# Water Wizard
TOUCHLESS AUTOMATIC 2.0

# Installation Manual





COLEMAN HANNA
CARWASH SYSTEMS LLC

*AN O'HANRAHAN COLEMAN COMPANY*

# WATER WIZARD 2.0

# INSTALLATION PROCEDURE

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## INSTALLATION KIT FOR THE WATER WIZARD 2.0

This list is included in the owner's manual so you can verify what should be in your shipment.

### INSTALLATION KIT FOR WATER WIZARD 2.0

**JOB:**_____ **AKO**_____

**LOCATION:**_____ **DATE**_____

**BUILT BY:**_____ **DOUBLE CHECK BY:**_____

| | QTY | DESCRIPTION | SHIPPED | BACK ORDERED |
|---|---|---|---|---|
| **BOTTOM OF BOX:** | | | | |
| | 1 | BOOM PLATE | | |
| | 1 | BACK-UP PLATE | | |
| | 4 | EYE BOXES WITH LIDS | | |
| | 2 | PROX TARGETS (for Home & End o Trk) | | |
| | 1 | TREADLE PLATE | | |
| | 1 | DISCONECT BOX | | |
| | 400 | SHIMS | | |
| | 2 | HOLD DOWN BRKTS | | |
| | 2 | UNDERCAR RAMPS | | |
| | 100 | 5 1/2" X 1/2" CONCRETE BOLTS | | |
| | 4 | 1 1/4 PILLOW BEARINGS VPS120 | | |
| | | | | |
| **PANEL ROOM:** | | | | |
| | 1 | GEA INSTALL KIT | | |
| | 1 | THERMOSTAT | | |
| | | | | |
| **HOSE DEPT:** | | | | |
| | 70' | 12/5 S.O. CORD | | |
| | 70' | 12/3 S.O. CORD | | |
| | 70' | 4/4 S.O. CORD FOR BLOWER | | |
| | 1 | BOX 3/4 CLEAR HOSE | | |
| | 30' | 3/8" GRAY P/L HOSE (for Air) | | |
| | 30' | 3/8" GREEN P/L HOSE (for Tire Cleaner) | | |
| | 30' | 1/2" BLUE P/L HOSE (for Presoak) | | |
| | 30' | 1/2" RED P/L HOSE (for Two Step Presoak) | | |
| | 30' | 1/2" BLACK P/L HOSE (for Triple Shine) | | |
| | 30' | 1/2" RED P/L HOSE (for L.P. Hot Wax) | | |
| | 30' | 3/4" BLUE (for Spot Free Rinse) | | |
| | 1 | 1" X 15' H.P. WIRE BRAID HOSE | | |
| | 1 | 1" X 28" WIRE BRAID | | |
| | 1 | 1" X 45" WIRE BRAID | | |
| | 1 | 1" X 60" WIRE BRAID | | |
| | 35' | 1/2" WIRE BRAID HOSE | | |
| | 25' | 1" SPIRAL WRAP | | |
| | 15' | 2" SPIRAL WRAP | | |
| | 1 | BOX OF HARDWARE | | |
| | | | | |
| **MISC:** | 1 | OWNERS MANUAL | | |
| | 1 | VINYL BOOM COVER | | |

DOOR KIT _

FOR TWO STEP _

GAS WINTER WIZARD_

ELECT. WINTER WIZARD_

CIRCULATING P.S. ___

LOW PRESS. HOT WAX___

MECHANICAL TREADLE_

## INSTALLATION PROCEDURES

The Water Wizard 2.0 Electrical Control Center and gantry are pre-plumbed and pre-wired at the factory. This makes the installation a fairly easy and straightforward operation. The only special tools needed for the installation are a hammer drill and bits for installing the track and other bay equipment and a forklift for setting the gantry on the track. The installation can be accomplished by following a simple step-by-step procedure.

The steps you will need to perform are:

1. Install the equipment in the equipment room.
   - **a.** Set the pump stand.
   - **b.** Set the Water Wizard 2.0 Electrical Control Center.
2. Install the equipment in the automatic bay.
   - **a.** Set the track
   - **b.** Set the guide rails.
   - **c.** Set the Gantry.
   - **d.** Install the Boom Assembly.
   - **e.** Install the plumbing from the pump stand to the gantry.
   - **f.** Set the treadle plate, entrance and treadle plate eyes
   - **g.** Set the undercarriage bar and ramps.
   - **h.** Set the 2-position sign and the 10-position sign ( If applicable)
3. Install the electrical from the Water Wizard 2.0 Electrical Control Center to the gantry.
4. Wire the Spot-free to the Self-Serve pump stand.
5. Wire the Stand-alone Dryers.
6. Wire the Freeze Thermostat
7. Wire the Bay Doors.
8. Install the plumbing from the incoming water supply to the pump stand.
   **NOTE:** Use a licensed plumber for this step.
9. Install the electrical from the breaker panels to the WW ECC.
   **NOTE:** Use a licensed electrician for this step.
10. Set the Auto Cashier.
11. Set the Clearance Bar

## STEP 1: SETTING THE EQUIPMENT IN THE EQUIPMENT ROOM

### a) SET THE PUMP STAND:

### Pump Stand With Control Panel Mounted on the End

Take the pumping unit with electrical box still mounted on the end into equipment room. When you set the unit in place, leave at least 18" between the wall and pumping plant. The 18" clearance allows access behind the unit for plumbing and service work. You need to position the unit on the wall closest to the gantry and in a place so that the electrical box can be removed and mounted to the wall; keep in mind that the 1¼" seal tight is only 6' long. For this reason, the cabinet needs to be mounted next to pumping unit.

After the pumping unit has been set in place with at least 18" of clearance between the wall and pumping unit, level the pumping plant by placing a level on 2" frame and turning leveling legs either up or down to obtain levelness.

## b) SET THE WATER WIZARD 2.0 ELECTRICAL CONTROL CENTER

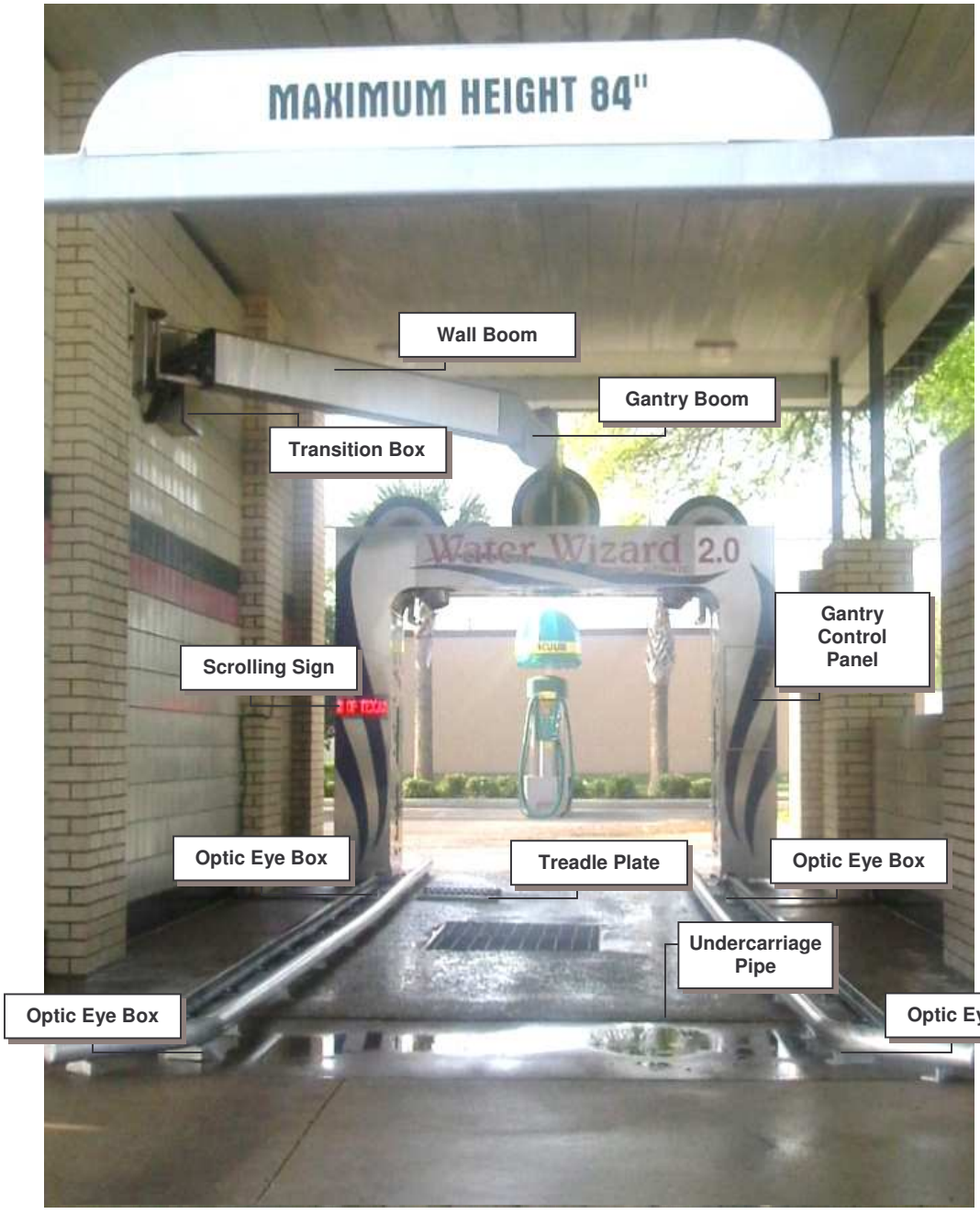

**Water Wizard 2.0 Pump Stand**


**Electrical Control Center**

Remove the electrical control center (ECC) from the pumping unit and mount to the wall using the proper mounting bolts according to the material of the wall.

**NOTE: The ECC should not be left attached to the pumping unit because the vibration of the pumps and motors could cause problems with the computer devices and will void any warranties.**

## STEP 2: SET THE EQUIPMENT IN THE BAY




### a) Set the Tracks:

You will need the blueprint labeled **"M1.0 & M1.A"** for setting the equipment in the bay. This gives the dimensions for the layout in the bay for the tracks and guide rails. It also gives the elevations for installing the boom and transition box.

Chalk a line 56 1/8" from the centerline of the bay to mark the center of the first track. Set one of the tracks at the center of this line. Level the track along its full length, using the shims you received in the shipment. If you run out of shims, use either 5/8" washers or some 3/4" galvanized pipe couplings as shims.

**NOTE**: When mounting the track, always mount one side completely, then you can measure from one track to the other so that you can set the second track at **112 1/4"** on center. This distance will allow the unit to run in the center of the wheels reducing wear on wheels, bearings and track.

Once all bolts have been installed and tightened, set the other track at 112 1/4". Keep in mind both tracks should be as level as possible with one another as well as along the path of travel. If a track is installed in sections, weld the gap between the tracks and grind the weld smooth. Do not grind the weld so much that you create a dip in the track.

**NOTE**: Always drill all the way through concrete when possible so that if you make a mistake, you can hammer the bolt through concrete and install a new bolt in the same hole. The pitch in the bay floor may require you to use longer 1/2" concrete bolts. You can purchase longer bolts at most hardware stores.

**b) Set the Guide Rails**

When mounting the guide rails you do not need to level the rails. Mount them directly to the floor. There is no problem if you end up with a bow in the rail. Use 1/2" concrete anchor bolts to secure the rail to the floor.

**c) Set the Gantry**

Once the tracks are set, pick up the gantry unit with a forklift and set it on the tracks in middle of the bay if possible. We recommend setting it the middle so when you hang the boom assembly you can rest it on the gantry while installing it.

**NOTE: Be sure you set the gantry so the Electrical Panel is facing the entrance end of the Car Wash and the safety eye cans are facing the exit end of the Car Wash.**

**d) Install the Boom Assembly**

Each boom has two sections. The longer section mounts on the wall, and the shorter section mounts on the gantry.

On each section of boom assembly are three 1/2" stainless steel tubes for pre-soak. There is one for low ph pre-soak, one for high ph pre-soak, and one for circulating pre-soak. Also, on each section are four 3/8" brass tubes. One brass tube is for air, and the other three are for tri-color wax. The 3/8" stainless steel tube is for the

Tire Cleaner. The 1" stainless steel tube is for the HP Functions, and the ¾" Schedule 80 PVC is for spot-free rinse. The anti-freeze system circulates through the square tubing on the frame of the boom. Use one square tube as the supply and the other as the return.

There are two PVC conduits for the electrical. Use one for the 24VAC cable and communication cable. Use the other for the 208\230 VAC 3ph cable and an additional PVC conduit for the 4/4 electrical used for the blower.

**1) Gantry Boom Assembly**

For the gantry with no on-board blowers, the shaft for the boom is 18½" long from the end of the shaft to the bottom of the boom. For the gantry with on-board blowers, the shaft is 29" long. Make sure you have the right boom. The boom with the longer shaft will allow the boom to pass over the blower housing for on-board blower units.

Mount the boom to the gantry first. This will help you line up the two booms when mounting the wall mounted boom assembly. Slide two 1¼" pillow block bearings on shaft and mount the bearings to the stainless steel plate that is welded in the center of gantry. The gantry boom needs about ¼" of clearance between the highest point of the top of gantry (which may be the top boom motor) and bottom of the boom.

**NOTE:** Make sure the wall boom and the gantry boom are at the same height, or as close as possible. If the boom hits the top boom motor, you need to recheck your measurements.

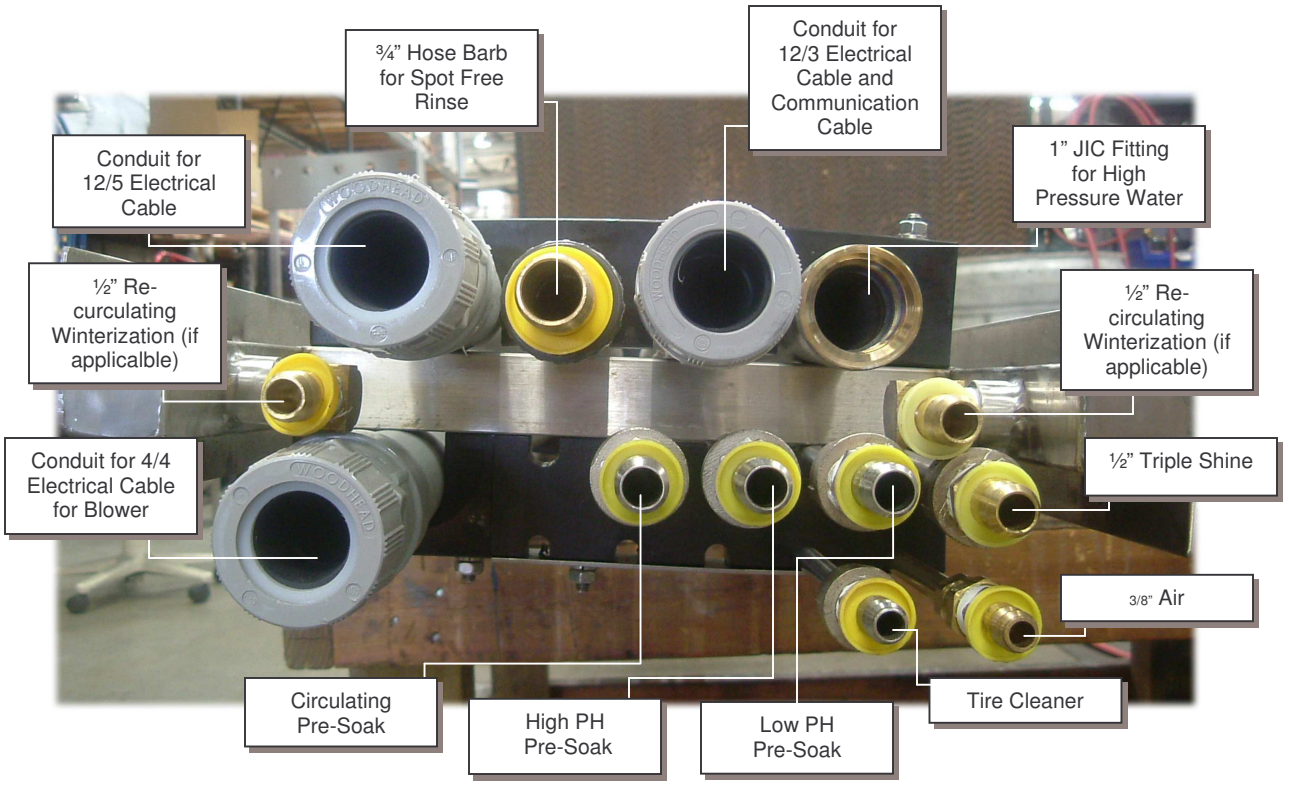
**2) Wall-Mounted Boom Assembly**

Of course, the boom and disconnect box for the gantry with on-board blowers will mount higher than the boom and disconnect box for the gantry without on-board blowers.

Lay out the location for mounting the "boom assembly mounting bracket" on the wall according to the measurements on drawing M 1.0 and according to the type of gantry you have. Drill holes through the wall and use the back-plate to prevent the bolts from pulling through the brick.

Once the boom bracket has been installed, slide 1¼" pillow block bearings onto the boom shaft and hang the boom on the bracket. Then bolt the boom to the bracket using ½" stainless steel nylon self-locking nuts.

**NOTE: Use "Never Seize" on bolt threads.**




**Boom Assembly**

### 3) Disconnect Box

Lay out the wall for the location of the disconnect box for the boom according to the measurements on drawing M1.A. Mount the box so the large hole faces the boom. The hoses go out the side of the Disconnect Box directly to the pipes mounted on the boom. If the equipment room is next to the automatic bay, the disconnect box will have couplings welded to the back of the box.

If the automatic bay is an extended bay not next to the equipment room, the box will have the fittings welded to the opposite side of the hole in the side of the box. It will have 90° fittings facing up to attach the hoses coming from the equipment room. Route the hoses from the equipment room, through the attic or on top of the roof (depending on the roof style of the car wash, then down through the ceiling of the automatic bay into the hose connectors of the disconnect box.

If the automatic bay is next to the equipment room, you will need to cut a hole in the wall, leaving enough space for the disconnect box to be mounted over the hole. Be careful not to cut the hole in the wall larger than 16" X 16". You can confirm the size of the hole with the box before cutting the hole. Once the hole has been cut in the wall, place the disconnect box over the hole with the large hole facing the boom and mount it to the wall using plastic anchors and stainless steel screws.

Once the box is mounted, swing the boom towards the entrance end of the car wash and connect all the hoses from the Disconnect Box to the Pipes attached to the boom. Run the SO Cord through the conduits going through the cord grip connectors at each end of the conduit.

## e) Install The Plumbing From The Gantry To The Pumping Plant

**NOTE: Do not connect any hoses to the high-pressure box or low-pressure box until after you flush out the lines during the Startup procedure.**

An installation kit is shipped with each unit, which includes all of the electrical cables and hoses you need between the gantry and pumping stand. The contents of the installation kit are listed on pages 3 and 4 of this section. For instructions on where the hoses go, see the portion of this section labeled "Wall Boom Installation."

A standard hook-up is when the automatic bay is next to equipment room. If the automatic bay is not next to the equipment room, you will need an extended bay installation kit. As a rule of thumb, add 20' of hose for each bay between the equipment room and the automatic bay. The price book lists the hose extension kit with its part number and price.

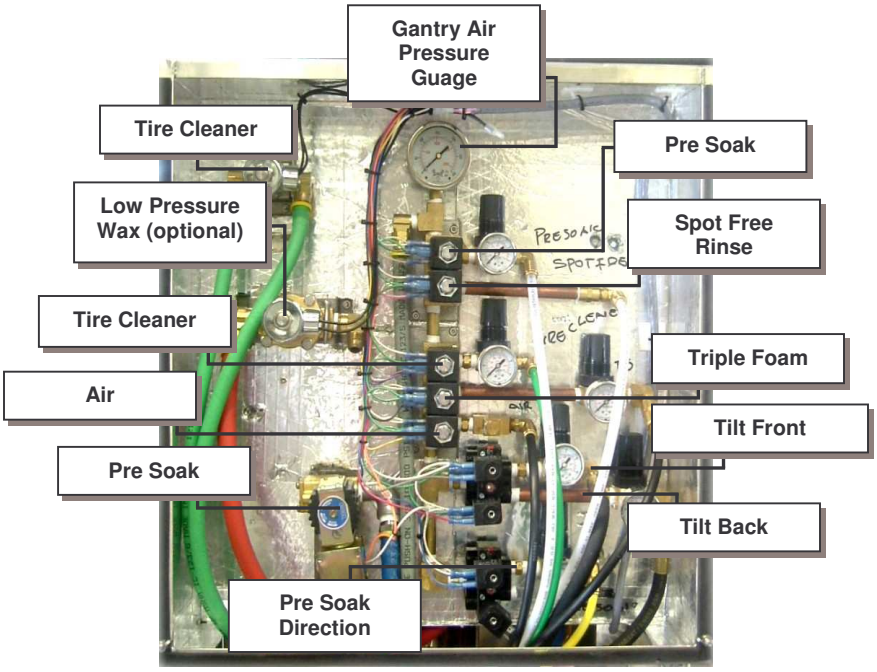
To hook up the product between the gantry and the pumping stand, you will need to use the Parker Hoses from the installation kit. All hoses for the products will hook to appropriate connector on the back of the pumping plant, except the blue ¾" R. O. hose. The R. O. hose connects to the R. O. pump on the R. O. system. Each hose will then go to the appropriate connector on the back of the disconnect box mounted on the wall. In the case of a remote bay, the connectors will be located on top of the box.

