

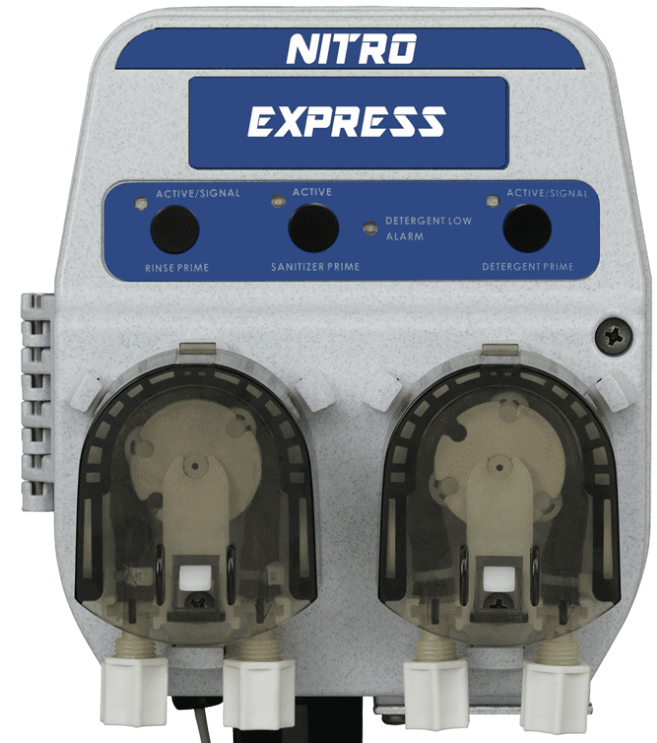


# NITRO EXPRESS

Training Session  
August 11, 2009

# Nitro Express Features

- Probe or probeless operation from the same unit
- Compact splash resistant ABS enclosure
- Pre-wired rinse and trigger reduces installation time
- Wall mounting bracket for easy installation and removal
- Quick change pump cover for tool-less faster tube changing



# Nitro Express Button Functions

**RINSE LED**

Indicates active rinse pump and active rinse trigger

**RINSE PRIME**

button primes rinse

**SANITIZER LED**

Indicates active sanitizer pump

**SANITIZER PRIME** button primes the sanitizer

**DETERGENT LED**

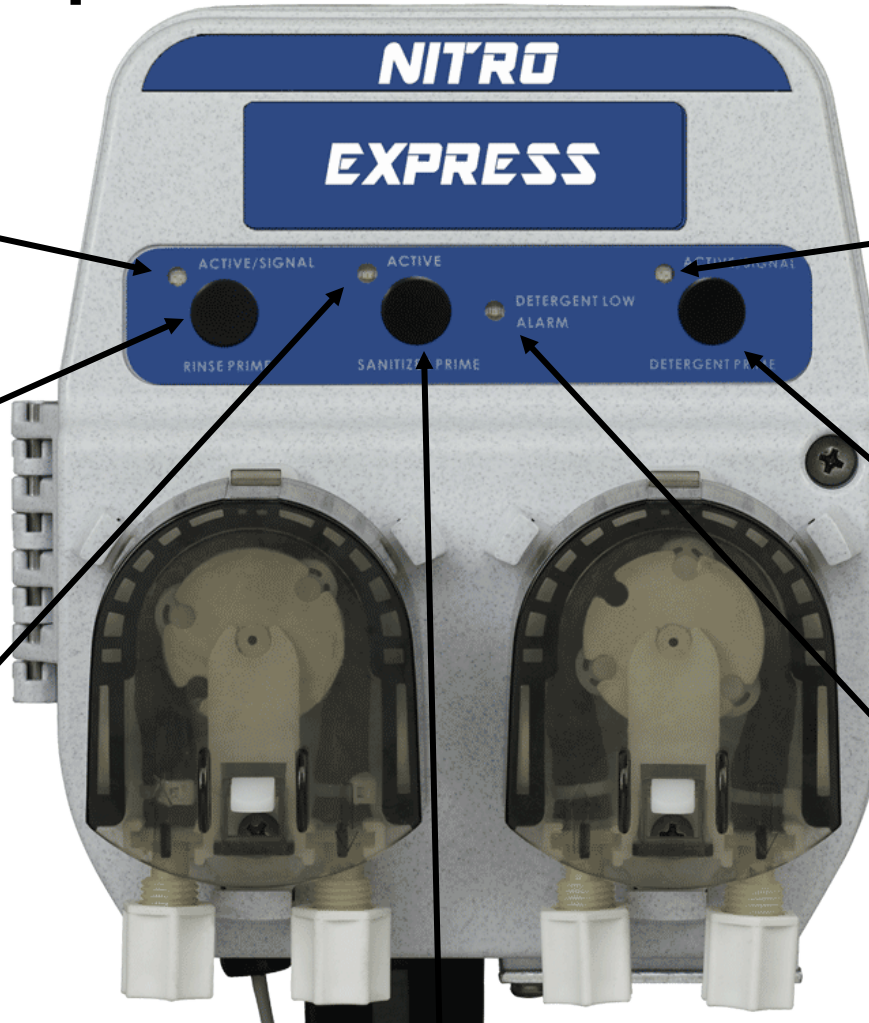
Indicates active detergent pump and active detergent trigger

