



# Top Brush Auto Retract (Allen-Bradley PLC)



TOP100TBG Shown  
with optional SF68  
Wraps and Poodle  
Brush

## Owner's Manual

Sonny's Enterprises, Inc.  
5605 Hiatus Road  
Tamarac, Florida 33321  
16v1



## **\*Table of Contents\***

<b>WARNING *SAFETY REQUIREMENTS* WARNING</b> .....	<b>3</b>
<b>*INTRODUCTION*</b> .....	<b>5</b>
<b>Product Specifications</b> .....	<b>6</b>
<b>*INSTALLATION*</b> .....	<b>7</b>
<b>Utilities Requirements</b> .....	<b>7</b>
<b>Dimensions</b> .....	<b>8</b>
<b>Equipment Installation</b> .....	<b>11</b>
<b>Top Brush Auto Retract</b> .....	<b>11</b>
<b>Adjustments and Testing</b> .....	<b>12</b>
<b>*GENERAL OPERATION*</b> .....	<b>14</b>
<b>*PREVENTIVE MAINTENANCE*</b> .....	<b>15</b>
<b>*WARRANTY*</b> .....	<b>16</b>
<b>*CUSTOMER SERVICE*</b> .....	<b>17</b>



## **WARNING \*SAFETY REQUIREMENTS\* WARNING**

1. All employees must be thoroughly trained in safe operation and standard maintenance practices. All employees must review this entire manual monthly.
2. Do not enter the wash tunnel when the equipment is operating. Death or dismemberment may occur.
3. Do not wear loose fitting clothing or jewelry around moving equipment. Do not allow any part of your body or other objects (including ladders, hoses or tools) to come in contact with moving equipment. Entanglement may result causing death or dismemberment.
4. Do not leave a ladder or any other items such as wash down hoses or tools in the wash tunnel while equipment is running. Vehicle damage and injury, including death, can occur.
5. Always exercise caution when walking (never run) through the wash tunnel as there may be slippery conditions. Be careful so you do not bump into or trip over equipment.
6. Only those employees specifically instructed and trained by the location management are permitted to enter the wash tunnel to perform inspections or maintenance. At least two qualified maintenance people must be present when performing equipment repairs or preventive maintenance.
7. Do not perform any maintenance or work on equipment unless you first perform Lock-Out Safety Precautions. All electrically powered equipment must have manually operated disconnects capable of being locked in the "OFF" position. Equipment that has been "locked out" for any reason must be restarted only by the person who performed the "lock out" operation.
8. When working on any equipment that is higher than your shoulders, always use a fiberglass ladder that is in good condition.
9. Do not attempt to repair or adjust any pressurized liquid or pneumatic part, hose, pipe or fitting while that equipment is in operation.
10. Electrical connections and repairs must be performed by a Licensed Electrician Only.
11. Emergency "STOP" buttons must be well marked and their location and proper use reviewed with all personnel. Any activated "STOP" button must be reset only by the person who activated it. Clear the wash tunnel of any people, ladders, hoses, tools and other loose items before restarting the equipment. An audible device must sound to warn people that the equipment is starting.
12. Do not operate any piece of equipment that requires safety covers with those covers removed or improperly installed. Do not operate any piece of equipment if any component of that piece is suspected to be defective or malfunctioning.



## Equipment Program - Manuals Top Brush Auto Retract Allen-Bradley PLC

13. Store all cleaning and washing solutions and oils in a well-ventilated area. Clean up fluid spills immediately to prevent hazardous safety conditions. Be certain to follow all safety procedures on SDS Sheets for each chemical product used.
14. All hydraulic and electric systems in the wash tunnel equipped with a torque relief or overload should be checked and set at the minimum amount that will allow for proper functionality under normal washing conditions.
15. No unauthorized people should ever be permitted in the wash tunnel or near the equipment at any time.

\* \* \*

### !! CAUTION !!

When a piece of equipment must be in operation during inspection or maintenance, one qualified technician must stay at the power disconnect switch while another qualified technician performs the inspection or maintenance.



## **\*INTRODUCTION\***

This Owner's Manual contains information that is vital to the successful installation, operation and maintenance of your SONNY'S vehicle washing equipment.

Please read, and understand, the full contents of this manual before installation and operation of the equipment. Keep this booklet in a location where it may be used for ongoing reference.

