

Top Brush Dual Counterweight (DCW)



Owner's Manual

Sonny's Enterprises, Inc.
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16v1



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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.



Program - Manuals DCW Top Brush

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

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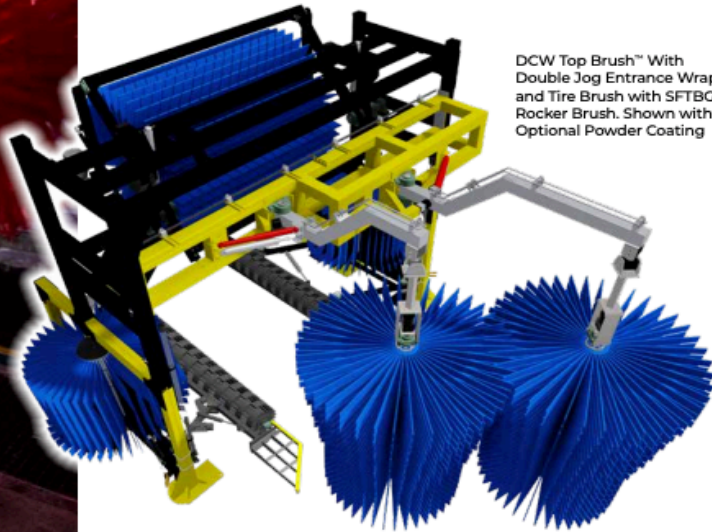
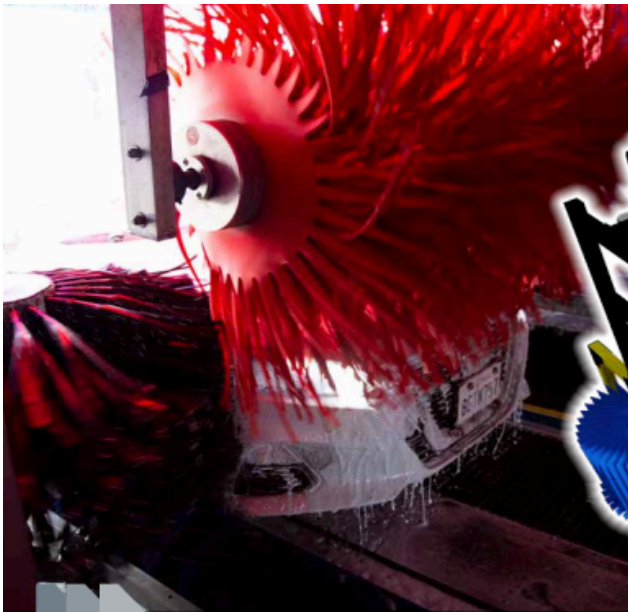




Product Specifications

- Designed to occupy 108" of tunnel length and 152" width (attachments available and add more length)
- 4" x 4" Aluminum alloy frame and legs for stability and durability
- Heavy duty double roller pivot bearings increase durability and smoothness of operation
- Dual counterweights allows for smooth vehicle profiling
- Simple linkage design is easy to maintain
- Soap lubrication is required for operation
- Requires VFD in order to change rotation to clean the rear of vehicles

and Save



DCW Top Brush™ With Double Jog Entrance Wraps and Tire Brush with SFTBG18 Rocker Brush. Shown with Optional Powder Coating

Sonny's Dual CounterWeight Top Brush™

Sonny's Dual CounterWeight Top Brush™ starts just 15in off the ground to wash the front bumper, grill, along the windshield, and up to the center of the roof line before reversing direction of the brush rotation to hug the rear of vehicles. This improves cleaning of those hard to reach rear windows and tailgates on both trucks and SUVs.

- Dual CounterWeight allows this brush to flex forward, become light on the front – and shift weight forward when it changes direction to hug the rear of the vehicle for amazing cleaning.
- Simple mechanical design delivers incredible cleaning with very little maintenance.
- Automatic Truck Bed Retract option uses sonar to detect open truck beds and retract top brush and blowers to ensure no issues with open truck beds.
- Durable QuadX Foundation Frame allows you to expand your wash capacity by converting your top brush into a combination unit with Wrap-Arounds, TBG300 Tire brush, and a variety of side and rocker brushes to elevate cleaning performance in a smaller footprint.