**1) Connect the hoses to the Low-Pressure Box**

The following table shows how we identify each hose function by color and size:

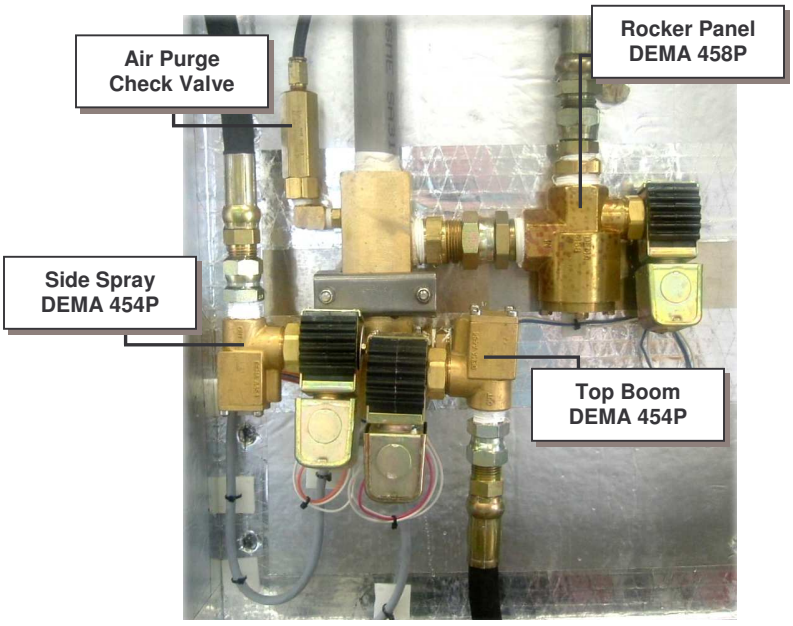
| Function | Hose Color | Hose Size |
|---|---|---|
| Low PH Presoak | Red | 1/2" |
| High PH Presoak | Blue | 1/2" |
| Tire Cleaner | Green | 3/8" |
| Tri-color Wax (Yellow) | Yellow | 3/8" |
| Tri-color Wax (Blue) | Blue | 3/8" |
| Tri-color Wax (Red) | Red | 3/8" |
| Air | Gray | 3/8" |
| Spot-free Rinse | Blue | 3/4" |

Begin connecting the hoses for the low-pressure box at the chemical pump on the pump stand and run the hoses to the back of the disconnect box. Then, connect the hoses between the wall-mounted boom and the gantry-mounted boom. Finally, connect the hoses from the low-pressure box to the gantry-mounted boom.




**Low Pressure Box on Gantry (Driver's Side)**

**2) Connect hoses to the high-pressure box**




**High Pressure Box on Gantry (Passenger's Side)**

The ¾" push lock hose connects to the Automatic R.O. Delivery pump on the Self-Serve or Stand Alone R.O. System to the transition box. From inside of the transition box connect a ¾" push lock hose, run the hose through the wall and gantry boom to the ¾" fitting on the gantry disconnect plate located at the top of the wash gantry.

### 3) Connect the Undercarriage Bar

The ½" wire braid hose will connect to the ½" 454P DEMA located in lower front center of pumping plant. This hose will connect to stainless steel undercarriage spray bar. Leave tips out until the hose and bar have been flushed out for 1 minute.

**This completes all hose connections.**

## f) Set the Treadle Plate, Entrance and Treadle Eyes

Using the print labeled **"SHEET M1.0",** set the eye boxes for the entrance and treadle eyes with ¼" concrete anchors. Set the treadle plate with ½" anchor bolts. Grind the bolts off flush with the nut, to avoid cars running over the bolt and inadvertently getting a flat tire.

### 1) Eye Sensor Wiring

There are four eye sensors sent with each unit (two transmitters and two receivers). These eyes go in the stainless steel eye boxes you just mounted in the bay (see the drawing M2.0 and wiring diagram on page 17). Put the receivers in the stainless-steel boxes on the equipment room side of the bay, and the transmitters in the boxes on the opposite side of the bay.

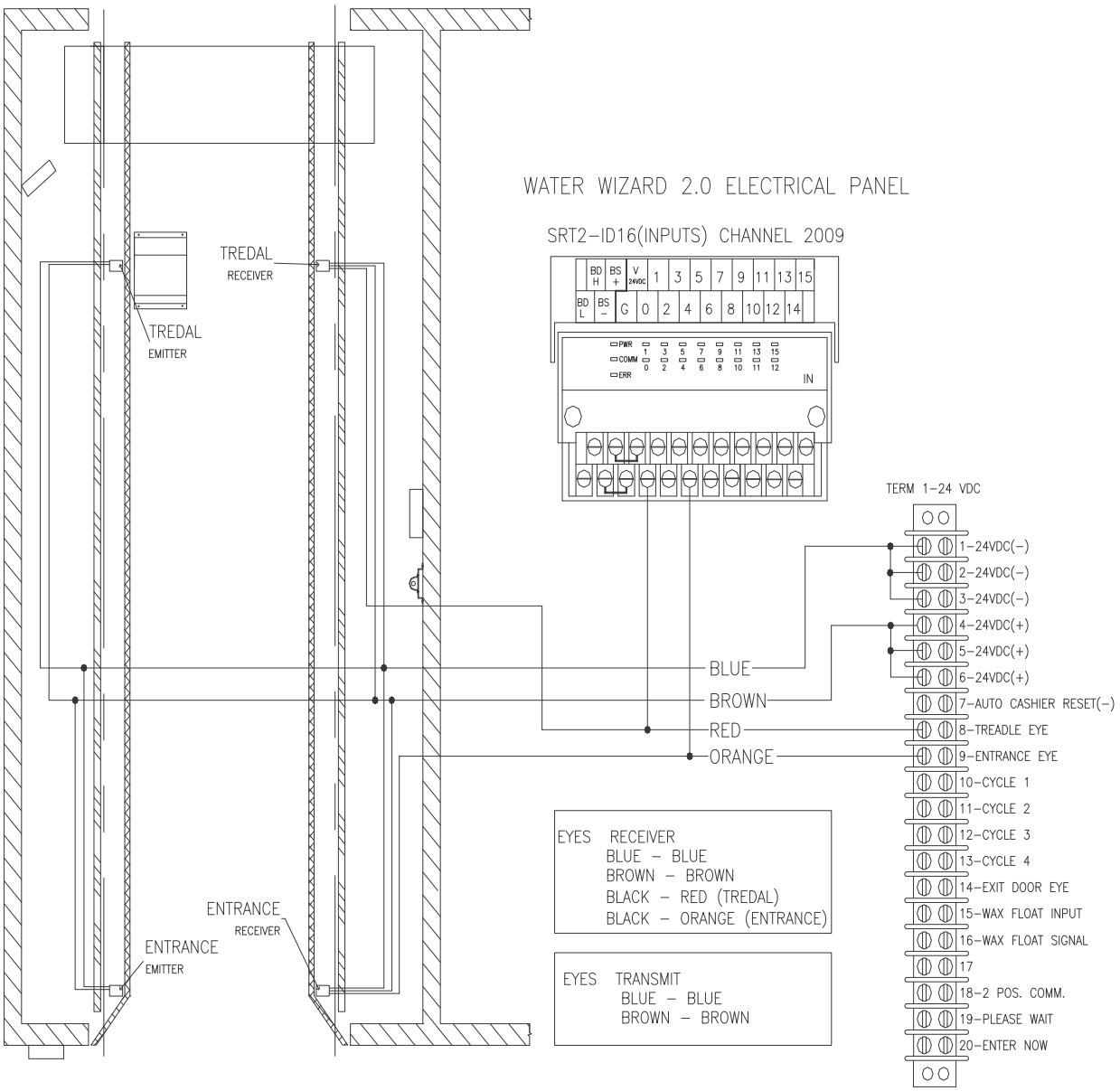
Have your electrician run a conduit from the WW ECC to a J-box by each of the receiver eyes. You will also need a conduit going underground (or overhead) to J-boxes by each of the transmitters.

You are supplied with four gray cables that are terminated with a plug on one end. Run the cables in a flexible, watertight conduit from the Eye box to each of the J-boxes provided by the electrician in the bay.

The cables are not long enough to reach to the ECC in the equipment room, so you will need to run some wires to the four J-boxes your electrician installed in the bay. You need two wires [brown for 24 DCV (+) and blue for 24 DCV (-)] for the transmitter and receiver eyes. In addition you need another two wires for the receiver eyes. One wire will go to the treadle receiver eye, and the other will go to the entrance receiver eye.
Both transmitter and receiver eyes are powered by 24 VDC. The two extra wires which go to each of the receiver eyes connects to the white wire of the cable going to the receiver eyes. This will serve as the input wire for each set of eyes, which you will tie into the **"Term 1"** terminal strip.

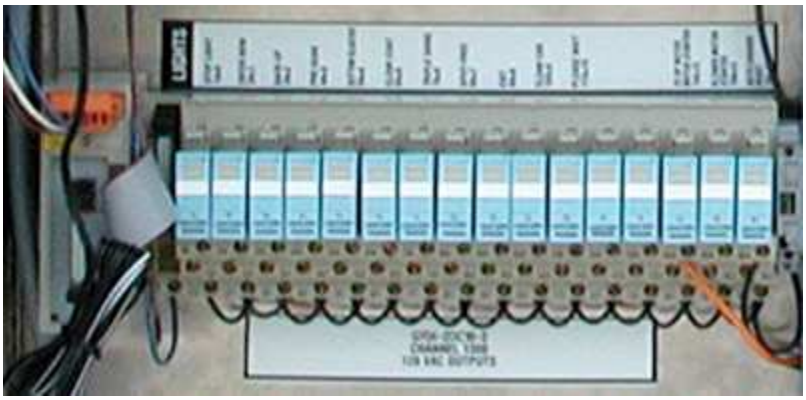
Run the cable from the stainless steel eye boxes in the bay through the conduit from the J-box to the ECC. You need one input for the treadle eye, and one input for the entrance eye. **Refer to drawing on page 17 for correct wiring**.

Note: Install receiver eye on the Equipment Room Side of the Bay.




EYES WIRING DIAGRAM

## G70A-ZOC16 AND SIGN WIRING



The Optional 10 position sign is lit by an output from the G70A-ZOC16-3-DC24 output card inside the ECC located inside the equipment room. This output card is located at the lower left corner of the WW ECC. See the picture above.

Below the relays are three rows of screws. The screws along the bottom row are the relay common contacts. These screws are jumpered together with 120VAC feeding them through a ten amp fuse, also located on the din rail to the right of the G70A-ZOC16.

The screws along the top row are the normally open contacts, and the screws along the middle row are the normally closed contacts (not used). Run one wire for each light function from the top row of screws (normally open contact) on the ZOC16 to the terminal strip inside of each of the light cans. (See the chart below for proper outputs).

**NOTE: DO NOT** use the middle row of screws. This is the Normally Closed contact, which are not used.

The SRT2-VOD16 and the G70A-ZOC16 are powered by 24VDC. If not pre-wired from the factory, hook up the 24VDC(+) (Brown Wire) to BS (+) on both cards and 24VDC(-) (Blue Wire) to the BS (-) on both cards. On the SRT2-VOD16, hook up the communications wires (Black for BDH and White for BDL) to the BDH and BDL connections of one of the other SRT2 cards in the equipment room.

**NOTE: DO NOT** apply any voltage to BDH or BDL. You will burn up the communications in all of your car wash components, which is very expensive.

In the top of the 10-position sign, you will find a terminal strip for wiring up the sign. Run a ¾" conduit from the WW ECC to a position on the wall. Using an EMT to sealtight connector, run a ¾" sealtight conduit from the wall to the top back of the 10-position sign. Pull the wires from the WW ECC to the sign. Terminate the wires according to the chart below:

## Lights - Wiring Diagram

| **10 POSITION LIGHT (OPTIONAL) INSIDE THE AUTOMATIC BAY** | | |
|---|---|---|
| **G70A-ZOC16-3DC24** | **WIRE COLOR** | **DESCRIPTION** |
| 14 | Red | "Stop" |
| 24 | Blue | "Enter" |
| 34 | Yellow | "Back-Up" |
| 44 | Tan | "Presoak" |
| 54 | Purple | "Bottom Blaster" |
| 64 | Black | "Clear Coat" |
| 74 | Gray | "Triple Shine" |
| 84 | Pink | "Spot Free" |
| 94 | Orange | "Exit" |
| 104 | Brown | "A Clean Car Is A Happy Car" |
| **TERM 3** | | |
| 2 | White | 120 Volt Neutral |
| 3 or Ground Bus | Green | Ground |

| 2 POSITION LIGHT AT ENTRANCE OF AUTOMATIC | | |
|---|---|---|
| **TERM 1 - 24 VDC** | **WIRE COLOR** | **DESCRIPTION** |
| 20 | Blue | "Enter Now" |
| 19 | Red | "Please Wait" |
| **SIGN CAN** | | |
| Pigtail | Blue | "Enter Now" |
| Pigtail | Red | "Please Wait" |

## COMMANDER C-1000 REMOTE

With the Commander C-1000, you can perform the following functions on the scrolling sign:

- Adjust the brightness of the sign
  - Press the up or down arrows on the remote
- Test each message in the sign
  - Press "0" for the main message
  - Press "1" through "9" for the first nine messages
  - Press "CNTL" + "0" through "5" for the remaining six messages
- Select different modes
  - Press the "MODE" button, then enter the password "9999" Press "0" to select either Self-Serve Bay or Automatic
  - Press "MODE 2" to select the display type. "MIRROR". The message will be displayed from right to left instead of left to right.
  - Press "3" to change the password.
  - Press "4" to test the sign. This function doesn't really do much.
  - Press "9" to Exit.

## CHANGING THE MAIN MESSAGE

The scrolling message when the automatic is not in use is changeable. To change the message, you need a "NULL MODEM" cable and a computer with "Windows". Hook the cable to COM1 of your computer. Press the "START" button, then select "ACCESSORIES", "COMMINICATIONS", "HYPERTERMINAL".

Under a new connection, choose communications under COM1. Change the properties to 9600 Baud, and set the Flow Control to "NONE". Press the Space Bar. A menu will come up that says:

N – New Message
H – Help
Esc – Exit

Press "N" to enter the new message. After entering the message, press the "ESC" key to exit. After you are done, you can save your Hyperterminal session. Then make a shortcut to your desktop for future use.

**i) Set the Home and End of Track Prox Targets.**

See drawing M1.0 for detailed the prox target mounting location. This will position the prox so it cannot pass the prox plate before the gantry is at the end of the track. Mount the plates perfectly level to give the prox an even signal as it passes over the plate. After mounting the plate, carefully move the gantry so the prox is above the prox plate. Set the prox ⅛th" to 3/8$^{ths}$ above the plate.

## STEP 3: INSTALL THE PLUMBING FROM THE WATER SUPPLY TO THE PUMP STAND

**WATER and ELECTRIC REQUIREMENTS**

**230VAC – 3phase - 125 AMP MINIMUM**
**Fusible Disconnect Switch w/125 Amp Dual Element Fuses**

**120VAC - 20 AMP DEDICATED**

**1" SOFT COLD WATER LINE**

The Water Wizard 2.0 has a simple hook-up procedure. There is a 1" brass tee in the back of the cold-water tank, which serves as the cold soft water hookup. The ¾" hose on the bottom of the tee, installed at the factory, will feed all chemical hydrominders.

## STEP 4: INSTALL THE ELECTRICAL FROM THE ELECTRICAL PANELS TO THE WATER WIZARD 2.0 ELECTRICAL CONTROL CENTER

Run the electrical service for the Water Wizard 2.0 into the Electrical Control Center ("ECC") on either the side or the bottom of the cabinet. Do not put any holes in the top of the cabinet. Metal shavings could fall into a computer component, or water could leak through a hole in the top of the cabinet, damaging the computer and its components.

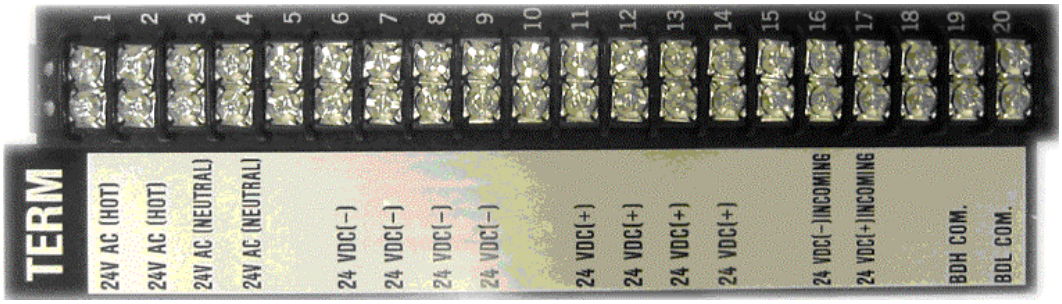
**NOTE:** If any holes are put in the top resulting in water damage or metal shavings falling into a computer component, causing a short, the warranty will be void.

Terminate the 125-amp 3-phase service for the Water Wizard 2.0 into L1, L2, and L3 of the plastic safety switch in the upper right hand corner of the panel. The bottom of the switch is pre-wired to the 25 HP motor starter and to two breakers.

The single-phase breaker protects the Low Pressure Pumps on the Pump Stand. The three-phase breaker protects the presoak heater and the motors/electronic drives on the gantry.

Terminate the 120 VAC circuit into the auxiliary, normally open contact on the left side of the safety switch. Terminate the 120 VAC Neutral in the terminal block labeled **"120 VAC Neutral"**. This circuit supplies voltage to the transformer, DC power supply, auto cashier, lights and computers.

## STEP 5: HOOK UP THE ELECTRICAL FROM THE ECC TO THE GANTRY




**Gantry Terminal Strip**

## INSTALLATION PROCEDURES

The gantry needs 208/230VAC, 24VAC, 24VDC, and communications. In the installation kit, you will find three electrical cords: one 12/5 SO cord (70'), one 12/3 SO cord (70'), and one Communications Cable (RSM531-30M, 30 meters long).

According to the National Electrical Code, Section 400.8, you are not permitted to run flexible SO cords through a wall. Electrical inspectors have called this to our attention. To avoid this problem, you can run a seal-tight from the bottom of the WW ECC to the back of the transition box. Then run your SO cords and communications cables through the seal-tight.

Run the cord through the grommet holes of disconnect box through the boom with all of the other hoses going to the gantry. Route the wires over to the electrical box on the passenger's side of the gantry.

Terminate one end of the 12/5 SO cord in L1, L2, and L3 3-Ph connections in the line side of the contacts for the presoak heater in the WW ECC. By hooking the gantry up in this manner, you can cut power to the gantry with the main switch in the equipment room.

**NOTE:** The white wire in the 12/5 SO cord is not used. This can be used as a spare if you lose one of the legs in your SO cord, so don't cut it off.

Run 12/5 SO cord to the electrical box on the passenger's side of the gantry. A hole is predrilled in the back of electrical box on the gantry for the 12/5 SO to enter the box. An aluminum GC90 cord grip fitting is provided for installation into the cabinet.

Terminate the black, red, and orange wires in L1, L2, and L3 of the safety switch in the gantry ECC. This will run all three motor starters on the gantry. Terminate the green wire in the ground bar at the bottom of the cabinet.

The 12/3 SO cord and Communication Cable run along the same path as the 12/5 but terminate at different locations. These two cords terminate on a terminal strip located at the bottom left side of the electrical panel on the gantry. The 12/3 S.O. cord is used for 24V AC. Terminate the black wire of the 12/3 S.O. cord in terminal screw #1or #2 (labeled 24 VAC hot). Terminate the white wire on terminal screw #3 or #4 (labeled 24 VAC neutral). Terminate the green wire on the ground bus at the bottom of the panel.

In the gantry, connect the ground wire to the ground bus. The other wires, blue and brown connect to the DC Filter. There is a brown wire, a blue wire, and a green wire. Connect the brown wire [24V DC Positive (+)] to #17 and the blue wire [24V DC Negative (-)] to #16. The black and white wires in the communication cable are communication wires for the Omron computer. Terminate the black wire to terminal screw #19 (BDH Comm). Terminate the white wire to terminal screw #20 (BDL Comm).

## STEP 6: WIRE THE SPOT-FREE TO THE SELF SERVE STAND

One of the relays next to the 25HP Motor starter in the WWECC is for Spot-Free. The relay is pre-wired to the **24VAC** terminal strip. The **relay common** goes to **terminal #8**, and the relay **normally-open** contact goes to **terminal #9**.

To wire the spot-free, run **two wires** to the spot-free cabinet (may be in self-serve equipment). Hook one wire to **"24VAC" terminal #7**. Hook the other end of the wire to **24VAC Hot** in the Self-Serve Electrical Panel. You can get **24VAC hot** from the **commons** of the output card on the **spot-free PLC** or from **terminal #1** of any of the bay terminal strips.