Should you have any questions on the operation or servicing of this equipment please contact

**TECHNICAL SERVICES DEPT.**

**SONNY'S ENTERPRISES INC.**

**5605 Hiatus Road**

**TAMARAC, FLORIDA 33321**

**TELEPHONE: 800-327-8723    FAX: 800-495-4049**





## Product Specifications

- Designed to automatically retract the Top Brush for open pickup beds
- Complete kit, including PLC
- Requires 110 VAC
- Adjustable to accommodate varying chain speeds



# **\*INSTALLATION\***

## **Utilities Requirements**

**UTILITIES INTERCONNECTION AND THE MATERIALS REQUIRED FOR INTERCONNECTION TO SONNY'S EQUIPMENT ARE THE RESPONSIBILITY OF THE CUSTOMER !**

**PERFORM ALL TRADES WORK TO ALL APPLICABLE LOCAL AND NATIONAL CODES !**

### **Electrical**

- The Customer's Electrician is to provide and install single phase power 110 VAC to the unit for power.
- The Customer's Electrician is to provide and install single phase power from the unit to the supplied air solenoid valve for retract.
- The Customer's Electrician is to provide materials and install 208VAC or 230VAC or 460VAC, 3-phase, 60Hz power to the electric motor on the hydraulic power pack or VFD panel from a properly sized three pole circuit breaker and motor starter with three thermal overloads when applicable.

### **Compressed Air**

- The Customer's Plumber is to provide and install a 1/2 inch compressed air line from the Air Compressor to the Air Distribution Manifold for the Retract functions.

### **Technical Disclaimer**

- Although building codes have been considered in developing all drawings, verification of site-specific conditions and compliance with federal, state and local building codes is the exclusive responsibility of the customer and/or architect and engineer.

