



ACCELERATOR™ HORIZONTAL TOP WHEEL INSTALLATION MANUAL

Part # TOPWL360BKS [....]
(ALL COLORS)

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Equipment Specifications

	ELECTRIC DRIVE TOPWL360[.....]
ELECTRICAL	CONTROL: 120 VAC, 3 WATTS UL® CERTIFIED MOTOR: 1.5 HP 6.6-3.0 AMPS/208-460 VAC 3 PH UL® RECOGNIZED, CSA CERTIFIED, CE MARK, IEC IP 55
PNEUMATICS	3 SCFM
WATER	RECLAIMED OR FRESH: 2 GPM @ 40 PSI

Equipment Features

- ☐ Aluminum Structure Color Skinz™ Snap On Structure Wrap
- ☐ Available With Star Foam Wash Material
- ☐ Less Than 7 Feet of Tunnel Space required
- ☐ 10 Feet Overall Height
- ☐ Cleans Up to 150 Cars per Hour Line Speed
- ☐ Built-In Foam Streamer™ for added Show and Proper Lubrication

Suggested Installation Tools and Materials

- | | |
|--|--|
| <input checked="" type="checkbox"/>  Hammer Drill with 1/2" Drill Bit | <input type="checkbox"/> (12) Wedge Anchor Bolts 1/2" x 5-1/2" |
| <input type="checkbox"/> Sledge Hammer | <input type="checkbox"/> Safety Goggles |
| <input type="checkbox"/> Set of Standard Combo Wrenches | <input type="checkbox"/> Torpedo Level |
| <input type="checkbox"/> Measuring Tape | <input type="checkbox"/> 3/8" Polyflow Tubing |
| <input type="checkbox"/> | <input type="checkbox"/> 1/2" Polyflow Tubing |

Notes and safety Symbols

Where necessary, important points will be highlighted in this manual, using the following symbols:



NOTE: PROVIDES FURTHER INFORMATION!




STOP! PRECAUTION TO TAKE TO AVOID EQUIPMENT
MALFUNCTION OR ERROR!



WARNING! DANGEROUS SITUATION WHICH MAY CAUSE
EQUIPMENT DAMAGE, PERSONAL INJURIES OR FATALITIES!

Always follow all “Notes”, “Warnings” and instructions. Failure to do so may have serious consequences on the overall performance of the equipment and/or the safety of the people working on the equipment!

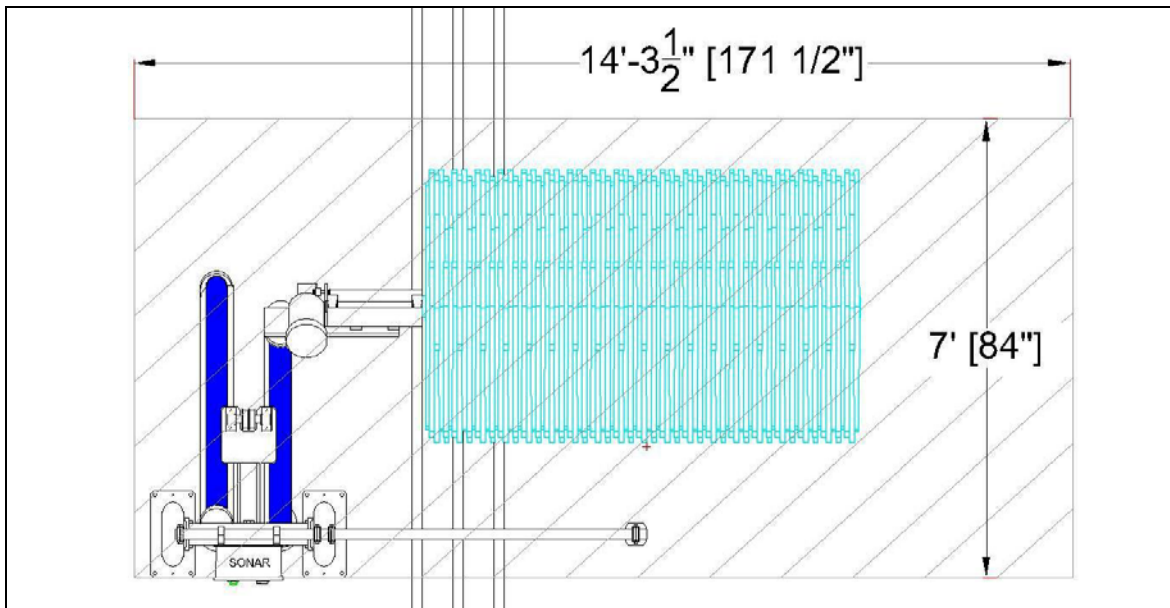
Installation Procedures

- ☒  **Upon** receiving your MCWW equipment, open all boxes and crates and verify that you have all the required components and that there is no damage to the equipment. Also verify that you have all your installation materials.

