ESCO SERVICES INC.

GENESIS I

DC PULSE

INSTALLATION AND SERVICE MANUAL

8/16 HOSE SYSTEM

(830/630)

TABLE OF CONTENTS

TABLE OF CONTENTS

WARNING: This equipment generates, uses, and can radiate radio frequency energy and if not installed in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J, Part 15, of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his/her own expense will be required to take whatever steps may be necessary to correct the interference.

A SHIELDED POWER CORD MUST BE USED WITH THIS CONSOLE

NOTICE: This system must be installed in accordance with NFPA 70 and the Automotive and Marine Service Station Code NFPA 30A.

INTRODUCTION

The Genesis, (ESCO 8/16 Hose system), was designed to meet all the needs of station operators and service personnel. The Genesis can control up to 8 hoses simultaneously (or 16 hoses if using the 16 Hose system) , plus Shift Changes and Reports can be printed at any time the console is in operation. The 8 Hose system has the capability of stacking up to 2 sales per hose, which allows the operator to re-authorize a pump before the first sale has been cashed out. Both systems enable the operator to track tank levels, as well as, running station totals and individual hose totals.

> THE CONSOLE TANK INVENTORY SHOULD NOT BE USED IN PLACE OF A TANK MONITOR. TANK VOLUME TOTALS COULD VARY DUE TO LEAKS OR OPERATOR ERROR.

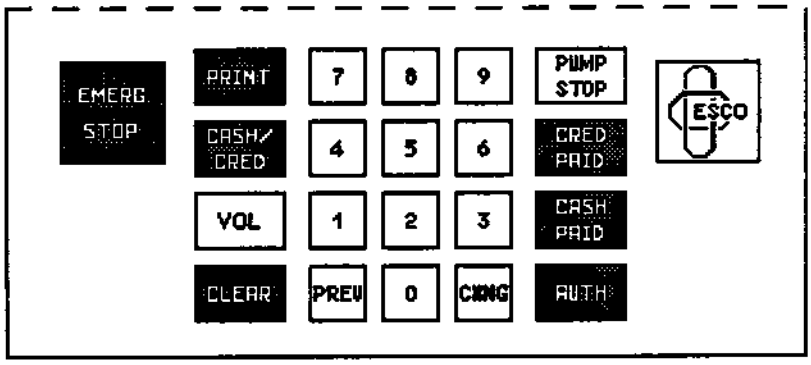
The service man has the ease of installation, along with the simple troubleshooting and repair of the system. This system enables the service person to set up the console's inputs and outputs to conform to most mechanical pumps or dispensers. In locations that utilize leak detectors, the Genesis can control valve turn on time which eliminates the need for external time delay relays. The fast valve control can also be set to switch either ACH or ACC, depending on the type of valves or dispensers being used. The Interconnect box also has Auto/Off/Manual switches located on the mother board, which enables a pump or dispenser to still be operated in a full service mode.

USING THIS MANUAL

The ESCO 8/16 Hose manual is divided into seven sections.

1) Functions (Keypad, Display, Audio and Visual Alerts)
2) Operating Instructions
3) Menu Outline
4) Programming Instructions
5) Installation Instructions
6) Troubleshooting Instructions
7) Field Wiring

Each section is set up to explain console operations as clearly as possible. Any text you see in uppercase **BOLDFACE** type (**PRICE**, **SLOWDOWN**) represents anything that is on the display. Text in uppercase "**BOLDFACE**" type surrounded by quote marks ("**AUTH**", "**PRINT**") represents keys being used to perform tasks. Some of the programming is different between the 8 Hose & the 16 Hose consoles. In such a case, there will be one explanation for the 8 Hose console followed by another explanation for the 16 Hose console, or a short statement explaining the difference.



Used to authorize a postpay sale on desired hose or to restart a stopped hose.

Used to switch between cash and credit amounts of a postpay, preset, previous, or change due sale.

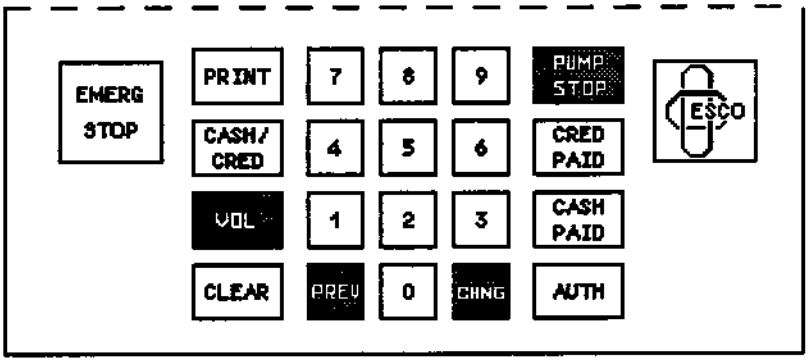
Used to authorize a cash prepay sale, to cash out a cash postpay, preset, or change due sale.

Used to clear the display, also displays the time of day by selecting an inactive hose and pressing "**CLEAR**" key twice.

Used to authorize a credit prepay sale, to cash out a credit postpay, preset, or change due sale.

Shuts down all hose operations, in Auto only. Hoses that were "in use" will automatically go into "collect". Cash out all sales before resuming to regular operation. *See warning on page 3.

Used to print sales receipts on optional printer.



Stops an individual hose from dispensing fuel. Also used to override a pre-authorized pump or to de-authorize a pump authorized in error.

Displays the volume amount, in gallons, of any sale.

8 Hose Console

If the Stack Option is On, it is used to switch between A & B sale on any selected hose; if the Stack Option is Off, it is used to show change due of incomplete prepay sales.

16 Hose Console

Used to change between hose group 1 thru 8 and hose group 9 thru 16.

8 & 16 Hose Console

Displays the previous sale on any selected hose.

8 Hose Console Only

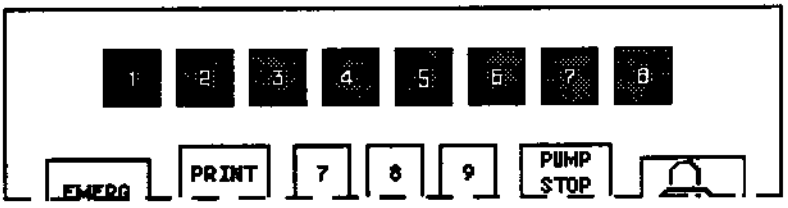
If the Stack Option is selected, it is used to display either the previous A sale or the previous B sale.

WARNING: THE "EMERG STOP" KEY SHUTS OFF POWER TO VALVES AND MTR RELAYS ONLY. IT DOES NOT SHUT OFF ALL POWER TO ISLANDS. IN CASE OF EXTREME EMERGENCY (I.E. FIRE, SPILLAGE) POWER TO THE ISLAND CAN BE SHUT OFF BY USE OF THE STATION'S EMERGENCY SHUT-OFF SWITCH. IF NOT AVAILABLE, TURN OFF ALL BREAKERS GOING TO ISLAND.

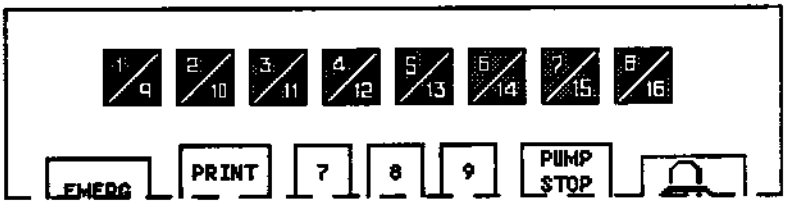
HOSE SELECT KEYS

Used to select desired hose.

8 Hose Console

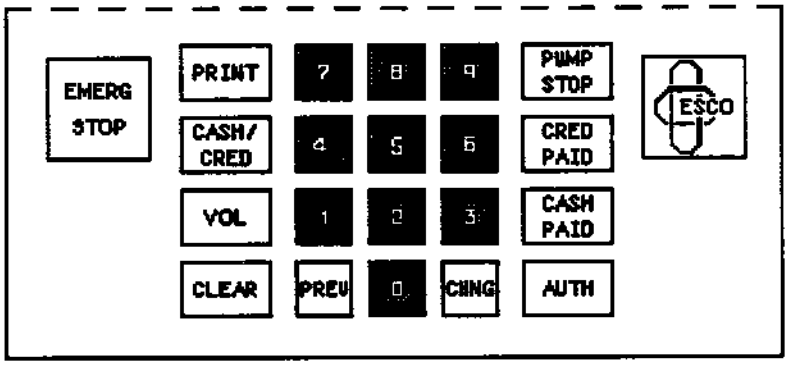


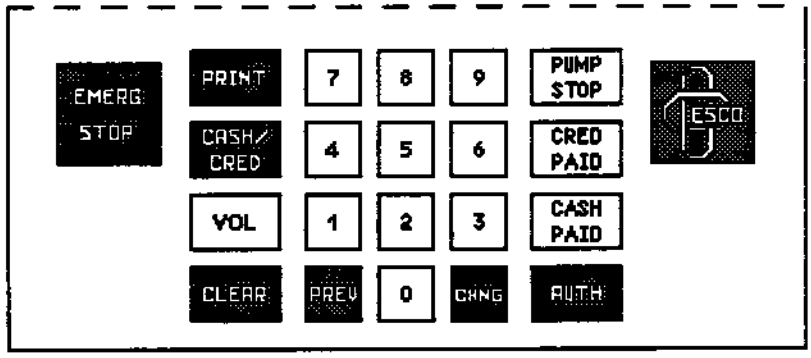
16 Hose Console



NUMERIC KEYS

Used to enter amount of a prepay or preset sale.





AUTH — Used to enter main and submenu selections, to enter selected data, and to print selected reports.

CASH/ CRED — Used to alternate between cash and credit price while in pricing mode.

CHNG — Used to move forward through main menu and submenus (used to scroll through available selections).

CLEAR — Used to return to previous sub-menu or main menu.

EMERG STOP — Shuts down all hose operation, in Auto only. Hoses that were "in use" will automatically go into "collect". Cash out all sales before resuming regular operation. *See warning on page 3.

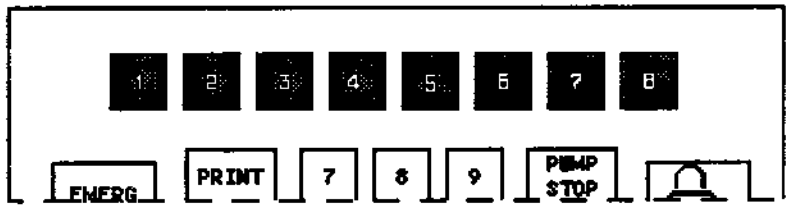
ESCO — Used to enter and exit manager mode.

PREV — Used to move backward through main menu (only functions when in main menu).

PRINT — Used in the Receipt Header menu to print programmable receipt header on optional printer.

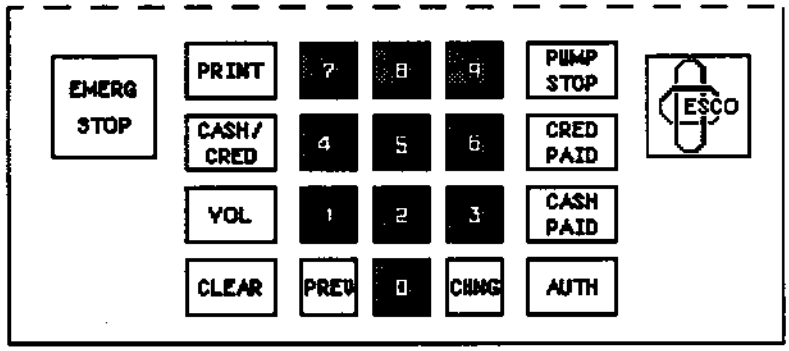
HOSE SELECT KEYS (8 Hose Console Only)

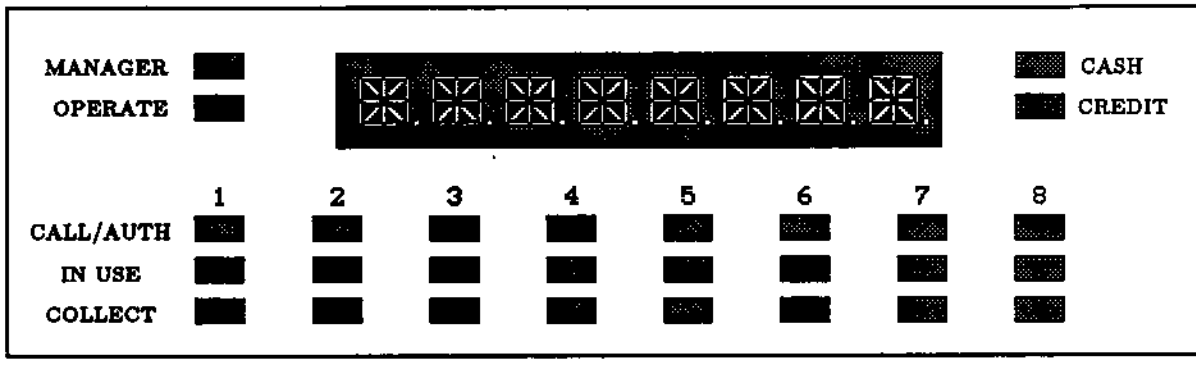
Used to select desired hose.



NUMERIC KEYS

Used to select desired tank or input required data in selected submenus. Also numeric keys 2, 4, 6 & 8 used as direction keys while using Receipt Header Menu.





8 Digit Alphanumeric Display Displays hose information and manager menu items.

MANAGER LED Indicates when the console is in manager or programming mode.

OPERATE LED Indicates when the console is in normal operating mode.

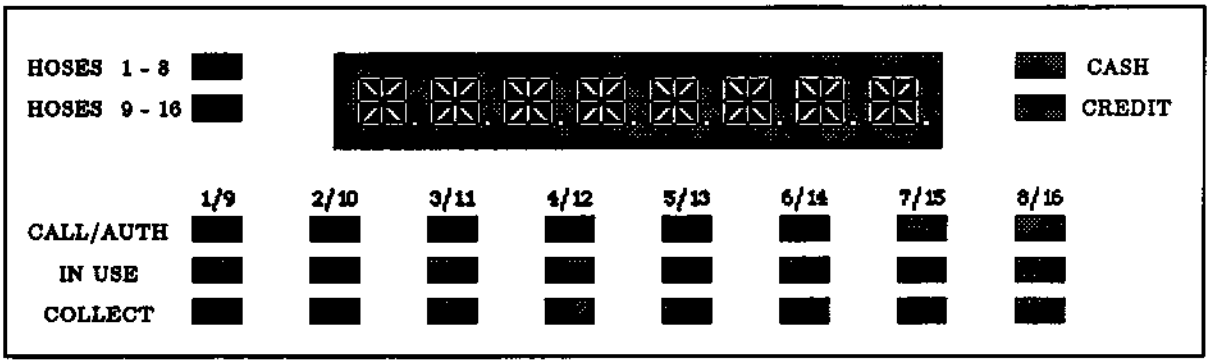
CASH LED Indicates that the display is showing the cash sale or cash price for the selected hose. When the Cash & Credit Leds are off at the same time, the display is indicating a volume figure. A flashing Led indicates that the display is showing the previous sale's data. If both Leds are alternately flashing (in manager mode only) then the display is showing a combined money figure.

CREDIT LED Indicates that the display is showing the credit sale or credit price for the selected hose. When the Cash & Credit Leds are off at the same time, the display is indicating a volume figure. A flashing Led indicates that the display is showing the previous sale's data. If both Leds are alternately flashing (in manager mode only) then the display is showing a combined money figure.

CALL/AUTH LED When flashing, this indicates that the hose is in a call state. When solid, this indicates that the hose is authorized.

IN USE LED When flashing, this indicates a Drive-Away alert. When solid, this indicates that the hose is being used.

COLLECT LED When flashing, this indicates that the sale for that hose is in the collect state. When solid, this indicates that both the A sale and the B sale for that hose are in collect (this will occur only if the Stack Option is selected).



8 Digit Alphanumeric Display Displays hose information and manager menu items.

HOSES 1 - 8 LED When on solid represents information being displayed is for hoses 1 thru 8, when blinking indicates there is activity on one or more hoses in that hose group.

HOSES 9 - 16 LED When on solid represents information being displayed is for hoses 9 thru 16, when blinking indicates there is activity on one or more hoses in that hose group.

CASH LED Indicates that the display is showing the cash sale or cash price for the selected hose. When the Cash & Credit Leds are off at the same time, the display is indicating a volume figure. A flashing Led indicates that the display is showing the previous sale's data. If both Leds are alternately flashing (in manager mode only) then the display is showing a combined money figure.

CREDIT LED Indicates that the display is showing the credit sale or credit price for the selected hose. When the Cash & Credit Leds are off at the same time, the display is indicating a volume figure. A flashing Led indicates that the display is showing the previous sale's data. If both Leds are alternately flashing (in manager mode only) then the display is showing a combined money figure.

CALL/AUTH LED When flashing, this indicates that the hose is in a call state. When solid, this indicates that the hose is authorized.

IN USE LED When flashing, this indicates a Drive-Away alert. When solid, this indicates that the hose is being used.

COLLECT LED When flashing, this indicates that the sale for that hose is in the collect state.

AUDIO ALERT INDICATIONS

Short Beep Indicates that data being entered was accepted by the keypad.

Long Beep Indicates that data being entered was not accepted by the console. Two long beeps indicates that data entered was accepted by the console.

Call Alert 2 short beeps every 4 or 8 seconds, depending on fast or slow setting.

Collect Alert 2 short beeps every 4 or 8 seconds, or 1 long beep, depending on setting.

Drive Away Alert 1 long beep every 4 seconds.

Low Tank Alarm 1 long beep occurring once during payout of sale.

NOTE: Audio Alerts can be temporarily disabled for any hose being used by pressing the "**Hose Select Key**" for that hose.

VISUAL ALERT INDICATIONS

Bad Pset Indicates that the preset or prepaid amount entered is above or below the set range.

Bad PPU Indicates that the hose does not have a price entered, or that the price entered is above or below the set range.

Bat Pwr Indicates that the console is on battery power. To return to regular display, press any "**Hose Select Key**".

Comm Err Indicates loss of communication between IC Box and console.

Gallons Will alternately flash on display when a volume figure is displayed.

Printing Indicates that the console is busy sending data to the printer.

Stop Will flash in the money/volume position when that pump or dispenser has been stopped by the console.

T - # Low Displayed after sale is cashed out, indicating that the tank number displayed has gone below the preset low inventory alarm level. This is displayed only if a volume amount has been entered in the Low Inventory Alarm option.

Flashing HOSE # (on Display) Indicates that the hose number displayed is in manual. Will start flashing when Auto/Off/Manual switch is in manual and the pump handle is operated for the first time. The manual operation is cleared when the Auto/Off/Manual switch is put into Auto and the console sees a Call Alert, (LIFT THE PUMP HANDLE)..

16 HOSE CONSOLE ONLY

Flashing HOSES 1-8 or 9-16 LEDS Indicates that there is activity on one or more hoses in that hose group.

POSTPAY CASH SALE

8 HOSE CONSOLE:

1) Select desired hose using the "**Hose Select Keys**".

2) If cash LED is not lit, then press 

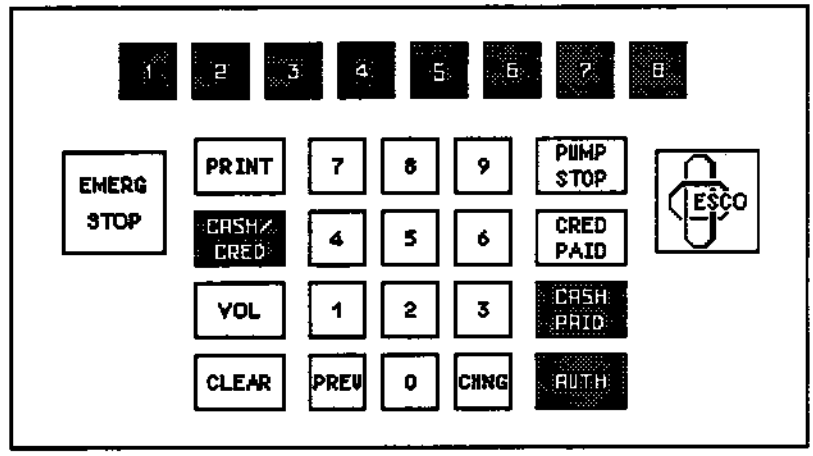
key.

3) Press 

key.

4) When sale is done, the display will start to flash, press 

key to complete transaction.



POSTPAY CREDIT SALE

8 HOSE CONSOLE:

1) Select desired hose using the "**Hose Select Keys**".

2) If credit LED is not lit, then press 

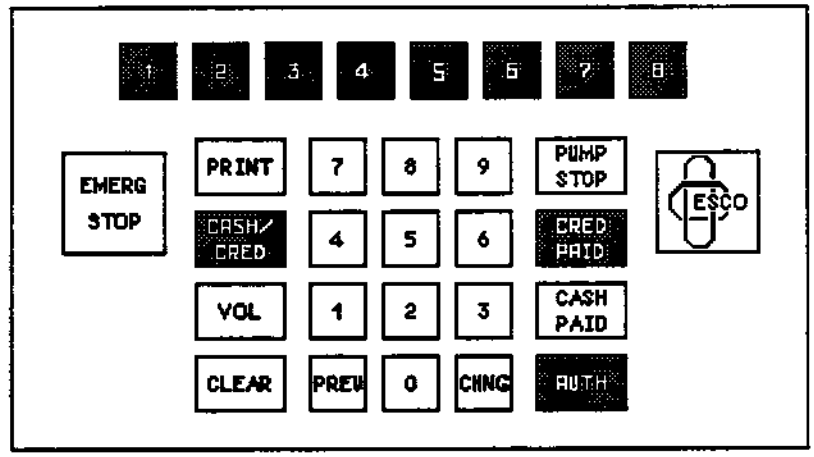
key.

3) Press 

key.

4) When sale is done, the display will start to flash, press 

key to complete transaction.



POSTPAY CASH SALE

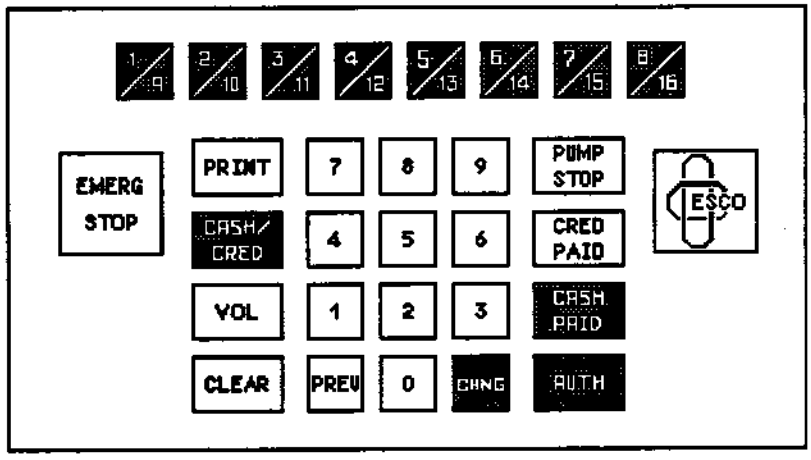
16 HOSE CONSOLE:

1) Select desired hose group (1-8 or 9-16) by using the CHNG key, then use the "**Hose Select Keys**" to select desired hose.

2) If cash LED is not lit, then press CASH/CRED key.

3) Press AUTH key.

4) When sale is done, the display will start to flash, press CASH PAID key to complete transaction.



POSTPAY CREDIT SALE

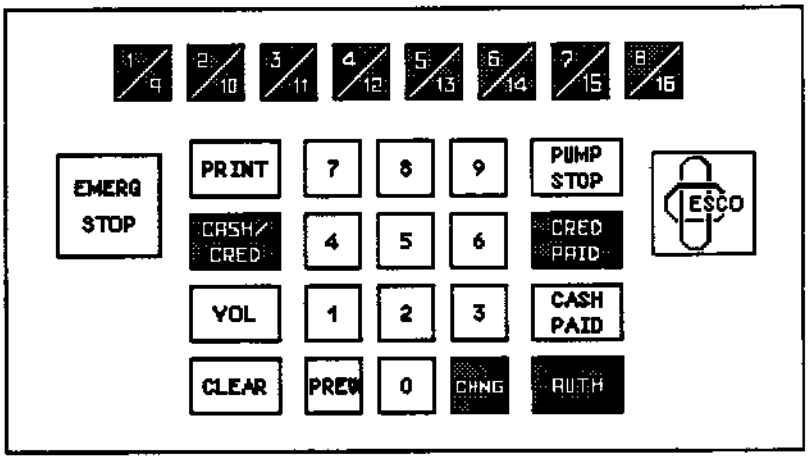
16 HOSE CONSOLE:

1) Select desired hose group (1-8 or 9-16) using the CHNG key, then use the "**Hose Select Keys**" to select desired hose.

2) If credit LED is not lit, then press CASH/CRED key.

3) Press AUTH key.

4) When sale is done, the display will start to flash, press CRED PAID key to complete transaction.

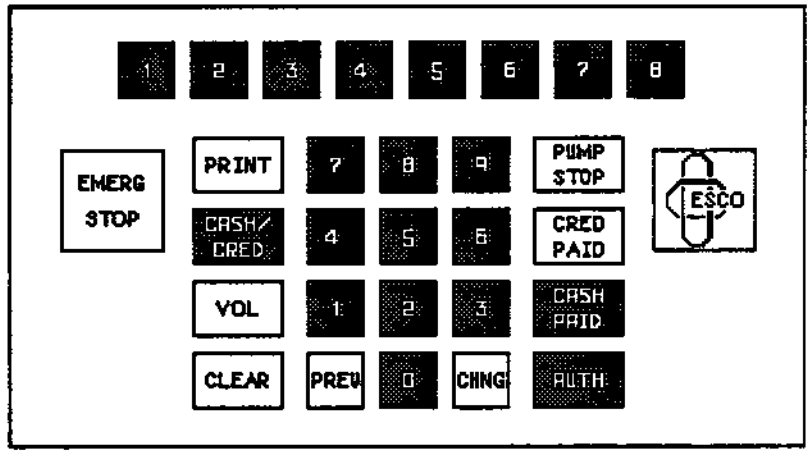


Note : The high and low limits for a preset or prepay sale is as follows -
Low limit - Amount the "**SLOWDOWN** " option is set at.
High limit - Up to $799.99 or 799.9 gallons, depending on price (if cash & credit prices are used, then the limit pertains to the highest of the two prices). Postpay sales may overrun limit by a few cents.

PRESET CASH SALE

8 HOSE CONSOLE:

1) Select desired hose using the "**Hose Select Keys** ".
2) If cash LED is not lit, then press CASH/ CRED key.
3) Enter money amount using the "**Numeric Keypad** "
4) Press AUTH key.

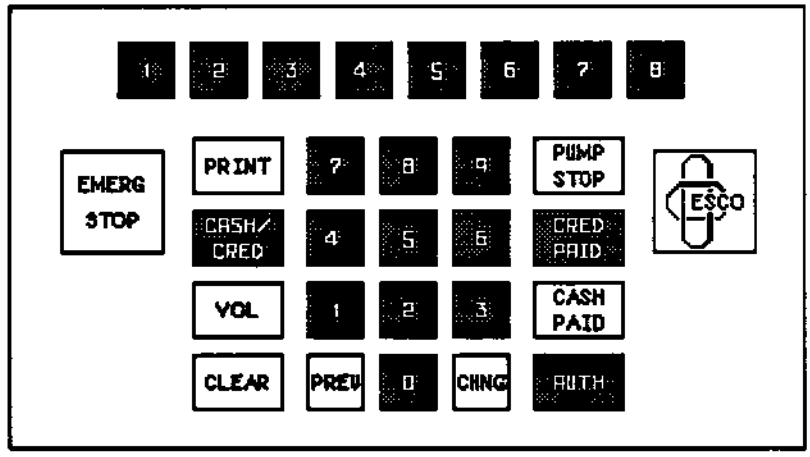


5) When sale is done, the display will start to flash, press CASH PAID key to complete transaction.

PRESET CREDIT SALE

8 HOSE CONSOLE:

1) Select desired hose using the "**Hose Select Keys** ".
2) If credit LED is not lit, then press CASH/ CRED key.
3) Enter money amount using the "**Numeric Keypad** ".
4) Press AUTH key.



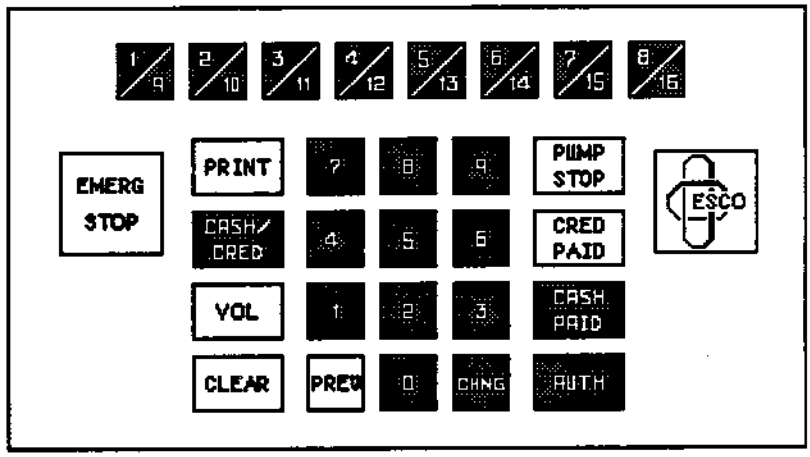
5) When sale is done, the display will start to flash, press CRED PAID key to complete transaction.

PRESET CASH SALE

16 HOSE CONSOLE:

1) Select desired hose group (1-8 or 9-16) by using the CHNG key, then use the "**Hose Select Keys**" to select desire hose.

2) If cash LED is not lit, then press CASH/CRED key.



3) Enter money amount using the "**Numeric Keypad**"

4) Press AUTH key.

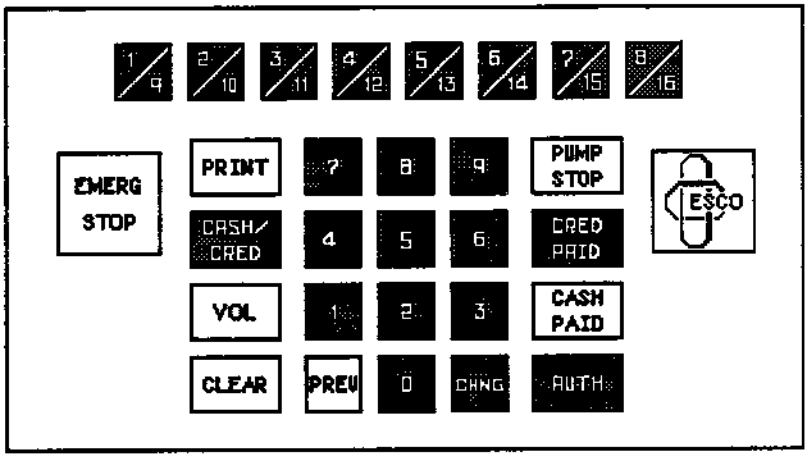
5) When sale is done, the display will start to flash, press CASH PAID key to complete transaction.

PRESET CREDIT SALE

16 HOSE CONSOLE:

1) Select desired hose group (1-8 or 9-16) by using the CHNG key, then use the "**Hose Select Keys**" to select desired hose.

2) If credit LED is not lit, then press CASH/CRED key.



3) Enter money amount using the "**Numeric Keypad**".

4) Press AUTH key.

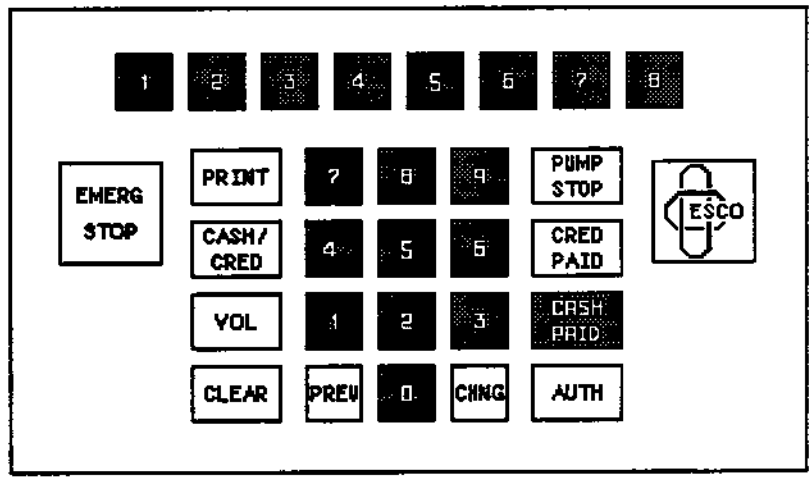
5) When sale is done, the display will start to flash, press CRED PAID key to complete transaction.

PREPAY CASH SALE

8 HOSE CONSOLE:

1) Select desired hose using the "**Hose Select Keys**".
2) Enter money amount using the "**Numeric Keypad**".
3) Press 

key.

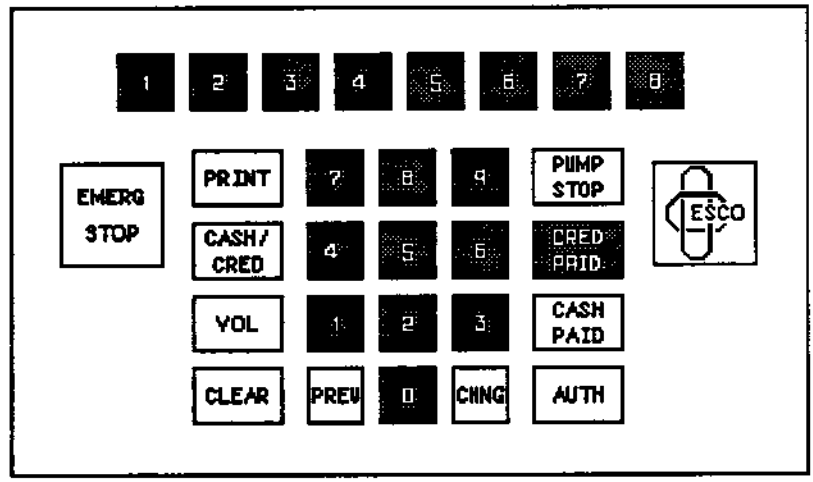


PREPAY CREDIT SALE

8 HOSE CONSOLE:

1) Select desired hose using the "**Hose Select Keys**".
2) Enter money amount using the "**Numeric Keypad**".
3) Press 

key.



PREPAY CASH SALE

16 HOSE CONSOLE:

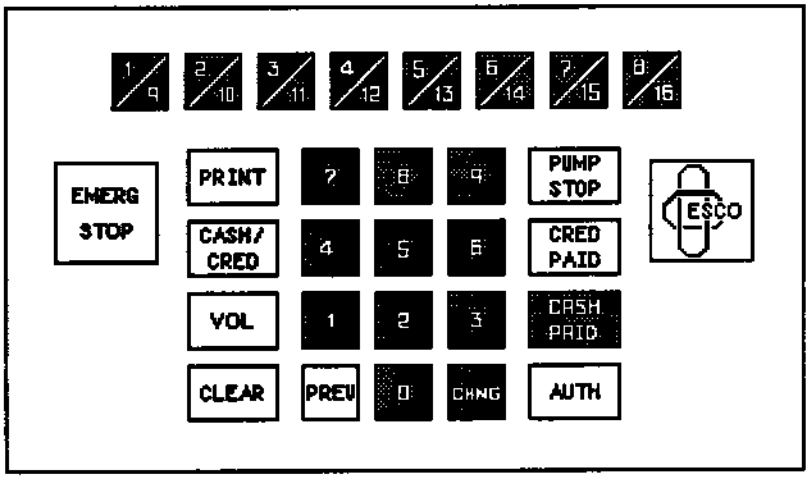
1) Select desired hose group (1-8 or 9-16) by using the

key, then use the "**Hose Select Keys**" to select desired hose.

2) Enter money amount using the "**Numeric Keypad**".

3) Press

key.



PREPAY CREDIT SALE

16 HOSE CONSOLE:

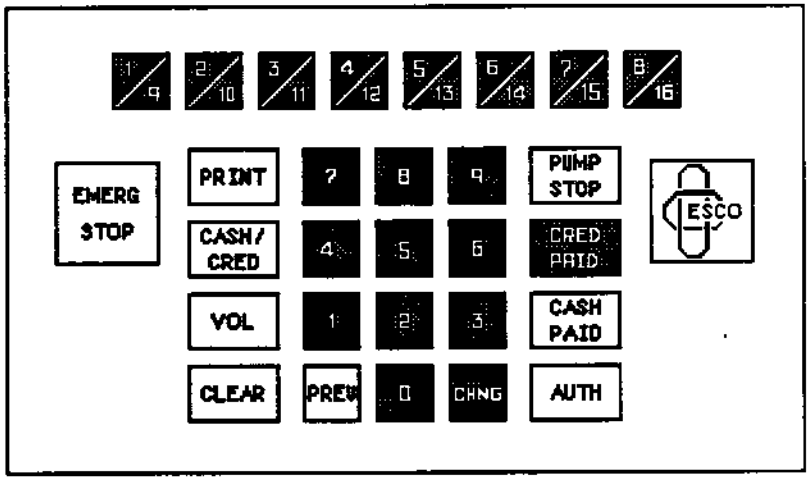
1) Select desired hose group (1-8 or 9-16) by using the

key, then use the "**Hose Select Keys**" to select desired hose.

2) Enter money amount using the "**Numeric Keypad**".

3) Press

key.



PRESET VOLUME CASH SALE

8 HOSE CONSOLE:

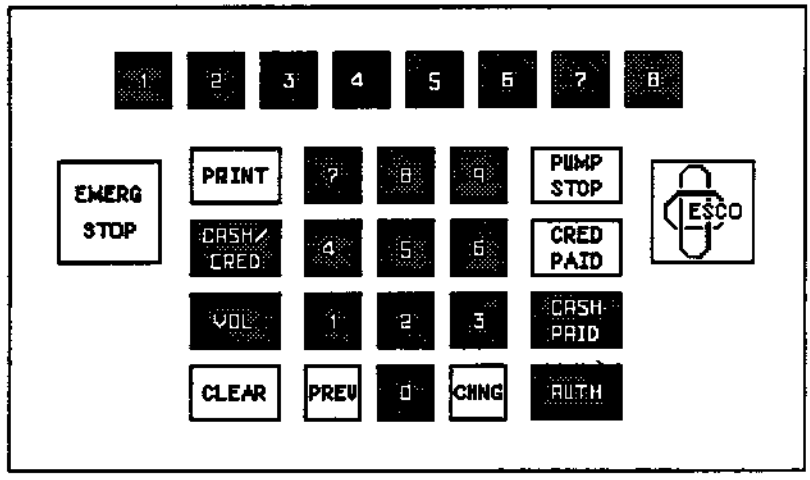
1) Select desired hose using the "**Hose Select Keys**".
2) If cash LED is not lit, then press 

key.
3) Press 

key.
4) Enter volume amount using the "**Numeric Keypad**".
5) Press 

key.
6) When sale is done, the display will start to flash, press 

key to complete transaction.



PRESET VOLUME CREDIT SALE

8 HOSE CONSOLE:

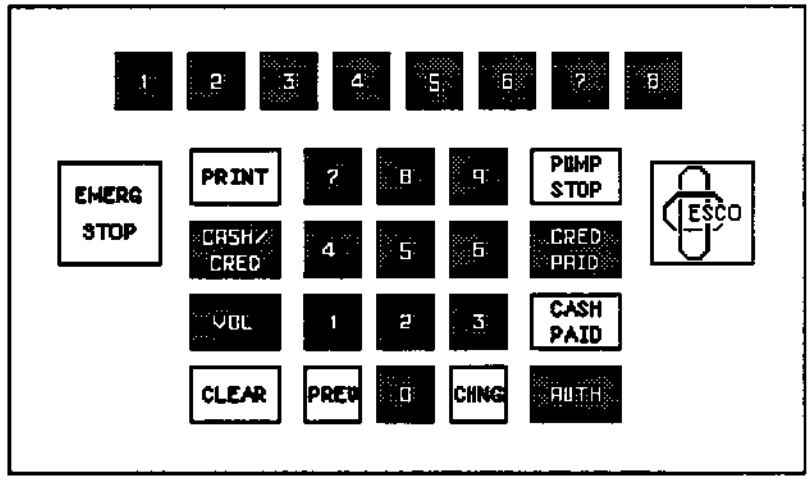
1) Select desired hose using the "**Hose Select Keys**".
2) If credit LED is not lit then press 

key.
3) Press 

key.
4) Enter volume amount using the "**Numeric Keyboard**".
5) Press 

key.
6) When sale is done, the display will start to flash, press 

key to complete transaction.



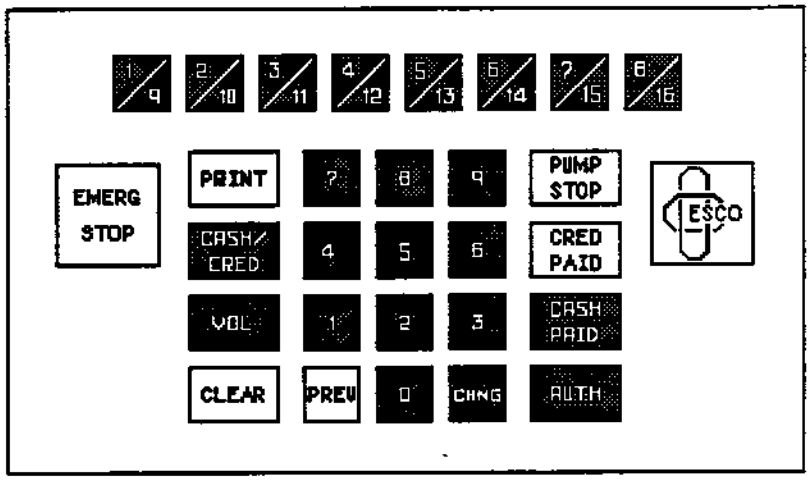
PRESET VOLUME CASH SALE

16 HOSE CONSOLE :

1) Select desired hose group using the CHNG key, then use the "**Hose Select Keys**" to select desired hose.

2) If cash LED is not lit, then press CASH/CRED key.

3) Press VOL key.



4) Enter volume amount using the "**Numeric Keypad**".

5) Press AUTH key.

6) When sale is done, the display will start to flash, press CASH PAID key to complete transaction.

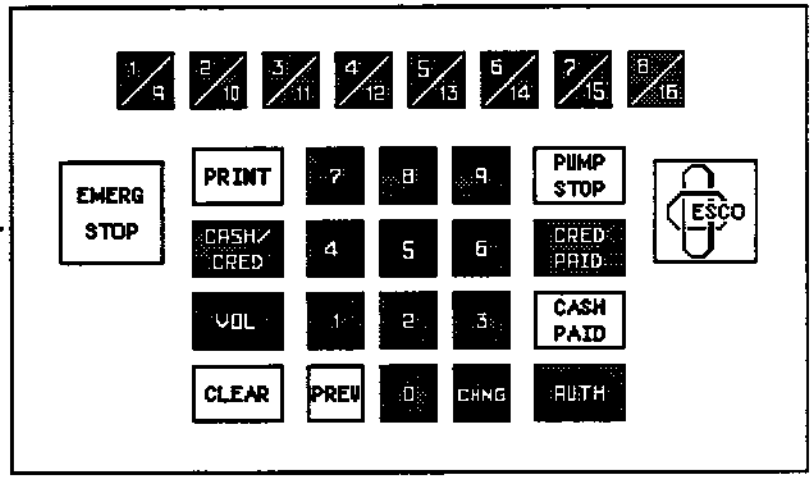
PRESET VOLUME CREDIT SALE

16 HOSE CONSOLE :

1) Select desired hose group using the CHNG key, then use the "**Hose Select Keys**" to select desired hose.