The R.O. PLC can service two automatics. The inputs for the automatic bays are **inputs #10 or #11**. The input wire for the **first automatic** terminates at **input #10**. The input wire for the **second automatic** terminates at **input #11**.
See the wiring diagram below:

| TERM 2 – 24VAC | Wire Color | PLC Input |
|---|---|---|
| #8 (COMMON) | Pink | 24VAC Hot |
| #9 (N/O) | Pink | #10 or #11 |

**NOTE: With Money Manager wire per instructions inside Supersaver Cabinet.**

INSTALLATION PROCEDURES

## STEP 7: WIRE THE DRYERS

### a) Stand-Alone Dryers

The stand-alone dryer is controlled by output 2003.14 of the ROC16. You only need two wires going to the control panel of the Free-Standing Blower Control Panel, one 120VAC hot to output 2003.14 and one 120VAC neutral to #4 on Term #3 – 120VAC

If you need to change the voltage for the output, take the jumpers out of the common for relay 14 in the bottom row of the ROC16. Put a jumper wire between the commons for outputs #13 and #15. Wire the voltage you need to the common of output 2003.14.

> **NOTE: If you need to change the voltage please call the Jim Coleman Co. technical support.**

### DIXMOR DIGITAL TIMER WIRING

To wire the Digital timer, you need four wires from the ECC to the timer. You need a black wire for 120 VAC Hot, a white wire for 120 VAC Neutral, and two control wires. See the wiring diagram below.

| Terminal 2 24VAC | Terminal 3 120VAC | Wire Color | Dixmor Timer Terminal Strip |
|---|---|---|---|
| | Hot #1 | Black | #1 |
| | Neutral #4 | White | #2 |
| #10 | | Purple | #3 |
| #11 | | Purple | #5 |

### b) On-Board Dryers

Run the 4/4 S. O. cord from the WW ECC to the Dryer Electrical Panel on the top of the gantry. In the Dryer Electrical Panel, terminate the 4/4 in L1, L2, and L3 of the main disconnect switch. Terminate the green wires to the ground bus of the panel.

## STEP 8: WIRE THE BAY DOORS

If the car wash is installed where temperatures will fall below freezing, you may wish to purchase the optional door package. The package includes an SRT2-ROC08 and a set of Banner Eyes. When the car wash comes with the door package pre-installed, the SRT2-ROC08 is installed in the Water Wizard 2.0 ECC, and the outputs and commons come pre-wired to the eyes terminal strip. The Eyes Terminal Strip is located near the bottom of the ECC.

**NOTE:** When the Door Control Package is purchased separately, you must install the SRT2-ROC08 in the ECC. The SRT2-ROC08 is powered by 24VDC and communicates to the Car Wash CPU over the BDH and BDL lines. Terminate BDH with a black wire to BDH of one of the other terminal cards. Terminate BDL with a white wire to BDL of one of the other terminal cards. The card is powered by 24VDC. BS (+) and BS (-) are the 24VDC(+) and 24VDC(-) respectively. Terminate the BS+ with a brown wire to 24VDC (+). Terminate the BS (-) screw with a blue wire to 24VDC (-).

To hook your door controls to the Water Wizard 2.0 ECC, run three wires to both door controllers. In each controller, terminate one wire on the Door Controller Common. Terminate the other wires to the Door Controller Open contact and the Door Controller Close contact.

In the WW ECC, hook the wires to the appropriate screws on the **"TERM 2"** terminal strip. See the wiring diagram that follows:

### BAY DOOR WIRING DIAGRAM

| TERM 2 24VAC | Wire Color | Door Control | SRT2-ROC16 |
|---|---|---|---|
| #13 | White/Yellow | Entrance Common | COM 4 |
| #14 | White/Blue | Entrance Open | 2003.08 |
| #15 | Red/Black | Entrance Close | 2003.10 |
| #16 | White/Yellow | Exit Common | COM 5 |
| #17 | Red/Yellow | Exit Open | 2003.09 |
| #18 | Red/Green | Exit Close | 2003.11 |

You can also wire the windy day switch to input 2009.06 of the SRT2-ID16. When input 2009.06 is on, the doors will close regardless of what the outside temperature is. This feature allows you to close the doors on windy days without activating the blowout feature, even though the temperature is above freezing. To wire the windy day switch, wire 24 VDC (-) to the common terminal of a switch. Then wire the switch leg terminal of the switch to #6 of the SRT2-ID16.

Included with the door package is a set of Banner Eyes. Install the banner eyes on the outside of the Exit door high enough to where the eyes will be blocked for at least two seconds. That means you must install the eyes at bumper height. Wire the Banner Eyes the same way the treadle and entrance eyes are wired. Terminate the DC power of the eyes to DC (+) (brown wire) and DC (-) (blue wire). Terminate the Normally Closed Input of the receiver eye wire (the white wire in the 4.4T cable) to Term #3 Screw #17 in the WW ECC. This screw is pre-wired to input #1 of the SRT2-ID16 in the ECC.

## STEP 9: WIRE THE FREEZE THERMOSTAT

### No Bay Doors or Bay Doors With no Bay Heat

**Inputs 2009.05, 2009.06, and 2009.07** of the SRT2-ID16 of the WW ECC in the equipment room are the three inputs that control the Freeze Blowout and the Bay Door programs. When the temperature rises above the temperature preset on the Thermostat, I**nput 2009.05** will come on and **Input 2009.07** will go off (if wired correctly). When the temperature falls below the temperature preset on the thermostat, **Input 2009.05** will go off and **Input 2009.07** will come on. **Inputs 2009.05 and 2009.07** should never be on at the same time.

When **Input 2009.05** first comes on, the car wash controller sends a 3 second signal to open both Bay Doors. When **Input 2009.07** first comes on, the car wash controller sends a 3 second signal to close both bay doors and execute the blowout program. (See the description of the blowout program below).

**Input 2009.06** is the **Windy Day Switch**. When this input first comes on, the car wash controller sends a 3 second signal to close both bay doors. However, the **Blowout Program** will not execute with the windy day switch. This is the difference between **Input 2009.06** and **Input 2009.07**. Both inputs will close the door and operate the **Bay Door** program. Input #7 will also execute the **Blowout Program**. **Inputs 2009.06 and 2009.07** can be on at the same time, or **Inputs 2009.05 and 2009.06** can be on at the same time, but **Inputs 2009.05, 2009.06, and 2009.07** cannot be on at the same time. If **Inputs 2009.06 and 2009.07** are on, the **Blowout Program** will execute even though **Input 2009.06** does not execute the blowout. The **Blowout Program** will execute because **Input 2009.07** is on.

To wire the **Thermostat**, you will need to run three wires to the **Thermostat** from the **WW ECC**. Wire one wire to **24 VDC (-)** in the WW ECC, one wire to the SRT2-ID16 **Input 2009.05**, and one wire to the SRT2-ID16 **Input 2009.07**. In the Thermostat, the **24 VDC (-)** wire goes to the **Common** terminal (**Red screw**). Output 2009.05 of the SRT2-ID16 goes to the **Close on Temperature Rise** contact (White screw), and **Input 2009.07** of the SRT2-ID16 goes to the **Open on Temperature Rise** contact (**Blue screw**).

When the **Blowout Program** is activated, the gantry will blowout all the chemical and water lines once after the temperature drops, and then again once **3 minutes** after each wash, once the car leaves the bay and as long as **Input 2009.07** remains lit. The blowout process goes through a sequence of blowing out all the lines on the gantry five times.

The sequence for the **Blowout Program** is as follows:

Rocker Panel
Side High Pressure Rinse
Top High Pressure Rinse
Tire Cleaner
Top Presoak
Side Presoak
Tri-foam Wax

**NOTE:** The undercarriage hose does not get blown out nor does it have a weep system. To protect the undercarriage from freezing, run some sort of heating system along the hose. If you have the winter wizard system, run the hoses for the rail heat along the side of the undercarriage hose. If you do not have rail heat, you can run heat tape, or something similar along the hose.

**Bay Doors with Bay Heat**

If you have Bay Doors with Bay Heat, and you don't want the gantry to blowout the lines, you can wire the thermostat differently. In this case, you will need two thermostats. One thermostat will measure the temperature in the bay, and one thermostat will measure the outside air temperature.

Pull two wires to the thermostat in the bay, and pull three wires to the outside air thermostat. Wire the commons of both thermostats to **24 VDC (-)**. You can bring two wires from the panel, one for each thermostat, or you can bring one wire from the panel to the first thermostat terminating the wire on the **Common terminal (Red screw)** of the first Thermostat. Then run a jumper wire from the first thermostat to the second thermostat, and terminate the jumper wire at each thermostat on the **Thermostat Common terminals (Red screw)**.

For the **Bay Thermostat**, terminate a wire to the **Open on Temperature Rise** contact (**Blue screw**), and terminate the other end to **Input 2009.06 (Windy Day Switch)** of the SRT2-ID16 of the WW ECC in the equipment room.

For the **Outside Air Thermostat**, terminate one wire on the **Close on Temperature Rise** contact of the thermostat **(White screw)**, and terminate the other end of the wire to **Input 2009.05 (Door Thermostat)** of the SRT2-ID16 of the ECC in the equipment room. Terminate another wire on the **Open on Temperature Rise** contact of the thermostat **(Blue screw)** and terminate the other end of the second wire to **Input 2009.07** of the SRT2-ID16 **(Freeze Thermostat)**.

## STEP 10: SET THE ENTRY WIZARD OR OTHER AUTO CASHIER

Using the print labeled **"SHEET M1.0"**, set the auto cashier.
***NOTE: Entry Wizard is to have a dedicated 120 volt circuit. DO NOT use 120 volt power from the Water Wizard Electrical Control Panel.***

### Electrical Hookup

### 120 VAC

Running from a 20 amp breaker from the main Equipment Room Breaker Panel, you should have one conduit with (3) three #12 AWG wires. These wires are:

1-120VAC Hot
1-120VAC Neutral (White)
1-Ground (Green)

> **NOTE: Refer to Auto Cashier instructions for correct voltage.**

**Cycle Switch and Entry Wizard Reset**
In a separate conduit, run (7) seven #18 AWG wires. These wires are:

| | |
|---|---|
| Cycle 1 – Pink | **Term 1** |
| Cycle 2 – Brown | **Term 1** |
| Cycle 3 – Purple | **Term 1** |
| Cycle 4 – Gray | **Term 1** |
| 24 VDC (-) Blue | **Term 1** |
| 24 VAC (Hot) Auto Cashier Reset | **Term 2** |
| 24 VAC Neutral | **Term 2** |

***NOTE: It is recommended to run 4-5 additional wires for future needs.***

In the WW ECC, terminate the above wires on the terminal strip labeled:
**"TERM 1 - 24VDC" & "TERM 2 – 24VAC"**

**AUTO CASHIER - HAMILTON**
The Hamilton Auto Cashier and Entry Wizard Auto Cashier send and receive the same type of signals to and from the Water Wizard 2.0 Electrical Control Center (ECC). Therefore, the wiring is very similar in both units. Run the Auto Cashier wiring into the (ECC) inside the equipment room. This is where the CPU will accept signals from the Auto Cashier, as well as send reset signals. You will find a terminal strip for the Auto Cashier terminations in the lower right corner of the panel. The terminal strip and all terminations are labeled for your convenience.

You will need a total of 8 wires. They are:
1-120V Hot *( To Main Panel – Not WW ECC )*
1-120V Neutral *(To Main Panel – Not WW ECC* )
1-Ground
4-Cycle Wires 24V DC (-)
1-Inhibit Signal 120V

***NOTE: Run all low voltage in a separate conduit.***

Inside the Hamilton, there is a single gang box containing the power wires and inhibit wires. Remove the cover and terminate your 120V hot from the ECC to the Hamilton. Then terminate the inhibit signal wire from the ECC to one of the small red wires. This will leave the 120V neutral (white) wire and one small red wire in the single gang box. Twist these two wires together and terminate with the 120V neutral from the ECC. You will then need to wire the signal wires. You will wire the 24V DC (-) from the ECC to terminal #1, on the relay terminal block. Then run jumper wires to terminals #3, #5 and #7. Then wire the cycle wires from the ECC to the relay terminal block. Terminate the wire for cycle #1 wire on terminal #2, cycle #2 on terminal #4, cycle #3 on terminal #6 Cycle #4 on terminal #8.

## HAMILTON WIRING DIAGRAM

| TERM 1 24VDC | Hamilton Auto Cashier | |
|---|---|---|
| 24VDC (-) | 1,3,5,7 | |
| Cycle 1 | 2 | |
| Cycle 2 | 4 | |
| Cycle 3 | 6 | |
| Cycle 4 | 8 | |
| 120VAC Hot | J-box, Black Wire | |
| 120V Cashier Reset | J-box, Red Wire | |
| 120VAC Neutral | J-box, 1 White & 1 Red Wire | |
| Ground | J-box, Green Wire | |

### AUTO CASHIER HAMILTON GOLDLINE

For the power and cycle switches you will need to run three wires for the main power, five wires cycle switches, and two wires for Cycle Inhibit.

Inside the Hamilton Goldline, locate the relay panel as shown in the figure on the following page. On the relay panel are three terminal strips with six screws each. The terminal strips are labeled **A, B,** and **C.** All the wires from the WW ECC to the auto cashier hook to these three terminal strips.

**NOTE:** ***(120 V power must come from Main Equipment Room Breaker Panel)***

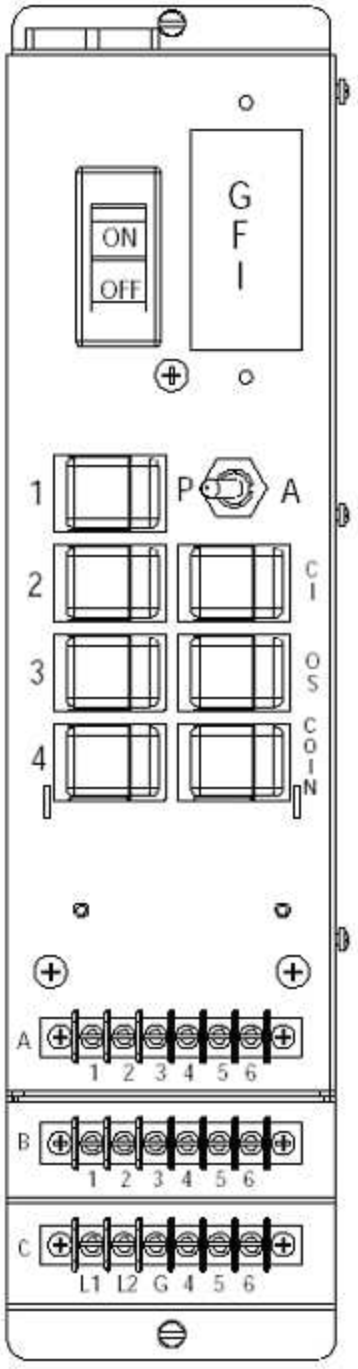
**Terminal C** is for incoming power and cycle inhibit. For the incoming power, terminate the **120VAC hot** to**L1**, **120 VAC Neutral** to **L2**, and the **ground wire** to **G**. Terminate **Auto Cashier Reset** to **C5** and **120 VAC Neutral** to **C6**.

**Terminals A and B** are for the cycle switches and the **Out of Service Relay**. Terminate the wire for **24 VDC (-)** to terminal **A1**. Then run jumper wires from **A1** to **A3**, from **A3** to **A5** and from **A5** to **B1**. Terminate the four wires for each of the cycles as follows:

**Cycle 1 to A2**
**Cycle 2 to A4**
**Cycle 3 to A6**
**Cycle 4 to B2.**

**Terminals B3, B4**, and **B5** are contacts for an out of service relay. **B3** is the **Common**, **B4** is the **Normally Open Contact**, and **B5** is the **Normally Closed Contact**. If the Goldline goes out of service, this relay is activated. See the diagram below:

**Relay Panel**



## AUTO CASHIER UNITEC

Run the Unitec Auto Cashier wiring into the Electrical Control Center (ECC) inside the equipment room. This is where we will accept signals from the Auto Cashier, as well as send reset signals. You will find a terminal strip for the Auto Cashier terminations in the lower right corner of the panel. The terminal strip and all terminations are labeled for your convenience. You will need a total of 10 wires. They are:

Main Power:

- 1-120V Hot
- 1-120V Neutral
- 1-Ground

Cycle Selection Wires:

- 4-Cycle Wires 24V DC (-)
- 1-24V DC (-) Common (Supply Voltage Blue Wire)

Wash in Use Signal:

- 1-Inhibit Signal 120V
- 1-Inhibit Signal 120V Neutral (can share the neutral with the main power)

**NOTE:** The Red Lion will need to be changed. To change the Red Lion, select "Change Settings". Enter your four number password, and then press "Enter". Press the "Next" button three times. The top of the screen will say "Unitec Auto Cashier?". Toggle the "No" to "Yes" by pressing the button under the word "TOGGLE". Press "Exit".

We suggest that you run all low voltage in a separate conduit. If this is not possible, then use shielded conductor cable for low voltages.

Hook the wires for the main power into the 3-pronged ac connector, which comes with the unit. (See pages 18 and 19 of the Unitec Wash Select II Installation Manual. Once the cord is assembled as instructed by the manual, you can plug in the main power into the connector in the lower left corner of the cabinet

To test the Unitec Auto Cashier Reset, select "Test Screen" on the Red Lion. Press the "Next Button" Toggle Auto Cashier Reset to "On". Then go see if the Unitec gets put out of service.

## UNITEC WIRING DIAGRAM

| **Signal** | **J-18 Connector** |
|---|---|
| Wash-In-Use Hot | 1 ( To WW ECC Panel 120 Volt ) |
| Wash-In-Use Neutral | 2 ( To WW ECC Panel 120 Volt ) |
| **POS4000** | **J-22 Connector** |
| Pin 1 – White | Pin 1 – White |
| Pin 2 – Red | Pin 2 – Red |
| Pin 3 – Black | Pin 3 – Black |
| Shield-Not connected | Shield, strap to base mounting bolt in case |
| **Signal** | **J-17 Connector** |
| Cycle Common | 9 |
| Cycle #1 | 4 |
| Cycle #2 | 3 |
| Cycle #3 | 2 |
| Cycle #4 | 1 |
| Spare Option Relays | 5-8 |

**Three-Prong AC Connector For Incoming Power**
***(Power must come from Main Equipment Room Breaker Panel)***

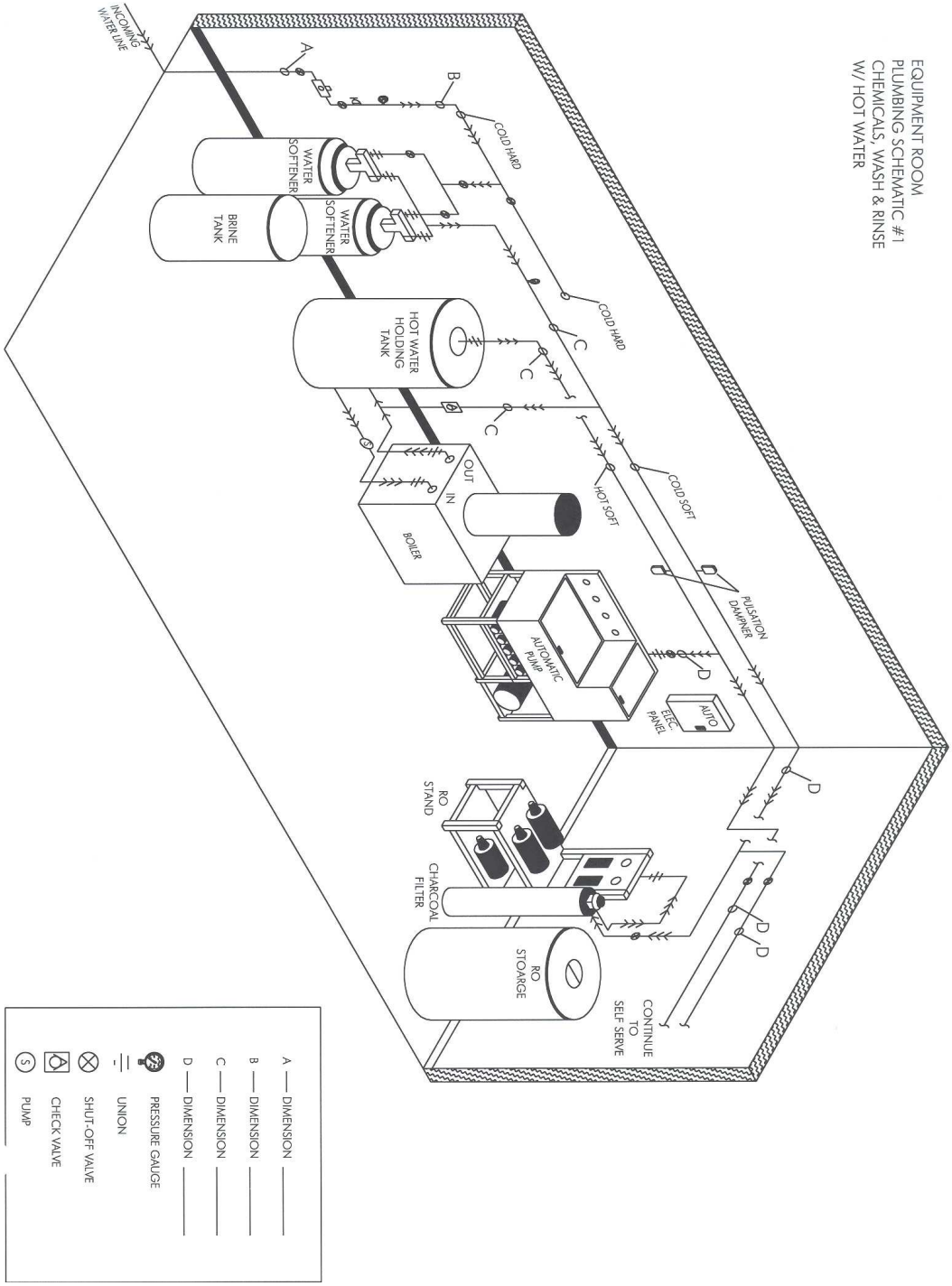

Hook the 120VAC hot to the L screw, the 120 VAC Neutral to the N screw and the ground to the G screw.

