

Apex

Rinse Dispenser

EBS #10019606

Installation & Operation Manual



Retain this manual as an installation, operation and servicing reference.

**APEX RINSE DISPENSER
INSTALLATION AND OPERATION MANUAL
TABLE OF CONTENTS**

Section

1.0	PREFACE	3
2.0	INTRODUCTION	3
3.0	SPECIFICATIONS	4
3.1	Dimensions	4
3.2	Service Access	4
3.3	Electrical Requirements	4
3.4	Water Requirements	4
3.5	Components Not Supplied	4
4.0	INSTALLATION PROCEDURES	5
4.1	Dispenser Installation	5
4.2	Water Supply Installation	6
4.3	Rinse Injection Tubing	6
4.4	Electrical Connections	7
5.0	SETUP	8
5.1	Determining Injection Rates	8
5.2	Low Product Alarm	8
6.0	RINSE SYSTEM TESTING	9
7.0	TROUBLESHOOTING	9
7.1	No liquid rinse additive in dispenser reservoir	9
7.2	Dispenser reservoir overflows	9
8.0	REPLACEMENT PARTS	10
8.1	Dispenser Assembly Exploded	10
8.2	Replacement Part Numbers	10

1.0 PREFACE

This manual has been written to present the basic Installation and operational characteristics of the *Apex Rinse Dispenser*. ***This manual applies, in its entirety, to current units. Some differences may be noted with earlier units.***

Guidelines will be suggested in reference to the preferred method of installation; however, the variety of equipment and the surrounding physical environment will dictate the actual installation of the *Apex Rinse Dispenser*.

WARNING: These installation and service instructions are for use by qualified personnel only. The installation must be made in accordance with local plumbing and electrical codes.

2.0 INTRODUCTION

The *Apex Rinse Dispenser* is specifically designed to convert solid ware washing rinse additive into a concentrated liquid form for dispensing into a dish machine's rinse water supply line during the rinse cycle. The *Apex Rinse Dispenser* consists of a heavy duty product cylinder for holding solid rinse additive, a vacuum breaker, infrared sensors, a solenoid valve, a cover with a lid switch, tubing, and a spray nozzle located at the bottom of the product cylinder. The product cylinder will hold 1½ blocks of solid rinse aid. Product blocks are added into the dispenser product cylinder by lifting the lid and inserting the block.

The system requires a 24 volt DC electrical power source and is used in conjunction with the *Apex Controller*. When the final rinse is activated, the dish machine communicates the need for rinse additive with the *Apex Controller*. The controller then turns on its pump, drawing solution from the sump of the *Apex Rinse Dispenser*. The dispenser has an automatic fill function that keeps the sump full of product. The infrared sensors will signal the out of product alarm on the *Apex Controller Interface* when the amount of solid product left has dropped to a significantly low level.

The *Apex Controller* comes with 1cc (1 ml) squeeze tube installed.

3.0 SPECIFICATIONS

3.1 Dimensions

- Height (H):
 - 14.5" (37 cm)
 - With lid open 23" (58.5 cm)
- Width (W): 9.25" (23.5 cm)
- Depth (D): 9" (23 cm)
- Weight: Approximately 7 lbs. (3.2 kg) plus the product weight.

NOTE: The dispenser must be mounted on a convenient vertical surface readily accessible to the operator at a sufficient height.

3.2 Service Access

An unrestricted vertical clearance of at least 9" (23 cm) must be provided directly above the dispenser to allow for product insertion and removal of the dispenser lid. A clearance of 4" (10 cm) must also be provided directly below the dispenser to allow for service and removal of the clear plastic sump reservoir.

3.3 Electrical Requirements

The dispenser requires 24 volt DC to operate the solenoid valve, which supplies the water necessary to convert the solid rinse additive to liquid form. The maximum current draw at 24 volts is 1.1 amps (26.4 VA). All field wiring practices must conform to the national electrical code or local electrical code and Ecolab installation standards. The wiring from the power source(s) to step down transformer(s) must be enclosed in conduit, seal-tite, rigid or other conduit approved for damp locations. It is recommended that the 24 volt wiring also be enclosed.