Specifications

Footprint Width	152in	
Height	143in	
Vehicle Clearance	90in	
Water Inlet	3/4in	
Footprint Length	Top Brush Only	108in
	With Tire Brush	188in
	With Straight Wrap	210in
	With DoubleJog Wrap	228in
Electric	3-Phase 208-460V	



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 from the (24 or 110 VAC as determined at time of order) from the Customer's Controller system to the liquid solenoid valve for the brush spray bars and, if required, the motor starter coil for the hydraulic power pack feeding the brush and any pump motor for the chemical distribution system.
- The Customer's Electrician is to provide and install single phase power from the remote push-button station through the tunnel equipment programmer to the supplied air solenoid valve on the Air Distribution Manifold for retract of both washers upon selective signal (see Figure #6 in Dimensions Section).
- The Customer's Electrician is to provide materials and install 208VAC or 230VAC or 460VAC, 3-phase, 60Hz power to the electric motor 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.

Chemical

- The installer is to run a 1/2 inch chemical line out to the brush to provide lubrication.

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

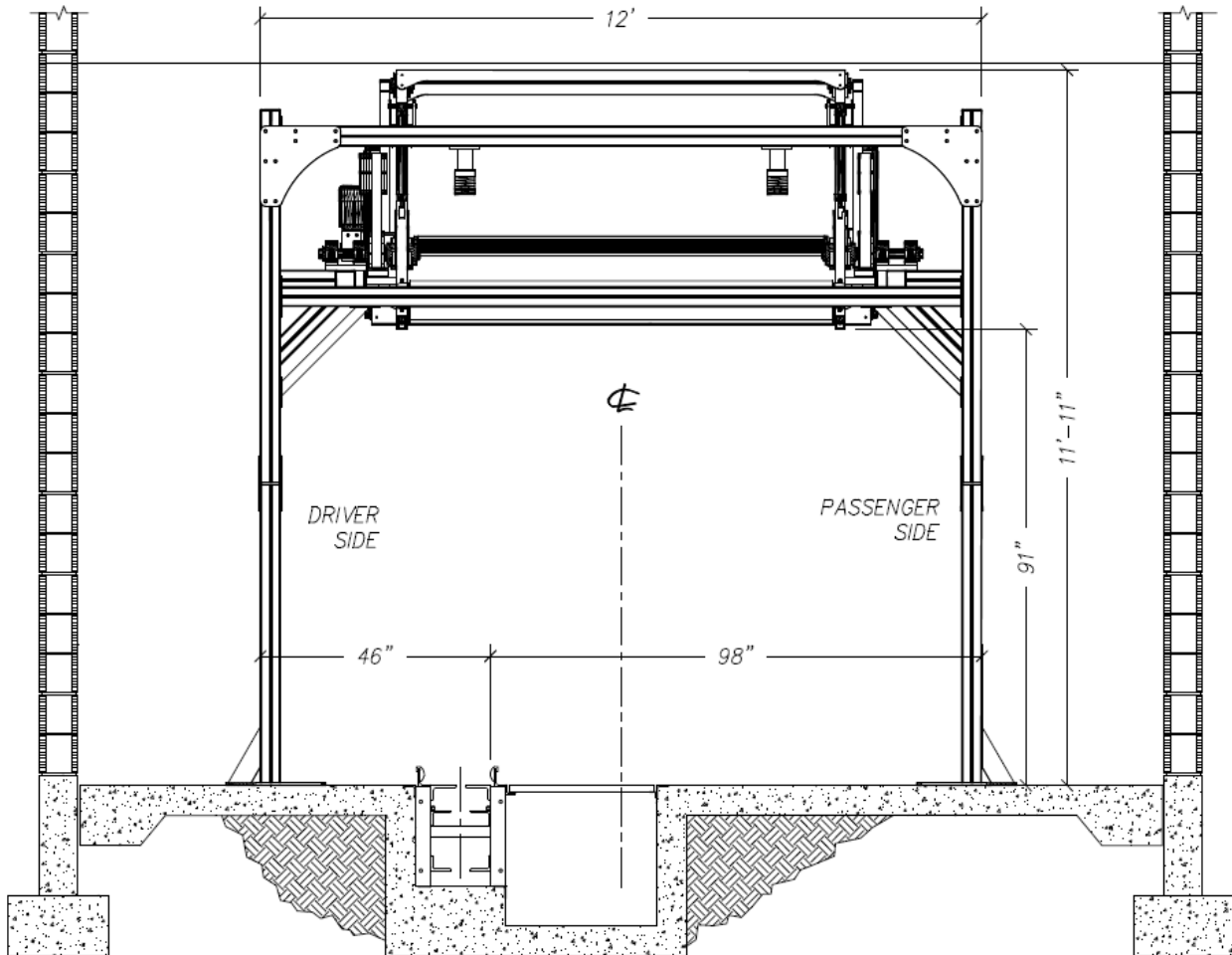
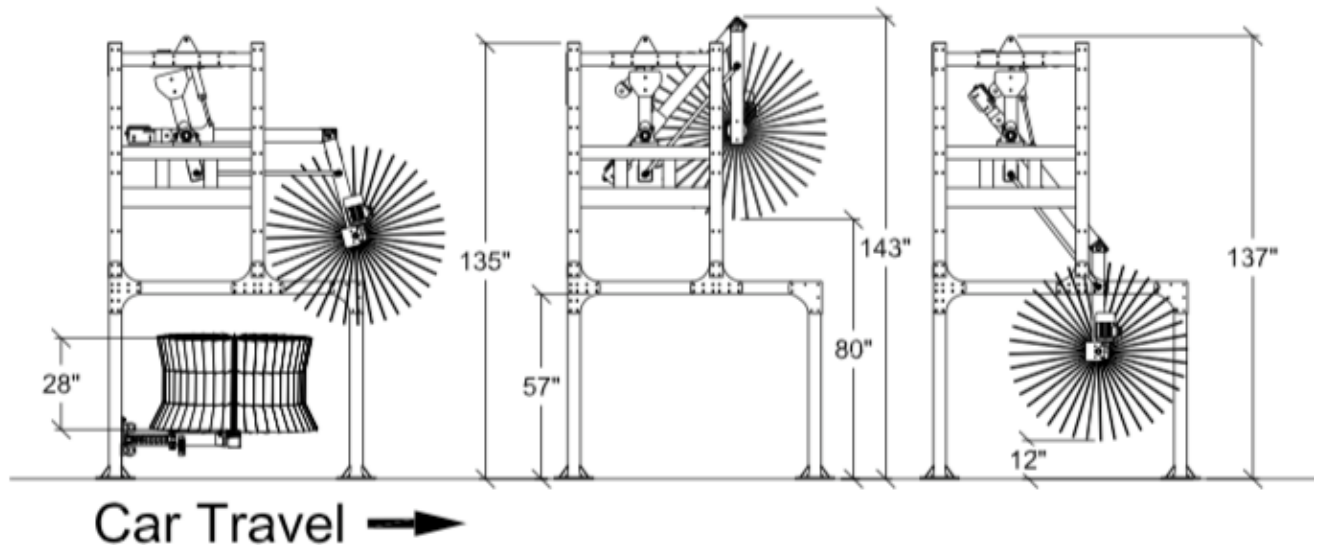


