

# Nipple Washer



Installation & Operation Manual

Zelio Control Cabinet  
Stand Alone Nipple Washer

**WESTWAARD**  
FABRICATORS for DARITECH






## Revision Sheet

Release No.	Date	Revision Description
Rev. 1	--/--/----	Manual Completion

## Explanation of Symbols

The following symbols are used within this manual to alert the reader to important information or potentially hazardous conditions.

Safety Symbols draw attention to adjacent text and should always be read and thoroughly understood.

	<b>WARNING!</b> Warning signals danger to life or health of personnel. Death or serious injury may result if the danger is not avoided.
	<b>CAUTION!</b> Caution signals dangerous situations. Injury may result if the danger is not avoided.
	<b>ATTENTION!</b> Attention signals important information on risks for product or the environment.

## Introduction

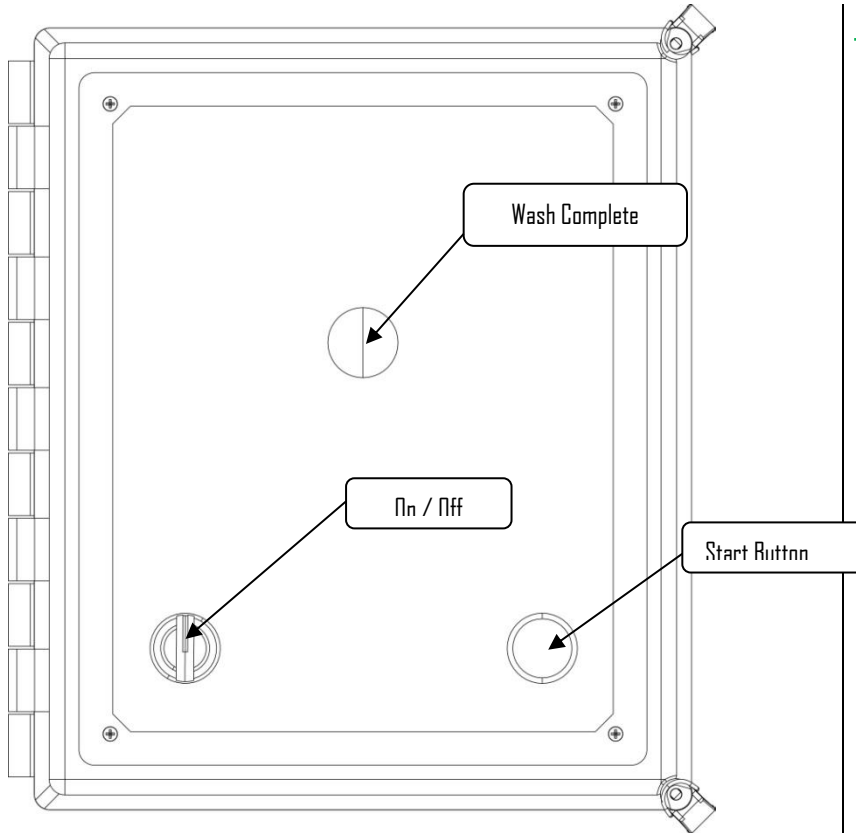
The Westwaard Nipple Washers are standalone units. While great effort is put into preparing milk the right way to feed calves, it is important that the sanitation of milk bottles & nipples is maintained to a high standard as well. With our years of equipment and automation experience, our goal is to give you the tools to raise the healthiest calves possible, while allowing you to do it in the most efficient and most economical method available.

The control cabinet is the brain center for the Nipple Washer, and it governs all its controlled functions. The cabinet features an array of terminal blocks, circuit breaker and a power relay that are all mitigated through a Smart Relay.



## Control Panel Overview

The control panel features; one switch, a start button & a completion light. Each component swerves a single control that is described in the Control Overview below.,



## Control Overview

### Wash Complete

The Wash Complete will illuminate once the Nipple Washer has gone through all its' fill and rinse cycles

### On / Off

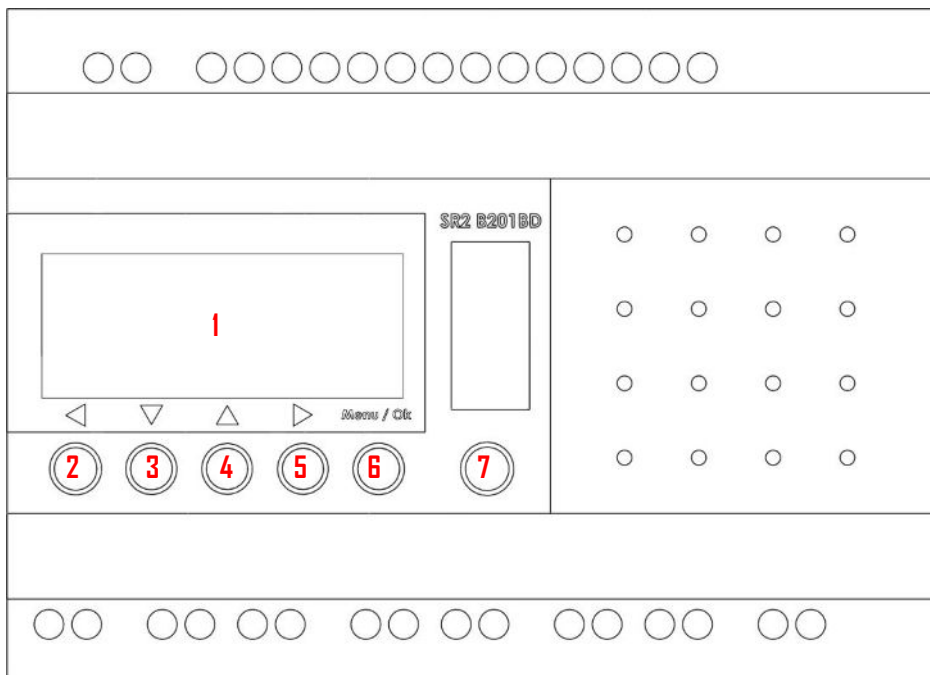
Control the power to the Nipple Washer and control box

### Wash Start

Press Wash Start once you are ready to begin the Nipple Washer cleaning cycle.

