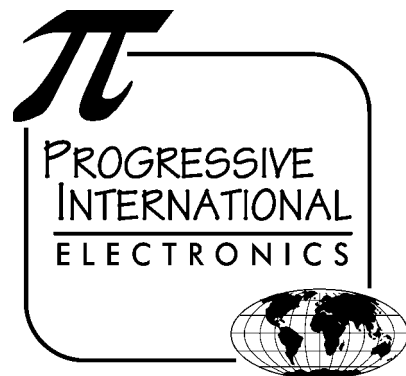


C2000

CONSOLE CONTROLLER

User Reference Manual
and
Installation Guide





2422 Atlantic Avenue
Raleigh, North Carolina 27604
Phone 919 821-1323 • Fax 919 821-1325
www.pie-corp.com



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Progressive International Electronics

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C2000

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GENERAL INFORMATION & WARRANTY**General Information**

The C2000 is an economical, full-featured console designed to provide control of up to 16 fueling positions. While most consoles can only control one type of fuel dispenser, the C2000 may be configured to run all major brand electronic and mechanical dispensers. This is accomplished through the use of configurator boxes that contain the unique circuitry required to interface to each individual dispenser.

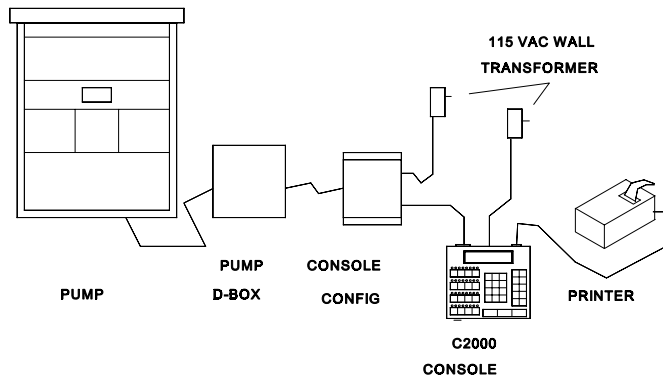


Figure 1: C2000 Installation

Your C2000 provides full features, yet is very simple to install and operate. Due to meticulous design of the keyboard and display layout, keystrokes are kept to a minimum during programming setup and normal operation modes.

Standard features provided by the C2000 for efficient control of your fueling dispensers include:

- C Full featured console which includes prepay/postpay, preset, drive-away alerts, stacked sale, cash/credit operation.
- C Management features including dispenser, shift and station totals, management security, prices programmed by product.
- C Easy to read LCD display.
- C Register style keyswitch for efficient operator entry.
- C Controls up to 16 fueling positions — including *all major electronic dispensers* and new blending pumps.
- C Audible alerts for call, drive-away and collect.
- C Battery backed memory to retain data in the event of power outage.
- C Built-in hardware clock to time stamp all reports.
- C Compact size allowing convenient counter-top positioning while utilizing a minimum amount of valuable counter space — or may be bracket mounted.
- C Standard printer interface for use with most low-cost printers.
- C Ease of installation — console wires directly into dispenser distribution boxes.

Prior to installation or operation of the C2000, please review each section of this manual to familiarize yourself with the system.

C2000 Manufacturer's Warranty

Progressive International Electronics, Inc. (SELLER) warrants to the Purchaser of the C2000 fuel control equipment manufactured by Seller against defects in material or workmanship for one (1) year from date of shipment. Seller will replace or repair defective parts or replace and issue credits to the Purchaser's account in accordance with the following Conditions of Warranty.

CONDITIONS OF WARRANTY

1. Credit will be applied only when the completed warranty request form and the defective parts are received and inspected.
Decisions to repair or replace defective equipment are solely at the discretion of PIE.
2. When parts shipments are made prior to receiving the required warranty request and defective parts, they will be billed to the Purchaser.
3. In all cases, approved warranty requests will be expedited by issuing the appropriate credit to the Purchaser's account and shipping replacement parts.
4. Credits will not be issued for parts and no cash refunds for warranty credits will be made.
5. All components and parts must be returned to the factory prepaid, and in turn, replacement components and parts will be returned prepaid by the factory.
6. Seller's warranty applies only if the equipment has been installed and used in accordance with Seller's instructions. The warranty is void if any unauthorized alteration or addition has been made to the equipment or if it has been subject to damage caused by abuse, misapplication, accident or improper operation.
7. The Seller's liability for any damages, including contribution and indemnification, arising out of or in any way connected with the supplying of the equipment or its use, shall not in any case exceed the cost of repair of the equipment as herein provided. Upon expiration of the warranty, all such liability, as well as any other liability, shall terminate.
8. Nothing contained herein shall make the Purchaser, its agents or employees, an agent or representative of Seller and Seller assumes no responsibility of any act, omission, representation or warranty by the Purchaser or anyone else except as expressly stated herein.
9. The final Decision as to the validity of any claims arising under the warranty shall be determined solely by the Seller.

THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEED THE AFORESAID OBLIGATIONS AND ARE HEREBY DISCLAIMED AND EXCLUDED BY SELLER.

W A R N I N G

Warning: Installation must comply with the National Electrical Code, as well as Federal, State, Local and all applicable codes.

Warning: High voltages are present in this equipment. Disconnect all power before making installation to prevent personal injury or equipment damage.

Warning: Do not install C2000 units in a volatile, combustible or explosive atmosphere. All C2000 units must be protected from severe vibration, extreme temperatures and excessive humidity.

Any peripheral equipment is to be installed over a non-hazardous location.

Any peripheral equipment connected to the C2000 must be UL listed and using standard RS232 or RS485 communication.

The C2000 **must** be plugged into a dedicated 115 VAC wall socket with bonded earth ground.

OPERATION

Introduction

In this section, all functions available to the cashier for operation of the C2000 are outlined. Table 1 on the following page provides brief descriptions of key functions. Also, refer to Figure 2 below for general locations of various keys, indicators and display.

