Sprite III (Alpha) Quick Start Guide

Overview

This guide is intended for those who are familiar with installing and using dispensing systems. It provides a quick overview of the installation and use of the Sprite III (Alpha), with brief instructions for each step. For more complete information, please refer to the Sprite III (Alpha) Reference Manual (p/n 20-09070-00). To obtain a copy, please call customer service at 1-800-543-7184 or download it at www.hydrosystemsco.com.

Follow these steps to begin using the Sprite III Alpha:
1. Install mechanical and electrical portions of the system. Refer to "Mechanical Installation" on page 2 and "Electrical Installation" on page 2 for instructions.
2. Familiarize yourself with the three keys on the keypad and with the User menus.
3. Within the Program Mode menus, familiarize yourself with the Configuration Settings and Adjustment Menu (Probe or Probeless) that you will use. Note the acronym used for each menu is in Figure 8 on page 5.
4. Input the Installer Password.

5. Configure the system's settings (see key icons in Figure 5 "Controller Keys" on page 2). Press the SCROLL key to change the display to CnF (Configuration Settings). Your configuration settings determine how your system operates and which menus are available to you during programming.
Choose between:
- Detergent control (Probe or Probeless)
- Machine type (Door or Conveyer)
- Detergent type (Liquid or Capsule)
- Third-product pump selection (with Rinse, with Detergent, or disabled). After setting the configuration, you need only program the adjustments that apply to your system.
6. Press SCROLL to change the display to AJ.P (Probe Adjustments) or AJ.n (Probeless Adjustments). Set adjustments as needed.
7. Press ENTER to return to the main menu. To exit, wait 30 seconds; the menu will automatically return to the Home screen after 30 seconds of inactivity.
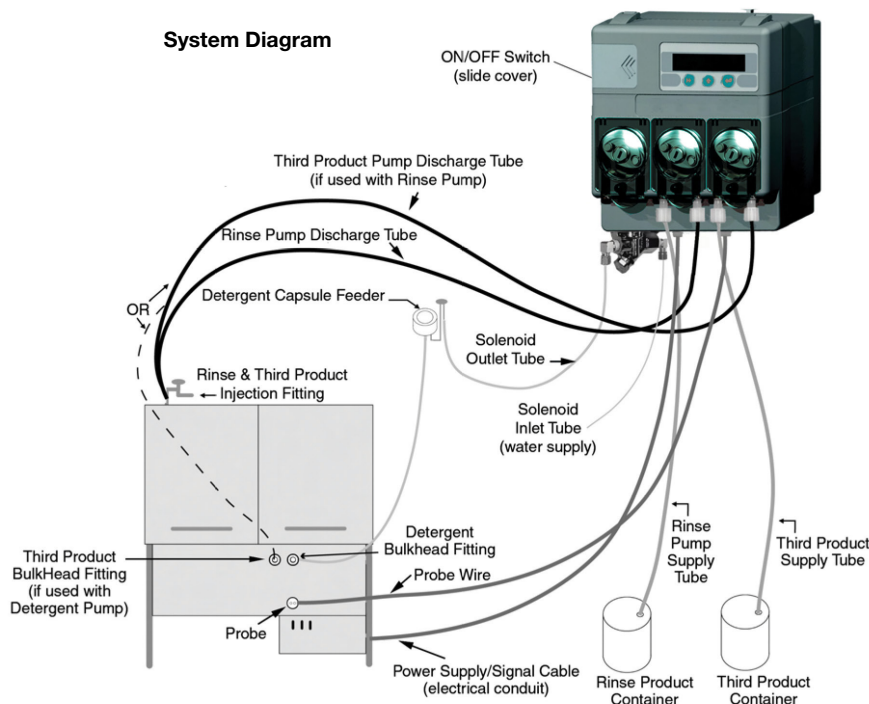8. Refer to the Sprite III (Alpha) Reference Manual (p/n 20-09070-00) for more detailed information.