2) If credit LED is not lit, then press CASH/CRED key.

3) Press VOL key.



4) Enter volume amount using the "**Numeric Keyboard**".

5) Press AUTH key.

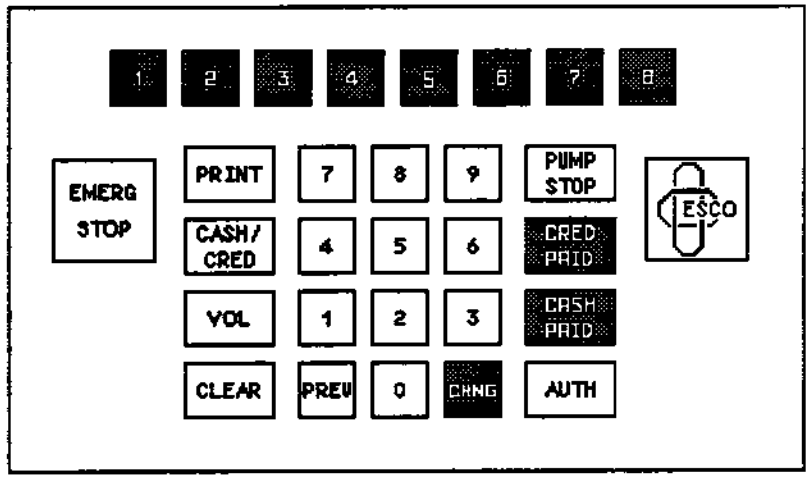
6) When sale is done, the display will start to flash, press CRED PAID key to complete transaction.

CHANGE DUE ON INCOMPLETE PREPAY SALES

8 HOSE CONSOLE:

1) Select desired hose using the "**Hose Select Keys**" (display will start to flash, show CNG and amount due).

2) Press either the CASH PAID or the CRED PAID key to complete transaction.



3) If the Stack Option is not selected and you wish to see change due of any current sale, select desired hose using the "**Hose Select Keys**", then press the CHNG key (display will show CNG and amount that was due).

NOTE: If a prepay sale is de-authorized by the Authorize Time Out option, it will act like a incomplete sale.

PUMP STOP

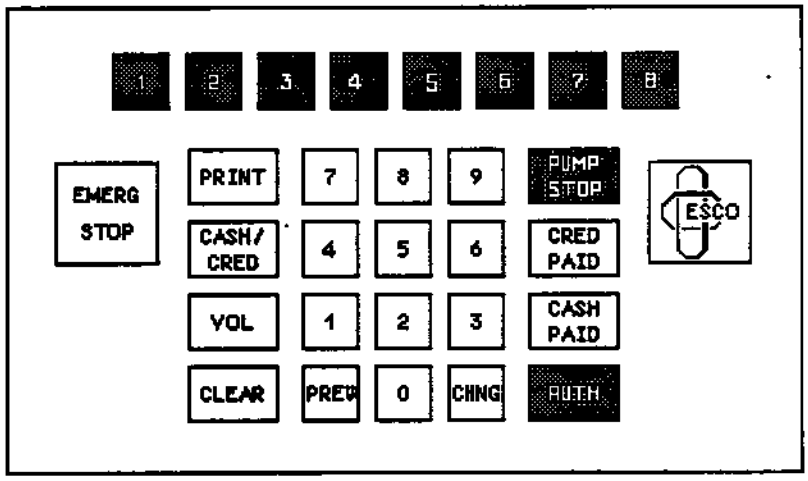
(To de-authorize one pump position)

8 HOSE CONSOLE

1) Press the "**Hose Select Keys**" for the transaction you wish to stop.

2) Press the PUMP STOP key once to stop pump. The display will alternately flash **STOP**, then the hose #.

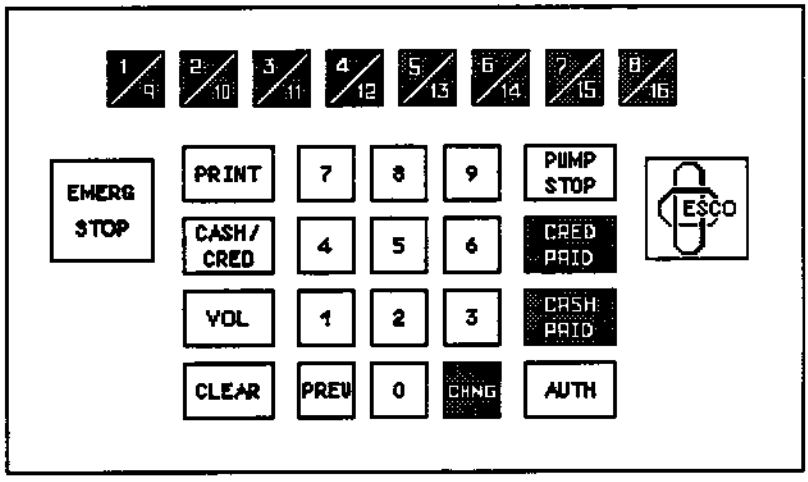
3) Press the AUTH key to restart pump where it left off, or press the PUMP STOP key again to stop sale.



CHANGE DUE ON INCOMPLETE PREPAY SALES

16 HOSE CONSOLE:

1) Select desired hose group using the CHNG key, then use the "**Hose Select Keys**" to select desired hose. (display will start to flash, show CNG and amount due).



2) Press the CASH PAID or the CRED PAID key to complete transaction.

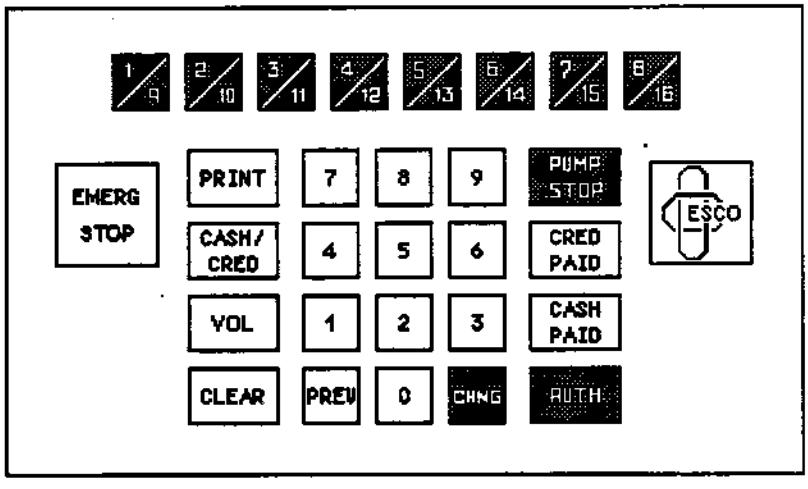
NOTE: If a prepay sale is de-authorized by the Authorize Time Out option, it will act like a incomplete sale.

PUMP STOP

(To de-authorize one pump position)

16 HOSE CONSOLE:

1) Press the CHNG key to select desired hose group, and the "**Hose Select Keys**" for the pump transaction you wish to stop.



2) Press the PUMP STOP key to stop pump. The display will alternately flash STOP, then the hose #.

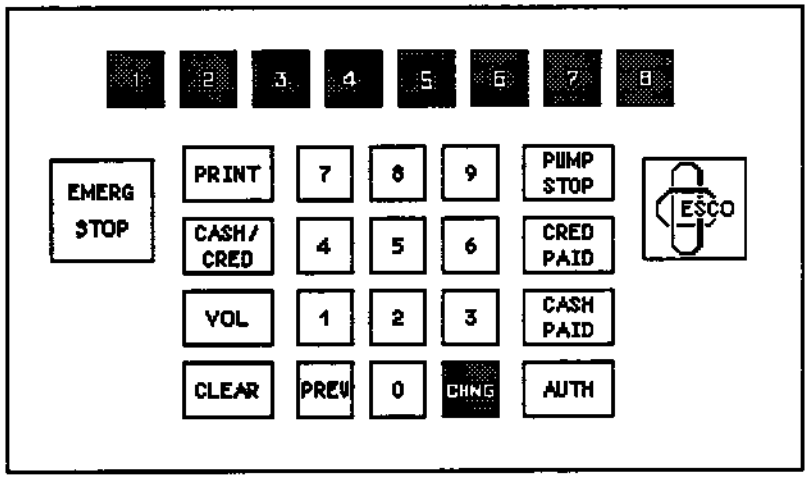
3) Press the AUTH key to restart pump where it left off, or press the PUMP STOP key again to stop sale.

A/B MEMORY SALES - 8 HOSE CONSOLE ONLY

Used to authorize a second sale before the current sale is cashed out. (**Stack Option** must be turned "On").

Authorization

To authorize a second sale :



1) Select desired hose, by using the "**Hose Select Keys**", then press the

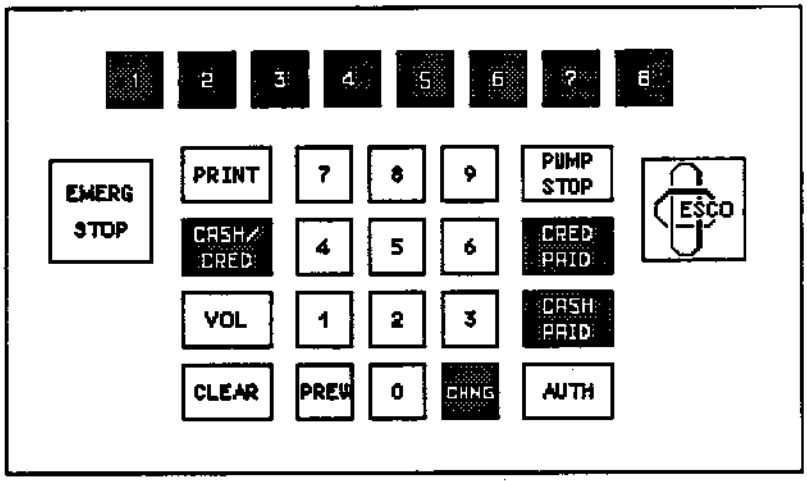
key.

2) Enter desired sale (postpay cash, prepay credit, etc). The unpaid sale will remain the "A" sale and the new sale will become the "B" sale.

NOTE: The "B" sale can not be authorized unless the "A" sale is in the collect state and the collect LED is flashing.

Collection

To collect (or cash out) the "B" sale :



1) Select desired hose by using the "**Hose Select Keys**" (if the "B" sale is not displayed press the

key).

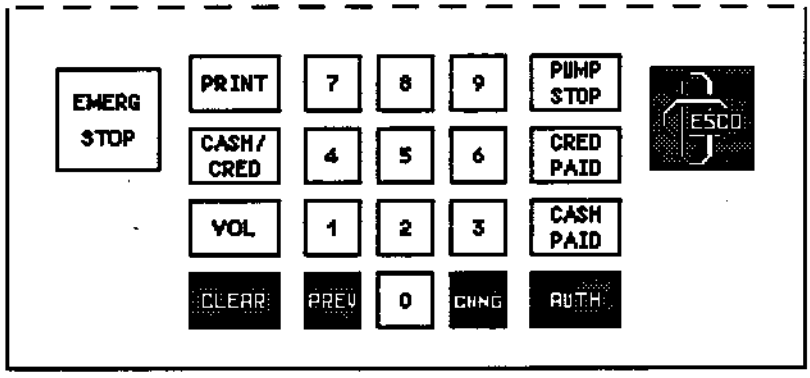
2) Check the Cash/Credit LEDS to assure proper sale is displayed, (if not press the

key), then press either the

key, or the

key (depending on type of sale) to complete transaction.

ENTERING MANAGER MENU



To enter, exit, or move around in the programming mode is quite simple. Press the ESCO key. The display will go blank and, if using an 8 Hose console, the Manager LED will light. Enter the proper Security code # (supplied on page 53*), code # will not be displayed. Display will remain blank for a few seconds before entering programming mode. Once in the programming mode, use the CHNG key to move forward, or the PREV key to move backward through the menu until desired menu item is displayed, then press the AUTH key. To return to the main menu, press the CLEAR key one to two times, depending on which level you are in. To exit the programming mode, just press the ESCO key. Display will return to where you left off before entering the programming mode.

*** BE SURE TO SUPPLY STATION MANAGER WITH LEVEL 1&2 SECURITY CODES.**

LEVEL 3 SECURITY

For HELP refer to Programming Instructions

Entry Code: 

then number 129895.

1) Hose Totalizer Adjust
    A) Hoses 1 thru 8/16
        1) Money
        2) Volume
2) Tank Adjust
    A) Tanks 1 thru 6
3) Tank Grade Assignment (Default: No Grade)
    A) Tanks 1 thru 6
        1) No Grade
        2) Premium Unleaded
        3) Super Unleaded
        4) Unleaded
        5) Premium
        6) Regular
        7) Diesel 1
        8) Diesel 2
        9) Kerosene
        10) Gasohol
        11) Misc. 1
        12) Misc. 2
4) Hose Tank Assignment (Default: Tank 1 on all hoses)
    A) Hoses 1 thru 8/16
        1) Tanks 1 thru 6
5) Pulser (Default: Money / 1)
    A) Money
        1) 1
        2) 2
        3) 2.5
        4) 4
        5) 5
        6) 10

5) Pulser
   B) Volume
      1) 1
      2) 2
      3) 2.5
      4) 4
      5) 5
      6) 10
      7) /10
6) Stack (Default: Off)
   A) On / Off
7) Credit Option (Default: Off)
   A) On / Off
8) Authorize Time (Default: 0 seconds)
   A) 2-255 seconds
9) Memory Dump
   A) Hoses 1 thru 8/16
10) Display Test
11) Reset

NOTE: All other functions of Level 3 security are the same as security Levels 1 & 2.

Enter Level 3 Security - Press 

key then code #.

NOTE: Security code numbers are on page 53. Be sure to supply station manager with Level 1 & 2 Security code numbers.

ADJUSTING HOSE TOTALIZERS

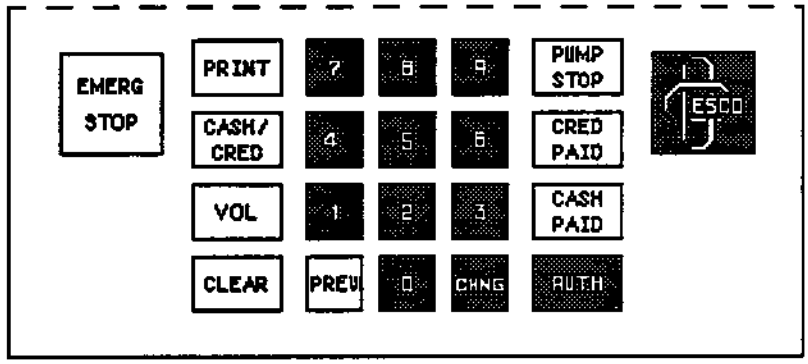
Allows the serviceman to re-enter or correct money & volume totalizers for each individual hose. The money totalizer amount is displayed in dollars and cents, while the volume totalizer amount is displayed to the tenth of a gallon (in the volume amount the decimal point is not displayed). **NOTE:** This function **DOES NOT** add to the amount displayed. Enter **NEW** total that is desired. **Range: Money - 6 digit max. Volume - 7 digit max.**

With **HOSE ADJ** displayed, press the 

key. **HOSE 1** is displayed. Use the 

key to select the desired hose # (for the 8 Hose Console you can also use the "**Hose Select Keys**"), then press the 

key.



The display will show **MONEY**. Press the 

key. Display will show the current money total. Enter new amount, (if desired), using the "**Numeric Keypad**", then press the 

key. Display will show **VOLUME**. Press the 

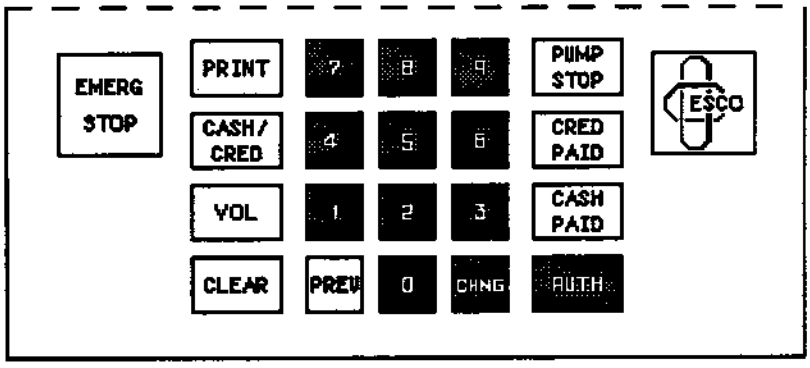
key. Display will show current volume total. Enter new amount, (if desired), using the "**Numeric Keypad**", then press the 

key. Display will show the next hose #. Repeat the process for remaining hoses.

NOTE: Over a period of time these amounts may vary from the actual hose totalizers due to mechanical tolerances (dispenser) verses electronic tolerances (console). A periodic check should be performed to update these amounts. Any large differences should be checked into for possible dispensing unit problems.

ADJUSTING TANK INVENTORY LEVELS

Allows the serviceman to re-enter or correct volume figures for each individual tank. Volume is displayed up to 8 digits.



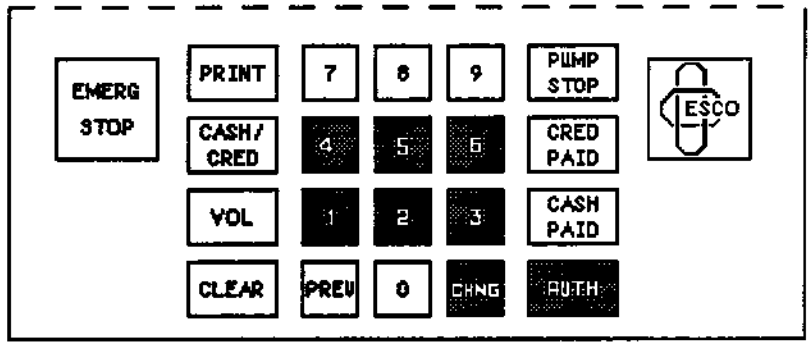
With **TANK ADJ** displayed, press the AUTH key. **TANK 1** is displayed. Use the CHNG key to select the desired tank #, then press the AUTH key. The display will show the current tank level in gallons. The new tank level can now be entered by using the "**Numeric Keypad**" and pressing the AUTH key. At this time the display will show the next tank #. Repeat the process for the remaining tanks.

NOTE: This function **DOES NOT** add to the amount displayed. Enter **NEW** total that is desired.

SETTING TANK GRADE ASSIGNMENT

Allows the service man to assign any one of 12 grades to each of six tanks in order to track inventory. **Default:** No Grade

With TANK GRD displayed, press the AUTH key.



TANK 1 is displayed. Select desired tank by use of the "Numeric Keypad", or press the CHNG key until desired tank # is displayed then press the AUTH key. The display will show the current grade assignment for the selected tank. Press the CHNG key to display desired grade to be assigned, then press the AUTH key. The display will show the next tank #. Repeat process for all tanks used.

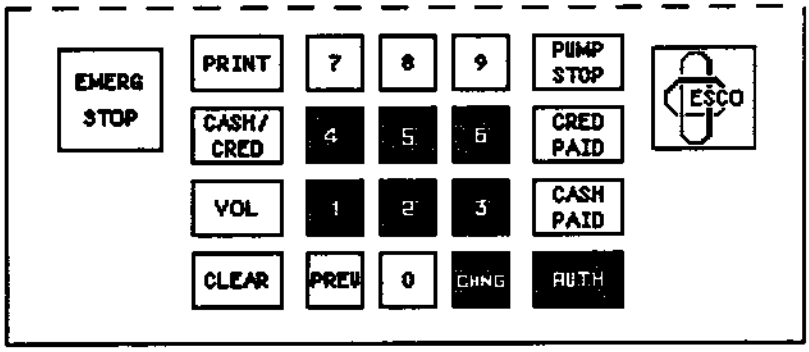
Grade Options

No Grade	Premium	Kerosene
Premium Unleaded	Regular	Gasohol
Super Unleaded	Diesel 1	Misc. 1
Unleaded	Diesel 2	Misc. 2

NOTE: If "Numeric Keys 0, 7, 8, or 9" is pressed console will beep once and display the last tank # selected.

SETTING HOSE TANK ASSIGNMENT

Permits the service man to assign any one of 6 tanks to each hose in order to track inventory. **Default: Tank 1 on all hoses**



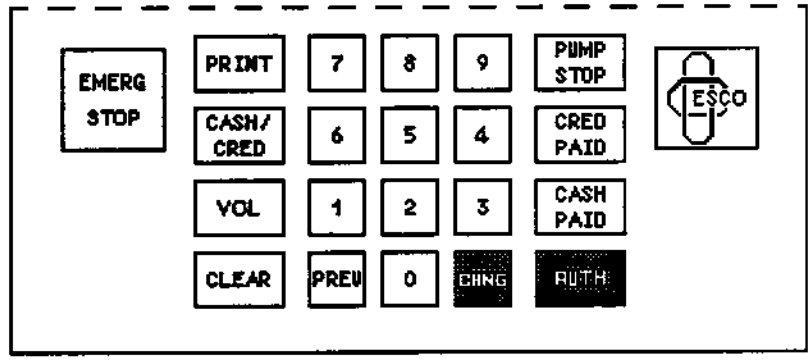
With **HOSE TNK** displayed, press the AUTH key. The console will display **H- 1 T-1** (signifying hose #1 and tank #1). Use the CHNG key to select a desired hose. When hose has been selected, use the "**Numeric Keypad**" to select a desired tank number to be assigned. When desired hose to tank assignment is displayed, press the AUTH key. The display will advance to next hose #.

Repeat process for all other hoses in use.

ADJUSTING PULSE RATIO

Used to adjust the console pulse per penny, per hose. Selectable money or volume pulser option for system only (not for each hose).

Default: Money pulser at a 1:1 ratio



With PULSER displayed, press the AUTH key. The display will show the current pulser selection (money or volume) with a ✱ . Use the CHNG key to display desired pulser type, then press the AUTH key. **HOSE 1** is displayed. Press the CHNG key to display desired hose number, then press the AUTH key. The current selected pulser ratio for that hose will be displayed. To display desired ratio press the CHNG key, then press the AUTH key. Display will show next hose #. Repeat the process for remaining hoses.

Pulser Ratios: All pulser ratio selections are in pulses per penny (or pulses per 100th unit). /10 is for volume pulsers only.

1 - 1 to 1	2 - 2 to 1
2.5 - 2.5 to 1	4 - 4 to 1
5 - 5 to 1	/10 - 1 to 10
10 - 10 to 1	

Example: 1 is one pulse per penny for a money pulser, or one pulse per 100th of a gallon for a volume pulser. /10 is 1 pulse per 10th of a gallon.

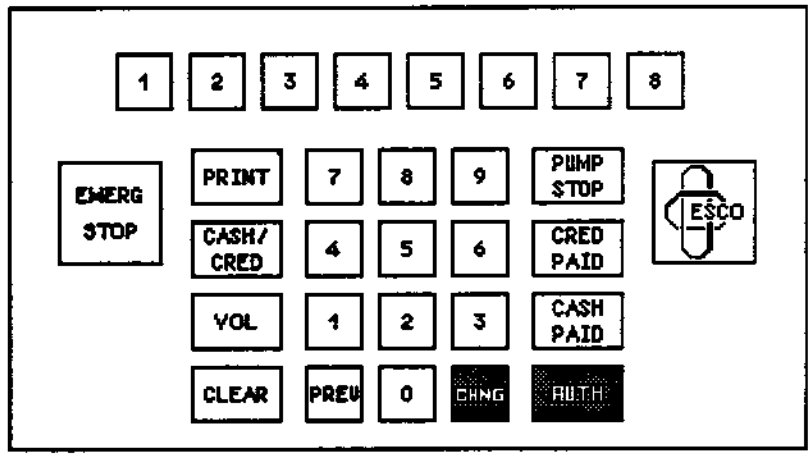
SELECTING THE STACK OPTION - 8 HOSE CONSOLE ONLY

With this option turned on, it allows the operator to authorize a second sale before the first sale has been cashed out. **Default: Off**

With **STACK** displayed, press the AUTH key.

The display will show the current setting with a ✱ .

Use the CHNG key for the selection (on or off), then press the AUTH key.



SELECTING CREDIT OPTION

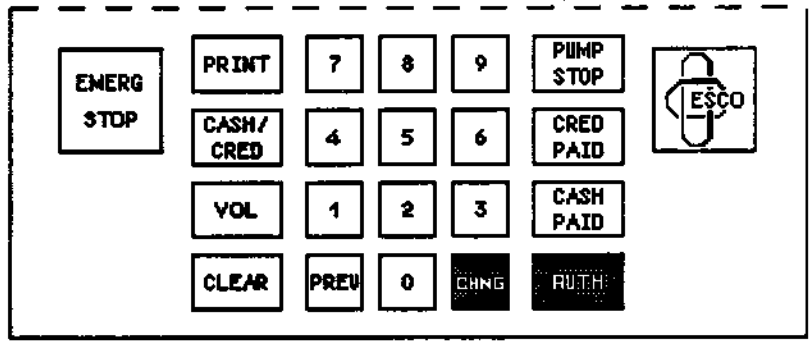
Allows the option of having cash and credit pricing for each hose. Both cash and credit prices must be entered, or the console will display "**BAD PPU**".

Default: Off

With **CRED OPT** displayed, press the AUTH key.

The display will show the current setting with a ✱ .

Use the CHNG key for the selection (on or off), then press the AUTH key.



NOTE: Set Computer Head for Credit price.

AUTHORIZE TIME OUT

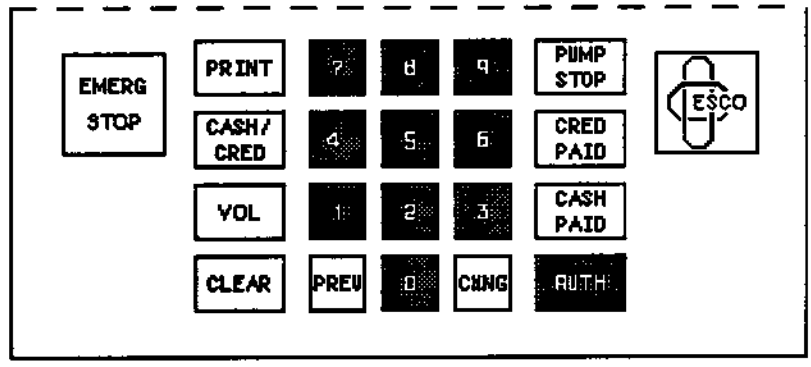
Allows the service man to set a specific time (in seconds) in which the console will de-authorize a hose if not in use. This setting is for all hoses. If a prepay sale is de-authorized, it will go into collect and console will display "CNG".

Default: 0 seconds/Off

Range: 2-255 seconds

With **AUTHTIME** displayed, press the AUTH key.

The display will show the current setting in seconds. Use the "**Numeric Keypad**" to enter desired setting, then press the AUTH key.

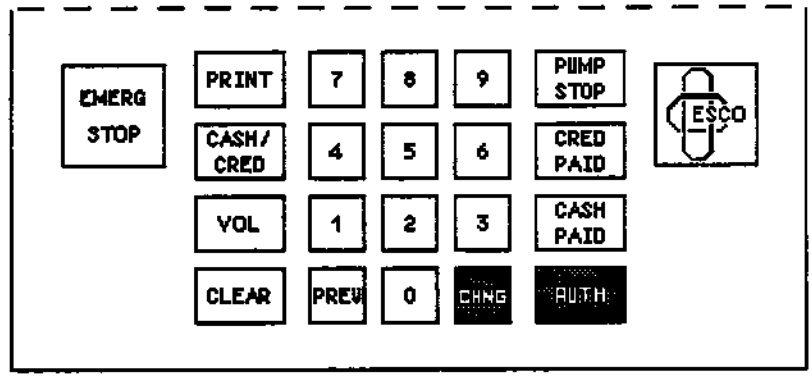


MEMORY DUMP

Prints data for **Factory Use Only**. **NOTE: Must have optional printer**

With **MEM DUMP** displayed, press the AUTH key.

HOSE 1 is displayed. Press the CHNG key to select desired hose #, then press the AUTH key. This will print out the data stored in memory for the selected hose.



NOTE: Memory Dump is for factory use and should only be used if it is requested by a Factory Field Service Tech.

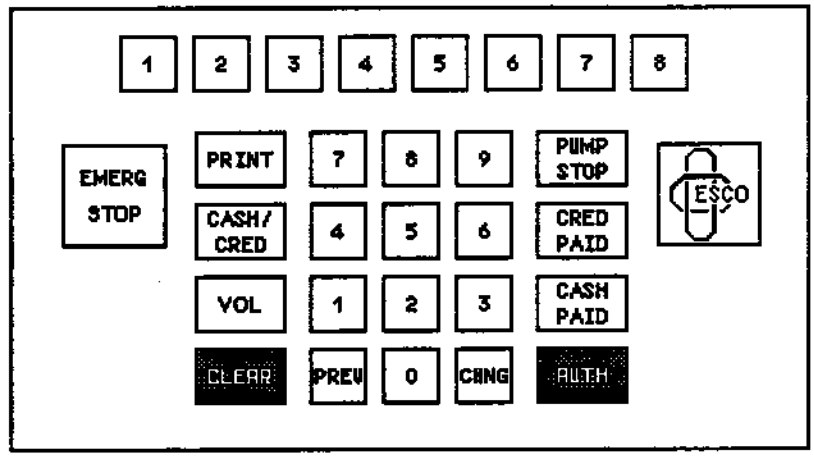
DISPLAY TEST

Used to check digits and Leds on console display.

With **DISPTEST** displayed,

press the AUTH key.

The display will flash first with the outside segments of the Alpha Numeric Display and the LEDs, then the inside segments of the Alpha Numeric Display. To stop the Display Test press the CLEAR key.



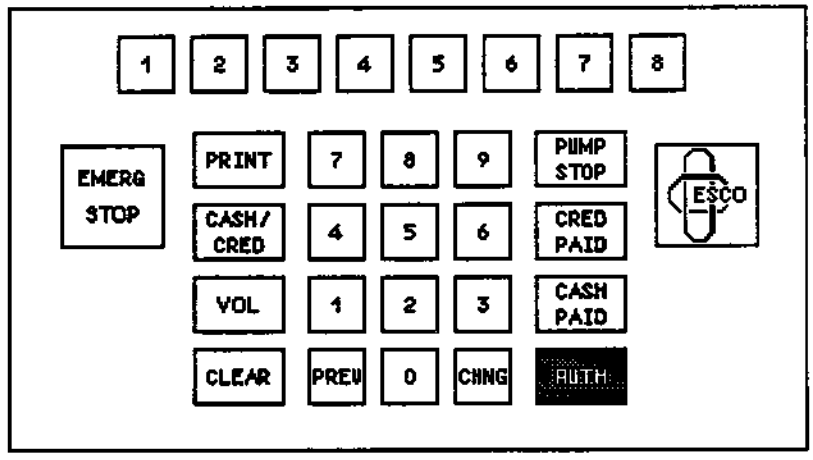
RESET

Used by the serviceman when system is first installed. Resets all totals and hose prices to zero, and sets console options to their default state. **NOTE:** If a system reset is required, record all hose and station totals before reset is performed.

With **RESET** displayed,

press the AUTH key and hold it down for 3 seconds.

Console will show **COMPLETE** and signal with two short beeps, then automatically exit the manager mode.



NOTE: If optional printer is used, the Revision Level will printout at end of reset.

NOTE: All other functions of Level 3 security are the same as

Level 2 Security

For HELP refer to Programming Instrucxtions

Entry Code: 

then number 23671.

1) Price
   A) Hoses 1 thru 8/16
      1) Set Cash Price (Range: $0.100 to $2.999)
      2) Set Credit Price (Range: $0.100 to $2.999)
2) Receipt Header (Default: Your Receipt)
3) Slowdown (Default: 10 cents)
   A) 5 to 99 cents
4) Alerts
   A) CALL (Default: Fast)
      1) Off
      2) Fast
      3) Slow
   B) COLLECT (Default: Slow)
      1) Off
      2) Once
      3) Fast
      4) Slow
   C) DRIVE(Away) (Default: On)
      1) On
      2) Off
5) Slow Delay (Default: 0 seconds)
   A) 0 to 9 Seconds
6) Fast Delay (Default: Off)
   A) On / Off
7) Low Inventory Alarm Level (Default: 0 gallons)
   A) Volume Amount (Range: 999,999 gallons)

NOTE: All other functions of Level 2 security are same as Level 1 security.

Enter Level 2 Security - Press 

key then code #.

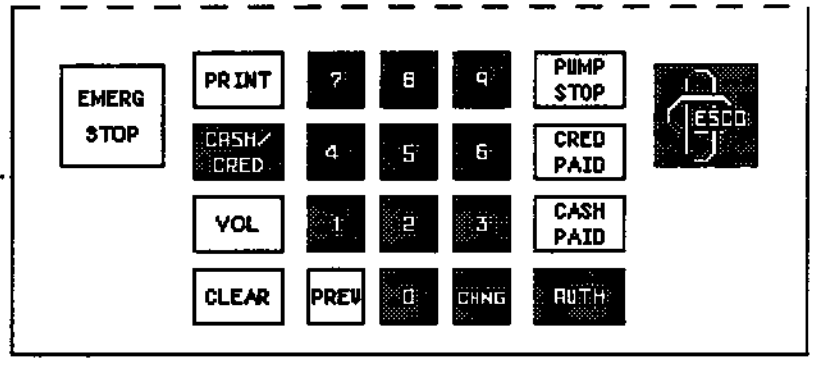
NOTE: Be sure to supply the Station Manager with Level 1&2 security codes.

SETTING HOSE PRICES

Displays current price per gallon for selected hose and allows the manager to change the price if necessary. **NOTE:** Console will not allow price changes for any hose that is authorized, in use or collect. Display will show **IN USE**. If a price is entered that is above or below the range listed below, the display will show **TOO HIGH** or **TOO LOW**. **Range: 0.100 cents to $2.999**

With **PRICE** displayed, press the 

key.



The display will show **HOSE 1**. Use the 

key until the desired hose # is displayed then press the 

key (if you are using the 8 Hose console you can also use the "**Hose Select Keys**" to select desired hose). The display will show the hose # followed by CA (Cash) and the current cash price. Enter a new amount with the "**Numeric Keypad**", and press the 

key. If credit option is selected, the display will show the same hose # followed by CR (credit) and the current credit price. Enter a new amount and press the 

key. The display will show the next hose # and the current cash price (to alternate between Cash and Credit prices press the 

key). Repeat the process for remaining hoses.

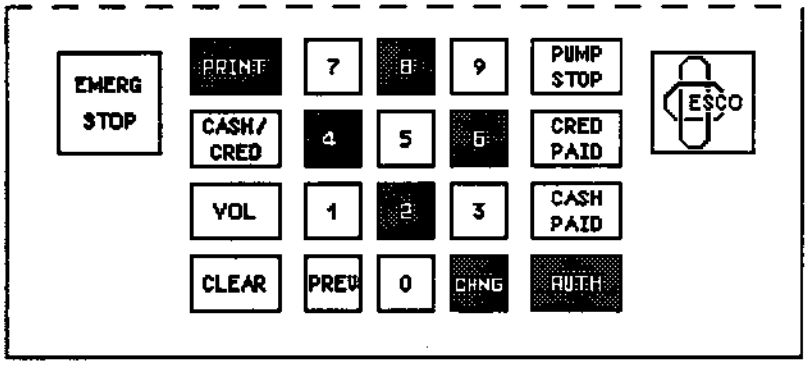
Example: For a price of $1.029 enter 1029 then press the 

key.

RECEIPT HEADER

Programmable heading, with auto-centering, for console receipts (to defeat the auto-centering, enter a space at the beginning of each line). The header can hold up to 255 characters - 40 characters per line. **NOTE: Must have optional printer.**

With **R HEADER** displayed, press the AUTH key.



The display will show the cursor (or starting point) which will be flashing. To move header to the right, press the numeric 6 key, and to move the header to the left, press the numeric 4 key. To advance through character-list, press the numeric 8 key, and press the numeric 2 key to go backward through the list. For quick advancement hold down the desired directional key and the CHNG key at the same time. When desired character is displayed at the cursor, press the numeric 6 key to advance to the next space. If optional printer is installed, the current header can be printed by pressing the PRINT key. After desired header is completed, press the AUTH key.

Character list:

A-Z	' Apostrophe	-- Dash
Header Stop	( ) Parentheses	/ Slash
Carriage Return	* Asterisk	0-9
Space	+ Plus	= Equal sign
$ Dollar Sign	, Comma	? Question Mark

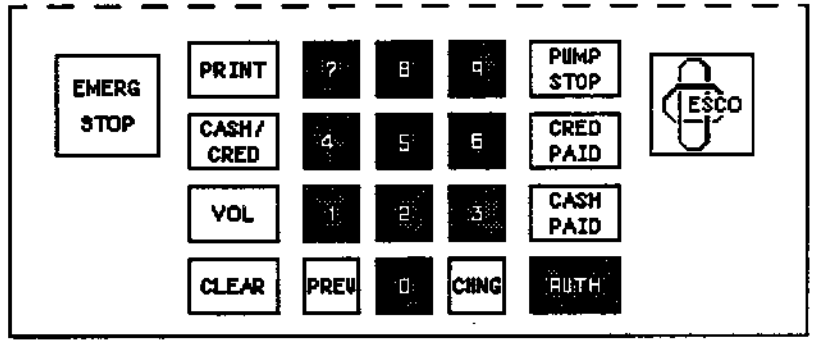
The **Carriage Return** should be put at the end of each line.
The **Header Stop** is put at the end of the completed header.

SETTING SLOWDOWN POINT

The point a hose will go into slowflow before the end of a preset or prepay sale to prevent fuel overflow. This setting is for all hoses.

Default: 10 cents
Range: 5-99 cents

With **SLOWDOWN** displayed, press the AUTH key.



The current amount of slowdown, in cents, will be displayed. Enter new amount of slowdown (if desired) with the "**Numeric Keypad**", and press the AUTH key.

NOTE: If **CREDIT OPTION** is selected the slowdown will be in credit cents, otherwise it will be in cash cents.

SELECTING AUDIO ALERTS

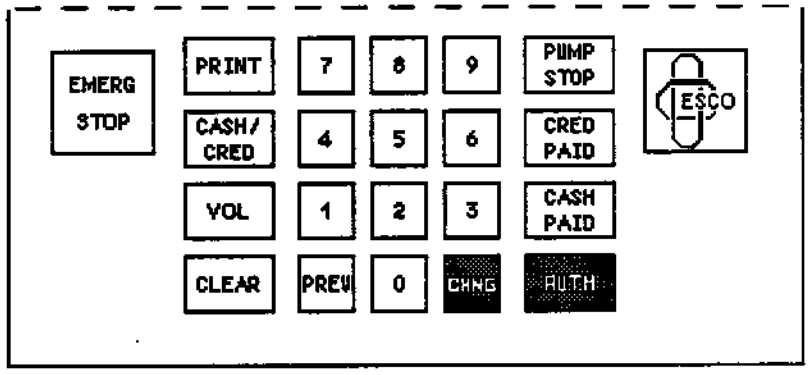
Allows the selection of the following alerts:

CALL (Rate: Off, Fast, Slow) Signals the operator that a pump handle is lifted and the customer is waiting for authorization. Used in conjunction with yellow LEDs on console display. **Default: Fast**

COLLECT (Rate: Off, Once, Fast, Slow) Signals the operator that a postpay or preset sale is complete. Used in conjunction with red LEDs on console display. **Default: Slow**

DRIVE-AWAY (Rate: On, Off) Signals the operator that a hose is in use but no product has been dispensed for 8 seconds. This condition could also signal possible pulser problems, as well as, a customer driving away. Used in conjunction with green LEDs on console display. **Default: On**

With **ALERTS** displayed, press the AUTH key. The display will show **CALL**. Use the CHNG key to select the desired alert, then press the AUTH key. Use the CHNG key again, to select the rate of audio alert (a ✱ indicates current setting), then press the AUTH key. The display will show the next alert. Repeat the process for the remaining alerts.

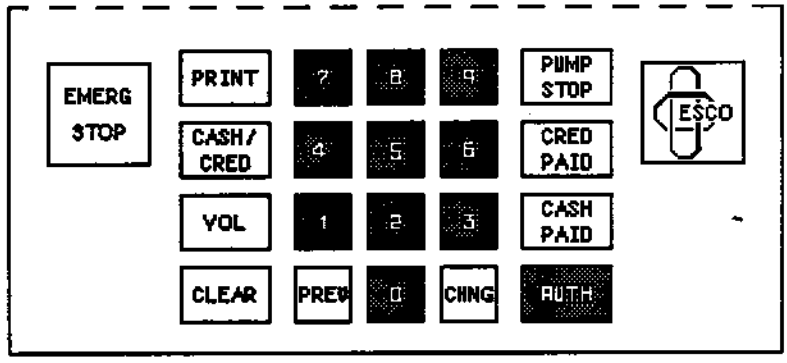


SETTING THE SLOW VALVE DELAY

A set time for the valves to open after reset is complete to insure proper leak detector operation. This setting is for all hoses.

Default: 0 seconds
Range: 0 to 9 seconds

With **SLOW DLY** displayed, press the AUTH key.



The display will show **DELAY** and current length of delay in seconds. The desired delay can be selected by use of the "**Numeric Keypad**". After delay has been selected, press the AUTH key.

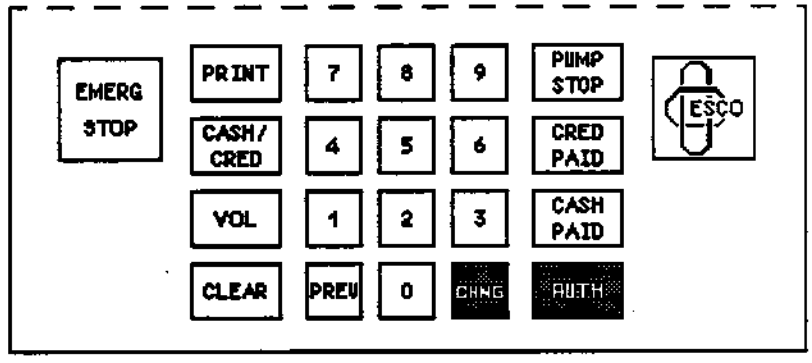
NOTE: To properly detect leaks we suggest the following settings:
Dispensers - 3 seconds
Pumps - 0 seconds

SELECTING THE FAST VALVE DELAY

Used to delay fast valve from opening after 3-5 pulses have been counted to prevent a sudden rush of fuel and cause tripping of nozzle. This setting is for all hoses.

Default: Off

With **FAST DLY** displayed, press the AUTH key.



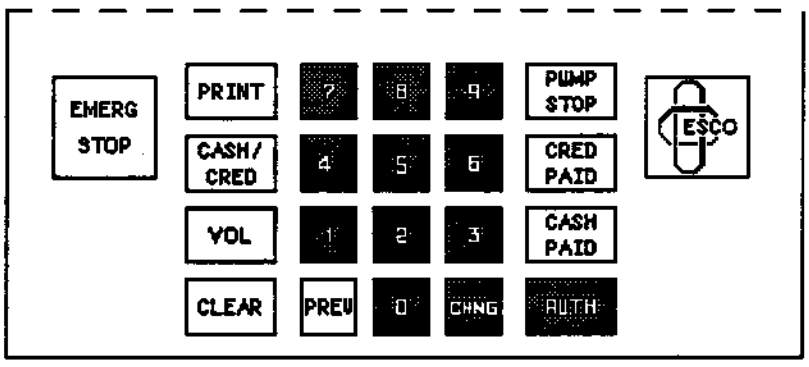
The display will show the current setting with a ✱ .

Use the CHNG key for selection (on for delay or off for no delay), then press the AUTH key.

SETTING THE LOW INVENTORY ALARM LEVEL

Programmable level, per tank, at which the console will signal the operator that a tank is low.

