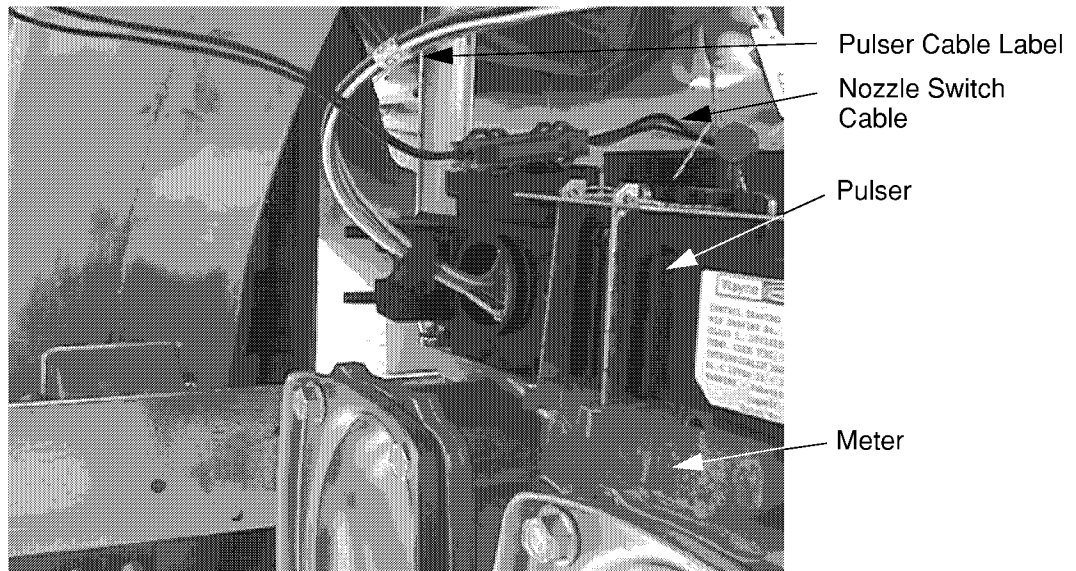


Figure 3-6 Pulser Cable Installation

9. Connect the pulser/nozzle switch harness to the nozzle switch for side 1 and side 2 according to the label on the harness.
10. Connect the pulser/nozzle switch harness to the ISB according to the labels on the harness. Securely attach the ISB ground wire then attach the ISB to the vapor barrier. See the wiring diagram on page A-1.
11. Install the valve coils removed earlier. Use a wrench to tighten the nut on the coil. Do not overtighten.
12. Install the main wire harness PN 2-301144-HRN by feeding the wires that have been taped together with electrical tape down into the junction box. Secure with coupling and washer below the vapor barrier. Ensure that the coupling is engaged with five full threads and is wrench tight. See Figure 3-7.

