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.

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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

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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: LAN IP for NetGear: 10.137.0.1 Subnet Mask: 255.255.0.0 UserName: admin Password: magpie5842

NetGear Default: 192.168.0.1 Subnet Mask: 255.255.255.0 User Name: admin 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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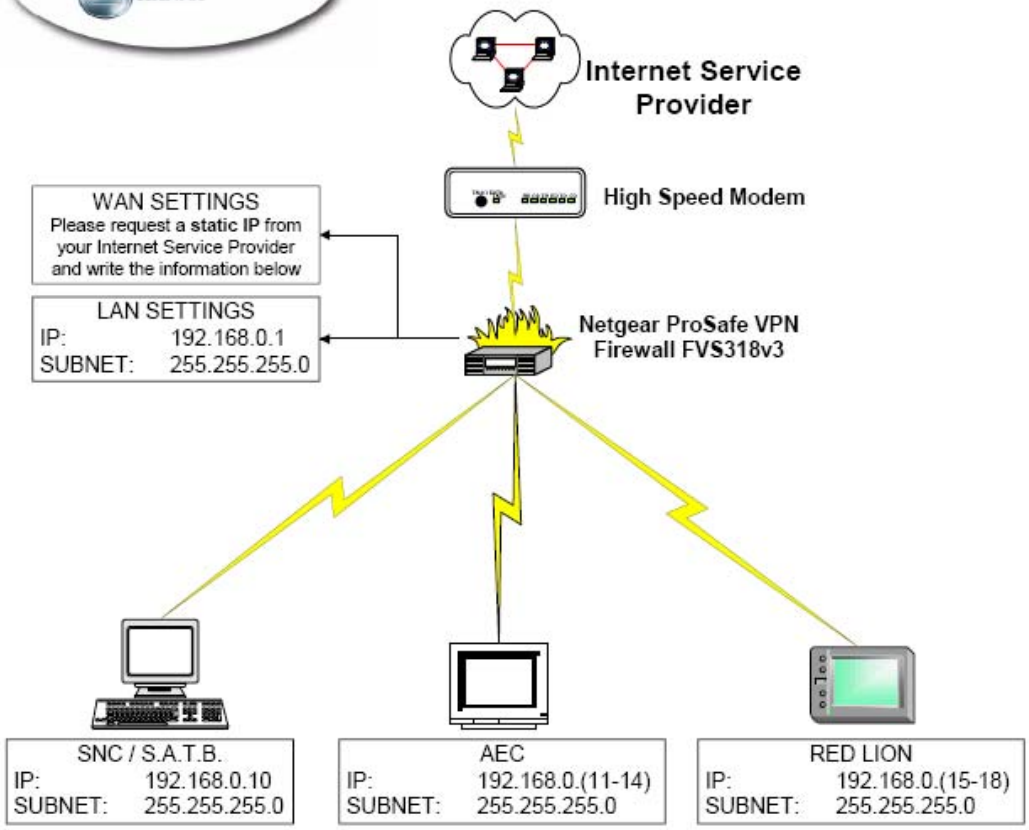
JCC High Speed Configuration



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

Channel 2005

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

0. Rotate WB CW
1. Extend WB Cyl.
2. Rotate WB CCW
3. HP Sol, WB
4.
5.
6.
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 :_____

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Date :_____

Inspected by :_____