Default: 0
Range: 999,999



With **TNK ALRM** displayed, press the AUTH key. The console will display (tank) 1 and the current level the alarm is set at. Press the CHNG key until desired tank number is displayed. Use the "**Numeric Keypad**" to enter new alarm level (in gallons), then press the AUTH key. Repeat process for remaining tanks.

NOTE: If the low inventory level is left at its default of zero, then the alarm will automatically be shut off.

NOTE: All other functions of Level 2 security are the same as Level 1 security.

Level 1 Security

For HELP refer to Programming Instructions

Entry Code: 

then number 2531.

1) Shift Change
2) Daily Change
3) Tank Drop (Delivery)
    A) Tank No.
        1) Tanks 1 thru 6 (Range: 999,999 gallons)
4) Printer Reports (available with optional printer)
    A) Shift Report
        1) Current Shift Report
        2) 1st Previous Shift Report (*) **Level 2 Security Only**
        3) 2nd Previous Shift Report (*) **Level 2 Security Only**
        4) 3rd Previous Shift Report (*) **Level 2 Security Only**
        5) 4th Previous Shift Report (*) **Level 2 Security Only**
    B) Daily Report
        1) Current Daily Report
        2) 1st Previous Daily Report (*) **Level 2 Security Only**
    C) Console (*) **Level 2 Security Only**
5) Display Hose Totals - Money in dollars only & volume in gallons only
    A) Hoses 1 thru 8/16
        1) Cash
        2) Credit
        3) Combined (Cash & Credit)
        4) Volume
6) Display Shift Totals - Money in dollars only & volume in gallons only
    A) Current Shift
        1) Select Grade (Pre-Unl, Reg, All Grade, etc.)
            a) Cash
            b) Credit
            c) Combined (Cash & Credit)
            d) Volume
    B) 1st Previous Shift
        1) Select Grade (Pre-Unl, Reg, All Grade, etc.)
            a) Cash
            b) Credit
            c) Combined (Cash & Credit)
            d) Volume

C) 2nd Previous Shift
1) Select Grade (Pre-Unl, Reg, All Grade, etc.)
a) Cash
b) Credit
c) Combined (Cash & Credit)
d) Volume

D) 3rd Previous Shift
1) Select Grade (Pre-Unl, Reg, All Grade, etc.)
a) Cash
b) Credit
c) Combined (Cash & Credit)
d) Volume

E) 4th Previous Shift
1) Select Grade (Pre-Unl, Reg, All Grade, etc.)
a) Cash
b) Credit
c) Combined (Cash & Credit)
d) Volume

7) Display Daily Totals - Money in dollars only & volume in gallons only
(Available with REV "C" MPU Boards only.)
A) Current Daily
1) Select Grade (Pre-Unl, Reg, All Grade, etc.)
a) Cash
b) Credit
c) Combined (Cash & Credit)
d) Volume

B) 1st Previous Daily
1) Select Grade (Pre-Unl, Reg, All Grade, etc.)
a) Cash
b) Credit
c) Combined (Cash & Credit)
d) Volume

8) Set Time
A) Displays Time
1) Enter Time

9) Set Date
A) Displays Date
1) Enter Date

Enter Level 1 Security - Press 

key then code #.

NOTE: Be sure to supply Station Manager with Level 1&2 security codes.

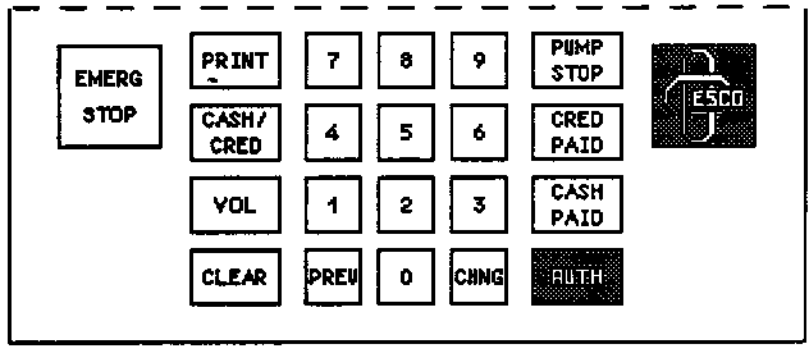
SHIFT CHANGE

Allows the manager to perform a Shift Change. When Shift Change is complete the console will clear current totals for next shift.*

With **SHIFT CH** displayed, press and hold down the 

key for 3 seconds.

The console will signal with 2 long beeps and flash **COMPLETE** on the display once.



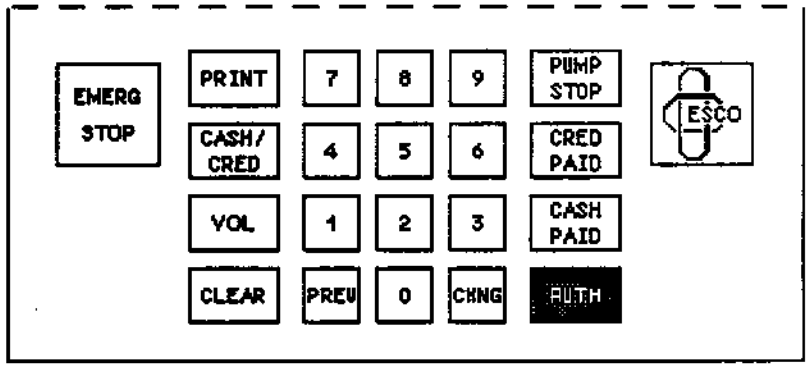
DAILY CHANGE

Allows the manager to perform a Daily Change. When Daily Change is complete the console will clear current totals for the next day.*

With **DAILY CH** displayed, press and hold down the 

key for 3 seconds.

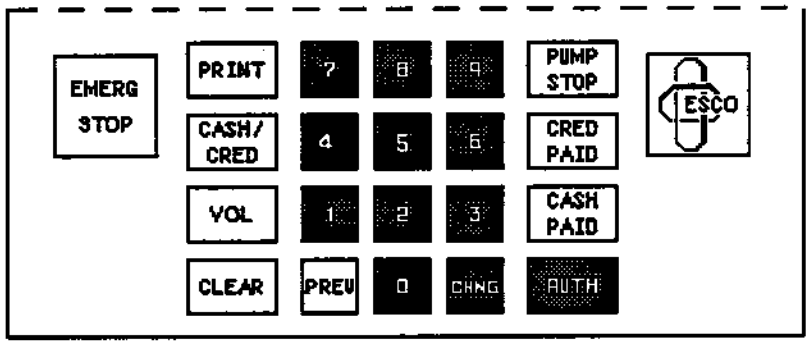
The console will signal with 2 long beeps and flash **COMPLETE** on the display once.



*** If optional printer is being used, a complete shift or daily report will be printed out when change is complete.**

ENTERING A TANK DROP (DELIVERY)

The amount of fuel added to each of six tanks. **Range: 999,999**



With **TANK DRP displayed,** press the AUTH key. The console will display TANK 1. Select desired tank by using the "**Numeric Keypad**" or the CHNG and the AUTH key. The current tank level for selected tank will be displayed. Enter amount of product added, in gallons, by using the "**Numeric Keypad**", then press the AUTH key. Repeat process for all other tank drops.

PRINTING REPORTS

Prints the following types of reports: **NOTE: Must have optional printer.**

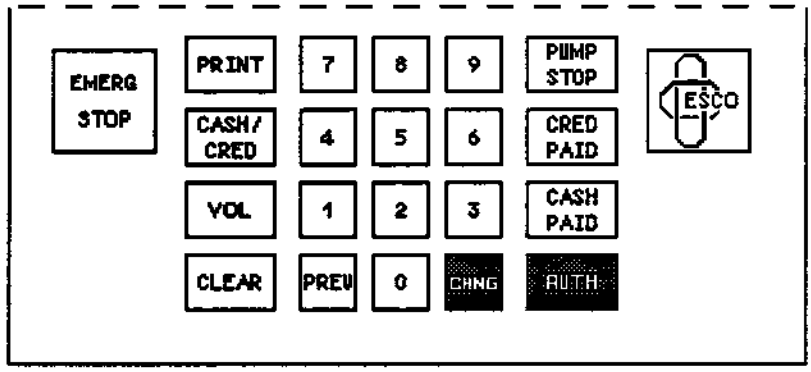
Shift (Current, 1st Previous*, 2nd Previous*, 3rd Previous*, or 4th Previous*) Prints money and volume totals, grade totals, hose totals, hose prices, tank inventory, adjustable hose totalizers, and non-resetable hose totalizers for desired shift.

Daily (Current or 1st Previous*) Prints money and volume totals, grade totals, hose totals, hose prices, tank inventory, adjustable hose totalizers, and non-resetable hose totalizers for desired day.

Console* Prints a list of all the options and how they are set in the console.

* Any report listed above that is followed by an asterisk (*) can be obtained only by the **Station Manager/Security Level 2** in the **Report** option.

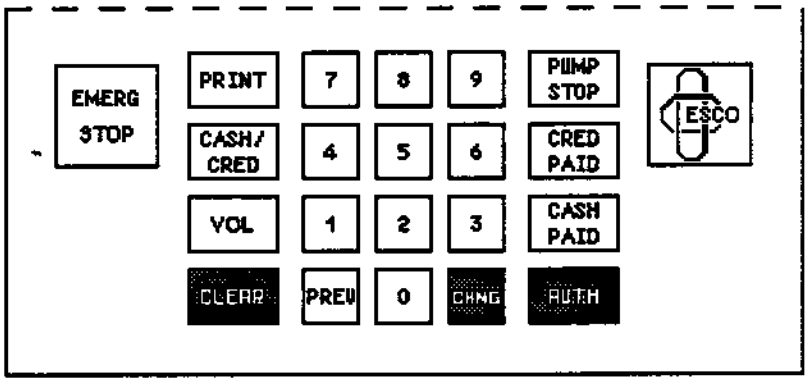
With **REPORT** displayed, press the AUTH key. The display will show **SHIFT**. Use the CHNG key to select the desired report, then press the AUTH key. A complete report will be printed out on the printer.



(If you are in **Security Level 2** and a Shift or Daily report is selected, the console will display **CURRENT**. Use the CHNG key to select desired type of report, then press the AUTH key to printout your report).

READING HOSE TOTALS

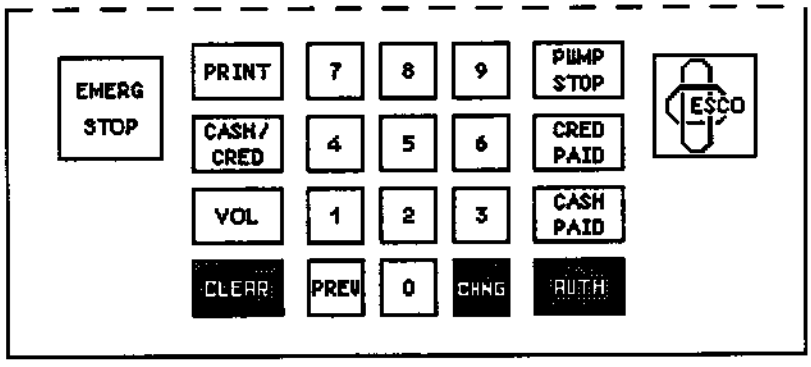
Displays totals for each individual hose. Money is displayed in dollars only, and volume is displayed in gallons only. This option **DOES NOT** give you a printout of the totals, you must go to the **Report** option for a printed report.



With **HOSE TOT** displayed, press the AUTH key. The console will display **HOSE 1**. Use the CHNG key to select desired hose, then press the AUTH key (if you are using the 8 Hose Console, you can also use the "**Hose Select Keys**" to select the desired hose). Use the CHNG key to select desired totals (cash, credit, combined or volume), then press the AUTH key to read total. Press the CLEAR key to return you to the desired menu, then the CHNG and the AUTH keys to select the desired option. Repeat process for all other hose totals.

READING SHIFT TOTALS

Displays totals for each individual grade. Money is displayed in dollars only, and volume is displayed in gallons only. This option **DOES NOT** give you a printout of the totals, you must go to the **Report** option for a printed report.



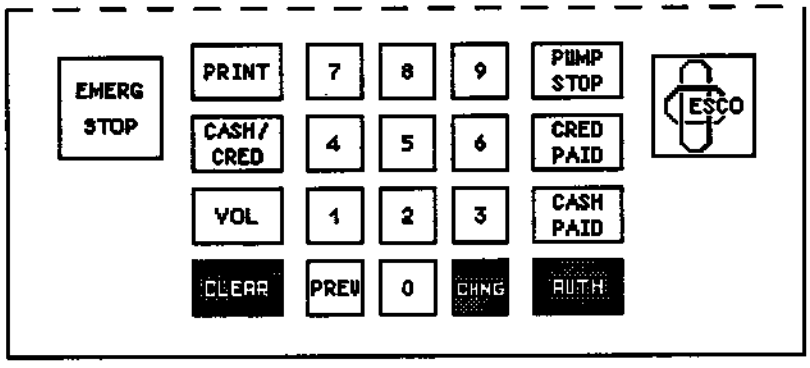
With **SH TOT** displayed, press the AUTH key. The console will display **CURRENT** . Use the CHNG key to select desired totals to be read (current, 1st prev, 2nd prev, 3rd prev or 4th prev), then press the AUTH key. The console will now show the grades that are being used (regular, unleaded, premium, etc.). Select desired grade by using the CHNG key, then press the AUTH key. The desired totals (cash, credit, combined or volume) can now be selected by using the CHNG key. When the desired totals have been selected, press the AUTH key to read totals. The CLEAR key can be used to go back to previous options when reading shift totals.

NOTE: ALL GRADE displays totals of all grades combined.

READING DAILY TOTALS

(Available with REV "C" MPU Board only.)

Displays totals for each individual grade. Money is displayed in dollars only, and volume is displayed in gallons only. This option **DOES NOT** give you a printout of the totals, you must go to the **Report** option for a printed report.

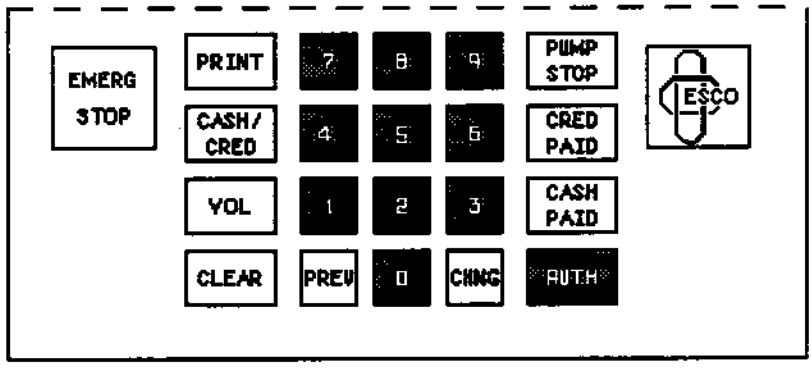


With **DL TOT** displayed, press the AUTH key. The display will show **CURRENT** . Use the CHNG key to select desired totals to be read (current or 1st prev), then press the AUTH key. The console will now display the grades that are being used (regular, unleaded, premium, etc.). Select desired grade by using the CHNG key, then press the AUTH key. The desired totals (cash, credit, combined or volume) can now be selected by using the CHNG key. When the desired totals have been selected, press the AUTH key to read totals. The CLEAR key can be used to go back to previous options when reading daily totals.

NOTE: ALL GRADE displays totals of all grades combined.

SETTING TIME

NOTE: This Console uses a 24 hour type clock.



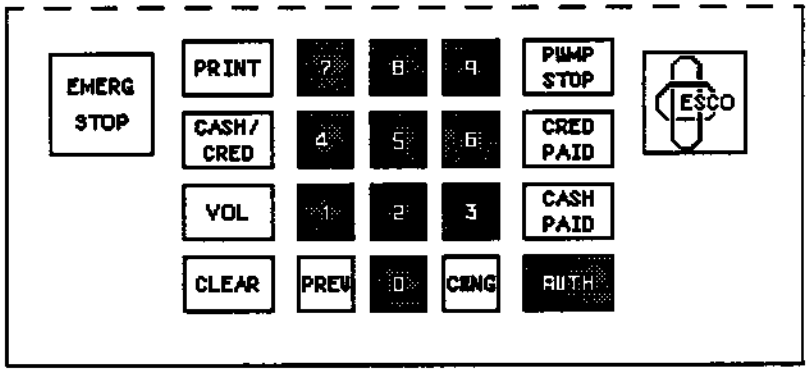
With **SET TIME** displayed, press the AUTH key. The display will show the current time that is programmed in the console. Enter the correct time (hours and minutes) by using the "**Numeric Keypad**", then press the AUTH key.

Example : 7:35 AM. Enter 0735 and press the AUTH key.

11:50 PM. Enter 2350 and press the AUTH key.

NOTE: To display time while in the operating mode:
Press any INACTIVE "**Hose Select Key**", then
press the CLEAR key twice.

SETTING DATE



With **SET DATE** displayed, press the AUTH key. The display will show the current date that is programmed in the console. Enter the correct date (month, day and year) by using the "**Numeric Keypad**", then press the AUTH key.

Example: August 5, 1989. Enter 080589 and press the AUTH key.

December 15, 1989. Enter 121589 and press the AUTH key.

Daily and Shift Reports are identical in configuration, except for the heading. The Shift Report will have a Shift # as well as a Report #. All Previous Reports, as well as Shift and Daily Change Reports, will have a Shift Start time/date and a Shift End time/date as shown below.

```
                YOUR RECEIPT
              8 HOSE SYSTEM

                DAILY REPORT
SHIFT STARTED AT 09:48:30  08/22/1989
                          REPORT # 000008
CASH   SALES  $      191.70
CREDIT SALES  $      112.75
GRAND TOTALS  $      304.45
TOTAL VOLUME         299.447

GRADE TOTALS
GRADE          CASH     CREDIT     VOLUME
PREM UNL      25.06      29.82     57.150
SUPR UNL      71.93      26.10     96.021
UNLEADED       0.00      34.83     32.280
PREMIUM       37.14       0.00     38.719
REGULAR       45.49       0.00     42.957
DIESEL 1      12.08      22.00     32.320

HOSE TOTALS
HOSE  GRADE          MONEY      VOLUME
1     PREM UNL       21.06      22.431
2     SUPR UNL       36.10      34.457
3     UNLEADED       34.83      32.280
4     PREMIUM        37.14      38.719
5     REGULAR        45.49      42.957
6     DIESEL 1       34.08      32.320
7     PREM UNL       33.82      34.719
8     SUPR UNL       61.93      61.564

HOSE PRICES
HOSE       CASH   CREDIT
1         0.939    0.979
2         1.019    1.059
3         1.039    1.079
4         0.959    0.999
5         1.059    1.099
6         1.029    1.069
7         0.939    0.979
8         1.019    1.059

TANK INVENTORY
TANK  DROP     GRADE        VOLUME
1     2000  PREM UNL     2442.850
2     2000  SUPR UNL     2446.431
3     1500  UNLEADED     1967.720
4     3000  PREMIUM      3161.281
5           REGULAR        57.043 *LOW*
6     1500  DIESEL 1     1967.680
```

```
          FIRST PREVIOUS SHIFT
SHIFT STARTED AT 09:48:30  08/22/1989
SHIFT ENDED AT   14:48:23  08/22/1989

SHIFT # 000002            REPORT # 000009
```

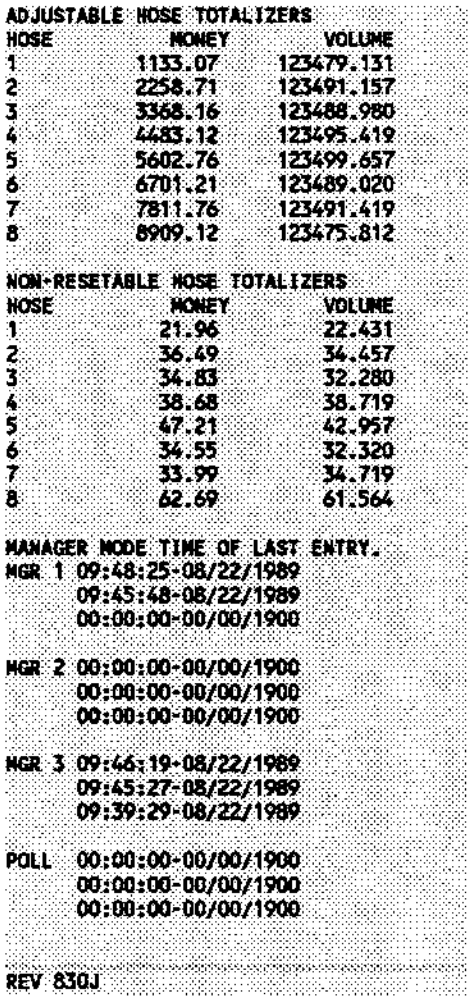
All Previous Reports will print all Grand Totals, Grade Totals and Hose Totals only.

Grade Totals are broken down to show cash, credit & volume totals for each grade. Money reflects credit to cash conversion-actual money paid. Volume is shown in gallons. These totals reset to zero after every Shift/Daily Change.

Hose totals shows what grade is assigned, as well as money & volume totals, for each individual hose. Money reflects credit to cash conversion-actual money paid. Volume is shown in gallons. These totals reset to zero after every Shift/Daily Change.

Cash & Credit Pricing for each hose. If the Credit Option is not selected then the cash & credit prices will be the same.

Tank Inventory shows grade assignment & volume totals, as well as any tank drops performed during shift, for each tank. If Low Inventory Alarm is selected, then any low tanks will be marked as shown. Volume totals do not reset to zero after a Shift/Daily Change.



```
ADJUSTABLE HOSE TOTALIZERS
HOSE          MONEY          VOLUME
1           1133.07       123479.131
2           2258.71       123491.157
3           3368.16       123488.980
4           4483.12       123495.419
5           5602.76       123499.657
6           6701.21       123489.020
7           7811.76       123491.419
8           8909.12       123475.812

NON-RESETABLE HOSE TOTALIZERS
HOSE          MONEY          VOLUME
1             21.96          22.431
2             36.49          34.457
3             34.83          32.280
4             38.68          38.719
5             47.21          42.957
6             34.55          32.320
7             33.99          34.719
8             62.69          61.564

MANAGER MODE TIME OF LAST ENTRY.
MGR 1 09:48:25-08/22/1989
      09:45:48-08/22/1989
      00:00:00-00/00/1900

MGR 2 00:00:00-00/00/1900
      00:00:00-00/00/1900
      00:00:00-00/00/1900

MGR 3 09:46:19-08/22/1989
      09:45:27-08/22/1989
      09:39:29-08/22/1989

POLL  00:00:00-00/00/1900
      00:00:00-00/00/1900
      00:00:00-00/00/1900

REV 830J
```

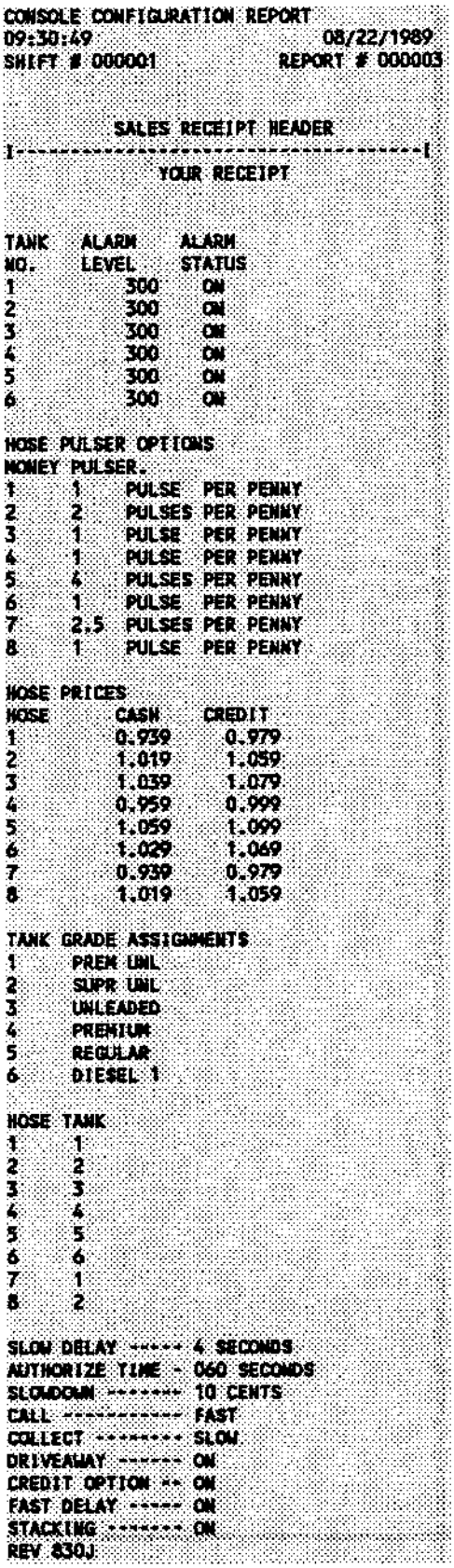
Adjustable Hose Totalizers,when entered into the console, correspond to the money and/or volume totalizers in each pump/dispenser*. Money is what is calculated at hoses's computer, it does not take credit to cash conversion in to account. Volume is shown in gallons.

Non-Resetable Hose Totalizers are set at zero when system is first installed.* Money is what is calculated at hoses's computer, it does not take credit to cash conversion in to account. Volume is shown in gallons

At the end of every report is the Manager Mode Time of Last Entry. This allows the manager to see the last 3 times each security level had been entered.

MGR 1 - Shift Manager Level 1
MGR 2 - Station Manager Level 2
MGR 3 - Serviceman Level 3
POLL - Modem/RS232 Port

*Over a period of time these amounts may vary from the actual hose totalizers. Any large differences should be reported to your serviceman. Adjustable Totalizers and Non-Resetable Totalizers will never match.



```
CONSOLE CONFIGURATION REPORT
09:30:49                    08/22/1989
SHIFT # 000001          REPORT # 000003

        SALES RECEIPT HEADER
|--------------------------------|
             YOUR RECEIPT


TANK   ALARM    ALARM
NO.    LEVEL    STATUS
1         300    ON
2         300    ON
3         300    ON
4         300    ON
5         300    ON
6         300    ON

HOSE PULSER OPTIONS
MONEY PULSER.
1     1    PULSE  PER PENNY
2     2    PULSES PER PENNY
3     1    PULSE  PER PENNY
4     1    PULSE  PER PENNY
5     4    PULSES PER PENNY
6     1    PULSE  PER PENNY
7     2.5  PULSES PER PENNY
8     1    PULSE  PER PENNY

HOSE PRICES
HOSE       CASH    CREDIT
1         0.939     0.979
2         1.019     1.059
3         1.039     1.079
4         0.959     0.999
5         1.059     1.099
6         1.029     1.069
7         0.939     0.979
8         1.019     1.059

TANK GRADE ASSIGNMENTS
1     PREM UNL
2     SUPR UNL
3     UNLEADED
4     PREMIUM
5     REGULAR
6     DIESEL 1

HOSE TANK
1     1
2     2
3     3
4     4
5     5
6     6
7     1
8     2

SLOW DELAY ----- 4 SECONDS
AUTHORIZE TIME - 060 SECONDS
SLOWDOWN ------- 10 CENTS
CALL ----------- FAST
COLLECT -------- SLOW
DRIVEAWAY ------ ON
CREDIT OPTION -- ON
FAST DELAY ----- ON
STACKING ------- ON
REV 830J
```

Programmable Receipt Header. Can hold up to 40 characters per line with a maximum of 255 characters.

Shows that the Low Inventory Alarm is on or off for each tank and at what level the alarm will be initiated.

Shows whether you are using money or volume pulsers and what pulser ratio each hose is set for.

Shows Cash & Credit pricing for each hose. If the Credit Option is not selected, then the cash & credit prices will be the same.

Shows Grade to Tank assignments.

Shows Hose to Tank assignments.

Shows what each programmable option is set at.

Shows Console Software Version.

SECURITY ENTRY CODES

Level 1 Security 2531

Level 2 Security 23671

Level 3 Security 129895

NOTE: Be sure to supply the Station Manager with Level 1 & 2 security codes.

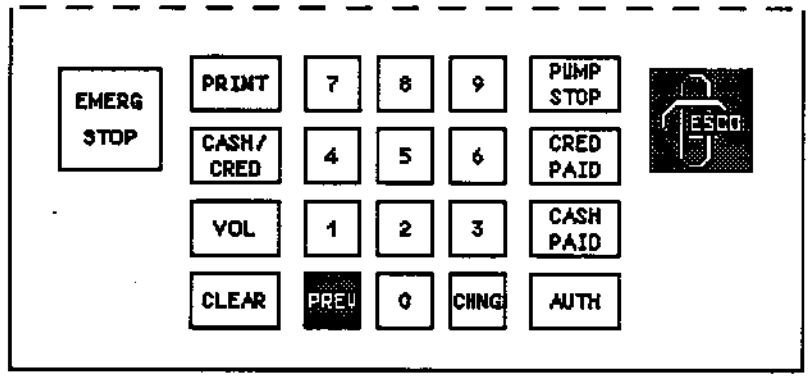
SYSTEM RESET

To be performed only if console locks up, display is scrambled and none of the keys are functional. Console must be reprogrammed after doing a System Reset.

Turn console key to off position. Depress the

key and the

key at the same time. Keep both keys depressed and turn console key to on position. Display will blank on and off. Once power is turned on, keep keys depressed for about 3 seconds before releasing.



NOTE: After the regular display comes up, enter Service Menu and perform a **RESET** before reprogramming console.

HOSE #	CASH PRICE	CREDIT PRICE	TANK #	PULSER RATIO	HOSE TOTALIZERS	
					MONEY	VOLUME
1						
2						
3						
4						
5						
6						
7						
8						

OPTION INFORMATION

ALERTS (OFF, ON, ONCE, FAST, SLOW)

CALL _____ COLLECT _____ DRIVE AWAY _____

AUTH TIME _____ SEC. SLOWDOWN _____ CENTS

SLOW DELAY _____ SEC. FAST DELAY _____ (ON/OFF)

STACK OPT. _____ (ON/OFF) PULSER OPT. _____ (MONEY/VOLUME)

TANK #	VOLUME	ALARM LEVEL	PRODUCT
1			
2			
3			
4			
5			
6			

HOSE #	CASH PRICE	CREDIT PRICE	TANK #	PULSER RATIO	HOSE TOTALIZERS	
					MONEY	VOLUME
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						

HOSE #	CASH PRICE	CREDIT PRICE	TANK #	PULSER RATIO	HOSE TOTALIZERS	
					MONEY	VOLUME
13						
14						
15						
16						

OPTION INFORMATION

ALERTS (OFF, ON, ONCE, FAST, SLOW)

CALL _____ COLLECT _____ DRIVE AWAY _____

AUTH TIME _____ SEC. SLOWDOWN _____ CENTS

SLOW DELAY _____ SEC. FAST DELAY _____ (ON/OFF)

PULSER OPTION _____ (MONEY/VOLUME)

TANK #	VOLUME	ALARM LEVEL	PRODUCT
1			
2			
3			
4			
5			
6			

The following equipment has been tested and evaluated by UL, for use with ESCO Consoles (Model #'s TLC-1008 & TLC-1016), as components of a complete listed control system:

I.C. Boxes - DC Pulser	Optional Relay Boxes
ICB-1021	MRB-1001
ICB-1022	MRB-1002
ICB-1023	MRB-1003
ICB-1024	MRB-1004
ICB-1025	MRB-1005
ICB-1026	MRB-1006
ICB-1027	MRB-1007
ICB-1028	MRB-1008

System Specifications

1) Component Sizes:

Console Size: ..... 9"x11.375"x5.75"
I.C. Box: ..... 15"x15"x6"
Relay Box: ..... 10"x15"x4"

2) Power Requirements:

Console: ..... 125VAC @ 1 amp max.
I.C. Box: ..... 125VAC @ 1 amp max.
Motor Relay Contacts: .... 240VAC @ 25 AMPS

3) Temperature & Humidity Ranges: -

Storage: .....-20 deg. to +45 deg. C
Operating: .....0 deg. to +40 deg. C / +32 deg. to +104 deg. F
@ 95% Humidity max.

4) Cable & Wire Lengths:

Fiber Optic Cable: ..... 20 ft. standard available up to 220 ft.
IC Box to dispensing unit: .... 200 ft. max. (refer to Wiring Chart pg. 8A)
IC Box to Relay Box: ..... 14AWG up to 100 ft. max.
..... 12AWG up to 300 ft. max

5) Misc.:

Battery Back-up: ..... Up to 30 minute operation, recharges during AC power operation.
Memory Retention: ..... 30 days minimum
Pulser: .....10VDC switching type pulser
Pulser Options: ..... Adjustable pulse ratios (1:1, 2:1, 2.5:1, 4:1, 5:1, 10:1 & 1:10)

WARNING: IN INSTALLATION AND USE OF THIS PRODUCT. COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL OR FATAL INJURY AND EQUIPMENT DAMAGE.

SPECIFICATIONS (Continued)

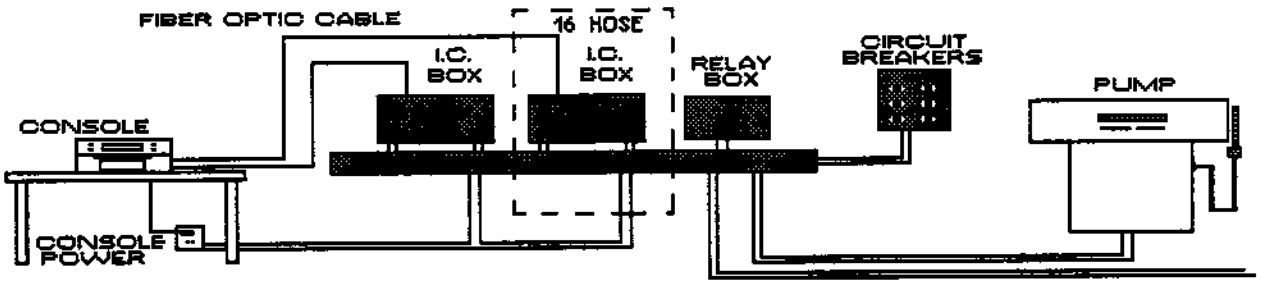
Pump/Dispenser Control Input/Output Ratings

Authorize	125VAC	3amps max.	ACH (Hot)	To Pump
Slow Valve	125VAC	3amps max.	ACC (Neutral)	To Pump
Fast Valve	125VAC	3amps max.	ACH or ACC	To Pump
Pulse Lines	10VDC	50m amps max.	DC	To Pulser
In Use	125VAC	.25amps	ACH	From Pump
Motor Relay	125VAC	3amps	ACH	To Relay Box
Motor Contactors	240VAC	25amps max.	1.5 H.P.	To Pump Motor

Fuse Ratings

Console - Rear	1/2AMP Slow Blow
IC Box - Housing	1/2 Amp Slow Blow
IC Box - Mother Board	3AMP Normal Blow

SYSTEM CONFIGURATION



WARNING: BEFORE STARTING WORK ON THE SYSTEM, ENSURE THAT POWER IS DISCONNECTED AND ALL CIRCUIT BREAKERS THAT CONTROL POWER TO THE SYSTEM ARE IN THE OFF POSITION. TAKE NECESSARY PRECAUTIONS TO PREVENT CIRCUIT BREAKERS FROM BEING TURNED ON UNTIL ALL WORK IS COMPLETED. MORE THAN ONE BREAKER MAY HAVE TO BE TURNED OFF TO OBTAIN A COMPLETE SHUTDOWN OF POWER TO THE SELECTED POSITION. FAILURE TO COMPLY WITH THIS WARNING MAY RESULT IN PERSONAL OR FATAL INJURY, PROPERTY LOSS, AND EQUIPMENT DAMAGE.

INTRODUCTION

This manual is for installation of the Genesis system to mechanical pumps/ dispensers using a switching type pulser to switch a DC supplied voltage signal. This includes reed type pulsers and specific pulser modules that will pulse a DC supplied voltage. It is recommended that this section be read in it's entirety before proceeding with installation. If there are any questions concerning the proper installation or wiring of pumps, contact your local ESCO Services Office before applying power to console or pumps. Incorrect wiring can cause permanent damage to the system, as well as, posing severe safety hazards.

In order to interface the Genesis console with a DC switching pulser, you must use one or more of the following IC Boxes:

Model #	Model #
ICB-1021	ICB-1025
ICB-1022	ICB-1026
ICB-1023	ICB-1027
ICB-1024	ICB-1028

Site Preparation

1) The ESCO Genesis I system was designed for ease of installation. It is suggested that the serviceman do a preliminary inspection of the location. The serviceman should note the type of dispensers/pumps being used as well as the condition of the field wires, if this is a retrofit location, and existing wiring is to be used. It is suggested that these wires be tested with a megger to insure there is no breakdown of insulation, shorts or opens.
2) Location site of the console should also be considered. Operating temperature for the console is 0 - +40 deg. C, care should be taken to locate the console so it will stay within this range. It should be placed so the operator can view all fueling positions. If using standard fiber optic cable, the I.C. Box should be placed within 20 ft. of the console (longer lengths, up to 220 ft., are available).

IC Box Components - DC Count Pulser

1) Commo board with a **Red** LED which, when flashing, indicates that there is power to the Commo board. When LED is solid, it indicates communication between IC Box and Console.
2) One to two Mother boards with 8 Position wire terminals for each hose.
3) Up to eight Pump Control boards, with **Yellow** card puller, which plugs into Mother board(s).
4) Separate 3 Position terminal block for Commo board power.
5) One or two 8 Position terminal blocks labeled for separate pulser power to Pump Control boards and power supply.
6) One 10VDC power supply to supply switching voltage for pulsers with a **Red** LED which, when lit solid indicates supply voltage is present.

System Wiring

1) Select proper field wiring diagram for the types of dispensers/pumps being used (refer to chart on page 8B to determine the number of wires needed for the specific application). Be sure to cap off any unused or spare wires in the junction box.
2) Pulse lines are wired to separate terminals located in the IC Box. Refer to diagram on page 9B for location of pulser terminals. Check cables from pulse terminals to Pump Control Boards. Make sure they are securely connected to proper Pump Control Board.
3) It is suggested that all dispensers/pumps of the same product be wired to the same breaker. The system provides a means of removing power from individual dispensers/pumpsby turning the **Auto/Off/Manual** switch to the **Off** position, and removing the Pump Card. This allows the serviceman to repair individual dispensers/pumps and not affect the other hoses.

System Wiring (Continued)

4) The IC Box requires a dedicated 15 Amp circuit breaker of 120VAC connected to terminal strip TS - 1 in the IC Box. Pull a green 14 gauge ground wire and secure with grounding screw in IC box. Do not rely on metal conduit as ground. A green #10 grounding screw is located in the IC box for equipment grounding. The second IC box (hoses 9-16) can be placed on this circuit.
5) Pump lights or canopy lights must be wired on a separate circuit from the pump power circuits.
6) It is **HIGHLY RECOMMENDED** that Console Power and IC Box Power be run in a conduit separate from non-continuous running motors.
7) It is **HIGHLY RECOMMENDED** that a green ground wire and at least one spare wire be pulled to each dispensing unit.

Pulser Requirements

1) This system is designed for use with a switching type pulser system that can switch a supplied DC voltage, such as a dry reed type or an electronically controlled switching pulser. Use of any other type of pulsers, pulse I.S. barriers, or transmitters will result in damage to the equipment as well as posing a possible safety hazard.

Reset Housings

1) When installing the Genesis I system it is recommended that the serviceman check the reset wiring to be sure no modifications have been made. A rewired or modified reset could result in improper operation or damage to the equipment.
2) The Pump Handle switch is activated when the customer turns the handle on, this switch opens up at the end of reset to stop the reset motor.
3) The Reset Complete switches are activated at the end of reset or at reset complete. These switches stay on until the handle is turned off.
4) Use separate, unused reset to junction box, wires (hot & neutral) for light ballast to insure proper operation.

Final Setup

1) After pumps or dispensers have been wired, recheck wiring for proper hookup and any possible shorts while all power is off.
2) Make sure the black **ACH/ACC** jumpers are in correct position for proper fast valve operation. **ACH** setting provides switch hot on fast valve terminal, and **ACC** provides switch neutral on fast valve terminal.
3) Switch the **Auto/Off/Manual** switch to the **Manual** position and place the red **Auto/Man** jumpers in the **Manual** position.* Apply power to the dispensing unit and check to see that they operate correctly as full service pumps or dispensers. To place dispensing units back into **Auto** operation, switch the **Auto/Off/Manual** switch to the **Auto** position and place the red **Auto/Man** jumpers in the **Auto** position. The pump handle must be lifted & the console must see a **Call** to place the dispenser back into **Auto** operation.

*NOTE: **DO NOT** remove Pump Control Board, even if pump or dispenser is running in manual.

WARNING: WHEN VOLTAGE MEASUREMENTS ARE MADE, HIGH VOLTAGES WILL BE PRESENT IN THE EQUIPMENT. TAKE THE NECESSARY PRECAUTIONS AND OBSERVE GOOD PRACTICES TO AVOID PERSONAL INJURY, PROPERTY LOSS AND EQUIPMENT DAMAGE.

Console Installation

1) Location Site

A) The ESCO Genesis Console, should be placed in a location such that all pumps or dispensers are in view of the operator. The console's operating temperature is 0 deg. to +50 deg. C, care should be taken to locate the console so that it will stay within this range. The console, and its optional printer (if used), should be plugged into a 15 Amp dedicated circuit with isolated earth ground. **Failure to follow this instruction could result in improper console operation .**

PERIPHERAL EQUIPMENT CONNECTED SHALL: (1) BE UL LISTED, (2) HAVE AN ELECTRONICS INDUSTRY ASSOCIATION (EIA) STANDARD RS232C OR RS422A COMMUNICATION PROTOCOL, AS APPROPRIATE, AND (3) NOT BE INSTALLED OVER A HAZARDOUS LOCATION.

2) Fiber Optic Cable

A) For ease of installation, one end of the Fiber Optic cable is color coded, (Gray & Blue). The Blue connects to the Blue connector on the Commo Board, and the Gray connects to the Black connector on the Commo Board. The other end has one connector, (White), which plugs into the back of the console.

B) 16 Hose console - There are two sets of Fiber Optic ports. The upper set of ports are for hoses 9 thru 16; the lower set of ports are for hoses 1 thru 8.

C) The Fiber Optic cable should have no less than a 1.5 inch bend radius at any one point to prevent possible damage, and/or communication loss. Removal of any optical fiber insulation will destroy the fiber optic cable.

CAUTION: CONSIDERABLE PRECAUTION MUST BE GIVEN TO THE ROUTING OF THE FIBER OPTIC CABLE TO AVOID ALLOWING THE CABLE TO BE STEPPED ON, OBJECTS TO BE DROPPED ON IT AND OTHER SIMILAR ABUSE DO NOT PINCH OR BIND CABLE.
THE CABLE SHOULD, WHEN POSSIBLE, BE RUN THROUGH A CONDUIT TO AVOID DAMAGE.

3) Final Setup

A) Turn on console. The display will light up then blank out. Then all the LEDs will light, and the display will show one of the following before returning to the regular display.

1) 8 Hose - Display should show **REV 830J** for about 3 seconds.