**DETERGENT PRIME**

button primes the detergent pump

**DETERGENT ALARM LED**

Indicates out of product condition

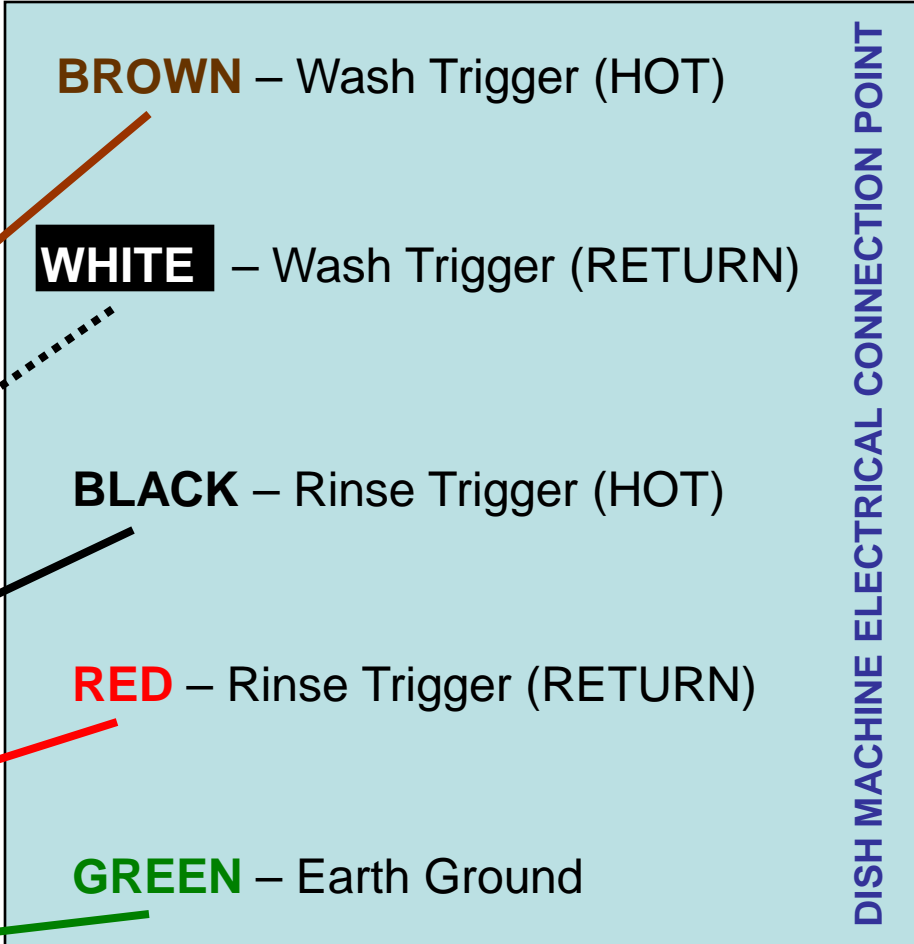




# Electrical Wiring



Probe wire

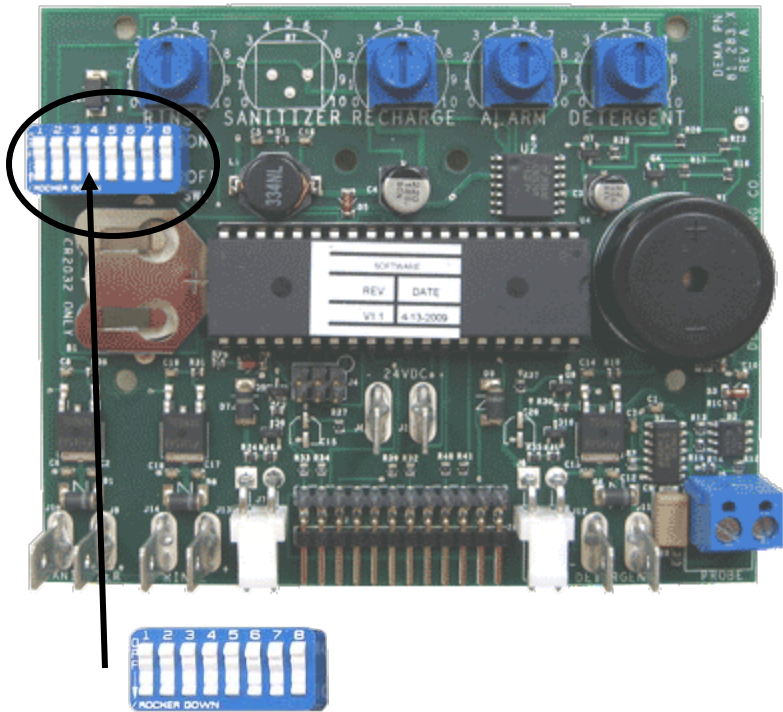


WARNING: For safety purposes disconnect main power to the dish machine before wiring trigger signals to Nitro