### STEP 11: CLEARANCE BAR

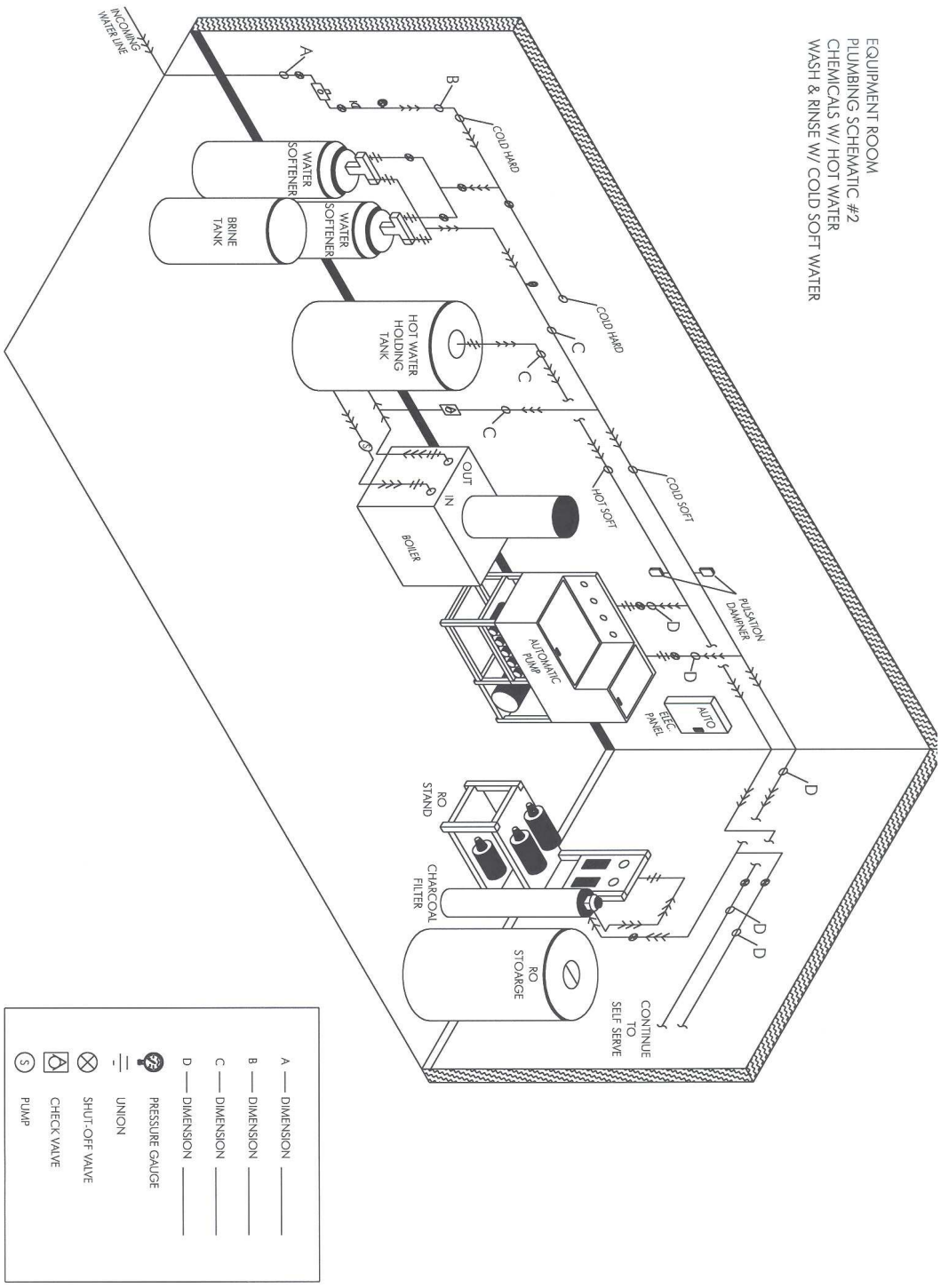
Bolt the clearance bar to the concrete, in front of the automatic and centered with the track, using ½" anchor bolts.

**NOTE:** The clearance bar can be mounted before the auto cashier, to prevent taller vehicles from inserting their money into the auto cashier.

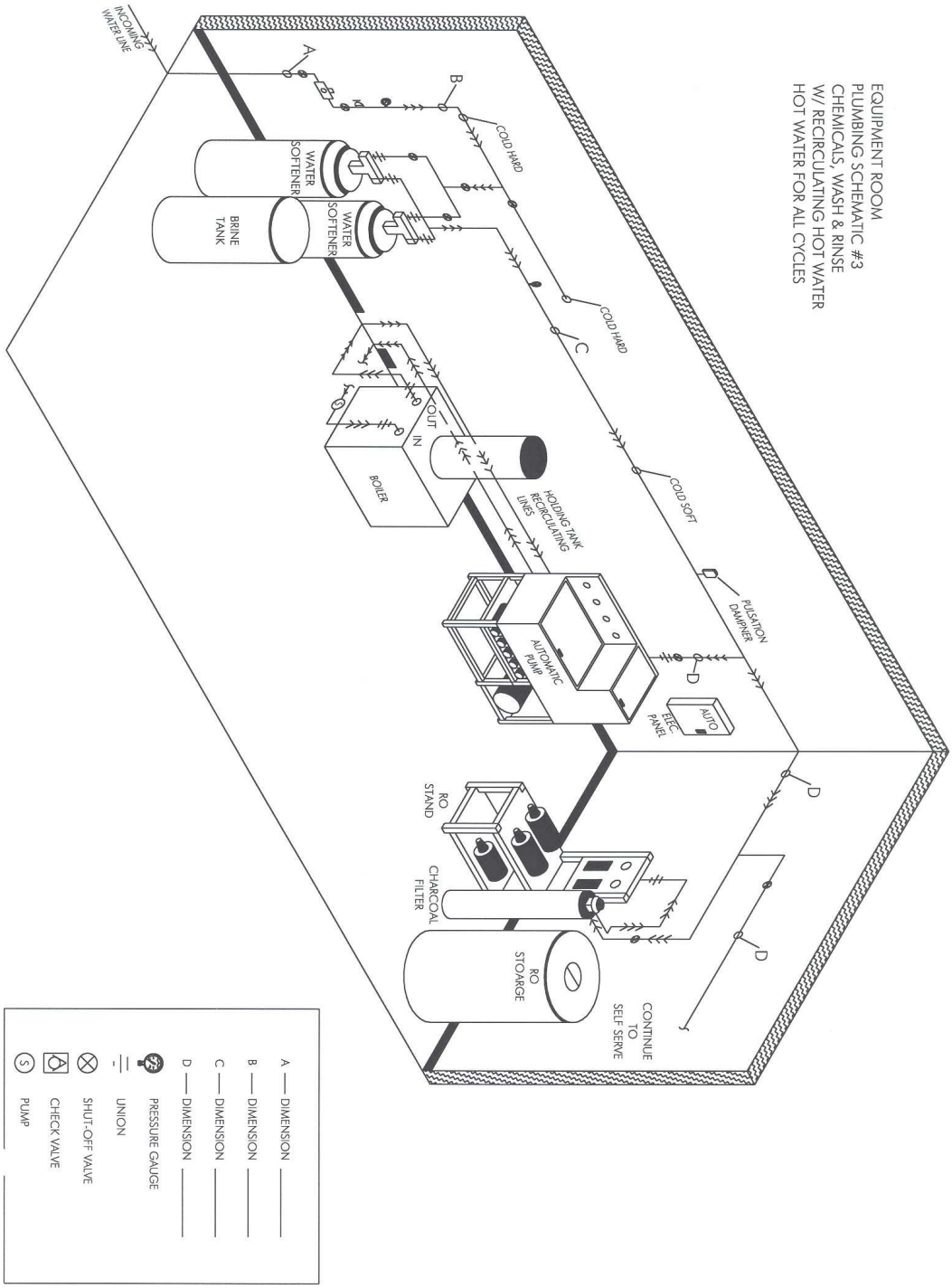
## INSTALLATION PROCEDURES

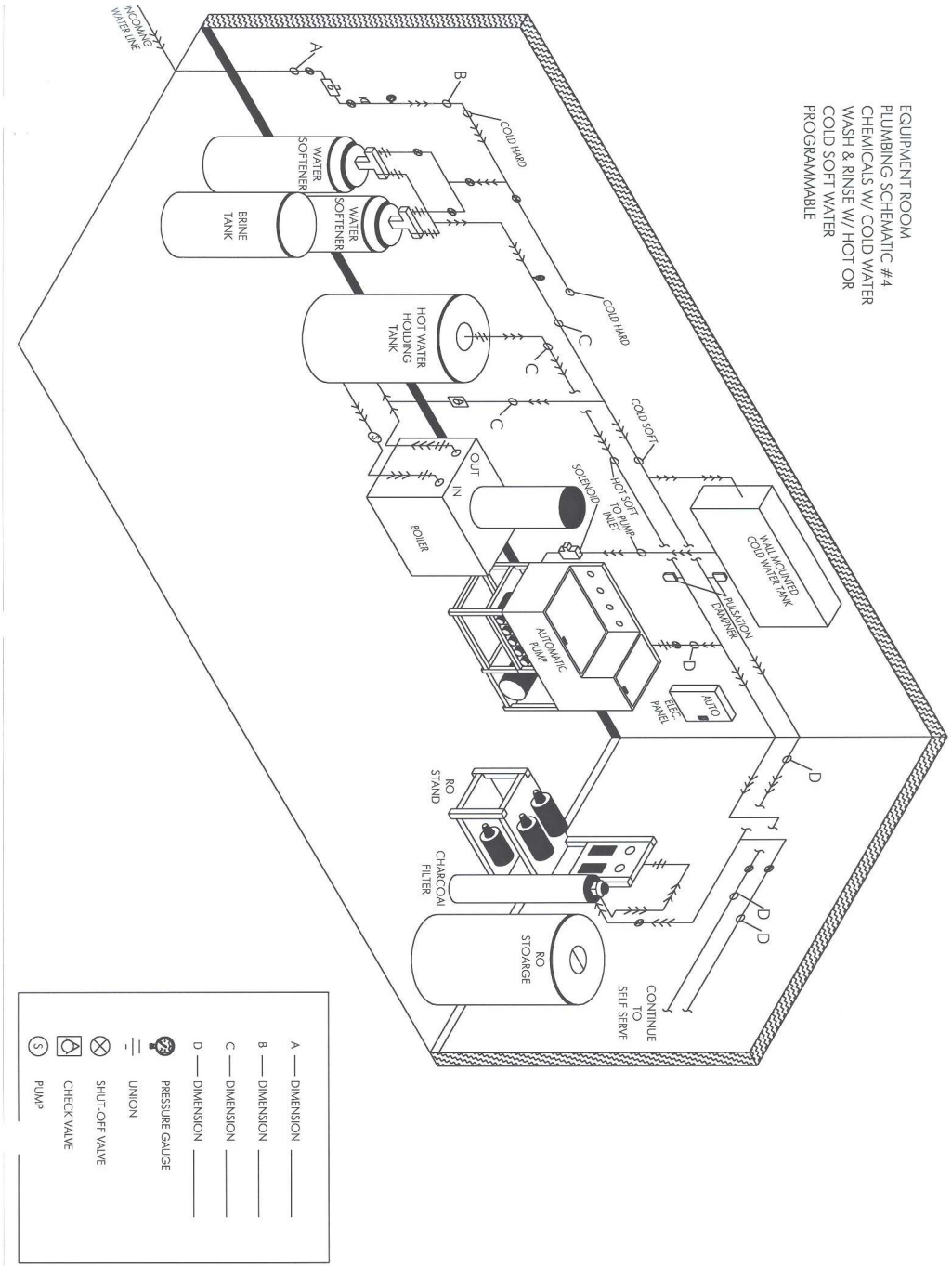


## INSTALLATION PROCEDURES



## INSTALLATION PROCEDURES




EQUIPMENT ROOM
PLUMBING SCHEMATIC #4
CHEMICALS W/ COLD WATER
WASH & RINSE W/ HOT OR
COLD SOFT WATER
PROGRAMMABLE
INCOMING WATER LINE
A
B
COLD HARD
WATER SOFTENER
WATER SOFTENER
BRINE TANK
COLD HARD
HOT WATER HOLDING TANK
C
C
C
COLD SOFT
OUT
IN
BOILER
SOLENOID
HOT SOFT TO PUMP INLET
WALL MOUNTED COLD WATER TANK
PULSATION DAMPNER
AUTOMATIC PUMP
D
AUTO ELEC. PANEL
D
RO STAND
CHARCOAL FILTER
D
D
RO STOARGE
CONTINUE TO SELF SERVE
A — DIMENSION
B — DIMENSION
C — DIMENSION
D — DIMENSION
PRESSURE GAUGE
UNION
SHUT-OFF VALVE
CHECK VALVE
PUMP

# *WATER WIZARD 2.0*

## STANDARD DESIGN FEATURES

**(Optional Features Listed Below)**

## Standard Features

Every Water Wizard 2.0 is loaded with standard features. This touch free in-bay automatic includes most of the customer requested features and then some. Every unit is equipped with Undercarriage, Rocker Panel Sprayers, Entrance Signs, Web Enabled Computer Monitoring and Stainless Steel construction with a wide open design. This booklet is designed to help you understand the many features and benefits the Water Wizard 2.0 offers you and your customers.

## Rollover Design:

The Water Wizard 2.0 Automatic is designed with a state-of-the-art rollover design. The advantage of this design offers greater wash cycle speed when compared with the inverted L design units. The rollover design washes the top and both sides of the vehicle simultaneously resulting in a faster cycle time. This is especially true when comparison units have an equal number of passes as the Water Wizard 2.0.

Additionally, the rollover design allows for features such as Triple Shine Foaming Conditioner, an independent Presoak System, On-Board Rocker Panel Sprayers, Wheel Scrubbers, Tire Cleaner applicators and On-Board Blowers. These features are appealing to the consumer yet inverted L units do not typically offer this feature because there is no place to physically mount the equipment.

## Floor Mounted Wash Gantry

The Water Wizard 2.0 floor mounted gantry offers the Operator a simplified installation procedure. The automatic floor base is uniformly a solid, flat surface with a place to mount drive rails to carry the unit. Walls, on the other hand, do not offer that same consistency. The factory can never be entirely sure how they are built or what problems they will encounter until actually on site and a visual inspection is made. With our gantry dollies, the Water Wizard 2.0 can be unloaded and installed without a forklift on site. Operators of competing units face the possibility of spending unnecessary money to have a forklift present to unload and later hang the gantry on the wall mounted rails.

Additionally, floor mount units offer less opportunity for problems to arise. As opposed to the wall mount units that have encountered problems in the past such as the gantry falling on a vehicle. Some units use pneumatic tires to drive the unit. A flat tire can create a lot of problems. Floor mounted units do not encounter these risks.

***World Class Manufacturing of Car Wash Equipment***
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info@jcolemanco.com • www.jcolemanco.com • www.hannacarwash.com

## Multiple Gantry Speeds

The gantry has 4 speeds. The Red Lion Operator Interface has 3 options, ultra slow, slow and high speed. If all these are off, the gantry is defaulted in regular speed. Now the low-pressure functions can be delivered at a higher rate of speed than ever before. This along with delivering the presoak and spot free rinse without dropping the boom saves a great deal of valuable cycle time.

## 3" Aluminum Guide Rails

The 3" Aluminum Guide Rails on the Water Wizard are designed to direct the customer from the cashier to the stop station as effortlessly as possible. The rails extend to the midpoint of the bay and are flared at the entry. This allows free and easy entry to the stop station. The radius of the 3" diameter rail is large enough to prohibit most vehicles from crossing over the line but not so large as to interfere with the tire/wheel cleaning applicators. It is a superb design.

## On-Board Rocker Panel Sprayers: (RPS)

The On-Board Rocker Panel Sprayer is an important feature that most competitive units do not offer. It provides far greater cleaning ability of the wheels and tires. Competitive units allow the customer to drive either too fast or too slow through the typical floor mounted systems. Accelerating too fast in the automatic bay, the customer may not take advantage of all the cleaning action - advancing too slow, the customer may not get the entire car clean. Add the optional Tire Cleaner applicator for exceptional cleaning results.

Having the Rocker Panel Sprayers on board the gantry offers another advantage to the Water Wizard's cleaning ability. It allows for a more effective presoak application. Presoak is the first application of every recipe and is therefore applied onto a dry vehicle. With the floor mounted systems, residual water is present on the vehicle from the rocker panel sprayers. This dilutes the strength of the presoak which can and will significantly decrease the cleaning strength of the presoak.

For areas with heavy mud or snow, an optional mud-buster package is available with oscillating, zero-degree nozzles. The increased strength of impact these nozzles create will secure optimal cleaning results.

## Independent Presoak System

The independent system designed for the Water Wizard allows for a line dedicated specifically to Presoak. The system uses 8 nozzles on the gantry to apply Presoak and completely cover the vehicle with just the Presoak chemical needed, with little or no waste. During the Presoak pass the boom does not drop saving valuable wash time. Non-dedicated systems typically use approximately 22 liter or 6 gallons per vehicle compared to the Water Wizard which will use only 14 liter or 3.5 gallons. The Presoak savings add up fast.

The reduced liquid flow resulting from this design offers better control with air to product mixtures when applying foamy Presoak. Wind conditions vary with each wash site. Locations with occasional strong winds and no doors will require more liquid mixture to keep the wind from blowing it away. Locations where wind is not a problem or with doors can allow for more foamy or misty type application.

Overall cost of operation is always a big concern for operators. Presoak is typically the biggest percentage of that cost. A number of units apply Presoak with the same nozzles as they do high pressure. Customarily a ¾" - 1" tubing is used with approximately 18 to 24 nozzles. In order to build enough pressure for proper delivery through all those nozzles, the chemical line must be filled. Immediately after the delivery of presoak, the product remaining in the line must be emptied to be ready for the next product. This is typically performed by flushing in advance or dumping the product at the end of the presoak pass. Either method results in a considerable waste.

## Scrubbing Action Oscillating Wash Nozzles

The Water Wizard 2.0 is the only sizing unit on the market that has scrubbing action oscillating nozzles covering the entire vehicle. The difference is the design of the top wash boom which has these oscillating nozzles standard, that drop below the bumper level, front and rear. Other units may have a top boom that lowers but will drop only partially.

It has been said that "touchfree washing" is not true. That it is not touchfree, you are touching the vehicle with the water. How true! With the Water Wizard scrubbing action nozzles, we do "scrub clean" the vehicle with high pressure water. The friction caused when the water contacts the vehicles surface at the different angles does indeed "Scrub the Vehicle Beautifully Clean".

The 5 degree side nozzles are set on a semi-horizontal spray pattern. All other units are vertical or zero degree. With nozzles that either oscillate or rotate, striping is always a concern. This happens if the gantry moves to fast for the movement of the nozzles to cover the vehicle completely. Though still an issue, the semi- horizontal spray pattern covers more with each pass therefore minimizing the possibility of striping.
The biggest advantage is the additional cleaning power provided by the 5 degree semi-horizontally mounted nozzles. The width of the 5 degree pattern is traveling with the gantry.

> *Example: Pick a single point on the vehicle. If the width of the spray pattern is 2 inches at the point of contact, you attack that spot multiple times and from different angles. With a vertical pattern you hit that spot once and from one angle only. This is a major advantage when removing bugs, bird droppings, or other solid debris from the vehicle.*

The zero degree oscillating nozzles that are standard in the top boom and optional for the sides, offer yet another advantage - customer appeal. From inside the vehicle the oscillating action causes the vehicle to rock back and forth creating a lasting impression on the customer who can physically feel the Water Wizard 2.0 cleaning their vehicle.

## Adjusts to Length

With the wide range of vehicles on the road today, this feature is a necessity. The Water Wizard, utilizing high tech optics, determines the size and length of the vehicle during the first pass. This is a low- pressure pass that will not interfere with the optics operation. The measuring function is performed by combining optics with a count-up proximity switch system. (CTU) As the gantry travels toward the rear of the vehicle, the optics make contact. A flag target wheel is mounted on an independent, spring loaded, floating axle. This allows for possible imperfections in the rails or installation. As each flag target passes in front of the multiple CTU's it sends a pulse which the processor counts. As the gantry moves toward the rear the processor begins to count. The optics see each other at the home position. When the gantry moves far enough that the vehicle blocks the optics, the processor records that count in memory and continues to the end of the vehicle. At the end of the vehicle the optics make contact again and the processor records that count as well. Now, the length of the vehicle is calculated. The system utilizes the counts obtained to get closer or further away for the perfect washing distance.

Some units on the market today do not use the count up method and have live eyes during the entire wash cycle. This design can cause problems when forcing the optics to work through high-pressure spray or dense fog that happens in cold weather climates.

## Red Lion Operator Interface Panel

The Water Wizard 2.0 comes equipped with an Operator Interface Panel (HMI) mounted on the units Electrical Control Center that allows the operator complete control. The comprehensive system puts you easily in charge…either on-site or on the web. Possessing web enabled capabilities permits complete access to system controls for monitoring or troubleshooting anyplace web access is available.