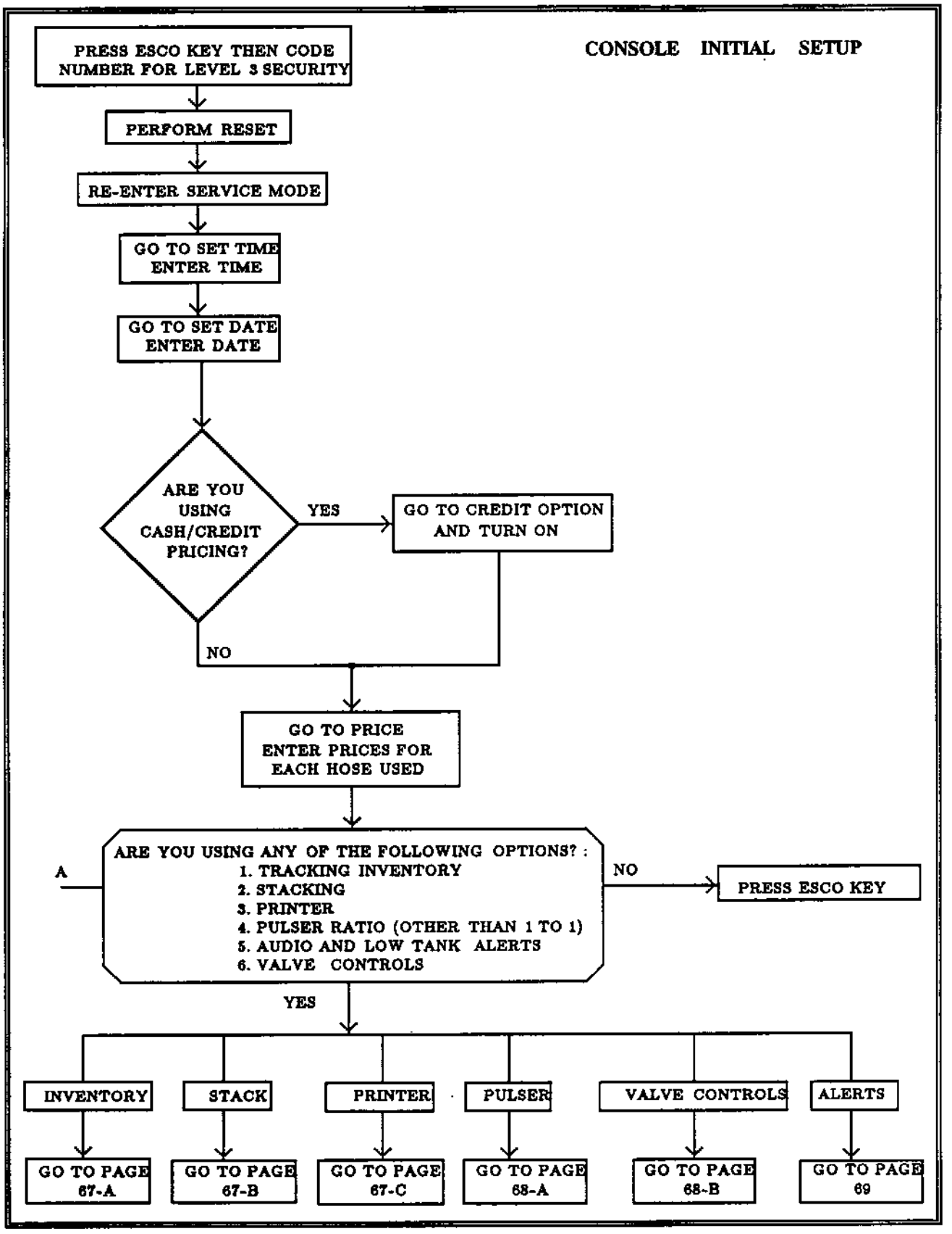
2) 16 Hose - Display should show **REV 630J** for about 3 seconds.

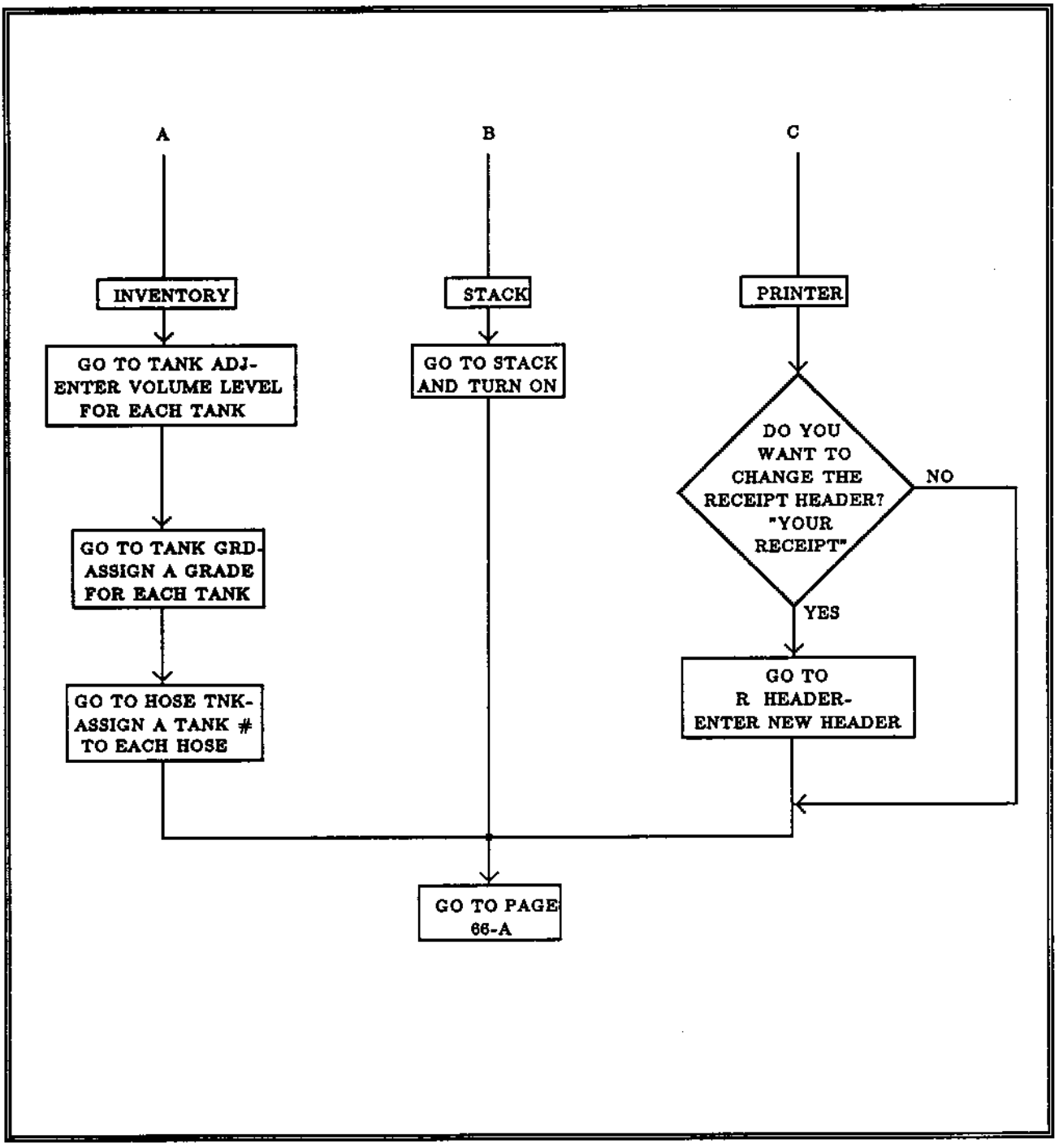
B) Enter Security Level 3, program correct time if necessary, then do a System Reset before programming console. Refer to page 65 for Console Initial Setup.

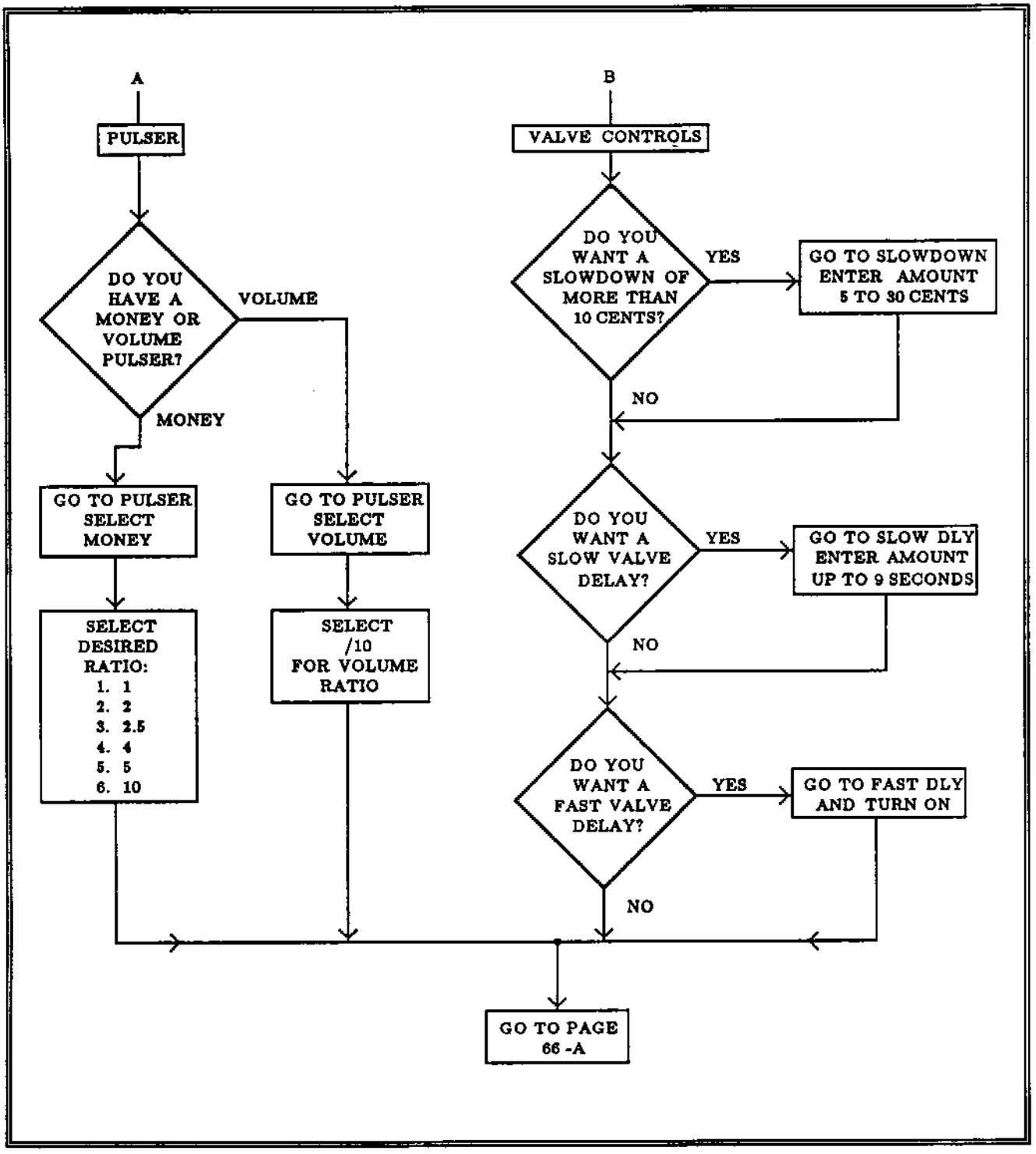
C) After programming, go to the IC box(es) and switch all **Auto/Off/Manual** switches to **Auto**, and place all red **Auto/Man** jumpers in the **Auto** position. Then lift the pump handle & check console for communication,(a **Call**).

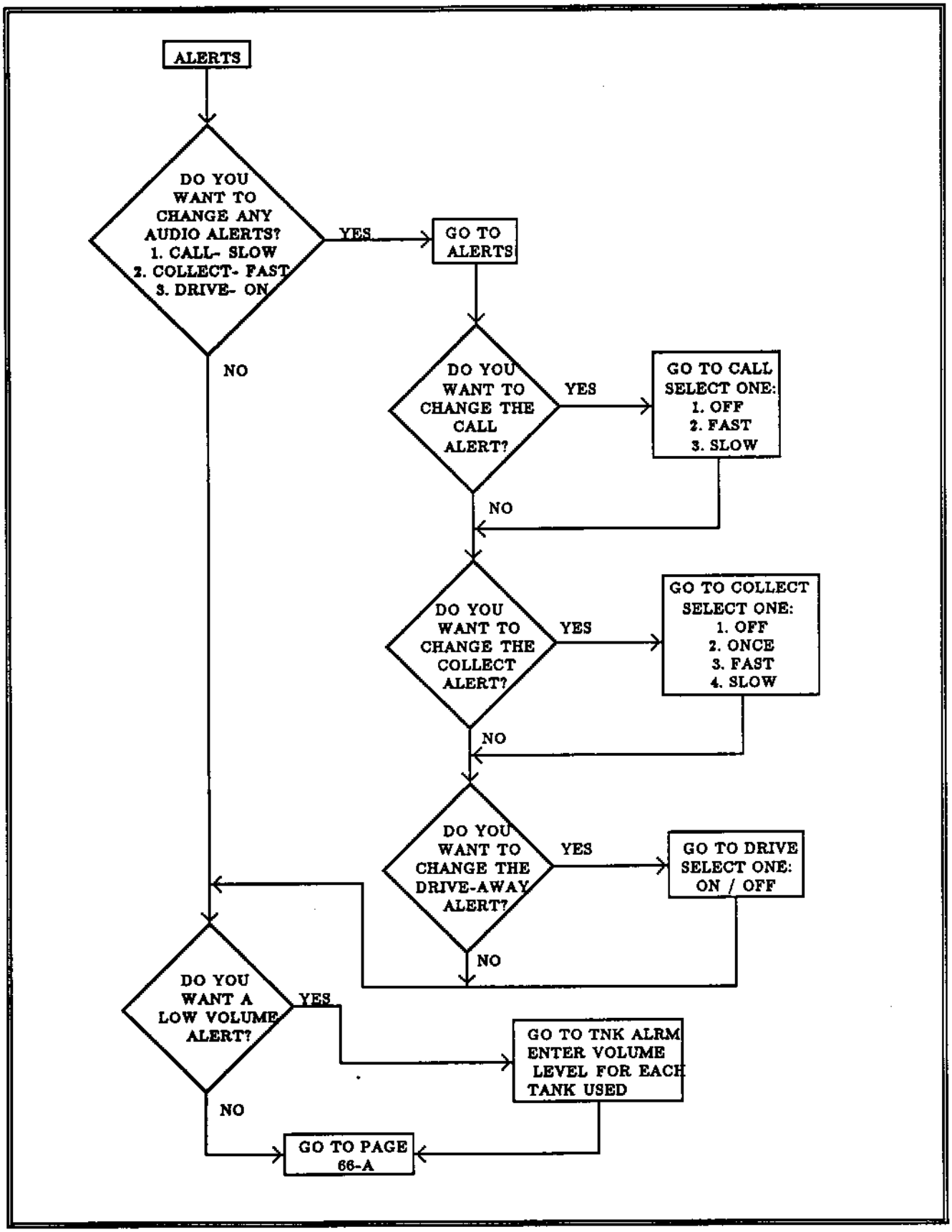
D) When system has been fully checked out, enter Security Level 3 and do a Daily Change to reset shift and report numbers.

CONSOLE INSTALLATION NOTICE:
TO INSURE RETENTION OF DATA, CONSOLE POWER SHOULD BE LEFT ON FOR AT LEAST 72 HOURS TO FULLY CHARGE BATTERY.

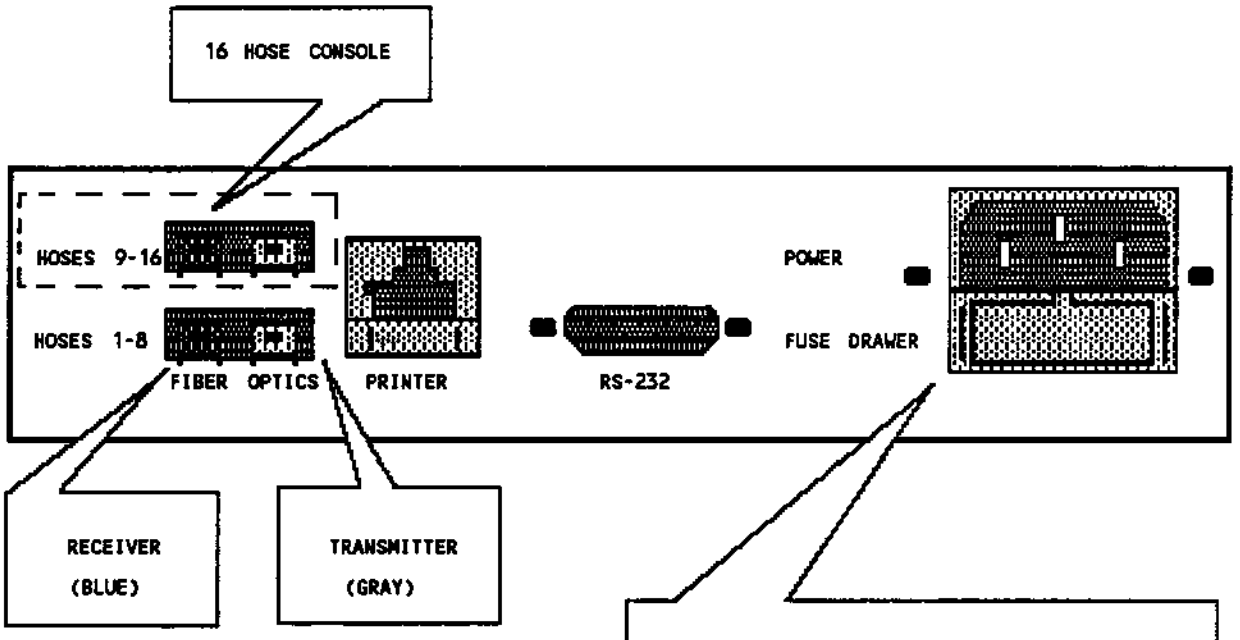

CONSOLE INITIAL SETUP
PRESS ESCO KEY THEN CODE NUMBER FOR LEVEL 3 SECURITY
PERFORM RESET
RE-ENTER SERVICE MODE
GO TO SET TIME ENTER TIME
GO TO SET DATE ENTER DATE
ARE YOU USING CASH/CREDIT PRICING?
YES
GO TO CREDIT OPTION AND TURN ON
NO
GO TO PRICE ENTER PRICES FOR EACH HOSE USED
A
ARE YOU USING ANY OF THE FOLLOWING OPTIONS? :
1. TRACKING INVENTORY
2. STACKING
3. PRINTER
4. PULSER RATIO (OTHER THAN 1 TO 1)
5. AUDIO AND LOW TANK ALERTS
6. VALVE CONTROLS
NO
PRESS ESCO KEY
YES
INVENTORY
STACK
PRINTER
PULSER
VALVE CONTROLS
ALERTS
GO TO PAGE 67-A
GO TO PAGE 67-B
GO TO PAGE 67-C
GO TO PAGE 68-A
GO TO PAGE 68-B
GO TO PAGE 69

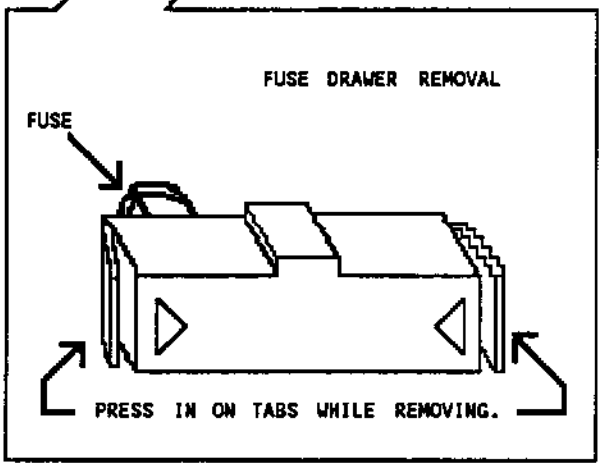

A
B
C
INVENTORY
STACK
PRINTER
GO TO TANK ADJ-
ENTER VOLUME LEVEL
FOR EACH TANK
GO TO STACK
AND TURN ON
DO YOU
WANT TO
CHANGE THE
RECEIPT HEADER?
"YOUR
RECEIPT"
NO
YES
GO TO TANK GRD-
ASSIGN A GRADE
FOR EACH TANK
GO TO
R HEADER-
ENTER NEW HEADER
GO TO HOSE TNK-
ASSIGN A TANK #
TO EACH HOSE
GO TO PAGE
66-A


A
PULSER
DO YOU HAVE A MONEY OR VOLUME PULSER?
VOLUME
MONEY
GO TO PULSER SELECT MONEY
GO TO PULSER SELECT VOLUME
SELECT DESIRED RATIO:
1. 1
2. 2
3. 2.5
4. 4
5. 5
6. 10
SELECT /10 FOR VOLUME RATIO
B
VALVE CONTROLS
DO YOU WANT A SLOWDOWN OF MORE THAN 10 CENTS?
YES
GO TO SLOWDOWN ENTER AMOUNT 5 TO 30 CENTS
NO
DO YOU WANT A SLOW VALVE DELAY?
YES
GO TO SLOW DLY ENTER AMOUNT UP TO 9 SECONDS
NO
DO YOU WANT A FAST VALVE DELAY?
YES
GO TO FAST DLY AND TURN ON
NO
GO TO PAGE 66 -A


ALERTS
DO YOU WANT TO CHANGE ANY AUDIO ALERTS? 1. CALL- SLOW 2. COLLECT- FAST 3. DRIVE- ON
YES
GO TO ALERTS
NO
DO YOU WANT TO CHANGE THE CALL ALERT?
YES
GO TO CALL SELECT ONE: 1. OFF 2. FAST 3. SLOW
NO
DO YOU WANT TO CHANGE THE COLLECT ALERT?
YES
GO TO COLLECT SELECT ONE: 1. OFF 2. ONCE 3. FAST 4. SLOW
NO
DO YOU WANT TO CHANGE THE DRIVE-AWAY ALERT?
YES
GO TO DRIVE SELECT ONE: ON / OFF
NO
DO YOU WANT A LOW VOLUME ALERT?
YES
GO TO TNK ALRM ENTER VOLUME LEVEL FOR EACH TANK USED
NO
GO TO PAGE 66-A

ESCO GENESIS CONSOLE - REAR PANEL





Fiber Optic Ports Communication ports between console and I.C. box. One way snap in fiber optic cable.

Printer Cable Connector For use with optional printer. Modular RJ-45 type jack self locking snap in.

RS232 D Connector Provided for your interfacing needs.

Power Entry Module For easy insertion and removal of cord and fuse drawer. Receives standard shielded type cord.

COMMUNICATION PORT, CONNECTOR J1 (RS232) [REV 830J or 630J Software]

See page 1C in this manual for communication protocall information.

The RS232 connector is located on the rear panel of the console. This port is used for communication between the ESCO console and other equipment, such as a modem or a computer. All information that appears in the reports that the ESCO console produces is also available at the RS232 connector.

9 PIN D CONNECTOR DESCRIPTIONS:

PIN	PIN	PIN
1- N/C	4- $\overline{\text{DTR}}$	7- $\overline{\text{RTS}}$
2- RXD	5- GND (LOGIC)	8- $\overline{\text{CTS}}$
3- TXD	6- $\overline{\text{DSR}}$	9- RI

The ESCO console asserts + 9VDC and -9VDC, and will accept up to +30VDC and -30VDC. Be sure to follow all instructions with your peripheral equipment for proper RS232 wiring or contact your local ESCO Service Office.

MODULAR PRINTER JACK, CONNECTOR J2 (RS-422)

The modular printer jack is located on the rear panel of the ESCO console. This is a standard RJ-45 jack and is intended for use with an **OPTIONAL PRINTER ONLY.** The modular printer jack is designed to be used with printers that utilize the current loop interface standard. An optional printer can be used to print out customer receipts, shift total reports, and console configuration reports.

MODULAR JACK DESCRIPTION:

NOTE- When looking at the jack pin #1 is located on the right and pin #8 is located on the left side.

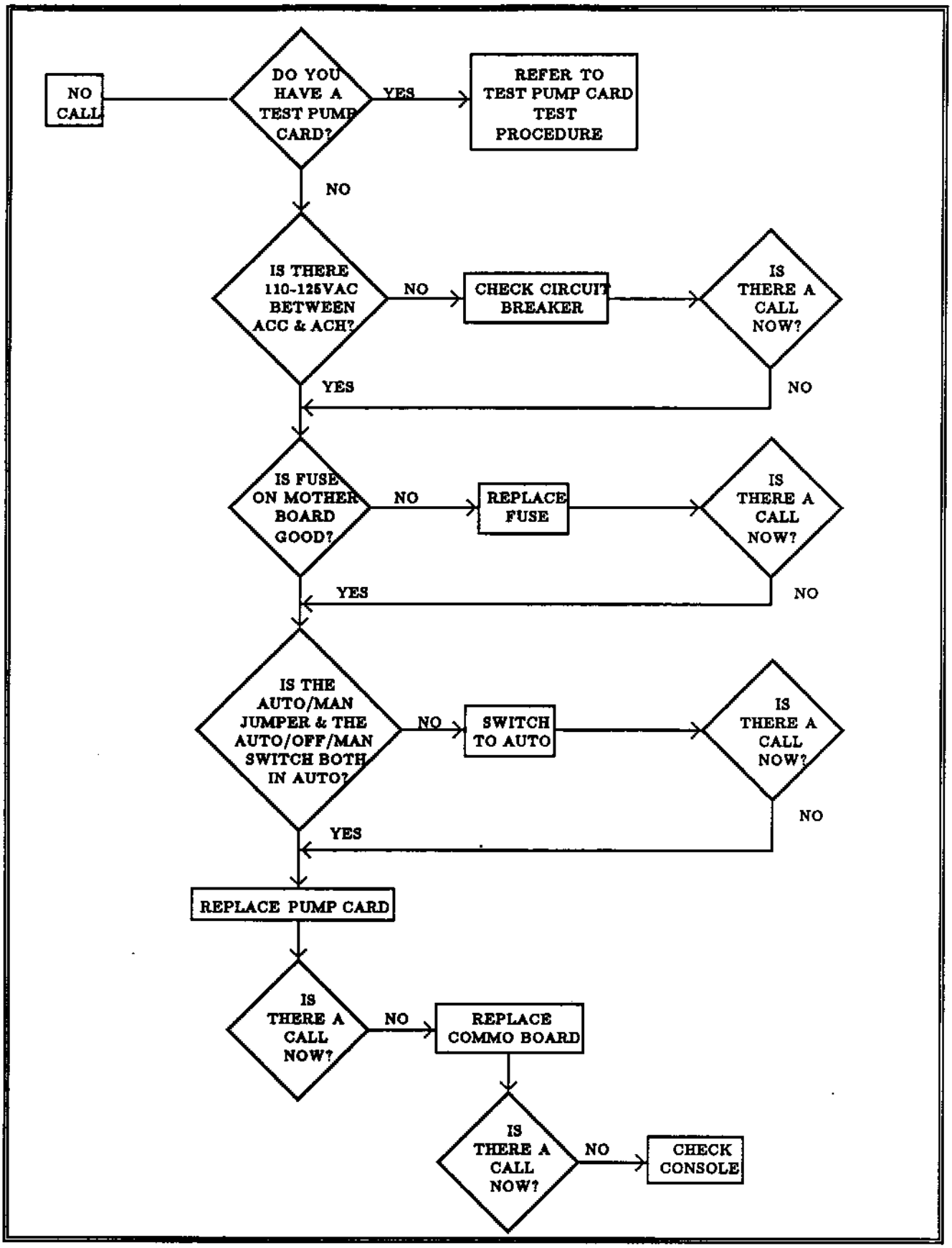
PIN	PIN	PIN	PIN
1- $\overline{\text{DTR}}$ (OUT)	3- $\overline{\text{DTR}}$ (IN)	5- TXD (OUT)	7- N/C
2- TXD (IN)	4- N/C	6- N/C	8- N/C

OPTIONAL PRINTER PARAMETERS:

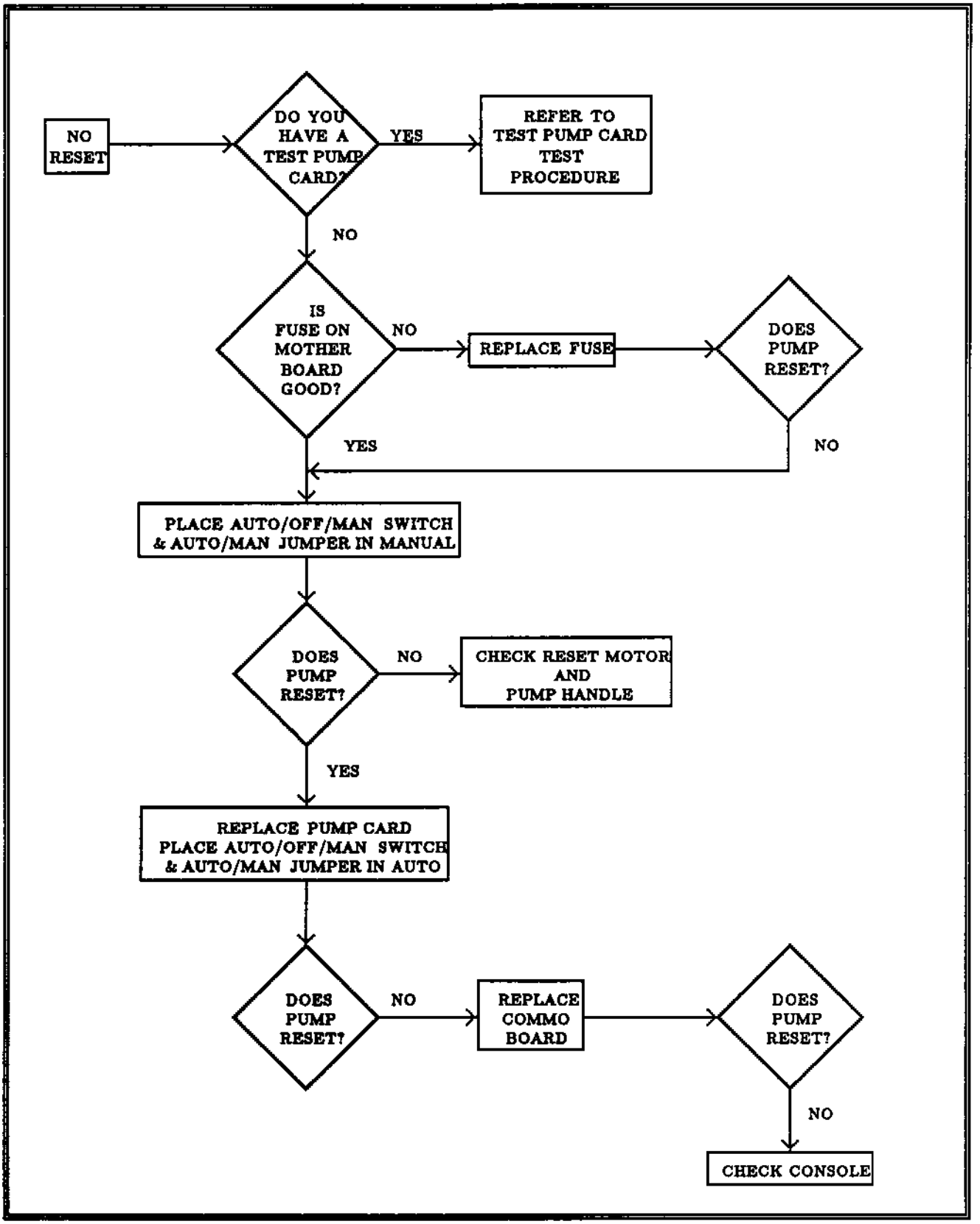
Baud Rate - 1200	Parity Checked	DTR Mode
One Stop Bit	Even Parity	CR Valid
7 Data Bits		

Contact your local ESCO Services Office for more information on optional printers.

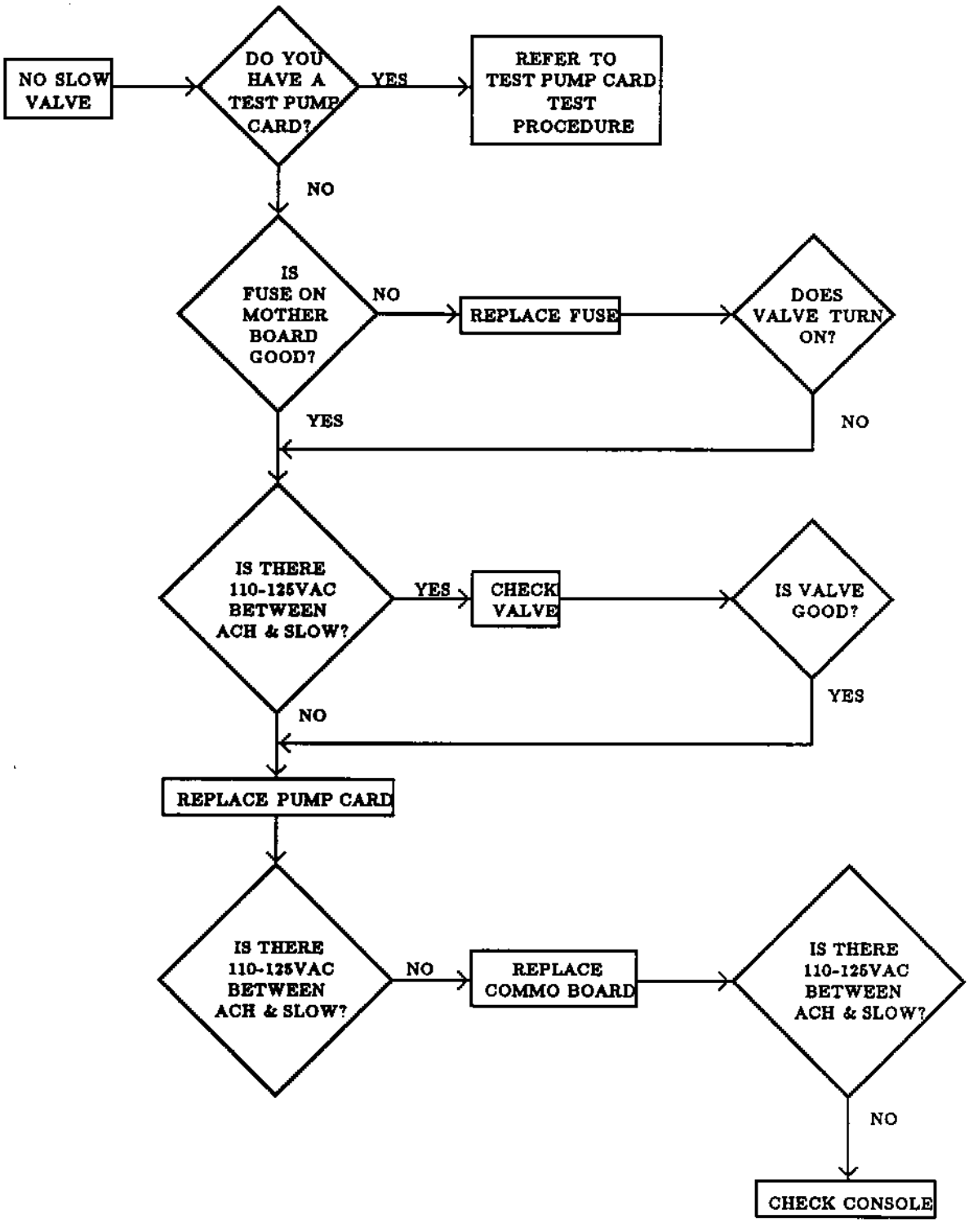
IC Box (Single hose) Troubleshooting



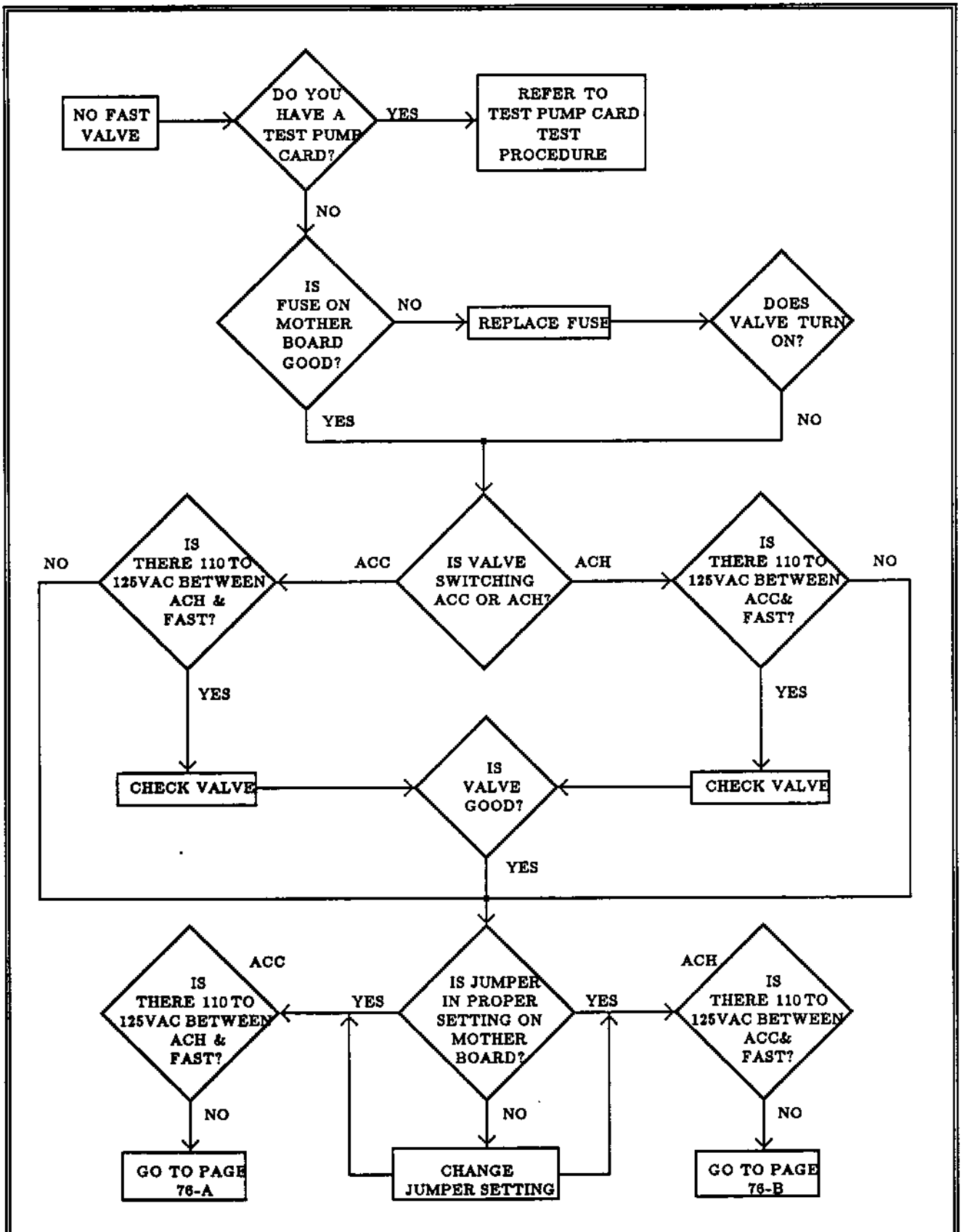
IC Box (Single hose) Troubleshooting (Continued)



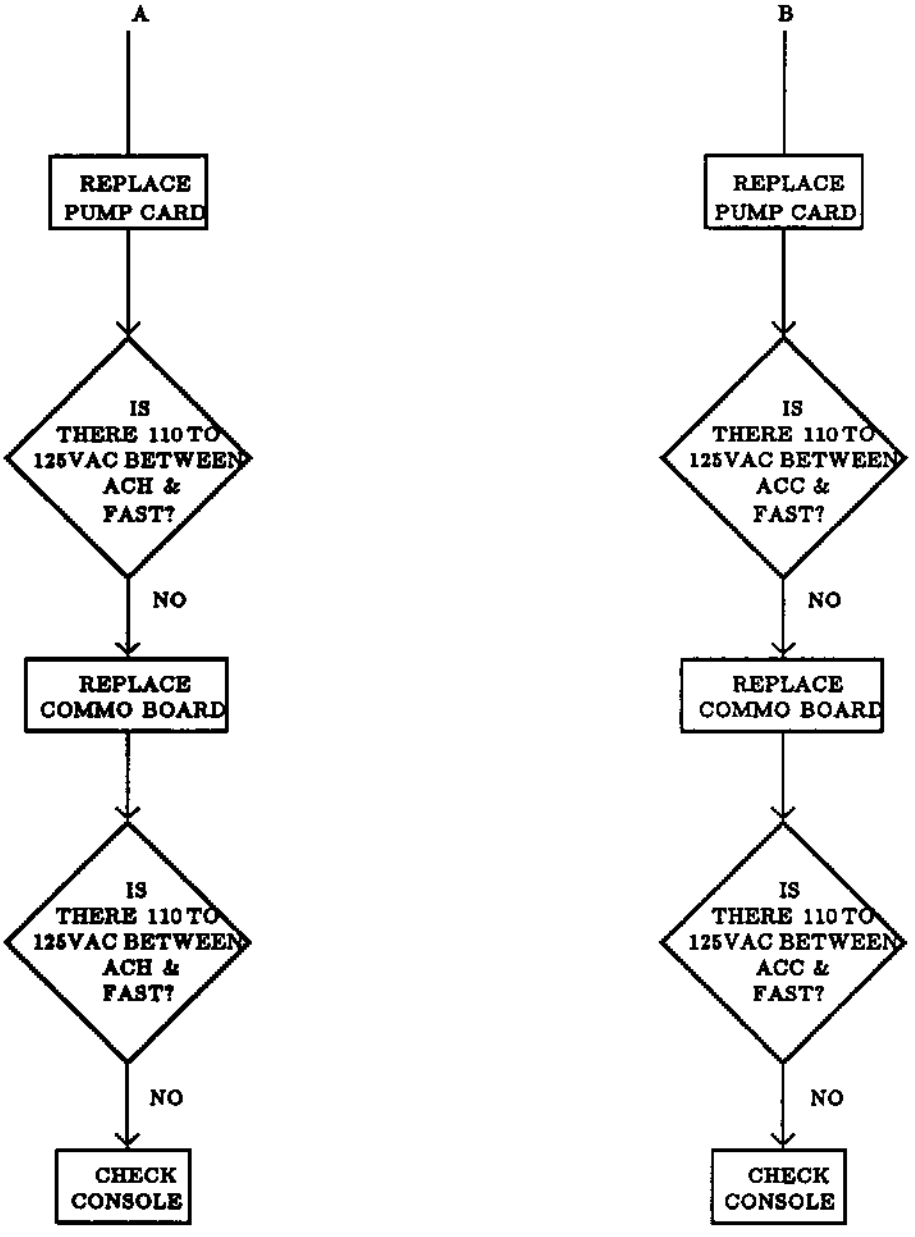
IC Box (Single hose) Troubleshooting (Continued)



