

# GXP-BX SITE PLANNING & INSTALLATION GUIDE

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**FOR THE GXP-BX PAY STATION:**  
Use this guide to identify the Conduits and wires, connections and terminations, and for the Programming in the GXP Setup Menu.

# ENVIRONMENTAL CONSIDERATIONS

## BRICK OR BLOCK ENCLOSURE CONSIDERATIONS:

The cabinet has been designed to withstand direct exposure to the elements. This does not mean it “should be” exposed to the elements without protection. It is always a good practice to enclose the machine in a brick or block island. This will not only provide additional protection from the elements, it will also provide security and longevity. Electrical equipment that is protected from direct exposure to the elements on all sides (except the front) will require less maintenance and be more reliable over the service life of the equipment. When mounting a cabinet in a brick enclosure the cabinet should be recessed 2”-3” inside the block. This will provide additional rain protection for the front of the machine, and it will prevent vehicle mirrors from coming in contact with the bezels on the front of the machine.

## FREE STANDING CABINET ON BASE CONSIDERATIONS:

The cabinet can be mounted on a stand and directly exposure to the elements. This does not mean it “should be” exposed to the elements without some protection. It is always a good practice to enclose the machine in a brick or block island or to cover the machine and user with a canopy. A brick or block island will not only provide additional protection from the elements, it will also provide security and longevity. The additional cooling, rain protection and heat barrier provided by the brick or block island will significantly reduce the environmental extremes that the electronic components would be exposed to.

If the machine is directly exposed to the heat of the sun or cold air in the winter, it is important to provide adequate heating and/or cooling protection. Free Standing machine installations typically mean that the cabinet will be exposed on all sides to the elements. It is important to include the necessary heating and cooling kits on Free Standing installations.

## TEMPERATURE MANAGEMENT :

The **HEATING KIT** is recommended for temperatures below 50F. The machine will operate at temperatures lower than 50F without a heater, however the user display may appear sluggish and the electronic components will not provide optimum performance. The heating kit will prevent a frozen layer of water (bay mist) from preventing proper operation of the selection buttons. In addition, it will keep snow and ice from forming inside the coin cup allowing patrons to continue to remove coins easily after a recent snow or ice storm. The heating kit will also maintain the temperature inside the machine so all electronic components operate at their optimum capability.

In warmer climates we recommend the **INTAKE FAN COOLING KIT**. This fan will bring air in from the outside of the cabinet to maintain an internal cabinet temperature that is close to the ambient temperature outside. Heat that is transmitted from the sun into the cabinet, and cabinet, will allow heat to build up inside of the cabinet. Venting the excess heat that builds up will extend the operating life of the machine components. The intake fan is controlled automatically by a thermostat. We recommend that the fan be included in any machine that will be exposed to moderate or hot climates. The hot climates, those found in the southern states during late summer, require the fan in order to keep the components within their operating specifications.



# VENTILATION, HEATING & COOLING

## VENTILATION:

The GXP-BX cabinet has a built in ventilation port. The vent port is located along the overhang at the top of the cabinet. This vent port should be closed off during the colder months to allow proper heating and it should be opened during the warmer months to allow cabinet heat buildup to be vented out of the machine.

## INTAKE FAN:

Check the filter, fan and thermostat operation prior to and during the warm weather season. A dirty or clogged filter will reduce the effectiveness of the intake fan. A fan or thermostat that is not functioning will prevent the intake fan kit from preventing excess temperature buildup inside the cabinet on a warm sunny day.

Keep the Intake Fan filter clean and remove dirt and bugs. The filter is located under the intake fan. This filter will prevent bugs and heavy dust particles from entering the machine.

Remind the machine owner to open the intake fan port before the start of the warm weather season to allow cooler air to enter the cabinet.

## HEATER:

The optional heater is thermostatically controlled. The heater will turn on when the temperature inside the machine drops below 65F.

Remind the machine owner to close the air intake vent on the machine before the start of the warm weather season so the warm air does not escape through the intake vent.



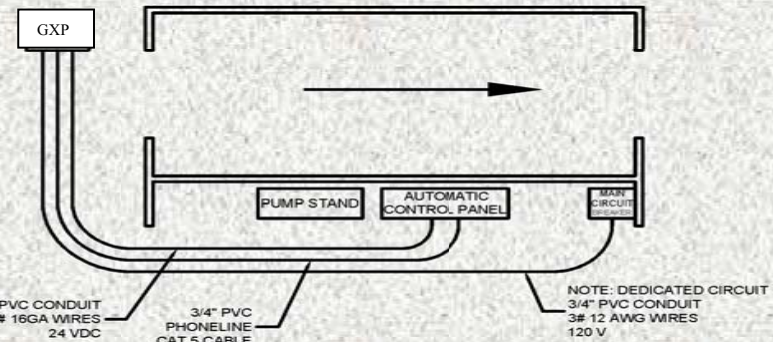


# GXP / CARD SYSTEM CONDUIT & CABLES

**C-STORE NOTE** – See INTERCOM CONNECTIONS installation information for POS Terminal and Intercom System conduit and cable requirements.