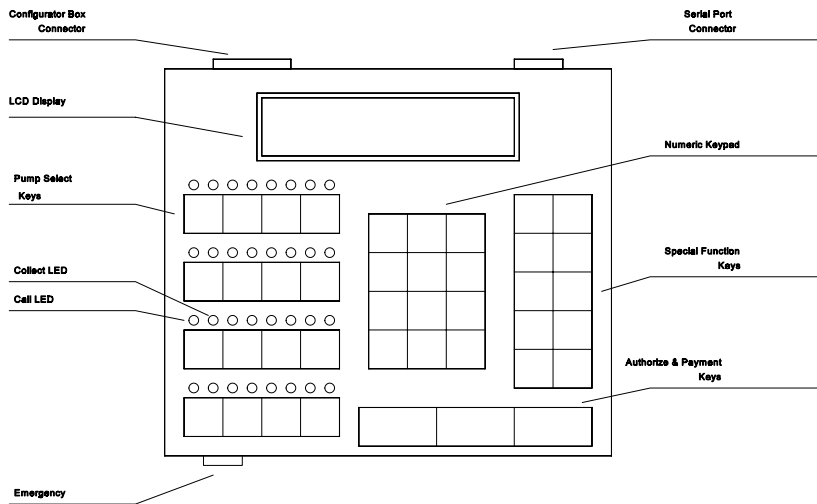


Figure 2: C2000 Keyboard Layout

There are two types of operations for the cashier:

- ! **Pump control** — initiated by pressing the appropriate pump select key, followed by the keys corresponding to the command for the C2000 to make upon that pump.
- ! **Select functions** — provide the cashier access to the shift, time and date, and console deactivation functions.

Active Keys	
PUMP KEYS	Select pump number
AUTHORIZE	Authorize selected pump or resume a stopped pump
CASH PAID	Pay out the sale in cash
CREDIT PAID	Pay out the sale in credit
VOLUME	Display the volume of the sale
PPG	Display the price per gallon of sale
A/B	Toggle between the A & B sales
PUMP STOP	Stop an authorized pump
PRINT	Print a receipt
CHANGE	Show the change of a preset or prepay sale; also show the preset amount
GRADE	Set the grade for an authorization
MANAGER	Enter/exit program & report modes
SELECT	Refer to Operation Section, Special Functions

Table 1: Key Functions

Display and Status Indicators

The LCD display provides the cashier with all sale information for the pump selected. It also provides data such as time/date and shift totals reports when using the select functions. Listed below in Table 2 are the various fields of data which may appear in the display area, along with a brief description of each field.

Display	Description
Pump #	Indicates the current/active pump #/fueling position. Further key entry, such as <i>authorization</i> or <i>payment</i> will apply to the current pump #.
Hose #	Indicates the active hose at a fueling position.
Sale Type	Indicates the method of payment selected for a sale — <i>cash (CA)</i> or <i>credit (CR)</i> .
Sale #	Indicates which sale is selected — <i>A</i> or <i>B</i> (current sale or stacked sale).
Product #	Indicates the product type for the displayed sale.
Amount Type	Indicates type of data being displayed in the amount field.
Amount	Indicates the value, dollar or volume of the active sale.
Entered Value	Displays any data entered on the numeric keypad.

Table 2: Display Data

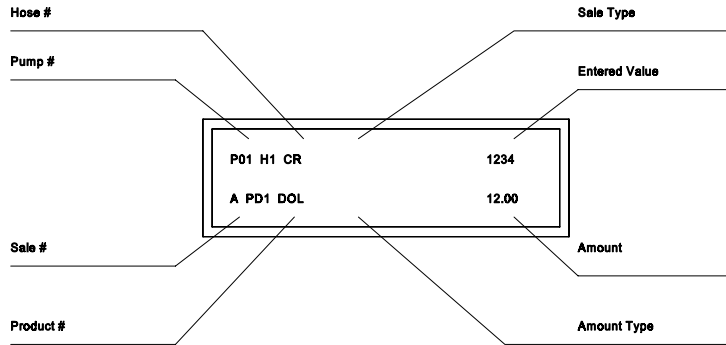


Figure 3: Display Layout

The LEDs above each of the pump select keys are the *status* indicators for that particular pump/fueling position. The green LED on the left indicates *call/in use*. The red LED on the right indicates *collect/stopped*. Table 3, below, shows the various states these LEDs represent for each pump/fueling position.

GREEN LED	RED LED	STATUS
Fast Flash	—	Call for service
On Solid	—	Authorized
—	Slow Flash	Collect "A" Sale
—	On Solid	Pump Stopped
Fast Flash and	Fast Flash	Drive-Away
Slow Flash and	Slow Flash	Collect "A" and "B" Sales

Table 3: LED Indicators for Pump/Fueling Positions

Sales

Authorization must be made for a sale as either a *Postpay*, *Preset Postpay*, or *Prepay* sale. Table 4, below, describes the sequence for completing each type of authorized sale.

NOTE: An actual key action is indicated by <___>

Sale Type	Procedure
Postpay	To authorize a pump for a Postpay/Fillup operation, press the appropriate <PUMP #> key and then press the red <AUTHORIZE> key. To pay out the sale on the console, press the <PUMP #> key. Press either <CASH> or <CREDIT> key. To print a receipt, press <PRINT>
Preset Postpay	To authorize a pump for a preset amount, press the appropriate <PUMP #> key and then enter the preset amount on the numeric keypad. Press the red <AUTHORIZE> key. (Note that the amount entered on the numeric keypad appears on the display in the ENTERED VALUE field.)
Prepay	To authorize a pump for a prepay sale, press the appropriate <PUMP #> key; then enter the amount paid on the numeric keypad. (Note that the amount entered on the numeric keypad appears on the display in the ENTERED VALUE field.) Press method of payment, <CASH> or <CREDIT> key; then the red <AUTHORIZE> key.

Table 4: Sales Procedure by Authorization Type

If the transaction is a stacked sale (A/B), it is important to select the correct sale with the <**A/B**> key before the method of payment — <**CASH**> or <**CREDIT**> key — is pressed. The status indicators show the state of a transaction, such as *call for service*, *collect*, etc. (Refer to the Quick Reference Guide for general sales procedures.)

Should it become necessary to stop all of the dispensers due to an emergency condition, press the large red button on the front edge of the C2000. This will place all of the dispensers in a stopped condition until the operator clears the emergency. This is accomplished by selecting each dispenser with the <**PUMP #**> key and then pressing the <**AUTHORIZE**> key.

Select Functions

Listed below are the five special operator *select functions*, along with the key sequences required to execute them. Each key sequence begins with the operator pressing the <SELECT> key. (Note that the display will prompt you to enter a function key for the appropriate mode.)