System Diagram

ON/OFF Switch (slide cover)

Third Product Pump Discharge Tube (if used with Rinse Pump)

Rinse Pump Discharge Tube

Detergent Capsule Feeder

OR

Rinse & Third Product ← Injection Fitting

Solenoid Outlet Tube

Solenoid Inlet Tube (water supply)

Detergent Bulkhead Fitting

Third Product BulkHead Fitting (if used with Detergent Pump)

Probe Wire

Rinse Pump Supply Tube

Third Product Supply Tube

Probe

Power Supply/Signal Cable (electrical conduit)

Rinse Product Container

Third Product Container

Figure 1 System Diagram

Mechanical Installation

Wall Mount Dispenser
1. Locate dispenser near product containers, at a height for easy service access.
2. Place, level and install mounting bracket.
3. Lower dispenser onto bracket. Press down to lock.
4. Install new probe (for probe operation only). Immerse the probe in the wash tank solution near the product entry point and ensure a good solution flow.
5. Install the Rinse Injection Fitting at least 6" below dish machine's rinse plumbing vacuum breaker. To prevent leaks, use thread sealant.

Lock Button

Level
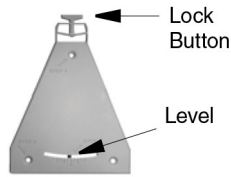
Figure 2 Mounting Bracket

Compression Fitting (tube from pump)
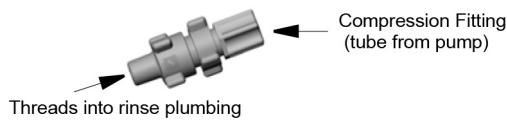
Threads into rinse plumbing

Figure 3 Rinse Injection Fitting

6. Mount the Detergent Bulkhead Fitting above water line in tank and as close to probe as possible.
7. Route detergent, rinse and third-product supply tubes as indicated in "System Diagram" on page 1.

Electrical Installation
All electrical connections (except the probe) must be made either in the dish machine control circuit panel or an external junction box. The dispenser is pre-wired with a multi-conductor electrical cable that must be run through a conduit to the hard-wired connection on the dish machine.

Use a 1/2" (13 mm) ID flexible, water tight conduit that meets all local and national codes. A conduit fitting is on the bottom of the dispenser, where the power cable exits. The probe wire is also pre-wired and must be routed to the probe location and cut to fit.

CAUTION:
Disconnect power to dish machine and dispenser during installation or any time cabinet is opened.

CAUTION:
Use only copper tubing if water source is hot. DO NOT connect solenoid to the boosted temperature rinse water line on high temperature dish machines.
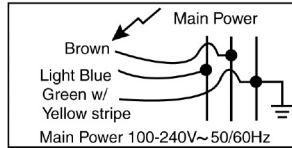

CAUTION:
Disconnect power to the machine and dispenser during installation or whenever cabinet is opened. Verify all voltage sources with a meter. Refer to Figure 4, "Wiring Diagrams."
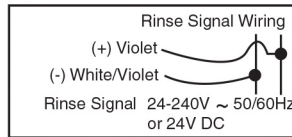
Electrical Connections

Wall Mount Dispenser

Electrical Connections

**Single-Phase,
Main Power Connection**

```
                    Main Power
        Brown
Light Blue
Green w/
Yellow stripe
Main Power 100-240V∼50/60Hz
```

Rinse Signal Wiring

```
              Rinse Signal Wiring
(+) Violet
(-) White/Violet
Rinse Signal  24-240V ∼ 50/60Hz
              or 24V DC
```

Detergent Signal Wiring

```
              Detergent Signal Wiring
(+) Yellow
(-) White/Yellow
Detergent Signal 24-240V ∼ 50/60Hz
              or 24V DC
```
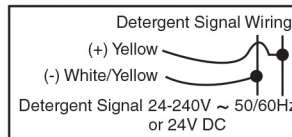
Figure 4 Wiring Diagrams