Multiple menus enable you to review and modify wash recipes, adjust timers and counters, view revenue, observe system operations, monitor electrical equipment and test any of the wash's functions. Other options such as blowers, door controls, reclaim systems and other support equipment are also easily controlled with the Operator Interface Panel. Critical areas are password protected.

The Water Wizard 2.0 has been designed to meet a wide range of operator/customer demands and comes complete with thirty (30) factory designed wash recipes. They have the option to create and save another 30 different recipes of their own. These recipes are responsible for directing the automatic to perform the desired functions to the vehicle on each pass. A "pass" is defined as the travel of the Water Wizard from ne end of the vehicle to the other. The Water Wizard 2.0 allows 2, 4, 6, 8 or 10 passes.

Most automatic operators will ask the carwash customer to purchase a wash from one of 4 different wash recipes offered at the entrance controller or POS system. With the Water Wizard 2.0, the operator will choose at start up, either four of the thirty pre-programmed wash recipes offered or variations thereof. The Operator Interface Panel will allow modification on any of the wash passes at a any time. Refer to the operator's manual for a description of the simple modification process.

Modifying a wash recipe is just one of the many features of the Operator Interface Panel. The Operator can perform complete income monitoring by the day, month, or year. It records income per wash cycle and a total of all wash cycles.

## Web Enabled

With a DSL line on site, you can stay in touch with your Water Wizard 2.0 anywhere web access is available. Perform all the Operator Interface functions as if you were standing at the control panel. Service and troubleshooting becomes a much simpler task when factory service technicians can be on-line with you and see exactly what you see.

## Wash Data / Operation Screen

The Wash Data section will allow the operator to monitor the wash in progress on the Operation screen. It will display the cycle and wash pass it is currently performing and the action of that pass (i.e. presoak, tire cleaner, rinse, etc.) Several other functions included in Wash Data are available for complete cycle monitoring.

## Tech Menu / Testing

The testing portion of the Operator Interface Panel Tech Menu is a tremendous feature. From the interface panel, the operator can turn on any of the wash functions and perform a variety of other testing or troubleshooting tasks. Simply select the option from the Tech Menu button by scrolling through the options on the screen and toggle it on or off as required.

> *Example: If you want to test the strength of the presoak at the nozzle, (instead of trying to catch product during a wash cycle), you go to presoak in the test screen and turn it on. Now the gantry is sitting in the home position spraying presoak only. The same is true for any of the wash functions.*

Additionally, there is a dry wash feature. This allows the operator to operate the gantry through a wash cycle without wasting chemical or water. The unit will go through a complete wash cycle without any of the liquid functions operating.

## View Inputs and Outputs

This feature of the Tech Menu screen provides valuable assistance to the service department in determining what sensors are on or off at any given time. It displays each proximity switch, optic sensor, tank level switch or any other input switch to determine their proper operation.

There are many more standard features of the Operator Interface Panel. Please refer to the Water Wizard 2.0 manual for a complete description.

# *Preferred Options*

## Auto Height Adjustment

All vehicles are not created equal, especially in overall height. This very unique Water Wizard 2.0 option will adjust the top wash boom to multiple height washing positions to accommodate the lower cars and mid-size SUV's. Again using high tech optics during the first pass, the unit profiles the vehicle's height and adjusts to it during the high pressure portion of the wash cycle. The cleaning on the hoods, trunks, and windshields of the lower cars is greatly improved with the Water Wizard 2.0's customized wash pass. Units attempting to clean a car hood that is 40 inches off the ground from 3-4 feet above it will fall way short in wash performance.

For safety's sake, there are two sets of safety optics mounted on the wash boom. Extensive diagnostic tests are performed on all system optics prior to each wash cycle.

## Triple Shine Foam Conditioner

The Triple Shine Foaming Conditioner is offered as an option on the Water Wizard Automatic and is aesthetically appealing to the customer. This option is not available on all in-bay automatics. Check out the comparison chart for units that offer this unique feature.

Mechanically, the Water Wizard Triple Shine Foam Conditioner package includes the tanks, dilution system, pump, and air mixture controls. Dazzle your customers with the magic of Triple Shine. Customers are amazed at the incredible array of colors as the specially designed applicator blends the Red, Gold and Blue conditioning foam into a soft, vibrant blanket to protect your vehicle's finish. Triple Shine provides a great show and a lot of sizzle to the customer currently in the bay and the customers waiting in line.

From a sales standpoint, inform the potential operator that this is a system that has an operational cost of about 10 percent of typical vend price. So at a profit of approximately 90 percent per vend, return on investment is tremendous.

## Hot Wax/Low Pressure Wax System

A distinctive spray pattern is provided by the Hot Wax system as this unique product is delivered through the gantry mounted rain arch. This option will provide faster drying, insure a smooth even coverage over the entire vehicle and is proven to gather high approval ratings from customers.
The system includes a wall mounted, stainless tank and chemical mixing system, in-tank heater, delivery pump and boom mounted “Rain Arch” manifold.

## On-Board Tire Cleaner Applicators

This feature is also unique when compared to most automatic units. When included in the customer selected wash recipe, a high strength Tire/Wheel Cleaner is applied to the wheels, tires and lower portion of the vehicle. It is a separate product delivered through independent nozzles typically during the first presoak pass. Other units offer floor mounted drive-through systems if it is offered at all. The Tire Cleaner Applicators coupled with the On-Board Rocker Panel Sprayers will enable the Water Wizard 2.0 to “out perform” any other system in the industry on wheels and tires. The Water Wizard 2.0 first applies tire/wheel cleaning chemicals to a dry vehicle and allows time to soak. Then the action starts as the on-board rocker panel sprayers blast clean the wheels, tires and rocker panels.

For areas with heavy mud or snow, an optional mud-buster package is available with oscillating, zero-degree nozzles. The increased strength of impact these nozzles create will secure optimal cleaning results.

## Wheel Scrub System

What a great system! The counter rotating wheel scrub brushes extend deep into the wheels to give them a good scrubbing. Each brush includes 3 high pressure nozzles to cleaning any spot the brush doesn’t touch. The wheel scrub optics locate the rear wheel on the first pass. The front wheel location is determined by the stop treadle position. The wheel scrub can be included on any pass. We typically recommend a high pressure wash or rocker panel wash pass to include the wheel scrub. The operator can select the amount of time the brush in engaged with the wheel and the amount of retract time when changing brush rotation. The result with this system is always a clean, shiny wheel even with the dirtiest of wheels covered with brake dust and other contaminates.

### On-Board Blowers

Three powerful blower producers are mounted on the wash gantry to provide a controlled drying application. The package includes an oscillating center nozzle that sweeps the water from the top of the car. The nozzle can rotate at the front and rear to give extra attention to the hard to reach areas. Where, when and if they rotate is operator controlled. The side nozzles are adjustable to suit your application. The poly housing gives a lower noise level than metal housings.


***Water Wizard 2.0 Typical Installation***

***World Class Manufacturing of Car Wash Equipment***
5842 West 34th Street • Houston, TX 77092
800-999-9878 • 713-683-9878 • Fax: 713-683-9624
info@jcolemanco.com • www.jcolemanco.com • www.hannacarwash.com

# WATER WIZARD 2.0
## *SYSTEM START-UP*

*Do Not Turn On Power Until Instructed To Do So*

**Step 1** Flush main water line before filling the water tanks on the Water Wizard 2.0. Connect the water line and fill the water holding tank. Check to make sure water is clean with no cloudy residue. If the water is cloudy or dirty, continue to flush lines.

**Step 2** Fill concentrate tanks with chemicals. Turn on water at each Hydrominder one at a time making sure chemical is drawn up into chemical tank. Be sure to drain beginning water/chemical mixture until chemical has made its way to the Hydrominder tip. Most chemicals will have a large air pocket in the suction line just before the tip. This is acceptable.

**Step 3** Before installing the tips in the undercarriage bar and connecting the 1" high-pressure hose to the gantry, you need to flush the lines. Connect the gantry hose to the gantry boom fitting but do not connect to the gantry fitting until the line is flushed with high pressure water.

**Step 4** Turn on the air compressor and check that pressure gauge on regulator located on the gantry is reading 90-100 PSI. Remove the cover from the low pressure box.

**Step 5** Turn off the Electrical Disconnect Switch on Gantry. This will shut off 3 phase power to the gantry only. The 24Vac, 24Vdc and Communications will still be operational. All solenoids are 24Vac and the prox's and eyes are 24Vdc.
Turn on Electrical Disconnect Switch on Electrical Control Center ("ECC") inside Equipment Room. The Operator Interface Panel (Red Lion) will come on.

**Step 6** **Testing Low Pressure Functions**
***(Operator Interface –Red Lion F key descriptions and instructions are located in the Operator Interface section of this manual)***
Before starting each pump, make sure the ¼ turn supply valve is fully open. It is recommended to bleed each pump prior to starting. Loosen the hose connection at each pump until product is flowing through the pump. If necessary press the "Test Screen Button (F7)". and turn on each function for 1 to 2 seconds and then back off until product is flowing out the loosened fitting.

Once primed, turn on Presoak for about 1 minute to flush line and get product to the Gantry. Turn on Tire Cleaner for about one minute. Continue to test services until you test all functions that apply to your machine. Pump pressure should be between 50-60 psi.

Make adjustment to the product application by adding more or less air pressure. Make these adjustments in the low pressure box. **NOTE: Air should always be at least 10 psi less than the product pressure.**

**High Pressure Functions**
Make sure ¼ turn valve below the water holding tank is fully open and tank is full. Check oil level on the high pressure pump. Using the Test Screen, turn on High Pressure Rinse to flush the main line. Then turn off and connect 1" line to the fitting in the top of the gantry.

**Step 7** **Gantry Movement Tests**
Turn on the Manual Operation toggle switch located inside the panel mounted on the Gantry. Turn on power at Electrical Disconnect Switch located on Gantry. Check the rotation of the drive Motors. Depressing the Drive Reverse Switch should cause the unit to travel away from home position. If not, then have a qualified electrician change the incoming 3-phase power to correct rotation.

Press the Boom Down Switch and the Top Boom should lower. Test all the test switches for proper operation.

**Step 8** Move the unit up and down the full length of the track by pressing the Drive Forward and Drive Reverse Switches. Make sure the Home and End of Track prox switches are set at the proper height above the target plates.

**Step 9** **Wheel Test**
Perform a "Wheel Test". This test can be accessed in the "F7 Tech Menu" of the Red Lion Interface Panel. This test will allow the PLC to store the length of your track in memory. ***This MUST be done to assure proper operation of the Water Wizard 2.0.***

**Wheel Brush Treadle Position Setting**

Next you ***MUST*** save the Treadle position that is required for the wheel brush to locate vehicle front wheels. This setting is done in "F2 Adjust Gantry Counts". The best way to accomplish this is to park a vehicle on the treadle plate and with the gantry in manual mode, position the gantry until the wheel brushes are aligned with the exact center of the front wheels. Press the "Wheel Brush Extend" manual push button to confirm alignment. Now press "Save" on the Red Lion Display to store this position.

**Step 10** You are now ready to test the unit on a car. Pull a vehicle into the bay and place in park position with front wheel on stop station.

There are factory recipes stored in all four wash cycle positions. To modify an existing recipe or construct a custom recipe, see instructions in the Recipe section of this manual.

Press the Cycle 1 button on the Electrical Panel and watch the Water Wizard 2.0 go through the wash process. Check for leaks and correct as needed. Once completed, press cycle 2 Button and monitor wash process. Repeat the same procedure for Cycle 3 and 4.

Make necessary or preference changes to the recipes after washing several vehicles and monitoring the performance and results. Test the Water Wizard 2.0 many times to make sure it is functioning properly.

**Suggested Start Up Check List**

- Check all Prox Switch settings to make sure there is a gap approximately 3/8" (10mm). Do not exceed a 3/8ths (10mm) inch spacing between the end of the prox and its target.
- Check that all set screws on bearings, Lovejoy couplings and other couplings are tight
- Make sure no hoses or cables are rubbing or kinking as the gantry is moving on the track or when the wash boom is moving up and down.
- Check all eye alignment signal strength. All eyes should read a signal strength of four (max).

# WATER WIZARD 2.0

***Instructions for loading OMRON PLC and Red Lion memory module***

**SAVING EXISTING RECIPES and REVENUE *(Recipes and Revenue are stored in the PLC NOT the Red Lion) It is suggested to use a memory card other than the program card.***

1. With power on to the PLC, insert a memory card into the slot in the PLC. Press the F5/Log In Page button and log in using the owner password. Press F6/Memory Card and select Recipe Mode then press Save Recipes twice. Remove the memory card with power still on. **DO NOT CYCLE POWER ON & OFF.**

**RED LION Operator Interface**

1. Turn off power to the display. Plug memory card into the slot located on the side of the Red Lion.
2. Turn on power to display. Wait for display to load program from memory card. (Observe text – LOADING CF). Once the screen is back to the main screen make sure the HMI number matches the version number you are loading.
3. After program is loaded, turn off power and remove card from display. Turn power back on.

**OMRON PLC (Loading Program Instructions)**

1. Turn off power to PLC. Open cover plate (located above the memory card slot) on CJM1M-CPU22 PLC module. Here you'll see 8 switches numbered 1-8 from top to bottom. Turn on DIP SW 7 (. (push switch to left position). Insert memory card into slot. Card is properly seated when the eject button is even with the top.
2. Turn on power to PLC. Wait for "busy" light to extinguish (about 5 to 10 seconds) and the main screen is up.
3. Turn off power to PLC. Remove memory card. Turn off DIP SW 7 (push switch to right position).
4. Turn on power to PLC.

**DOWNLOADING SAVED RECIPES**

1. With power on to the PLC, insert the memory card. Press the F5/Log In Page button and log in using the owner password. Press F6/Memory Card and select Recipe Mode then press Load Recipes twice.
2. Remove the memory card with power on. **DO NOT CYCLE POWER ON & OFF**

**WHEEL COUNT TEST AND INITIALIZING THE SYSTEM**

1. Perform a "Wheel Test". This test can be accessed in the "F7 Tech Menu" of the Red Lion Interface Panel. This test will allow the PLC to store the correct length of travel for each of these components. **THIS MUST BE DONE TO ENSURE PROPER OPERATION.**

# Water Wizard 2.0
## Wheel Scrub Features and Set-up Instructions

You will find a recipe bit titled “Wheel Brushes” in the Program Recipe menu. A custom recipe is required to apply this function to a wash recipe. You cannot perform the wheel brush step on the first pass of a wash recipe. The wheel brush photo eye must first find the rear wheel position.

**Setting Front Wheel Counter**
The stop treadle will position the front wheel in the same location with each wash. In “F2-Timers & Counters”, go to “Adjust Gantry Counts” menu (Menu Option 1) and press the “Enter” button. There you will see an adjustable counter titled “Treadle Position”.

To set this counter, first put a car in the bay. Put the gantry in manual mode (turn toggle switch in gantry panel ‘on’), and manually position the gantry until the wheel brush is perfectly aligned with the center of the car’s wheel Manually extend the wheel brush to assure you are centered on the wheel.

Once you in position go back to the Red Lion and press the arrow key that is located directly below Enter in the center of the screen. This screen will then read, “On”. You will see the value under the word “Treadle” change. You have now set where the wheel brush will position at the front tire when the wheel brush function is performed in a wash recipe.

**Wheel Brush - Setting Rear Wheel Counter**
The wheel brush photo eye will locate the rear wheel position in pass 1. This position is also adjustable. Watch it wash a variety of vehicles to determine if the rear wheel position should be adjusted.

If adjustment is needed go to “F2-Timers & Counters”, go to “Adjust Gantry Counts” menu (Menu Option 1) and press the “Enter” button. Now press the “Next” button repeatedly until you get to “Rear Wheel Offset”. A negative number moves the wheel brush position toward the exit and a positive number moves toward the entrance

**Wheel Brush Air Pressure Adjustments**
There are two air regulators to move the brushes in and out, one of them to extend and one to retract. The extend regulator adjustment is very critical and should be adjusted to the lowest possible operating pressure, usually about **20 psi to extend.** Very little pressure is required to clean the vehicle wheels and too much air pressure could cause unnecessary load and could cause equipment to fail. The retract regulator should be adjusted so the brushes return smoothly but positively into their home position, usually about **30 psi to retract.**

# NORMAL OPERATION

**Under normal operation the Water Wizard 2.0 will perform the following functions. *(we have used preprogrammed 10 pass recipe as an example*):**

1. Customer at the entrance controller, selects wash and deposits money or if applicable, enters a code. The money acceptor sends a 24-volt DC electronic signal for the corresponding wash recipe to the Water Wizard 2.0 to begin operation.

**2.** Once the Water Wizard 2.0 receives a signal the following will happen
   a. *"Enter Now"* sign at the entrance of the wash bay will illuminate
   b. *"Drive forward"* sign in the wash bay will illuminate.
   c. *If applicable, Horn will sound twice.*
   d. The Entrance Timer will start.
   *e.* The Overall Wash Timer will start. (This is set at 10 minutes)

**3.** As the customer drives forward, the vehicles front tires break the beam of the entrance optics turning on the Undercarriage wash cycle (if selected in the recipe). The undercarriage will stay on for the length of time set by the undercarriage timer or until the vehicle reaches the designated stop station (treadle switch). There is also an additional timer that will shut off the undercarriage. Once the rear vehicle tires have passed the entrance optics, it starts a timer (Under car Rear Wheel Timer) that will shut off the undercarriage. This is usually set for 3 –4 seconds.

**4.** In the event the customer drives past the stop station treadle switch, and far enough toward the exit end of the wash bay to break the gantry optics, the back up light will illuminate instructing the customer to back up until the customer once again triggers the treadle switch optic which causes the STOP light to illuminate.

**5.** Once the vehicle is on the treadle switch, the following will happen:
   a. *"Drive Forward"* sign will turn off
   b. *"Stop"* sign will illuminate.
   c. Please Wait Light at the bay entrance will come on.
   d. If applicable, Horn will sound once.
   e. The Entrance timer will reset.
   f. The Omron PLC will run a series of tests on the eyes and proxes.
   g. If any of the eyes or proxes fails a test then the proper error code will be displayed on the operator interface (Red Lion) and the unit will continue without certain functions or remain at home until error is corrected and unit reset.

***6.*** The Water Wizard 2.0 will have a four second delay before the presoak function begins. *This is there to insure the vehicle is stopped before receiving its wash and allow time for presoak delivery to be fully pressurized.*

7. **Definition of a Pass.** Each pass begins with the Boom at Home position. During the high pressure passes, the Boom will go down and then back up. *The distance the boom travels downward is determined by the boom down counter.* (84 is the maximum travel count.) This is settable for both the front and rear of the vehicle for each pass. Once the boom completes its travels down and up again, the gantry will *then* travel to the opposite end of the vehicle.
8. **Low Pressure Passes.** During Presoak, Hot Wax, Triple Shine and Spot Free Rinse the boom does not drop. Each of these products is delivered through a gantry mounted fixed delivery manifold or nozzles. The presoak has 8 nozzles that change directions as the gantry moves to ensure complete coverage.
9. **Start Delay and Boom Down Count.** Each pass has can have a delay at the start and the end of each pass. Each pass can also have a boom down count at the start and end of each pass.
10. **Pass #1** ***Presoak and Tire Cleaner*** - The following will happen:
    a. If applicable, the scrolling sign will read “Presoak”
    b. The Presoak pump starts and delivers presoak through the top and side nozzles.
    c. If applicable, the Tire Cleaner pump will start and spray product to cover the tires and lower Rocker panels.
    d. The Gantry will start to travel down the track toward the back of the vehicle.
    e. The two count up proxes (CTU’s) adjacent to the counting wheel will send signals for the wheel count as the gantry moves down the track.
    f. The optic eye sensors are looking for the front of the car. When the eye sees the front of the vehicle it signals the Omron PLC to store the wheel count.
    g. If applicable, the Auto Height Adjustment and/or Contouring eyes are looking for the Height and/or exact profile of the vehicle.
    h. The optic eyes also look for the rear of the vehicle. When the eye sees the rear of the vehicle it signals the Omron PLC to store the wheel count.
    i. At the rear of the vehicle Pass 2 is started unless pass one includes a boom down count.
    j. If there is a boom down count for pass #1, the wash boom will travel down the preset count at the rear of the vehicle and then return to the home position.
    k. If there is a start delay time then the gantry will dwell the number of seconds as set on start delay for pass #1. This is true for all passes as well.

11. **Pass #2** ***Presoak and Rocker Panel Sprayers*** - begins at the rear of the vehicle.
    a. Presoak and Rocker Panel sprayers will be delivered.
    b. The wash boom will travel down based upon the setting of the boom down counter.
    c. The wash Boom will rise to its home position.
    d. The Gantry will travel toward the front of the vehicle based upon the wheel count. The wheel counts that were collected in pass 1 are now used in the remaining passes. The gantry will travel a preset distance past the vehicle to position the wash boom nozzles at approximately 14 inches away.
    e. The auto height adjustment or contouring optic eyes will again look for the height or profile of the vehicle.
    f. Presoak will continue to spray from the tips.
    g. Rocker panel sprayers will begin.
    h. The scrolling sign will change from Presoak to Rocker Panel.
    i. If pass #2 has an ending delay, the presoak will dwell for the set amount of seconds at the end of that pass.