Key Pressed	Resulting Message
<ENTER>	<i>Show Shift Totals</i>
<PRINT>	<i>Print Current Shift Totals</i>
<CHANGE>	<i>Shift Change</i>
<SELECT>	<i>Show the Console Clock</i>
<PUMP STOP>	<i>Turn off the Console</i>

Table 5: Select Key Functions

For example, a typical sequence of select functions might be the sequence used to determine shift totals. This select function would be accomplished by first pressing the <SELECT> key. The word *Function* will appear in the display, prompting the operator to enter the key for the desired function. Pressing the <ENTER> key will cause the display to begin showing the volume shift totals. To view the cash shift totals, press the <CASH PAID> key. The credit shift totals may be viewed by pressing the <CREDIT PAID> key. To display all of the product shift totals, continue to press the <ENTER> key.

This will scroll all of the shift totals. After exhibiting all of the totals, the display will return to the select function entry screen. If another select function is desired, it may be entered, or the select function mode may be exited by pressing the **<CLEAR>** key.

A similar sequence is used to print the current shift totals. By pressing the **<PRINT>** key at the *Select Function* prompt, a shift totals report will be printed if a printer is attached to the C2000.

As a precautionary measure, the *Shift Change* function may only be implemented if shift totals have been completely viewed or printed and if at least one hour has elapsed since the last shift change. To execute a shift change, simply press the **<CHANGE>** key at the *Select Function* prompt. When this has been accomplished, the C2000 changes the current shift total to zero. The last shift total is then stored as shift 1. At any time, there are four stored shift reports. They are the current shift, shift 1, shift 2, and shift 3, with shift 3 being the oldest. Please note that all shift reports are time/date stamped and contain a unique two-digit number that increments by one each time a shift change takes place.

The C2000 has a built-in clock/calendar to provide accurate time/date stamping on reports and sales receipts. This clock/calendar may be read by pressing **<SELECT>** to access

the *Select Function* menu. Press <**SELECT**> again to read the console clock.

A special select function is required to turn off the C2000. By pressing <**PUMP STOP**> at the *Select Function* prompt, the console is placed in an off mode. At this point, all LEDs are turned off and the work *Off* flashes on the display. Note that any fueling transactions that have already begun when the C2000 was turned off will be allowed to run to completion. To turn the C2000 back on, press <**CLEAR**>; then enter the Operator PIN Code on the numeric pad and press the <**ENTER**> key. The default Operator PIN Code is set at the factory to **1111**. Operator PIN Codes do not appear in the display as they are entered on the numeric keypad. (See the Program & Report Section of this manual for instructions on changing the Operator PIN Code.)

PROGRAM & REPORT**Introduction**

The Program & Report Section describes the operation and resulting information provided by the C2000 *program and report functions*. These functions allow the manager to configure the C2000 for the specific type of operation desired and to retrieve important data collected. This management information is protected by the use of a unique Manager PIN Code (factory default — 2422). This Manager PIN Code may be changed by the manager at any time through the use of one of the program and report functions.

As you review this section of the manual, please refer to Figure 2 for general locations of the various keys, indicators and display. While using program and report functions, the fields on the display will vary from function to function, depending upon the type of data being displayed or requested.

Refer to Program & Report in the Quick Reference Guide at the end of this manual.

PIN Code Access

To access C2000 program and report features, a sequence utilizing a valid PIN Code must first be entered.

Access is divided into two categories — manager and operator.

The manager, using a Manager PIN Code, has access to **all** program and report functions. Report functions (modes 10, 11, 12) are also available to the operator, who uses an Operator PIN Code. Manager and operator access are described below.

Manager Access

Entry of the correct Manager PIN Code allows access to all program and report functions. First, press <MANAGER> key. The display will prompt you to enter your PIN Code. Enter this PIN Code on the numeric keypad. (This number, with a maximum of four digits, is stored in the C2000. Its purpose is to limit access to C2000 program and report data. The number **2422** is the factory default value for the Manager PIN Code.) Next, press the <ENTER> key. *M:0* will appear in the display, prompting you to enter the desired function mode number on the numeric keypad. Press <ENTER> again to generate the requested program & report function sequence. At this point, if you wish to return to the operator mode, press the <MANAGER> key.

Operator Access

Access to report functions is accomplished through the entry of a valid Operator PIN Code. First, press the **<MANAGER>** key. You will be prompted by the display to enter your PIN Code. Enter your Operator PIN Code on the numeric keypad. (This number, with a maximum of four digits, is stored in the C2000. Its purpose is to limit access to C2000 report data. The number **1111** is the factory default value for the Operator PIN Code.) Next, press the **<ENTER>** key. *M:0* will appear in the display, prompting you to enter the desired function mode number on the numeric keypad. Press **<ENTER>** again to generate the requested program & report function sequence. At this point, if you wish to return to the operator mode, press the **<MANAGER>** key.

Mode Descriptions

The sequence for manager access **must** be completed before programming features can be utilized through the various program modes. The sequence for either manager access or operator access allows generation of reports (Modes 10, 11 and 12). Each set of instructions for the following program and report modes assumes that the appropriate manager/operator access has already been executed and that the *mode number* prompt now appears in the display.

Mode 1 — Pump Setup Information *(Manager only)*

Through Mode 1, assignments, blend ratios and self/full service modes are entered for each pump/fueling position controlled by the C2000. After being prompted for *mode number* (see previous page for instructions on accessing program mode), press <1> on the numeric keypad and then press <ENTER>. You are now in Mode 1.

Initiate pump programming by pressing the <PUMP #__> key for the first pump/fueling position at the site (usually Pump #1). The mode begins with setting the following parameters for hose 1. (If you have a multi-product dispenser, then you will need to set these for all hoses.) Press the <GRADE> key to scroll to the desired product for the current hose displayed. During this step, pressing the <AUTHORIZE> key will clear the product number for reentry.

To set the service mode, press the <CHANGE> key to toggle between full- or self-service for the specified pump.

If the dispenser is a blending dispenser, on the numeric keypad enter the amount, in percent of hose 1, to be dispensed by the selected hose. Press <ENTER>. Remember that any data entered on the numeric keypad will appear on the display. If the dispenser is a multi-product dispenser, then press <SELECT> to scroll to the next hose to be programmed. Follow this procedure to program each pump/dispenser at the site.

To exit Mode 1, press the <MANAGER> key. The C2000 display returns to the *mode entry* prompt. To exit programming mode completely, press the <MANAGER> key again. The C2000 will return to operator mode.