## CONDUITS GXP TO WASH BAY:

- POWER - One (1) for machine power
- DATA - One (1) for all data lines (“optional” phone CC modem, high speed CC modem, alarm dialer)
- BAY CONNECTIONS - One (1) for wash bay connections (selection 1,2,3,4, common and inhibit). Note - if data lines and wash bay connections terminate in at the same junction box in the control room, then only one conduit is required for both Data and Bay Connections.
- IMPORTANT – If a POS Terminal is connected to the GXP see the POS Terminal installation information for the required wires / conduits.



## CABLES - WIRES TO PULL:

*Note – we recommend pulling wires for the pay station as well as all available “options” even if they were not purchased with the machine. All options are available as field upgrades and can be added at any time as long as the wires are available. Always use stranded wires.*

- Three (3) wires for machine power (ground/neutral/hot) > 12- 14 gauge wire. Terminates to the Power Box located in bottom left side of pay station. Remove the thumb screw to access the power connections./ Remove the hot,neutral and common wires supplied with the machine and connect your power wires their place.
- Seven (9) wires for the wash selection lines; 5 for the wash selections (selection 1,2,3,4, selection common), 2 for the inhibit line, and 2 for the optional bay Out Of Service line) > 16-18 gauge, multi stranded wire. It is always a good idea to run extra wires in case one breaks or additional features are added to the pay station at a later date. **IMPORTANT - See decals on inside cover of junction box to identify the junction connection points.**
- Two (2) CAT5 cables (alarm 1,2,3,4,5,6,7,8 & alarm common) > Standard CAT5 cable, shielded or un-shielded. Note - each cable has 8 wires total. 9 wires are required for the “optional” dialer so the remaining 7 will be spares. Two of the spares can be used for the standard phone line connection, however, we recommend a separate phone line cable for easy identification and simplified routing inside the pay station. CAT5 cable is recommended because it is readily available and relatively inexpensive.
- One (1) CAT5 cable for the “optional” high speed credit card option. Standard CAT5 cable, shielded or un-shielded.
- One (1) standard phone line cable for the “optional” dialup CC modem. This should be present even if the high speed CC modem option is used as the phone line is a backup connection for the CC processing and this is the line used to dial up for any download updates from the CC modem provider.
- If the machines are equipped with the Datacap modem and not the high speed Iptran option, we recommend that you consider running

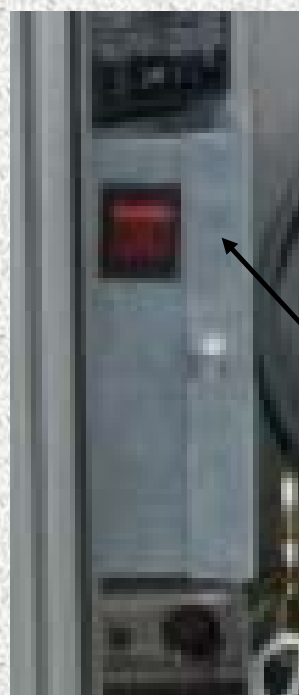
## Note - Networking 2 or 3 Datatran credit card modem to a single IPtran high speed data modem:

A single high speed Iptran modem can connect up to 3 Datacap credit card modems to a single high speed connection. Each Datacap card modem must have an Ethernet cable connected to a “centrally located” IPTran modem. The maximum length of cable that is used to connect each Datacap modem to the Iptran modem should not exceed 50'. The Iptran can be mounted in one of the pay stations or in a central temperature controlled area that is protected from the elements, i.e. Equipment Room. Again, the maximum length of the cable that connects each Datacap to the Iptran should not exceed 50'.

# POWER & SURGE PROTECTION

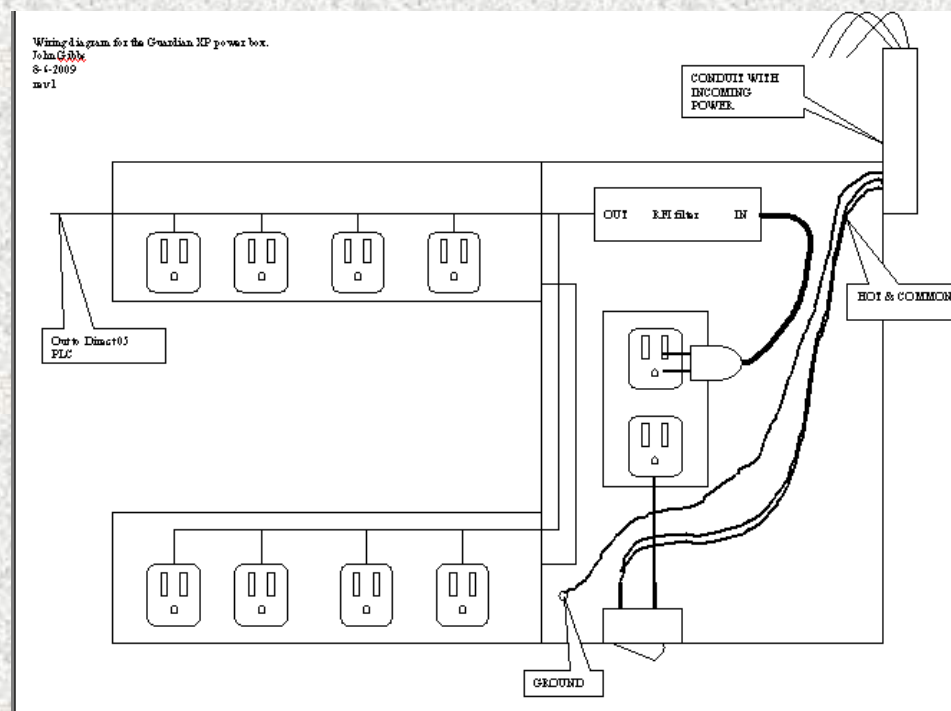
**POWER REQUIREMENTS:** The pay station requires a 120 vac power source capable of supplying up to 5 amps of current. The pay station by itself will require roughly 1 amp. The optional heater kit will require up to 2 amps. Any other option items such as a scrolling or backlit message sign will require up to 1 amp. We recommend the use of 12 ga. outdoor rated wire with a 3<sup>rd</sup> wire ground . A dedicated line and circuit breaker from the main power panel is required.