12. **Pass #3** ***High Pressure Wash -*** begins at the front of the vehicle.
    a. High pressure wash will begin as the wash boom begins to lower the preset number of counts. (84 counts is full travel) The high pressure spray will not begin until the boom is lowered and tilted toward the vehicle.
    b. If applicable, scrolling sign will read - Wash
    c. If Bug Wash is selected, boom will raise from lowest point to approximately halfway up and then down again to the full 84 counts and then up again.
    d. If auto height adjustment or contouring is applicable, the wash boom will travel up to the adjusted position as calculated by vehicle profile in memory.
    e. The gantry will travel to the rear of the car based upon the wheel count.

13. **Pass #4** ***High Pressure Rinse*** - begins at the rear of the vehicle.
    a. If applicable, scrolling sign will read Rinse.
    b. The Cat Pump will deliver high pressure water from the top and side nozzles.
    c. The wash boom will travel down based upon the boom @ start counter.
    d. The wash boom will rise to the home position. If auto height adjustment or contour is on, the wash boom will travel up to the adjusted position as calculated by vehicle profile in memory.
    e. The wash boom will spray High Pressure rinse while raising or lowering.
    f. Then the gantry travels toward the front at a slow speed because the slow speed option is selected in the recipe applying a high-pressure rinse.

14. **Pass #5** ***Triple Shine*** - begins at the front of the vehicle.
    a. If applicable, scrolling sign will read Triple Shine
    b. Low pressure pump will begin to run and deliver Triple Shine. Function has 3 solenoids that will open alternately every 1 second to blend the 3 colors.
    c. Gantry will travel toward the rear of the car delivering Triple Shine .
    d. The wash boom will not travel downward during this pass.

**15. Pass #6 *Clear Coat Protectant*** - begins at the rear of the vehicle.
   a. The scrolling sign will read: Clear Coat Protectant
   b. The Cat Pump will deliver Clear Coat Protectant under high pressure.
   c. The wash boom will travel down based upon the boom @ start counter.
   d. The wash boom will rise to the home position. If auto height adjustment or contour is on, the wash boom will travel up to the adjusted position as calculated by vehicle profile in memory.
   e. Then the Gantry will travel toward the front of the vehicle applying High Pressure Clear Coat Protectant.

**16. Pass #7 *Hot Wax*** - begins at the front of the vehicle.
   a. If applicable, the scrolling sign will read Wax.
   b. Hot Wax System will begin to deliver a low pressure application of Crystal Polymer Glaze or similar product through boom mounted Rain Arch.
   c. Gantry will travel toward the rear of the car
   d. The wash boom will not travel downward during this pass.

17. **Pass #8 *Spot Free Rinse*** – begins at the rear of the vehicle.
   a. If applicable, the scrolling sign will read: Spot Free Rinse
   b. The Spot Free Rinse pump will turn on and spray Spot Free rinse water out of the independent gantry mounted nozzles.
   c. The wash boom will travel down based upon the boom @ start counter.
   d. The wash boom will rise up to the home position.
   e. The gantry will travel toward the front of the vehicle applying Spot Free Rinse.
   f. When the gantry reaches the front of the vehicle the wash boom will travel down based upon the boom @end counter.
   g. The wash boom will return to its home position.

18. **Pass #9 *Blower*** – begins at the front of the vehicle.
   a. If applicable, the scrolling message sign will read: Blower
   b. Blowers will start alternately
   c. Center blower will rotate 360 degrees for set time to allow air scoop to remove excess water residue from gantry top panel.
   d. Gantry will travel toward the rear of the vehicle with center nozzle sweeping back and forth toward the rear of the vehicle.
   e. Near the rear of the vehicle and at a set count, the blower nozzle will reverse direction and blow back toward the front effectively drying the rear of the vehicle.

19. **Pass #10 *Blower*** – begins at the rear of the vehicle.
   a. The gantry travels towards the front of the vehicle
   b. Center blower nozzle oscillates back and forth while blower is on.
   c. Near the windshield and at a set count, the blower will reverse direction and blow back toward the rear of the vehicle as it continues to the gantry home position.

20. ***End of the Wash*** – gantry in the home position.

If applicable, the scrolling sign will read *"Exit Slowly".* When the vehicle passes through the eyes on the gantry completely the Water Wizard 2.0 will send a 3 second signal to reset the auto cashier allowing the next customer to enter. Also the Omron PLC is reset so it can wash a different size vehicle with a different wash package.

***The following conditions have to be on for the Water Wizard 2.0 to function.***

## Water Wizard 2.0
### Lights on in Standby*

| Electrical Control Panel | Proper Lights |
|---|---|
| SRT2-ID16 (ch.2009) | 2 , 8 , 9 , 14 , 15 (1, 5, 7 conditional ** ) |
| SRT2-ROC16 (ch.2002) | 7 , (12 conditional ) |
| SRT2-ID16 (ch.2011) | No Lights |
| SRT2-ROC16 (ch.2003) | No Lights |
| Optional VOD/ZOC16 (ch.2004) | No Lights |
| **Gantry** | |
| SRT2-ID16 (ch.2008) | 0, 2, 3, 4, 5, (7 conditional) |
| SRT2-ROC16 (ch.2000) | No Lights |
| SRT2-ID16 (ch.2010) | 0, 1, 11, 12, 15 ( 2, 3, 4, 9, 10 conditional ) |
| SRT2-ROC16 (ch.2001) | No Lights |
| **Telco Eye Amplifiers** | Both Lights On (all amps) |
| | |
| **Omron Drives** | |
| Drive (left) | 55.0 |
| Oscillate (center) | 40.0 |
| Boom (right) | 60.0 |

Note * "**Standby**" mode means that the Gantry is at home, the boom is all the way up, the Gantry toggle switch is off, nothing is blocking any of the photo eyes and it is ready to accept a wash at the Auto Cashier.

Note ** "**Conditional**" means that the light could be on or off depending on different factors such as installed options, customer enabled features, outside air temperature, & position of prox target when the Gantry came to rest, etc.

***The following Tank Floats should also be on for proper operation***

| | | | |
|---|---|---|---|
| Tire Cleaner | OK | Input | 2009.08 |
| Foaming Conditioner | OK | Input | 2009.09 |
| Presoak | OK | Input | 2009.14 |
| Water Tank | OK | Input | 2009.15 |

## Safety Features of the Water Wizard 2.0

- Both the gantry and the wash boom have redundant proximity switch counters. This is for safety reasons and allows the processor to always know which direction both are moving.
- The Wash Boom will not come down if the Gantry Eyes, Boom Safety Eyes or the Can Eyes are blocked. This prevents the wash boom from coming down on a vehicle.
- The Auto Height Adjustment and Contouring eye profiles the height of the vehicle in Pass 1. Also to make sure that the eyes are working correctly the system completes a diagnostic test by cycling the measurement eye on and off before the start of each wash cycle.
- The wash boom has two safety eyes mounted on it. One for the front and one for the rear of the vehicle. These are in position to look for any obstructions as the boom and gantry travel.

# Proximity Switches

Proximity switches should be set to have no more that ¼ inch clearance from prox target. Care should also be taken to not allow the face of the prox to come in contact with prox target.

Prox switches are o-ring fitted with screw on electrical connections and should be filled with electrical grease to keep moisture out.

# Wheel Count

A rubber wheel is located on the gantry and follows the gantry track. This rubber wheel has a 4-position Stainless Steel target connected to it so that every revolution of the wheel will send a count from both wheel count proxes. Full gantry track travel is approximately 280 counts. This system is used to monitor the length of the vehicle. When the gantry moves down the track the counting wheel is continuously sending electrical pulses to the PLC. The PLC receives a signal from the photo eye sensors where the front or rear of a vehicle is. The PLC stores the count of the counting wheel so that the gantry will be able to return to the Front or Rear of the vehicle using the counts store in memory and not rely on the eyes. Inside the PLC is a number in the Start Spray @ Front of Car that is added to the wheel count to keep the wash boom at the optimum distance from the vehicle. This number is factory set to be (approximately 15 inches). This number can be changed by Factory trained service men. The number can be changed to allow the wash boom to be closer or farther away from the vehicle. Normally the setting of 8 is the best for over performance. Remember that a setting too close will not clean a car any better and will risk hitting a vehicle. If you are having a problem with the wheel counting proxes there are several methods to help you solve the problem utilizing the Operator Interface Panel. Using the Test Functions Screen and the Wash Status Screen. Review these sections under the Operator Interface Panel tab for all possible test functions.

**Wheel Brush Timers**

There are also two timers and two counters associated with this option. Under “F2-Timers & Counters” on the Red Lion, go to the “Adjust Timers” menu (Menu Option 0) and press the “Enter” button until you see a timer called “Wheel Brush Dwell”. This timer determines how long the brush will stay engaged in the wheel in each direction (clockwise & counter-clockwise). This is **factory set to 3 seconds**.

Press the “Next” button to advance to the “Wheel Brush Retract Dwell” timer. This timer determines how long the brush disengages from the wheel between direction changes. This timer is **factory set to 1 second**. You want the brushes to disengage the wheel slightly while it changes directions. If it does not, you would want to increase this timer value.

# Water Wizard 2.0

## *Instructions for loading programs into PLC and Red Lion memory module*

**SAVING EXISTING RECIPES and REVENUE *(Recipes and Revenue are stored in the PLC NOT the Red Lion)***

1. With power on to the PLC, insert memory card into the slot in the PLC. Press the F5/Log In Page button and log in using the owner password. Press F6/Memory Card and select Recipe Mode then press Save Recipes twice. Remove the memory card with power still on. DO NOT CYCLE POWER ON & OFF.

**RED LION Operator Interface**

1. Turn off power to the display. Plug memory card into the slot located on the side of the Red Lion.
2. Turn on power to display. Wait for display to load program from memory card. (Observe text – LOADING CF). Once the screen is back to the main screen make sure the HMI number matches the version number you are loading.
3. After program is loaded, turn off power and remove card. Turn power back on.

**OMRON PLC (Loading Program Instructions)**

1. Turn off power to PLC. Open cover plate (located above the memory card slot) on CJ1G-CPU13 PLC module. Here you'll see 8 switches numbered 1-8 from top to bottom. Turn on DIP SW 7. (push switch to left position). Insert memory card into slot. Card is properly seated when the eject button is even with the top.
2. Turn on power to PLC. Wait for "busy" light to extinguish (about 5 to 10 seconds) and the main screen is up.
3. Turn off power to PLC. Remove memory card. Turn off DIP SW 7 (push switch to right position).
4. Turn on power to PLC.

**DOWNLOADING SAVED RECIPES**

1. With power on to the PLC, insert the memory card. Press the F5/Log In Page button and log in using the owner password. Press F6/Memory Card and select Recipe Mode then press Load Recipes twice.
2. Remove the memory card with power on. **DO NOT CYCLE POWER ON & OFF**

## *REFER TO START UP INSTRUCTIONS FOR SYSTEM INITIALIZATION*

# ***Uploading Program from Omron PLC to Compact Flash Card***

The following procedures are the same for Omron CPU12 & 13 on a Water Wizard 2.0 and a CPU44 on Fusion units. **The power must remain on during this entire procedure**.

1. Lift the small door on the Omron PLC. This door is where the Run, Err, Comm, etc. LED lights are located. Behind this door you will find a vertical set of 8 dip switches.
2. Flip dip switch #7 to the left.
3. With power applied to the ECC (main panel), insert the compact flash card into the slot on the Omron PLC.
4. You will see the "MCPWR" light illluminate and the "BUSY" will begin to flash. Once the "BUSY" light extiguishes, press & hold the small button just to the left of these lights. Continue to hold this button in until the "BUSY" light begins to flash again. It is now writing the program to the card. This may take several minutes to complete.
5. Once the "BUSY" light completely stops flashing, the upload is complete. You can now press the eject button, located directly below the compact flash card, and remove the card. Once the card is removed, the "MCPWR" light will extiguish. The program now on the card is an exact copy of what is currently in the PLC including Recipes, Timer, Positioner & Revenue Values.
6. Now flip dip switch #7 back to the right and close the small access door.
7. The unit can now be returned to service.

# Red Lion Operator Interface Function Key Descriptions

### ***F1/Recipe Menu***

0 - Current Recipes
1 - Assign Recipes
2 - Program Recipes
3 - Review Recipes
4 - Copy & Save Recipes

### ***F2/Timers & Counters***

0 - Adjust Timers
1 - Adjust Gantry Counter
2 - View Boom Counters

### ***F3/Prices & Revenues***

0 - View Revenue
1 - Set Wash Prices
2 - Best Day Last Week
3 - Best Day This Month
4 - Best Day This Year
5 - Best Day Ever
6 - Last Ten Washes
7 - View Total Washes

### ***F4/Wash Data***

0 - Wash Status
1 - Washes Today
2 - Boom Status
3 - Display Status
4 - Wash Time
5 - Car Measurement
6 - Car Front Counts
7 - Car Rear Counts
8 - Last 5 Car Counts
9 - Car Front Profile
10 - Car Rear Profile

### ***F5/Log In Page***

Insert Password

### ***F6/Memory Card***

Recipe Mode
Revenue Mode

### ***F7/Tech Menu***

0 - View PLC Inputs
1 - View PLC Outputs
2 - Test Functions
3 - Test Misc. Functions
4 - Force PLC Outputs
5 - Wheel Test
6 - Boom Test
7 - Nozzle Test
8 - Freeze Test
9 - Door Status
10 - Entry Door Test
11 - Exit Door Test
12 - Dry Wash Test
13 - Test Pager
14 - Set Time Clock
15 - Reset Wash

### ***F8/Site Data***

0 - Change Passwords
1 - Pager Values
2 - Enter IP Address
3 - On-Board Blower
4 - Type Cashier
5 - Enable Cycle Switches
6 - Recirculating High PH
7 - Recirculating Low PH
8 - Undercarriage Sol 1
9 - Undercarriage Sol 2
10 - Profile Option
11 - Profile Mode
12 - Blower Truck Mode
13 - Horn Mute Mode
14 - Static Blower
15 - Static Spot Free
16 - Treadle Sensor
17 - Undercarriage Eye
18 - Door Mode
19 - Windy Day Bypass
20 - Init. Gantry Counts

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## 8 Pass Wash with Blower

| Pass # | Active Functions | Preset Values | | | |
|---|---|---|---|---|---|
| | | Start Delay | Boom @ Start | Boom @ End | End Delay |
| 1 | Undercarriage / High pH Presoak / Tire Cleaner / Hi Gantry Speed | **2.0 sec.** | 0 counts | 0 counts | 5.0 sec. |
| 2 | Rocker Panel/ Wheel Brush / Hi Gantry Speed | **0.0 sec.** | 0 counts | 0 counts | **0.0 sec.** |
| 3 | High Press. Wash / Slow Gantry Speed | 0.0 sec. | **84 counts** | **84 counts** | 0.0 sec. |
| 4 | High Press. Wash / Regular Gantry Speed | 0.0 sec. | **0 counts** | **0 counts** | 0.0 sec. |
| 5 | Low Pressure Wax | 0.0 sec. | **0 counts** | **0 counts** | 0.0 sec. |
| 6 | Spot Free Rinse | **4.0 sec.** | 0 counts | 0 counts | 0.0 sec. |
| 7 | Slow Gantry Speed / **Blower** / Flip Fwd | **8.0 sec** | 0 counts | 0 counts | 0.0 sec. |
| 8 | Slow Gantry Speed / **Blower** | **5.0 sec.** | 0 counts | 0 counts | 0.0 sec. |

## 8 Pass Wash with Blower

| Pass # | Active Functions | Preset Values | | | |
|---|---|---|---|---|---|
| | | Start Delay | Boom @ Start | Boom @ End | End Delay |
| 1 | | **0.0 sec.** | 0 counts | 0 counts | 0.0 sec. |
| 2 | | **0.0 sec.** | 0 counts | 0 counts | **0.0 sec.** |
| 3 | | 0.0 sec. | **0 counts** | **0 counts** | 0.0 sec. |
| 4 | | 0.0 sec. | **0 counts** | **0 counts** | 0.0 sec. |
| 5 | | 0.0 sec. | **0 counts** | **0 counts** | 0.0 sec. |
| 6 | | **0.0 sec.** | 0 counts | 0 counts | 0.0 sec. |
| 7 | | **0.0 sec** | 0 counts | 0 counts | 0.0 sec. |
| 8 | | **0.0 sec.** | 0 counts | 0 counts | 0.0 sec. |

***World Class Manufacturing of Car Wash Equipment***
5842 West 34th Street • Houston, TX 77092
800-999-9878 • 713-683-9878 • Fax: 713-683-9624
info@jcolemanco.com • www.jcolemanco.com • www.hannacarwash.com

# Requirements for JCC High Speed Configuration

## Obtain the following information from your Service Provider

Static Public IP Address
Subnet Mask
Default Gateway
Both DNS servers

Please request the ISP (internet service provider) to set their modem in Full Bridged Mode. The NetGear FVS318v3 router provided by JCC or purchased from a local retailer will perform all of the firewall functions. If this is a PPoE account, please provide us with user name and password.
The ISP provider can email all the information to shaunc@jcolemanco.com

JCC Certified Firewall: NetGear FVS318v3

| |
|---|
| JCC Setup:<br>LAN IP for NetGear: 10.137.0.1<br>Subnet Mask: 255.255.0.0<br>UserName: admin<br>Password: magpie5842 |

| |
|---|
| NetGear Default: 192.168.0.1<br>Subnet Mask: 255.255.255.0<br>User Name: admin<br>Password: password |

Configuration of the LAN side of the network should follow:

IP Redlion 1: 10.137.0.15 or 192.168.0.15
IP Redlion 2: 10.137.0.16 or 192.168.0.16
IP Redlion 3: 10.137.0.17 or 192.168.0.17
Subnet Mask: 255.255.0.0
Gateway: 10.137.0.1 or 192.168.0.1

Either configuration is acceptable for compliance with our standards.

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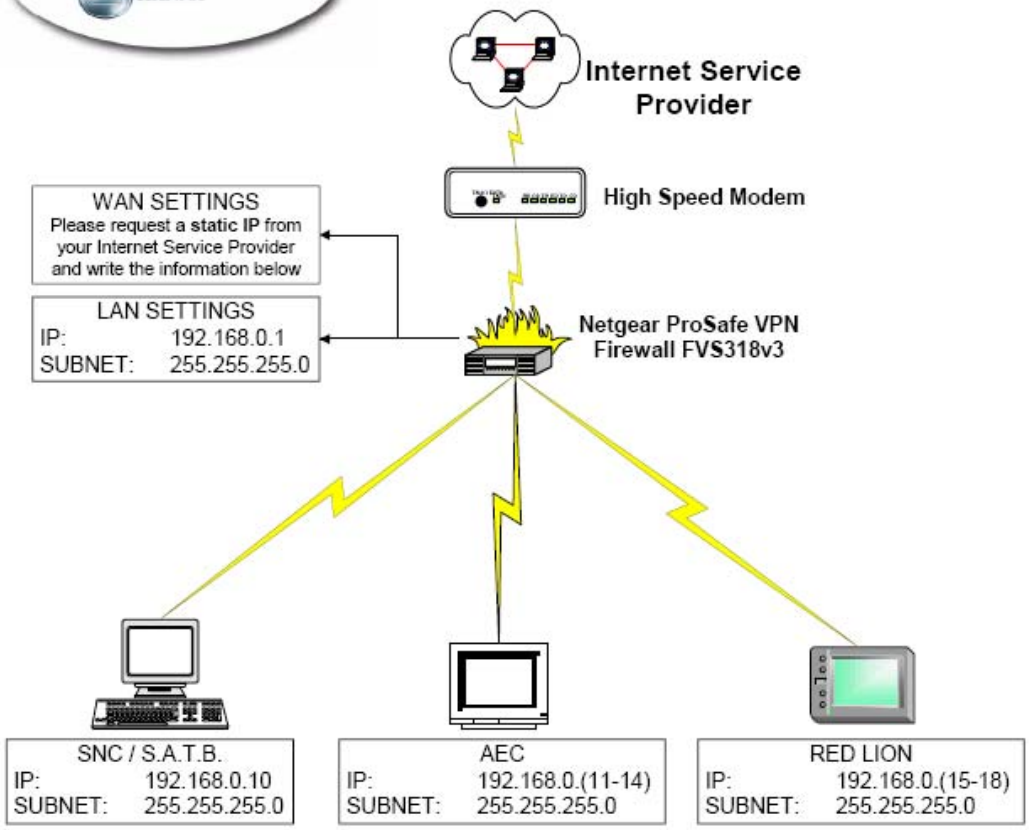
# JCC High Speed Configuration




Carwash Name: _____

STATIC IP SETTINGS
(from ISP)

IP: _____
SUBNET: _____
GATEWAY: _____

DNS 1: _____
DNS 2 (if any): _____
DNS 3 (if any): _____

**Please Contact JCC Technical Support for High Speed Setup**

# WW 2.0 Gantry I-O Decals

## Channel 2000

**Gantry Outputs -24vAC & 24vDC**
**16 Point Output - SRT2-ROC16**
**Address 0**

0. Run Drive Fwd
1. Run Drive Rev
2. Drive Slow Speed
3. Drive Fast Speed
4. Oscillating Motor
5. Reset VFDs
6. Top Boom Down
7. Top Boom Up
8. Scroll Sign A or Drive Fwd
9. Scroll Sign B or Stop
10. Scroll Sign C or Back Up
11. Scroll Sign D
12. PreSoak Air Sol.
13. Spot Free Air Purge
14. PreSoak Liq. Sol
15. Photo Eye Test Circuit

## Channel 2001

**Gantry Outputs -24vAC & 24vDC**
**16 Point Output - SRT2-ROC16**
**Address 2**

0. Rocker Panel Sol.
1. Side Spray Sol.
2. Blower 1
3. Blower 2
4. Blower 3
5. Tire Cleaner Sol.
6. Water Dump Val, Top
7. PreSoak Direction
8. Low Press Wax Sol.
9. Blwr Noz VFD CW
10. Tri Color Sol.
11. Blwr Noz VFD CCW
12. Tilt Boom Front Sol.
13. Tilt Boom Rear Sol.
14. HP Air Purge
15. Top Spray Sol.