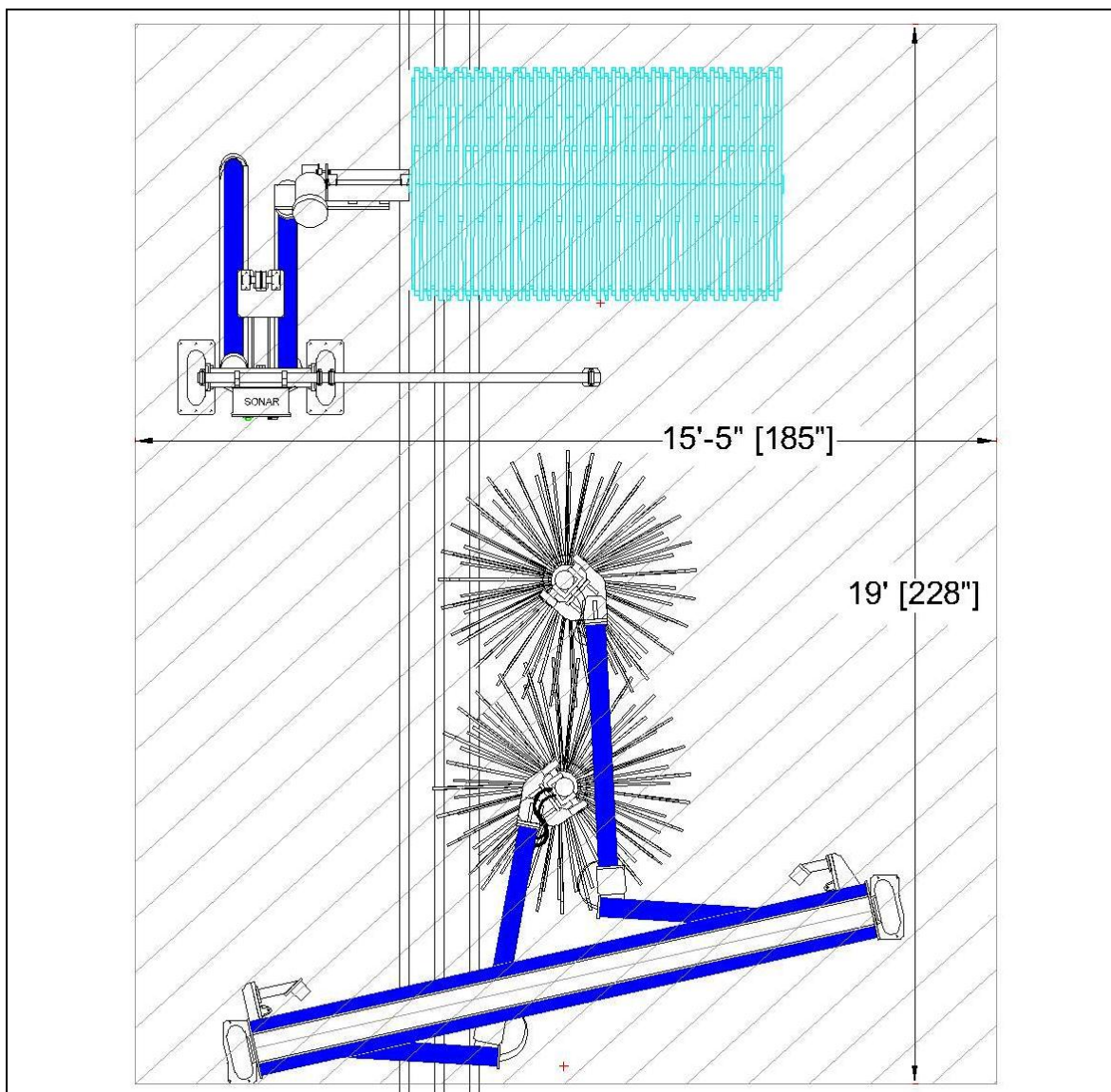


**PLEASE COMMUNICATE WITH YOUR LOCAL MOTOR CITY WASH WORKS
REPRESENTATIVE FOR ANY DAMAGE TO YOUR EQUIPMENT!**

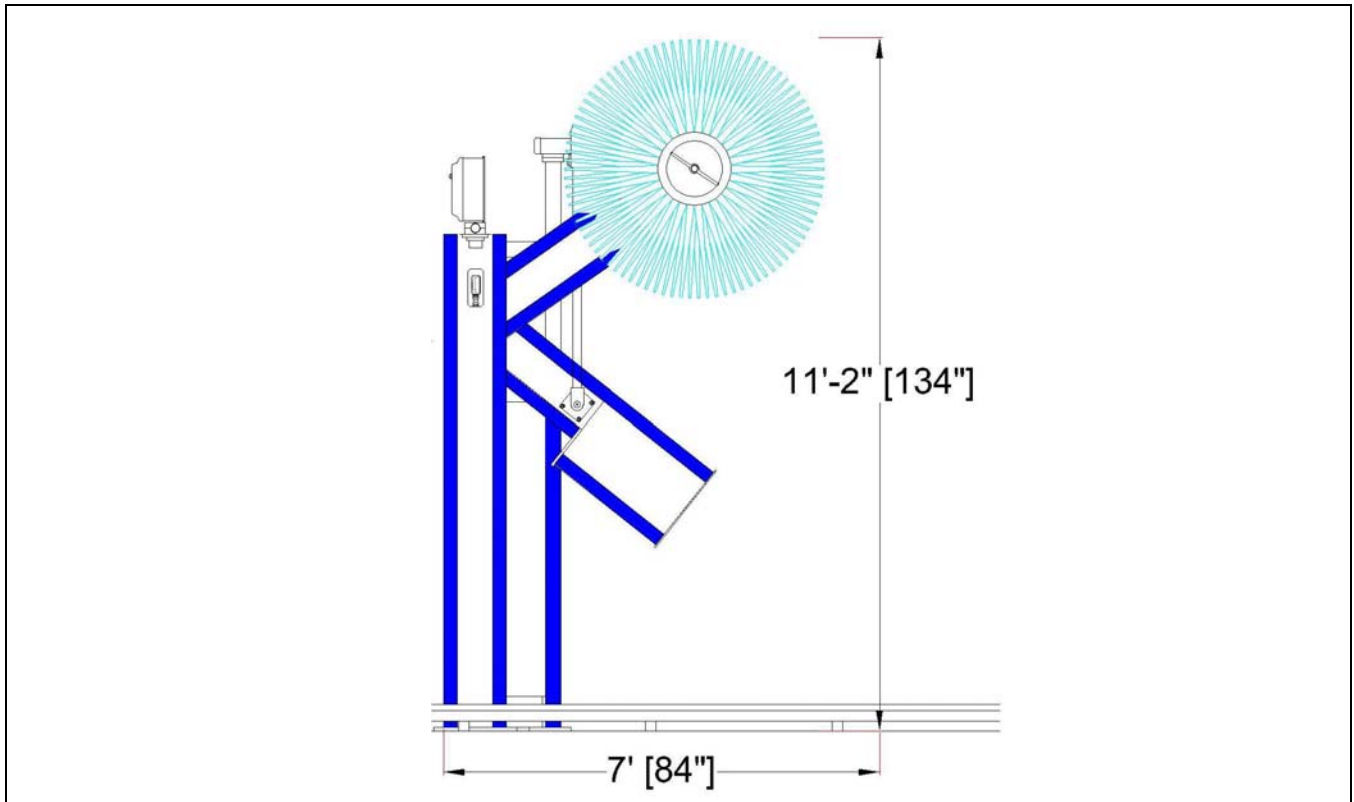
- ☐ **Remove** packaging material covering your **ACCELERATOR™ TOP WHEEL** and bring it to the wash in the area where it will be installed and verify that the area is sufficiently large for the **ACCELERATOR™ TOP WHEEL WORKING ENVELOPE** and **DIMENSIONS** (see Picture #1 though #4).