Mode 2 — Product Information (*Manager only*)

In this mode, Product Name, Cash PPU and Credit PPU for each product at the site are programmed. To enter this mode from the *mode number* prompt, press <2> on the numeric keypad and then press <ENTER>. You are now in Mode 2.

The display now prompts for information about product #1. To assign a product name such as UL, REG or DIESEL to this product, press the <GRADE> key until the desired product name is presented in the display. If you wish to just view the product name already assigned, press the <SELECT> key and

the name will appear in the display.

To set the Cash PPU for a product, enter the desired PPU on the numeric keypad and press the **<CASH PAID>** key.

To set the Credit PPU for a product, enter the desired PPU on the numeric keypad and press the **<CREDIT PAID>** key.

As the Cash and Credit PPUs are entered, numeric key errors may be erased by pressing the **<CLEAR>** key and reentering the data. Also, Cash and Credit PPUs may be viewed by pressing the **<CASH PAID>** or **<CREDIT PAID>** key. The value will appear in the display.

To proceed to the next product number to be programmed, press the **<ENTER>** key. Follow this procedure for each product type at the site.

Exit Mode 2 by pressing the **<MANAGER>** key. The C2000 display returns to the *mode entry* prompt. To exit programming mode completely and return to operator mode, press the **<MANAGER>** key again.

Mode 3 — Beeper Settings (*Manager only*)

Mode 3 is used to program single or continuous beeps for Handle, Collect and Drive-Away. (Note: The console defaults to a single beep unless set otherwise.) To enter Mode 3 from the *mode number* prompt, enter <3> on the numeric keypad and press <ENTER>.

The display first will prompt for selection of the style of beep associated with a Handle/Call for Service. To change the style of beep, press the <SELECT> key and toggle between *single* and *continuous*.

To proceed to the next option setting, press <ENTER>. The display now prompts for selection of the style of beep associated with a Collect condition. To change the style of beep, press the <SELECT> key and toggle between *single* and *continuous*.

To proceed to the next option setting, press the <ENTER> key. The display now prompts for selection of the style of beep associated with a Drive-Away condition. To change the style of beep, press the <SELECT> key and toggle between *single* and *continuous*.

Exit Mode 3 by pressing the <MANAGER> key. The *mode entry* prompt will appear on the display. To exit programming mode completely and return to operator mode, press the <MANAGER> key again.

Mode 4 — Clock/Calendar (*Manager only*)

Mode 4 allows the setting of time and date. To enter mode 4, press <4> and press <ENTER>. The C2000 is now in programming Mode 4.

Time and date already set in the C2000 will be displayed. To change the time, enter the new time on the numeric keypad in 24 hour format. The new time will appear in the display as you enter it. Press <ENTER> and the time will be updated in the C2000.

Next, you may change the date by entering the new date on the numeric keypad in mmddyy format. The new date will appear in the display as you enter it. Press <ENTER> and the date will be updated in the C2000.

To exit Mode 4, press the <MANAGER> key. The *mode entry* prompt will appear on the display. To exit programming mode completely and return to operator mode, press the <MANAGER> key again.

Mode 5 — Serial Port (*Manager only*)

Mode 5 allows configuration of the C2000 serial port. To enter Mode 5, press <5> and press <ENTER>. The C2000 is now in programming Mode 5.

The display now prompts a selection for the *correct baud rate*. Press the <SELECT> key until the desired baud rate appears in

the display.

Press <ENTER> to advance the menu. The display will now prompt an entry for *correct data bit* selection. Press the <SELECT> key until the desired data bit selection appears in the display.

Again, press <ENTER> to advance the menu. Here, the display prompts an entry for *correct stop bit* selection. Press the <SELECT> key until the desired stop bit selection appears in the display.

Press <ENTER> again to advance the menu. The display will prompt an entry for *correct parity* selection. Press the <SELECT> key until the desired parity selection appears in the display. If parity is enabled, press <ENTER> to advance to parity type menu. At this point the display will show *odd parity*. To toggle to *even parity*, press <SELECT> key.

To review your selections for the serial port, simply press <ENTER> and scroll through all of the port parameters.

Mode 5 may be exited by pressing the <MANAGER> key. The C2000 will return to the mode entry prompt on the display. To exit programming mode completely and return to operator mode, press the <MANAGER> key.

Mode 6 — Peripheral Devices (*Manager only*)

Mode 6 enables the device(s) connected to the serial port. (The C2000 default assumes that no devices are connected to the port.) To enter Mode 6, press <6> on the numeric keypad and press <ENTER>.

The display prompts the programmer to *activate/deactivate printer*. Use the <SELECT> key to toggle between these two selections.

Next, press <ENTER> to advance the menu. The display will now prompt an entry for *activate/deactivate register*. Press the <SELECT> key to toggle between these register selections. (There are actually two register selections from which to choose — *single* and *multiple*.)

To review your peripheral device selections, press <ENTER> and scroll through.

Mode 6 may be exited by pressing the <MANAGER> key. The C2000 will return to the mode entry prompt on the display. To exit programming mode completely and return to operator mode, press the <MANAGER> key again.

Mode 7 — Print Header (*Manager only*)

In this mode, the print header for the printer receipt is created and edited. (Note that this mode is accessible only if the printer has been enabled in Mode 6.) To enter this mode, enter <7> on the keypad and press <ENTER>.

The display shows the beginning information for the printer header. If your header has not been programmed or has been cleared, the cursor will prompt you for your first character entry. (Refer to Table 6, Print Header Character Codes, for a numeric code which represents the characters available for your use on the printer header.) Determine the character you wish to place in the first position of the header and look up the numeric code. Enter this numeric code on the keypad and press <ENTER>. The character will appear on the display, and has been saved in memory. For each subsequent character, follow the sequence described above.

There are two special numeric codes for the header: <10> indicates a *new line* in the header; <01> is the code for *end of header*. Enter the *new line* code at the point where the printer should cease printing on the current line and go to the beginning of the next line. The *end of header* code is entered after the entire header is entered and will tell the C2000 that no more characters are needed in the header.