## Smart Relay Layout

The Nipple Washer runs on a smart relay, located inside the control cabinet. Operation of the smart relay control is essential to adjusting the nipple washer to more suit the dairyman's sanitation needs. The smart relay control operates with 5 push buttons to easily access the parameter settings of the Nipple Washer.



## Smart Relay Layout

1. Display Screen
2. Back
3. Down / -
4. Up / +
5. Forward
6. Menu / Ok
7. Shift Key (Not Used)



**Before continuing be aware that changing parameter settings outside their default range could result in unforeseen equipment operation. Make sure you properly understand each parameter setting before making adjustments.**



**Default display settings may vary. Refer to Parameter sticker located inside the control box in the top right corner of the cabinet door for your Nipple Washer's default settings.**

### Home Screen

The first screen you will see when looking at the smart relay Controller.

The Home Screen displays “The Nipple Washer By Westwaard” and the double triangle will rotate when system is active.

- Press the Menu / Ok button to be taken to the Menu Screen.
- Default setting is 1. Select 1 to Activate, 0 to Deactivate.

### Select Cycle

- R00B044:** Prerinse
- R00B047:** Detergent
- R00B050:** Rinse
- R00B053:** Acid
- R00B056:** Final Rinse

### Pre-Rinse Cycle

The Pre-Rinse Cycle will be displayed on the smart relay once the start button has been pressed and is the first of five cycles. The bottle washer will spray clean water into the system to rinse out any sediment before the Detergent cycle starts.

*To change parameter settings see “Device Settings” for the associated reference code.*

- R01B027:** Pre-Rinse Water Fill Duration w/ Hot Water
- R01B028:** Pre-Rinse Water Fill Duration w/ Cold Water
- R01B029:** Pre-Rinse Circulation Duration
- R01B030:** Pre-Rinse Drain Duration
- R01B039:** Max Fill Time Before Fault

### Detergent

The Detergent is the second cycle and will pump liquid detergent into the system that will then be sprayed into the bottles for cleaning.

*To change parameter settings see “Device Settings” for the associated reference codes below.*

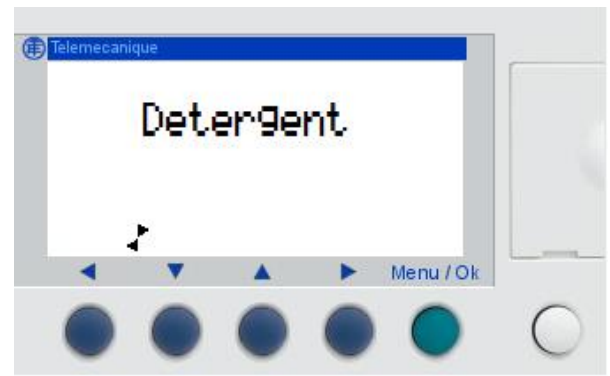
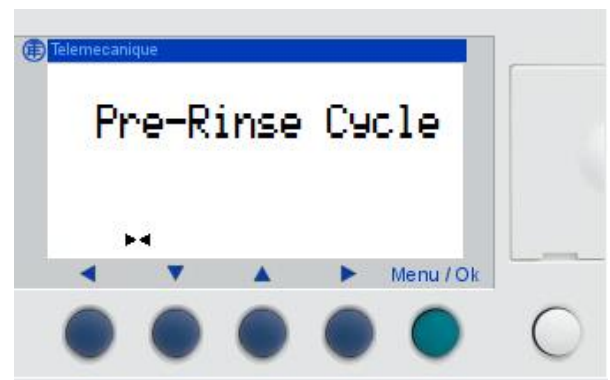
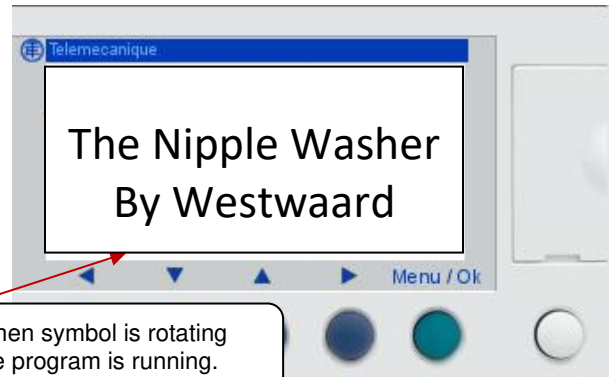
- R02B032:** Detergent Water Pre-Fill Duration
- R02B033:** Detergent Water Pre-Fill w/Hot Water
- R02B034:** Detergent Water Pre-Fill w/Cold Water
- R02B035:** Detergent Chemical Injection Duration
- R02B041:** Detergent Circulation Duration
- R02B042:** Detergent Drain Duration
- R02B069:** Max Fill Time Before Fault

### Detergent Rinse

The third cycle is a Detergent Rinse. The rinse will spray clean water into the system to rinse out any leftover detergent residue before the Acid cycle starts.