**POWER TERMINATION:** The power termination for the pay station is made inside the "Power Box" (see picture below). Remove the thumb screw at the front of the power box to access the inside of the box. See the diagram below for terminations.



**110VAC  
POWER BOX**  
(with Red toggle  
switch on it)

Note - Remove  
the cover by  
unscrewing the  
thumb screw.



**SURGE & LIGHTNING PROTECTION:** It is important to note that equipment damage resulting from power surges and lightning strikes, is not covered under your warranty. If the machine is located in an area where power surges or lightning is common, we recommend that you take additional measures to prevent damage to the machine. Additional measures are to connect the machine frame to a ground rod located at or near the machine using a heavy gage wire, and to install a High Energy surge protector on the power line going to the GXP. Contact your distributor for surge protection recommendations. Note – every machine includes an RFI filter.



# CABINET MOUNTING PREPARATION

The Guardian XP can be installed using a variety of mounting methods. Each method will require certain mounting considerations and sometimes a specific mounting hardware. Please review all available mounting kits (in this manual) before proceeding with the installation. The following steps apply to prepare the cabinet for any of the mounting options.

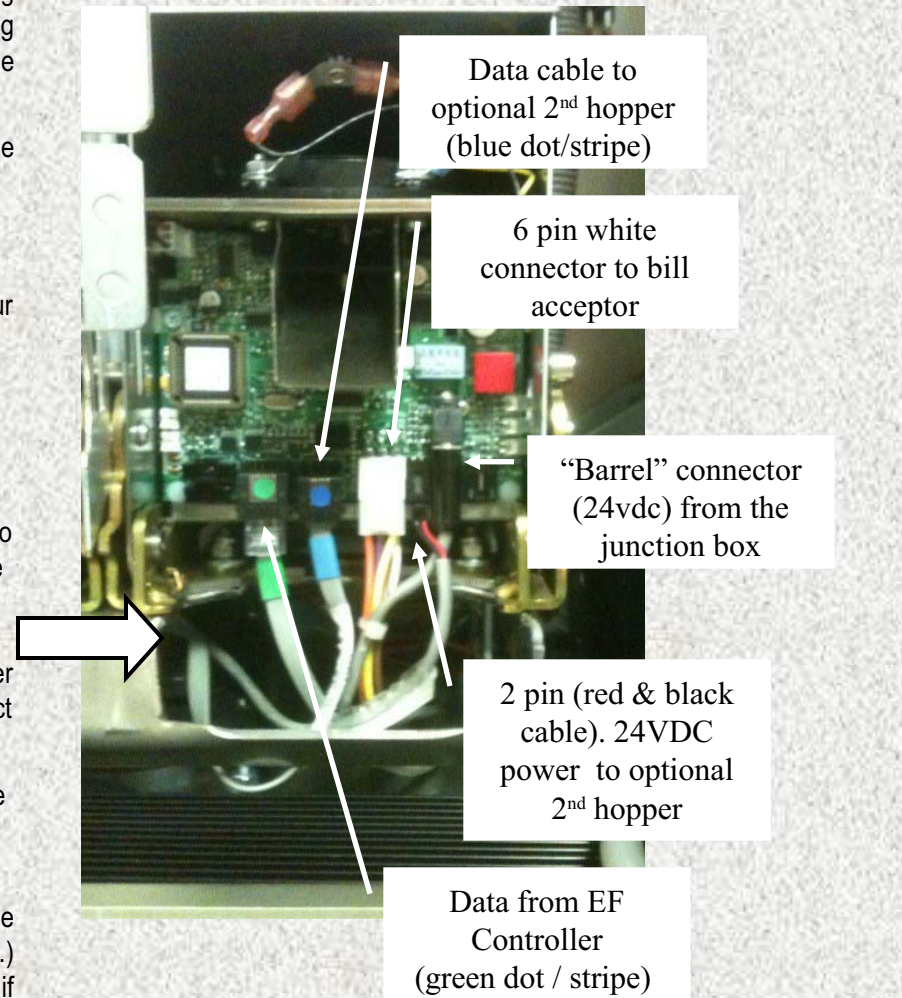
**IDENTIFY THE MOUNTING METHOD** - Determine which mounting method is to be used and make sure you have the correct mounting kit and parts.

**ANCHORING THE CABINET** - We recommend that the cabinet be anchored using as many of the anchoring holes as possible and anchoring it on each side as well as the bottom of the cabinet. Use hardened bolts and large washers for added strength. If your machine was ordered with a factory welded angle bracket on each side of the cabinet (available only with GXP-BX) you can either weld the bracket onto the mounting posts or bolt it onto the post or into the concrete enclosure. Remove the electrical components from the machine prior to any welding. The heat and electrical surges can damage these components.