# Dimensions

Figure #1

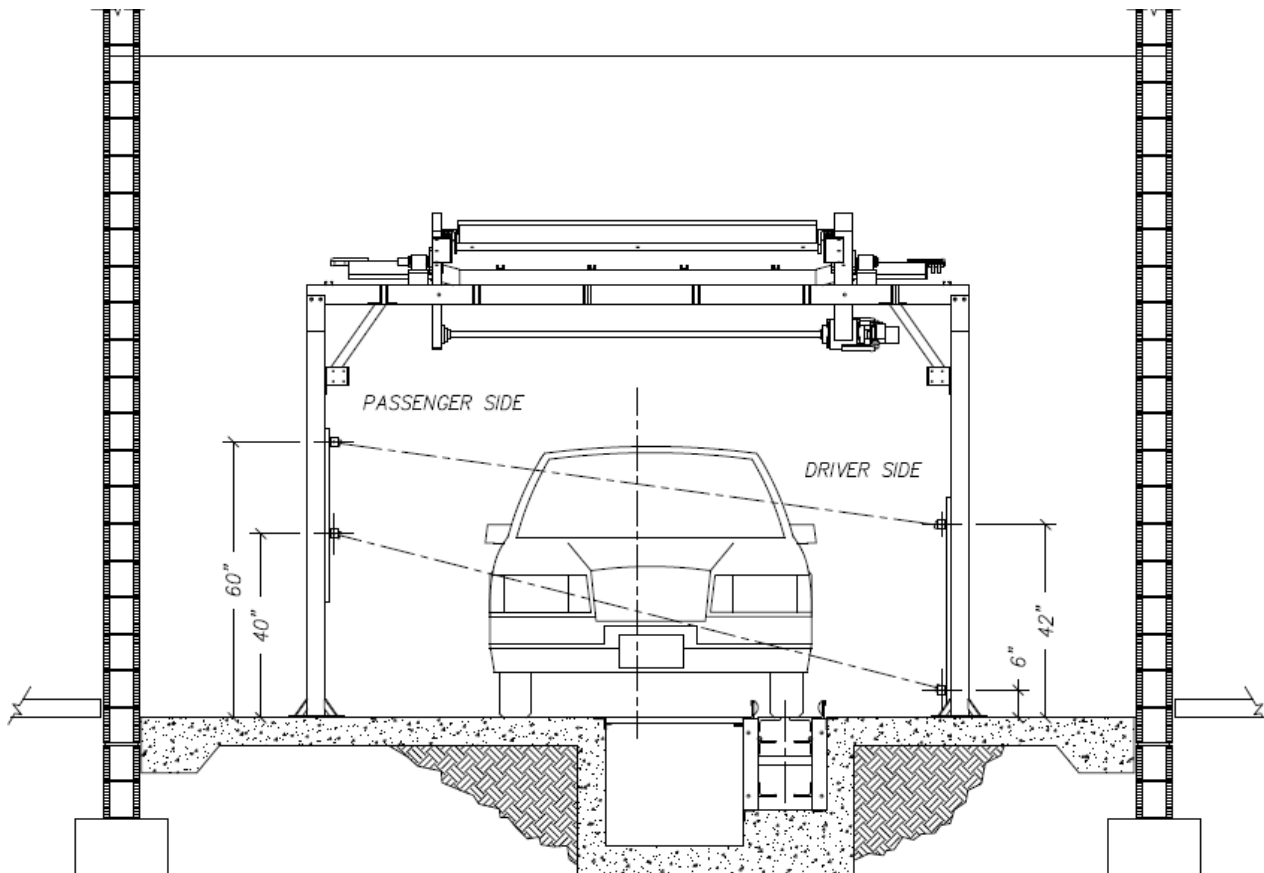
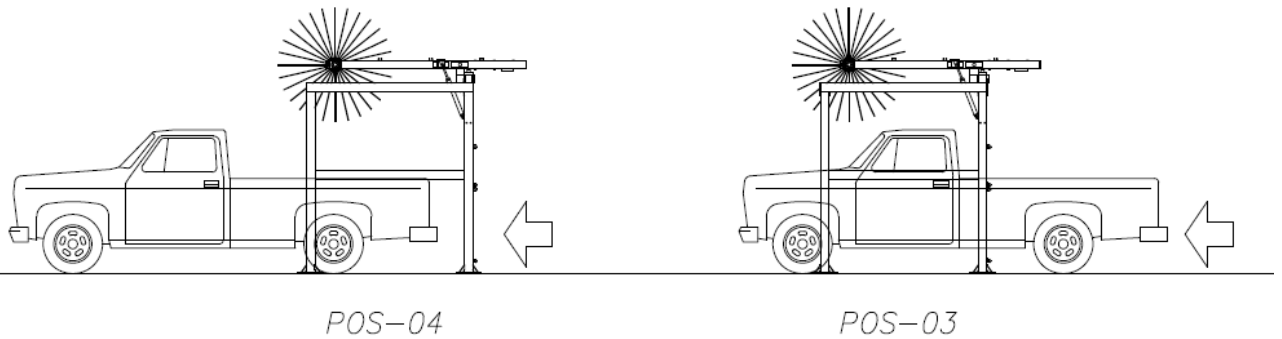