3.4 Water Requirements

For proper dispensing rates the water supply must be at least:

- Dynamic water pressure > 1.8 BAR, requires water temperature > 5 °C
- Dynamic water pressure > 1.5 BAR, requires water temperature > 15 °C

The spraying water temperature should be maximum of 60 °C.

The water line to the dispenser can be braided SST G3/8 hose or 10 mm OD metal tubing.

Plastic tubing (1/8" OD) is supplied to direct the effluent from the dispenser to the rinse line that supplies the water for the dish machine's final rinse. A single point pressure / injection fitting with a check valve assembly is used for installation into the final rinse line.

3.5 Components Not Supplied

- 10 mm OD metal tubing (inlet)

4.0 INSTALLATION PROCEDURES

Required Installation Tools

- Electric or cordless drill
- Drill bit
 - 1/4" (6mm) standard and masonry bit
- Standard screwdriver
- Phillips screwdriver
- Level
- Utility knife
- Tape (optional)
- Marking pencil
- Hammer
- 5/16" (8 mm) nut driver (optional)

Note: Refer to the appropriate controller I/O manual for installation instructions of the control unit and rinse injection line.

There is no substitute for planning the installation prior to beginning the work. The following must be taken into consideration before installation:

- The dispenser must be mounted on a convenient vertical surface readily available to the operator.
- Access to the product cylinder requires 9" (23 cm) minimum clearance above the dispenser to insert product and for proper lid function. The bottom of the dispenser requires a 4" (10 cm) minimum clearance for removal of the clear plastic sump reservoir.

4.1 Dispenser Installation

1. Remove the mounting backplate from the packaging. Remove the dispenser from the shipping carton.
2. Using the mounting back-plate as a template, mark the desired mounting holes through the backplate with a felt tip pen or pencil. The location of the installation must be adjacent to the dish machine's rinse section. Two sets of four mounting holes are provided, they are the same set of holes for the Solitron / Geo II dispensers. NOTE: Make sure the backplate is level before marking holes.
3. Mount the backplate to the wall using the appropriate wall anchors, washers, and screws. NOTE: If the unit is mounted to a hollow wall, a butterfly nut and bolt (or equivalent) must be used.
4. Mount the dispenser to the backplate on the wall. The three plastic knobs on the backplate should match-up to the dispenser's three key hole slots on the back of the main dispensing unit. Push dispenser against back-plate and then down to lock into place.
5. Secure the dispenser to the backplate with a screw to the wall through the holes in the enclosure on either side of the product cylinder.
6. Record the installation date on the dispenser.