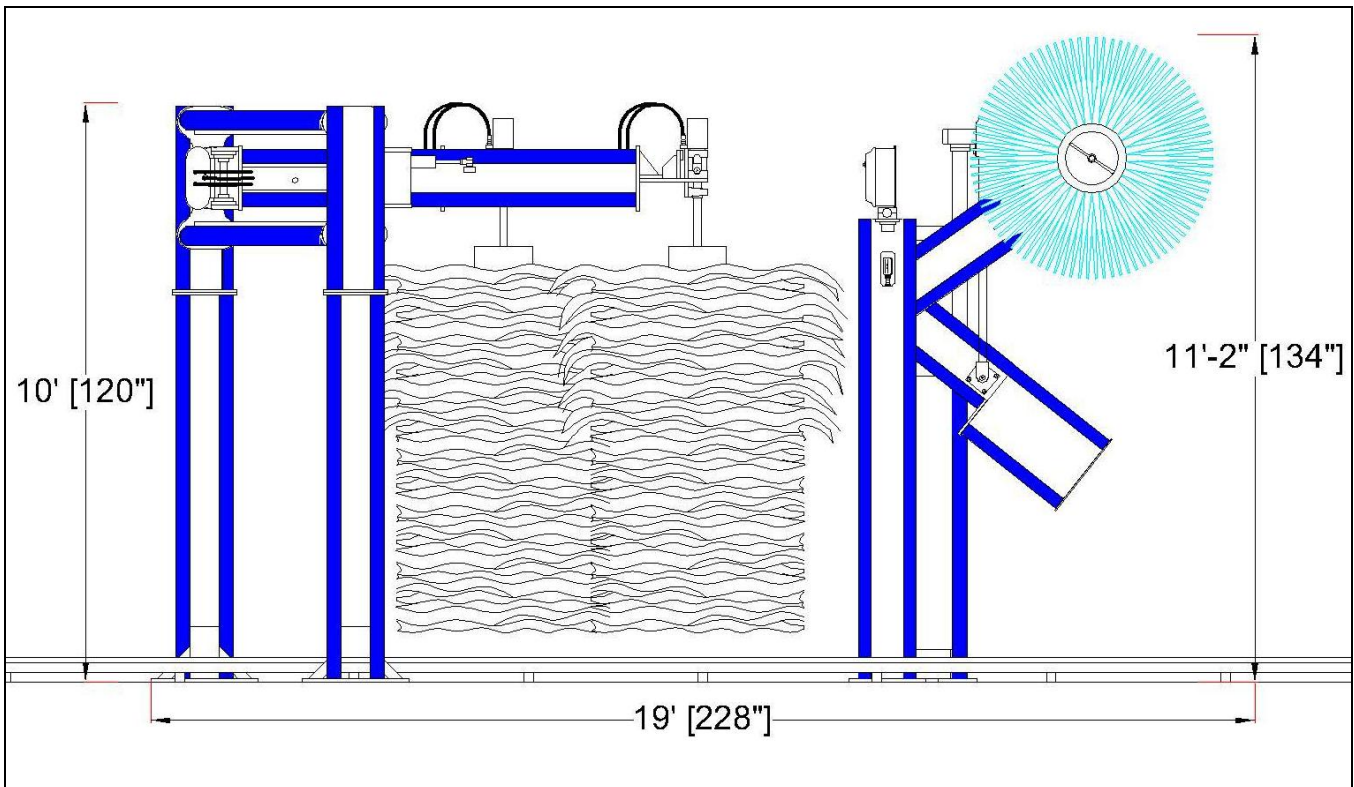
Pic #1: Working Envelope for Accelerator™ With Foam



Pic #2: Working Envelope for Accelerator™ With Cross-Over™



Pic #3: Accelerator™ Overall Dimensions



Pic #4: Accelerator™ and Cross-Over™ Overall Dimensions

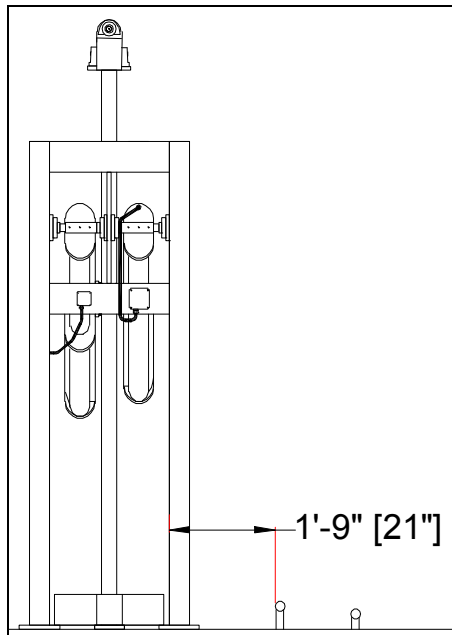


FOR DRIVER SIDE TOP WHEEL:

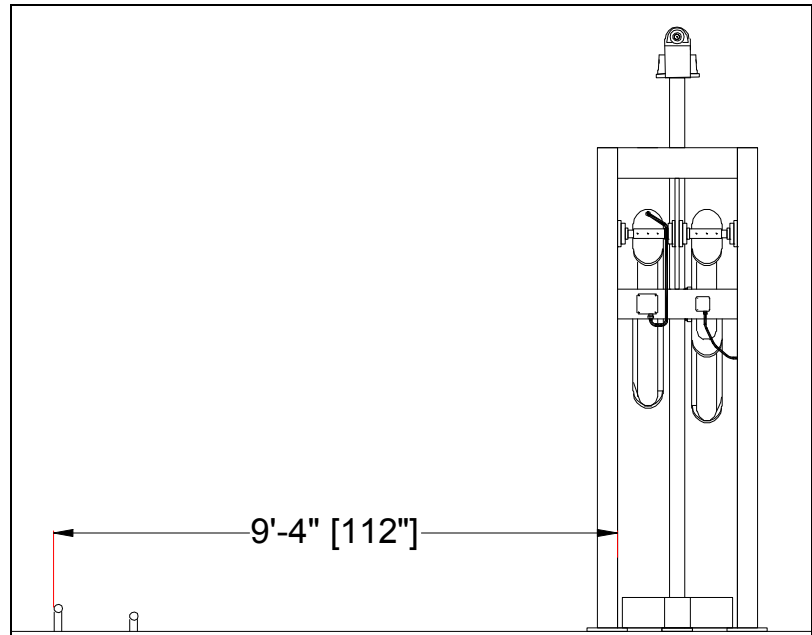
Position the frame on the **DRIVER SIDE OF THE CONVEYOR** with the two arms pointing toward the exit. Position the inside edge of the inside leg **21 INCHES** to the **OUTSIDE EDGE OF THE OUTSIDE GUIDE RAIL** (see Picture #5).

**FOR PASSENGER SIDE TOP WHEEL:**

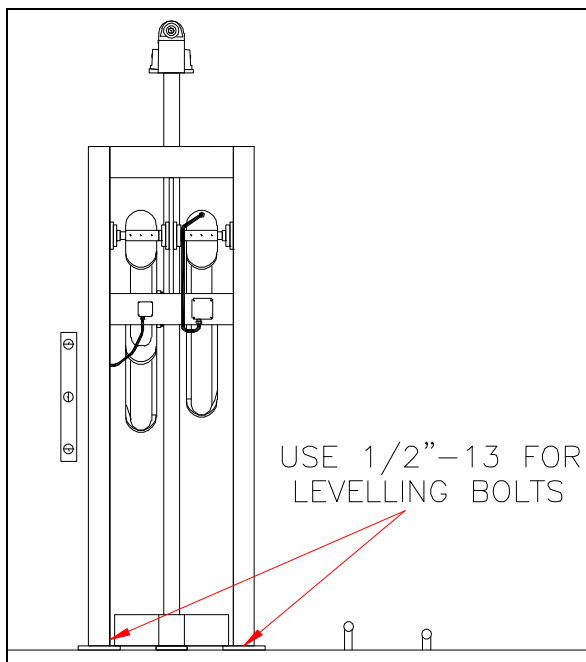
Position the frame on the **PASSENGER SIDE OF THE WASH BAY** with the two arms pointing toward the exit. Position the inside edge of the inside leg **112 INCHES** to the **OUTSIDE EDGE OF THE OUTSIDE GUIDE RAIL** (see Picture #6).



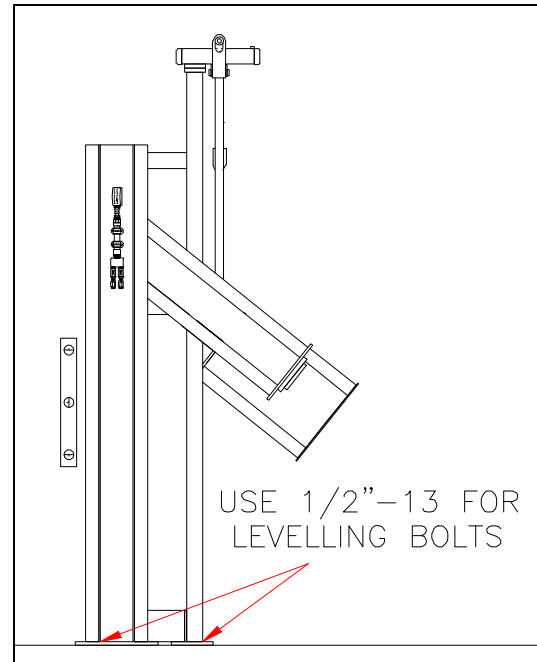
Pic #5: D/S Distance to Outside Guide Rail



Pic #6: p/S Distance to Outside Guide Rail



Pic #7: Level Frame (1)



Pic #8: Level Frame (2)