*To change parameter settings see “Device Settings” for the associated reference codes below.*

- R03B027:** Detergent Rinse Water Fill w/Hot Water
- R03B028:** Detergent Rinse Water Fill w/Cold Water
- R03B029:** Detergent Rinse Circulation Duration
- R03B030:** Detergent Rinse Drain Duration
- R03B039:** Max Fill Time Before Fault



**Acid**

The Acid injection is the fourth cycle in the cleaning process and is pumped and sprayed into the system to further eliminate contaminants in the bottles.

To change parameter settings see “Device Settings” for the associated reference codes below.

- R04B032:** Acid Water Pre-Fill Duration
- R04B033:** Acid Water Pre-Fill w/Hot Water
- R04B034:** Acid Water Pre-Fill w/Cold Water
- R04B035:** Acid Chemical Injection Duration
- R04B041:** Acid Cycle Circulation Duration
- R04B042:** Acid Cycle Drain Duration
- R04B069:** Max Fill Time Before Fault

**Final Rinse**

Clean water is pumped and sprayed into the system to rinse out any remaining acid residue.

To change parameter settings see “Device Settings” for the associated reference codes below.

- R05B027:** Final Rinse Water Fill w/Hot Water
- R05B028:** Final Rinse Water Fill w/Cold Water
- R05B029:** Final Rinse Circulation Duration
- R05B030:** Final Rinse Drain Duration
- R05B039:** Max Fill Time Before Fault

**Cycle Complete - Front Red Light**

Once the Acid rinse has completed the smart relay screen will display “Cycle Complete” and the bottles will now be cleaned.

- Flashing light - Wash Complete
- Solid Light – Water Fill Fault

All these settings can be adjusted for fill time, duration, agitation and draining. Access the parameter settings from the menu screen.

**Menu Screen**

The menu screen can be accessed by pressing the Menu/Ok button when on the home screen

- Highlight “Parameters”
- Press the Menu / Ok button to adjust device operations.

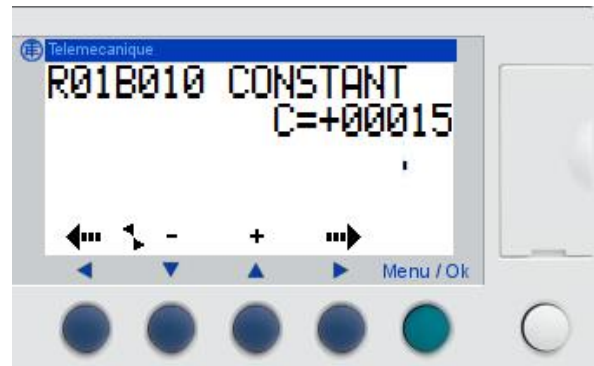
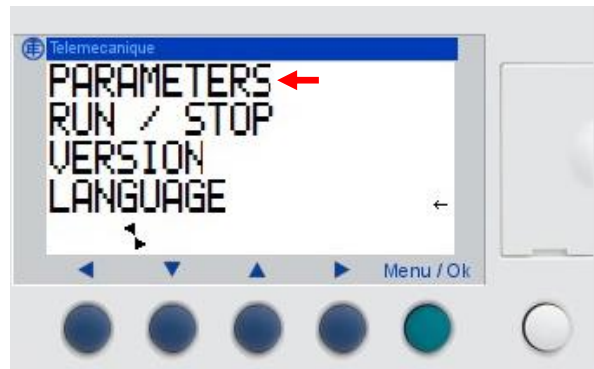
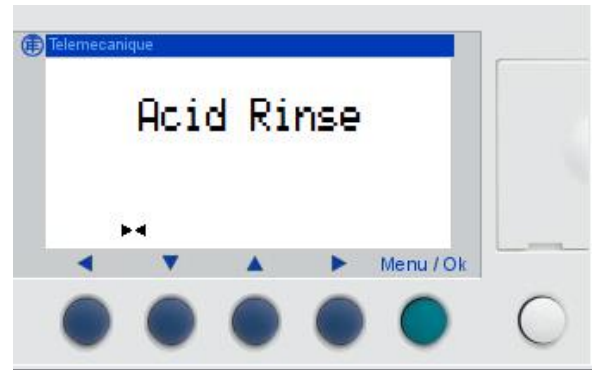
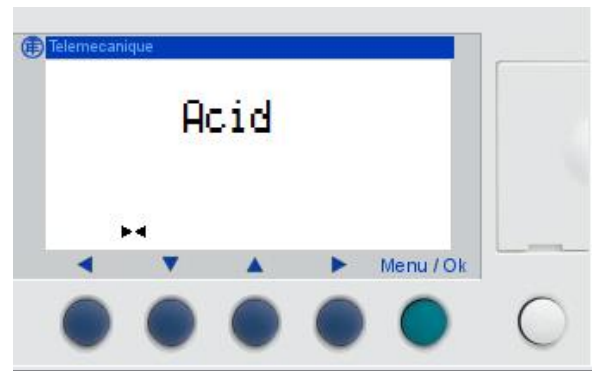
Parameter Settings allow you to adjust different components & fault durations.

You can also refer to the Parameter List sticker located on the door of the control cabinet for code reference.

**Navigate the Settings Screen**

By pressing the **Back** or **Forward** button you can switch from the Device or C= value. To adjust Settings hit either the - / Down or + / Up buttons.

The C= value represents Units or Seconds, adjust to change device input.