Description of Controls
The keypad shown in Figure 5 displays and controls dispenser functions. Blinking characters prompt you to input a value with the SCROLL key. Use the NEXT key to move to the next digit. When the correct value displays, press the ENTER key to save and return to the main menu.
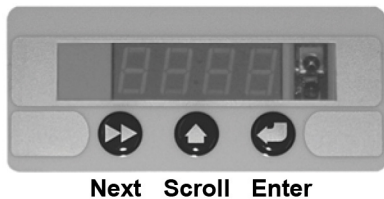
Next   Scroll   Enter

Figure 5 Controller Keys

Key	Description
NEXT	Displays User or Program menus. Moves through each screen that does not have a blinking digit.
SCROLL	Moves between setting choices within a menu. Changes the blinking number displayed (0-9). Starts Probeless Manual Initial Detergent Charge.
ENTER	Views and changes settings. Sets value and exits program. Starts and stops pumps and prime.

User Mode Operation
In User Mode, the Sprite III (Alpha) displays operating status, alarms, and gives access to the Program Mode menus:

User Mode Menus & Functions
- Rack Count (⌐Rc) in multiples of 20 racks
- Detergent Prime (d P)
- Rinse Pump Prime (⌐ P)
- Third Product Pump Prime (Ⳛ P)
- De-lime (d L)
- ID Mode
- Live Conductivity Display (if enabled)
- Password Access to Program Mode
- Audible & Visible Alarms (Low Detergent, Detergent Overfeed Stop, Change Tank Water)

Alarms and Indicators
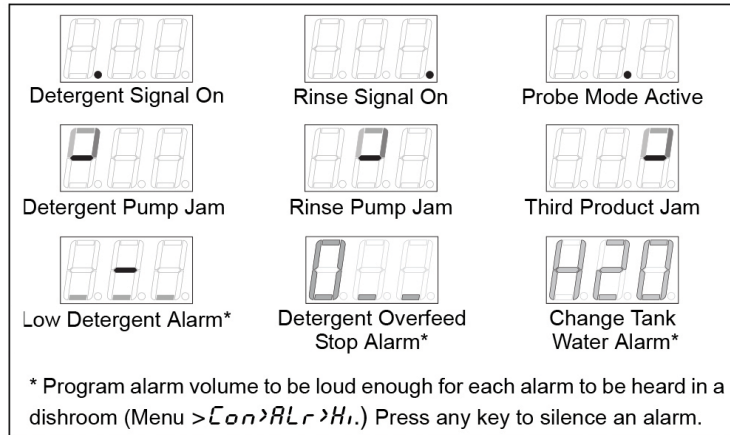These indicators and alarms may be seen in User Mode.

Figure 6 Alarms and Status Indicators

Low Detergent Alarm (Probe Mode Only)
This audible and visual alarm occurs when all of the following conditions are met:
1. A detergent signal occurs, AND
2. The conductivity level falls below the programmed set point, AND
3. The conductivity level remains low for the number of racks set in "Low Detergent Alarm Delay" (LdA).

Reset Low Detergent Alarm
Conditions that cause the alarm to reset are:
1. Conductivity rises by 10% (OR rises to the set point) within the number of racks set in LdA, OR
2. A key is pressed on the controller (pause), OR
3. Device power is cycled off and on (alarm will resume unless conductivity rises).

Detergent Overfeed Stop Alarm (Probe Mode Only)
This audible and visual alarm occurs if a low detergent alarm condition continues for twice the preset number of racks washed (as programmed in the Low Detergent Alarm Delay menu>$AdJ.P$>LdA). At that point, the detergent feed stops. To begin detergent feed after changing the product container, press any key.

Change Tank Wash Water Alarm
This audible and visual alarm alerts the operator to drain the wash tank and refill it with fresh water. It occurs after a set number of racks run. This alarm must be enabled in "Change Tank Wash Water Alarm" (Menu $CnF > CtA$).