**REMOVING THE COIN HOPPERS** - The coin hoppers have been disconnected prior to shipping. This will allow them to be easily removed so you will have easy access to the mounting provisions in the bottom and back of the cabinet. It is important to remember to plug the coin hopper connections back into the hopper(s) after they have been reinstalled. If your machine is equipped with the optional 2<sup>nd</sup> hopper then only the power and data cables will be connected to the optional hopper. See the picture for the correct connections. The cables have been color coded for ease of identification.

**REMOVE THE HOPPER PLATFORM** - To allow additional access to the bottom of the cabinet you can remove the hopper mounting platform. Remove the nuts that secure the hopper mounting platform and remove the platform.

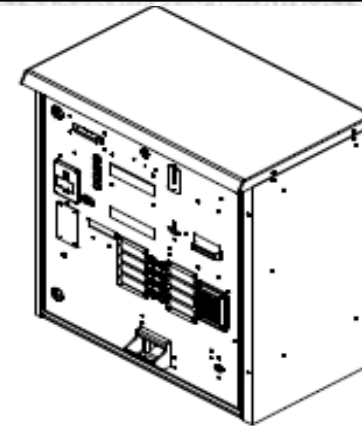
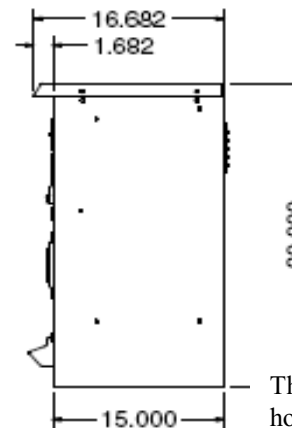
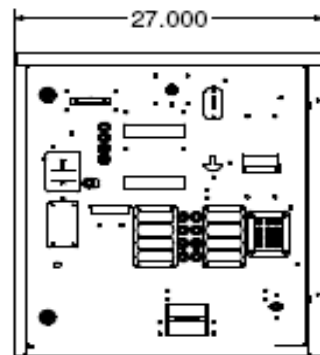
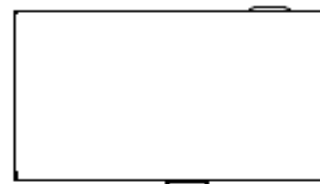
**REMOVE THE KNOCK-OUTS.** The cabinet includes a variety of access holes for the electrical connections (wash bay connections, power connections, data connections...) These can be removed using a large screw driver, small pry bar and a hammer if necessary. The holes are available as individual conduit sized holes or as a large hole that will allow easy access for all connections to enter machine. The access holes are typically in the bottom of the cabinet while the retrofit GXP model includes additional holes in the back of the cabinet for ease of alignment to existing conduits.



# GXP-BX "ISLAND" INSTALLATION

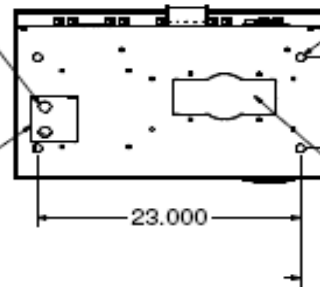
## VERY IMPORTANT INSTALLATION NOTE FOR GXP-BX MACHINES WITH THE INTERNAL VAULT OPTION

The door of the machine must be able to open the full amount to allow the dispenser Vault door to be opened. If the cabinet door cannot be opened the full 180 degrees, the Vault door will interfere with the machine hinges.



KNOCK OUT FOR 3/4 CONDUIT FITTING (2 PLACES)

LARGE KNOCK OUT FOR ACCESS



Ø0.750 MOUNTING HOLES (4 PLACES)

LARGE KNOCK OUT FOR ACCESS

### IMPORTANT INSTALLATION NOTE

The GXP-BX cabinet may include precut knock out holes on the top, back and side of the cabinet. Water will enter the cabinet through these knock outs if it is allowed to drip on the top, back or sides of the cabinet. To insure this will not happen in a concrete enclosure, we recommend the concrete above, behind and on the sides of the cabinet be lined with plastic or other water barrier material.

CHECKED		TITLE		
CA		FA KIT, GXP-BX		
MPG				
APPROVED	4/23/2000	SIZE	UNSWD	REV
POLYMER AND INCOMPATIBLE		C	4K01015-FA	A
DO NOT SCALE		SHEET 1 OF 1		