Express. Connect power to the Nitro Express per the dish machine manufacturer's recommendations.

UNIT MUST BE GROUNDED (EARTHED).

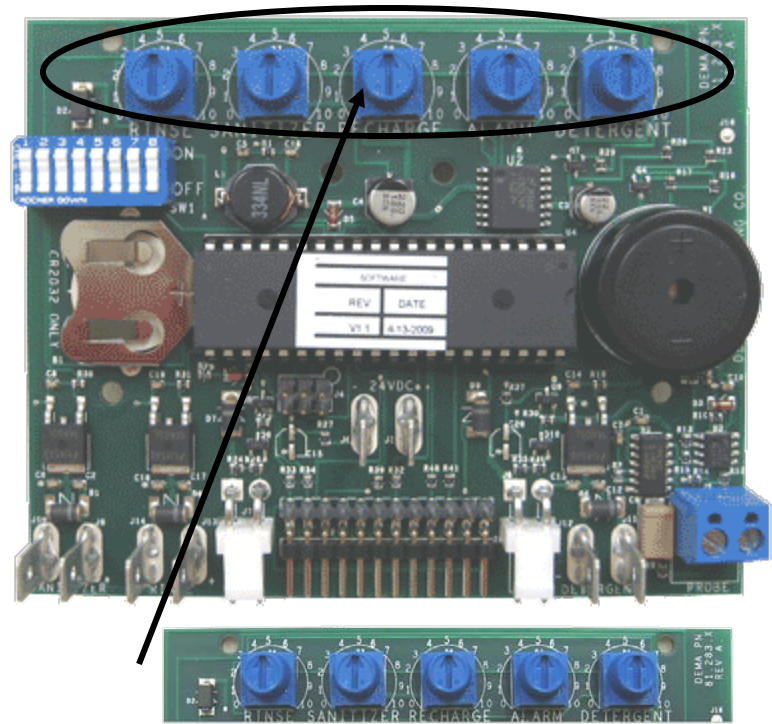
# Nitro Express Control Boards

Two Product Board  
(No Sanitizer Pot)



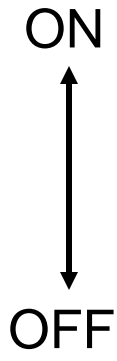
Dip Switches – Used to configure dispenser for machine type and conditions