Rack Count
Racks are counted by 20s. Each time the count reaches 999, the display automatically rolls over to 000 and a decimal lights up. The display can rollover a maximum of three times; each rollover causes another decimal to light. One lit decimal indicates approximately 20,000 racks have run. Two lit decimals indicate approximately 40,000 racks have run. Three lit decimals indicate approximately 60,000 racks have run. When 999 plus three lit decimals display, 80,000 racks have run and no additional racks can be counted until the Rack Counter is reset in Menu $CnF > rCr$.
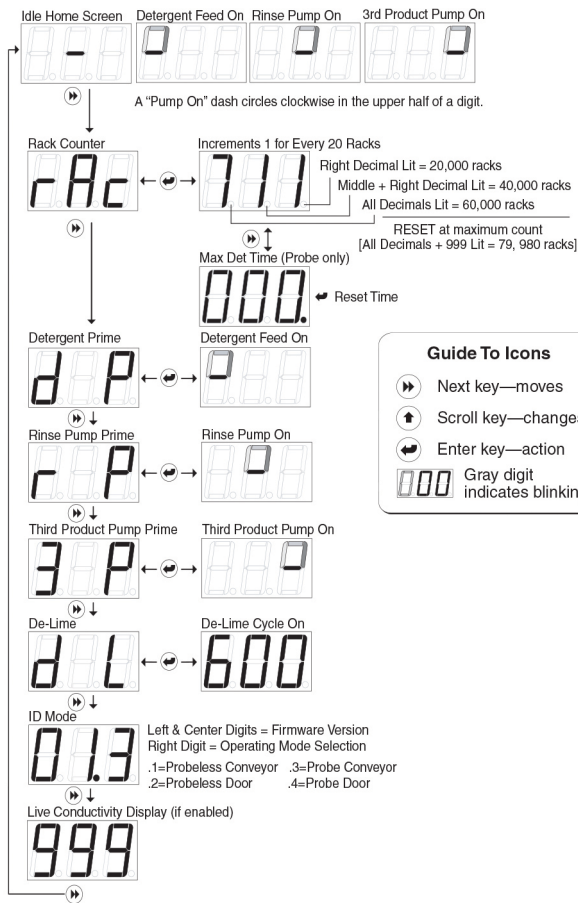
User Mode Menus

Figure 7 User Mode Menus & Pump Functions

Password Access to Program Mode
A password is needed to enter Program Mode. The factory set password (*l23*) can later be changed to any
3-digit password.

NOTE: Make note of a new password. If your password is lost, you cannot program the unit and must
contact Customer Service for assistance.

1. Press and hold ENTER for two seconds to access the password input screen. Three zeros display.
2. Press SCROLL to change the blinking digit to a 1, then press NEXT to move to the next digit.
3. SCROLL until 2 displays in the center digit.
4. Continue until 123 displays, then press ENTER to reach Program Mode's Configuration Menu (*CnF*).

Program Mode Notes
Menus are illustrated in Figure 8 on page 8. Some menus will not appear, based upon Configuration Settings.
Configuration Menus (*CnF*) and one Adjustment Menu, Probe (*AdJ.P*) or Probeless (*AdJ.n*), display.

NOTE: In new installations, set Configuration Settings first. Press ENTER to view the first selection, then SCROLL to view additional selections or to set the value. Press ENTER to "save" or press NEXT to exit without saving.

Configuration Settings (Menu *CnF*)
    Detergent Control *dct*: Probe or No Probe
    Machine Type *Mt*: Door or Conveyor
    Detergent Type *d t*: Liquid or Capsule
    Pulse Feed *PuL* (Capsule Detergent & Probe Mode Only)
        Left digit = Seconds On; Center digit = Seconds Off;
        Right digit = % of setpoint (5 = 50%, 8 = 80%, etc.)
    Alarm Volume *ALr*: Off, Low, Medium or High
    Rack Time in Rinse *rtr* (Conveyor-type machine only): Set the number of seconds it takes to move one rack a single rack length's distance.)
    Rack Count Reset *rCr*: Press ENTER to display the count, SCROLL to display *CLr*, then ENTER to reset count to 0.
    Automatic Initial Charge *AI c* (Probeless Mode only):
        • Off = User starts Manual Charge with SCROLL key.
        • On, Door machine = Automatic charge occurs each time dispenser receives a rinse signal that was not preceded by a detergent signal within 90 seconds. A five minute lockout timer begins at start of charge.
        • On, Conveyor machine = Automatic charge occurs each time the dispenser detects a detergent signal input that remains on for 10 seconds continuously.
    Change Installer Password: Change from the default password to any 3-digit password; note new password.
    Change Tank Wash Water Alarm *CtA*: Number of individual racks to run (1-999, 0=Off) before alarm activates.
    3rd Product Pump: Run with Rinse or Detergent pump.