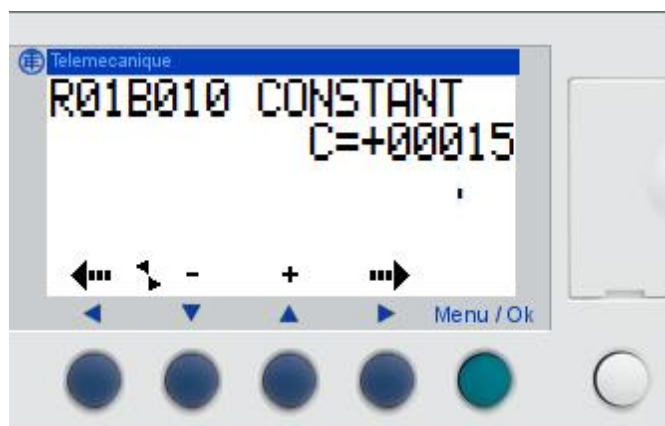


## Device Settings

### R01B010 - Detergent Injection Time

C= Seconds of Detergent

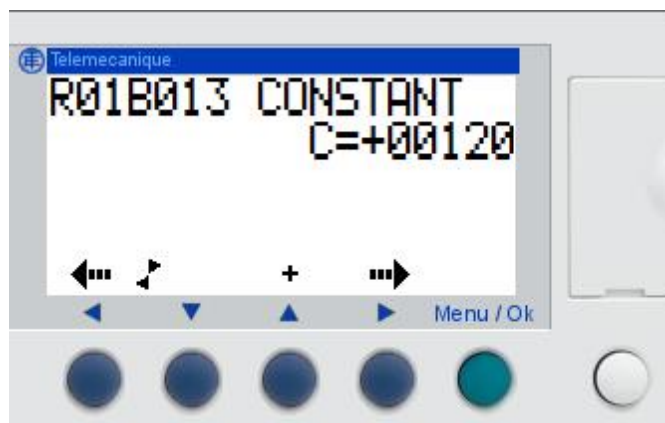
Adjust to change the chemical pump duration when dispensing Detergent.



### R01B013 - Detergent Water Fill Duration

C= Seconds Water Runs Before Pump Turns On

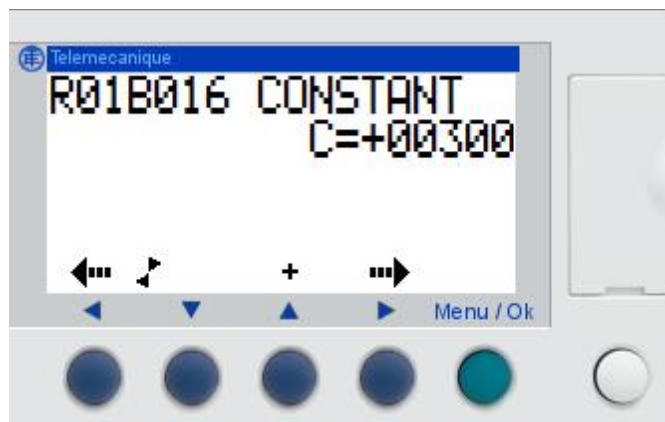
Adjust to change the amount of time that the system will pump water into the bottle washer before activating Detergent Circulation Duration.



### R01B016 - Detergent Circulation Duration

C= Seconds Pump and Water Runs

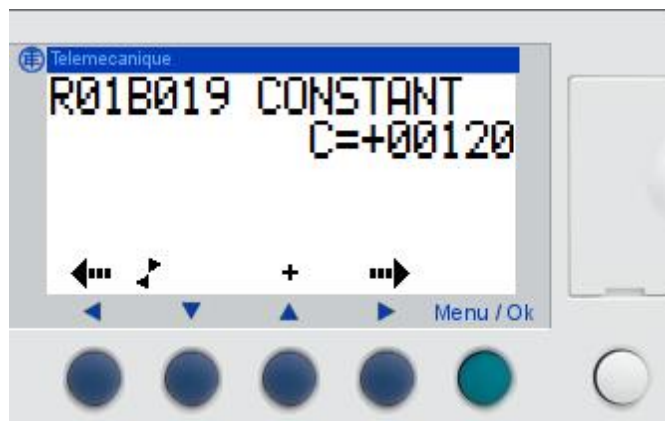
Set to change the amount of time that the Bottle Washer will run during the Detergent Cycle.



### R01B019 - Detergent Drain Duration

C= Seconds Drain Remains Open Before Starting Next Cycle

Adjust to change the amount of time that the drain valve will remain open after circulation duration has completed.