Figure #1



NOTE: 28" Brush is the maximum size that can be used. When using a 28" brush it will require retracts to hold the brushes retracted until the Top Brush is on the hood of the vehicle.

Figure #2

*PNEUMATIC DIAGRAM
PULLING ACTUATOR*

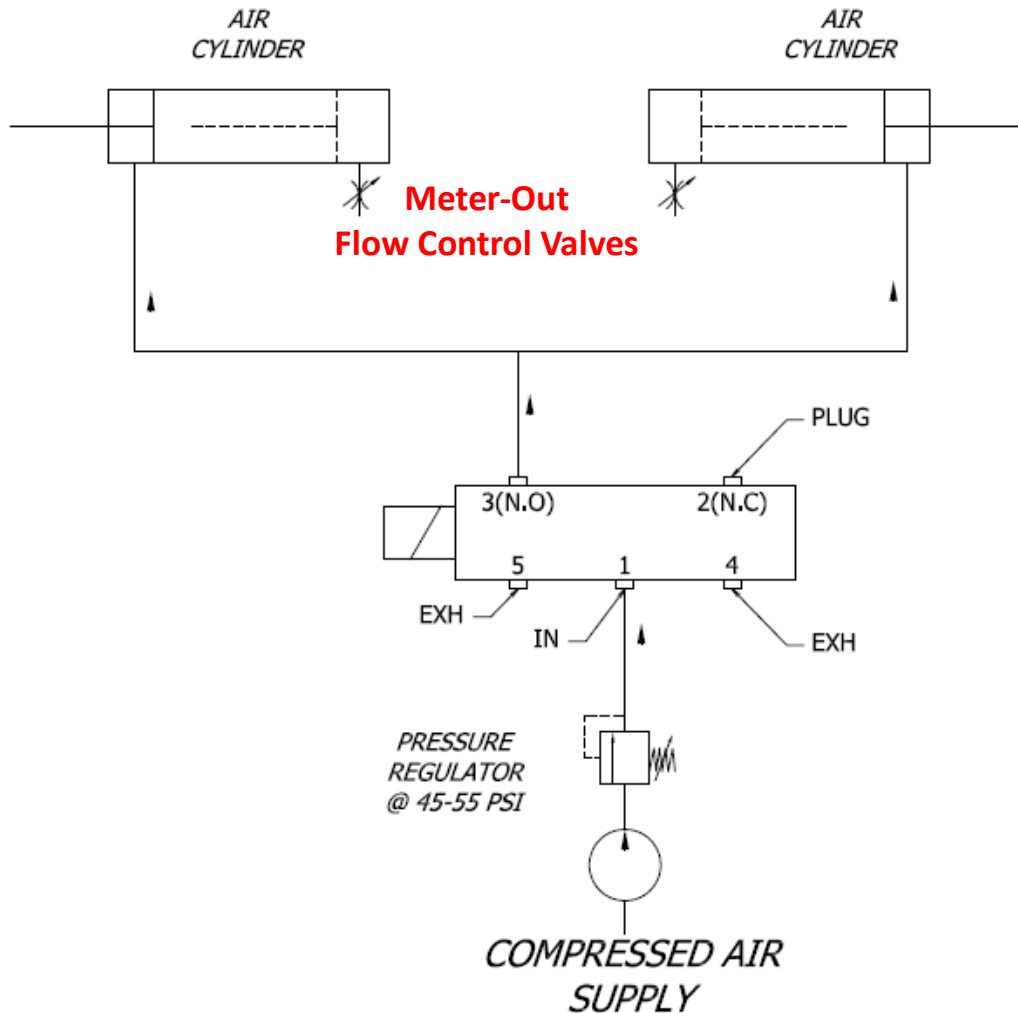


Figure #3

CAUTION: Do not plumb any air to the back side of the cylinder, air is for retract only.

NOTE: Flow control adjustment required upon installation.

Equipment Installation

Installation Tools and Consumables

Tools

1. Safety Glasses
2. ½ " Drive Ratchet Set
3. Standard Combo Wrenches
4. 4' Level
5. Electric Impact Wrench
6. 1" Hammer Drill
7. Tape Measure
8. Forklift - 2 Ton Load Capacity - (4,000 Lbs.)

Consumables

1. Anti-Seize Compound
2. Marine Grease

Work Force

Four (4) persons

Time (assuming no problems)

5.00 – 6.00 hours

NOTE: Use Anti-Seize Compound on all the hardware: Bolts, U-Bolts, etc.

Forklift – 2 Ton Load Capacity



Roller Skids Are Recommended



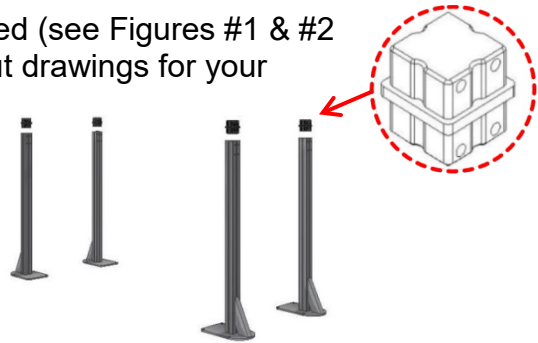
1 Ton Min. Load Capacity

Installation Steps

1. Determine where the Top Brush is to be installed (see Figures #1 & #2 in the Dimensions Section and the tunnel layout drawings for your location).

2. Sweep any debris from where the Top Brush will stand.

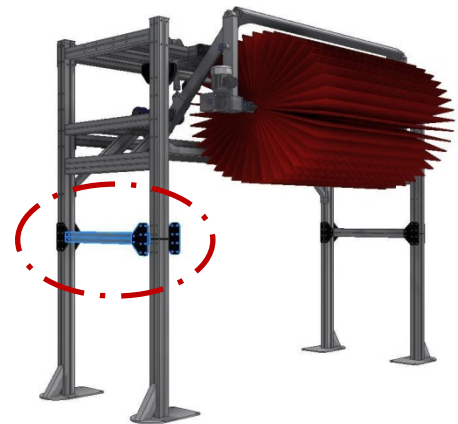
3. Insert aluminum couplers into the leg posts. Holes must be in alignment. Place the legs in the location where the top brush will stand.