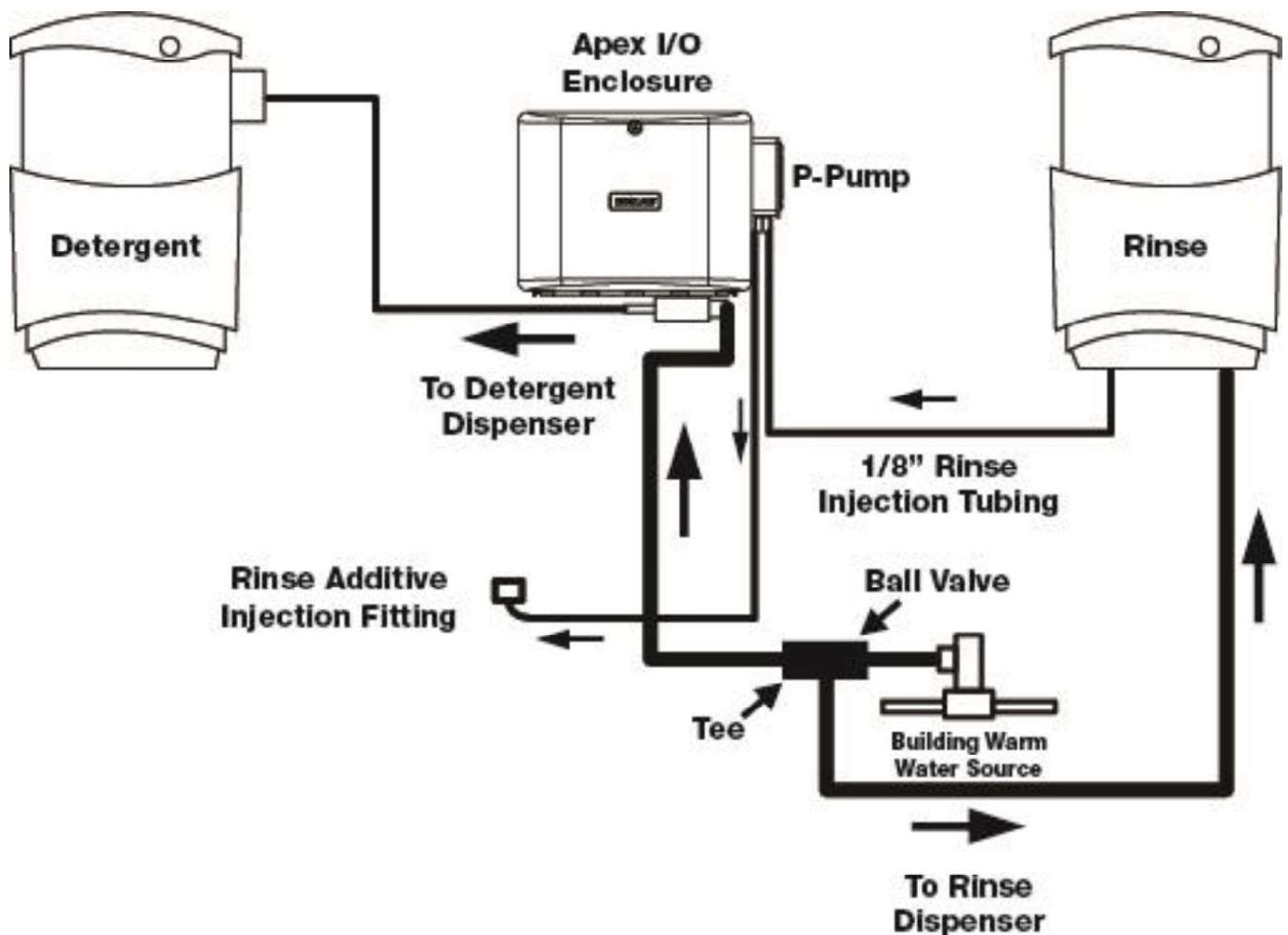
IMPORTANT: In all cases, use the 4 mounting screws, wall anchors, and washers to ensure a robust installation that helps avoid unnecessary emergency service requests in the future.

4.2 Water Supply Installation

1. Remove the clear plastic reservoir on the bottom of the dispenser before making the water and rinse injection tubing connections. Unscrew the two thumb screws which hold the reservoir in place and carefully lower it.
2. Route the tubing from the account hot water supply to the inlet of the rinse dispenser solenoid valve.

Do not use water above 60 °C.

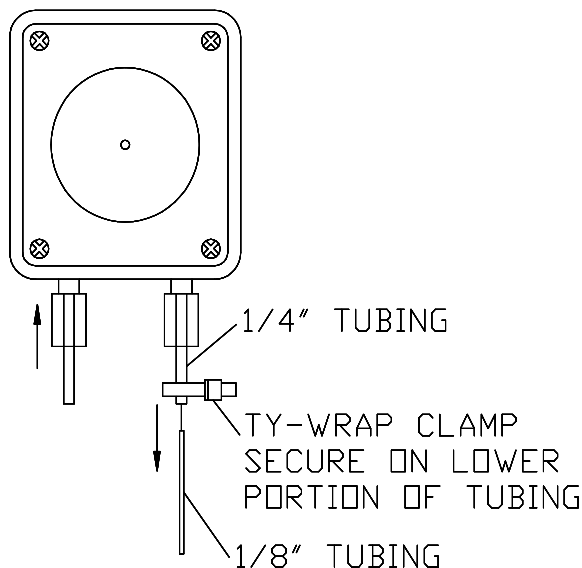
NOTE: A tee has been supplied to allow branching from the account's water source used for the detergent dispenser water supply. Make sure the tee is placed after the water shut-off valve and before the detergent solenoid valve. Refer to the figure below.