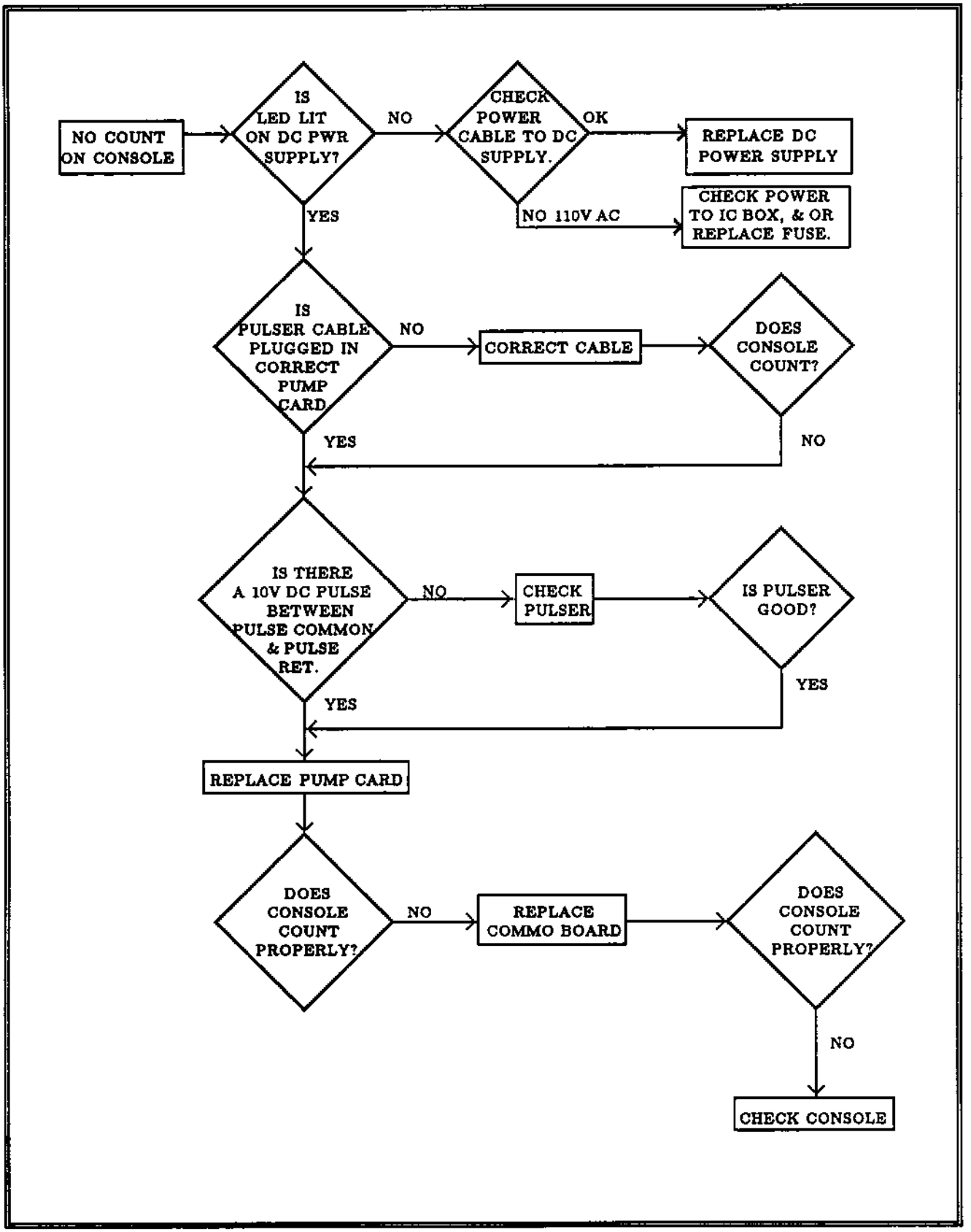
IC Box (Single hose) Troubleshooting (Continued)



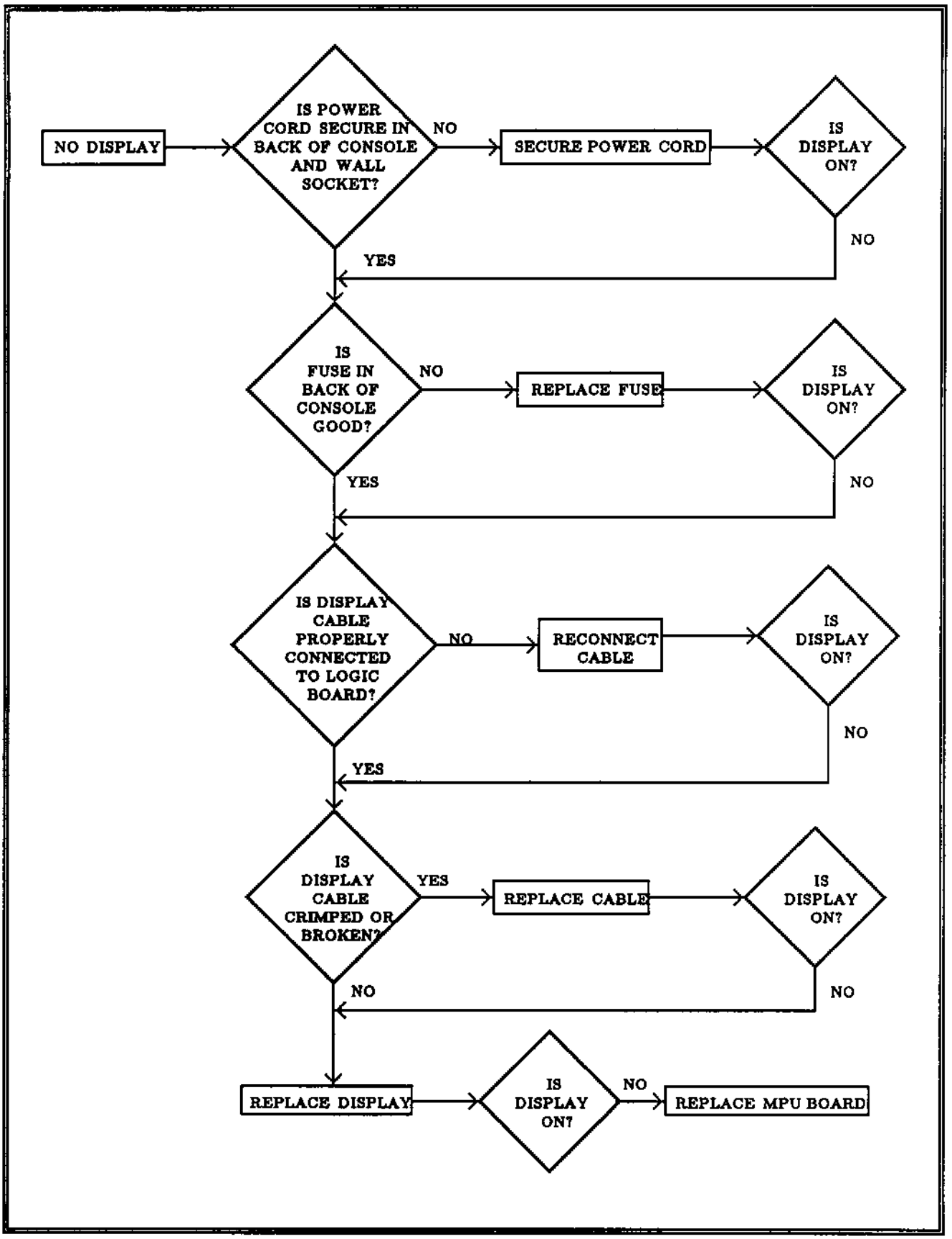
IC Box (Single hose) Troubleshooting (Continued)

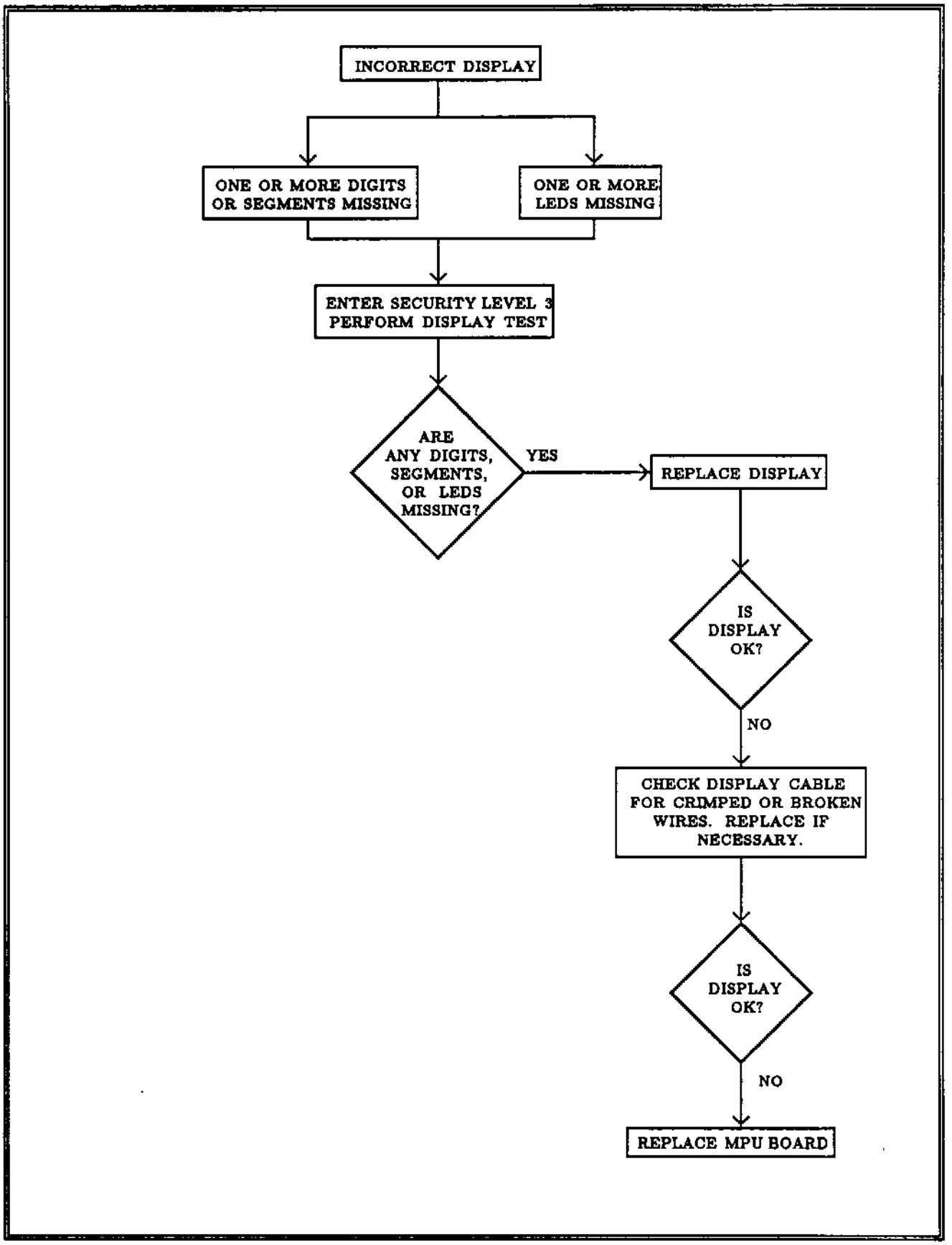


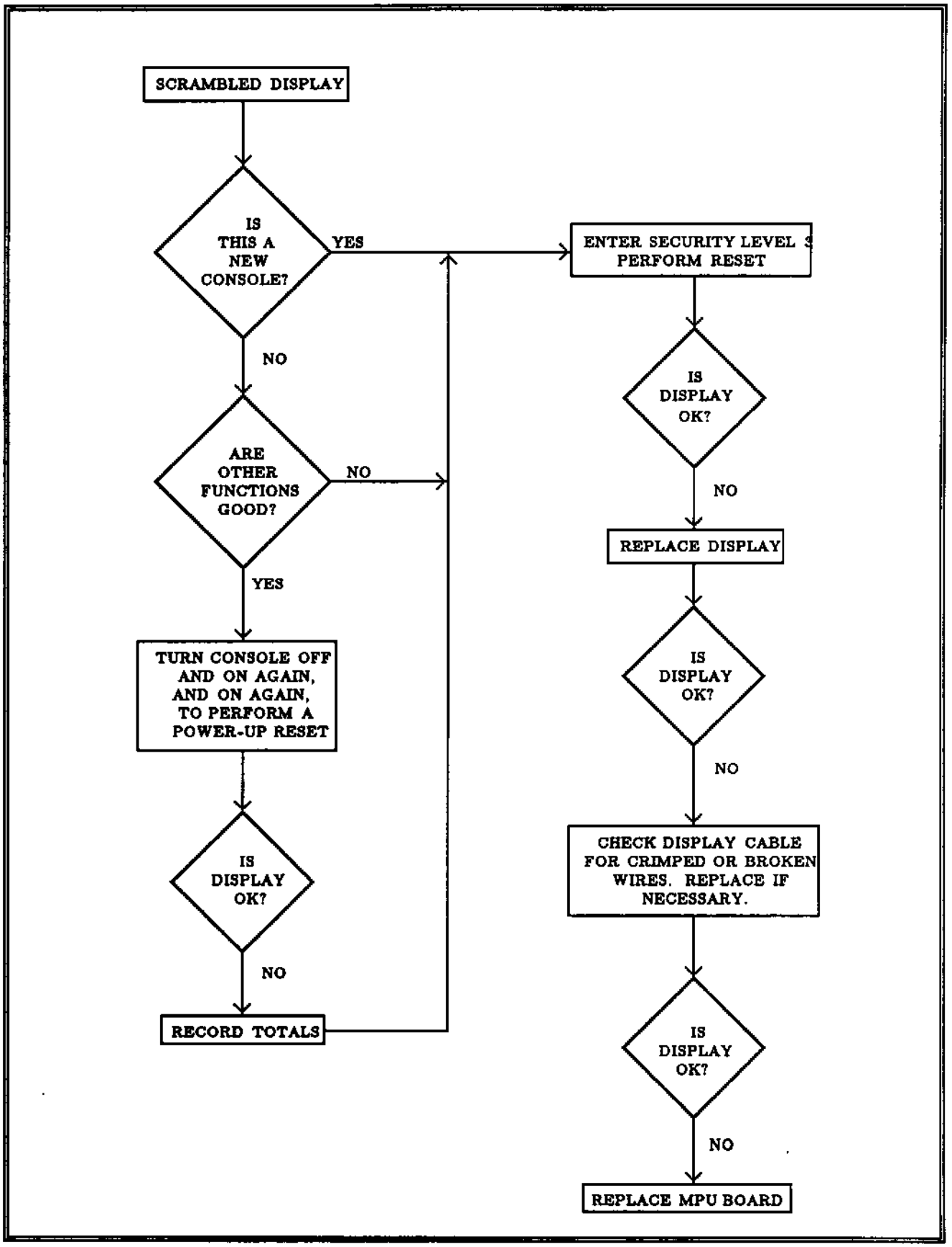
IC Box (Single hose) Troubleshooting (Continued)

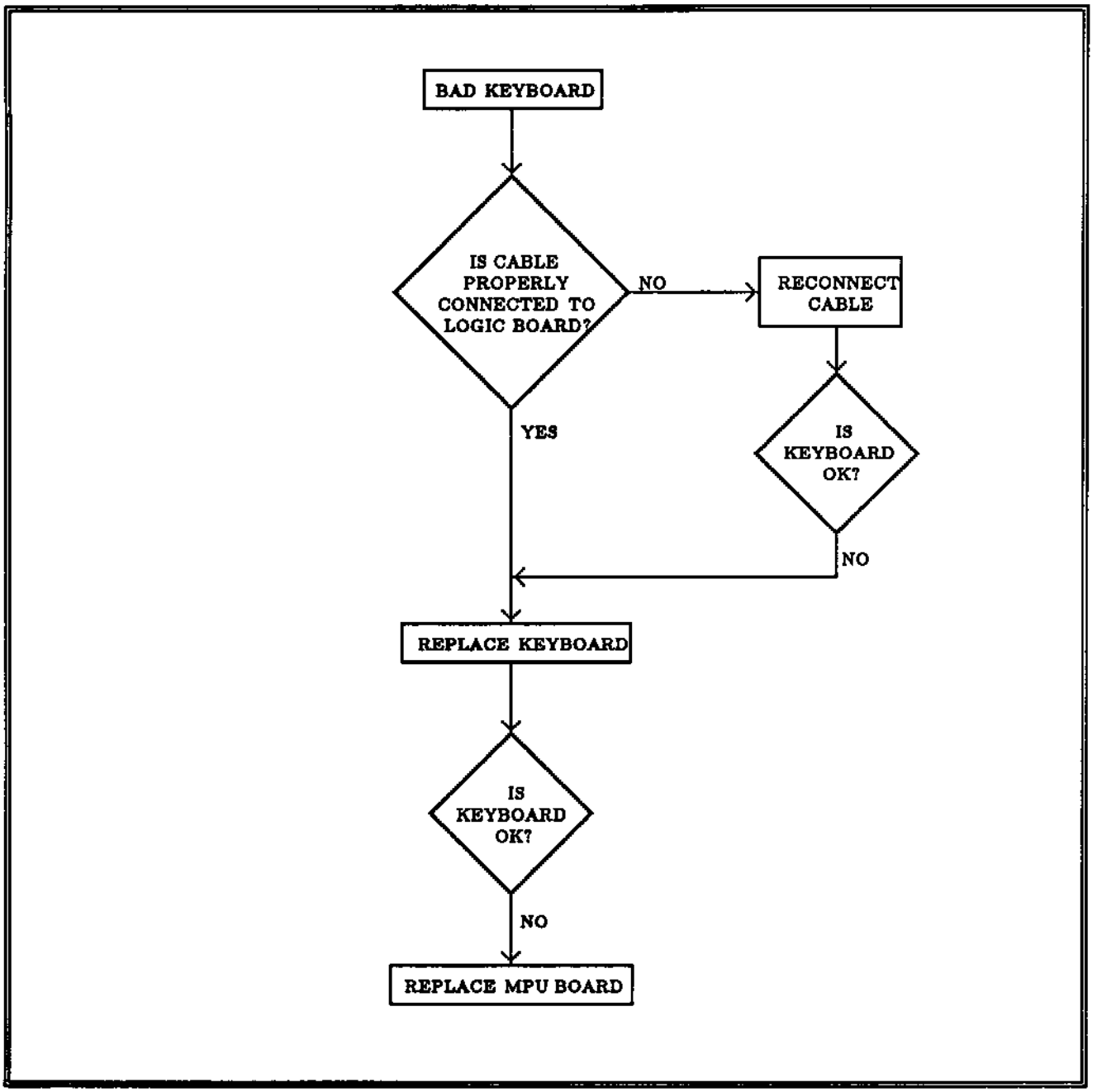


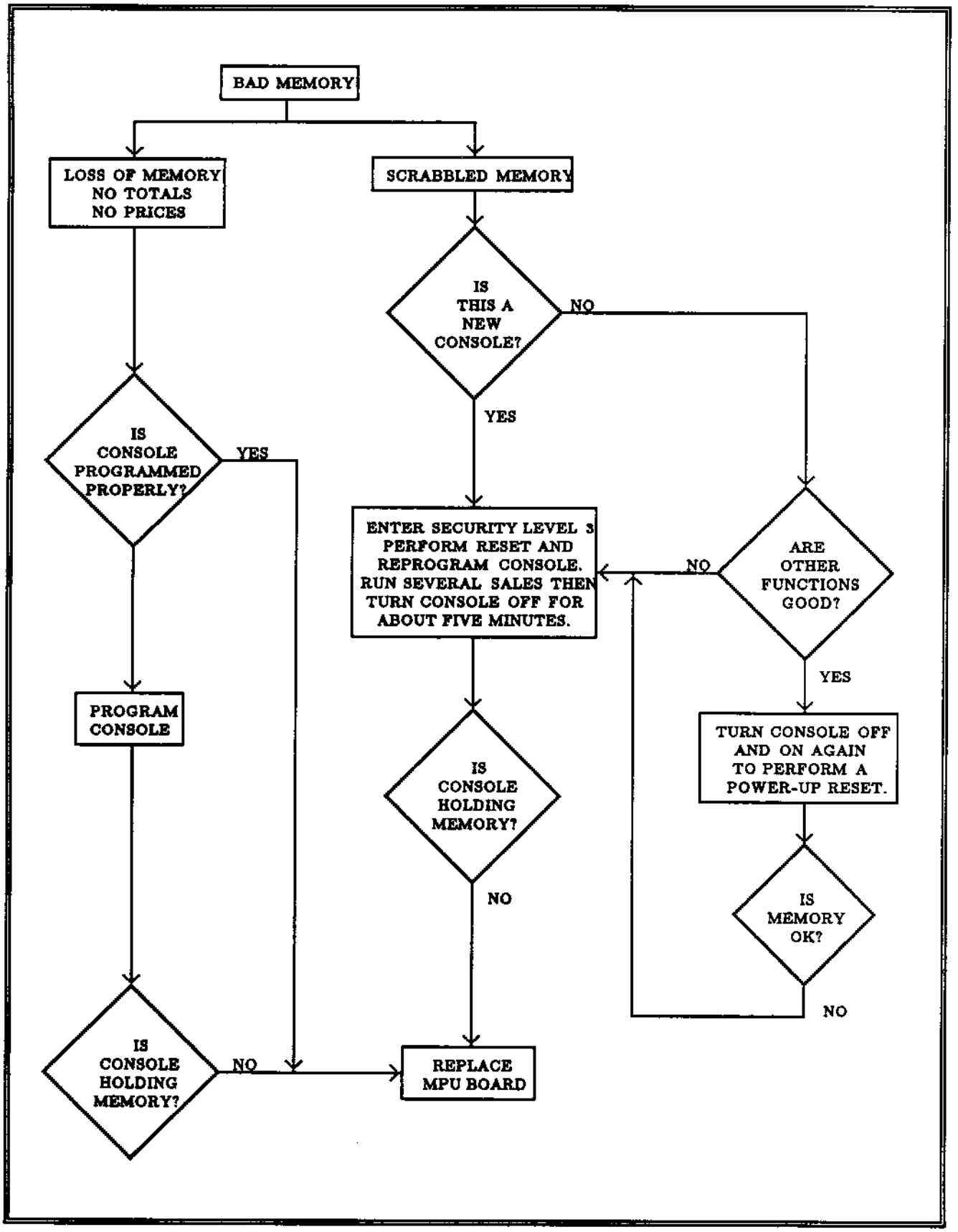
Console Troubleshooting

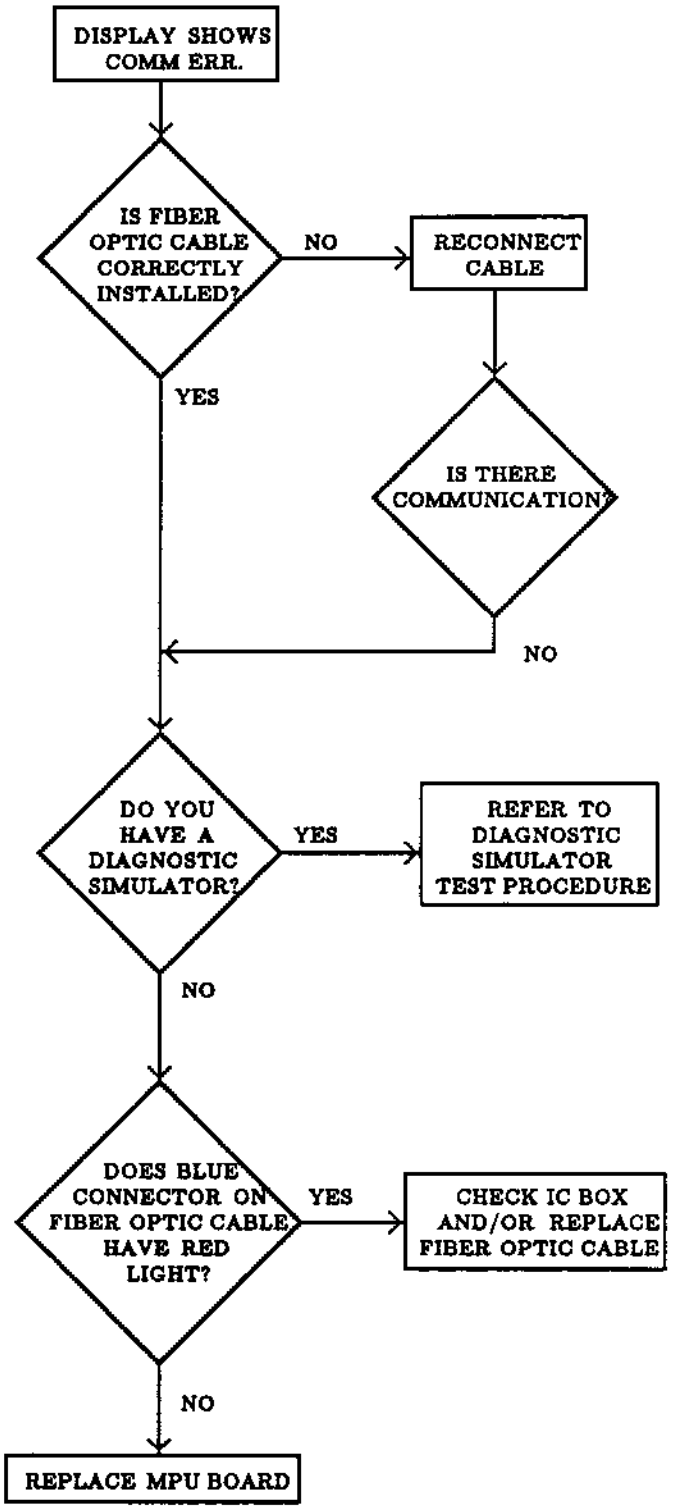


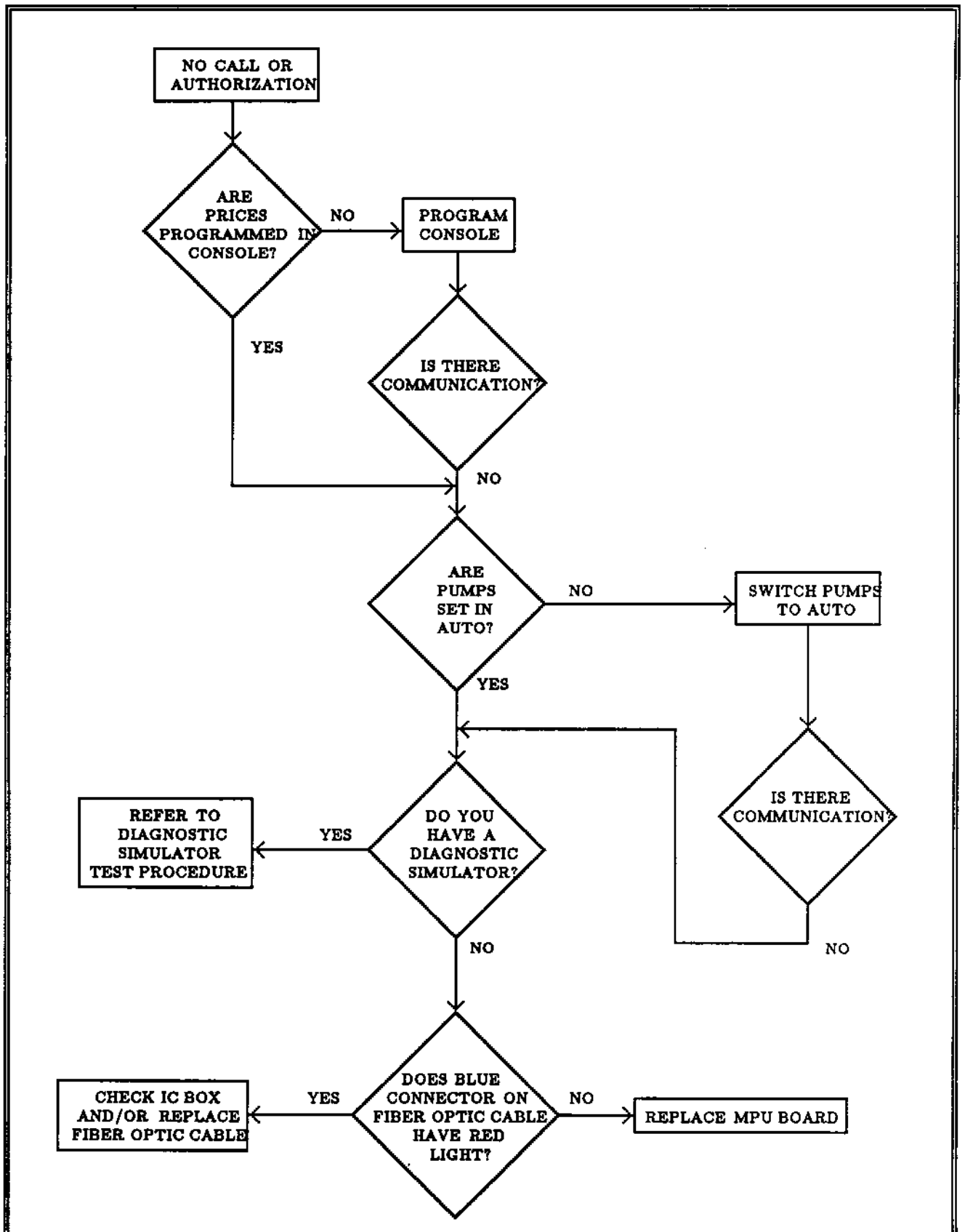

INCORRECT DISPLAY
ONE OR MORE DIGITS OR SEGMENTS MISSING
ONE OR MORE LEDS MISSING
ENTER SECURITY LEVEL 3 PERFORM DISPLAY TEST
ARE ANY DIGITS, SEGMENTS, OR LEDS MISSING?
YES
REPLACE DISPLAY
IS DISPLAY OK?
NO
CHECK DISPLAY CABLE FOR CRIMPED OR BROKEN WIRES. REPLACE IF NECESSARY.
IS DISPLAY OK?
NO
REPLACE MPU BOARD

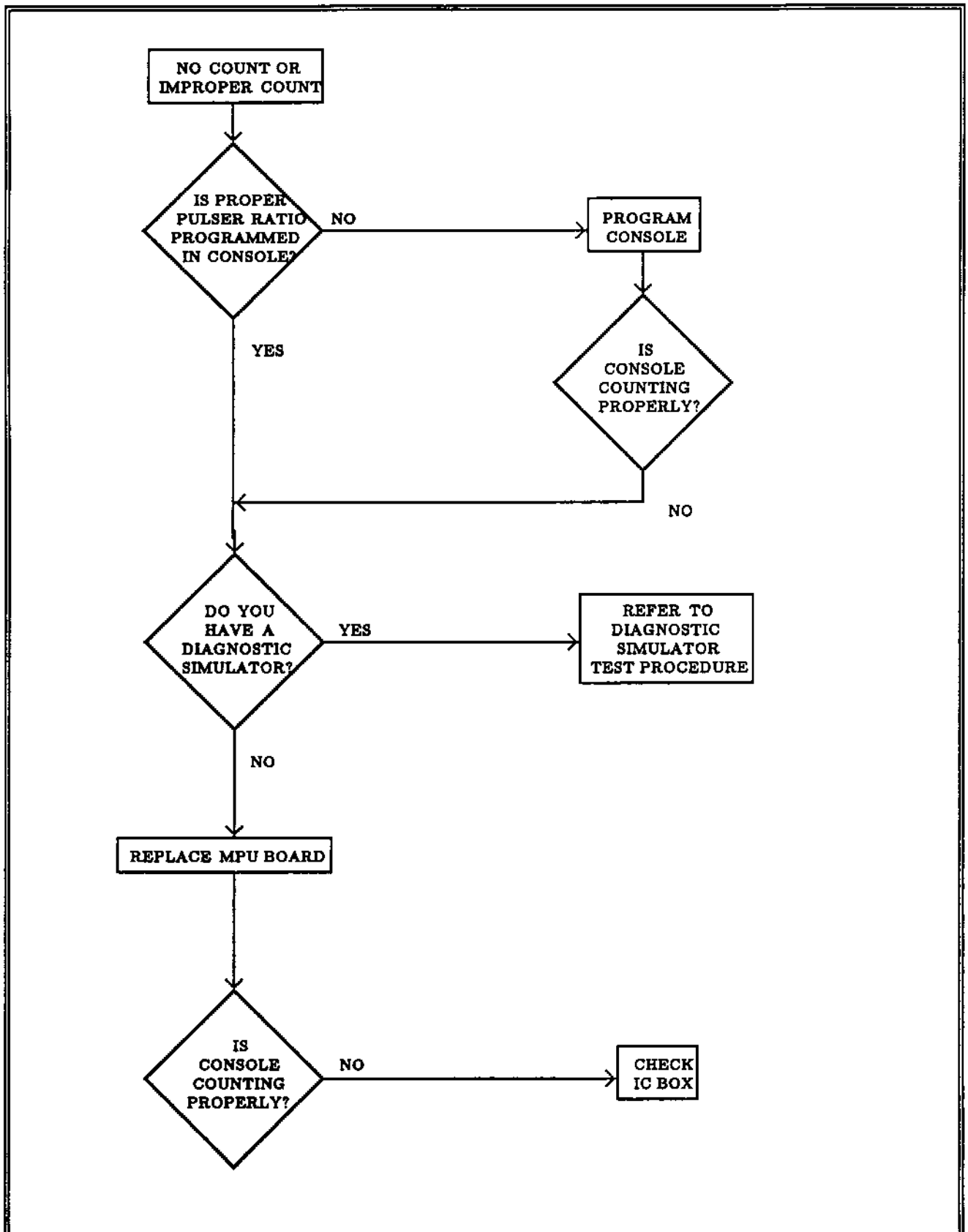

SCRAMBLED DISPLAY
IS THIS A NEW CONSOLE?
YES
ENTER SECURITY LEVEL 3 PERFORM RESET
NO
IS DISPLAY OK?
NO
REPLACE DISPLAY
ARE OTHER FUNCTIONS GOOD?
NO
YES
IS DISPLAY OK?
NO
TURN CONSOLE OFF AND ON AGAIN, AND ON AGAIN, TO PERFORM A POWER-UP RESET
CHECK DISPLAY CABLE FOR CRIMPED OR BROKEN WIRES. REPLACE IF NECESSARY.
IS DISPLAY OK?
NO
IS DISPLAY OK?
NO
RECORD TOTALS
REPLACE MPU BOARD


BAD KEYBOARD
IS CABLE PROPERLY CONNECTED TO LOGIC BOARD?
NO
RECONNECT CABLE
IS KEYBOARD OK?
YES
NO
REPLACE KEYBOARD
IS KEYBOARD OK?
NO
REPLACE MPU BOARD


BAD MEMORY
LOSS OF MEMORY
NO TOTALS
NO PRICES
SCRABBLED MEMORY
IS THIS A NEW CONSOLE?
NO
YES
IS CONSOLE PROGRAMMED PROPERLY?
YES
ENTER SECURITY LEVEL 3 PERFORM RESET AND REPROGRAM CONSOLE. RUN SEVERAL SALES THEN TURN CONSOLE OFF FOR ABOUT FIVE MINUTES.
ARE OTHER FUNCTIONS GOOD?
NO
YES
PROGRAM CONSOLE
IS CONSOLE HOLDING MEMORY?
NO
TURN CONSOLE OFF AND ON AGAIN TO PERFORM A POWER-UP RESET.
IS MEMORY OK?
NO
IS CONSOLE HOLDING MEMORY?
NO
REPLACE MPU BOARD


DISPLAY SHOWS COMM ERR.
IS FIBER OPTIC CABLE CORRECTLY INSTALLED?
NO
RECONNECT CABLE
YES
IS THERE COMMUNICATION?
NO
DO YOU HAVE A DIAGNOSTIC SIMULATOR?
YES
REFER TO DIAGNOSTIC SIMULATOR TEST PROCEDURE
NO
DOES BLUE CONNECTOR ON FIBER OPTIC CABLE HAVE RED LIGHT?
YES
CHECK IC BOX AND/OR REPLACE FIBER OPTIC CABLE
NO
REPLACE MPU BOARD


NO CALL OR AUTHORIZATION
ARE PRICES PROGRAMMED IN CONSOLE?
NO
PROGRAM CONSOLE
YES
IS THERE COMMUNICATION?
NO
ARE PUMPS SET IN AUTO?
NO
SWITCH PUMPS TO AUTO
YES
IS THERE COMMUNICATION?
DO YOU HAVE A DIAGNOSTIC SIMULATOR?
YES
REFER TO DIAGNOSTIC SIMULATOR TEST PROCEDURE
NO
NO
DOES BLUE CONNECTOR ON FIBER OPTIC CABLE HAVE RED LIGHT?
YES
CHECK IC BOX AND/OR REPLACE FIBER OPTIC CABLE
NO
REPLACE MPU BOARD


NO COUNT OR IMPROPER COUNT
IS PROPER PULSER RATIO PROGRAMMED IN CONSOLE?
NO
PROGRAM CONSOLE
YES
IS CONSOLE COUNTING PROPERLY?
NO
DO YOU HAVE A DIAGNOSTIC SIMULATOR?
YES
REFER TO DIAGNOSTIC SIMULATOR TEST PROCEDURE
NO
REPLACE MPU BOARD
IS CONSOLE COUNTING PROPERLY?
NO
CHECK IC BOX

Diagnostic Simulator

The Diagnostic Simulator aids the serviceman in testing the console for communication, and proper data and control signals. The Simulator visually shows authorization, slow and fast valve turn on, as well as pulse counts for each hose. The serviceman can verify prepay, preset, and postpay sales.

Test Procedure

1) The simulator can be used on battery power or A/C power. Be sure battery is properly charged by leaving A/C adapter plugged in the simulator, and an A/C wall outlet, for at least 10 hours. **NOTE:** Simulator power switch can be either in the ON or OFF position while charging battery. Also, the simulator will **not** work if A/C adapter is plugged in simulator but **not** plugged in wall outlet.

2) Disconnect fiber optic cable from back of console and connect cable from simulator. **CAUTION:** Be sure no transactions are currently running on console and make all reports needed before testing with simulator. The simulator will alter sales totals.

3) Turn on simulator. The simulator display should show **CODE 00** (if any number besides 00 appears on the display contact your local **ESCO Services Office** before continuing).

4) Select type of sale desired and enter it in the console (we recommend using prepay or preset sales).

5) As soon as hose is authorized the simulator display will switch to **Hose Status**. Check for authorization and slow valve turn on. There will be a delay of several seconds (depending on what your Slow Valve Delay is set at) before the slow valve comes on.

6) Press "**Flow**" key located on simulator and check for fast valve turn on. If Fast Valve Delay option, in console configuration, is turned On then console will wait for three to five pulses before turning on the fast valve.

7) Press "**Mode**" key located on simulator to display Pulse Count. Press "**Hose Sel**" key on simulator until desired hose is displayed. Depending on Pulser ratio for that hose, the simulator pulse count should be the same as the credit sale (or cash sale if Credit Option is not selected) on the console.

Example: If the Pulser ratio is set at 2 pulses per penny and the sale on the console is $2.00 then the simulator will display 4.00 .

Test Pump Card

The Test Pump Card actually consists of two separate tests. One side tests Communication from console to pump card. This test checks for proper data and control signals between console and pump card. The other side tests Hose operation from pump card to selected hose. This test checks for pump handle, reset complete, and pulse line signals from hose.

WARNING: TURN AUTO/OFF/MANUAL SWITCH OF DESIRED HOSE TO THE OFF POSITION BEFORE REMOVING AND INSERTING PUMP CONTROL BOARD OR TEST PUMP CARD. FAILURE TO DO SO MAY CAUSE ELECTRICAL SHORT, DAMAGE TO PUMP CARD AND MOTHER BOARD, AND ALSO MAY CAUSE PERSONAL INJURY.

Communication Test Procedure

1) Turn **Auto/Off/Manual** switch of desired hose number to **Off** position. Remove pump card and insert test pump card. Leave the switch in the **Off** position for this portion of the test.

2) Turn pump handle switch on test pump card to On position. A call signal should appear on the console for that particular hose number.

Test Pump Card (Continued)

3) Authorize hose on console. The Authorize LED on the test pump card should turn on. After a delay of a couple of seconds (depending on what the Slow Delay in the console is set at), the slow valve LED should turn on.

4) Turn flow switch to **On** position. If the Fast Delay option in the console is selected, the console will start counting slowly for a few seconds. Then the fast valve LED will turn on, and the console count will speed up. If the Fast Delay option is not selected, the fast valve LED will turn on along with the slow valve LED, then the console will start to count.

Hose Test Procedure

1) Turn **Auto/Off/Manual** switch of desired hose to **Off** position. Remove pump card and insert test pump card. Turn **Auto/Off/Manual** switch to **Auto** position for this portion of the test.

2) Lift pump handle on pump/dispenserof desired hose number. The call LED on the test pump card will turn on if pump call circuit is good.

3) Turn authorize switch to **On** position. The hose should reset, then the inuse LED will come on and the valves should open. This signifies that reset is complete.

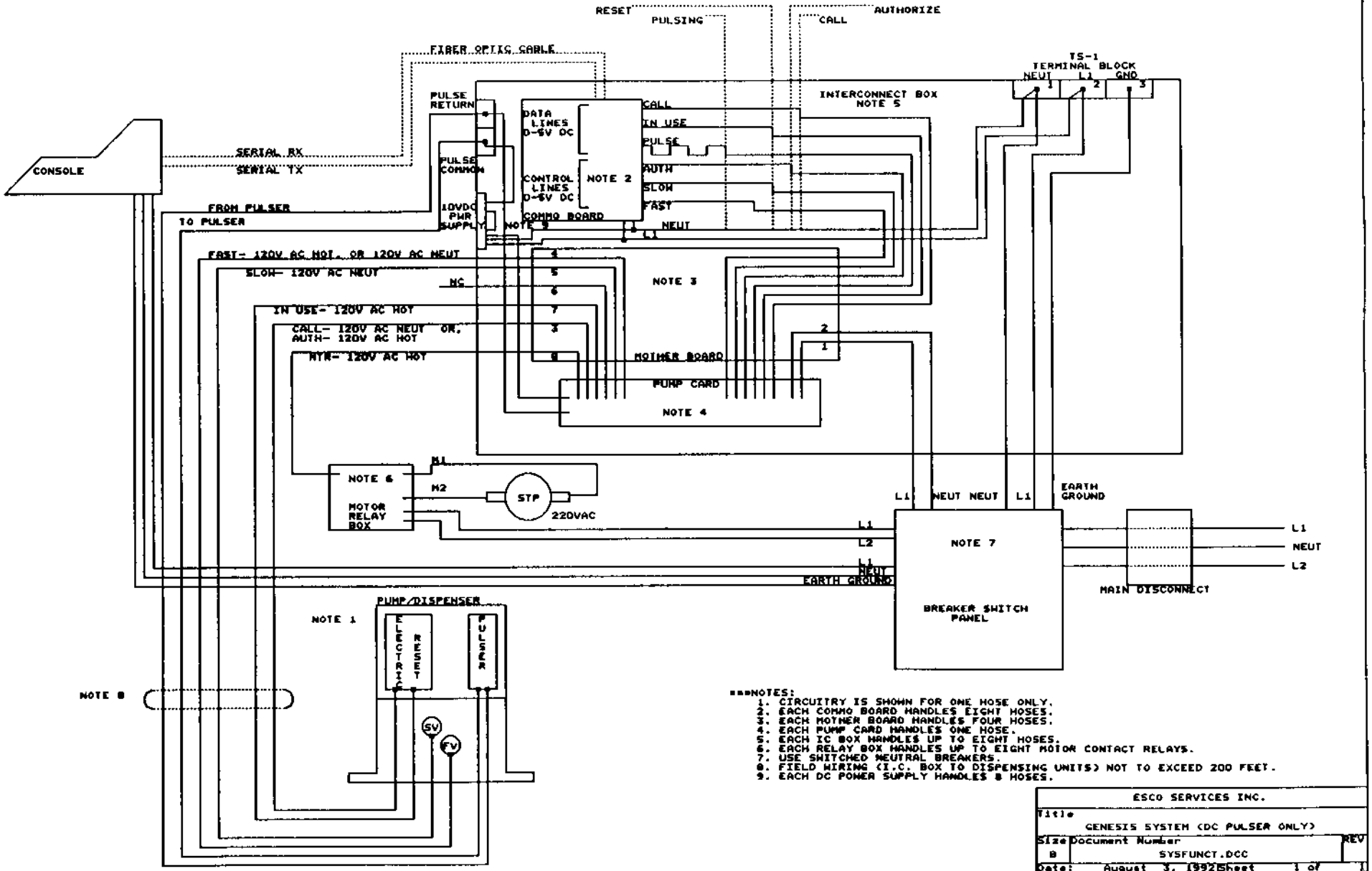
4) Dispense fuel. Pulse LED will flash while dispensing if pulser circuit is good. Note: pulse LED will not flash if system is a DC Pulsing system, this portion of the test can not be done for DC Pulsing systems.