# GXP-BX “STAND” INSTALLATION

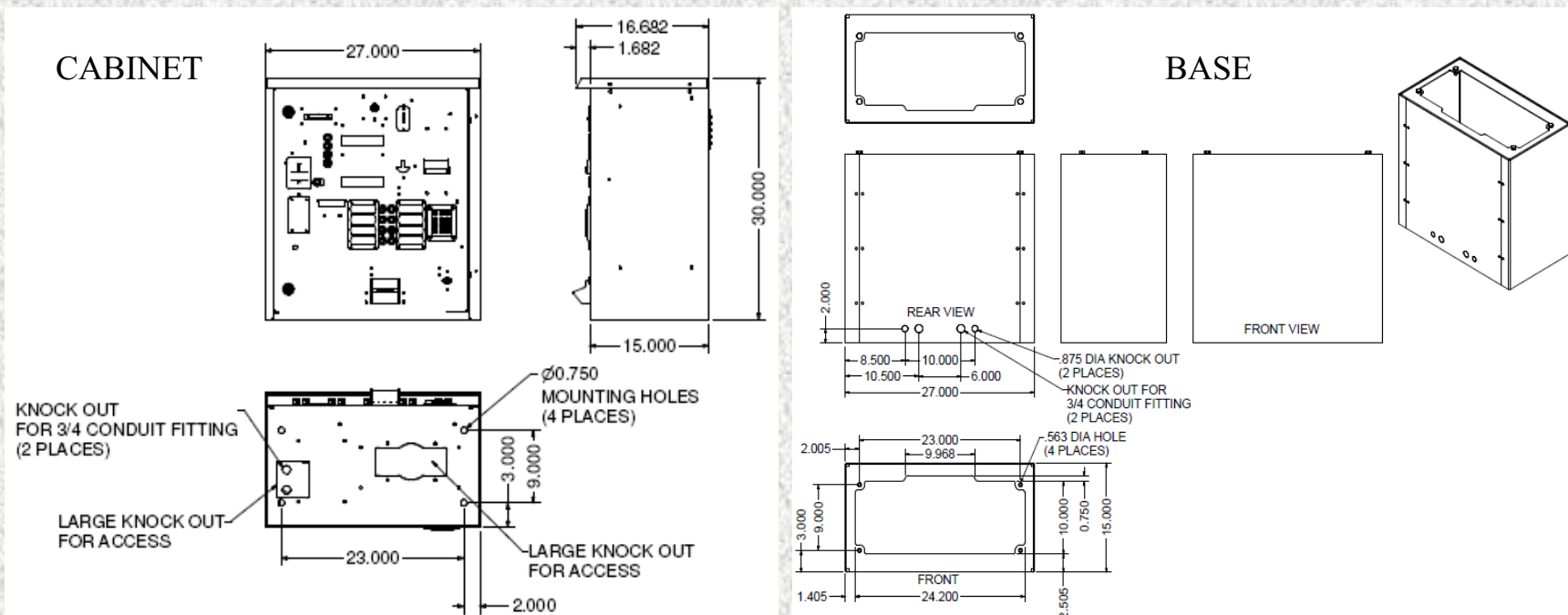
Stand to concrete - The stand is mounted to the concrete using 1/2” anchors. The 4 mounting holes in the bottom of the stand are slightly oversized to allow for a small amount of anchor misalignment.

Electrical Conduit - The conduit should enter directly under the stand whenever possible so it is not visible or accessible. There are four holes in the bottom back of the stand that can be used for electrical conduit if it is not practical for the conduit to enter directly under the stand. Note - keep the power lines separate from the data lines where it is practical to do so.

Cabinet Electrical – There are small holes (conduit knock outs) or one large holes (knock out) located in the bottom left side of the cabinet, directly below the power box. Remove the desired knock out(s) to allow the electrical connections to enter the cabinet.

Cabinet Mounting - Mount the cabinet to the stand using the four 1/2” bolts provided with the base.

Note – there are a variety of additional security measures that can be taken to secure the stand to the concrete and/or the cabinet to the concrete. If additional measures are to be welded to the cabinet, remove the electrical components before welding.





# GXP-BX SECURITY VAULT OPTION INSTALLATION

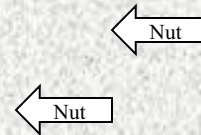
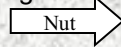
## VERY IMPORTANT INSTALLATION NOTE FOR GXP-BX MACHINES WITH THE INTERNAL VAULT OPTION

The door of the machine must be able to open the full amount to allow the dispenser Vault door to be opened. If the cabinet door cannot be opened the full 180 degrees, the Vault door will interfere with the machine hinges.

The security vault for the Bills & Coins accepted and for the Bills & Coin dispensers were installed in the machine prior to shipment. The Bills & Coins dispensed vault will need to be removed prior to mounting the cabinet to the stand or in the brick island. Be careful to note the location of the cable routings entering and exiting the vault so they remain in that position when the vault is re-installed.

### REMOVAL AND RE-ASSEMBLY:

- 1) Unplug the connectors for the hoppers and bill dispenser.
- 2) Remove the hoppers and bill dispenser. Tilt the hopper forward and lift to remove. Pull the bill dispenser out on its slides and remove the 3 nuts showing in the photograph.

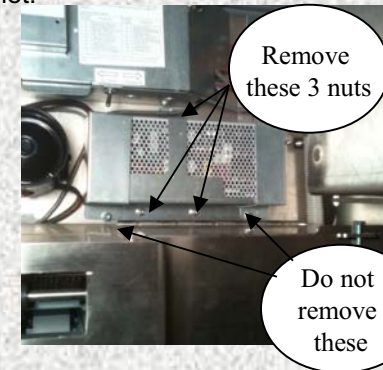


4. Remove the 6 nuts that attach the Vault to the machine cabinet. Note – the 4 on the back have washers. Be sure to use these washers when re-installing the Vault.



5. Remove the vault by lifting the front studs out of the corresponding slots. Lift the vault out of the cabinet. Note – a shim may have been included at the front right side of the vault. Retain this shim and install it into the same location when re-installing the vault.