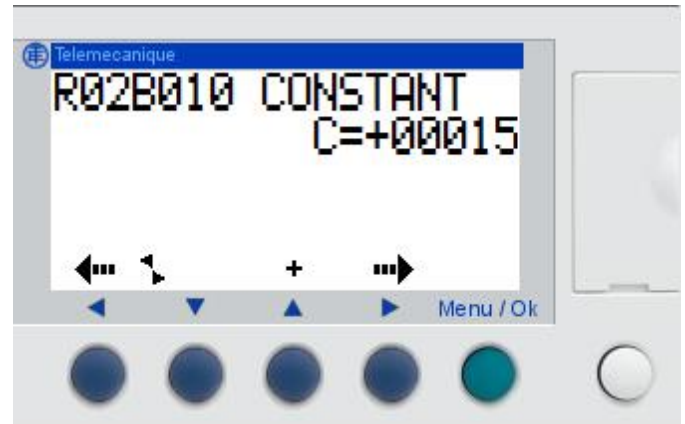


## Device Settings

### R02B010 - Acid Injection Time

C= Seconds of Acid

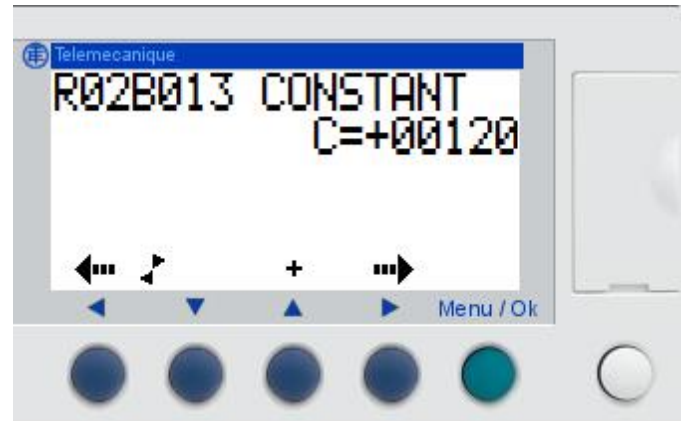
Adjust to change the chemical pump duration when dispensing Acid.



### R02B013 - Acid Water Fill Duration

C= Seconds Water Runs Before Pump Turns On

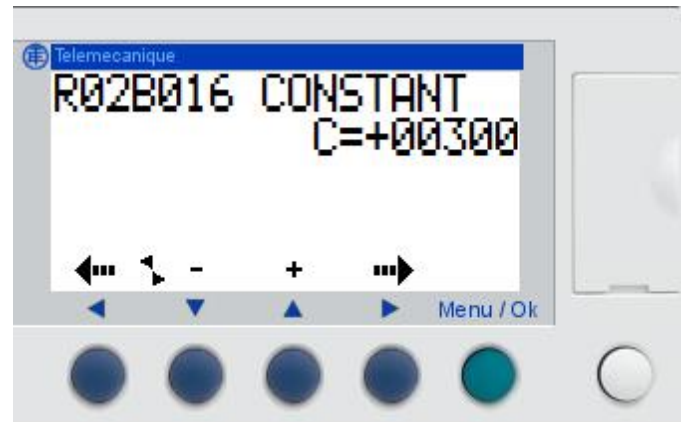
Adjust to change the amount of time that the system will pump water into the bottle washer before activating Acid Circulation Duration.



### R02B016 - Acid Circulation Duration

C= Seconds Pump and Water Runs

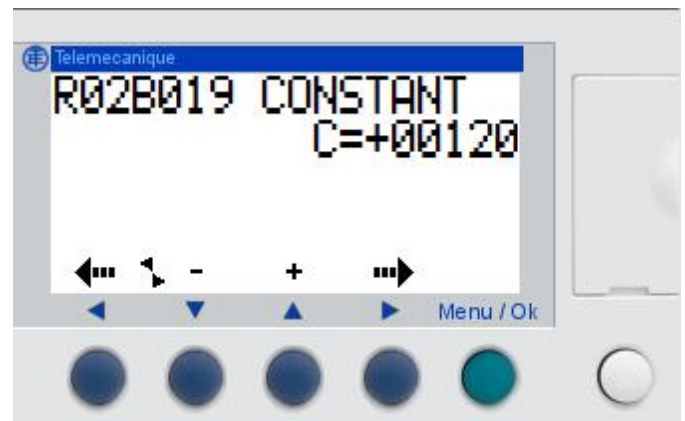
Set to change the amount of time that the Bottle Washer will run during the Acid Cycle.



### R02B019 - Acid Drain Duration

C= Seconds Drain Remains Open Before Starting Next Cycle

Adjust to change the amount of time that the drain valve will remain open after circulation duration has completed.



## Device Settings

### R04B050 - Pre-Rinse Water Fill Duration

C= Seconds Water Runs Before Pump Turns On

Adjust to change the amount of time that the system will pump water into the bottle washer before pre-rinse circulation duration.



### R04B053 - Pre-Rinse Circulation Duration

C= Seconds Water Runs Before Pump Turns On

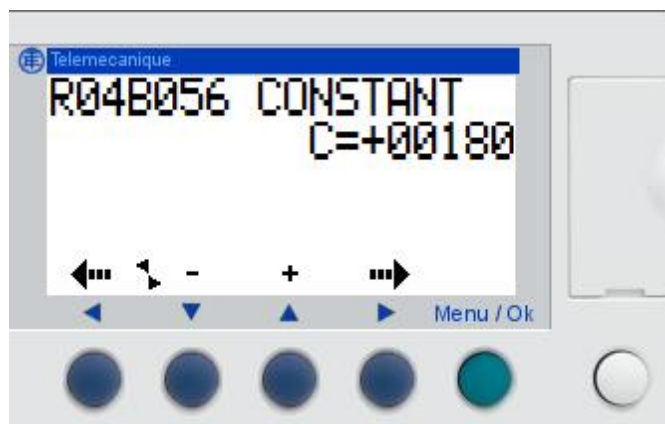
Set to change the amount of time that the Bottle Washer will run during the Pre-Rinse Cycle.