FIELD WIRING INDEX

TYPE	WIRING CONFIGURATION			
	POSTPAY	PRESET/PREPAY	PRESET/PREPAY WITH SLOW CONTROL	PRESET/PREPAY W/SLOW & LIGHTS
SINGLE PUMP	6- #16 AWG 2- #12 AWG	7- #16 AWG 2- #12 AWG	8- #16 AWG 2- #12 AWG	10- #16 AWG 2- #12 AWG
DUAL ONE PRODUCT PUMP	11- #16 AWG 2- #12 AWG	13- #16 AWG 2- #12 AWG	15- #16 AWG 2- #12 AWG	17- #16 AWG 2- #12 AWG
DUAL TWO PRODUCT PUMP	11- #16 AWG 4- #12 AWG	13- #16 AWG 4- #12 AWG	15- #16 AWG 4- #12 AWG	17- #16 AWG 4- #12 AWG
SINGLE DISPENSER	6- #16 AWG	7- #16 AWG	9- #16 AWG	11- #16 AWG
DUAL ONE PRODUCT DISPENSER	11- #16 AWG	13- #16 AWG	15- #16 AWG	17- #16 AWG
DUAL TWO PRODUCT DISPENSER	11- #16 AWG	13- #16 AWG	15- #16 AWG	17- #16 AWG

NOTES:
1. ABOVE NUMBER OF WIRES DO NOT INCLUDE WIRES FOR EARTH GROUND OR SPARES.
2. SUBSTITUTING LARGER FOR SMALLER GAUGE WIRES IS ACCEPTABLE.
3. I.C. BOX TO DISPENSING UNIT WIRING IN EXCESS OF 100 FEET, USE NEXT LARGER GAUGE WIRE.
4. I.C. BOX TO DISPENSING UNIT WIRING NOT TO EXCEED RUNS OF 200 FEET UNDER ANY CONDITIONS.

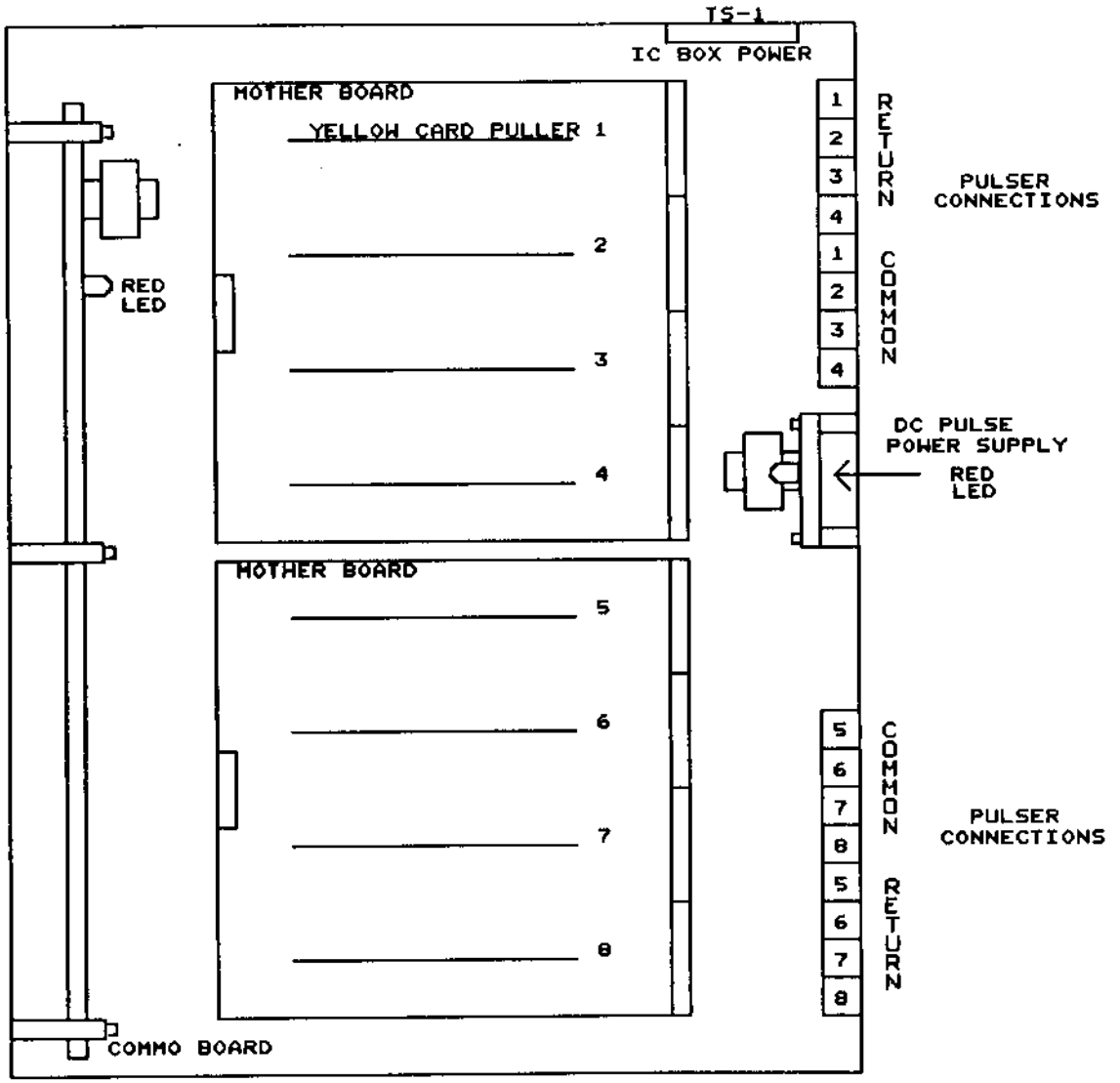
Title: FIELD WIRING CHART (DC COUNT ONLY)		
Size: A	Document Number: AWGCHART.DCC	REV
Date: April 18, 1991	Sheet 1 of 1	



***NOTES:

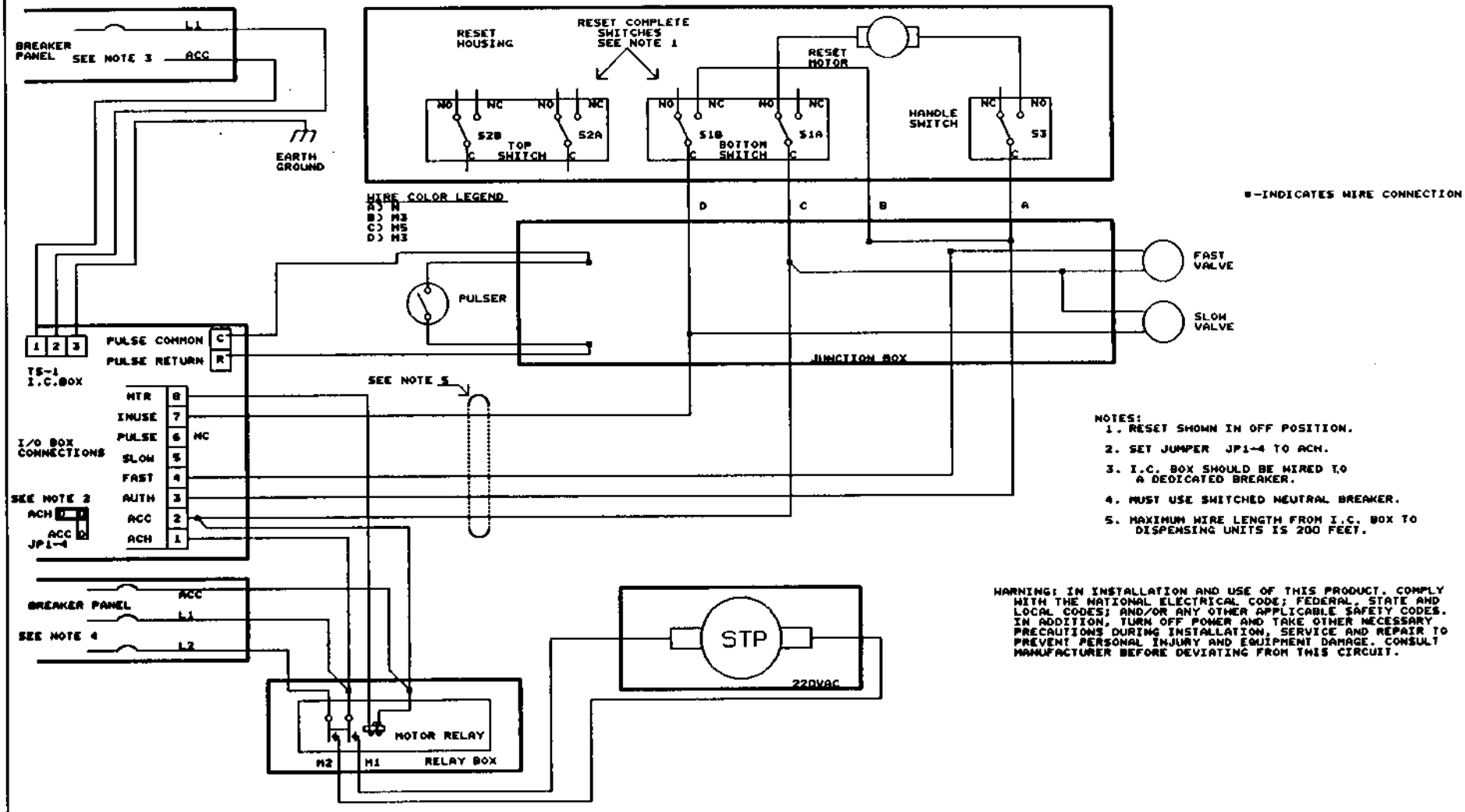
1. CIRCUITRY IS SHOWN FOR ONE HOSE ONLY.
2. EACH COMMO BOARD HANDLES EIGHT HOSES.
3. EACH MOTHER BOARD HANDLES FOUR HOSES.
4. EACH PUMP CARD HANDLES ONE HOSE.
5. EACH IC BOX HANDLES UP TO EIGHT HOSES.
6. EACH RELAY BOX HANDLES UP TO EIGHT MOTOR CONTACT RELAYS.
7. USE SWITCHED NEUTRAL BREAKERS.
8. FIELD WIRING (I.C. BOX TO DISPENSING UNITS) NOT TO EXCEED 200 FEET.
9. EACH DC POWER SUPPLY HANDLES 8 HOSES.

ESCO SERVICES INC.		
Title: GENESIS SYSTEM (DC PULSER ONLY)		
Size: B	Document Number: SYSFUNCT.DCC	REV:
Date: August 3, 1992	Sheet 1 of 1	



NOTE:FOR DC PULSE SYSTEM,
COMMO BOARD MUST HAVE RED LED.
PUMP CARDS MUST HAVE YELLOW CARD PULLERS.

Title: DC PULSE IC BOX (DC PULSE ONLY)		
Size: A	Document Number: ICBDCP.SHT	REV: A
Date: June 7, 1990	Sheet 1 of 1	

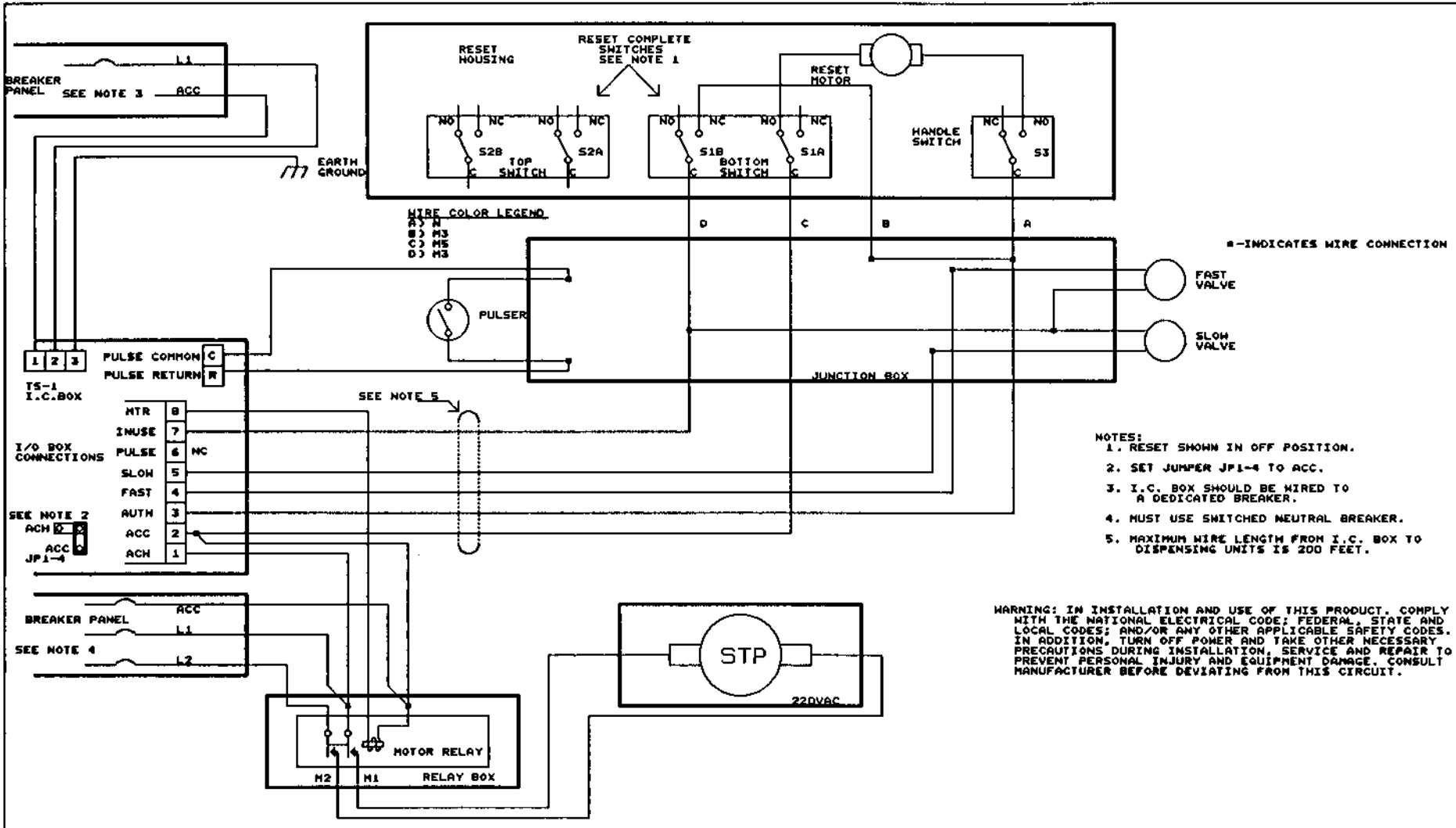


NOTES:

1. RESET SHOWN IN OFF POSITION.
2. SET JUMPER JP1-4 TO ACH.
3. I.C. BOX SHOULD BE WIRED TO A DEDICATED BREAKER.
4. MUST USE SWITCHED NEUTRAL BREAKER.
5. MAXIMUM WIRE LENGTH FROM I.C. BOX TO DISPENSING UNITS IS 200 FEET.

WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.

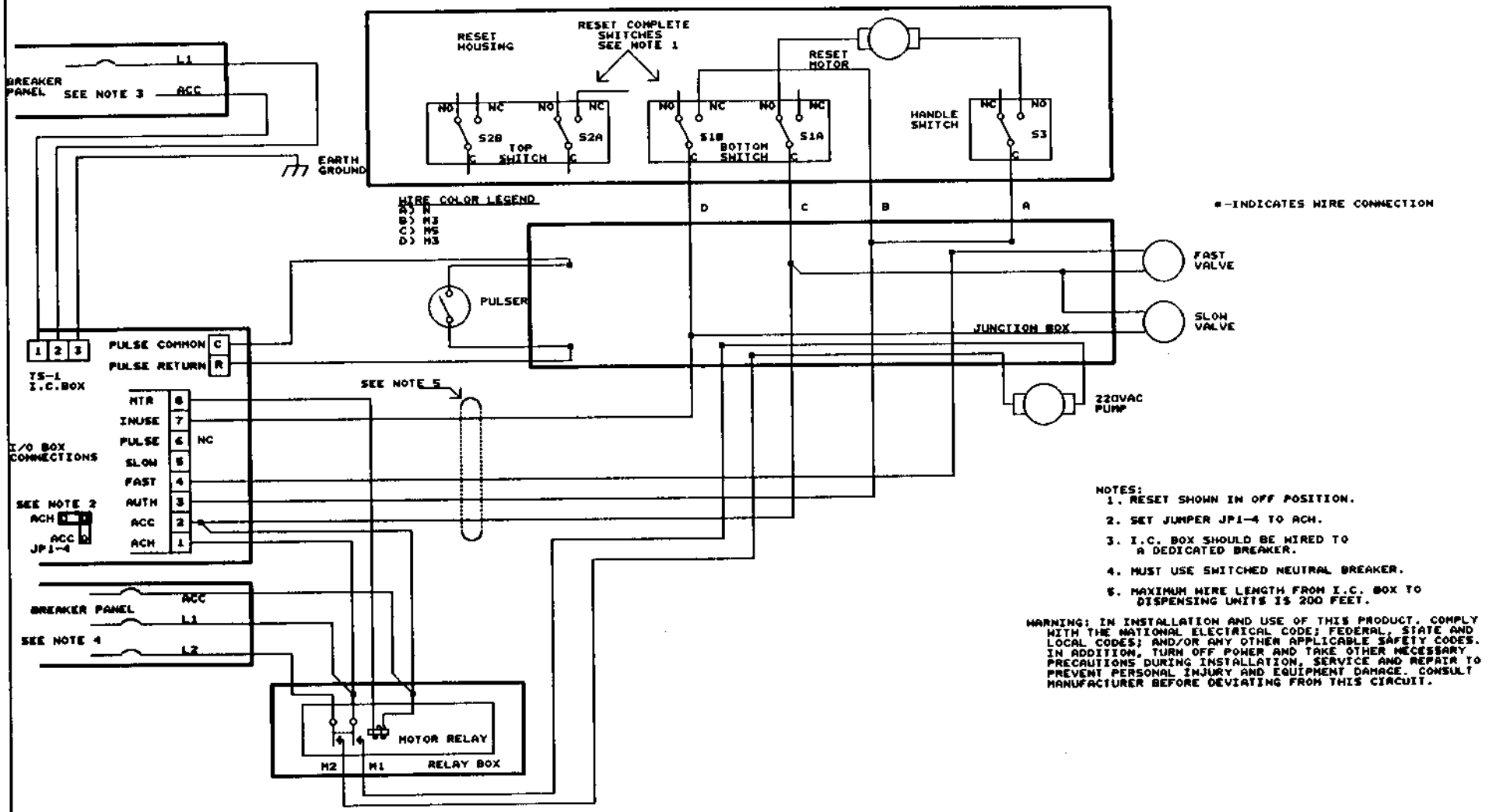
ESCO MFG. INC.		
Title: TYPICAL A.O. SMITH DISPENSER WIRING		
Size: B	Document Number: HO-0003	REV
Date: August 3, 1992	Sheet 1 of 1	



NOTES:
1. RESET SHOWN IN OFF POSITION.
2. SET JUMPER JP1-4 TO ACC.
3. I.C. BOX SHOULD BE WIRED TO A DEDICATED BREAKER.
4. MUST USE SWITCHED NEUTRAL BREAKER.
5. MAXIMUM WIRE LENGTH FROM I.C. BOX TO DISPENSING UNITS IS 200 FEET.

WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.

ESCO SERVICES INC.		
Title: A.O. SMITH DISPENSER WITH SLOW CONTROL		
Size: B	Document Number: WD-0003-A	REV
Date: August 3, 1992	Sheet 1 of 1	

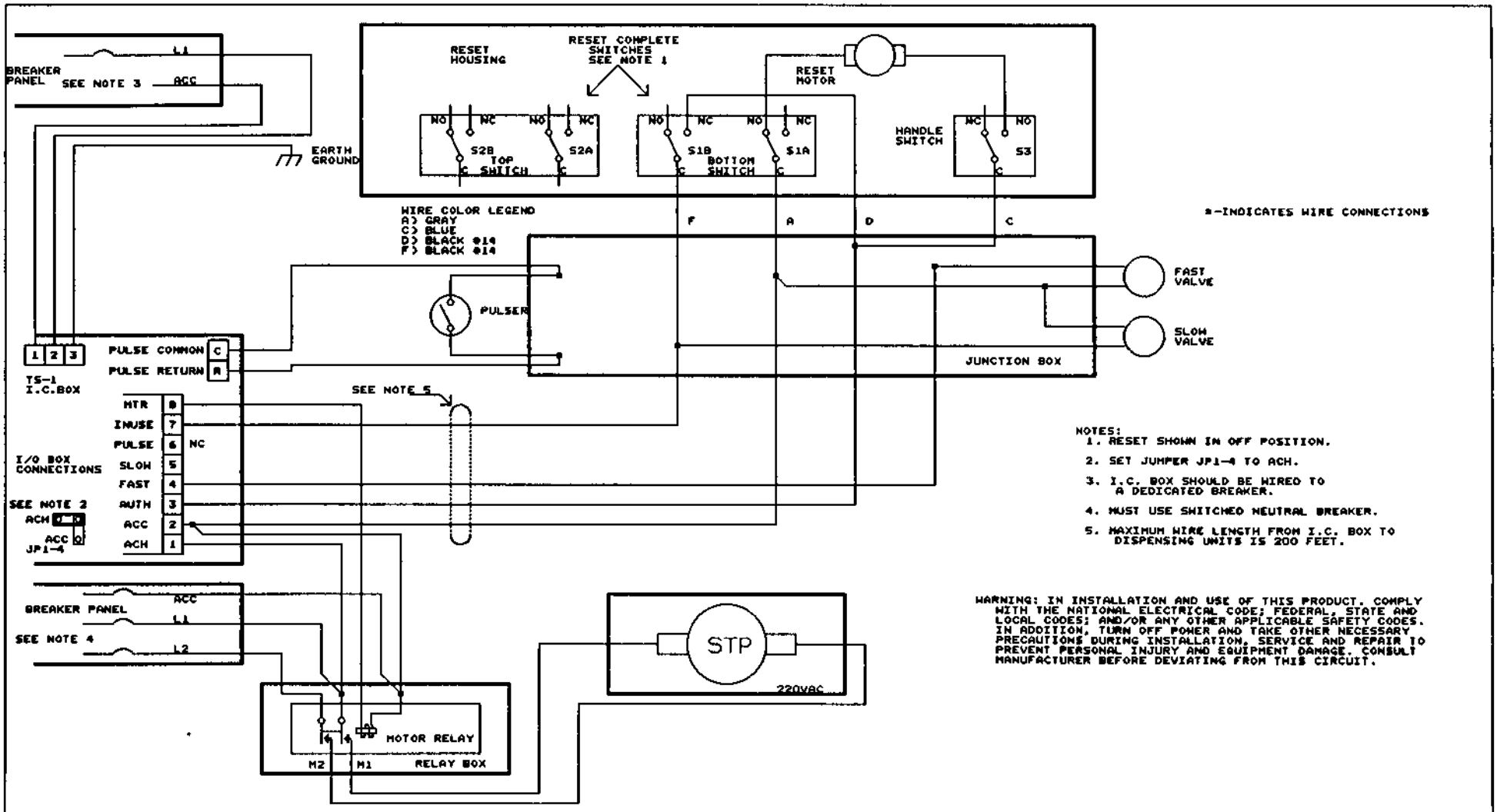


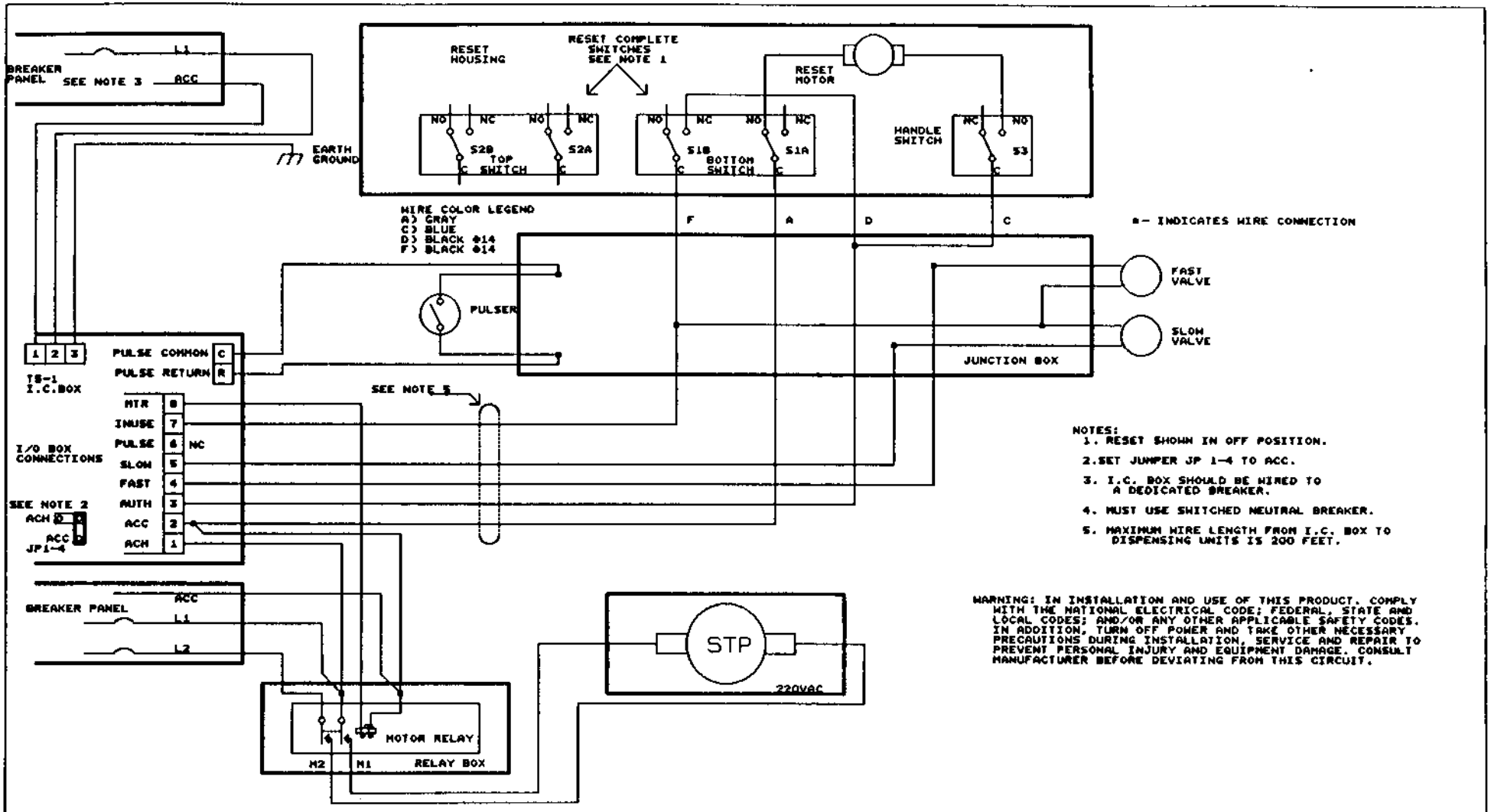
NOTES:

1. RESET SHOWN IN OFF POSITION.
2. SET JUMPER JP1-4 TO ACH.
3. I.C. BOX SHOULD BE WIRED TO A DEDICATED BREAKER.
4. MUST USE SWITCHED NEUTRAL BREAKER.
5. MAXIMUM WIRE LENGTH FROM I.C. BOX TO DISPENSING UNITS IS 200 FEET.

WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.

ESCO SERVICES INC.		
Title: TYPICAL A.O. SMITH 220VAC PUMP WIRING		
Size: B	Document Number: WD-0003-B	REV
Date: August 3, 1992	Sheet 1 of 1	

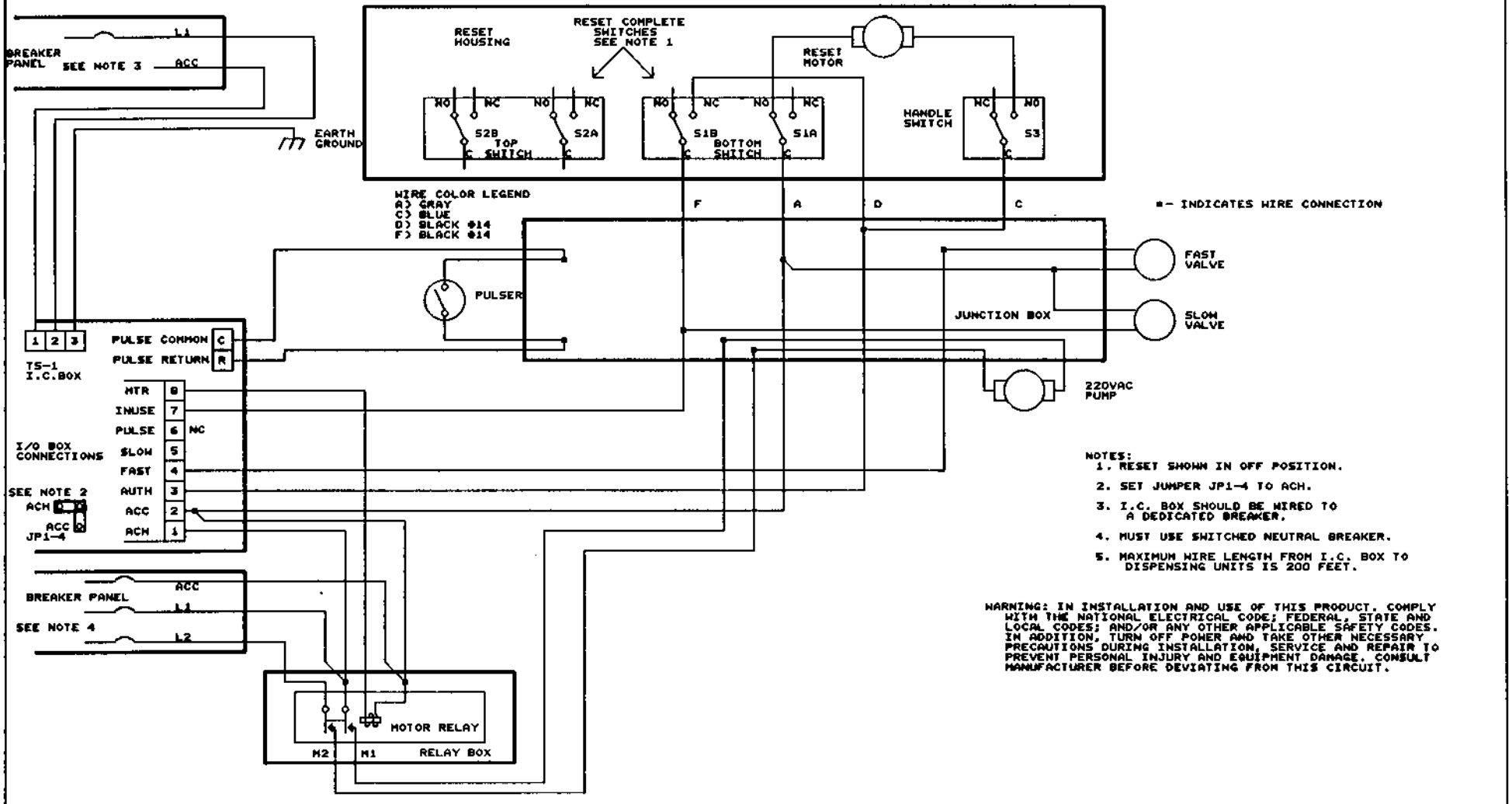

BREAKER PANEL
SEE NOTE 3
L1
ACC
EARTH GROUND
RESET HOUSING
RESET COMPLETE SWITCHES SEE NOTE 1
RESET MOTOR
NO NC NO NC
S2B TOP SWITCH
S2A
S1B BOTTOM SWITCH
S1A
HANDLE SWITCH
NC NO
S3
C
WIRE COLOR LEGEND
A) GRAY
C) BLUE
D) BLACK #14
F) BLACK #14
F
A
D
C
*-INDICATES WIRE CONNECTIONS
PULSER
FAST VALVE
SLOW VALVE
JUNCTION BOX
1 2 3
TS-1 I.C.BOX
PULSE COMMON C
PULSE RETURN A
SEE NOTE 5
HTR B
INUSE 7
PULSE 6 NC
SLOW 5
FAST 4
AUTH 3
ACC 2
ACH 1
I/O BOX CONNECTIONS
SEE NOTE 2
ACH
ACC
JP1-4
BREAKER PANEL
SEE NOTE 4
ACC
L1
L2
STP
220VAC
MOTOR RELAY
M2
M1
RELAY BOX
NOTES:
1. RESET SHOWN IN OFF POSITION.
2. SET JUMPER JP1-4 TO ACH.
3. I.C. BOX SHOULD BE WIRED TO A DEDICATED BREAKER.
4. MUST USE SWITCHED NEUTRAL BREAKER.
5. MAXIMUM WIRE LENGTH FROM I.C. BOX TO DISPENSING UNITS IS 200 FEET.
WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.
ESCO SERVICES INC.
Title
TYPICAL BENNETT DISPENSER WIRING
Size B
Document Number WD-0001
REV
Date: August 4, 1992 Sheet 1 of 1



NOTES:
1. RESET SHOWN IN OFF POSITION.
2. SET JUMPER JP 1-4 TO ACC.
3. I.C. BOX SHOULD BE WIRED TO A DEDICATED BREAKER.
4. MUST USE SWITCHED NEUTRAL BREAKER.
5. MAXIMUM WIRE LENGTH FROM I.C. BOX TO DISPENSING UNITS IS 200 FEET.

WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.

ESCO SERVICES INC.		
Title: BENNETT DISPENSER WITH SLOW CONTROL		
Size: B	Document Number: WD-0001-A	REV
Date: August 4, 1992	Sheet 1 of 1	



NOTES:
1. RESET SHOWN IN OFF POSITION.
2. SET JUMPER JP1-4 TO ACH.
3. I.C. BOX SHOULD BE WIRED TO A DEDICATED BREAKER.
4. MUST USE SWITCHED NEUTRAL BREAKER.
5. MAXIMUM WIRE LENGTH FROM I.C. BOX TO DISPENSING UNITS IS 200 FEET.

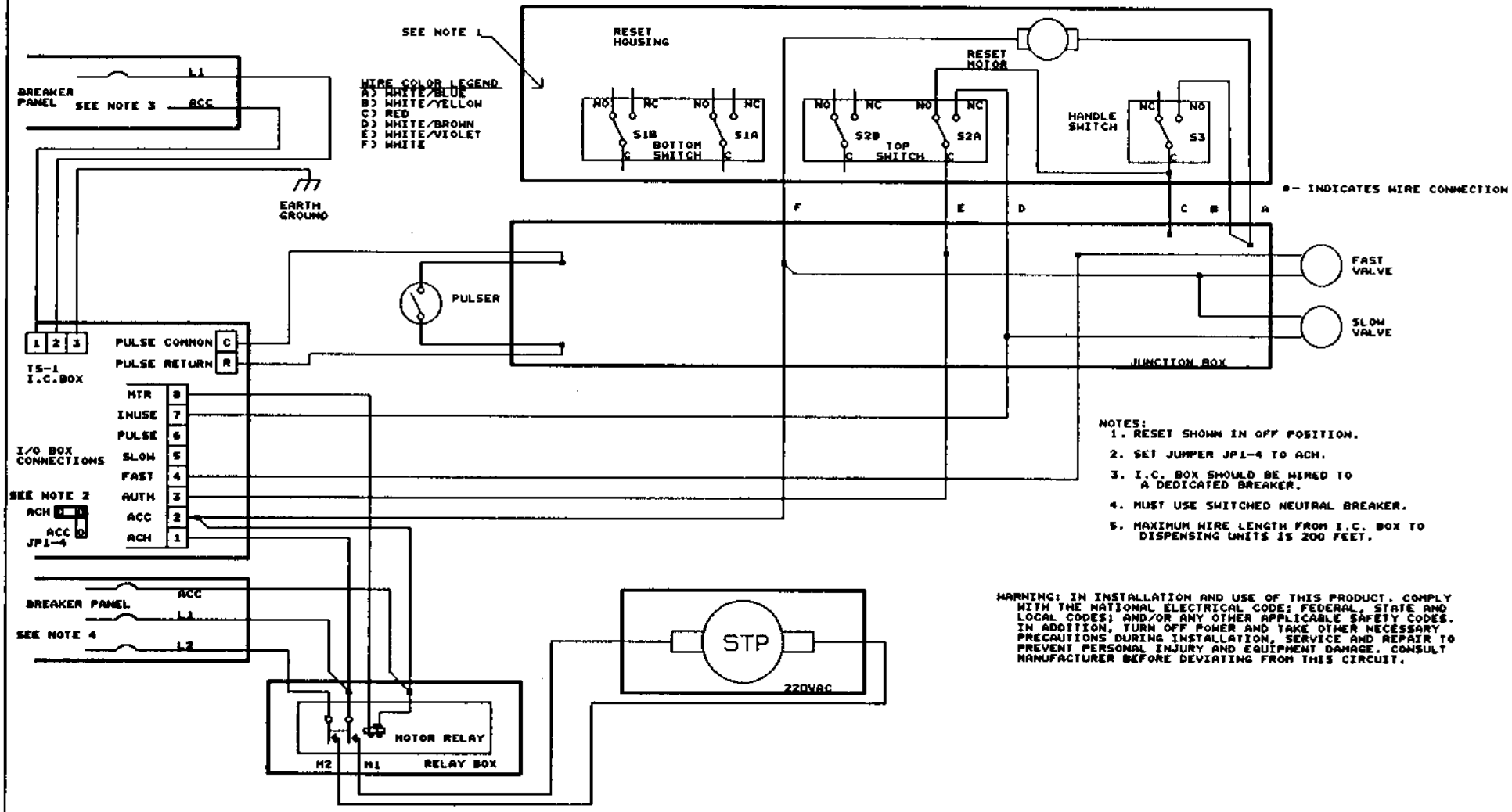
WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.

ESCO SERVICES INC.

Title: TYPICAL BENNETT 220VAC PUMP WIRING

Size	Document Number	REV
B	WD-0001-B	

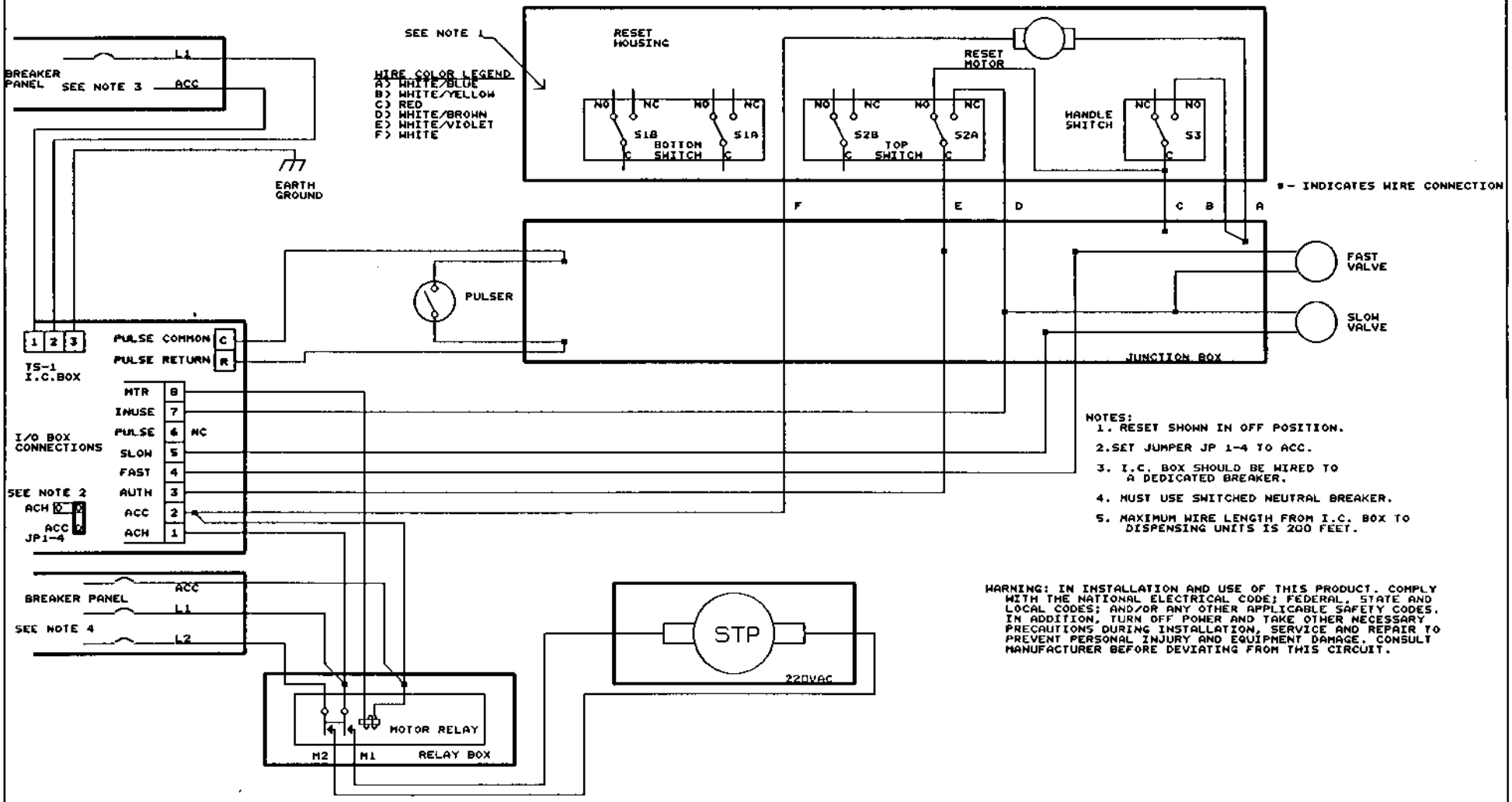
Date: August 4, 1992 Sheet 1 of 1



NOTES:
1. RESET SHOWN IN OFF POSITION.
2. SET JUMPER JP1-4 TO ACH.
3. I.C. BOX SHOULD BE WIRED TO A DEDICATED BREAKER.
4. MUST USE SWITCHED NEUTRAL BREAKER.
5. MAXIMUM WIRE LENGTH FROM I.C. BOX TO DISPENSING UNITS IS 200 FEET.

WARNING! IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.