4.3 Rinse Injection Tubing

1. The *Apex Rinse Dispenser* comes with 1/8" injection tubing. Route this tubing to the p-pump on the *Apex Controller*.
2. Insert the 1/8" tubing through a short piece of 1/4" tubing so that the ends are flush. (Hint: the 1/8" tube will slide through easily if lubricated with soap or rinse additive).
3. Connect the 1/4" tubing to the inlet of the p-pump using the supplied nut and compression fitting.

NOTE: It is recommended to secure the 1/8" and the 1/4" tubing combination with a Ty-wrap clamp.



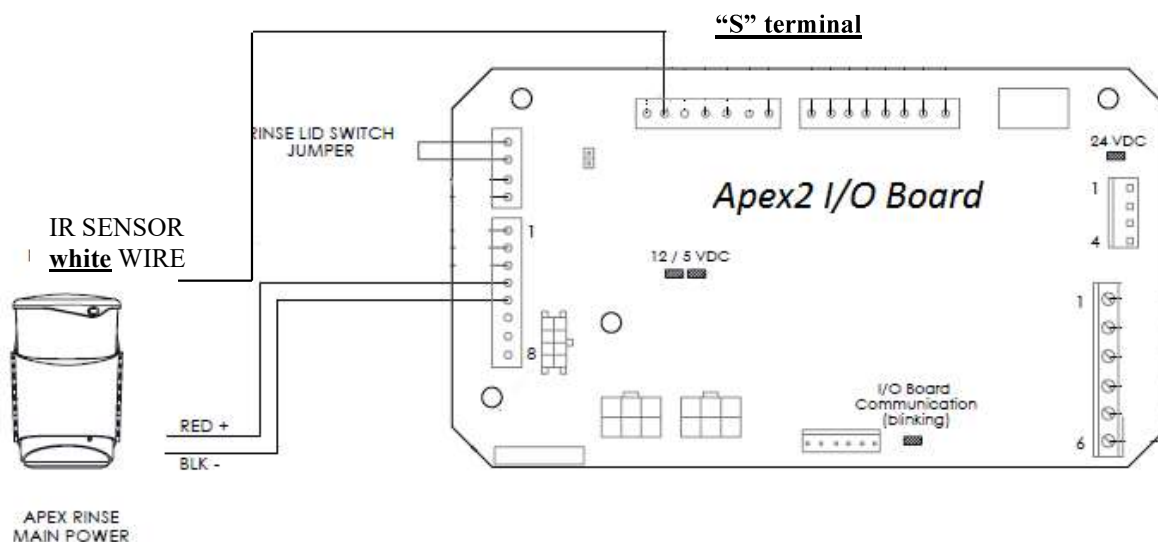
4. Connect another length of 1/8" tubing from the outlet side of the p-pump to the single point injection fitting in the final rinse line. Make sure to use a check valve.

4.4 Electrical Connections

Route the 16' (4.9 m) 3 stranded cable from the *Apex Rinse Dispenser* to the *Apex Controller*.

Connect the RED wire to (+) and BLACK wire to (-) in the "Rinse Disp" section of the terminal block.

Connect the WHITE wire to (S) in the "Rinse Sensor" on the *Apex Controller* I/O board. **Refer to the figure below.**



5.0 SETUP

5.1 Determining Injection Rates

The tubing provided with the p-pump in the *Apex Controller* provides 1 cc (1 ml) per revolution. Alternate squeeze tubes are available which provide 1/8 cc (0.125 ml) through 2 cc (2 ml) per revolution. Refer to the Replacement Parts in the back of this manual. By adjusting the rinse pump speed in the *Apex Controller*, the injection rate and total volume of the rinse additive can be controlled. The injection rate can also be adjusted by use of alternately sized squeeze tubes.

<u>TUBE SIZE</u>	<u>FLOW RATE/MINUTE</u>	
<u>1cc = 1ml</u>	<u>3.6 RPM (min.)</u>	<u>36 RPM (max.)</u>
1/8 cc/rev	0.45 ml (0.02 oz)	4.5 ml (0.15 oz)
1/4 cc/rev	0.9 ml (0.03 oz)	9 ml (0.30 oz)
1/2 cc/ rev	1.8 ml (0.06 oz)	18 ml (0.61 oz)
1 cc/rev *	3.6 ml (0.12 oz)	36 ml (1.22 oz)
1-1/2 cc/rev	5.4 ml (0.18 oz)	54 ml (1.83 oz)
2 cc/rev	7.2 ml (0.24 oz)	72 ml (2.43 oz)

* indicates EUROPEAN standard tube size

NOTE: The most consistent injection rates are achieved in the 10-20 revolutions per minute range. It is recommended to select the tubing that allows mid range operation.