### R04B056 - Pre-Rinse Drain Duration

C= Seconds Drains Remains Open Before Starting Next Cycle

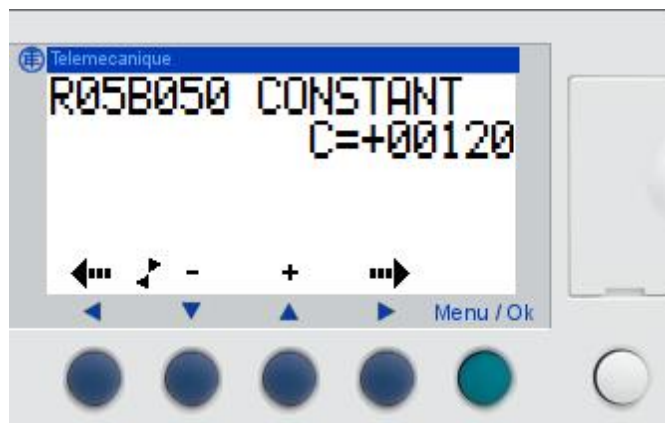
Adjust to change the amount of time that the drain valve will remain open after circulation duration has completed.



### R05B050 - Detergent Rinse Water Fill Duration

C= Seconds Water Runs Before Pump Turns On

Adjust to change the amount of time that the system will pump water into the bottle washer before activating Detergent Rinse Circulation Duration.



## Device Settings

### R05B053 - Detergent Rinse Circulation Duration

C= Seconds Water Runs Before Pump Turns On

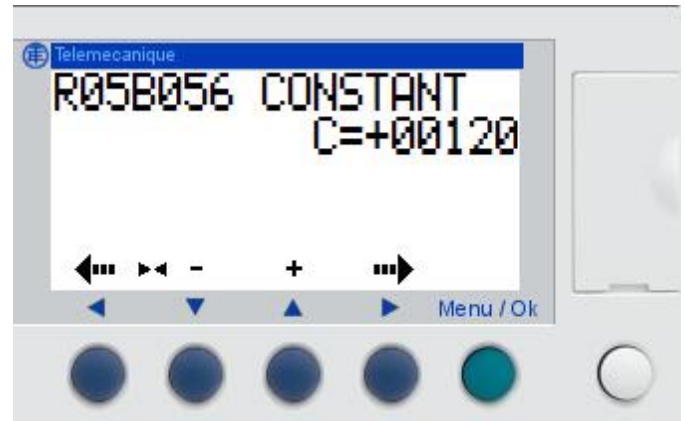
Set to change the amount of time that the Nipple Washer will run during the Detergent Rinse Cycle.



### R05B056 - Detergent Rinse Drain Duration

C= Seconds Drains Remains Open Before Starting Next Cycle

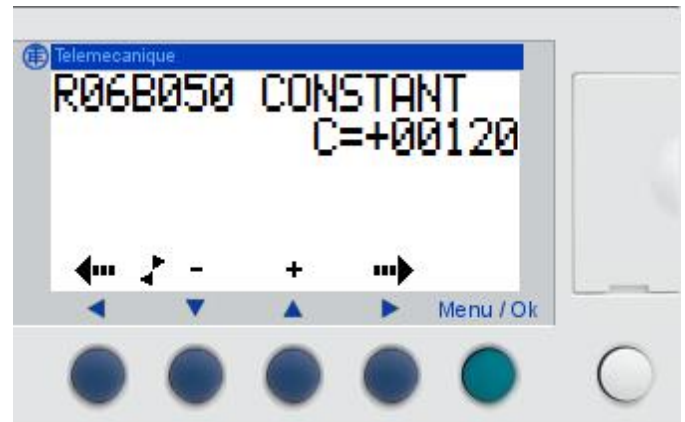
Adjust to change the amount of time that the drain valve will remain open after circulation duration has completed.



### R06B050 - Acid Rinse Water Fill Duration

C= Seconds Water Runs Before Pump Turns On

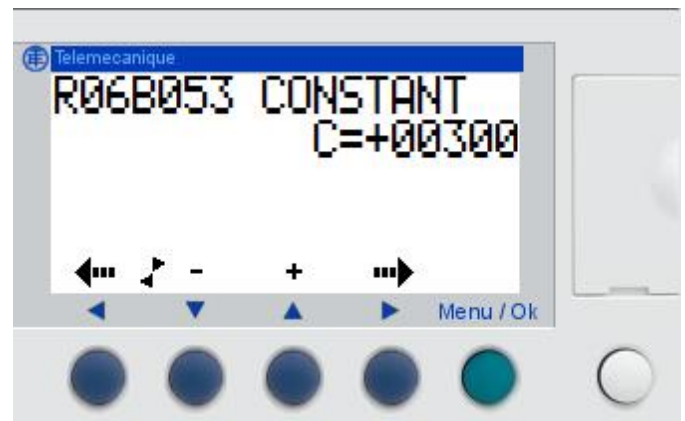
Adjust to change the amount of time that the system will pump water into the bottle washer before activating Acid Circulation Duration.



### R06B053 - Acid Rinse Circulation Duration

C= Seconds Water Runs Before Pump Turns On

Set to change the amount of time that the Nipple Washer will run during the Acid Rinse Cycle.



## Device Settings

### R06B056 - Acid Rinse Drain Duration

C= Seconds Drains Remains Open Before Starting Next Cycle

Adjust to change the amount of time that the drain valve will remain open after rinse circulation duration has completed.



## Starting Procedure

In the event that the smart relay has stopped due to user interaction and the "STOP FBD" screen is displayed (shown below), proceed with the following instructions to restart the system.