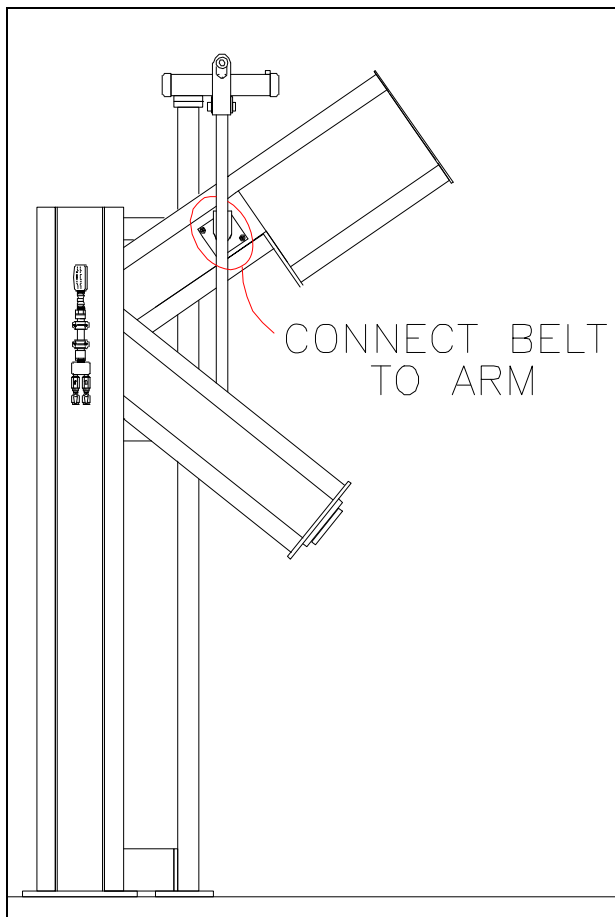
Level the frame in both directions (see Picture #7 and #8). Secure to the floor using **1/2" x 5" ANCHOR BOLTS** (one for each floor mount holes).



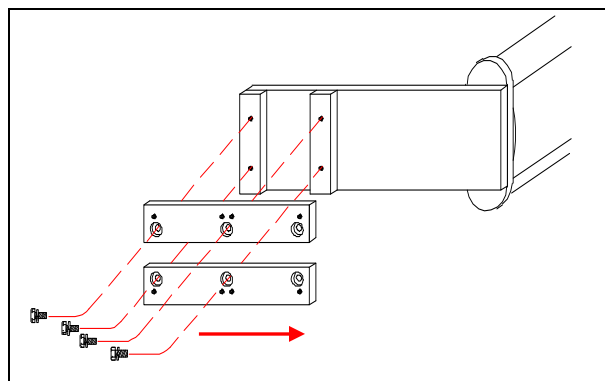
Attach the belt to the arm (see Picture #9)



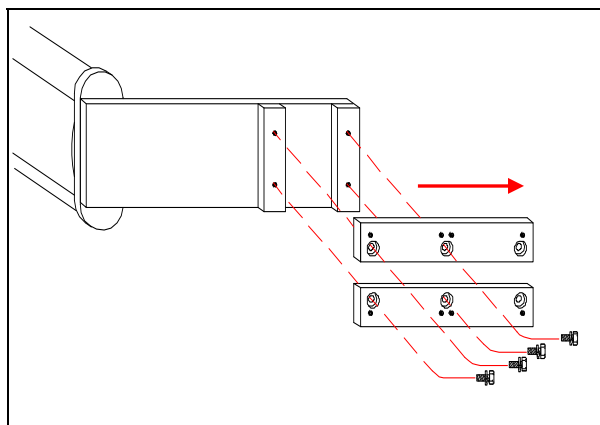
Locate the **ADAPTOR PLATES** and secure it on the arm as shown in picture #10 or 11.



Pic #9: Connect The Belt



Pic #10: Driver Side Adaptor Plates Assembly



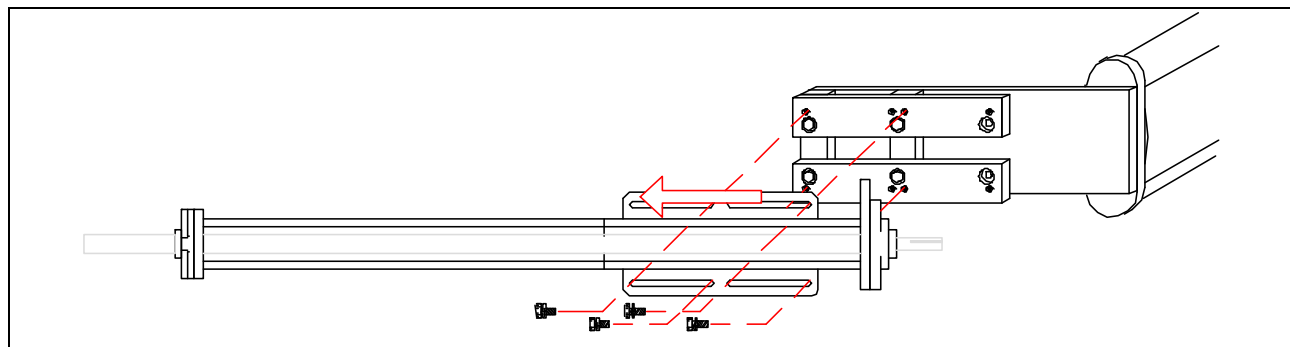
Pic #11: Passenger Side Adaptor Plates Assembly