Three Product Board



Potentiometers (Pots or Knobs) – Used to adjust various functions

# Setting Dip Switches

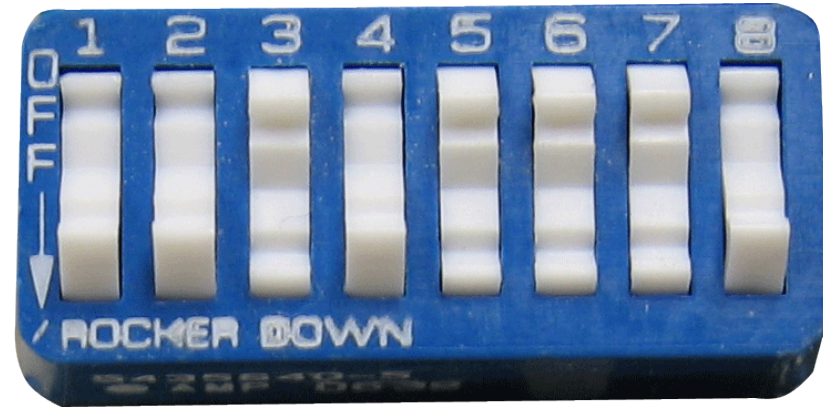


- 1. Probeless Mode
- 2. Door Mode
- 3. Normal Range (Detergent)
- 4. Pulse Feed Off (Probe Only / Det.)
- 5. +0 Sec. Rinse Delay
- 6. +0 Sec. Rinse Delay
- 7. 20 Sec. Rinse Limit Off
- 8. Alarm Volume Low (Detergent Only)

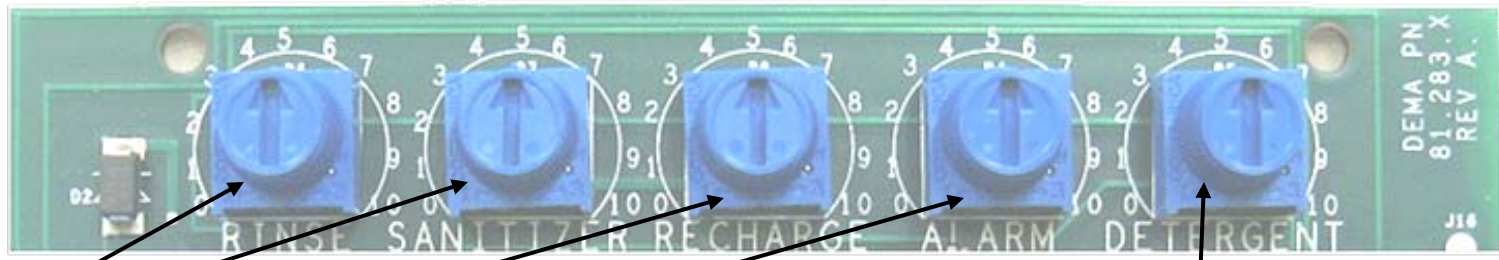
- 1. Concentration (Probe) Mode
- 2. Conveyor Mode
- 3. High Range (Detergent)
- 4. Pulse Feed On (Probe Only / Det.)
- 5. +2 Sec. Rinse Delay
- 6. +4 Sec. Rinse Delay
- 7. 20 Sec. Rinse Limit On
- 8. Alarm Volume High (Detergent Only)

# Concentration / Conveyor Mode

- Switch 1 – On  
(concentration/probe mode)
- Switch 2 – On  
(conveyor mode)
- Switch 3 – Off  
(normal range recommended start point)
- Switch 4 – On for dry detergent and or large tank  
(pulse feed)
- Switch 5&6 – Off or set 2, 4, or 6 sec. rinse delay
- Switch 7 – Off (not used in conveyor mode)
- Switch 8 – On for high alarm volume



# Concentration / Conveyor Mode



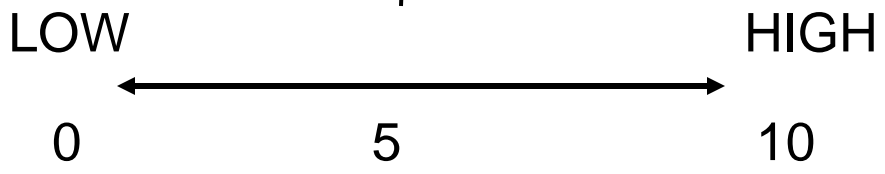
NOT USED

RINSE / SANITIZER SETTING	PUMP RATE
0	0 ml / min
2	8.5 ml / min
4	27 ml / min
6	33 ml / min
8	40 ml / min
10	43 ml / min

RINSE / SANITIZER SETTING – Speed control

ALARM SETTING	ALARM TIME
0	10 sec.
2	44 sec.
6	112 sec.
10	180 sec.