Adjustments – Probe Mode (Menu *AJ.P*)
    Detergent Tank Reading *dtr*: Press SCROLL to add product to proper concentration, then test. Solution must be well mixed (wash pump running) and at operating temperature. Press ENTER to view reading (Detergent Setpoint).
    Detergent Setpoint *dSP*: Setpoint is most accurate when used with new Nova Controls probe (provided).
    Live Conductivity Display *Lcd*: On or Off
    Rinse Pump Speed *rPS*: See RPM Settings Guide, below. With standard rinse tube, dispenses .5 ml/rev.
    3rd Product Pump Speed 3PS: At maximum speed, dispenses 6 oz. / min. Set to 0 to turn pump off.
    Low Detergent Alarm Delay *LdA*: Number of racks to run before Low Detergent Alarm is activated.
    Rinse Feed Option *rFo*: Determines whether rinse pump is activated by the rinse signal or by the detergent signal.
    Rinse Delay Time *rdt* (Door, rinse on rinse only): Restricts rinse injection to last seconds (0-19) of each rack.

Adjustments – Probeless Mode (Menu *AJ.n*)
    Detergent Initial Charge *dI c*: Time needed to charge wash tank to correct concentration on an initial fill.
    Detergent Dose *doS*: Detergent pump run time (0-59 secs.)
    Detergent Dose Interval *ddI*: Dose every rack (1), every other rack (2), or every third rack (3).
    Rinse Pump Speed *rPS* **& 3rd Product Pump Speed 3PS:** See instructions in Adjustments – Probe Mode.
    Rinse Feed Option *rFo*: Determines whether rinse pump is activated by the rinse signal or by the detergent signal.
    Rinse Delay Time *rdt* (Door, rinse on rinse only): Restricts rinse injection to last seconds (0-19) of each rack.

Final Rinse Time (Sec.)	1 m./rack	1.5 m./rack	2 m./rack	2.5 m./rack	3 m./rack	3.5 m./rack	4 m./rack	4.5 m./rack	5 m./rack
6	20	30	40	50	60	—	—	—	—
8	15	23	30	38	45	53	60	—	—
10	12	18	24	30	36	42	48	54	60
12	10	15	20	25	30	35	40	45	50
14	9	13	17	21	26	30	34	39	43
15	8	12	16	20	24	28	32	36	40
16	8	11	15	19	23	26	30	34	38
18	7	10	13	17	20	23	27	30	33
20	6	9	12	15	18	21	24	27	30

Specifications

Size	8" W x 9" H x 6" D (20.3 cm W x 23 cm H x 15.4 cm D)
Weight	6 lbs. (2.72 kg.)
Temperature	10° to 40° C (50° to 120° F) Maximum. See the Sprite III Alpha Reference manual for a complete list of Environmental Specifications.
Power	Total amperage draw during operation is: 100 to 240 VAC nominal (+/- 10% fluctuation), 50/60 Hz., 1.0 amps (max)
Rinse Pump Flow Rate	0.5 mls./revolution
Detergent Pump Flow Rate	6 oz./min. (178 mls./min.)
3rd Product Pump Flow Rate	0.60 oz./min. to 6 oz./min. (17.8 mls./min. to 178 mls./min.)