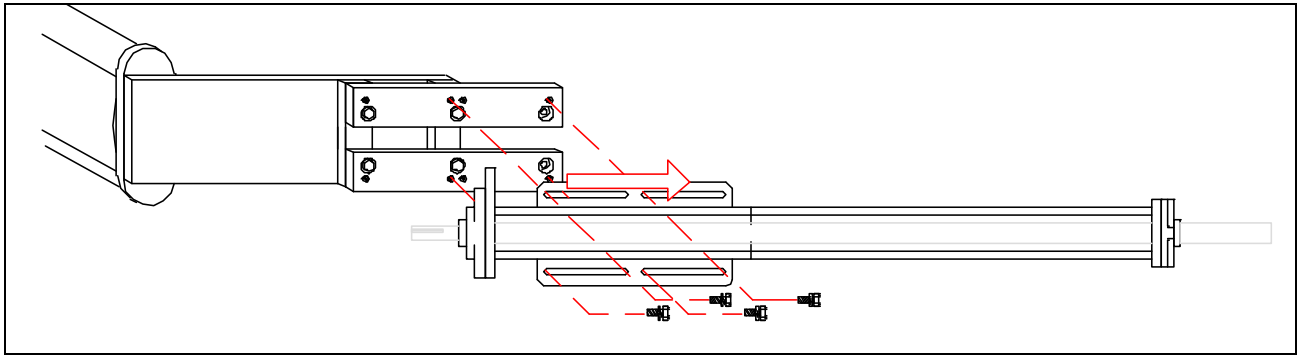
DRIVER SIDE TOP WHEEL:
MOUNT THE ADAPTOR PLATES JUSTIFIED
TOWARD THE RIGHT AS SHOWN IN PIC #10

PASSENGER SIDE TOP WHEEL:
MOUNT THE ADAPTOR PLATES JUSTIFIED
TOWARD THE RIGHT AS SHOWN IN PIC #11

- ☐ **Locate the DRIVE SHAFT ASSEMBLY** and mount to the adaptor plates as shown in pictures #12 and 13.

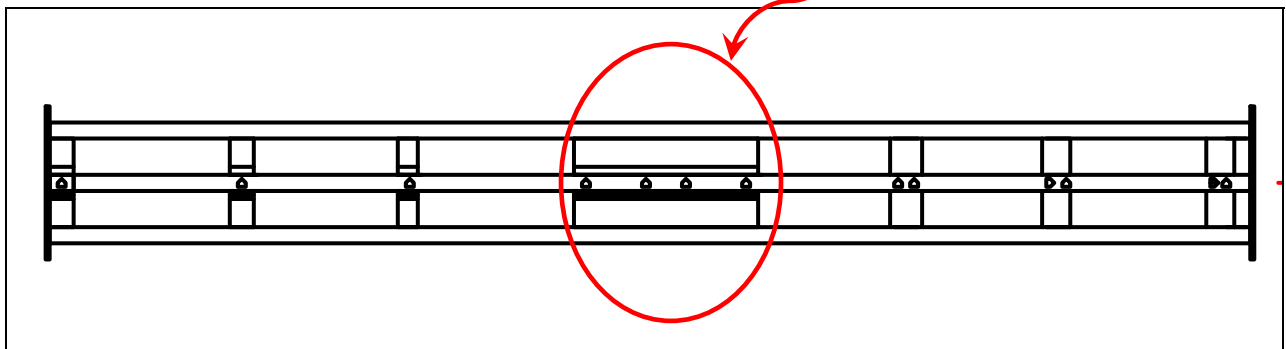


Pic #12: Driver Side Drive Shaft Assembly Mounting

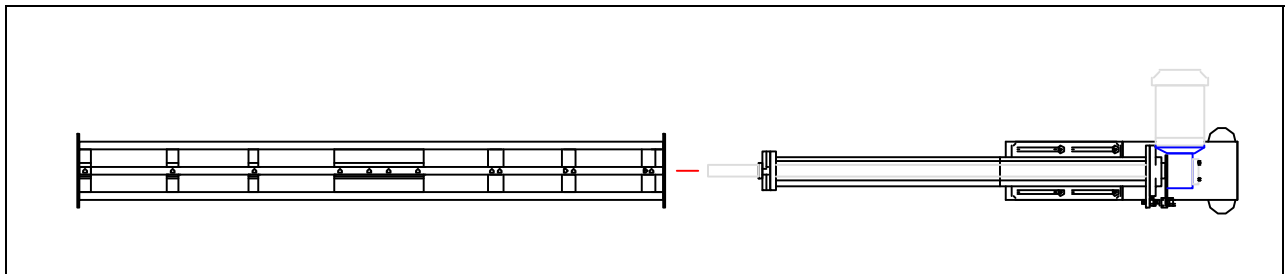


Pic #13: Passenger Side Drive Shaft Assembly Mounting

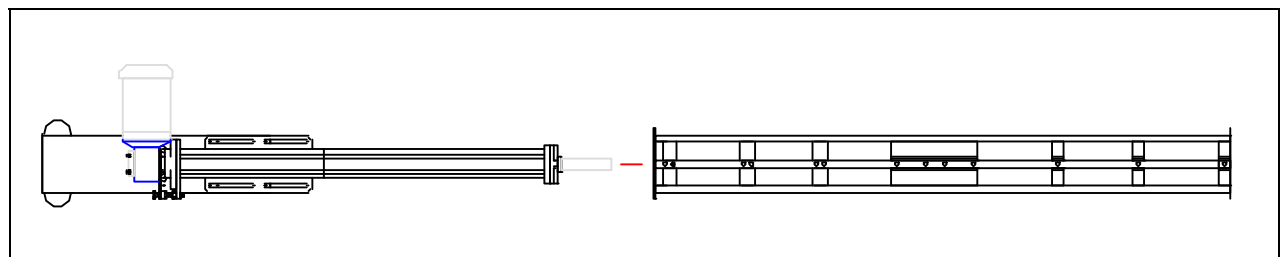
- ☐ **Locate** the top wheel **HUB AND LOOSEN THE MIDDLE CLAMP FASTENERS** (see Picture below) and slide the hub on the drive shaft (see Picture #15 or 16).