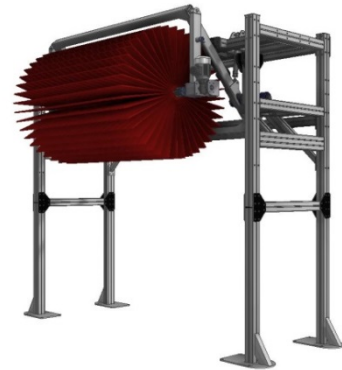
4. Place a small amount of Anti-Seize Compound on each bolt included in the kit.
5. Using the recommended forklift, place the assembled frame (with the brush toward the end of the car wash) on top of the leg extensions, and make sure the frame is sitting square on all leg posts.



6. With the hardware provided in the kit, join the leg posts, cross beam and 3-way join plates, making sure to use anti-seize compound on bolts.



7. Level and square the frame with the centerline of the equipment (see Figure #1 in the Dimensions Section and the tunnel layout drawings for your location).
8. Place and anchor the unit per the dimensions shown in Figure #1. Be certain that the entrance and exit cross beams are level (shim mounting feet, if necessary) and that each of the 4 vertical legs are plumb.



Note: Ensure the frame is correctly located before installing any lag bolts. Before lagging the frame into position have a second person double check all measurements against your tunnel equipment layout drawings to ensure all measurements were performed correctly.

1. Run the air supply line hose from the air manifold to the retract cylinders for the retract operation (see Figure #3 in the Dimensions Section).
2. Retract cylinder air regulators (Actuators) needs to be adjusted once the equipment is in testing operation.
 - In order to adjust the retract function; slowly increase the pressure to the air cylinders until the top brush retracts all the way to the bumpers (Recommended pressure 40-60 PSI). Make sure flow control valves are fully closed, gradually open up the flow control valves until the top brush is retracting in a smooth motion.
3. Standard rotation of the brushes is against vehicle travel. As viewed from the driver side the brush turns COUNTERCLOCKWISE. The brush requires a VFD to change rotation to clean the back of vehicles.

Brush Hub Installation

1. Remove and discard the retainer plate from one end of top brush assembly. Insert the screws and lock washers to the PS Spindle.

Reuse Screws



2. Hold the brush straight, insert the end of the brush to the PS top brush arm spindle and tighten into place with the screws. (Use anti-seize compound on screws).



CAUTION: Extra foam spacers are sent with the brush and may need to be added. After the first week of operation, check the brush for gaps in the foam. If any gaps are found, add spacers to the end of the brush.

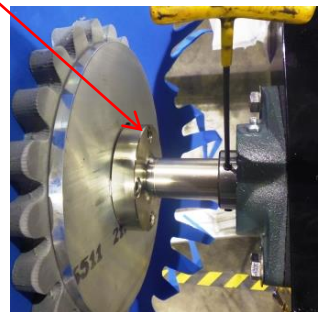
Failure to do so may result in damage to vehicles.

3. Remove and discard the retainer plate from the other end of top brush assembly. Insert the screws and lock washers to the DS Spindle.

Reuse Screws



4. Loosen PS bearing set screws to be able to slide the brush hub on to the spindle.



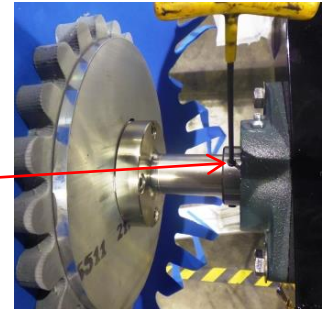
5. Slide the brush hub into the DS spindle and tighten the screws.

DS Set Screws



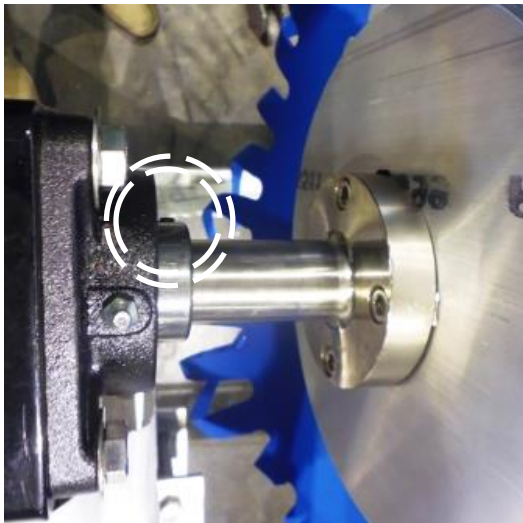
6. Once the top brush assembly is securely tightened to both spindles (DS & PS), go ahead and tighten the PS bearing set screws. Check the DS bearing set screws to make sure they are also tighten.