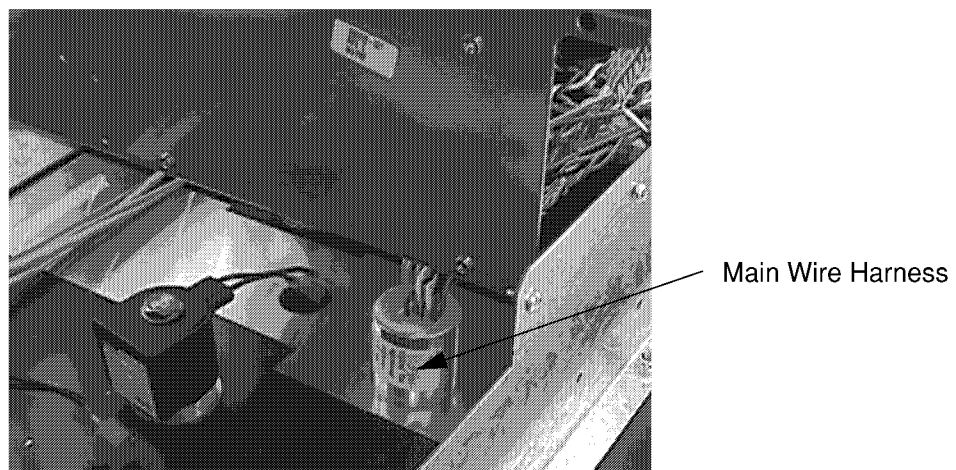


Figure 3-7 Main Harness View From Side 1

13. Make the electrical connections in the J-box for the main wiring harness according to the wiring diagram on page A-2.
14. Place side 1 DEM onto the electronic head frame and make electrical connections according to the wiring diagram on page A-2.

Caution: Be sure that wires are routed so that they are not pinched or damaged by the DEM when raised.

15. Attach any additional wiring harnesses according to the wiring diagram on page A-2.
16. Move the DEMs into the upright position.
17. Attach the Tube Stabilizer bracket on both columns of the pump and secure the Upper Fluid tubes using the hardware removed earlier. See Figure 3-8.

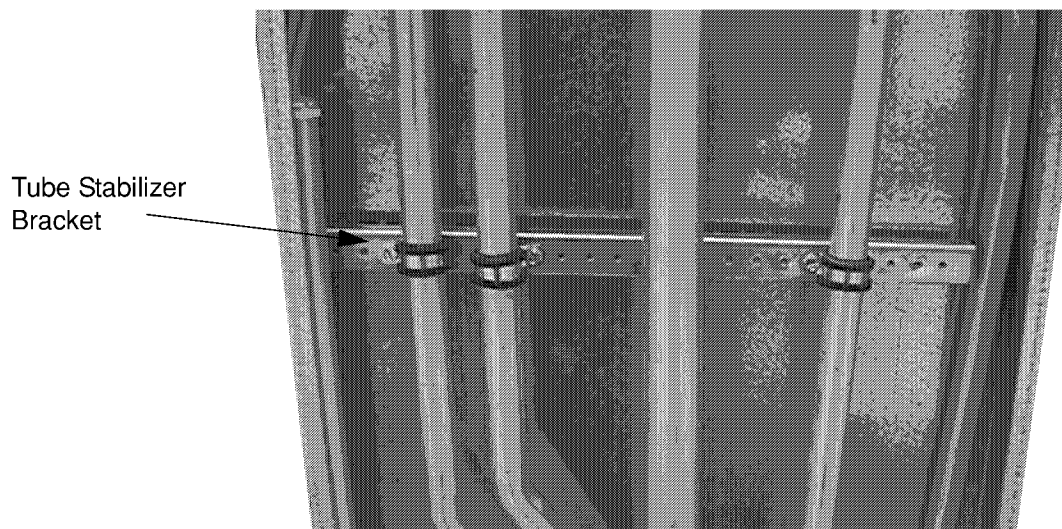


Figure 3-8 Tube Stabilizer Bracket

18. Replace the Junction Box cover using all of the bolts and tighten wrench tight.
19. Reconnect and replace bezels.

3.3 Testing the Installation

1. Turn power on to the dispenser.
 2. Refer to the Option Programming manual and program the dispenser for a 2/V590/U.
 3. Open the emergency shut off valves for the left and middle product.
- Note:** The meter position on the dispenser is determined from Side 1 of the dispenser.
4. Select mid grade and purge the air from the system.
 5. Check for fluid leaks. Use STP by energizing mid grade for 1 minute with nozzles closed. Visually inspect all connections and correct any leaks if necessary.
 6. Replace top cover, column covers and doors.