- 3) Remove the 3 nuts that hold the power supply in place to allow clearance for the vault to be lifted slightly before removing it from the cabinet.



6. To re-install the vault reverse the removal process. Hint – to properly seat the rear bottom of the vault against the cabinet, lift up on the vault door (with vault door opened) until the vault is fully lowered into place. Install one washer and nut at the top rear to hold it down into position while installing the remaining fasteners.

# TERMINAL BLOCKS

## SPRING LOADED TERMINAL BLOCKS:

-The terminal blocks are spring loaded to ensure the connection will maintain it's integrity over time and with vibration.

- You must first release the spring pressure before inserting a stripped wire into the terminal block. See the attached picture for placement of wire and placement of screw driver. The screw driver must be inserted using enough force to open the spring. When inserted to full depth, the screw driver should remain in the slot without having to hold it.



**IMPORTANT** – Check all spring loaded terminal block and PLC screw connections before testing the GXP and wash bay. Gently pull on the wires to make sure they are secure.

## TERMINATIONS:

-The machine is equipped with either a PLC05 PLC or a CLICK PLC. The connection diagram for the brand used in your machine can be found on the inside cover of the Junction box located inside the GXP machine. The following pages include a copy of the connection diagram for each machine.

- The terminal blocks can handle wire gauges 12ga – 22 ga. The Wash Selection terminations have a 2' long wire connected to them. These wires should be removed and replaced with the wires from the wash bay. There are 4 selection wires and one common wire plus a pair of wires for the Inhibit line connection. Remove these wires one by one as you replace them with the Wash Selection wires coming from the conduit connected to the Wash Bay.

-Confirm that C2 & C3 on the PLC are connected via a short jumper wire. These are the commons for the wash bay connections.

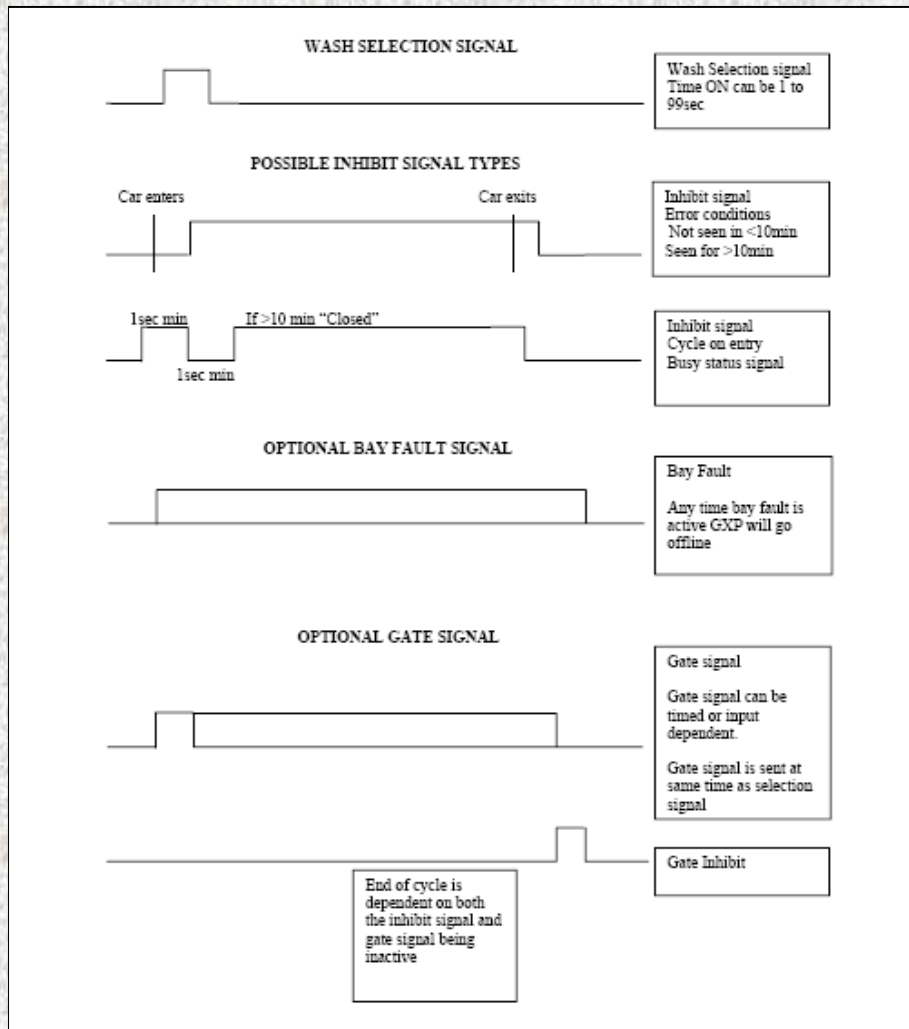
- The decal shown below is located inside the junction box cover. In addition, there is a decal that you can use to not the wire colors for each conduit wire from the wash bay controller.