PS Set Screws



Electric “Flender” Motor

1. Loosen the DS and PS shaft bearing set screws to adjust the brush to the center of the top brush arms. Once centered, tighten the shaft set screws.





Adjustments and Testing

Adjust the Cleaning Pressure of the Washer

Ensure the air solenoid is manually put in the wash position so there is no air pressure applied to the retract cylinder. Using a 3/4" wrench, loosen up the 4 bolts that secure the counterweight assembly until lock washers have released pressure. (**DO NOT** unscrew the bolts more than 3 to 4 full turns.). Adjust the position of the counterweight so that when the counterweight is released, the brush slowly moves downward. Using a 1/16" wrench, rotate the nut on the back of the frame to adjust the counterweight. In order to get the brush to drop it may be necessary to open the flow control valves on the air cylinder, see Figure 3.

After the initial adjustment has been made, manually activate and deactivate the air retract. When deactivated the brush should fall smoothly to the down position. Final adjustment of the counterweight can be accomplished while running test vehicles. Fine tuning of brush pressure on vehicle should be made by moving the counterweight 1/8" – 1/4" at a time; this is equivalent to 1-2 full rotations at the 1-1/16 nut.

Once adjusted properly, the cloth penetration should be about three to four inches across the entire vehicle. If brush bounces too much the counterweight has been adjusted to far out. Adjustment is easiest if made in small amounts, approximately 1/4" to 1/2" at a time.

The triangle weights on the brush control how heavy the brush is in the front to rear motion. If the brush is applying to much pressure in the reverse direction more weight may be needed. This adjustment is based on the type of vehicles being washed and the speed of the conveyor. More triangles = Less pressure on the rear Less triangles = More pressure on the rear

Adjust the Rotation Speed of the Brush

The brush speed can be adjusted using a VFD and needs to be adjusted based on your chain speed. If you purchased a VFD from Sonny's, it will come programed to change directions with an input provided by the car wash controller. The brush should change directions just after the front windshield area.

Speed and Torque Adjustment (where applicable)

1. 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

Top Brush Operation

Brush rotation starts and stops with a signal from the Customer supplied Controller system. This Controller Start-Stop signal should also control soap solution delivery to the spray bar on the brush.

BE CERTAIN THAT THE BRUSHES ROTATE AGAINST VEHICLE TRAVEL

With the brush rotating (against the direction of vehicle travel and at proper RPM) the vehicle's front hood contacts the brush and brush travels across the vehicle maintaining steady contact while washing the hood, just after the front windshield the brush should smoothly change directions to wash the roof and rear of the vehicle.

Proper cloth penetration on flat vehicle surfaces should be 3 to 4 inches. As the brush rounds corners, such as on windshields, the cloth penetration may be greater, but not deeper than half the distance to the aluminum brush core.

Retract Operation

When there is no vehicle approaching the brush the tunnel controller will retract the brush from the wash position, toward the ceiling. This can also be set up in the controller to retract for the beds of trucks to avoid problems.

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. Check all lines and fittings for leaks. Repair, or replace, as needed.
2. Check brush for proper operation, listening for any unusual noises from the equipment.
3. Inspect brush cloth for cuts, grease, or oil. Remove and repair, or replace, any cloth panel if any of these conditions are found.
4. Check the brush retract and extend for proper operation, smoothness and correct application pressure.

WEEKLY

1. Spray lubricant on the clevis pins on both ends of the retract cylinders.
2. Grease the brush shaft bearings. Do not allow grease to come in contact with brush cloth.

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.

MONTHLY

1. Inspecting all hardware and fittings for tightness.
2. Grease all bearings. Do not allow grease to come in contact with brush cloth.
3. Inspect the bumper stops for wear to ensure the air cylinders have not reached the end of their travel. If bumper stops are worn they can be flipped to extend life.
4. Thoroughly clean the equipment and framework.

SEMI-ANNUALLY

1. Carefully inspect brush equipment cloth for wear and damage. Replace as necessary.



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.



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.

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

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

From all of us here at