Pic #14: Top Wheel Hub Assembly

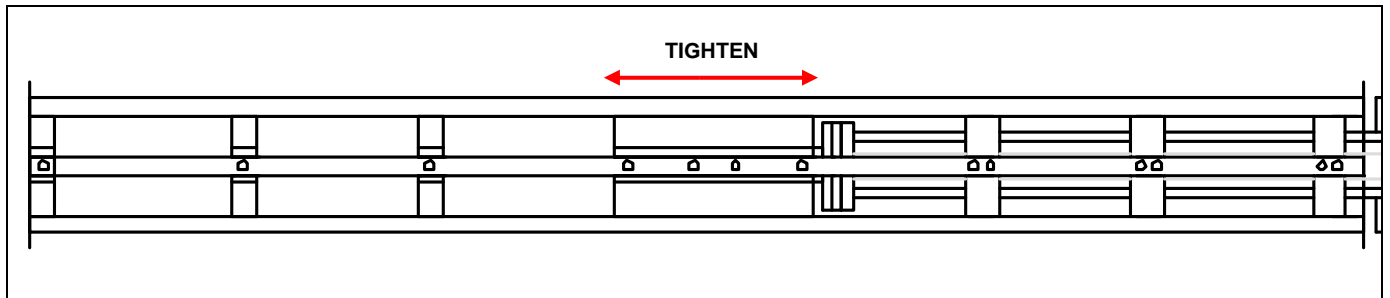


Pic #15: Driver Side Hub Assembling



Pic #16: Passenger Side Hub Assembling

- ☐ **Tighten** all the clamp fasteners evenly starting from the middle toward the ends.

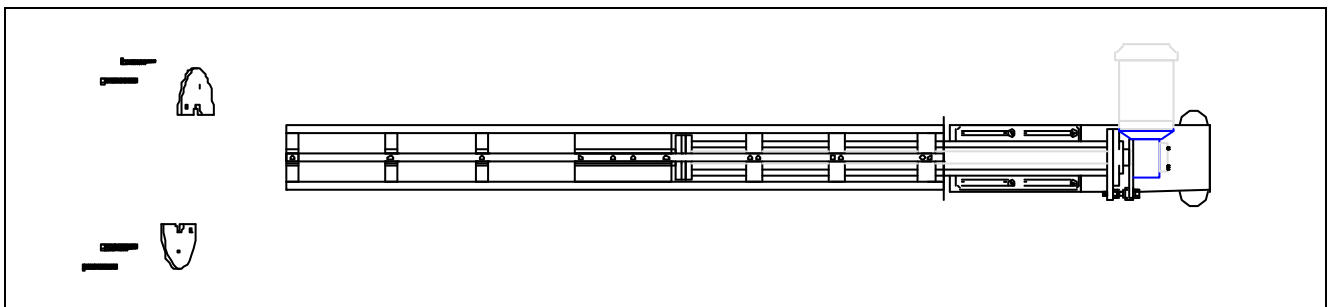


Pic #16: Passenger Side Hub Assembling

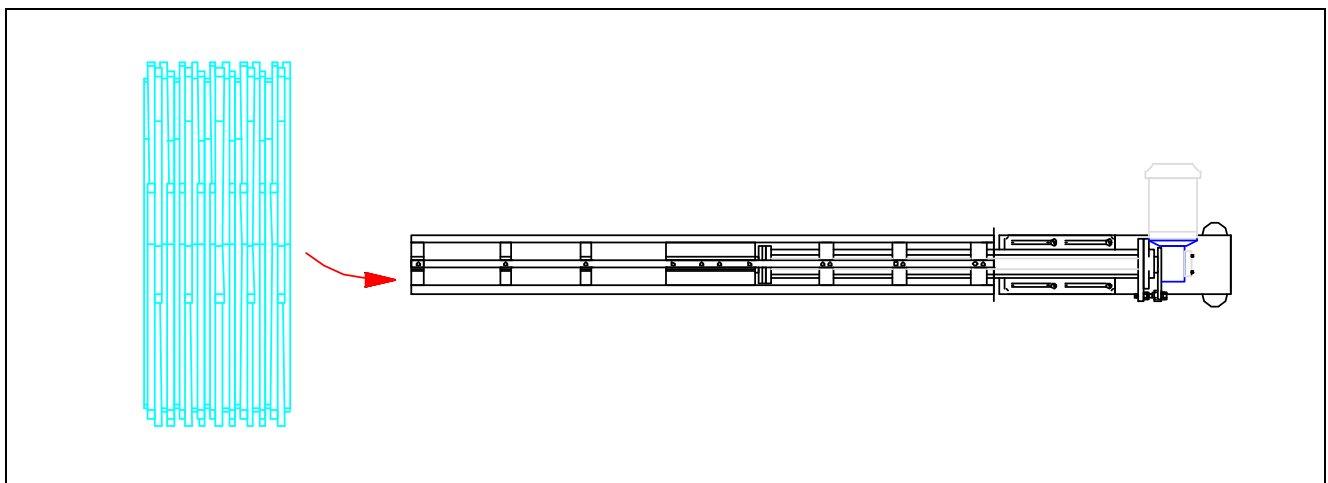


STOP!
IT IS IMPORTANT THAT THE FASTENERS ARE TIGHTENED EVENLY. FAILURE TO DO SO MAY CAUSE THE TOP WHEEL BRUSH TO “WOBBLE” WHEN RUNNING AND MAY LEAD TO PREMATURE WEAR OF YOUR TOP WHEEL