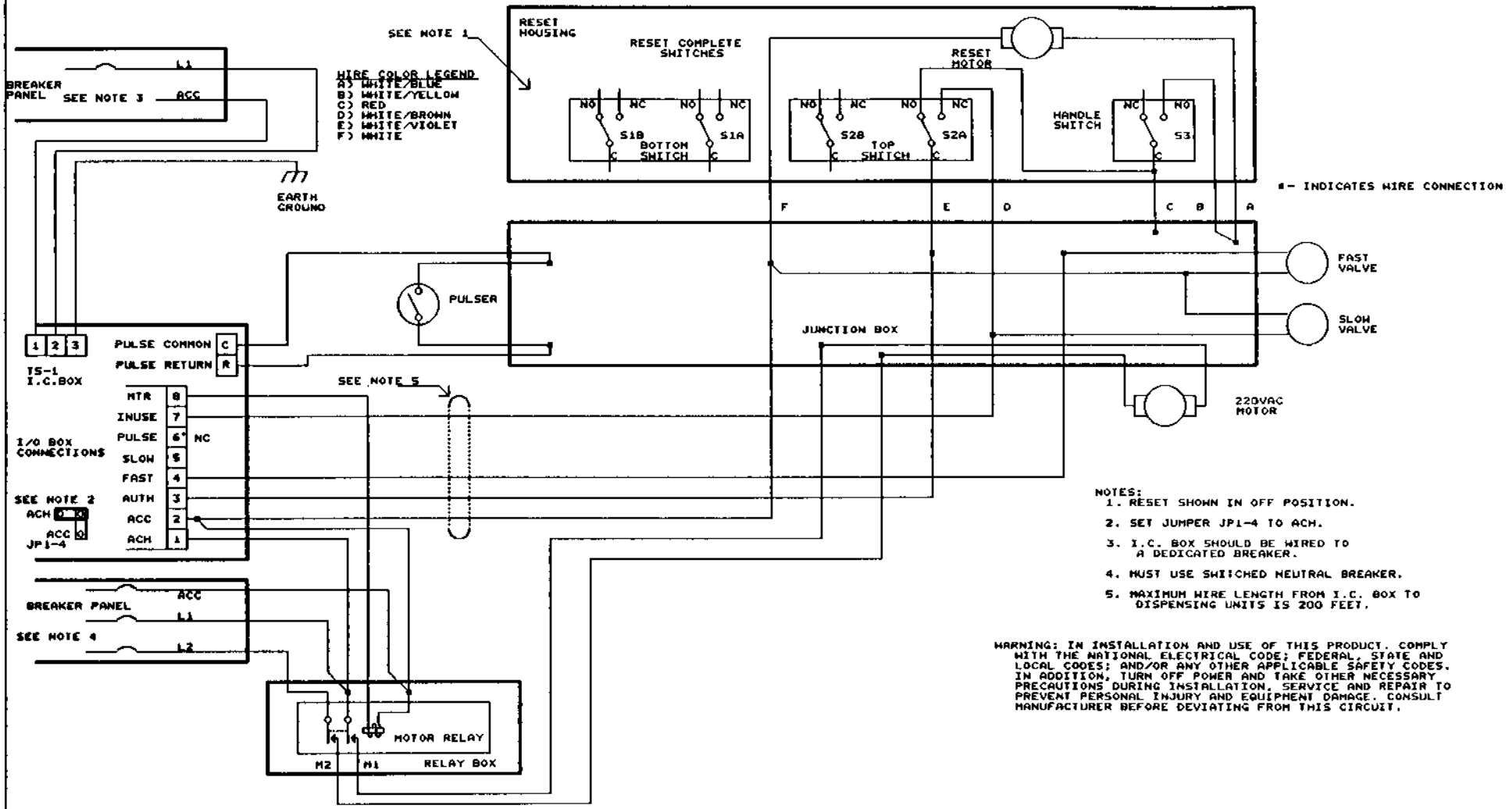
ESCO SERVICES INC.		
Title: TYPICAL WAYNE DISPENSER WIRING		
Size: B	Document Number: WD-0002	REV
Date: August 4, 1992	Sheet 1 of 1	



NOTES:
1. RESET SHOWN IN OFF POSITION.
2. SET JUMPER JP 1-4 TO ACC.
3. I.C. BOX SHOULD BE WIRED TO A DEDICATED BREAKER.
4. MUST USE SWITCHED NEUTRAL BREAKER.
5. MAXIMUM WIRE LENGTH FROM I.C. BOX TO DISPENSING UNITS IS 200 FEET.

WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.

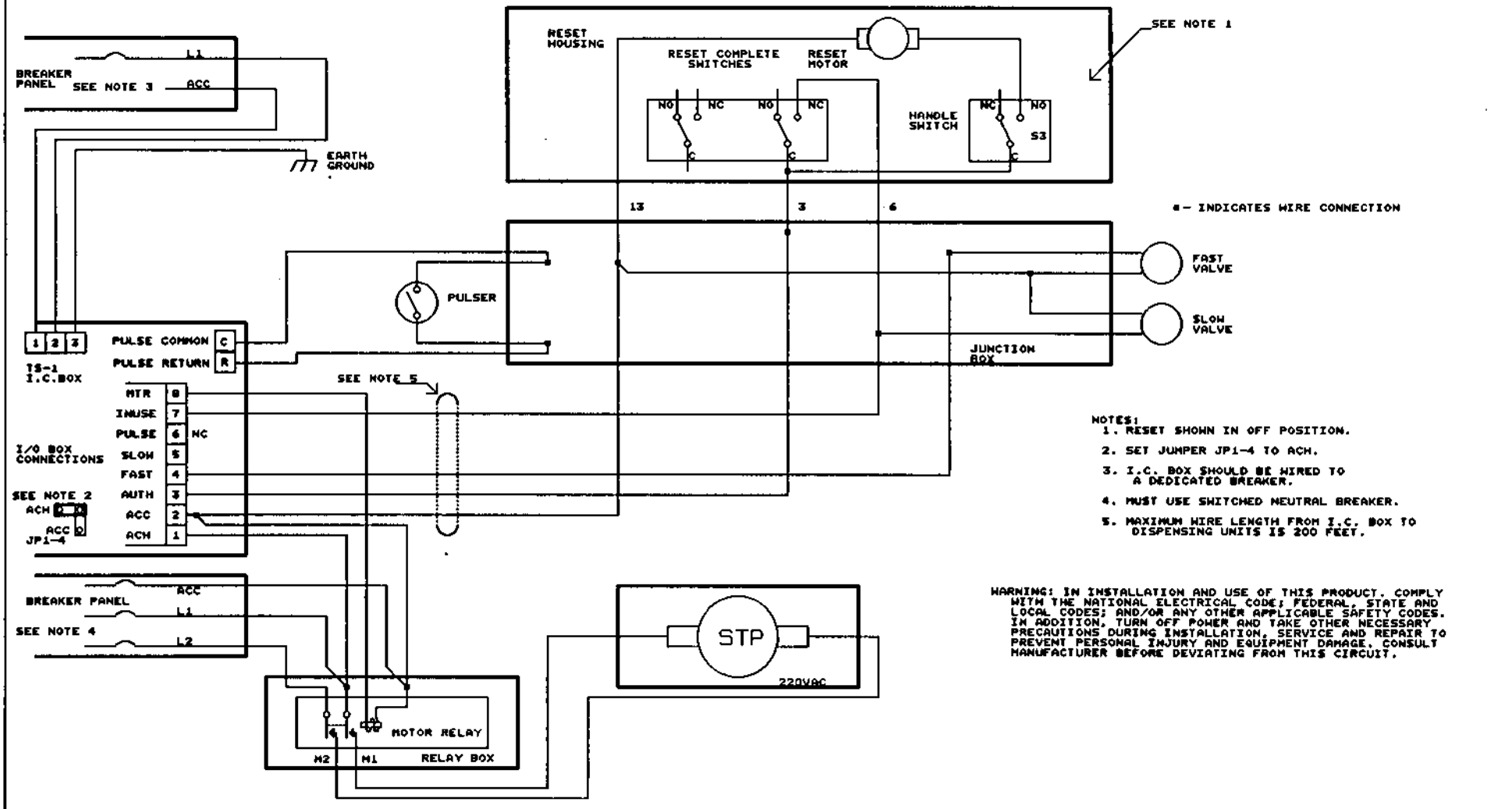
ESCO SERVICES INC.		
Title: WAYNE DISPENSER WITH SLOW CONTROL		
Size: B	Document Number: WD-0002-A	REV
Date: August 4, 1992	Sheet 1 of 1	



NOTES:
1. RESET SHOWN IN OFF POSITION.
2. SET JUMPER JP1-4 TO ACH.
3. I.C. BOX SHOULD BE WIRED TO A DEDICATED BREAKER.
4. MUST USE SWITCHED NEUTRAL BREAKER.
5. MAXIMUM WIRE LENGTH FROM I.C. BOX TO DISPENSING UNITS IS 200 FEET.

WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.

ESCO SERVICES INC.		
Title: TYPICAL WAYNE 220VAC PUMP WIRING		
Size: B	Document Number: WD-0002-B	REV:
Date: August 4, 1992	Sheet 1 of 1	

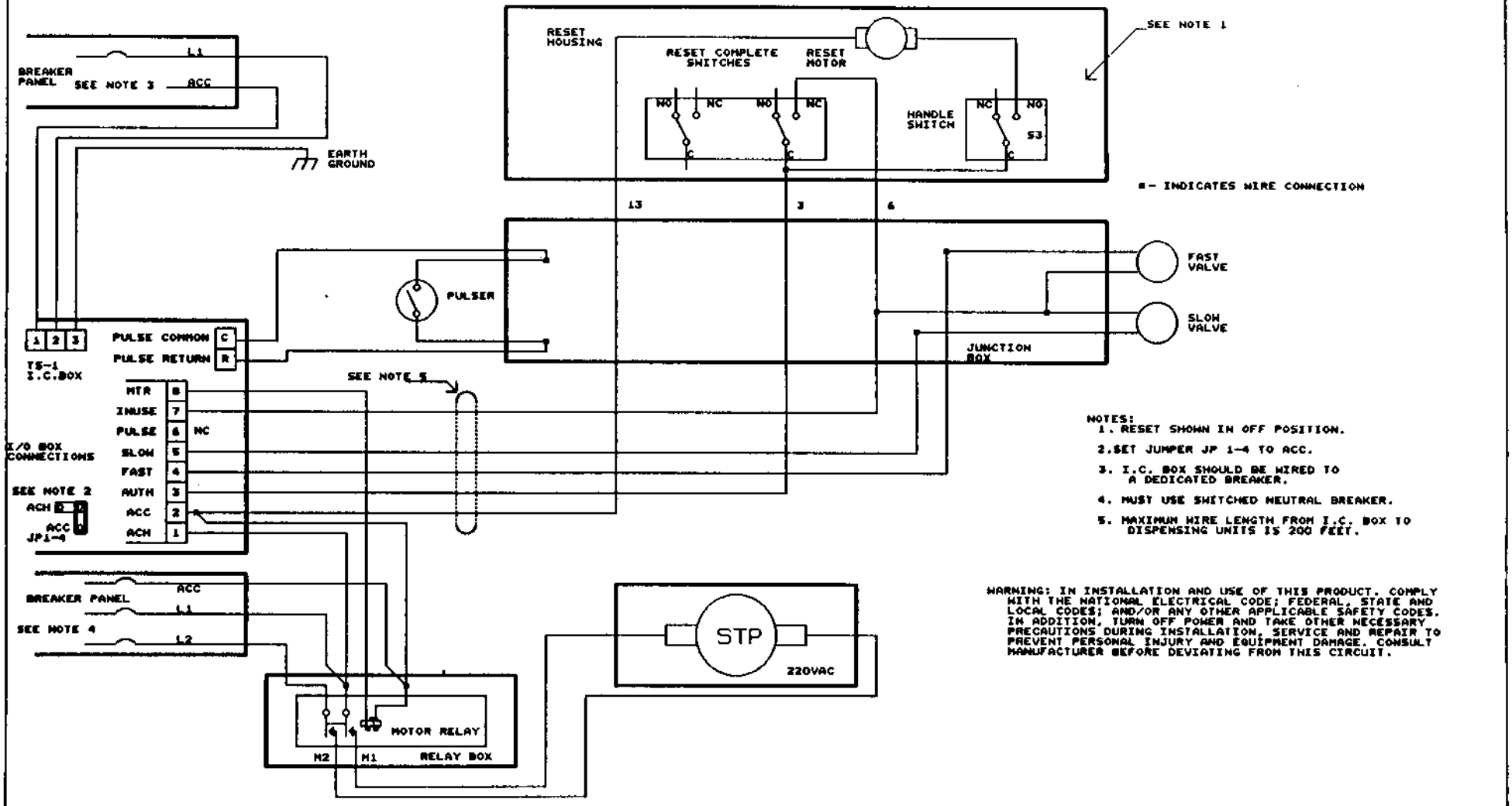


NOTES:

1. RESET SHOWN IN OFF POSITION.
2. SET JUMPER JP1-4 TO ACH.
3. I.C. BOX SHOULD BE WIRED TO A DEDICATED BREAKER.
4. MUST USE SWITCHED NEUTRAL BREAKER.
5. MAXIMUM WIRE LENGTH FROM I.C. BOX TO DISPENSING UNITS IS 200 FEET.

WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.

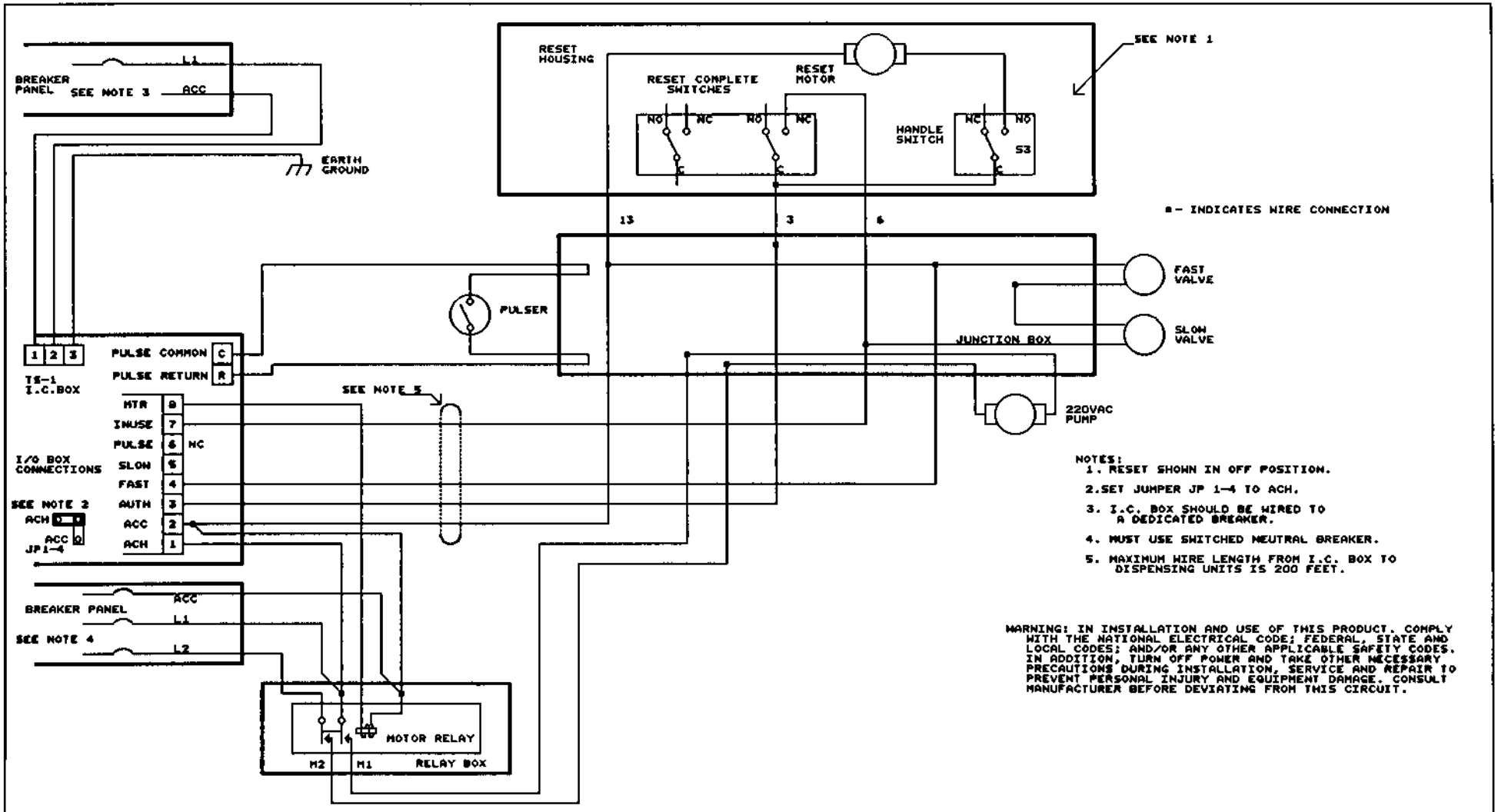
ESCO SERVICES INC.		
Title: TYPICAL GILBARCO DISPENSER WIRING		
Size: B	Document Number: HD-0004	REV
Date: August 6, 1992	Sheet 1 of 1	



NOTES:
1. RESET SHOWN IN OFF POSITION.
2. SET JUMPER JP 1-4 TO ACC.
3. I.C. BOX SHOULD BE WIRED TO A DEDICATED BREAKER.
4. MUST USE SWITCHED NEUTRAL BREAKER.
5. MAXIMUM WIRE LENGTH FROM I.C. BOX TO DISPENSING UNITS IS 200 FEET.

WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.

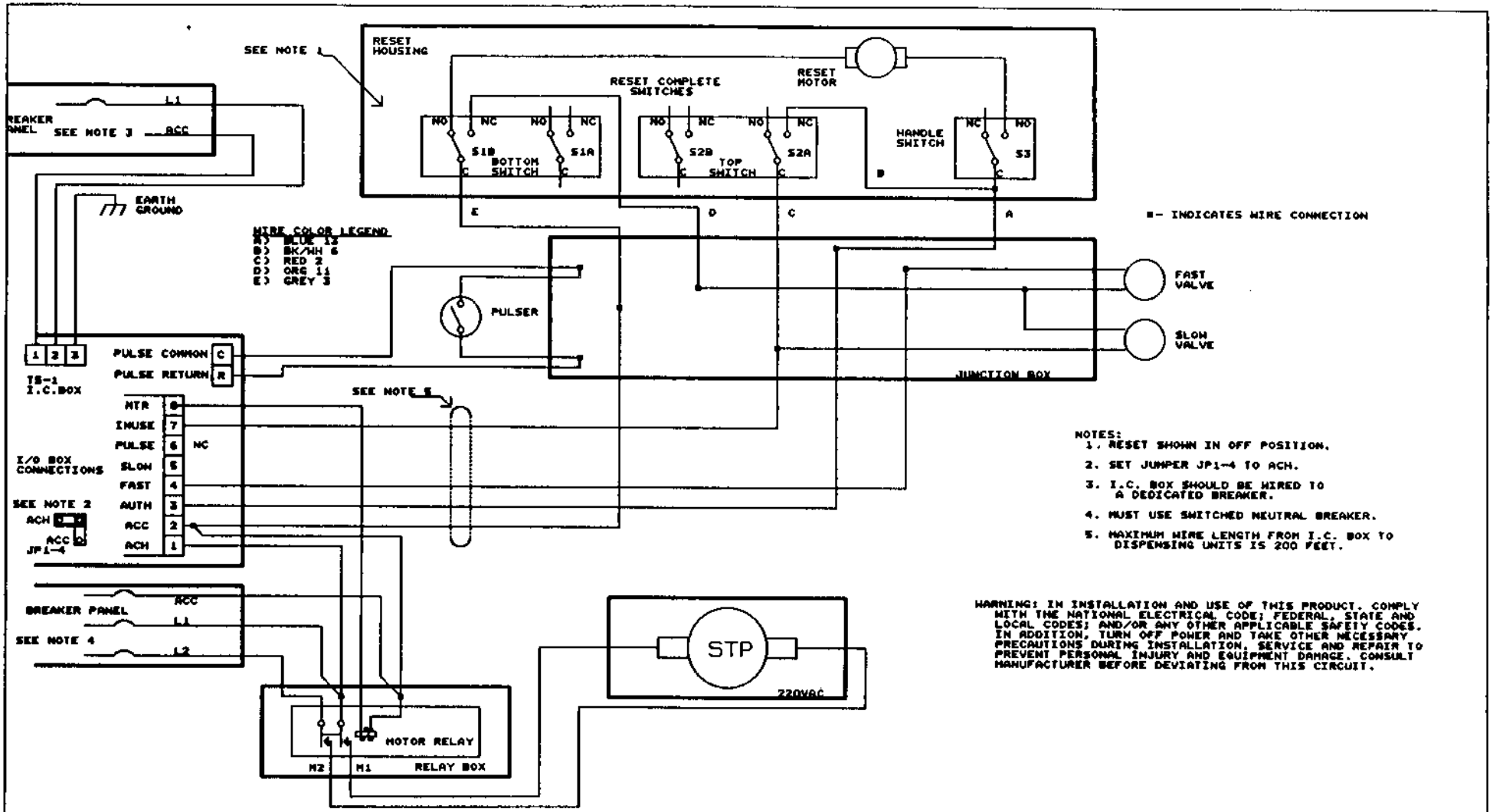
ESCO SERVICES INC.		
Title: GILBARCO DISPENSER WITH SLOW CONTROL		
Size: B	Document Number: HD-0004-A	REV
Date: August 6, 1992	Sheet: 1 of 1	

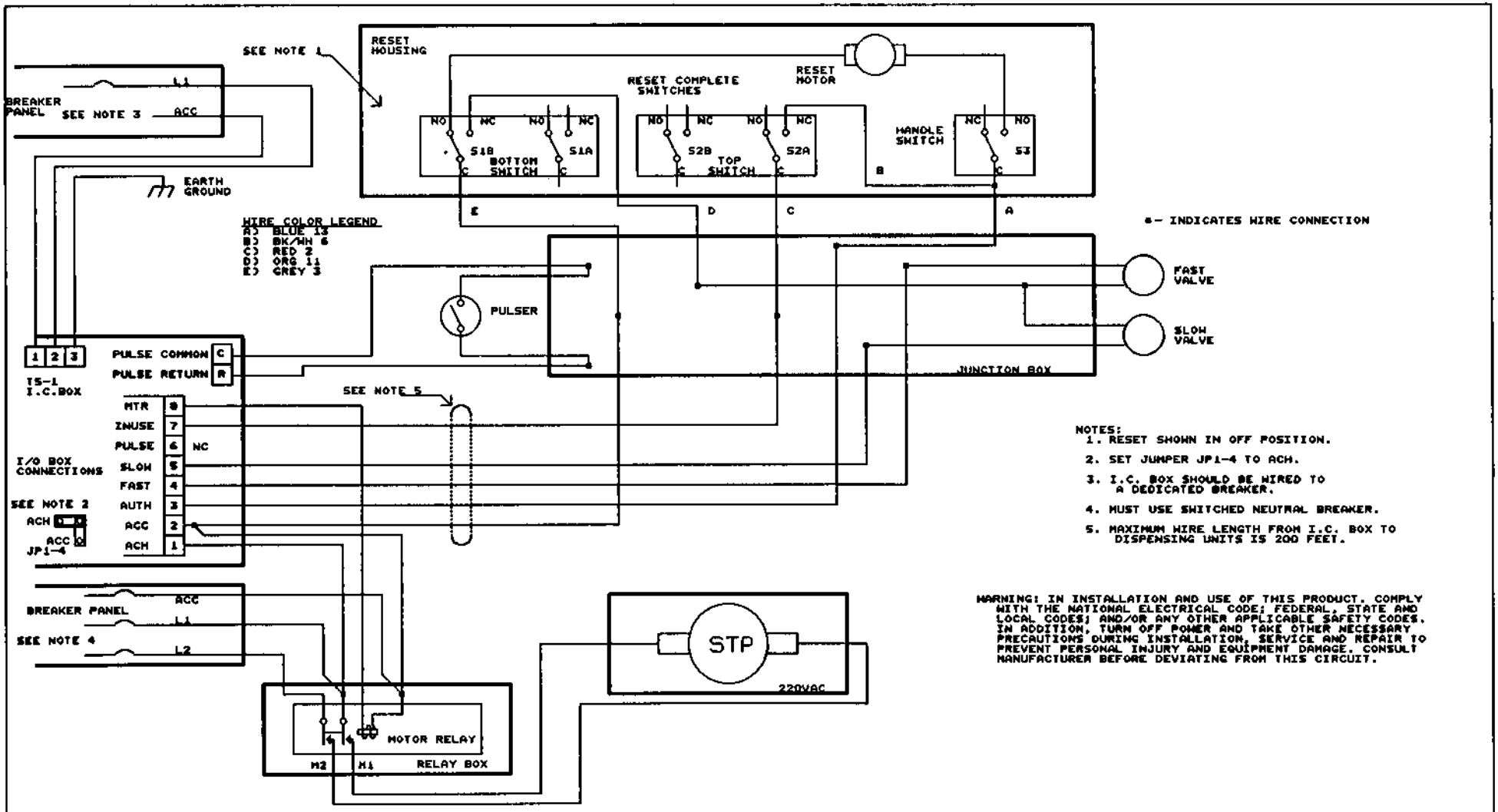


NOTES:
1. RESET SHOWN IN OFF POSITION.
2. SET JUMPER JP 1-4 TO ACH.
3. I.C. BOX SHOULD BE WIRED TO A DEDICATED BREAKER.
4. MUST USE SWITCHED NEUTRAL BREAKER.
5. MAXIMUM WIRE LENGTH FROM I.C. BOX TO DISPENSING UNITS IS 200 FEET.

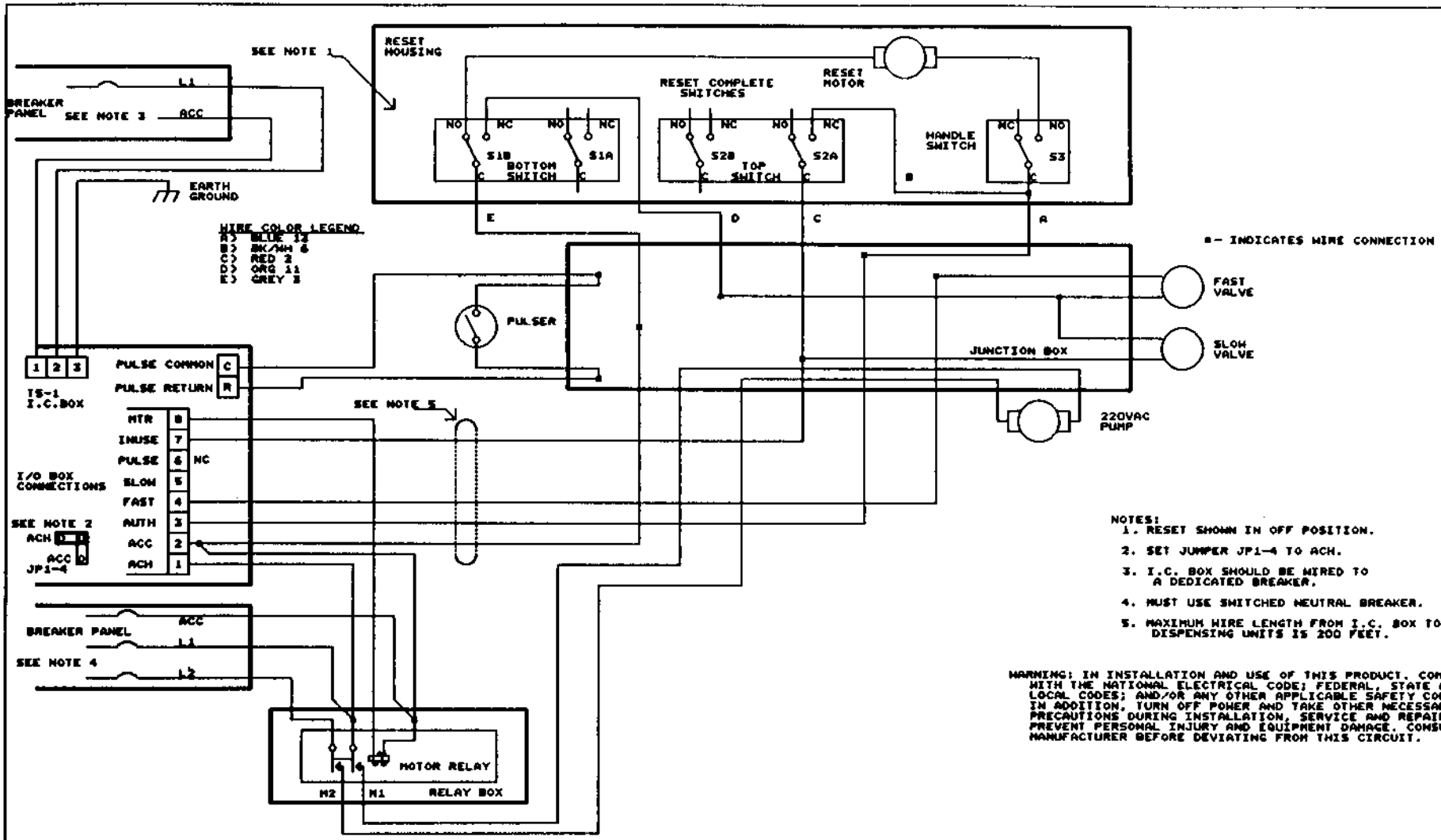
WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.

ESCO SERVICES INC.		
Title: TYPICAL GILBARCO 220VAC PUMP WIRING		
Size: B	Document Number: WD-0004-B	REV
Date: August 6, 1992	Sheet 1 of 1	


SEE NOTE 1
RESET HOUSING
RESET COMPLETE SWITCHES
RESET MOTOR
HANDLE SWITCH
S1B BOTTOM SWITCH
S1A
S2B TOP SWITCH
S2A
S3
NO NC
C
B
E D C A
EARTH GROUND
L1
ACC
SEE NOTE 3
WIRE COLOR LEGEND
A) BLUE 12
B) BK/WH 6
C) RED 2
D) ORG 11
E) GREY 3
PULSER
FAST VALVE
SLOW VALVE
JUNCTION BOX
■- INDICATES WIRE CONNECTION
1 2 3
IS-1 I.C.BOX
PULSE COMMON C
PULSE RETURN R
SEE NOTE 5
I/O BOX CONNECTIONS
MTR 8
INUSE 7
PULSE 6
SLOW 5
FAST 4
AUTH 3
ACC 2
ACH 1
NC
SEE NOTE 2
ACH
ACC
JP1-4
BREAKER PANEL
SEE NOTE 4
L1
L2
STP
220VAC
MOTOR RELAY
M2 M1 RELAY BOX
NOTES:
1. RESET SHOWN IN OFF POSITION.
2. SET JUMPER JP1-4 TO ACH.
3. I.C. BOX SHOULD BE WIRED TO A DEDICATED BREAKER.
4. MUST USE SWITCHED NEUTRAL BREAKER.
5. MAXIMUM WIRE LENGTH FROM I.C. BOX TO DISPENSING UNITS IS 200 FEET.
WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.
ESCO SERVICES INC.
Title
TYPICAL S/H DISPENSER WIRING
Size B
Document Number HD-0006
REV
Date: August 10, 1992
Sheet 1 of 1



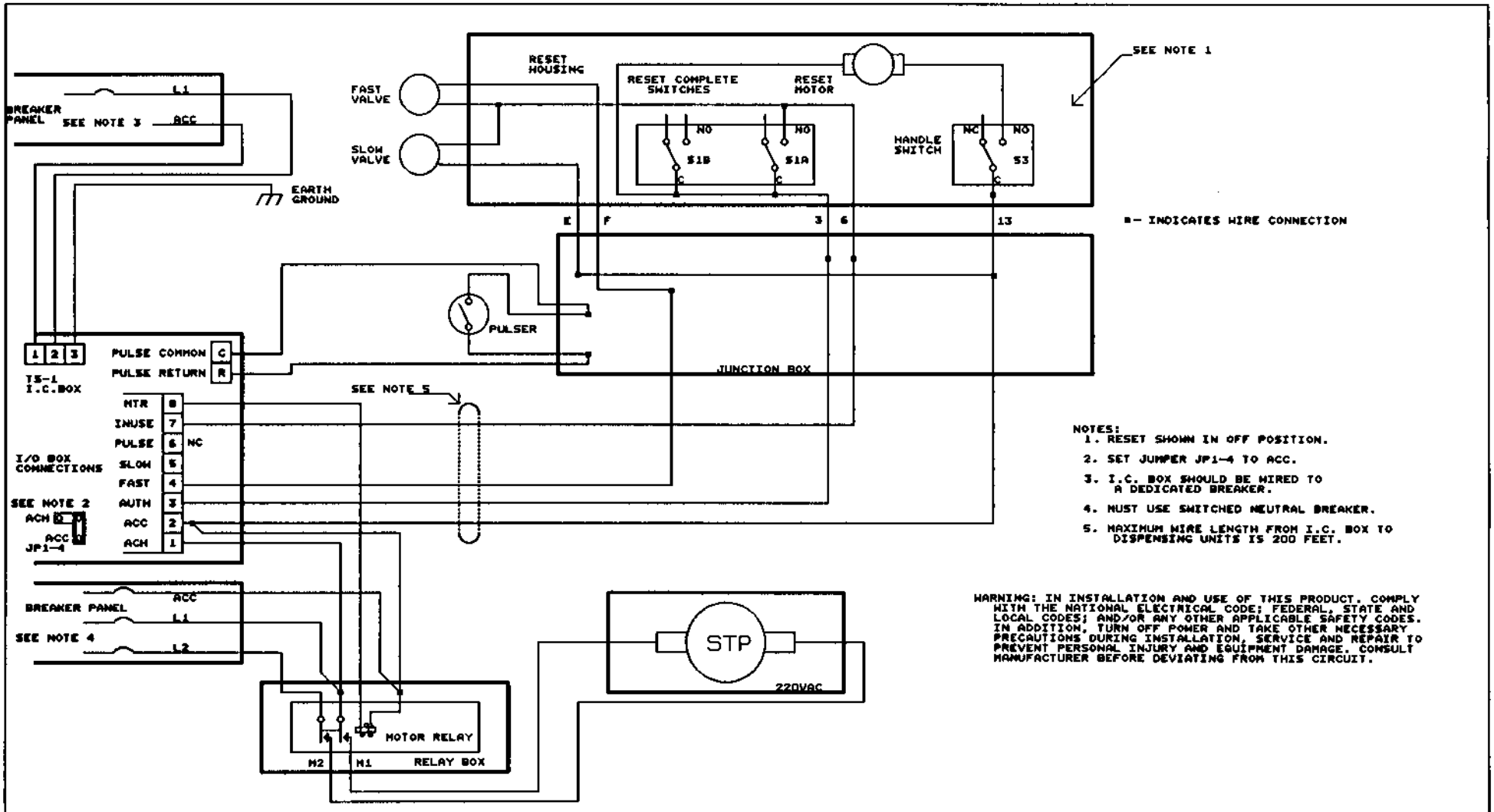
ESCO SERVICES INC.		
Title: S/N DISPENSER WITH SLOW CONTROL		
Size: B	Document Number: HD-0006-A	REV
Date: August 10, 1992	Sheet 1 of 1	



NOTES:
1. RESET SHOWN IN OFF POSITION.
2. SET JUMPER JP1-4 TO ACH.
3. I.C. BOX SHOULD BE WIRED TO A DEDICATED BREAKER.
4. MUST USE SWITCHED NEUTRAL BREAKER.
5. MAXIMUM WIRE LENGTH FROM I.C. BOX TO DISPENSING UNITS IS 200 FEET.

WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.

ESCO SERVICES INC.		
Title: TYPICAL S/M 220VAC PUMP WIRING		
Size: B	Document Number: MD-0006-B	REV
Date: August 10, 1992	Sheet 1 of 1	

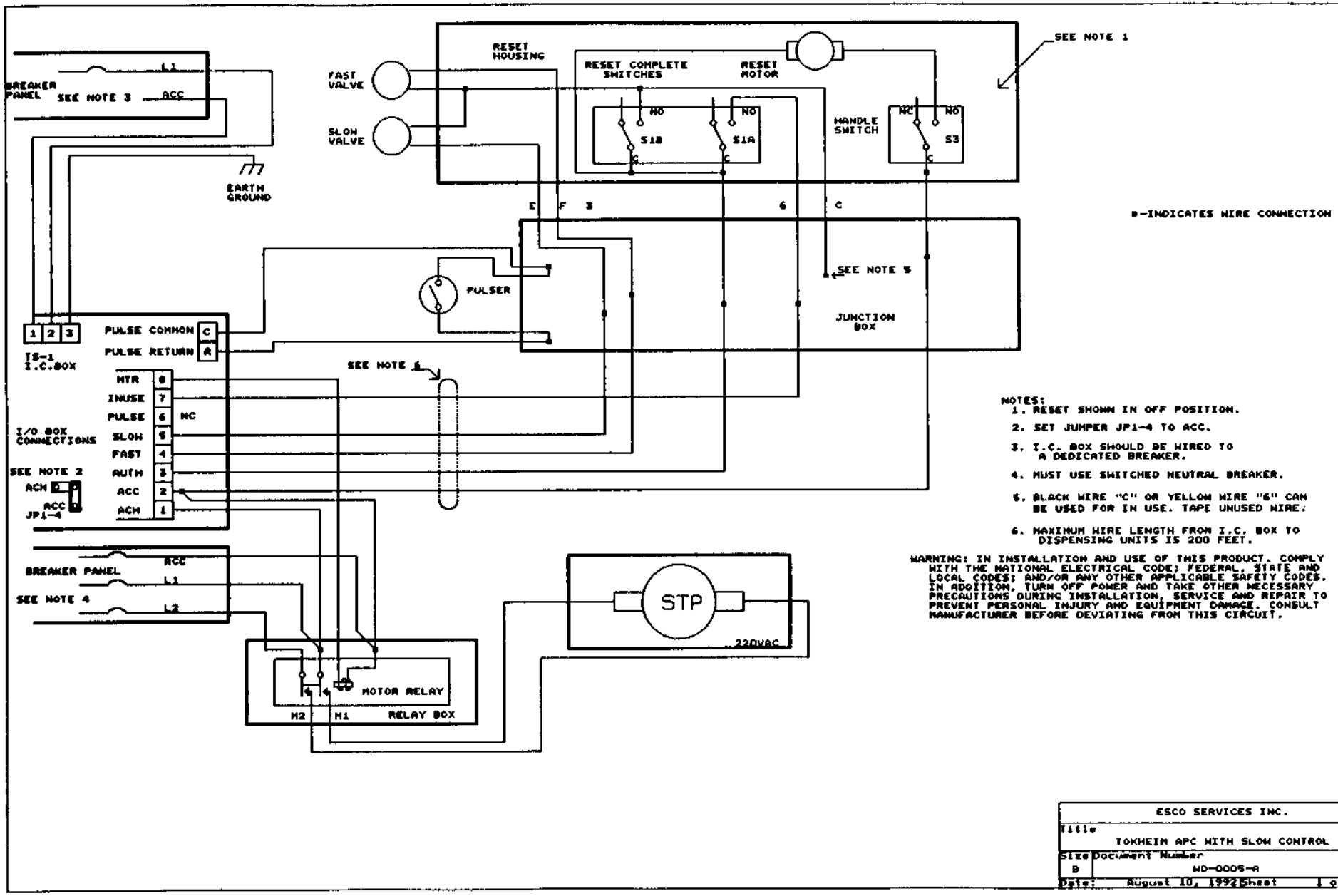


NOTES:

1. RESET SHOWN IN OFF POSITION.
2. SET JUMPER JP1-4 TO ACC.
3. I.C. BOX SHOULD BE WIRED TO A DEDICATED BREAKER.
4. MUST USE SWITCHED NEUTRAL BREAKER.
5. MAXIMUM WIRE LENGTH FROM I.C. BOX TO DISPENSING UNITS IS 200 FEET.

WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.

ESCO SERVICES INC.		
Title: TYPICAL TOKHEIM DISPENSER WIRING		
Size: B	Document Number: WD-0005	REV
Date: August 10, 1992	Sheet 1 of 1	



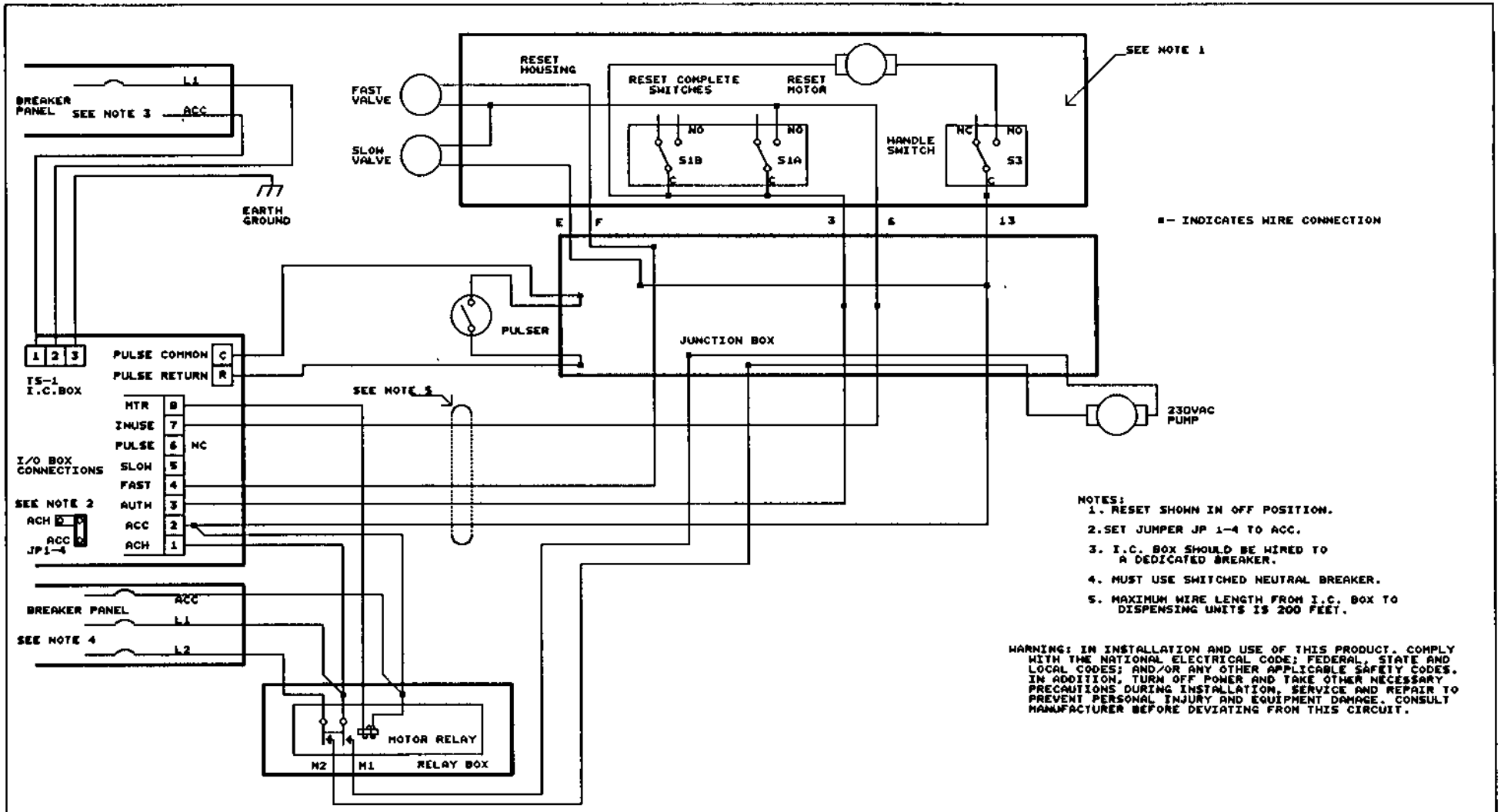
B-INDICATES WIRE CONNECTION

NOTES:

1. RESET SHOWN IN OFF POSITION.
2. SET JUMPER JP1-4 TO ACC.
3. I.C. BOX SHOULD BE WIRED TO A DEDICATED BREAKER.
4. MUST USE SWITCHED NEUTRAL BREAKER.
5. BLACK WIRE "C" OR YELLOW WIRE "6" CAN BE USED FOR IN USE. TAPE UNUSED WIRE.
6. MAXIMUM WIRE LENGTH FROM I.C. BOX TO DISPENSING UNITS IS 200 FEET.

WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.