Print Header Character Codes													
01 = end of header						10 = new line							
0	48	F	70	U	85	j	106	y	121	-	45	<	96
1	49	G	71	V	86	k	107	z	122	.	46	{	123
2	50	H	72	W	87	l	108	space	32	/	47		124
3	51	I	73	X	88	m	109	!	33	:	58	}	125
4	52	J	74	Y	89	n	110	"	34	;	59	~	126
5	53	K	75	Z	90	o	111	#	35	<	60		
6	54	L	76	a	97	p	112	\$	36	=	61		
7	55	M	77	b	98	q	113	%	37	>	62		
8	56	N	78	c	99	r	114	&	38	?	63		
9	57	O	79	d	100	s	115	'	39	@	64		
A	65	P	80	e	101	t	116	(40	[91		
B	66	Q	81	f	102	u	117)	41	\	92		
C	67	R	82	g	103	v	118	*	42]	93		
D	68	S	83	h	104	w	119	+	43	^	94		
E	69	T	84	i	105	x	120	,	44	_	95		

Table 6: Print Header Character Codes

Special editing features are available for use in this mode:

- <**ENTER**> without entering a numeric code — The display cursor will increment to the next character in the header.
- <**SELECT**> without entering a numeric code — The display cursor will go back one character in the header.
- <**CHANGE**> without entering a numeric code — The entire printer header will be cleared.
- <**PRINT**> without entering a numeric code — The printer will print the header that is programmed.
- <**MANAGER**> — Exit Mode 7.

Mode 10 — Read Reports (*Manager/Operator*)

In Mode 10, totals reports may be generated and displayed. To enter this mode, enter <**10**> on the keypad and press <**ENTER**>.

The display will show an *R:0*, prompting you to enter a report type code. Use the table below to select which type of report you would like displayed.

- 1** Resettable Totals
- 2** Non-Resettable Totals
- 3** Shift 0 Totals (current shift)
- 4** Shift 1 Totals
- 5** Shift 2 Totals
- 6** Shift 3 Totals
- 7** Polled Pump Totals

Select the report number and enter it on the C2000 keypad; then press <ENTER>. The beginning data for the report is shown in the display. Use the following keys to scroll through the report.

<ENTER>	Display next product totals
<VOLUME>	Display the volume total
<CASH PAID>	Display the cash total
<CREDIT PAID>	Display the credit total
<MANAGER>	Exit Mode 10

Mode 11 — Print Reports *(Manager/Operator)*

Mode 11 allows reports to be generated and printed on the printer attached to the C2000. To enter this mode enter <11> on the numeric keypad and press <ENTER>.

P:0 will be displayed, prompting you to enter a report type code. Use the table below to select which type of report you would like printed by the C2000.

- 1 Resettable Totals
- 2 Non-Resettable Totals
- 3 Shift 0 Totals (current shift)
- 4 Shift 1 Totals
- 5 Shift 2 Totals
- 6 Shift 3 Totals
- 7 Polled Pump Totals
- 8 Console Program Information

Select the report number and enter it on the C2000 keypad; then press <ENTER>. Data for the report will be printed. If you wish to print additional reports, select another report option. Or press <MANAGER> to exit Mode 11.

Mode 12 — Clear Resettable Totals *(Manager/Operator)*

Mode 12 is used to reset resettable totals by clearing them to zero. Enter <12> and press <ENTER> to enter Mode 12.

The display will show *press clear*. If you wish to zero all resettable totals, proceed by pressing <CLEAR>.

Press any key to exit Mode 12.

Mode 97 — Program Operator PIN Code

(Manager only)

WARNING: Care should be observed when using this mode. If the PIN Code is altered, be sure to make note of the new PIN Code and save in a safe location.

In Mode 97, the Operator PIN Code is viewed and changed. (The default Operator PIN Code is **1111**.) To enter this mode, enter <97> on the numeric keypad and press <ENTER>. The display will show the existing Operator PIN Code. To change the code, enter the new number (up to 4 digits) on the numeric keypad and press <ENTER>. The new Operator PIN code will appear on the display. To exit this mode, press the <MANAGER> key.

Mode 98 — Program Manager PIN Code*(Manager only)*

WARNING: Care should be observed while using this mode. If the PIN Code is altered, be sure to make note of the new one and save in a safe location. remember, all access to program and report functions is accomplished via this number.

Mode 98 allows the Manager PIN Code to be viewed and changed. The default Manager PIN Code is **2422**. To enter Mode 98, enter **<98>** on the numeric keypad and press **<ENTER>**. The display will show the existing Manager PIN Code. To change the code, enter the new number (up to 4 digits) on the numeric keypad and press **<ENTER>**. The new Manager PIN Code will appear on the display.

To exit Mode 98, press **<MANAGER>**.

Mode 99 — Console Diagnostics *(Manager only)*

Call Progressive International Electronics at 919 821-1323 for instructions.

INSTALLATION

Introduction

The Installation Section contains instructions for installing the C2000 to electronic fuel pump computers and to peripheral equipment (PE), such as the point of sale terminal (POS).

Instructions for installing or servicing electronic fuel pumps or dispensers, and the point of sale terminals are not included in this manual. (See manufacturer's manual specific to each particular product for installation/servicing instructions.)

Read the entire installation section of this manual before attempting to install the C2000.

If further assistance is required, please contact:

PROGRESSIVE INTERNATIONAL ELECTRONICS, INC.

2422 Atlantic Avenue

Raleigh, North Carolina 27604

Phone (919) 821-1323

FAX (919) 821-1325

General Installation Guidelines

The basic C2000 system consists of several components — the console, configurator box and cables to interconnect the components. Refer to Figure 1, which shows a typical layout of the C2000 system, including attachment to an optional printer.

To begin installation, place the console at the checkout counter of the station. Note that the console has four threaded inserts on the bottom for mounting with screws to a cellular telephone stand (not provided). This will allow the console to be elevated and angled for efficient use next to the cash register.

Next, locate the configurator box and mount under the counter or on a wall adjacent to the console, not more than five feet away. Attach the console/configurator cable to the 15-pin connector on the back of the C2000. Plug the other end into the input connector (9-pin) on the configurator box. If a printer is to be used with the C2000, attach the printer cable to the 25-pin connector on the back of the printer and the other end to the 9-pin serial port connector on the back of the console.

Attach the C2000 system to the dispenser data distribution equipment for the appropriate pump type, as outlined in the following pages.

Upon completion, apply power to the C2000 console and configurator box, as well as the printer (if applicable) and commence programming, as outlined in Program & Report.

Installation Warnings

Warning: Installation must comply with the National Electrical Code, as well as Federal, State, Local and all applicable codes.

Warning: High voltages are present in this equipment. Disconnect all power before making installation to prevent personal injury or equipment damage.