### Starting

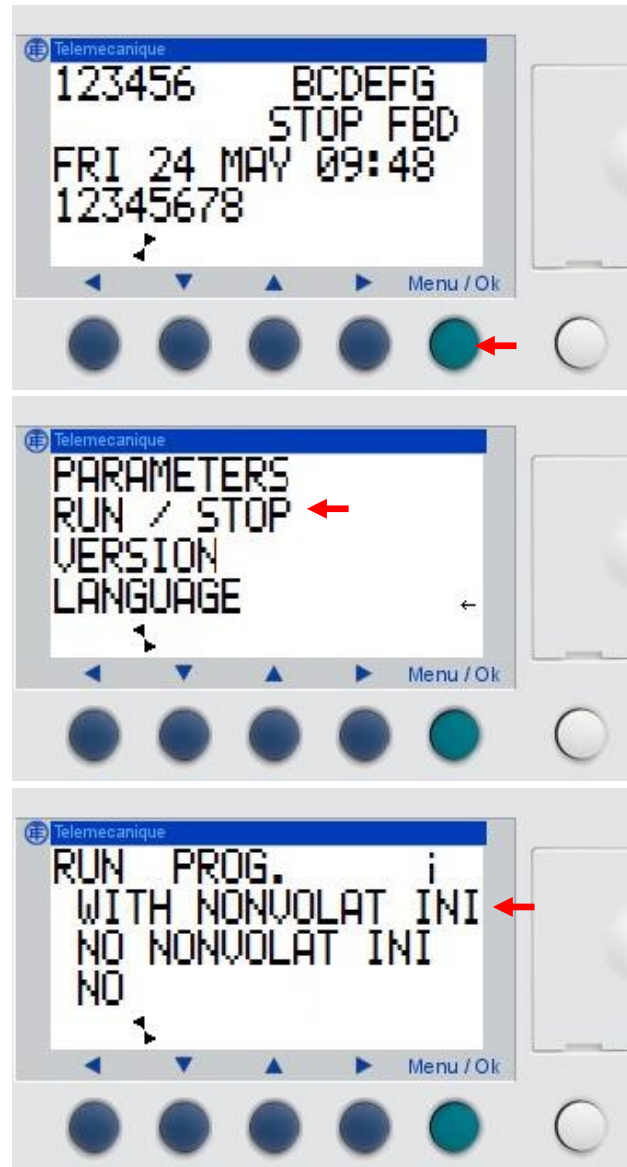
Starting the smart relay control from the Home Screen;

- Press the Menu button

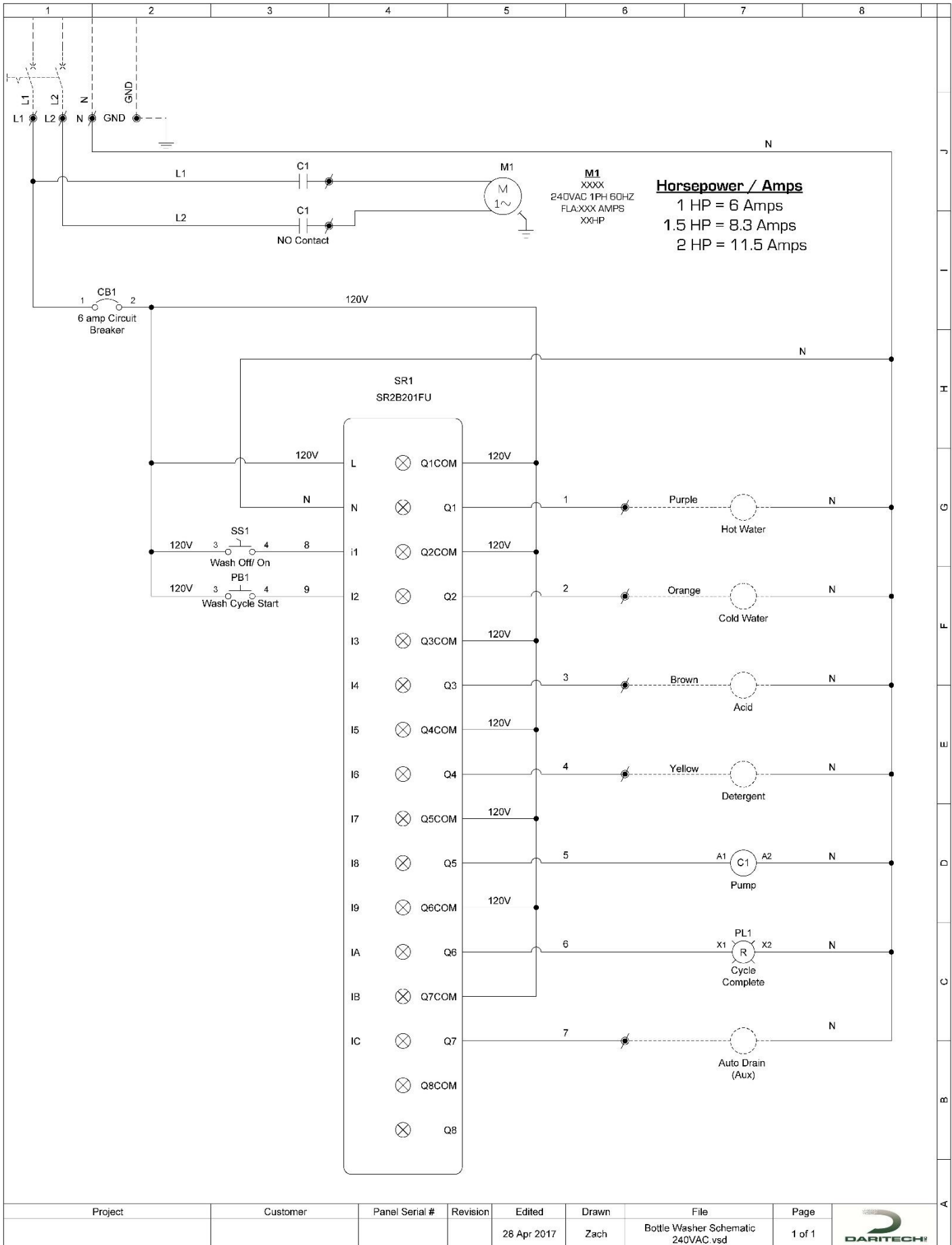
- Highlight "Run / Stop"
- Press OK

Run Program Screen will appear

- Select "WITH NONVOLAT INI" to restart the Smart Relay Program.