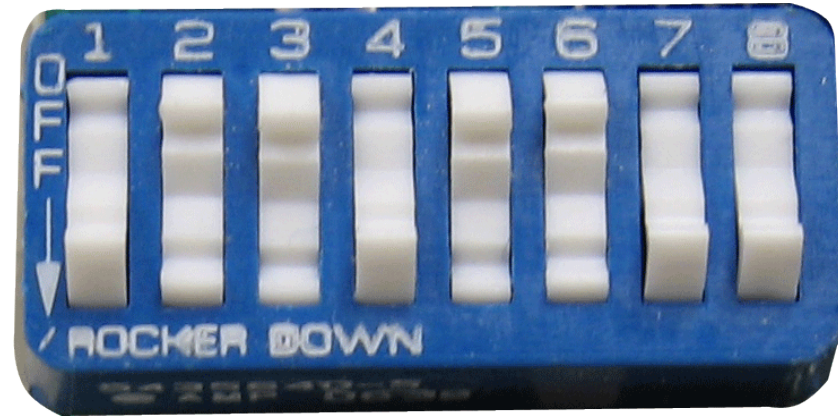
ALARM TIME – Delay until out of product alarm sounds



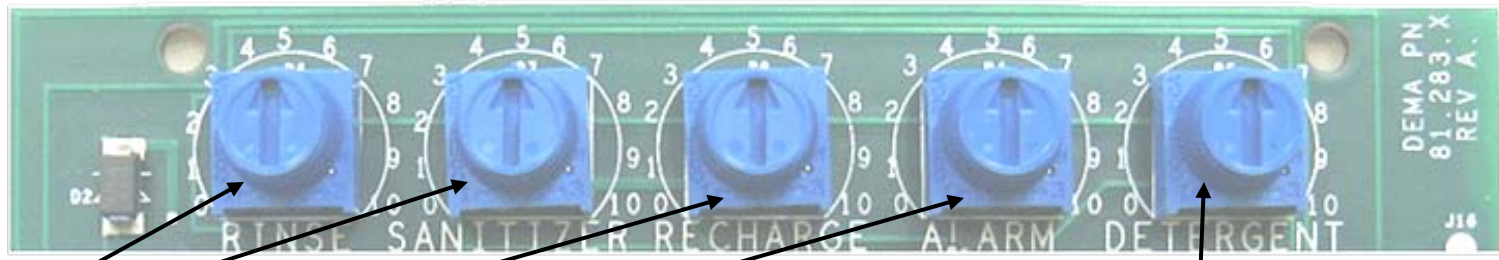
DETERGENT CONCENTRATION LEVEL (SET POINT)  
 Note: Use Titration test kit to establish appropriate level

# Concentration / Door Mode

- Switch 1 – On  
(concentration/probe mode)
- Switch 2 – Off (door mode)
- Switch 3 – Off  
(normal range recommended start point)
- Switch 4 – On for dry detergent and or large tank  
(pulse feed)
- Switch 5&6 – Off or set 2, 4, or 6 sec. rinse delay
- Switch 7 – On (20 sec. rinse limit)
- Switch 8 – On for high alarm volume