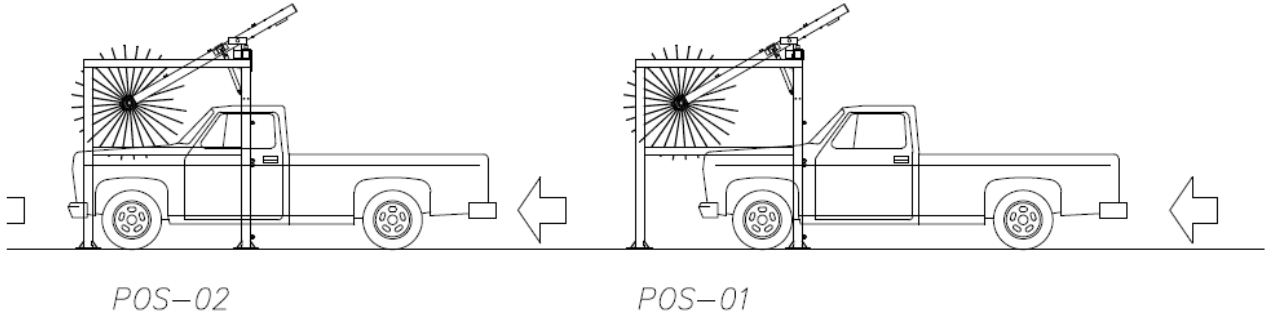
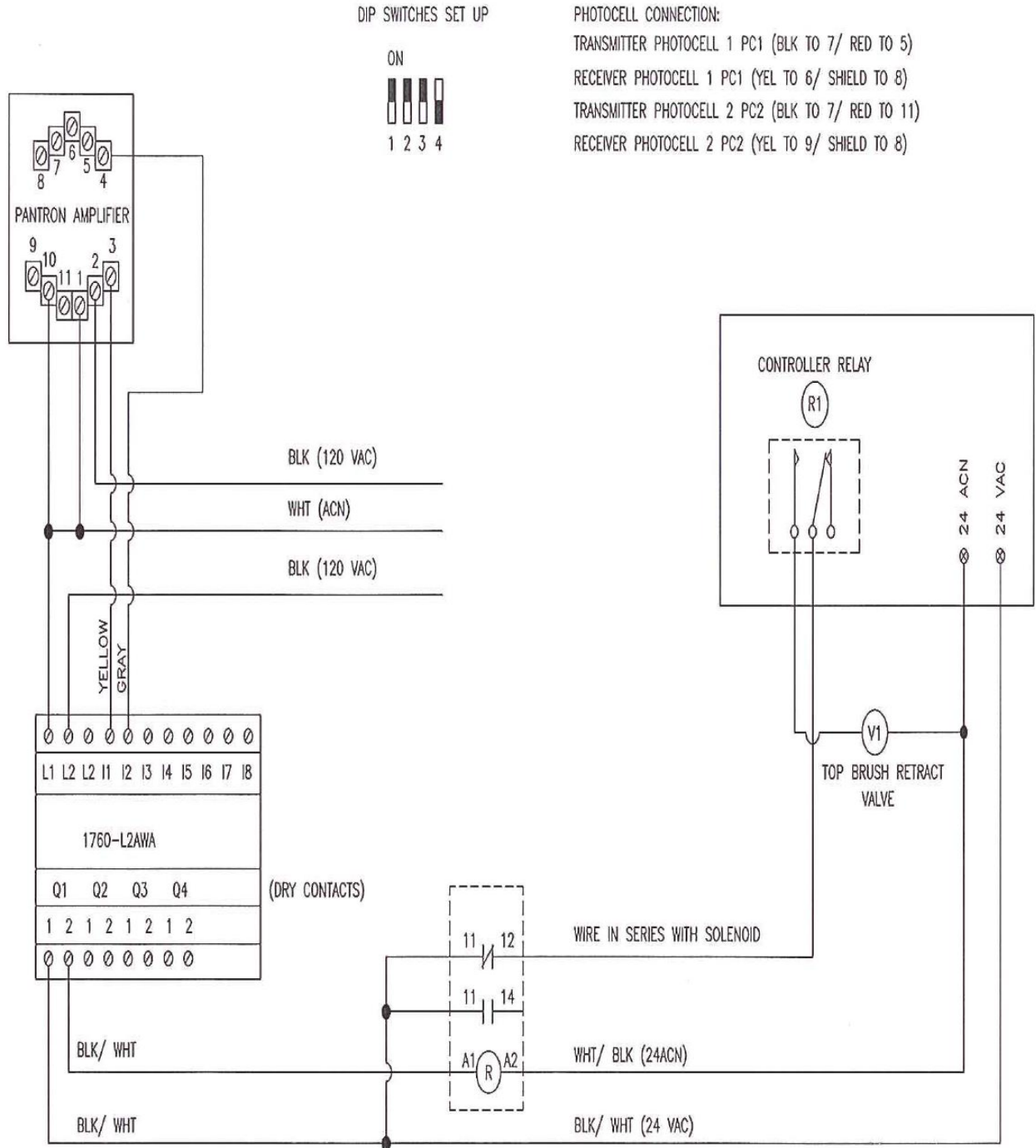