## Channel 2008

**Gantry Input - 24vDC(-)**
**16 point Input - SRT2-ID16**
**Address 0**

| | |
|---|---|
| 0. Gantry Eye Inner | 8. Jog Fwd |
| 1. Prox Boom Bot Lmt | 9. Jog Rev |
| 2. Gantry Can Eye | 10. Jog Boom Up |
| 3. Prox Boom Top Lmt | 11. Jog Boom Down |
| 4. ProxA Boom Cnt(Top) | 12. Jog Osc. Motor |
| 5. Gantry Home LS | 13. Jog Tilt Fwd |
| 6. Gantry Rear LS | 14. Jog Tilt Rev |
| 7. Prox1 Wheel, Bot | 15. Jog Enable |

## Channel 2005

**Gantry Output - 24vAC & DC**
**8 point Output - ROC08**
**Address 10**

| | |
|---|---|
| 0. Rotate WB CW | 4. |
| 1. Extend WB Cyl. | 5. |
| 2. Rotate WB CCW | 6. |
| 3. HP Sol, WB | 7. |

## Channel 2010

**Gantry Input - 24vDC(-)**
**16 Point Input - SRT2-ID16**
**Address 4**

0. Height First (Top)
1. Height Second
2. Height Third
3. Height Fourth
4. Prox2 Wheel Cntr (Top)
5. Gantry Drive OL
6. Osc./WB OL
7. Boom OL
8. WB Rectracted Prox
9. Blwr Noz. Prox 1 (Top)
10. Blwr Noz. Prox 2 (Bot)
11. Boom Safety Rear
12. Boom Safety Front
13. Vacation Home Prox
14. WB Photo Eye
15. Prox B Boom Cntr (Bot)

# WW 2.0 ECC I-O Decals

## Channel 2002

**ECC Outputs -24vAC & 24vDC(-)**
**16 Point Output - SRT2-ROC16**
**Address 4**

| | |
|---|---|
| 0. | HP Soap |
| 1. | HP Wax |
| 2. | UnderCarriage Sol. |
| 3. | Med Press Sol |
| 4. | Spot Free MS |
| 5. | Hi pH PreSoak MS |
| 6. | Tire Cleaner MS |
| 7. | PreSoak Heater |
| 8. | Tri Foam MS |
| 9. | Reclaim Water Sol. |
| 10. | PreSoak Hi pH Recirc Sol |
| 11. | Lo pH PreSoak MS |
| 12. | Photo Sensor Test Relay |
| 13. | Main Low Press.Pump (4eBlu) |
| 14. | Auto Cashier Reset, 24vDC |
| 15. | Blower Count-down Timer |

## Channel 2003

**ECC Outputs -24vAC & 24vDC**
**16 Point Output - SRT2-ROC16**
**Address 6**

| | |
|---|---|
| 0. | Enter Now Light |
| 1. | LP Wax MS |
| 2. | Please Wait Light |
| 3. | Cold Water Sol. |
| 4. | Sol 1 Tri Foam |
| 5. | Sol 2 Tri Foam |
| 6. | Sol 3 Tri Foam |
| 7. | InTank Water Heater |
| 8. | Open Entrance Door |
| 9. | Open Exit Door |
| 10. | Close Entrance Door |
| 11. | Close Exit Door |
| 12. | Alarm Horn |
| 13. | Hi Press.Pump, Main |
| 14. | Ext.Blower MS 1, center |
| 15. | Auto Cashier Reset, 120vAC |

## Channel 2009

**ECC Inputs - 24v DC(-)**
**16 Point Input - SRT2-ID16**
**Address 2**

| | |
|---|---|
| 0. | Treadle Switch |
| 1. | Exit Door Eye |
| 2. | E-stop Sw |
| 3. | Reset Sw |
| 4. | UnderCarriage Eye |
| 5. | Door T'stat |
| 6. | |
| 7. | Freeze T'stat |
| 8. | Tire Cleaner Level OK |
| 9. | Wax Level OK |
| 10. | Cashier Cycle1 |
| 11. | Cashier Cycle2 |
| 12. | Cashier Cycle3 |
| 13. | Cashier Cycle4 |
| 14. | PreSoak Level OK |
| 15. | H20 Level OK |

## Channel 2011

**ECC Inputs - 24v DC(-)**
**16 Point Input - SRT2-ID16**
**Address 6**

| | |
|---|---|
| 0. | Manual Cycle 1 |
| 1. | Manual Cycle 2 |
| 2. | Manual Cycle 3 |
| 3. | Manual Cycle 4 |
| 4. | Bill Changer 1 Fault |
| 5. | Bill Changer 2 Fault |
| 6. | Auto Cashier Fault |
| 7. | Exit Door Prox, vacation only |
| 8. | Ext.Blower Eye (early shut-off) |
| 9. | Ext.Blower Nozzle Prox |
| 10. | |
| 11. | |
| 12. | |
| 13. | Reclaim Tank Level OK |
| 14. | 3ph Power Detection |
| 15. | 25hp Overload Tripped |

## WW 2.0

### Channel 2004

**ECC Outputs - 120vAC**

**16 Point Output - SRT2-ZOC16**

**Address 8**

| | |
|---|---|
| 0. | Stop Light |
| 1. | Enter Light |
| 2. | Backup Light |
| 3. | Presoak Light |
| 4. | Rocker Panel Light |
| 5. | Clearcoat Light |
| 6. | Tri Foam Light |
| 7. | Spot Free Light |
| 8. | Exit Light |
| 9. | Clean Car Light |
| 10. | Please Wait Light |
| 11. | |
| 12. | |
| 13. | |
| 14. | |
| 15. | |

## WW 2.0

### Opt'l Channel 2004

**ECC Outputs - 24vAC Neutral & Hot**

**8 Point Output - SRT2-ROC08**

**Address 8**

| | |
|---|---|
| 0. | Scroll Sign A |
| 1. | Scroll Sign B |
| 2. | Scroll Sign C |
| 3. | Scroll Sign D |
| 4. | Glass Treatment MS |
| 5. | Tire Glaze MS |
| 6. | Tire Glaze Liq. Sol. |
| 7. | Tire Glaze Air Sol. |

## WW 2.0

### Opt'l Channel 2006

**ECC Outputs - 24vAC Hot & 24vDC(-)**

**8 Point Output - SRT2-ROC08**

**Address 12**

| | |
|---|---|
| 0. | Ext.Blower Noz, CW Rotation |
| 1. | Ext.Blower MS 2 & 3 |
| 2. | Ext.Blower Noz, CCW Rotation |
| 3. | |
| 4. | |
| 5. | |
| 6. | |
| 7. | |

# SETTING PARAMETERS ON YASKAWA J1000 VF DRIVES

Due to the expanded capabilities of the Yaskawa J1000 VFDs, the complete parameter list is much more extensive. Most of the additional parameters have a default setting that will work in our applications which limits the parameters you will need to set. See the drawing on page 2 for pictorial instructions.

To set the drive, press the down arrow button once on the Yaskawa J1000 and the “Par” message will be displayed. Now press the “ENTER” button and “A1-01” will be displayed. The J1000 allows you to set each digit individually, instead of scrolling up or down through the entire range to reach the value, as the J7 VFD did. Use the up and down arrows to raise or lower each digit to the desired value. Press the “>RESET” button to advance to the next digit from left to right and change as necessary. When the desired parameter number is reached, press the “ENTER” button to view the parameter value. Use the up and down arrows to raise or lower each digit to the desired value. Press the “>RESET” button to advance to the next digit from left to right and change as necessary. When the desired value is set, press the “ENTER” button to return to the parameter list. Repeat these same procedures for each required parameter. The order in which you enter these settings must be exactly as they are listed on the parameter lists. Once you have completed setting all of the parameters for the VFD, press the “ESC” button until you have returned to the run mode. What is seen on the display will be different on certain drives based on the settings that you entered. If you set “b1-01” to a value of “0”, the display would show the set frequency, such as “F 60.00”. If you were not required to set “b1-01”, the display would show “F 0.00”

***IMPORTANT NOTE**:*
*IF YOU ARE ONLY REVIEWING THE SETTINGS, **DO NOT REVIEW “A1-03”** OR ALL SETTINGS WILL BE RESET TO YASKAWA FACTORY DEFAULTS WHICH WILL REQUIRE YOU TO RE-ENTER ALL SETTINGS.*

## Access Parameter Menu and Change Parameter Value

J1000 Digital Operator power-up state →


Press the ∨ key once.

The digital operator shows the parameter menu (PAr) then press the ENTER key.


Select Parameter Menu

Press the RESET key to select the digit you would like to change. Next use the ∧ and ∨ keys to select the parameter group, sub-group or number


Select Parameter

Modify the parameter value using the ∧ and ∨ key and press the ENTER key to save the new value.


Change Parameter Value

# Parameter on YASKAWA J1000 VF Drives

# PLEASE READ BEFORE YOU CONTINUE…

## *** IMPORTANT***

If only reviewing settings,**DO NOT REVIEW A1-03 on the any of the J1000 VFDs (or n01 on the J7 VFDs**. This will reset all settings to the VFD manufacturer's factory defaults and you would have to re-enter all settings.

## Water Wizard 2.0 VFD Parameters

| Parameters for Gantry Drive Motor VFD | | | | | | |
|---|---|---|---|---|---|---|
| NEW STYLE Yaskawa J1000 Drive | | | Parameter Descriptions | OLD STYLE Yaskawa or Omron J7 Drive | | |
| A1-03 | to | 2220 | 2-wire init | n01 | to | 10 |
| b1-01 | to | 0 | Freq Reference = d1-01(thru -04) | n03 | to | 1 |
| C1-01 | to | 0.5 | Accel 1 | n16 | to | 1.0 |
| C1-02 | to | 0.5 | Decel 1 | n17 | to | 1.0 |
| E1-04 | to | 75.0 | Max Freq. | n09 | to | 75.0 |
| d1-01 | to | 55.0 | Freq. Ref.1 | n21 | to | 55.0 |
| d1-02 | to | 30.0 | Freq. Ref.2 | n22 | to | 30.0 |
| d1-03 | to | 75.0 | Freq. Ref.3 | n23 | to | 75.0 |
| d1-04 | to | 25.0 | Freq. Ref.4 | n24 | to | 25.0 |
| H1-05 | to | 4 | Input S5=Spd.Ref.B | n39 | to | 7 |
| H1-04 | to | 3 | Input S4=Spd.Ref.A | n38 | to | 6 |
| H1-03 | to | 14 | Input S3=External Reset | | | |
| L1-01 | to | 2 | O/L Protect | n33 | to | 1 |
| L2-01 | to | 2 | Pwr.Loss Ride Thru=Indefinite | n47 | to | 2 |
| L5-01 | to | 2 | # auto restarts=6 | n48 | to | 6 |

# Water Wizard 2.0 VFD Parameters cont.

| Parameters for Oscillator Motor VFD | | | | | | |
|---|---|---|---|---|---|---|
| NEW STYLE Yaskawa J1000 Drive | | | Parameter Descriptions | OLD STYLE Yaskawa or Omron J7 Drive | | |
| A1-03 | to | 2220 | 2-wire init | n01 | to | 10 |
| b1-01 | to | 0 | Freq Reference = d1-01 | n03 | to | 1 |
| C1-01 | to | 1.0 | Accel 1 | n16 | to | 1.0 |
| C1-02 | to | 1.0 | Decel 1 | n17 | to | 1.0 |
| d1-01 | to | 42.0 | Freq. Ref.1 | n21 | to | 42.0 |
| H1-04 | to | 4 | Input S4=Spd.Ref.A | n38 | to | 6 |
| H1-03 | to | 14 | S3 = External Reset | | | |
| L1-01 | to | 2 | O/L Protect | n33 | to | 1 |
| L2-01 | to | 2 | Pwr.Loss Ride Thru=Indefinite | n47 | to | 2 |
| L5-01 | to | 2 | # auto restarts=6 | n48 | to | 6 |

| Parameters for Wash Boom Motor VFD | | | | | | |
|---|---|---|---|---|---|---|
| NEW STYLE Yaskawa J1000 Drive | | | Parameter Descriptions | OLD STYLE Yaskawa or Omron J7 Drive | | |
| A1-03 | to | 2220 | 2-wire init | n01 | to | 10 |
| b1-01 | to | 0 | Freq Reference = d1-01 | n03 | to | 1 |
| b2-04 | to | **2.0** | DC Inj.@ Stop | n53 | to | 5.0 |
| C1-01 | to | **0.5** | Accel 1 | n16 | to | 1.0 |
| C1-02 | to | **0.4** | Decel 1 | n17 | to | 1.0 |
| d1-01 | to | 60.0 | Freq. Ref.1 | n21 | to | 60.0 |
| H1-05 | to | 4 | Input S5=Spd.Ref.B | n39 | to | 7 |
| H1-04 | to | 3 | Input S4=Spd.Ref.A | n38 | to | 6 |
| H1-03 | to | 14 | Input S3=External Reset | | | |
| L1-01 | to | 2 | O/L Protect | n33 | to | 1 |
| L2-01 | to | 2 | Pwr.Loss Ride Thru=Indefinite | n47 | to | 2 |
| L3-04 | to | **4** | Stall Prevent During Decel=Overexcit | | | |
| L5-01 | to | **2** | # auto restarts=2 | n48 | to | 6 |
| n3-13 | to | **1.30** | Overexcitation Gain up to 1.40 | | | |

# Water Wizard 2.0 VFD Parameters cont.

| Parameters for Wheel Brush Spindle Motor VFD | | | | | | | |
|---|---|---|---|---|---|---|---|
| NEW STYLE Yaskawa J1000 Drive | | | Parameter Descriptions | OLD STYLE Yaskawa or Omron J7 Drive | | |
| A1-03 | to | 2220 | 2-wire init | n01 | to | 10 |
| b1-01 | to | 0 | Freq Reference = d1-01 | n03 | to | 1 |
| C1-01 | to | 0.5 | Accel 1 | n16 | to | 0.4 |
| C1-02 | to | 0.5 | Decel 1 | n17 | to | 1.0 |
| C6-01 | to | 1 | Heavy Duty Torque Application | | | |
| d1-01 | to | 60.0 | Freq. Ref.1 | n21 | to | 60.0 |
| E1-04 | to | 70.0 | Max Freq. | n09 | to | 70 |
| | | | **For 380 - 415 volt Applications ONLY** | | | |
| E1-05 | to | 230 | Volt.Max (for 380-415v) | n10 | to | 230 |
| E1-08 | to | 12 | Volt.Mid (for 380-415v) | n13 | to | 12 |
| E1-10 | to | 12 | Volt.Min (for 380-415v) | n15 | to | 12 |
| E2-01 | to | 5.0 | Mtr. Rated Current (for 380-415v) | n32 | to | 4.0 |
| H1-04 | to | 4 | Input S4=Spd.Ref.A | n38 | to | 6 |
| H1-03 | to | 14 | S3 = External Reset | | | |
| L1-01 | to | 0 | O/L Protect | n33 | to | 2 |
| L2-01 | to | 2 | Pwr.Loss Ride Thru=Indefinite | n47 | to | 2 |
| L5-01 | to | 2 | # auto restarts=6 | n48 | to | 6 |

| Parameters for Blower Oscillator Motor VFD | | | | | | |
|---|---|---|---|---|---|---|
| NEW STYLE Yaskawa J1000 Drive | | Parameter Descriptions | OLD STYLE Yaskawa or Omron J7 Drive | | |
| A1-03 | 2220 | 2-wire init | n01 | to | 10 |
| b1-01 | 0 | Freq Reference = d1-01 | n03 | to | 1 |
| C1-01 | 0.4 | Accel 1 | n16 | to | 0.4 |
| C1-02 | 0.4 | Decel 1 | n17 | to | 0.4 |
| d1-01 | 15.0 | Freq. Ref.1 | n21 | to | 15.0 |
| H1-04 | to 4 | Input S4=Spd.Ref.A | n38 | to | 6 |
| H1-03 | to 14 | S3 = External Reset | | | |
| L1-01 | 2 | O/L Protect | n33 | to | 1 |
| L2-01 | 2 | Pwr.Loss Ride Thru=Indefinite | n47 | to | 2 |
| L5-01 | 2 | # auto restarts=6 | n48 | to | 6 |

| WW 2.0 I-O Assignments | | | |
|---|---|---|---|
| **OUTPUTS** | Assignm't | Description | **Common** |
| **ROC-16 Located in Gantry panel in top row Address = 0** | | | **Voltage** |
| O_RunDriveFwd | 2000.00 | move carriage to front of car | 24 Vdc - |
| O_RunDriveRev | 2000.01 | move carriage to rear of car | 24 Vdc - |
| O_DriveSlowSpeed | 2000.02 | run VFD @ slow speed | 24 Vdc - |
| O_DriveFastSpeed | 2000.03 | run drive at fast speed | 24 Vdc - |
| O_OscillatingMotor | 2000.04 | oscillate motors | 24 Vdc - |
| O_ResetVFDs | 2000.05 | reset contact to the VFDs | 24 Vdc - |
| O_TopBoomDown | 2000.06 | boom down | 24 Vdc - |
| O_TopBoomUp | 2000.07 | boom up | 24 Vdc - |
| O_ScrollingSignA&**GreenLite** | 2000.08 | white/red wire | 24 Vac neutral |
| O_ScrollingSignB&**RedLite** | 2000.09 | tan wire | 24 Vac neutral |
| O_ScrollingSignC&**AmberLite** | 2000.10 | yellow wire | 24 Vac neutral |
| O_ScrollingSignD | 2000.11 | brown wire | 24 Vac neutral |
| O_PreSoakAirSol | 2000.12 | presoak air solenoid | 24 Vac hot |
| O_SpotFreeAirPurge | 2000.13 | spot free air purge solenoid | 24 Vac hot |
| O_PreSoakMS | 2000.14 | presoak sol.- used for both low and high ph pre-soaks | 24 Vac hot |
| O_PhotoEyeTestGantry | 2000.15 | photo eye test relay in gantry panel | 24 Vac hot |
| | | | |
| **ROC-16 Located in Gantry panel in center row Address = 2** | | | **Voltage** |
| O_RockerSol | 2001.00 | rocker solenoid valve | 24 Vac hot |
| O_SideSpraySol | 2001.01 | side solenoid valve | 24 Vac hot |
| O_Blower1 | 2001.02 | blower #1 | 24 Vac hot |
| O_Blower2 | 2001.03 | blower #2 | 24 Vac hot |
| O_Blower3 | 2001.04 | blower #3 | 24 Vac hot |
| O_TireCleanerSol | 2001.05 | tire cleaner solenoid | 24 Vac hot |
| O_WaterDumpValTop | 2001.06 | water dump valve top boom | 24 Vac hot |
| O_PreSoakDirection | 2001.07 | off: facing front of car; on: facing rear of car | 24 Vac hot |
| O_LowPressWaxSol | 2001.08 | low pressure wax solenoid | 24 Vac hot |
| O_NozzleVFD_CW | 2001.09 | rotate the blower vent in CW direction | **24 Vdc -** |
| O_TriColorAirSol | 2001.10 | air solenoid for triple shine wax | 24 Vac hot |
| O_NozzleVFD_CCW | 2001.11 | rotate the blower vent in CCW direction | **24 Vdc -** |
| O_TiltFrontSol | 2001.12 | tilt front direction | 24 Vac hot |
| O_TiltRearSol | 2001.13 | tilt towards rear of car | 24 Vac hot |
| O_AirPurge | 2001.14 | air purge sol | 24 Vac hot |
| O_TopSprayerSol | 2001.15 | top spray sol | 24 Vac hot |
| | | | |
| **ROC-16 Located in ECC panel in top row Address = 4** | | | **Voltage** |
| O_HiPressSoap | 2002.00 | high pressure soap solenoid | 24 Vac hot |
| O_HiPressWax | 2002.01 | hi pressure wax solenoid | 24 Vac hot |
| O_UnderCarriageSol | 2002.02 | under carriage solenoid | 24 Vac hot |
| O_MedPressSol | 2002.03 | medium pressure solenoid | 24 Vac hot |
| O_SpotFreeMS | 2002.04 | spot free motor starter | 24 Vac hot |
| O_PreSoakHiPH_MS | 2002.05 | high pH presoak motor starter | 24 Vac hot |
| O_TireCleanerMS | 2002.06 | tire cleaner motor starter | 24 Vac hot |
| O_PreSoakHeater | 2002.07 | presoak heater contactor | 24 Vac hot |
| O_TripleShineMS | 2002.08 | triple shine motor starter | 24 Vac hot |
| O_ReclaimWaterSol | 2002.09 | reclaim water solenoid | 24 Vac hot |
| O_PreSoakRecircSol1 | 2002.10 | Hi pH presoak recirculation sol | 24 Vac hot |
| O_PreSoakLowPH_MS | 2002.11 | Lo pH presoak motor starter | 24 Vac hot |
| O_PhotoEyeTestECC | 2002.12 | photo eye safety test relay in ECC | **24 Vdc -** |
| **O_Main_LP_Pump** | **2002.13** | **Main low press water pump ms (4eBlu pumpstand)** | 24 Vac hot |
| O_AutoCashierReset | 2002.14 | reset the auto cashier | **24 Vdc -** |
| O_BlowerTimer | 2002.15 | blower digital timer | 24 Vac hot |
| | | | |
| **ROC-16 Located in ECC panel in center row Address = 6** | | | **Voltage** |
| O_EnterNowLight | 2003.00 | enter now light at entrance of car wash | **24 Vdc +** |
| O_LPWaxMS | 2003.01 | low pressure wax motor starter | 24 Vac hot |
| O_PleaseWaitLight1 | 2003.02 | please wait at entrance of wash | **24 Vdc +** |
| O_ColdWaterSol | 2003.03 | Cold Water Solenoid | 24 Vac hot |
| O_Sol1TripleShine | 2003.04 | solenoid 1 for triple shine | 24 Vac hot |
| O_So2TripleShine | 2003.05 | solenoid 2 for triple shine | 24 Vac hot |
| O_Sol3TripleShine | 2003.06 | solenoid 3 for triple shine | 24 Vac hot |
| O_InTankWaterHeater | 2003.07 | for optional heater in water tank | 24 Vac hot |
| O_OpenDoorEntrance | 2003.08 | entrance door | to term. Strip |
| O_OpenDoorExit | 2003.09 | open exit door | to term. Strip |
| O_CloseDoorEntrance | 2003.10 | close entrance door | to term. Strip |
| O_CloseDoorExit | 2003.11 | close exit door | to term. Strip |
| O_Treadle Stop Horn | 2003.12 | Signal to Horn (110V) | 120 Vac |
| O_MainPumpStarter | 2003.13 | 25 HP motor starter (110V) | 120 Vac |
| O_BlowerExternal | 2003.14 | external blower motor starter (110V) | 120 Vac |
| O_CashierReset | 2003.15 | auto cashier reset (110V) | 120 Vac |