# Concentration / Door Mode



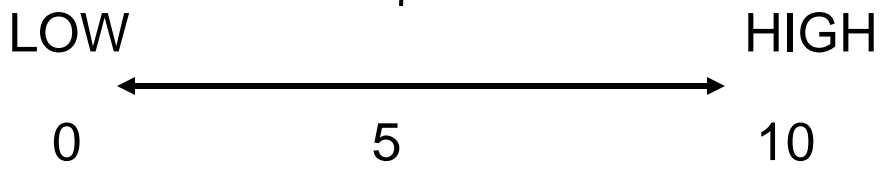
NOT USED

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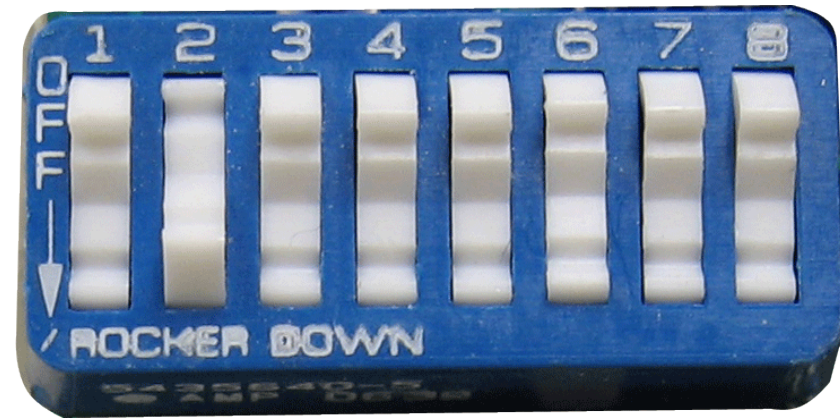
ALARM TIME – Delay until out of product alarm sounds



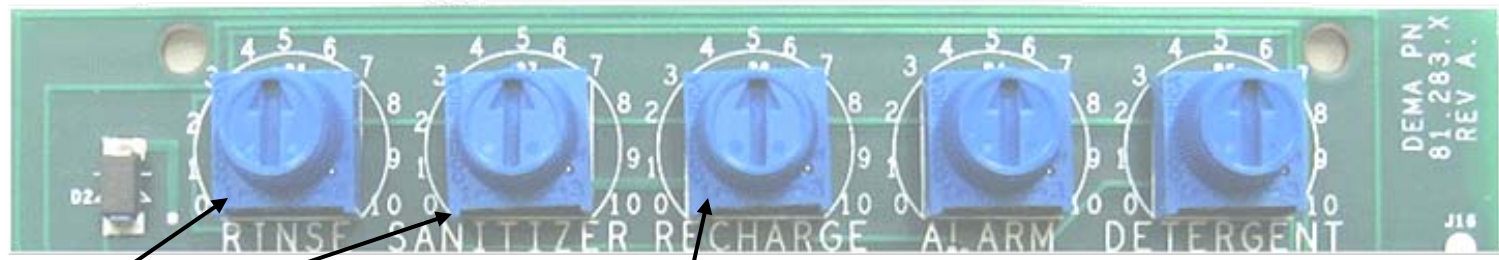
DETERGENT CONCENTRATION LEVEL (SET POINT)  
 Note: Use Titration test kit to establish appropriate level

# Probeless / Conveyor Mode

- Switch 1 – Off  
(probeless mode)
- Switch 2 – On  
(conveyor mode)
- Switch 3 – Off for lower range  
of detergent output, On for higher range
- Switch 4 – Off (not used in probeless mode)
- Switch 5&6 – Off or set 2, 4, or 6 sec. rinse delay
- Switch 7 – Off (not used in conveyor mode)
- Switch 8 – Off (not used in probeless mode)



# Probeless / Conveyor Mode

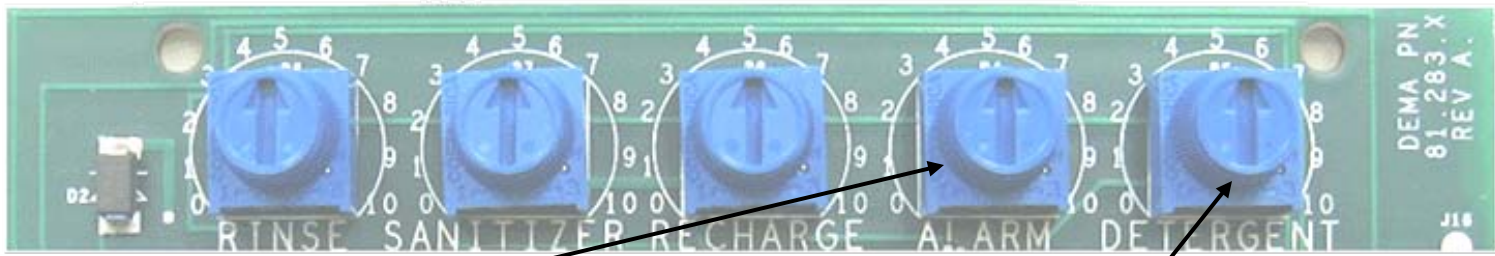


RINSE / SANITIZER SETTING	PUMP RATE
0	0 ml / min
2	8.5 ml / min
4	27 ml / min
6	33 ml / min
8	40 ml / min
10	43 ml / min