Figure #2



**Figure #3**





# Equipment Installation

## Top Brush Auto Retract

### Tools

1. Safety Glasses
2. ½" Drive Ratchet Set
3. Standard Combo Wrenches
4. Tape Measure

### Work Force

Two (2) persons

### Consumables

1. Anti-Seize Compound

### Time (assuming no problems)

1.00 – 2.00 hours

### Installation Steps

1. Check all hardware and place a small amount of Anti-Seize Compound on each bolt.
2. Secure the Top Brush retract enclosure to the wall.
3. Place the Photo eyes in their proper location on the entrance legs ( see Figure #1) Driver side one 6" off floor (transmitter PC1) one 42" off floor (receiver PC1). Passenger side one 40" off floor (Transmitter PC2) one 60" off floor (receiver PC2).
4. Run the wiring from the eyes back to the enclosure.
5. Wire According to diagram (see Figure #3)
  - a. Transmitter PC1 black to 7 red to 5 on the Amplifier.
  - b. Receiver PC1 yellow to 6 shields to 8 on the Amplifier.
  - c. Transmitter PC2 black to 7 red to 11 on the Amplifier.
  - d. Receiver PC2 yellow to 9 shield to 8 on the Amplifier.



## Adjustments and Testing

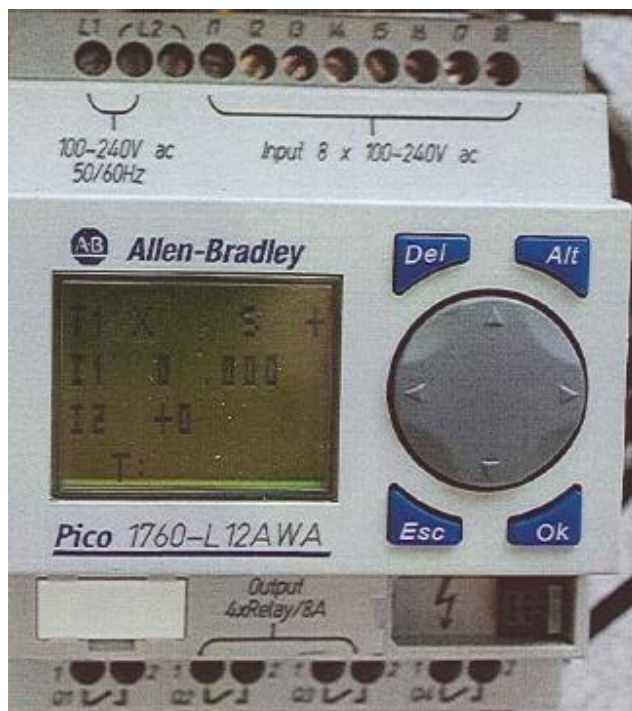
### Adjust the PLC for operation

#### Step #1

Place a mark on the conveyor using a marker. Measure 36" from your first mark and make a second mark. Time how long it takes a roller to travel the 36". Time the roller 3 times and use the average, note this time it will be required for step #2.

#### Step #2

To adjust the PLC enter the main screen and press the blue button marked OK. Use the down arrow and move to you get to parameters then press OK twice. Enter the time in seconds from step one into I 1(5.000) = 5 Seconds. Arrow down to I 2 and press OK. Set the time for I 2 this is a delay to allow the truck bed to clear before the brush come down. The average time is 5-9 seconds, adjust as necessary to keep the brush out of the bed. Once done use ESC to get back to the main menu and make sure the PLC says RUN.



**NOTE:** Anytime the speed of the conveyor is changed the PLC will need to be re-calibrated.



## Equipment Program - Manuals Top Brush Auto Retract Allen-Bradley PLC

### Adjust for Smooth Retract Operation

To adjust the retract operation the air pressure regulator should be adjusted for approximately 30PSI in the retract position. The tunnel controller should be adjusted so that the brush is put into the wash position prior to the front of the car arriving at the brush. This will entail deactivating the retracts before the vehicle reaches the brush and setting the look ahead to check for the proximity of the next car.

#### 1. Adjustments

##### a. Signal Strength Adjustment

- 1) The signal strength can be adjusted by adjusting the angle of the transmitter beam and the angle of the receiver.
- 2) To adjust, loosen the mounting nuts on the transmitter and receiver and adjust so that they are aimed at each other. Snug the nuts up and check the signal strength again. Make small changes until satisfied.

### Speed and Torque Adjustment (where applicable)

#### 1. Hydraulic

- a. The speed can be adjusted on the flow control for the power pack.
- b. To increase the speed move the handle on the flow control closer to the number 10.
- c. To decrease the speed move the handle on the flow control closer to the number 1.
- d. The torque must be set prior to operation and should be set between 600 and 900 PSI. For information on how to set the torque please refer to the Hydraulic Power Pack Manual.

#### 2. Electric

- a. The speed can be adjusted on the Variable Frequency Drive (VFD).
- b. To increase the speed adjust the Hertz on the VFD to a higher number.
- c. To decrease the speed adjust the Hertz on the VFD to a lower number.
- d. The Overload on the Motor Starter protector(s) must be set at the lowest level to allow for operation. Adjust the amps in accordance with motor(s) name plate.