# WASHBAY CONNECTIONS & TIMING

## WASHBAY TIMING

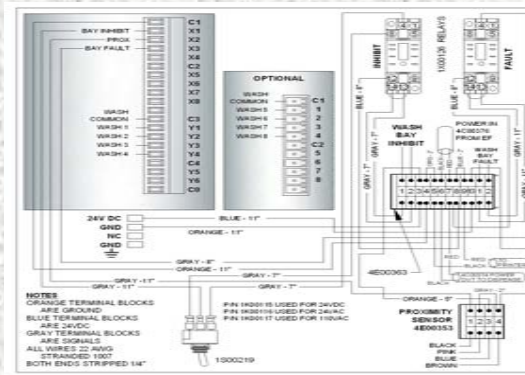
The wash bay "wash signal", wash bay inhibit signal, and bay fault signal timing is shown in the document below. Also shown is the timing diagram for an optional gate.



## WASHBAY CONNECTIONS

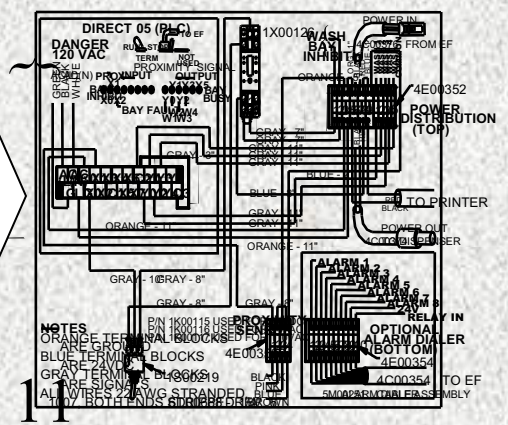
The decals shown below are located on the inside of the Junction Box cover. Remove the cover and flip it over to see the connection points for the wash bay signals. Use this decal to determine where each wash bay connection should be terminated.

The machine has been equipped with either a "Click PLC" or a PLC05.



'CLICK PLC' The Click PLC is a light gray (off white) color and has "CLICK" screened onto the face of it.

'PLC 05' - The PLC05 is a dark gray color and has "PLC05" screened onto the face of it.



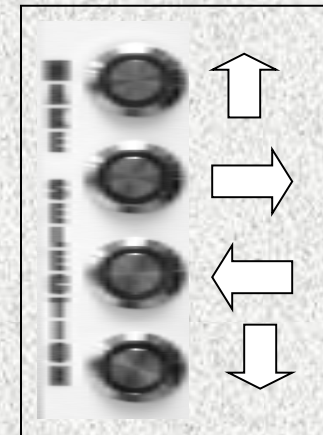
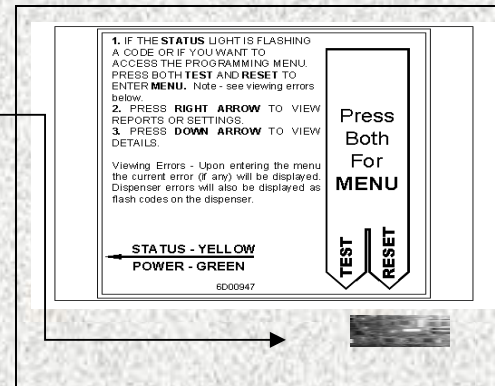
# CHECK THE PROGRAMMING

## NAVIGATING THE MAIN MENU ITEMS:

It is a good practice to check each Main Menu Setting to confirm it is set to match the operators intent. Enter the Owner menu items by pressing both red buttons **simultaneous** for at least 1 second and then release them.

The RIGHT and LEFT arrows (2<sup>ND</sup> and 3<sup>RD</sup> wash selection buttons) are used to step to each main menu item or to pick one of the multiple settings. The UP and DOWN arrows (top & bottom wash selection buttons) are used to move through the list of available settings for each main menu item. **NOTE – each Selection button has a small gray dot printed next to the button. If the dot is on the right side of the button then the button is the Right Arrow button. If it is on the left it is the Left Arrow Button, etc.**

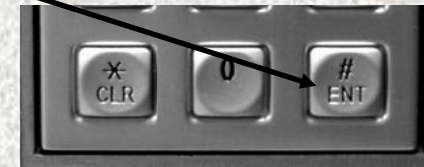
You can EXIT the Main Menu mode by pressing the Cancel button on the machine one or more times.



## HELP BUTTON:

The Help button is used to display help relating to the menu feature you are looking at. It will also provide navigation tips to let you know how to move through the menu to see available choices. If at any time you are not sure what to do next just press the Help button.

Some help screens will not fit on a single display screen so it may be necessary to press the question-mark button (?) a second or third time in order to view the next help screen. The help screens include detailed information that pertains to the feature you are viewing or setting.



## VIEWING ERRORS:

If an error is present in the machine, upon entering the Main Menu it will be shown on the display instead of the normal 'Main Menu' verbiage. To proceed to the Main Menu screen press the right arrow button again.



# TEST THE MACHINE



## CONTROLLER DIP SWITCH SETTINGS

#1 – always “ON”. This sets the machine for the IDX –X10 coin acceptor.

#2,3,4,5 – always “OFF”. These are not used.

#6 – Input Test Mode: “OFF” during normal operation. ON” to allow the pay station inputs (bill acceptor, coin acceptor, buttons...) to be tested without sending the Wash Signal to the wash bay.

#7 – Wash Bay Bypass Mode: “OFF” during normal operation. ON” to allow the pay station to be tested without sending the Wash Signal to the wash bay.

#8 – Credit Card Demo Mode: “OFF” during normal operation. ON” to allow the pay station to accept credit cards without resulting in an actual credit transaction .