Warning: Do not install C2000 units in a volatile, combustible or explosive atmosphere. All C2000 units must be protected from severe vibration, extreme temperatures and excessive humidity.

Any peripheral equipment is to be installed over a non-hazardous location.

Any peripheral equipment connected to the C2000 must be UL listed and using standard RS232 or RS485 communication.

The C2000 **must** be plugged into a dedicated 115 VAC wall socket with bonded earth ground.

Gilbarco Electronic Fuel Pumps

**Read entire installation section before attempting to install system.
Take careful note of warnings in this section before mounting C2000.**

Mount the C2000's configurator box on the wall or under the counter so that no cables are strained.

1. Install the Gilbarco pumps according to the Gilbarco installation instructions. Connect the pump data wires to the Gilbarco "D" box according to Gilbarco installation instructions.
2. Locate the appropriate pump connection cable. Connect the DIN or D-sub connector to the Gilbarco "D" box. The various "D" box models are illustrated in Figures 4, 5 and 6.

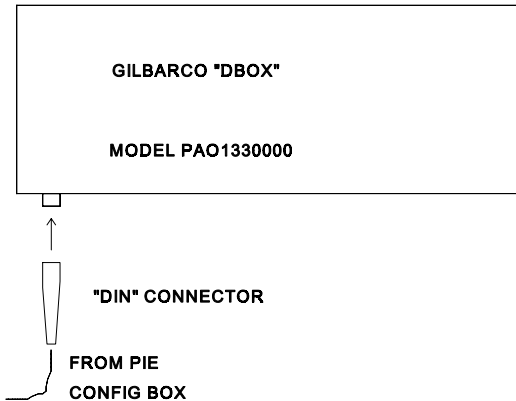


Figure 4: Gilbarco PAO1330000 "D" Box

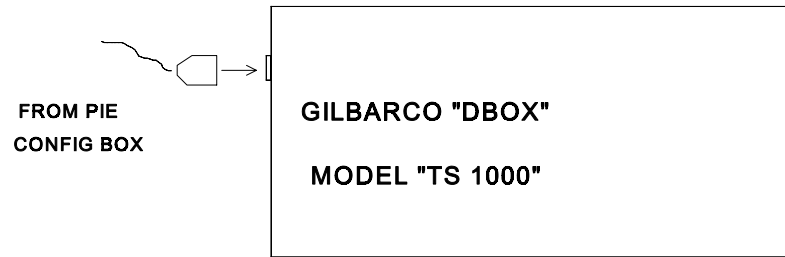


Figure 5: Gilbarco TS1000 "D" Box

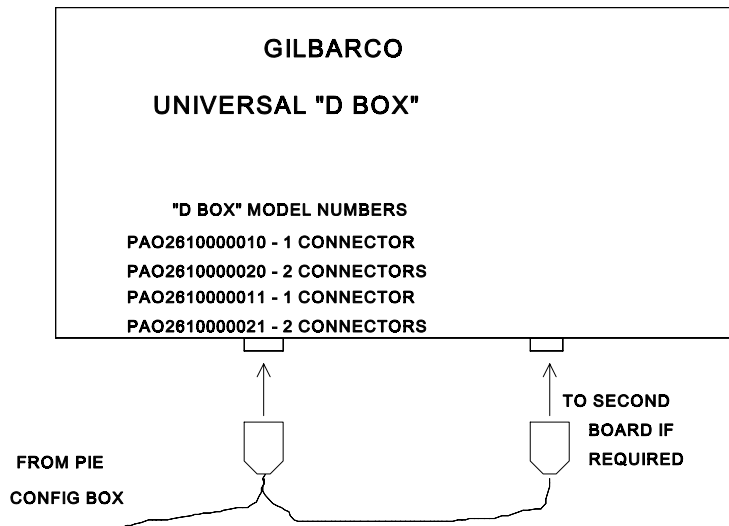


Figure 6: Gilbarco Universal "D" Box

3. Test all the pumps in stand-alone. Do not proceed until all pumps run in stand-alone.

4. Turn all the switches in the Gilbarco "D" box to *ISOLATE*. Program the pump numbers into the pumps. Switch the "D" box switches for the pumps that are connected to *NORMAL*.

NOTE: All Single Product Dispensers (SPDs) must be set for "grade 1."

Tokheim Electronic Fuel Pumps

Read entire installation section before attempting to install system. Take careful note of warnings in this section before mounting C2000.

Mount the C2000's configurator box on the wall or under the counter so that no cables are strained.

For Pumps Using Tokheim M98 Computer/Power Center:

1. Install the Model 98 Computer/Power Center box and Tokheim pumps according to Tokheim installation instructions. Pumps must work in stand-alone before proceeding. Pumps should be configured in the same manner as for the Tokheim Model 179 Console.

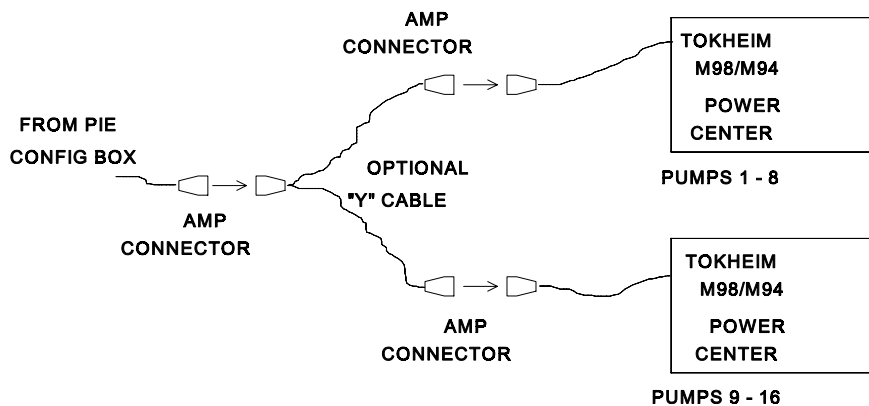


Figure 7: Tokheim 98 Installation

2. Locate the C2000 pump connection cable. This cable has a DE9S connector with hood on one end and a round connector on the other end.