| | | | |
|---|---|---|---|
| **Optional ZOC-16 located in ECC panel in bottom row Address = 8** | | | **Voltage** |
| O_StopLight | 2004.00 | stop light | 120 Vac |
| O_EnterLight | 2004.01 | enter light | 120 Vac |
| O_BackupLight | 2004.02 | backup light | 120 Vac |
| O_PresoakLight | 2004.03 | presoak light | 120 Vac |
| O_RockerLight | 2004.04 | rocker panel light | 120 Vac |
| O_ClearCoatLight | 2004.05 | clear coat light | 120 Vac |
| O_TripleShineLight | 2004.06 | triple shine light | 120 Vac |
| O_SpotFreeLight | 2004.07 | spot free light | 120 Vac |
| O_ExitLight | 2004.08 | exit light | 120 Vac |
| O_CleanCarLight | 2004.09 | clean car is a happy car light | 120 Vac |
| O_PleaseWaitLight | 2004.10 | please wait at entrance of car wash | 120 Vac |
| | | | |
| **Alternate Channel 2004 Output Card, selectable in Red Lion** | | | |
| **Optional ROC-08 located in ECC panel in bottom row Address = 8** | | | **Voltage** |
| O_ScrollingSign A | 2004.00 | "off-board" scrolling sign output A | 24 Vac neutral |
| O_ScrollingSign B | 2004.01 | "off-board" scrolling sign output B | 24 Vac neutral |
| O_ScrollingSign C | 2004.02 | "off-board" scrolling sign output C | 24 Vac neutral |
| O_ScrollingSign D | 2004.03 | "off-board" scrolling sign output D | 24 Vac neutral |
| O_GlassTreatmentMS | 2004.04 | motor starter output for glass treatment product | 24 Vac hot |
| O_TireGlazeMS | 2004.05 | Motor Starter to spin Tire Glaze Brush | 24 Vac hot |
| O_TireGlazeLiquidSol | 2004.06 | Liquid Product Solenoid to dispense Tire Glaze | 24 Vac hot |
| O_TireGlazeAirCylSol | 2004.07 | Solenoid to extend Tire Glaze Air Cylinder | 24 Vac hot |
| | | | |
| **ROC-08 Located in Gantry panel in bottom row Address =10** | | | **Voltage** |
| O_RotateWB, CW | 2005.00 | wheel brush VFD (CW) direction signal | **24 Vdc-** |
| O_ExtendWB, cylinder | 2005.01 | Extend wheel brush cylinder | 24 Vac hot |
| O_RotateWB, CCW | 2005.02 | wheel brush VFD (CCW) direction signal | **24 Vdc-** |
| O_HpSol, WB | 2005.03 | hi press soleniod for wheel brush | 24 Vac hot |
| spare | 2005.04 | spare Gantry output | |
| spare | 2005.05 | spare Gantry output | |
| spare | 2005.06 | spare Gantry output | |
| spare | 2005.07 | spare Gantry output | |
| | | | |
| **New Output Card for External Blower Osc. Nozzle Control** | | | |
| **Optional ROC-08 located in ECC panel in bottom row- Address = 12** | | | **Voltage** |
| O_BlwrNozCW | 2006.00 | Blwr Noz CW rotation | **24 vDC (-)** |
| O_BlwrMS2 | 2006.01 | Blower motor starters # 2 & 3 | 24 Vac hot |
| O_BlwrNozCCW | 2006.02 | Blwr Noz CCW rotation | **24 vDC (-)** |
| spare | 2006.03 | spare ECC Output | 24 Vac hot |
| spare | 2006.04 | spare ECC Output | |
| spare | 2006.05 | spare ECC Output | |
| spare | 2006.06 | spare ECC Output | |
| spare | 2006.07 | spare ECC Output | |
| | | | |
| **ID-16 Located in ECC panel in the center row Address = 6** | | | |
| ManualWash1 | 2011.00 | manual wash 1 pb in electrical room | |
| ManualWash2 | 2011.01 | manual wash 2 pb in electrical room | |
| ManualWash3 | 2011.02 | manual wash 3 pb in electrical room | |
| ManualWash4 | 2011.03 | manual wash 4 pb in electrical room | |
| I_BillChanger1Fault | 2011.04 | bill changer 1 fault | |
| I_BillChanger2Fault | 2011.05 | bill changer 2 fault | |
| I_AutoCashierFault | 2011.06 | auto cashier fault | |
| I_ExitDoorOpenProx | 2011.07 | exit open position prox | |
| I_ExtBlwrEye | 2011.08 | photo to shut-off FS blower when car leaves | |
| I_Blwr Nozzle Prox | 2011.09 | blower osc nozzle prox | new input |
| spare | 2011.10 | spare ECC input | |
| spare | 2011.11 | spare ECC input | |
| spare | 2011.12 | spare ECC input | |
| I_ReclaimTankLevel | 2011.13 | detects low level in reclaim/cold water tank | |
| I_3phPowerDetection | 2011.14 | detects loss of 3 phase power | |
| I_CatPumpOL | 2011.15 | 25hp OL tripped | |

| | | | |
|---|---|---|---|
| **INPUTS** | | | |
| **ID-16 Located in Gantry panel in the top row** | | **Address = 0** | |
| I_GantryEyeInner | 2008.00 | inner eye on gantry | |
| I_ProxBoomBotLimit1 | 2008.01 | boom bottom limit prox | |
| I_GantryEyeCan | 2008.02 | gantry safety eye in can | |
| I_ProxBoomTopLimit1 | 2008.03 | boom top limit prox | |
| I_ProxABoomCntr | 2008.04 | A phase prox on boom encoder | |
| I_GantryHomeLS | 2008.05 | home position of the gantry | |
| I_GantryRearLS | 2008.06 | reverse limit on gantry | |
| I_Prox1Wheel | 2008.07 | prox 1 gantry encoder | |
| I_JogFwd | 2008.08 | jog drive forward | |
| I_JogRev | 2008.09 | jog drive reverse direction | |
| I_JogBoomUp | 2008.10 | jog boom up direction | |
| I_JogBoomDown | 2008.11 | jog boom down direction | |
| I_JogOscillateMotor | 2008.12 | jog the oscillator motor | |
| I_JogTiltFwd | 2008.13 | jog the tilt forward | |
| I_JogTiltRev | 2008.14 | jog the tilt arm reverse direction | |
| I_JogEnable | 2008.15 | enable switch for jog's | |
| | | | |
| **ID-16 Located in ECC panel in the top row** | | **Address = 2** | |
| I_Treadle_sw | 2009.00 | switch on floor | |
| I_ExitDoorEye | 2009.01 | eye on exit door (closes when eye is blocked) | |
| I_EstopSw | 2009.02 | emergency stop switch | |
| I_ResetSw | 2009.03 | reset switch | |
| I_UnderCarSw | 2009.04 | front entrance switch to turn on undercarriage wash | |
| I_TempSwitch | 2009.05 | thermostat for door, closes on rise in temperature | |
| spare | 2009.06 | spare ECC input | |
| I_FreezeTstat | 2009.07 | freeze thermostat - closes when temp falls | |
| I_TireCleaner_Level_OK | 2009.08 | level OK in tire cleaner vessel | |
| I_WaxLevelOK | 2009.09 | level OK on foaming conditioner tank | |
| I_CashierCycle1 | 2009.10 | pulse from auto cashier, cycle 1 | |
| I_CashierCycle2 | 2009.11 | pulse from auto cashier, cycle 2 | |
| I_CashierCycle3 | 2009.12 | pulse from auto cashier, cycle 3 | |
| I_CashierCycle4 | 2009.13 | pulse from auto cashier, cycle 4 | |
| I_PreSoak_Level_OK | 2009.14 | level OK in presoak vessel | |
| I_H20_Level_OK | 2009.15 | water tank level OK | |
| | | | |
| **ID-16 Located in Gantry panel in the center row** | | **Address = 4** | |
| I_height_first | 2010.00 | eye sensing height of car highest level | |
| I_Height_second | 2010.01 | height adjustment eye second from top | |
| I_Height_third | 2010.02 | height adjustment eye, third from top | |
| I_Height_fourth | 2010.03 | height adjustment eye, fourth from top | |
| I_Prox2Wheel | 2010.04 | prox 2 gantry encoder | |
| I_carriage_ol | 2010.05 | carriage VFD tripped | |
| I_oscillate_ol | 2010.06 | oscillator VFD tripped | |
| I_boom_ol | 2010.07 | boom VFD tripped | |
| I_WheelBrushRetacted | 2010.08 | wheel brush retracted position prox | |
| I_NozzleProx1 | 2010.09 | front oscillations | |
| I_NozzleProx2 | 2010.10 | rear oscillations | |
| I_BoomSafetyRear | 2010.11 | rear boom safety eye, attached to boom rear direction | |
| I_BoomSafetyFront | 2010.12 | front boom safety eye, attached to boom front direction | |
| I_VacationHome_Prox | 2010.13 | vacation home prox | |
| I_WB Photo Eye | 2010.14 | eye sensing rear wheel position | |
| I_ProxBBoomCntr | 2010.15 | B phase prox on boom encoder | |

# *Water Wizard 2.0 Alarms*

| | |
|---|---|
| Alarm1 | no motion detected on gantry when drive enabled |
| Alarm2 | 3x lockout alarm |
| Alarm3 | exit door open alarm if doors enabled this wash |
| Alarm4 | wheel B phase prox failure |
| Alarm5 | wheel A phase prox failure |
| Alarm6 | motion detected when drives are stopped |
| Alarm7 | car measurement too small |
| Alarm8 | car measurement too large |
| Alarm9 | Drive Motor ran too long |
| Alarm10 | boom failed to clear top LS. Rewind the top boom for equivalent time period. |
| Alarm11 | boom prox A failure |
| Alarm12 | boom prox B failure |
| Alarm13 | no downward motion detected on boom. |
| Alarm14 | no upward motion detected on boom when drive running |
| Alarm15 | motion detected when boom drive not running |
| Alarm16 | boom watchdog, too long to move to SP |
| Alarm17 | when profiling to rear of car, boom safety eyes sensed obstruction |
| Alarm18 | when profiling to front of car, boom safety eyes sensed obstruction |
| Alarm19 | rear boom cycle, boom safety eyes saw obstruction |
| Alarm20 | front boom cycle, boom safety eyes saw obstruction. |
| Alarm21 | rear boom cycle, measurement eye sensed obstruction |
| Alarm22 | front boom cycle, measurement eye obstructed |
| Alarm23 | rear boom cycle, can safety eye sensed obstruction. |
| Alarm24 | front boom cycle, can eye sensed an obstruction |
| Alarm25 | top prox was ON even though boom count greater than 10 counts. |
| Alarm27 | Treadle senses car even though wash was idle for > 12 minutes. |
| Alarm28 | Recipe called for undercarriage wash, but car was not detected by undercarriage eye |
| Alarm29 | jog enable switch left on for longer than 15 minutes |
| Alarm30 | one or more manual jog switches left on for longer than 1 minute |
| Alarm31 | e-stop switch on |
| Alarm32 | Reset switch left on for longer than 1 minute. |
| Alarm33 | one or more start wash switches left on for longer than 60 seconds |
| Alarm34 | bill cashier 1 or 2 faulted |
| Alarm35 | Auto-Cashier faulted |
| Alarm36 | Tire Cleaner low level warning and out of service if low longer than 1.5 minutes |
| Alarm37 | Wax low level warning and out of service if low for longer than 1.5 minutes |
| Alarm38 | H2O low level warning and out of service if low for longer than 60 seconds |
| Alarm39 | PreSoak low level warning and out of service if low for longer than 1.5 minutes |
| Alarm40 | Gantry OL tripped |
| Alarm41 | Boom OL tripped |
| Alarm42 | Osc OL tripped |
| Alarm43 | advisory - reset button pressed |
| Alarm45 | blower nozzle proxes failed to show motion within 5 seconds of starting rotation VFD |
| Alarm46 | Home Prox Abnormal |
| Alarm47 | gantry end of travel prox abnormal |
| Alarm48 | Run track test before allowing auto cycles to begin |
| Alarm49 | wheel prox sequence abnormal |
| Alarm50 | Track test OK **This is opposite from the Fusion alarms 50 & 59** |
| Alarm51 | treadle hung at end of wash cycle - reset wash after watchdog timer expires |
| Alarm52 | end of car not found during measurement pass |
| Alarm53 | Customer did not leave treadle within 90 seconds |

# *Water Wizard 2.0 Alarms*

| | |
|---|---|
| Alarm54 | 13 minute max wash time exceeded. Cancel remaining wash cycle |
| Alarm55 | treadle switch was on when car wash was started. |
| Alarm56 | car took too long to reach treadle after starting wash |
| Alarm57 | car off treadle for too long while wash in progress. Cancel remaining wash cycle. |
| Alarm58 | customer failed to leave wash within 3 minutes after wash was completed. |
| Alarm59 | Track test not OK **This is opposite from the Fusion alarms 50 & 59** |
| Alarm60 | top boom prox was not ON at start of wash. Do not allow wash to continue. |
| Alarm61 | Gantry home sensor was not on at start of wash. Do not allow wash to continue |
| Alarm62 | bottom boom prox ON at start of boom cycle. No boom cycle will result because of error. |
| Alarm63 | main pump > 500 hours operation. Alarm issued at midnight until run time PV has been reset. |
| Alarm64 | Pump OL tripped |
| Alarm65 | no car seen within 50 counts at start of wash |
| Alarm66 | while wash idle, ganry home prox was OFF for > 60 seconds. OS |
| Alarm67 | while wash wash idle,top boom prox was OFF for > 60 seconds; OS |
| Alarm68 | front boom pass, home prox sensed |
| Alarm69 | end of track prox sensed on rear boom pass |
| Alarm76 | Relay for Gantry Eyes test sequence appears abnormal. All eyes were OFF at start of test. |
| Alarm77 | Relay for control panel eye tests sequence is abnormal. All eyes were OFF at start of test. |
| Alarm78 | boom prox switches miswired. Boom encoder counting backwards. |
| Alarm79 | gantry count prox switches miswired. Gantry encoder counting backwards |
| Alarm80 | Profile 1 did not test OFF at start of wash |
| Alarm81 | Profile 2 did not test OFF at start of wash |
| Alarm82 | Profile 3 did not test OFF at start of wash |
| Alarm83 | Profile 4 did not test OFF at start of wash |
| Alarm84 | Measurement eye did not test OFF at start of wasy |
| Alarm85 | can eye did not test OFF at start of wash |
| Alarm86 | rear boom safety eye did not test OFF at start of wash |
| Alarm87 | front boom safety eye did not test OFF at start of wash |
| Alarm88 | treadle sensor did not test OFF at start of wash |
| Alarm89 | undercarriage eye did not test OFF at start of wash |
| Alarm90 | Exit eye did not test ON at start of wash |
| Alarm91 | WB photo eye not ON at start of wash |
| Alarm96 | Profile 1 photo (top) was not ON at start of wash |
| Alarm97 | Profile 2 photo was not ON at start of wash |
| Alarm98 | Profile 3 photo was not ON at start of wash |
| Alarm99 | Profile 4 photo was not ON at start of wash |
| Alarm100 | Measurement photo was not ON at start of wash cycle |
| Alarm101 | Can Eye was not ON at start of wash cycle |
| Alarm102 | Rear Boom Safety was not ON at start of wash, 2010.11 |
| Alarm103 | Front Boom Safety was not ON at start of wash |
| Alarm104 | Treadle Eye was not ON at start of wash cycle |
| Alarm105 | UnderCar Eye was not ON at start of wash cycle |
| Alarm106 | exit eye was not ON at start of wash |
| Alarm108 | boom belt safety prox alarm |
| Alarm109 | boom prox detected slack in belt |
| Alarm110 | pipe rack mode selected this wash |
| Alarm111 | 3-phase power fault |
| Alarm112 | Reclaim water is low level |
| Alarm113 | communications error |
| Alarm122 | WB home prox not ON at start of wash. |
| Alarm123 | WB photo eye did not test OFF at start of wash |
| Alarm124 | WB prox failure during WB cycle |

# Water Wizard 2.0

## Preventive Maintenance Checklist

### General Inspection

* Pick up and remove all debris from the bay floor.
* Review the Permanent Alarm History in the Red Lion for alarms that have occurred in the past week. Record these alarms along with all of the information displayed on the screen.(date,time,counts,etc) Investigate each alarm for possible causes. Pay special attention to any reoccurring alarms.
* Observe the unit washing a vehicle and check for proper operation. Watch and listen for abnormalities.

Comments :_____

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### Pumpstand & Related Equipment Inspection

* Check oil level on the large Cat pump using the sight glass located at the back of the pump
* Drain water from the air compressor
* Drain water from the air regulator/water seperator mounted on the left side of the pumpstand and gantry
* Check chemical level and water level in all tanks
* Check water hardness
* Titrate Presoak
* Inspect pumpstand components for any leaks, rubbing or cracking hoses& wires, and general condition
* Inspect chemical concentrate suction hoses for restrictions, such as kinks & visible debris in hoses
* Check all pump pressures ( all low pressure pumps and Cat 3535 pump)
* "View Total Washes" thru the Red Lion (F3-Prices and Revenue, menu option 7) Total :_____

Comments :_____

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_____

Date :_____

Inspected by :_____

# Water Wizard 2.0

## Preventive Maintenance Checklist

### Gantry & Other Bay Equipment Inspection

* Remove all Gantry side doors, low pressure valve box cover, and high pressure valve box covers. Inspect for any leaks, rubbing or cracking hoses& wires, and general condition. Repair as necessary.
* Remove debris found in or on top of the gantry
* Test each function seperately thru the Red Lion. (F7-Tech Menu, Menu Option 2)
  Check all spray tips for proper spray pattern. Clean or replace spray tips & adjust air press. as necessary.
  Confirm that the Presoak Tilt is operating properly. (F7-Tech Menu, Menu Option 4, Gantry Outputs 2001)
* Check all rod ends on Oscillating linkage and Presoak Tilt cylinders for wear and free motion.
* Tighten Allen set screws on Oscillating shaft collars and love joy couplings
* Confirm all Banner eyes on the gantry and in the bay (treadle,entrance) are at the proper frequency.
  Also confirm all Banner receiver eyes are achieving a signal strength of "4". No exceptions
* Check all proximity sensors for proper adjustment and that cables are securely connected. If a loose cable connection is found remove and reapply dielectric grease and install cable securely.
* Clean all eye lenses on the gantry and in the bay (treadle,entrance & exit door) with a soft cloth
* Inspect Boom Belts and Pulleys for proper alignment, wear and general condition .
* Inspect the Gantry Drive Wheel Lovejoy couplings and spiders for general condition and proper alignment. Misalignment may be caused by a damaged bearing or drive wheel shaft. Check closely.
* Grease all Gantry Drive wheel bearings and tighten bearing set screws. (8ea.)
* Inspect the Boom Drive Shaft Lovejoy couplings and spiders for general condition.
* Grease all Boom Drive Shaft bearings and tighten bearing set screws. (6ea.)
* Extend and retract wheel brushes to check for smooth movement and prox adjustment
* Check the Treadle Stop Horn for proper operation.
* Inspect all hoses and cables on supply booms and transition box for wear and general condition
* Grease bearings on wall and gantry supply booms
* Run a test wash on each of the wash cycles. (Cycle 1,2,3 & 4). Compare functions to Menu Sign.
* While the unit is washing, listen for any abnormal sounds and movements.
* Confirm all products are being applied to the vehicle with desired coverage

Comments :_____

_____

_____

_____

Date :_____

Inspected by :_____


# Water Wizard 2.0 Installation Manual

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