## INPUT TEST MODE:

This special test mode allows you to individually test each acceptor deposit or button press. This is particularly useful when troubleshooting an individual component like a button, button cable, bill acceptor or coin acceptor. Any deposits will not be audited. If you deposit a particular coin or bill, the denomination will be shown on the user display.

## WASH BAY BYPASS MODE:

The Pay Station can be tested without “firing” (sending the wash signal to the bay controller) the wash bay. This is useful for testing the machine after installation and if performing general troubleshooting on one of the acceptors. In this mode the pay station PLC will not send the wash signals to the bay and it will not require the bay-in-use signal to be sent back from the bay. To start this test mode set dip switch #7 to the “ON” position and press the red “TEST” button located next to the RESET button. The test mode will now activate for 5 minutes. When finished testing it is strongly recommended that the dip switch be returned to the “OFF” position and the machine be reset. Hint: set dip switch #7 & #8 to “ON” when testing the machine immediately following the machine installation.

## CREDIT CARD DEMO MODE:

The credit card reader can be set to bypass the credit card modem thereby allowing virtually any credit card for be used for testing without the card holders account being debited. In this mode the card, any card, is swiped and the amount to be debited is approved by the machine as opposed to being approved by the card processing company selected by the merchant. In essence the machine will issue free washes whenever any type of card is swiped and no debiting of the card holders account will occur. To start this test mode set dip switch #8 to the “ON” position and press the red “TEST” button located next to the RESET button. The test mode will now activate for 5 minutes. When finished testing it is recommended that the dip switch be returned to the “OFF” position and the machine be reset. Note – when entering this mode you will hear two long beeps from the machine to confirm this mode is activated and the user display will show that you are in this mode.

# TROUBLESHOOTING

## RESTORING FACTORY DEFAULTS:

You can restore the factory default setting for all numerical entries. Text entries will remain in tact after restoring factory defaults. To restore the defaults drill down into the "CONFIGURATION REPORT" until you come to the last entry - "end of list". While at this point you will press the clear button (CLR on user keypad) and be prompted to answer "yes" to clearing the defaults.

It is important to note that you should check every setting after restoring the factory defaults.

## INHIBIT RELAY STATUS:

Verify the Car Wash inhibit signal by measuring the voltage between the jumper wires labeled "Inhibit Cycle One" and "Inhibit Cycle Two" on the power distribution block in the GXP. The small red LED on the relay will light when the proper voltage is applied to the relay.

If the Car Wash Controller momentarily turns off the relay after an end of wash cycle, set the switch on the GXP to Active. If the Car Wash Controller turns the relay on momentarily after an end of wash cycle, set the switch on the GXP to Passive.

## INSTALLATION TROUBLESHOOTING:

- ✓ Printout or written list of the "machine configuration". See the Machine Configuration Report in the Main Menu.
- ✓ Have manufacturer and model of the Wash Bay available.
- ✓ Run the internal testing outlined in the "Test The Machine" section of this manual.

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# DATATRAN/IPTRAN CARD SYSTEM

## ETHERNET TERMINATIONS:

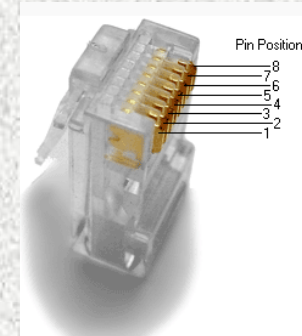
The Ethernet connections for the Datatran box are "Normal" (straight through) connections from one cable end to the other. See the following table for the pin out. It does not matter which RJ45 (at end of cable) plugs into a particular device.

A router must always be used with a cable modem. The router is required so the connected device can be assigned a valid IP address and this can only be accomplished by a router, not a modem.

## DATATRAN CONNECTION:

The Ethernet cable coming from the router through the conduit in the GXP will plug directly into the Ethernet connector in the DataTran box. When connected properly the IP address for the DataTran can be viewed in the Event Report menu item. Access the Main Menu in the pay station to see this report.

NORMAL	
Pin 1	Pin 1
Pin 2	Pin 2
Pin 3	Pin 3
Pin 4	Pin 4
Pin 5	Pin 5
Pin 6	Pin 6
Pin 7	Pin 7
Pin 8	Pin 8



## CONFIGURING THE DATATRAN IN THE GXP:

Access the Main Menu in the GXP. Step through the Menu selections until you find the Card System menu. Step down into the card system menu and answer the related questions.... Set the Card System type

When connected properly the IP address for the DataTran can be viewed in the Event Report menu item. Access the Main Menu in the pay station to see this report.

## NETWORKING MULTIPLE (2 or 3) DATATRAN CREDIT CARD MODEMS TO A SINGLE IPTRAN (High Speed Modem):

A single Iptran can connect up to 3 Datacap credit card modems to a single. The maximum length of cable that is used to connect each Datacap to the Iptran should not exceed 50'. The Iptran can be mounted in one of the pay stations or in a central temperature controlled area that is protected from the elements, i.e. Equipment Room. Again, the maximum length of cable that connects each Datacap to the Iptran should not exceed 50'.

## TROUBLESHOOTING:

DataCap Credit card setup and test: Check the "Credit Settings" menu and verify the Datacap has been selected in the "Card System" menu. You can verify the card reader and internal connections by following the credit card demo mode test procedure outlined in this manual.