3. Attach the C2000 pump connection cable to the connector on the Tokheim configurator box. Be sure to screwlock this connector to the Tokheim configurator box with the screws provided.
4. For systems with eight pumps or less, connect the C2000 pump connection cable directly to the Model 98 Computer/Power Center. For systems with more than eight pumps (two Model 98 Computer/Power centers) use a "Y" cable (optional component, available through Progressive International Electronics) between the Tokheim configurator box and the Model 98 Computer/Power Centers. **Ensure that cables are screwlocked together. The connection must not be subjected to harsh environments such as under water, extreme heat or extreme cold, etc.**
5. Connect the wall transformer into a 115 VAC receptacle.

For Pumps Using Tokheim Model 67 Connection Box:

1. Install pumps and connect wires to the Tokheim 67 connection box according to Tokheim instructions. Configure pumps as for Tokheim MIMS IV.

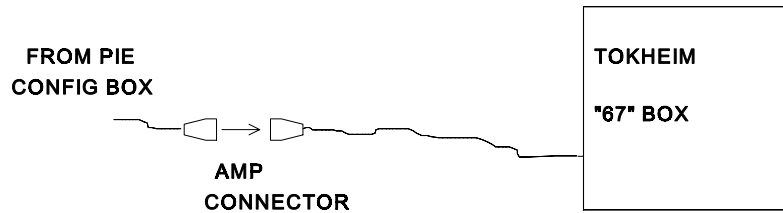


Figure 8: Tokheim 67 Installation

2. Locate the C2000's pump connection cable. This cable has a DE9S connector with hood on one end and a round connector on the other end.
3. Connect the C2000's pump connection to the connector on the Tokheim configurator box. **Be sure to screwlock this connector to the Tokheim configurator box with the screws provided.**
4. Locate the other end of the C2000's pump connection cable. Connect the round connector to the cable from the Tokheim 67 into the connect box. Ensure that this cable connection is screwlocked together. The connection must not be subjected to harsh environments such as under water, extreme heat or extreme cold, etc.
5. Connect the wall transformer into a 115 VAC receptacle.

Kraus Micon 100 Electronic Fuel Pumps

Read entire installation section before attempting to install system. Take careful note of warnings in this section before mounting C2000.

Mount the C2000's configurator box on the wall or under the counter so that no cables are strained.

1. Connect the data wires (TTC, TTP, DCC) into the pump connectors on the configurator box for the Kraus system. Refer to Figures 9, 10, and 11, as well as Table 6.

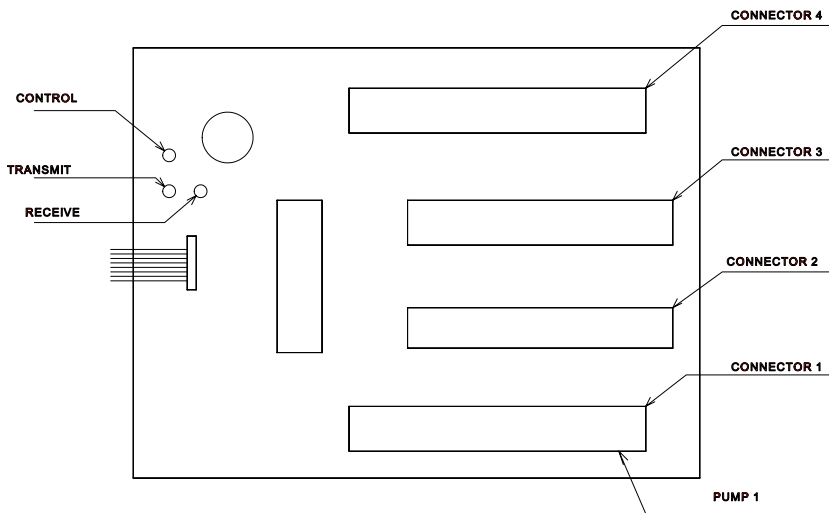


Figure 9: Configurator Box for Kraus 16-Hose Systems

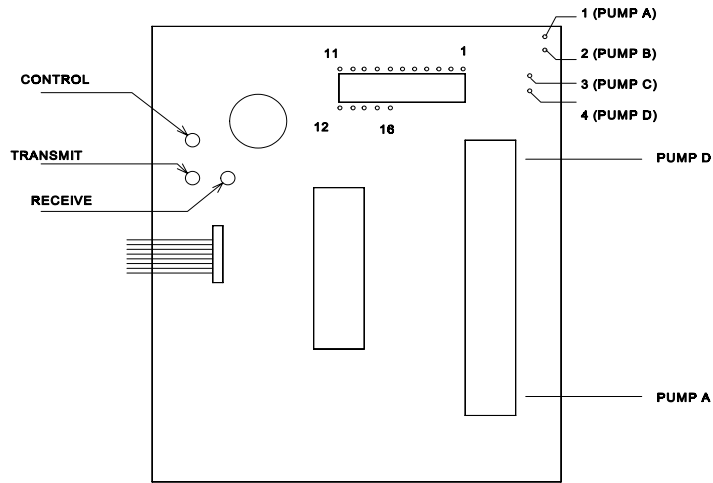


Figure 10: Configurator Box for Kraus 4-Hose Systems

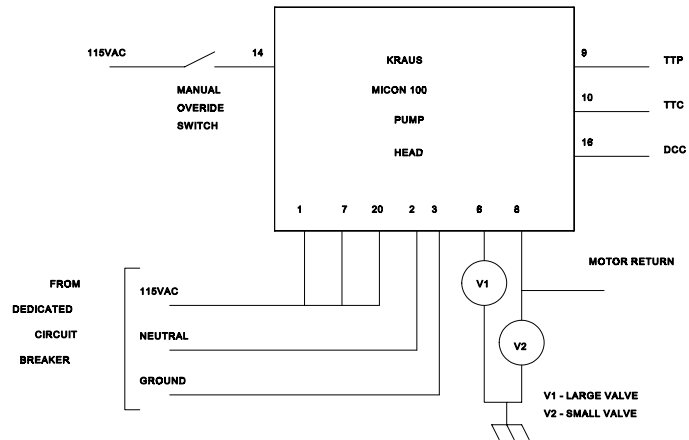


Figure 11: Kraus Micon Pump Head

PIN #	SIGNAL	PUMP #
1	TTC	1, 5, 9, 13
2	DCC	
3	TTP	
4	TTC	2, 6, 10, 14
5	DCC	
6	TTP	
7	TTC	4, 7, 11, 15
8	DCC	
9	TTP	
10	TTC	4, 8, 12, 16
11	DCC	
12	TTP	

Table 6: Kraus Connector Layout

Pumps	1, 2, 3, 4	on connector 1
Pumps	5, 6, 7, 8	on connector 2
Pumps	9, 10, 11, 12	on connector 3
Pumps	13, 14, 15, 16	on connector 4

- If submerged turbine pumps are used, install the optional turbine relay box. Refer to Figure 12 below.