5.2 Low Product Alarm

The *Apex Controller* is supplied with a low product alarm. The alarm will turn on whenever the product level in the unit reaches the point when another product block can be added. The alarm uses an infrared beam to detect the product level. A transmitter and receiver project a beam of infrared light across the cylinder. When the product level is low enough the beam sends a signal to the *Apex Controller* that enables an audible and visual alarm on the *Apex Controller* interface.

Note: Alarm will not operate if the **WHITE** signal wire is not correctly connected to the Apex I/O board.

6.0 RINSE SYSTEM TESTING

1. Before turning on dish machine power, ensure clear plastic sump is clean.
2. Add a solid rinse additive block to the *Apex Rinse Dispenser*.
3. Turn on dish machine power- this should turn on the *Apex Controller*. With power supplied to the dispenser, water should be spraying on the product, until the float switch inside the dispenser's sump shuts off the solenoid valve. Check for any leaks.
4. Activate the final rinse. The p-pump on the *Apex Controller* should turn on.
5. Adjust p-pump speed times and/or squeeze tube to desired volume of rinse additive injected into machine's rinse.

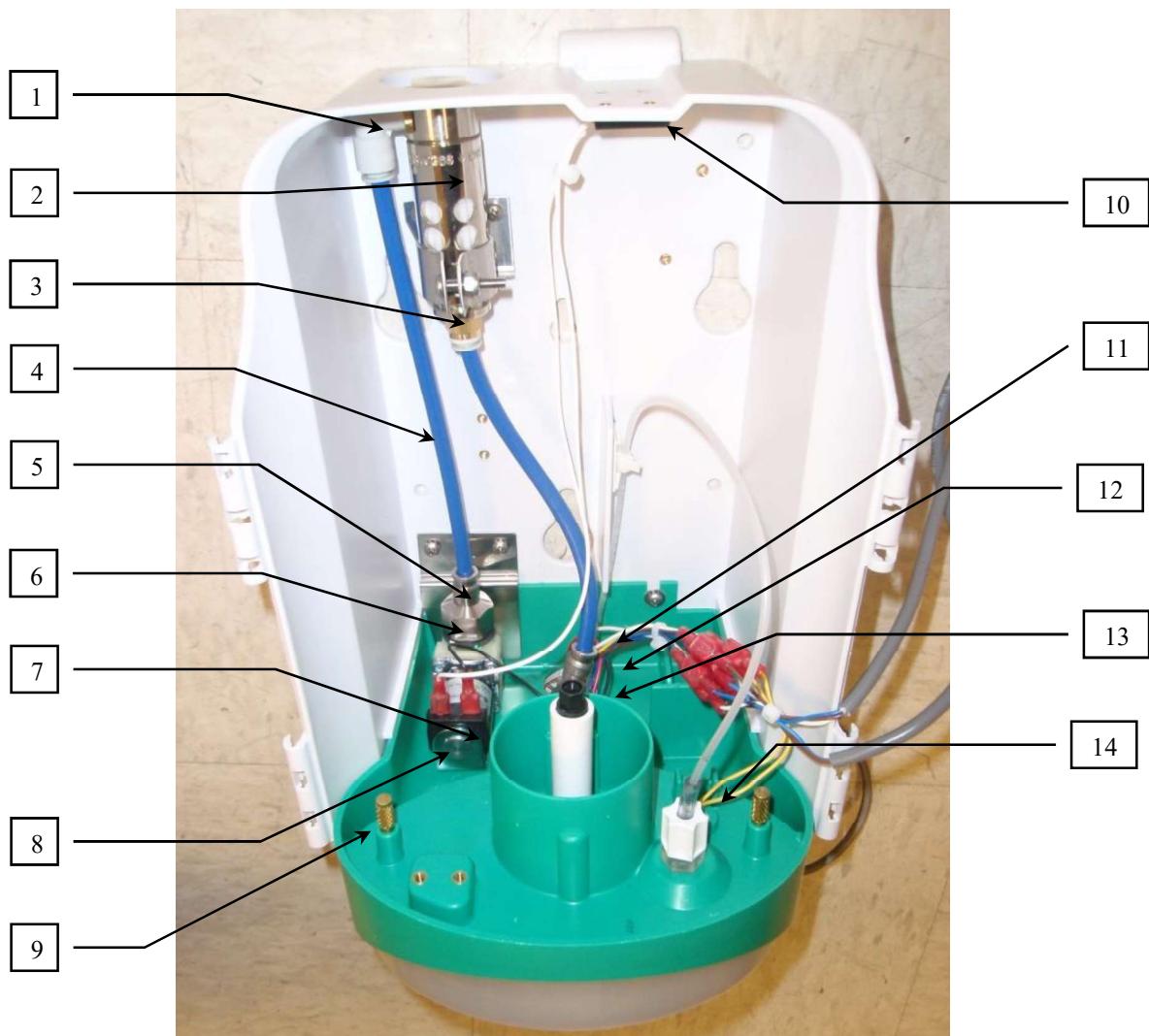
7.0 TROUBLESHOOTING

The following troubleshooting procedures are specific to the *Apex Rinse Dispenser*. The optimum input voltage for the dispenser is 24V DC. Actual input voltage may range from 18V to 26V DC without affecting proper performance of the *Apex Rinse Dispenser*.

NOTE: When measuring DC voltage, proper polarity must be observed: positive (+) terminal at the voltmeter to positive (+) side of circuit being tested; similarly, negative (-) voltmeter to negative (-) side of circuit.

Symptom	Action