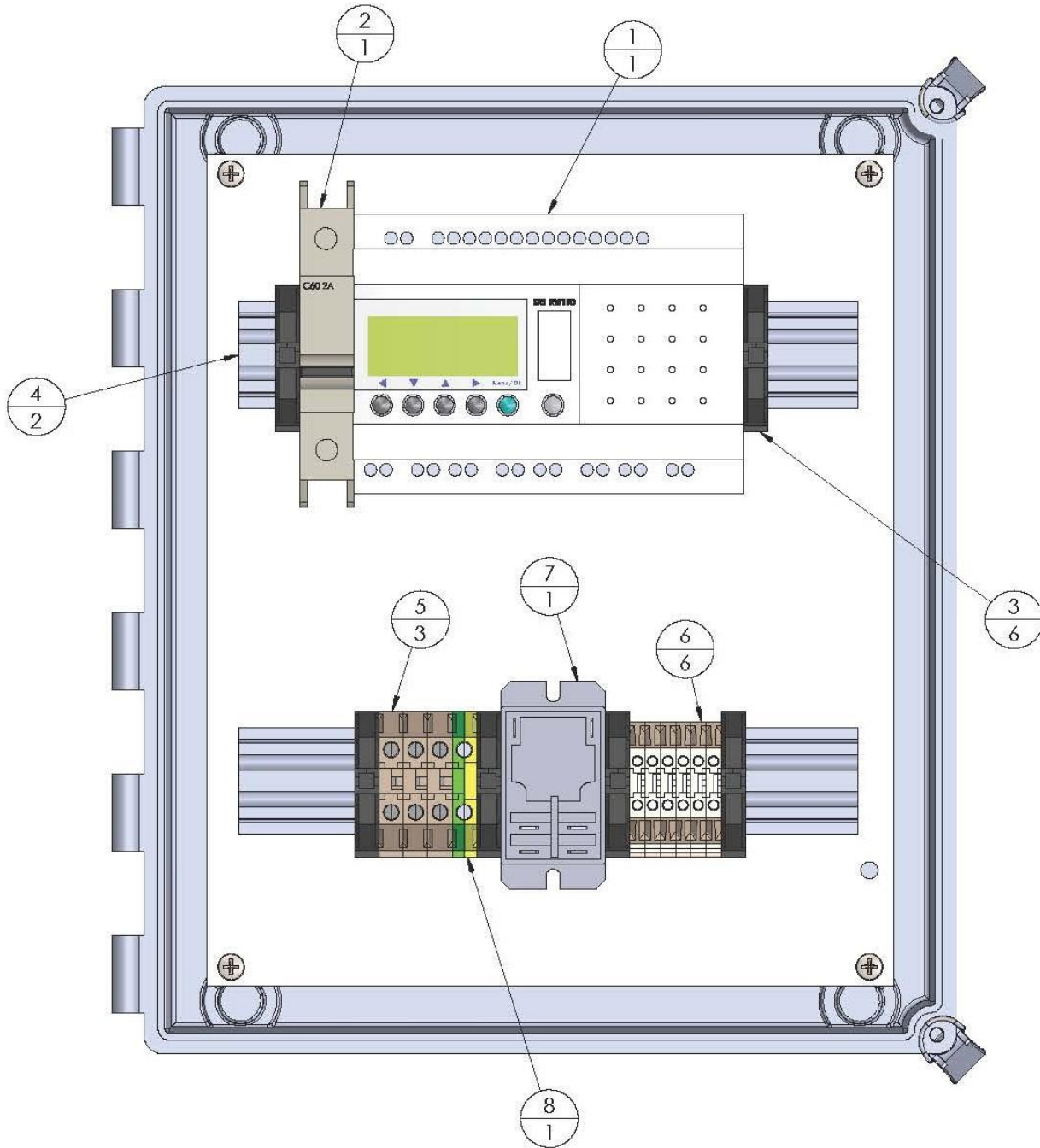


# Nipple Washer - Wiring Diagram



Project	Customer	Panel Serial #	Revision	Edited	Drawn	File	Page	
				28 Apr 2017	Zach	Bottle Washer Schematic 240VAC.vsd	1 of 1	

## Nipple Washer - Control Box Parts



Item#	Part #	Description
1	TI34	Schneider Zelio Smart Relay I2in, 8out I29VAC
2	P465	Schneider IP 6A UL489 240VAC Circuit Breaker
3	N458	Terminal Block End
4	B539	Din Rail - Ft Alum
5	F317	10 MM Screw Terminal Passthrough
6	J749	2.5 MM Screw Terminal Passthrough
7	U687	Schneider Power Relay 250VAC 2 NO
8	S301	10 MM Grounding Screw Terminal



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**For Technical Support, to order Replacement Parts, or for questions about other products, please contact your local dealer.**

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