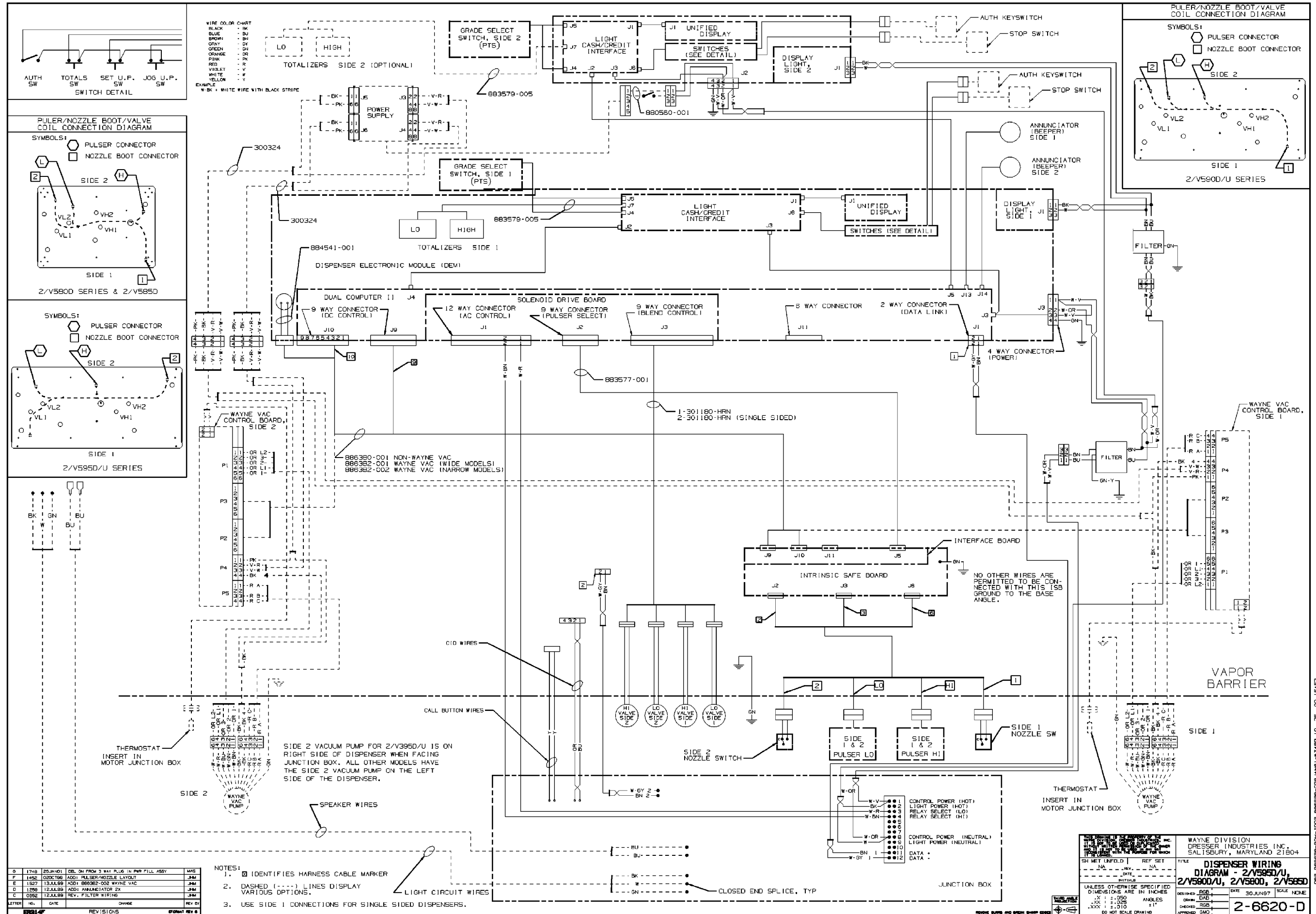
Appendix

A

Wiring Diagram

Refer to the following drawing for help in installing the 2/V390/U to 2/V590/U Conversion kit.

Dispenser Wiring Diagram



INSTALLATION MANUAL
WAYNE 2/V390/U TO 2/V590/U CONVERSION KIT

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Illustrated by Tom Sigmon.

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