7.1 No liquid rinse additive in the dispenser reservoir	<ol style="list-style-type: none"> 1. Check to be sure that polarity is correct at <i>Apex Controller</i> PC board connection. 2. Check to be sure that the lid with the safety switch is seated. 3. With power to the dispenser on, check for 24V DC at solenoid valve coil. If 24V DC is present, repair or replace solenoid valve diaphragm assembly. If 24V DC is present and diaphragm is good, replace solenoid coil. 4. If 24V DC is not present: bypass the float switch and measure for 24V DC at the solenoid valve coil. If 24V DC is present, replace float switch. 5. If 24V DC is not present, bypass lid switch and measure for 24V DC at solenoid valve coil. If 24V DC is present, replace lid switch.
7.2 Rinse Dispenser reservoir overflows.	<ol style="list-style-type: none"> 1. Check to be sure that polarity is correct at <i>Apex Controller</i> PC board connection. 2. Turn power off to rinse injector. If dispenser continues to overflow, repair or replace solenoid valve. 3. With dish machine running, remove the reservoir from the dispenser. If the problem stops, check for sticking float and replace float switch assembly if necessary. 4. Remove 1/8" rinse injection tubing from dispenser. Activate the final rinse on the dish machine. If water shoots out of the tubing then replace the check valve assembly that is part of the injection fitting assembly.

8.0 REPLACEMENT PARTS



Reference #	Description	EE-P. Number	EBS Number
1	Elbow 8mm x G1/4	85635030	10019483
2	Backflow Preventer	37200129	10019365
3	Conn 8mm x G1/4	85613015	10019474
4	8mm OD tubing	85015062	10021608
5	Fitting 8mm x G3/8F	85614000	10020649
6	Rubber washer 5/8ID	P85799906	10004948
7	Water Valve	417704157	10021372
8	Adapter G1/2F X G3/8M	37200125	10019369
8	Sealing washer	88569005	NA
9	Thumb screw	E92183177	10019383
10	Lid safety switch	83051136	10020643
10	Bar Magnet (inside cover)	83051102	10020642
11	Elbow 8mm x 1/4NPT	85534000	10020614
12	Connector 1/4NPT st. steel	86033016	10022342
13	Spray Nozzle 5.6 90deg	E85312395	10000175
14	Float switch	83053082	10019478
NA	Rinse injector check valve kit	E92171271	10000316