Limited Warranty

Limitation of Liability

Figure 8 Program Mode Menus

Spare Parts Listing

1a. Power Supply Module Only
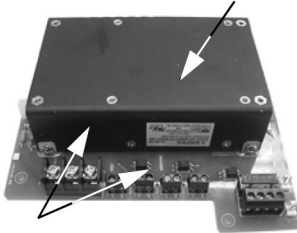
1b. Power Supply Assembly
(includes module, PCB, harness)
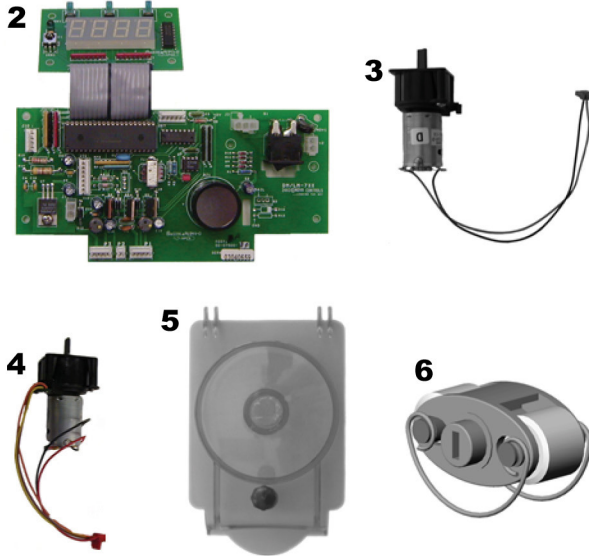
Ref. #	Part #	Description
1a	13-07724-00	Power Supply Module Only
1b	13-07724-01	Power Supply Assembly (includes module, PCB and Harness)
2	13-07725-10	Logic Circuit Board
*	13-07725-01	Logic Circuit Board w/ Ext. Alarm Option
3	13-06524-01	Pump Motor Detergent w/2-Pin Plug
4	13-06523-01	Pump Motor Rinse w/5-Pin Plug
5	13-06398-06 Add'l. Colors	Kit, Pump Cover, TEAL (-04 BLUE) (-05 ORANGE) (-11 SMOKE)
6	13-06396-00	Pump Spinner Assembly (all pumps)
*	37-07584-02	Cabinet Front, LT. GRAY (-05 BLACK)
*	37-07585-32	Cabinet Rear, LT. GRAY (-05 BLACK)
*	13-07268-06	Power Switch Cover
*	13-07122-00	Dispenser Mounting Bracket Kit
*	13-07191-00	Solenoid Valve Kit, 1/4" Fitting
*	13-07191-02	Solenoid Valve Kit, 5/16" Fitting
*	13-06528-00	Solenoid Valve Nut w/Sleeve, 1/4" 10 pk.
*	13-06528-02	Solenoid Valve Nut w/Sleeve, 5/16" (8mm) 10 pk.
*	13-06395-10	Pump Tube, Rinse/Sanitizer Lo-Flow, EPDM (incl. 1/4" Fittings w/o nuts) 10 pk.
*	13-06395-20	Pump Tube, Rinse / Sanitizer Lo-Flow, 10 pk. EPDM (incl. 1/4" and 1/8" Fittings w/o nuts)
*	13-06395-30	Pump Tube, Rinse / Sanitizer Lo-Flow, EPDM (incl. 1/8" Fittings w/o nuts) 10 pk.
*	13-06928-10	Pump Tube, Rinse / Sanitizer Lo-Flow, Silicone (incl. 1/4" Fittings w/o nuts) 10 pk.
*	13-06928-20	Pump Tube, Rinse / Sanitizer Lo-Flow, 10 pk. Silicone (incl. 1/4" and 1/8" Fittings w/o nuts)
*	13-06928-30	Pump Tube, Rinse / Sanitizer Lo-Flow, Silicone (incl. 1/8" Fittings w/o nuts) 10 pk.
*	13-06399-10	Pump Tube, Detergent / Sanitizer, EPDM (incl. 1/4" Fittings w/o nuts) 10 pk.
*	13-06563-00	Pump Tube Compression Nut w/Sleeve, 1/4", 10 pk.
*	13-06563-02	Pump Tube Compression Nut and Ferrule, 1/8" (3mm) 10 pk.
*	13-06529-00	Rinse Injection Fitting, Straight, Kynar, 1/8" NPT x 1/4" Tube
*	13-06529-02	Rinse Injection Fitting, Straight, Kynar, 1/8" NPT x 6mm Tube
*	13-06531-00	Rinse Injection Fitting, 90° , Elbow, 1/8" NPT x 1/4" Tube
*	13-06531-01	Rinse Injection Fitting, 90°, Elbow, 1/8" NPT x 1/8" (3mm) Tube