## \*GENERAL OPERATION\*

### Retract Operation

When there is no vehicle approaching the brush the tunnel controller will retract the brush from the wash position, toward the ceiling. It is recommended that the brush be retracted for:

1. Sun visors mounted over the windshield.
2. Any racks mounted on the roof.
3. Rear wipers on Acura Integra's and Mazda RX-7's unless they are taped down.
4. Open bed pickup trucks.



## **\*PREVENTIVE MAINTENANCE\***

### **DAILY**

1. Perform a general examination of operation. Check the transmitter and receiver of the photo eye and wipe clean.

FOR THE FIRST MONTH OF OPERATION CHECK ALL HARDWARE AND FITTINGS FOR TIGHTNESS EACH WEEK. PERFORM THIS INSPECTION TO THE SCHEDULE SHOWN BELOW AFTER THE FIRST MONTH OF OPERATION.



## **\*WARRANTY\***

### **SONNY'S ENTERPRISES, INC. FACTORY LIMITED LIFETIME WARRANTY**

Equipment manufactured by SONNY'S ENTERPRISES, INC. is warranted to be free from defect in material and workmanship. Welded metal framework and other non-moving, non-wearable fabricated metal components manufactured by SONNY'S are warranted for the life of the equipment to the original purchaser. Fabricated metal wearable surface and moving components manufactured by SONNY'S are warranted for a period of one (1) year to the original purchaser of the equipment.

All components assembled to SONNY'S equipment that are manufactured by others are warranted by the appropriate manufacturer and subject to that manufacturer's limited warranty. Contact SONNY'S for the specific information on other component manufacturer's warranty terms. All new cloth shipped with new SONNY'S equipment is warranted for a period of one (1) year or 80,000, whichever occurs first.

This warranty is not assignable or transferable. The warranty period begins the first day following installation or 30 days from the original invoice date, whichever occurs first. The Seller's liability shall be limited to repair or replacement of materials found to be defective within the warranty period. In the event of repair or replacement this limited warranty is noncumulative. The Purchaser must supply the Seller with immediate written notice when any defects are found. The Seller shall have the option of requiring the return of defective material to establish the Purchaser's claim. Neither labor nor transportation charges are included in this warranty. Transportation damage claims are to be submitted to the carrier of the damaged materials.

This warranty is based upon the Purchaser's reasonable care and maintenance of the warranted equipment. It does not apply to any equipment which has been subject to misuse, including neglect, accident or exposure to harsh chemicals or chemicals that react violently with: water, organic acids (e.g. acetic acid), inorganic acids (e.g. hydrofluoric acid), oxidizing agents (e.g. peroxides), and metals (e.g. aluminum). Chemicals corrosive to: aluminum alloys, carbon steel, and other metals. Nor does it apply to any equipment which has been repaired or altered by anyone not so authorized by SONNY'S. Further, the equipment must be properly installed with proper accuracy of all specified plumbing, electrical, and mechanical requirements. This warranty does not apply to normal wear and tear or routine maintenance components.

EXCEPT AS EXPRESSLY STATED HEREIN, SONNY'S SHALL NOT BE LIABLE FOR DAMAGES OF ANY KIND IN CONNECTION WITH THE PURCHASE, MAINTENANCE, OR USE OF THIS EQUIPMENT INCLUDING LOSS OF PROFITS AND ALL CLAIMS FOR CONSEQUENTIAL DAMAGES. THE LIMITED WARRANTY EXPRESSED HEREIN IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED. SONNY'S NEITHER ASSUMES NOR AUTHORIZES ANY PERSON TO ASSUME FOR IT ANY OTHER OBLIGATION OR LIABILITY IN CONNECTION HEREWITH.





Equipment Program - Manuals  
Top Brush Auto Retract  
Allen-Bradley PLC

## \*CUSTOMER SERVICE\*

Please contact SONNY'S Equipment Department for installation and/or operational questions regarding this piece of equipment.

Please refer to the Parts Catalog and contact SONNY'S Customer Service Order Entry Department for any replacement parts for this piece of equipment.

You can also visit the web at [www.SonnysDirect.com](http://www.SonnysDirect.com).

**DEPARTMENT**

Toll Free Main Line  
Equipment Department

**PHONE NUMBERS**

800-327-8723  
954-720-4100

**FAX NUMBERS**

800-495-4049  
954-720-9292

Or you can email Sales at [sales@SonnysDirect.com](mailto:sales@SonnysDirect.com)

*Thank you for being a SONNY'S car wash equipment owner!*

*From all of us here at*