RECHARGE SETTING	RUN TIME (Normal Range)		RUN TIME (High Range)	
	Seconds	mL	Seconds	mL
0	0	0	0	0
2	6	17	12	34
4	12	34	24	68
6	18	51	36	102
8	24	68	48	136
10	30	85	60	170

RINSE / SANITIZER SETTING RECHARGE SETTING Replenishes or  
 – Speed control “Tops Off” detergent in wash tank

# Probeless / Conveyor Mode



DWELL TIME (USE ALARM SETTING POT)	
SETTING	DWELL TIME
2	37 sec.
4	80 sec.
6	125 sec.
8	165 sec.
10	180 sec.

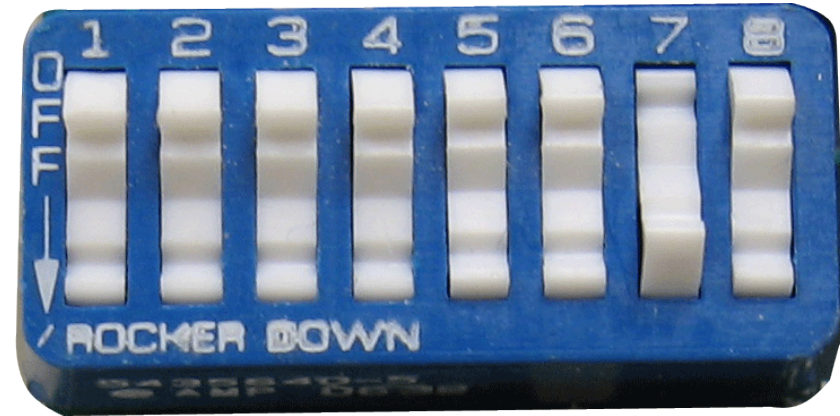
DWELL TIME - Period of time between detergent charges (initial or recharge)

DETERGENT		
INITIAL CHARGE SETTING	RUN TIME	
	Seconds	mL
0	0	0
2	12	34
4	24	68
6	36	102
8	48	136
10	60	170

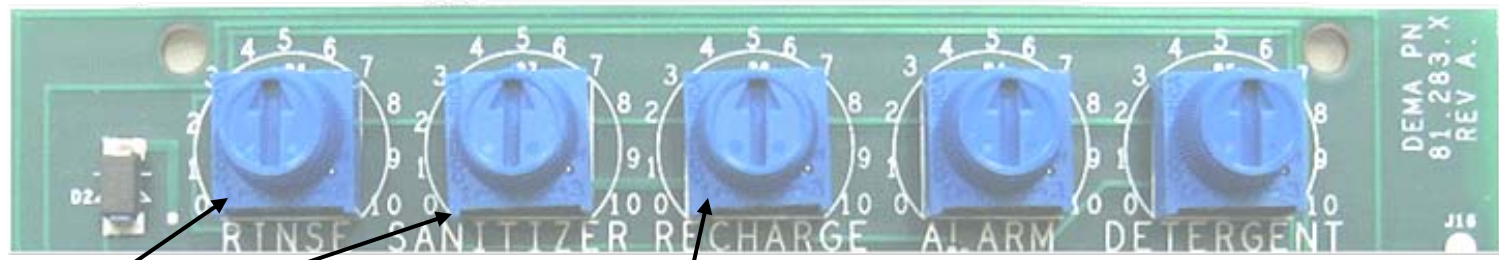
INITIAL CHARGE – Initial detergent volume / run time with a fresh tank of water

# Probeless / Door Mode

- Switch 1 – Off  
(probeless mode)
- Switch 2 – Off  
(door mode)
- Switch 3 – Off for lower range  
of detergent output, On for higher range
- Switch 4 – Off (not used in probeless mode)
- Switch 5&6 – Off or set 2, 4, or 6 sec. rinse delay
- Switch 7 – On (20 sec. rinse limit)
- Switch 8 – Off (not used in probeless mode)