Quick Reference Wallet Card

Cut along dotted outer line and keep for future reference.

Configuration Settings

Input Password to Start

CnF

Detergent Control
dct ← → Prb (Probe) ↕ noP (Probeless)

Machine Type
ጠቲ ← → dor (Door) ↕ con (Conveyor)

Detergent Type
d t ← → Li9 (Liquid) ↕ cAP (Capsule)

Pulse Feed* (Capsule)
PuL ← → oFF 195 197 265 268 447 648 619

Alarm Volume
ALr ← → oFF (Off) Lo (Low) ጠE (Medium) Hi (High)

* NOTE: Pulse Feed display is ONLY available when Detergent Type = Capsule (Menu d t = cAP)

195 = 1 Second On, 9 Seconds Off, 50% of Set Point
197 = 1 Second On, 9 Seconds Off, 70% of Set Point
265 = 2 Seconds On, 6 Seconds Off, 50% of Set Point
268 = 2 Seconds On, 6 Seconds Off, 80% of Set Point (Default)
447 = 4 Seconds On, 4 Seconds Off, 70% of Set Point
648 = 6 Seconds On, 4 Seconds Off, 80% of Set Point
619 = 6 Seconds On, 1 Second Off, 90% of Set Point

Configuration Settings con't.

Rack Time in Rinse **Seconds For 1 Rack (0-29 secs.)**
rtr ← → 10 (Conveyor)

Rack Count Reset **Current Rack Count** **Press to Clear Rack Count**
rCr ← → 9.8.8. ← → CLr

Initial Charge (Probeless) **Automatic** **Manual**
Aic ← → on ↕ oFF

Edit Password **New Password**
Pin ← → 223

Change Tank Alarm **# of Racks (000-999)**
CtA ← → 000 000 = Off (default)

Third Product Runs **With Rinse** **With Detergent**
3rd ← → rin ← → dEt

Sprite III (Alpha) Warewash Quick Reference Card

Fold Here → ←——→   ←— Fold Here

Adjustments, Probe Mode

AJ.P

Detergent Tank Reading **Tank Reading**
dtr ← → 000

Detergent Set Point **Setpoint 0-999**
dSP ← → 000

Live Conductivity Display **(Default)**
Lcd ← → on ↕ oFF

Rinse Pump Speed **0-59.5 RPM + = Test**
rPS ← → 00.0

Third Product Pump Speed **0=off, 2-110 RPM**
3PS ← → 000

Low Detergent Alarm Delay **# of Racks, 1-9**
LdA ← → 1

Rinse Feed Opt. (Door Only) **Rinse on Rinse** **Rinse on Detergent**
rFo ← → ror ↕ rod

Rinse Delay Time (Door Only) **0-19 Seconds**
rdt ← → 08

Adjustments, Probeless Mode

AJ.n

Detergent Initial Charge **0-199 Seconds**
dic ← → 12

Detergent Dose **0-19 Seconds**
doS ← → 02

Detergent Dose Interval **Racks (1, 2 or 3)**
ddi ← →

Rinse Pump Speed **0-59.5 RPM + = Test**
rPS ← → 00.0

Third Product Pump Speed **0=off, 2-110 RPM + = Test**
3PS ← → 080

Rinse Feed Opt. (Door Only) **Rinse on Rinse** **Rinse on Detergent**
rFo ← → ror ↕ rod

Rinse Delay Time (Door Only) **0-19 Seconds**
rdt ← → 08