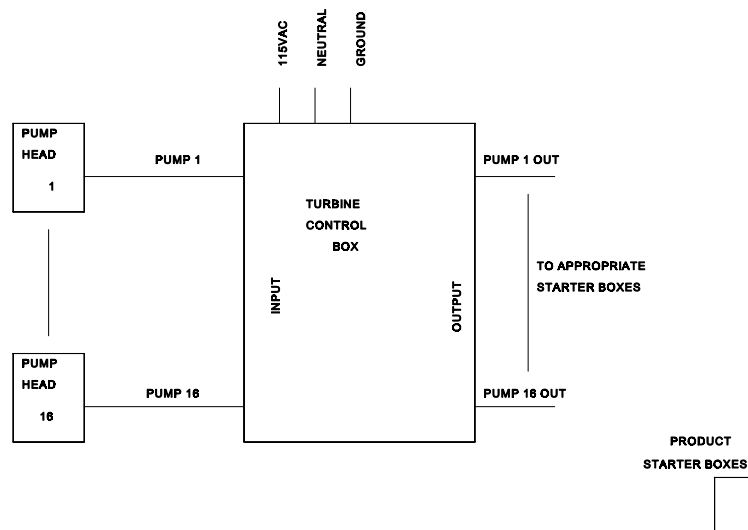


Figure 12: Turbine Relay Box for Kraus

- Connect the wall transformer into a 115 VAC receptacle.

Wayne/Dresser Electronic Fuel Pumps

Read entire installation section before attempting to install system. Take careful note of warnings in this section before mounting C2000.

Mount the C2000's configurator box on the wall or under the counter so that no cables are strained.

1. Install the Wayne/Dresser pumps according to the Wayne/Dresser installation instructions. Connect the pump data wires to the model DD/DY2400/16 connection box according to the Wayne/Dresser installation instructions.
2. Locate the C2000's pump connection cable. Connect the wires into the Wayne/Dresser connection box, as shown in Figure 13.

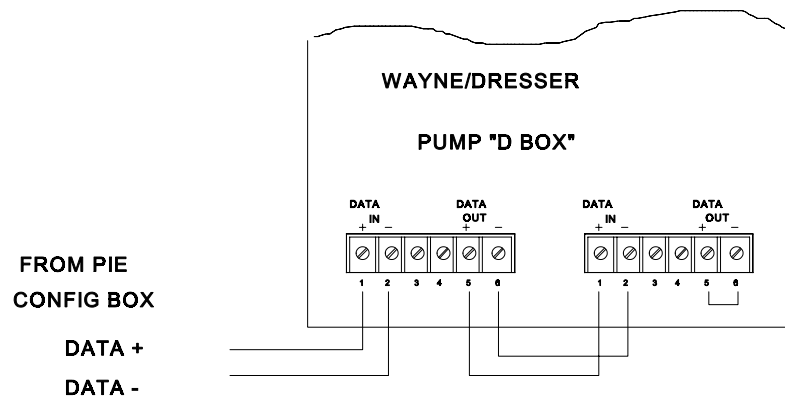


Figure 13: Wayne/Dresser Distribution Box

3. Test all the pumps in stand-alone. Do not proceed until all pumps run in stand-alone.
4. Turn all the switches in the Wayne/Dresser connection box to *BYPASS*. Program the pump numbers into the pumps. Switch the "D" box switches for the pumps that are connected into *AUTO*.
5. Connect the wall transformer into a 115 VAC receptacle.

Bennett Electronic Fuel Pumps

Read entire installation section before attempting to install system. Take careful note of warnings in this section before mounting C2000.

Mount the C2000's configurator box on the wall or under the counter so that no cables are strained.

1. Connect the data wires — Orange (+) and Yellow (-) — into the pump connectors on the Bennett distribution box. Refer to Table 7 and Figure 14.

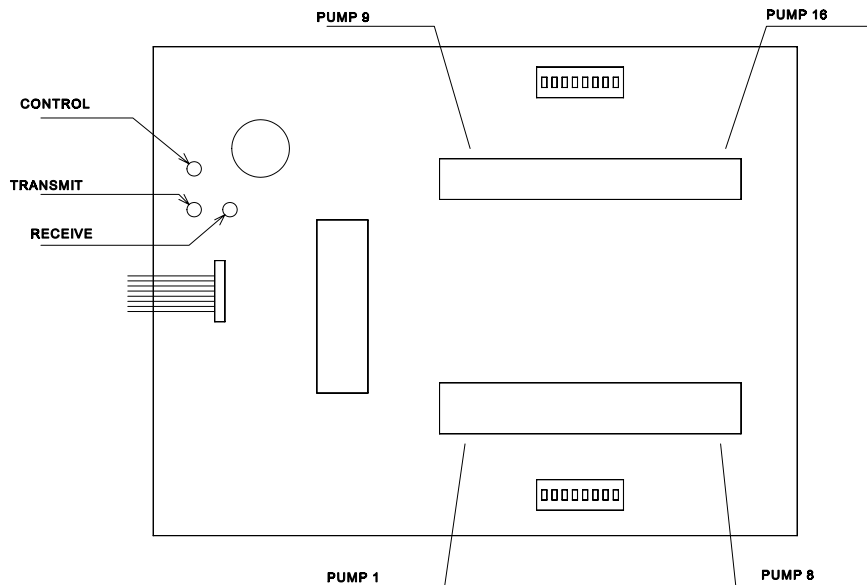


Figure 14: Configurator Box for Bennett Systems

2. Connect the wall transformer into a 115 VAC receptacle.

PIN #	SIGNAL	PUMP #
1	Orange (+)	1, 9
2	Yellow (-)	
3	Orange (+)	2, 10
4	Yellow (-)	
5	Orange (+)	3, 11
6	Yellow (-)	
7	Orange (+)	4, 12
8	Yellow (-)	
9	Orange (+)	5, 13
10	Yellow (-)	
11	Orange (+)	6, 14
12	Yellow (-)	
13	Orange (+)	7, 15
14	Yellow (-)	
15	Orange (+)	8, 16
16	Yellow (-)	

Table 7: Bennett Connector Layout

NOTES

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