# Probeless / Door Mode



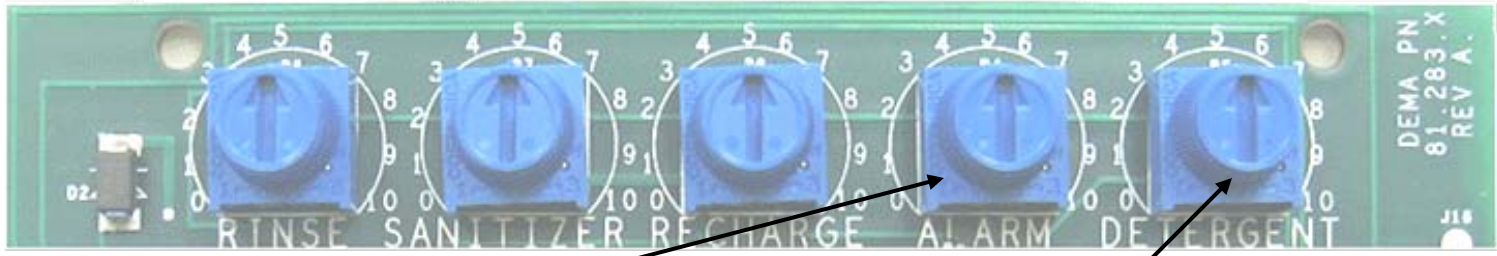
RINSE / SANITIZER SETTING	PUMP RATE
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2	8.5 ml / min
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8	40 ml / min
10	43 ml / min

RINSE / SANITIZER SETTING – Speed control

RECHARGE SETTING	RUN TIME (Normal Range)		RUN TIME (High Range)	
	Seconds	mL	Seconds	mL
0	0	0	0	0
2	6	17	12	34
4	12	34	24	68
6	18	51	36	102
8	24	68	48	136
10	30	85	60	170

RECHARGE SETTING Replenishes or “Tops Off” detergent in wash tank

# Probeless / Door Mode



DEAD CYCLES (USE ALARM POT)	
SETTING	DEAD CYCLES
2	0
4	1
6	2
8	3

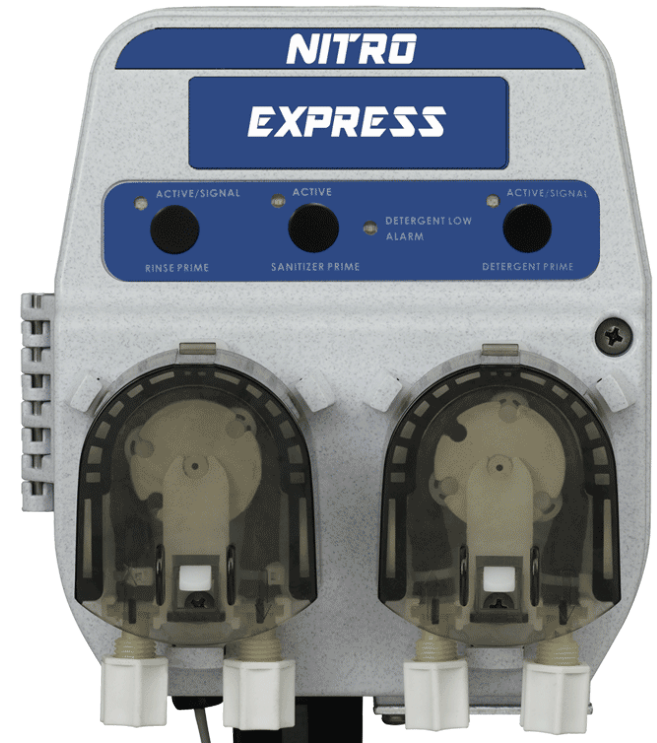
DEAD CYCLES – Wash cycle or door operation when no detergent is dispensed

DETERGENT		
INITIAL CHARGE SETTING	RUN TIME	
	Seconds	mL
0	0	0
2	12	34
4	24	68
6	36	102
8	48	136
10	60	170

INITIAL CHARGE – Initial detergent volume / run time with a fresh tank of water

# Test Your Set Up

- After program set up, operate dish machine
  - Check titration
  - Make necessary adjustments to achieve desired results



# **NITRO EXPRESS**

**QUESTIONS?**