ESCO SERVICES INC.		
Title: TOKHEIM APC WITH SLOW CONTROL		
Size: B	Document Number: WD-0005-A	REV:
Date: August 10, 1992	Sheet: 1 of 1	

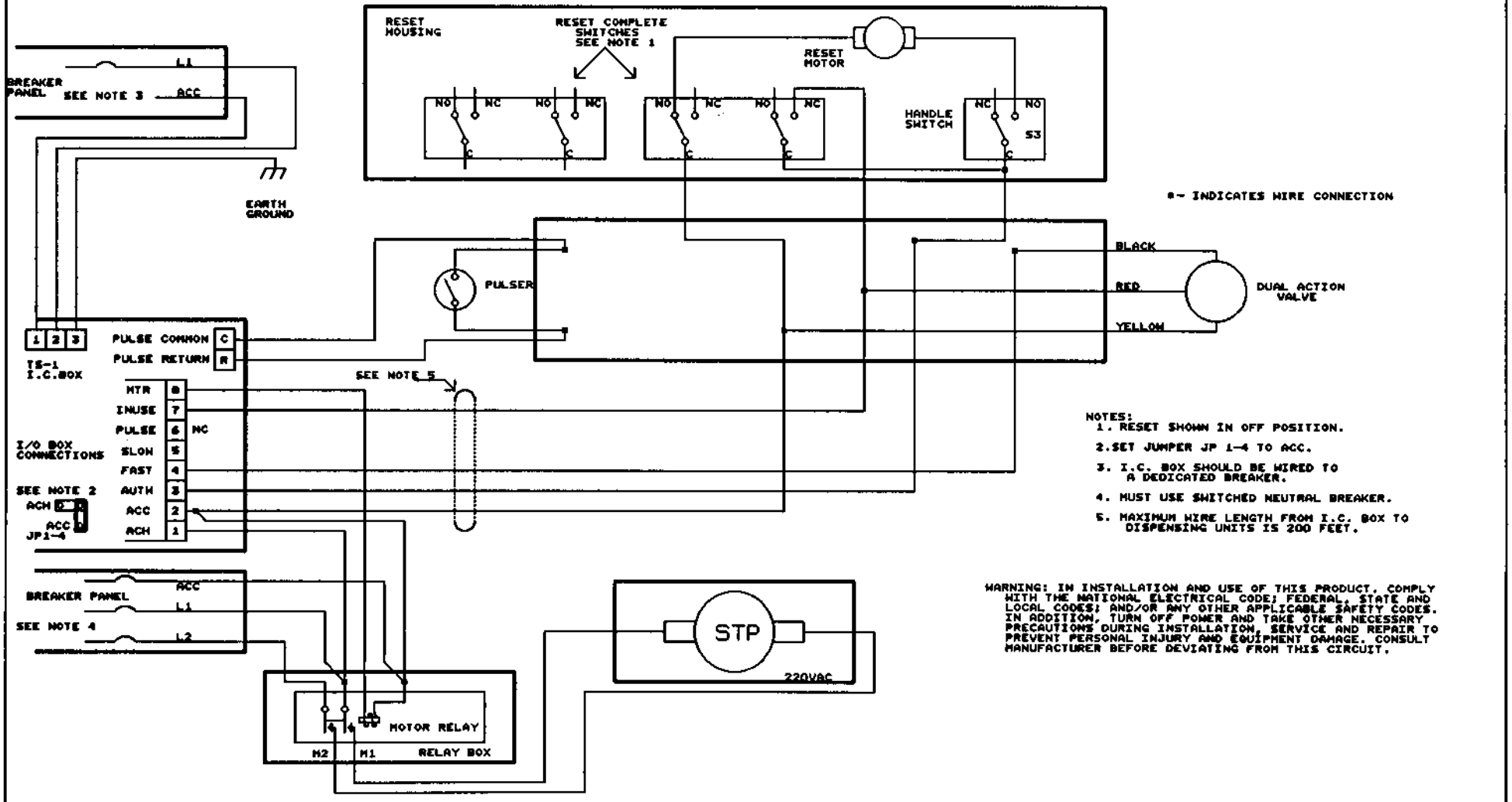


NOTES:

1. RESET SHOWN IN OFF POSITION.
2. SET JUMPER JP 1-4 TO ACC.
3. I.C. BOX SHOULD BE WIRED TO A DEDICATED BREAKER.
4. MUST USE SWITCHED NEUTRAL BREAKER.
5. MAXIMUM WIRE LENGTH FROM I.C. BOX TO DISPENSING UNITS IS 200 FEET.

WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.

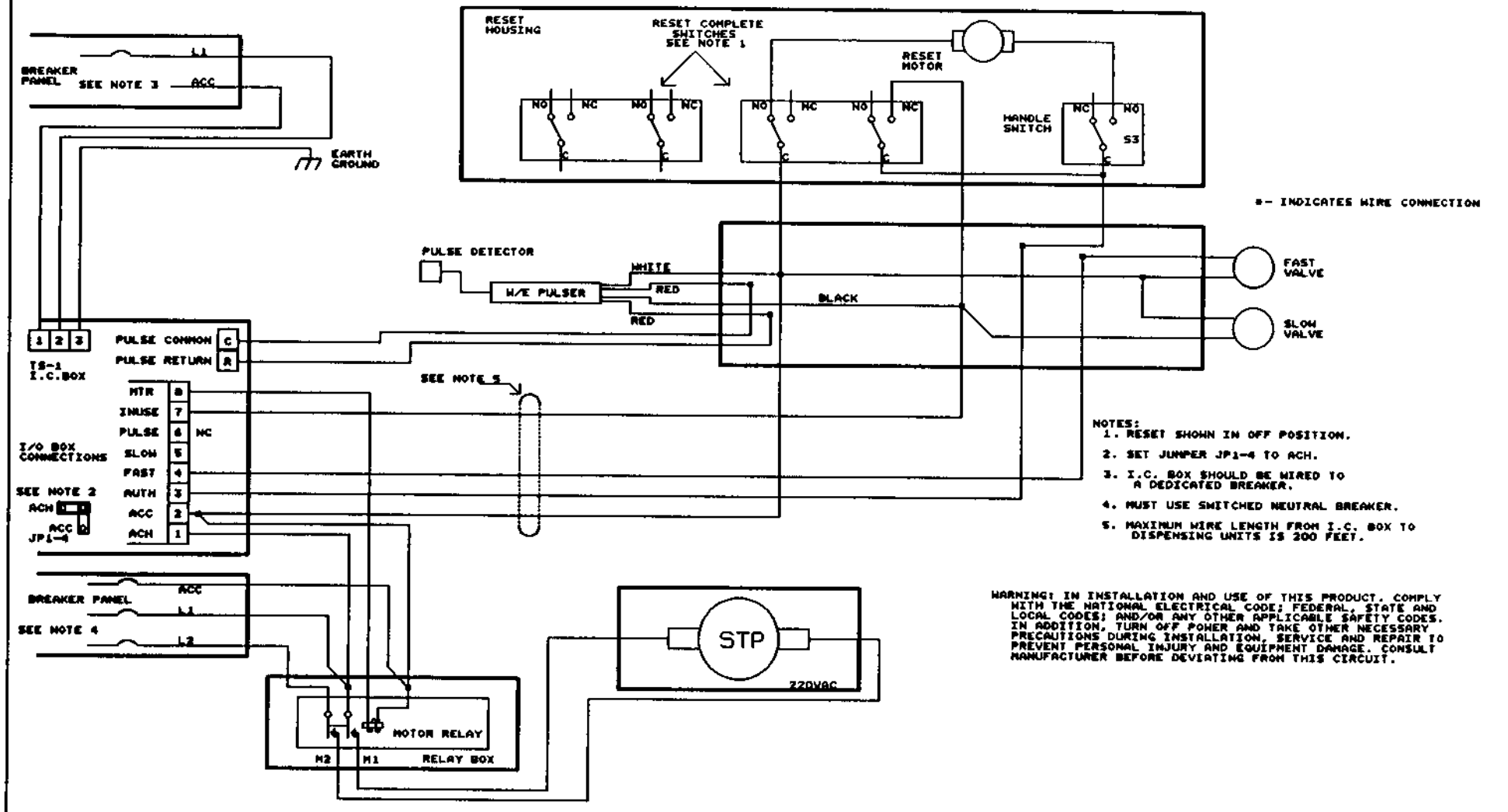
ESCO SERVICES INC.		
Title: TYPICAL TOKHEIM 230VAC PUMP WIRING		
Size: B	Document Number: WD-0005-B	REV
Date: August 10, 1992	Sheet 1 of 1	



NOTES:
1. RESET SHOWN IN OFF POSITION.
2. SET JUMPER JP 1-4 TO ACC.
3. I.C. BOX SHOULD BE WIRED TO A DEDICATED BREAKER.
4. MUST USE SWITCHED NEUTRAL BREAKER.
5. MAXIMUM WIRE LENGTH FROM I.C. BOX TO DISPENSING UNITS IS 200 FEET.

WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.

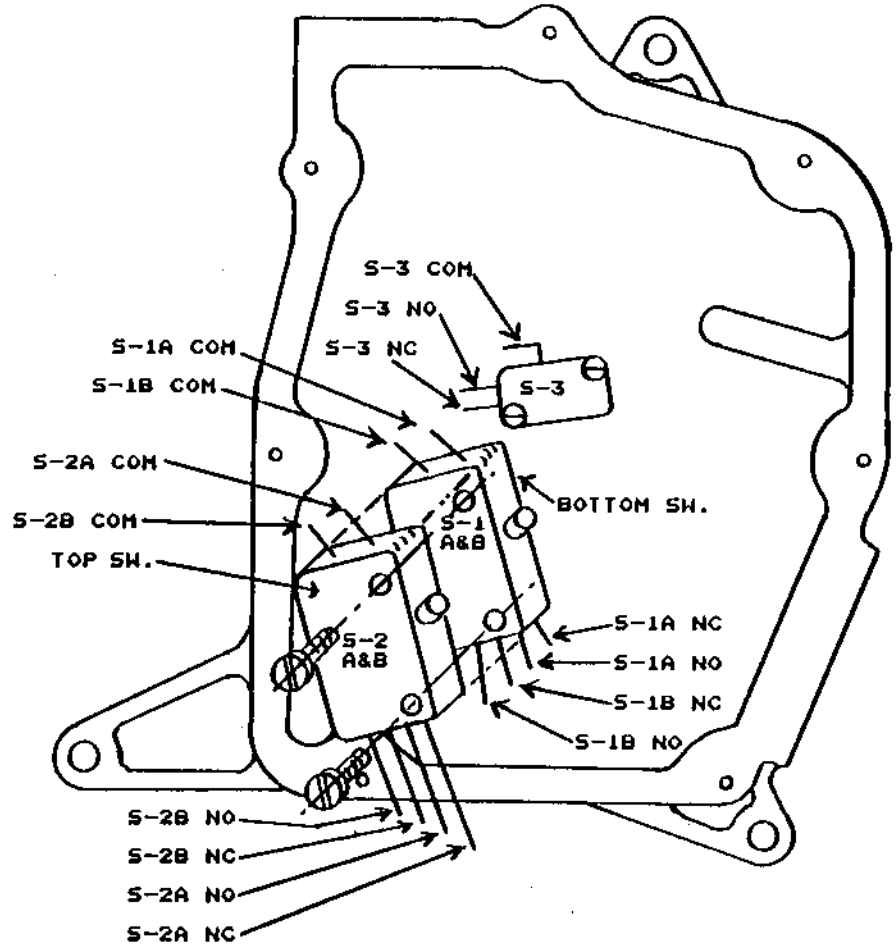
ESCO SERVICES INC.		
Title: TYPICAL DUAL ACTION VALVE WIRING		
Size: B	Document Number: WD-0007	REV
Date: August 10, 1992	Sheet 1 of 1	



NOTES:
1. RESET SHOWN IN OFF POSITION.
2. SET JUMPER JP1-4 TO ACH.
3. I.C. BOX SHOULD BE WIRED TO A DEDICATED BREAKER.
4. MUST USE SWITCHED NEUTRAL BREAKER.
5. MAXIMUM WIRE LENGTH FROM I.C. BOX TO DISPENSING UNITS IS 200 FEET.

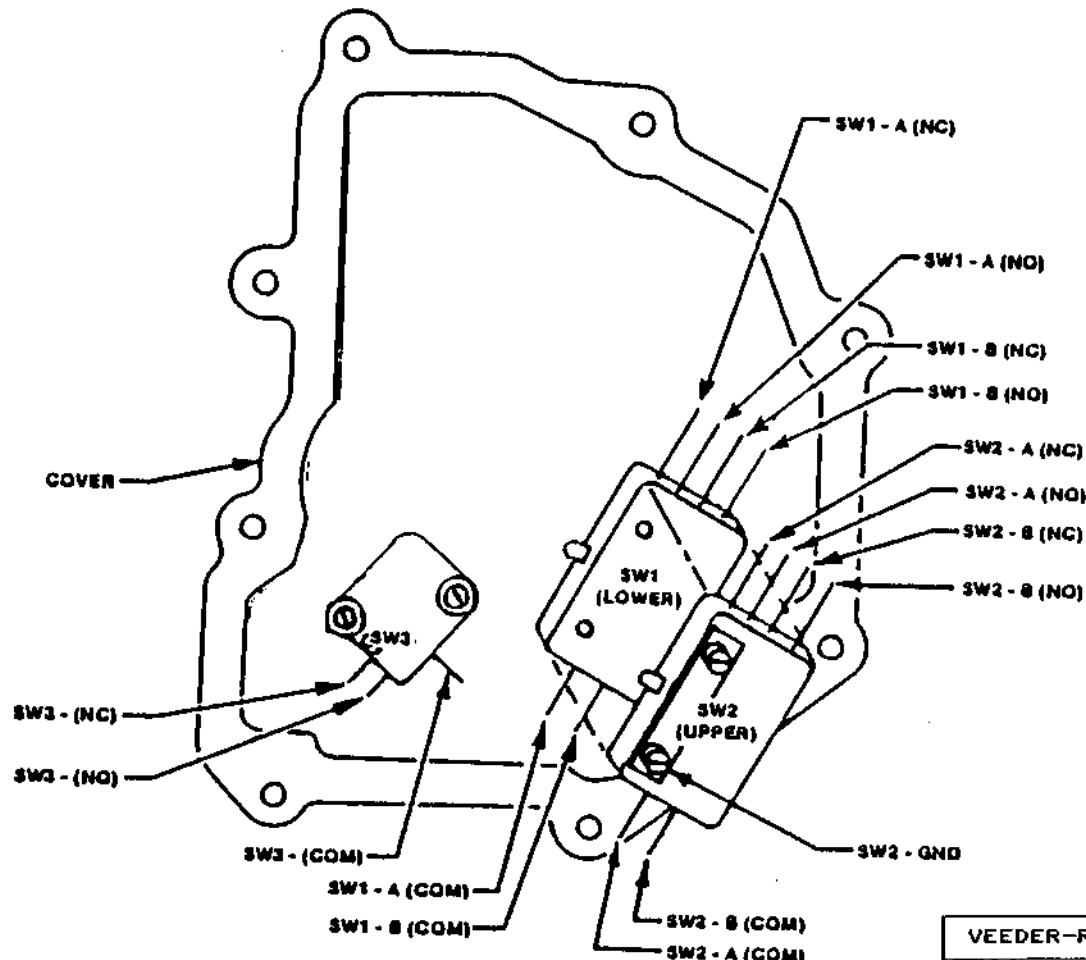
WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.

ESCO SERVICES INC.		
Title: TYPICAL WESTERN ELECTRONICS		
Size: B	Document Number: MD-0008	REV:
Date: August 10, 1992	Sheet 1 of 1	

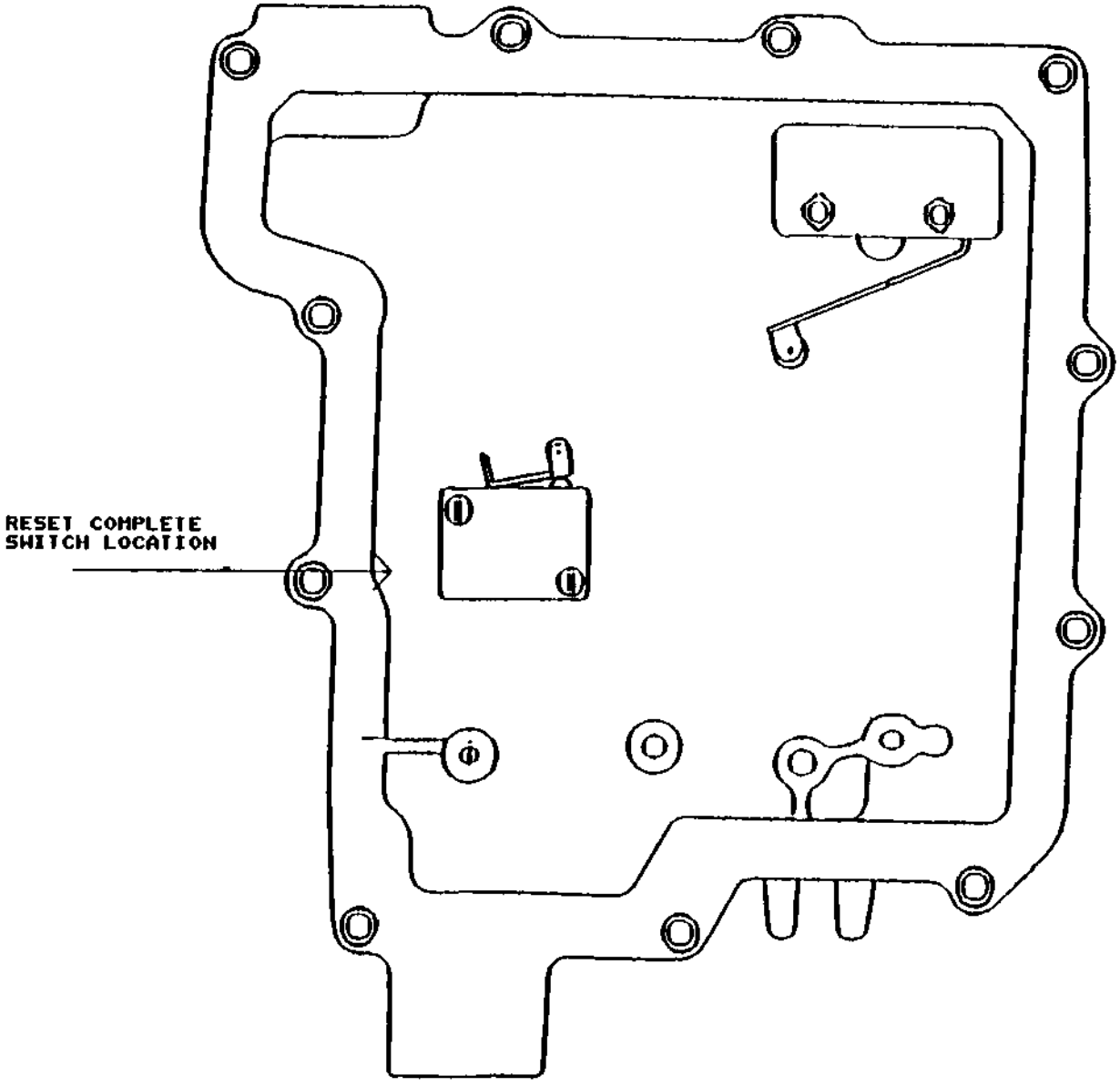


VEEDER-ROOT RESET SWITCH PLACEMENT

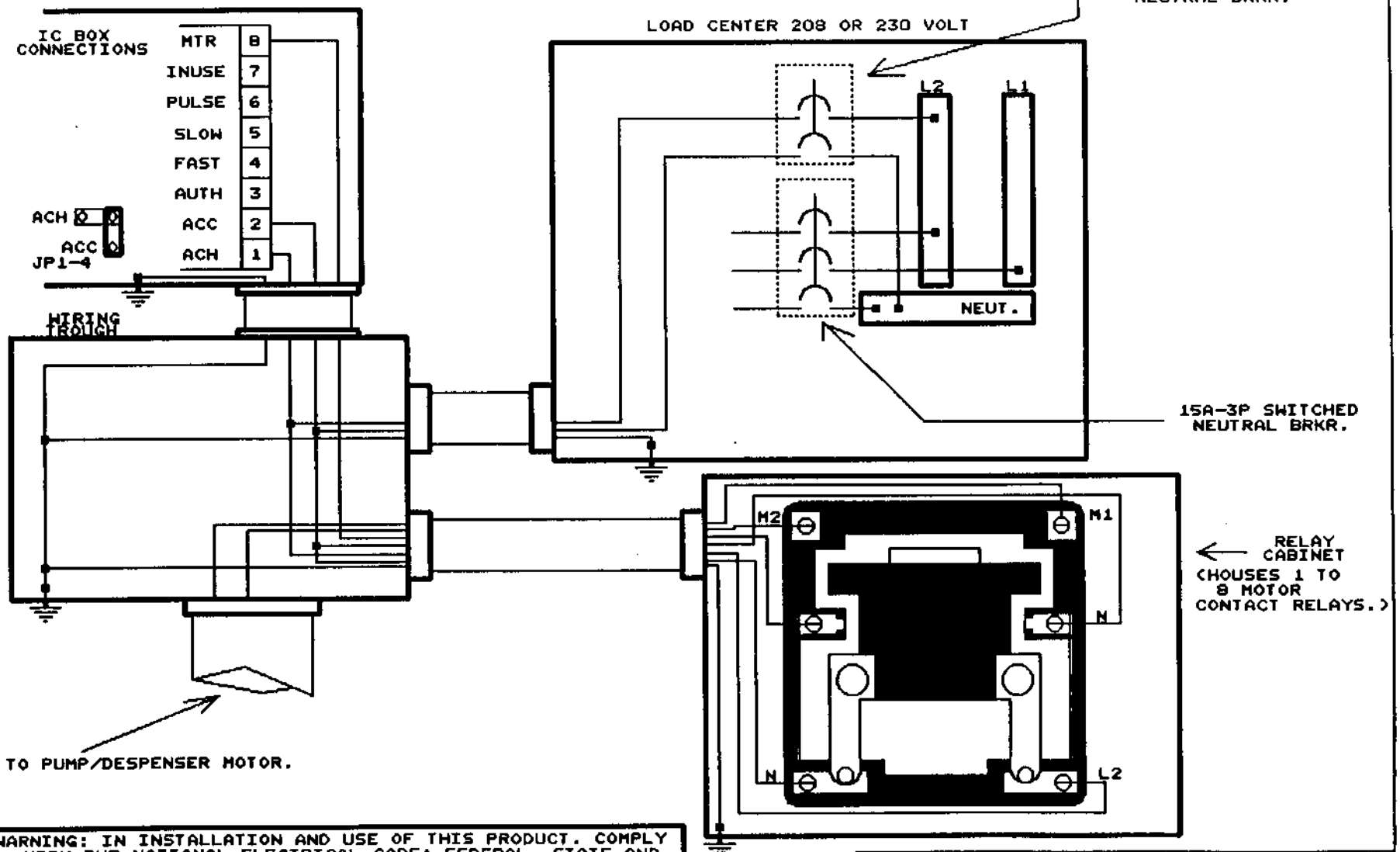
Size	Document Number	REV
A	WD-0009	
Date: June 15, 1989	Sheet 1 of 1	



VEEDER-ROOT OFFSET RESET SWITCH PLACEMENT		
Size A	Document Number WD-0010	REV
Date: June 19, 1989	Sheet 1 of 1	



GILBARCO ELECTRIC RESET SWITCH LOCATION		
Size A	Document Number	REV
Date: October 9, 1989	Sheet	of

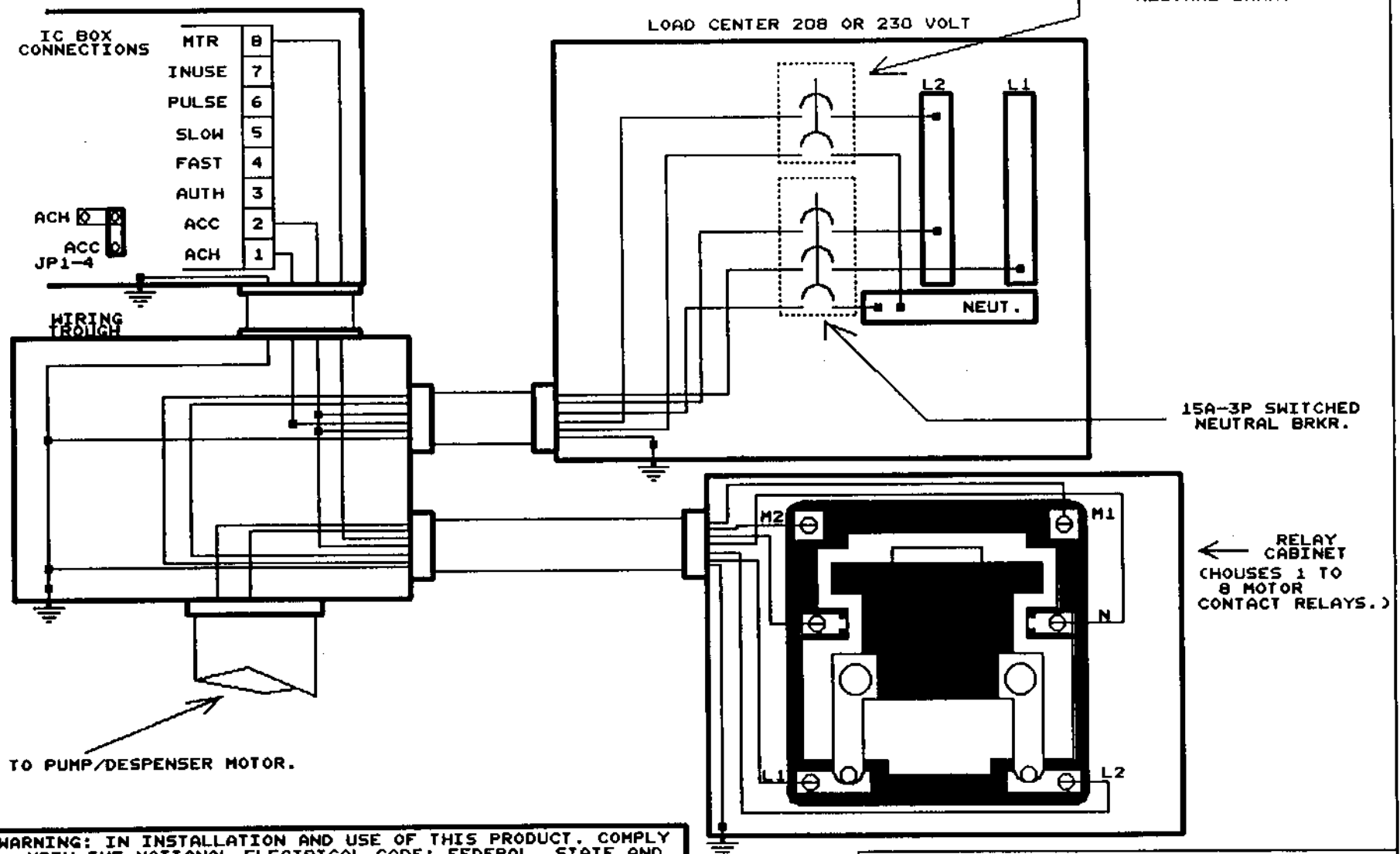


WARNING: IN INSTALLATION AND USE OF THIS PRODUCT. COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.

ESCO SERVICES INC.

Title
TYP. MOTOR CONTACT RELAY FOR 115V MOTOR

Size	Document Number	REV
A		
Date: July 29, 1989	Sheet 1 of 1	



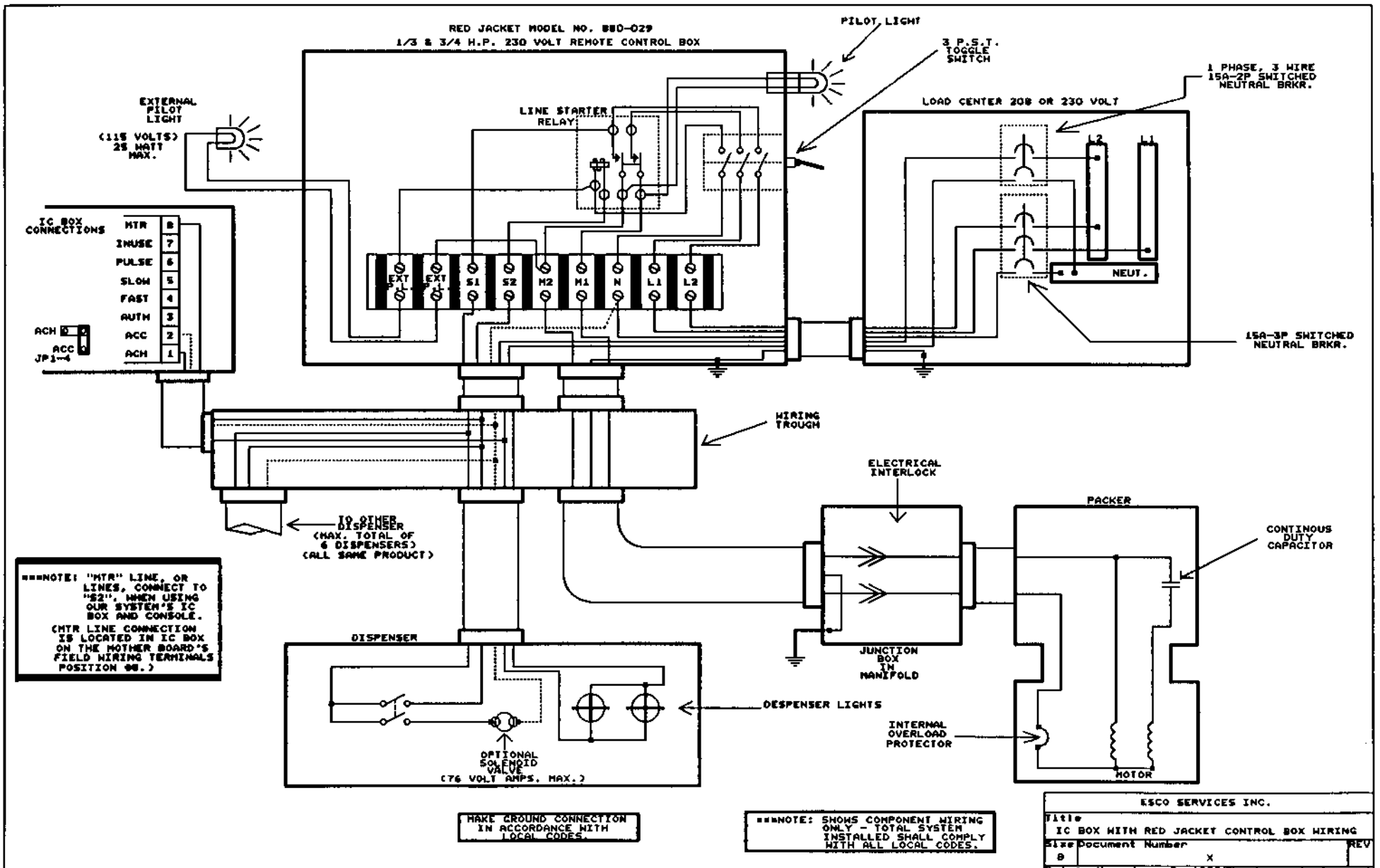
WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE NATIONAL ELECTRICAL CODE; FEDERAL, STATE AND LOCAL CODES; AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, TURN OFF POWER AND TAKE OTHER NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE. CONSULT MANUFACTURER BEFORE DEVIATING FROM THIS CIRCUIT.

ESCO SERVICES INC.

Title
TYP. MOTOR CONTACT RELAY FOR 230V MOTOR

Size	Document Number	REV
A		

Date: July 31, 1989 Sheet 1 of 1


RED JACKET MODEL NO. 880-029
1/3 & 3/4 H.P. 230 VOLT REMOTE CONTROL BOX
PILOT LIGHT
3 P.S.T. TOGGLE SWITCH
1 PHASE, 3 WIRE 15A-2P SWITCHED NEUTRAL BRKR.
LOAD CENTER 208 OR 230 VOLT
EXTERNAL PILOT LIGHT
(115 VOLTS) 25 WATT MAX.
LINE STARTER RELAY
IC BOX CONNECTIONS
MTR 8
INUSE 7
PULSE 6
SLOW 5
FAST 4
AUTH 3
ACC 2
ACH 1
ACH
ACC
JP1-4
EXT P1
EXT P1
S1
S2
M2
M1
N
L1
L2
NEUT.
15A-3P SWITCHED NEUTRAL BRKR.
WIRING TROUGH
ELECTRICAL INTERLOCK
PACKER
CONTINOUS DUTY CAPACITOR
TO OTHER DISPENSER (MAX. TOTAL OF 6 DISPENSERS) (ALL SAME PRODUCT)
***NOTE: "MTR" LINE, OR LINES, CONNECT TO "S2", WHEN USING OUR SYSTEM'S IC BOX AND CONSOLE. (MTR LINE CONNECTION IS LOCATED IN IC BOX ON THE MOTHER BOARD'S FIELD WIRING TERMINALS POSITION #8.)
DISPENSER
JUNCTION BOX IN MANIFOLD
DESPENSER LIGHTS
INTERNAL OVERLOAD PROTECTOR
OPTIONAL SOLENOID VALVE (76 VOLT AMPS. MAX.)
MOTOR
MAKE GROUND CONNECTION IN ACCORDANCE WITH LOCAL CODES.
***NOTE: SHOWS COMPONENT WIRING ONLY - TOTAL SYSTEM INSTALLED SHALL COMPLY WITH ALL LOCAL CODES.
ESCO SERVICES INC.
Title
IC BOX WITH RED JACKET CONTROL BOX WIRING
Size B
Document Number X
REV
Date: November 8, 1989 Sheet 1 of 1

RS232
COMMUNICATIONS
(OPTIONAL)

SOFTWARE
(REV 830J or 630J)

The RS-232 communications port allows a remote computer to poll the console and retreive information about the operation of the console. The flow of information is only one way - no information in the console can or will be changed as a result of communicating with a remote computer. The protocol is very simple, a single character sent to the console will produce a response. All command letters must be in upper case. Each command has a very rigid format for the response and will always be in ASCII printable characters. The console will accept new commands even while sending a response to a previous command. When the console receives a command via the RS-232 communications port the generation of the response is given top priority. This is so that the response can be generated as soon as possible. As soon as the response has been generated the console will resume it's previous task. The console will then send the response to the remote computer using an interrupt driven routine which operates in the background. The time delay produced by the console generating the response is typically 50 to 300 milliseconds in duration. The number of active hoses will have no bearing on this delay.

COMMANDS:

A = Console configuration and tanks
B = hose 1
C = hose 2
D = hose 3
E = hose 4
F = hose 5
G = hose 6
H = hose 7
I = hose 8
J = hose 9
K = hose 10
L = hose 11
M = hose 12
N = hose 13
O = hose 14
P = hose 15
Q = hose 16
R = console software version number
S = page number for memory hex dump
T = memory hex dump
U = NOT USED
V = NOT USED
W = NOT USED
X = NOT USED
Y = NOT USED
Z = NOTUSED

command = A
typical response:
@aaaaaaaaaabbbbbbbbbbccccccccccddddddddddeeeeeeeeeeffffffffffgghhiiijjkkllmmmmmmmmnnnnnnnoooooop
pppppqqqqqqrrrrrrssssssttttttuuuuuuuvvvvvvwwwwwwwxxxxxxyyzzAAABBCCCCCCCCDDDDDDDDFF
FFFFGGGGGGGGGGGGGGGGGGGGGHHH

WHERE
@ = COMMAND
a = tank 1 level in reverse format (123456.7890)
b = tank 2 level in reverse format (123456.7890)
c = tank 3 level in reverse format (123456.7890)
d = tank 4 level in reverse format (123456.7890)
e = tank 5 level in reverse format (123456.7890)
f = tank 6 level in reverse format (123456.7890)
g = grade number of tank 1 in decimal format (01)
h = grade number of tank 2 in decimal format (01)
i = grade number of tank 3 in decimal format (01)
j = grade number of tank 4 in decimal format (01)
k = grade number of tank 5 in decimal format (01)
l = grade number of tank 6 in decimal format (01)
m = tank alarm setting for tank 1 in reverse format (123456)
n = tank alarm setting for tank 2 in reverse format (123456)
o = tank alarm setting for tank 3 in reverse format (123456)
p = tank alarm setting for tank 4 in reverse format (123456)
q = tank alarm setting for tank 5 in reverse format (123456)
r = tank alarm setting for tank 6 in reverse format (123456)
s = current drop volume for tank 1 in reverse format (123456)
t = current drop volume for tank 2 in reverse format (123456)
u = current drop volume for tank 3 in reverse format (123456)
v = current drop volume for tank 4 in reverse format (123456)
w = current drop volume for tank 5 in reverse format (123456)
x = current drop volume for tank 6 in reverse format (123456)
y = slowdown in decimal format (in pulses)
z = slow delay in decimal format (in seconds)
A = authorize timeout in decimal format (in seconds)
B = current diagnostic mode (should always be '00')
C = current console time (I.E. 09:23:45)
D = current console date (I.E. 08/21/91)
E = current shift number in reverse format
F = current report number in reverse format
G = console serial number (not used at this time)
H = checksum byte in decimal format

command = B (COMMANDS C - Q ARE THE SAME FORMAT)
typical response:
@aabbbbbbbbbbbbccccccccccccddddddddddddeeeeeeeeeeeeffffffffffffgggggggggggghhhhhhhhhhhhiiiiiiiii
iiijjjjjjjjjjjjkkkkkkkkkkkkllllllllllllmmmmmmmmmmmmnnnnnnnnnnnnooooooooooooppppppppppppqqqq
qqqqqqqqrrrrrrrrrrrrsssssssssssstttttttttttttuuuuuuuuuuuuvvvvvvvvvvvvwwwwwwwwwwwwxxxxxxxxxxxx
yyyyyyyyyyyyzzzzzzzzzzzzAAAAAAAAAAAABBBBBBBBBBBBCCCCCCCCCCCCDDDDDDDDDD
DDEEEEFFFFGGGGGGHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH
HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHIII

WHERE
@ = COMMAND
a = tank number assigned to this hose in decimal format (01)
b = current shift voloume for hose 1 in reverse format (12345678.9012)
c = current shift cash for hose 1 in reverse format (12345678.9012)
d = current shift credit for hose 1 in reverse format (12345678.9012)
e = first previous shift volume for hose 1 in reverse format (12345678.9012)
f = first previous shift cash for hose 1 in reverse format (12345678.9012)
g = first previous shift credit for hose 1 in reverse format (12345678.9012)
h = second previous shift volume for hose 1 in reverse format (12345678.9012)
i = second previous shift cash for hose 1 in reverse format (12345678.9012)
j = second previous shift credit for hose 1 in reverse format (12345678.9012)
k = third previous shift volume for hose 1 in reverse format (12345678.9012)
l = third previous shift cash for hose 1 in reverse format (12345678.9012)
m = third previous shift credit for hose 1 in reverse format (12345678.9012)
n = fourth previous shift volume for hose 1 in reverse format (12345678.9012)
o = fourth previous shift cash for hose 1 in reverse format (12345678.9012)
p = fourth previous shift credit for hose 1 in reverse format (12345678.9012)
q = current daily shift volume for hose 1 in reverse format (12345678.9012)
r = current daily shift cash for hose 1 in reverse format (12345678.9012)
s = current daily shift credit for hose 1 in reverse format (12345678.9012)
t = previous daily shift volume for hose 1 in reverse format (12345678.9012)
u = previous daily shift cash for hose 1 in reverse format (12345678.9012)
v = previous daily shift credit for hose 1 in reverse format (12345678.9012)
w = nonadjustable volume totalizer for hose 1 in reverse format (12345678.9012)
x = nonadjustable cash totalizer for hose 1 in reverse format (12345678.9012)
y = nonadjustable credit totalizer for hose 1 in reverse format (12345678.9012)
z = nonadjustable money totalizer for hose 1 in reverse format (12345678.9012)
A = adjustable volume totalizer for hose 1 in reverse format (12345678.9012)
B = adjustable cash totalizer for hose 1 in reverse format (12345678.9012)
C = adjustable credit totalizer for hose 1 in reverse format (12345678.9012)
D = adjustable money totalizer for hose 1 in reverse format (12345678.9012)
E = cash price for hose in reverse format (12.34)
F = credit price for hose in reverse format (12.34)
G = 6 unused digits
H = 30 values each 3 digits for sales analysis in decimal format (see the section of sales analysis)
I = sumcheck of response in decimal format

command = R
typical response:
RGENESIS REV830J
aaa

Where
R = command
GENESIS = This is the series identifier (GENESIS or MICRO-T)
REV830J = This is the version message of the console software
aaa = sumcheck of the response

NOTE:Because of a bug in the routine that generates this response there is a carriage return without a line feed between the version message and the sumcheck. This causes the response as viewed on a PC screen to look like this:
017NESIS REV830J
This will be corrected in the next release of this software.

---

command = S
typical response:
@aabbb

Where
@ = command
a = page number of memory dump in 2 digit hexadecimal format
b = sumcheck of response

Each time this command is sent the page number is incremented to the next page. The range is from 00 to 7F.

command = T

typical response:

T

```
0000  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ................
0010  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ................
0020  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ................
0030  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ................
0040  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ................
0050  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ................
0060  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ................
0070  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ................
0080  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ................
0090  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ................
00A0  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ................
00B0  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ................
00C0  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ................
00D0  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ................
00E0  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ................
00F0  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ................a
```

WHERE

T = command

a = sumcheck of response

NOTE: This command will cause the console to pause for approximately 500 to 750 milliseconds. This in itself is not a problem, however if repeated memory hex dumps are commanded the console display will progress in a jerky confusing manner.

SALES ANALYSIS

The console will provide information for the purposes of sales analysis. This data consists of the number of sales which were started during each hour of the previous 24 hours as well as totals for the current and 4 previous shifts. Each time a sale is started the appropriate hour and shift 'buckets' are updated. If a sale is cancelled for any reason it will still show up as a sale that was started.

000 = # OF SALES STARTED DURING THE CURRENT HOUR
000 = # OF SALES STARTED DURING THE PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE SECOND PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE THIRD PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE FOURTH PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE FIFTH PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE SIXTH PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE SEVENTH PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE EIGHTH PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE NINTH PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE TENTH PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE ELEVENTH PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE TWELTH PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE THIRTEENTH PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE FOURTEENTH PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE FIFTEENTH PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE SIXTEENTH PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE SEVENTEENTH PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE EIGHTEENTH PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE NINETEENTH PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE TWENTITH PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE TWENTIFIRST PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE TWENTISECOND PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE TWENTITHIRD PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE TWENTIFOURTH PREVIOUS HOUR
000 = # OF SALES STARTED DURING THE CURRENT SHIFT
000 = # OF SALES STARTED DURING THE FIRST PREVIOUS SHIFT
000 = # OF SALES STARTED DURING THE SECOND PREVIOUS SHIFT
000 = # OF SALES STARTED DURING THE THIRD PREVIOUS SHIFT
000 = # OF SALES STARTED DURING THE FOURTH PREVIOUS SHIFT

DECIMAL
This is a format that you can read right off the screen. Example: 183 in decimal format actually means 183.

REVERSE
This is a format that is used directly by the math routines in the console. It is not meant to read directly off the screen but rather is meant to be used as input for various PC based software. Example: 78563412 in reverse format is actually 12345678. Each set of two digits are swapped with their counterparts at the other end of the number.

CONNECTOR PINOUT

PIN	FUNCTION
1	NO CONNECTION
2	RXD (RECEIVE DATA FROM HOST)
3	TXD (TRANSMIT DATA TO HOST)
4	DTR (DATA TERMINAL READY) NOT IMPLEMENTED
5	LOGIC GROUND
6	DSR (DATA SET READY) NOT IMPLEMENTED
7	RTS (REQUEST TO SEND) ALWAYS ACTIVE
8	CTS (CLEAR TO SEND) MUST BE ASSERTED
9	NO CONNECTION

COMMUNICATION PARAMETERS:
BAUD RATE = 1200 BAUD (FACTORY ADJUSTABLE TO 600,1200,2400,4800,9600)
DATA BITS = 8
STOP BITS = 1
PARITY = NONE
FLOW CONTROL = XON/XOFF