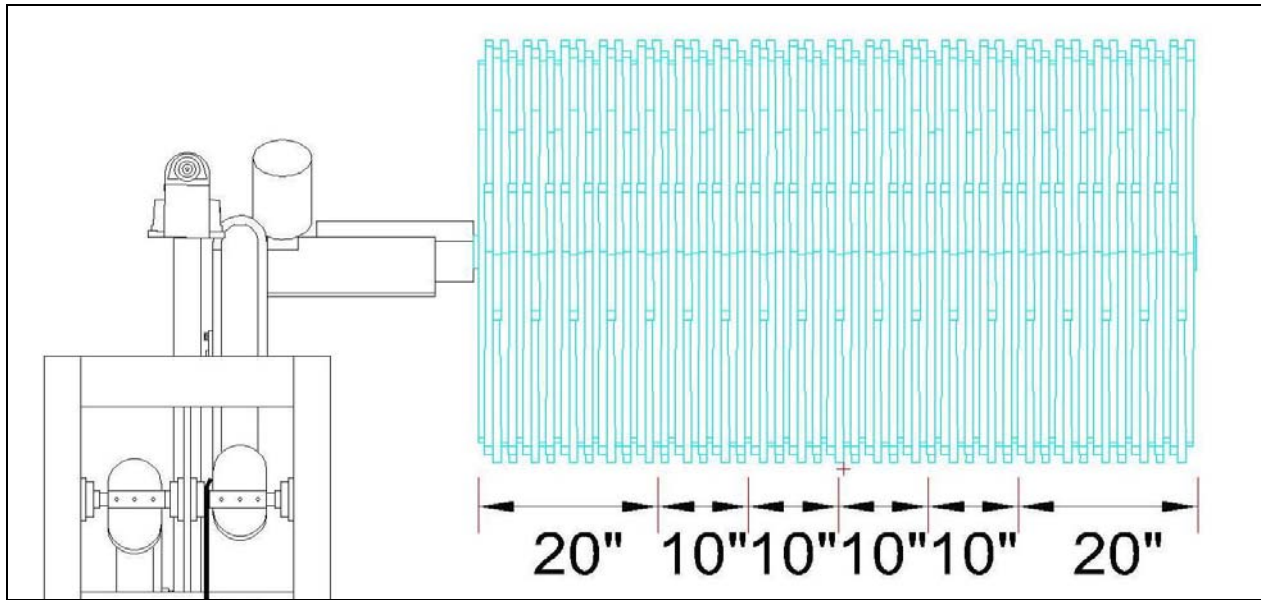
- ☐ **Remove** the compression plates at the end of the hub and slide a **20” STAR FOAM “BUN” ONTO THE HUB** (see picture #18). Follow with four **10” STAR FOAM BUNS** and complete with the last **20” BUN**. Reinstall the two compression plates (see Picture #19).



Pic #17: Driver Side Compression Plates

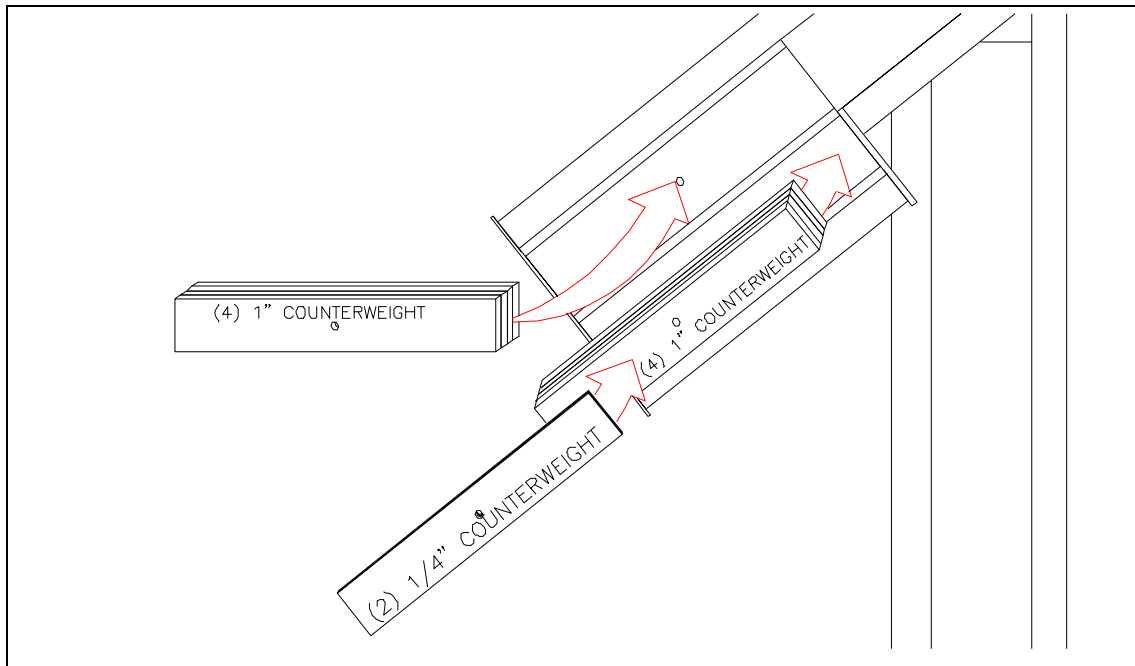


Pic #18: Slide In 20' Bun



Pic #19: Star Foam Top Wheel

- ☐ **Raise** the Top Wheel arm with a **FORK LIFT TRUCK** or a **GENIE LIFT™** to its highest position, the **COUNTERWEIGHT ARM** should now be at its lowest position. Your top wheel comes with **8 x 1" COUNTERWEIGHT** and **4 x 1/4" COUNTERWEIGHTS**. Add all the 1" counterweight (**4 IN THE TOP SLOT AND 4 IN THE BOTTOM SLOT**) and 2 x 1/4" counterweight in the **TOP** or **BOTTOM** slot to the counterweight arm box (see picture #20 and 21). Keep the remaining counterweight for future usage.

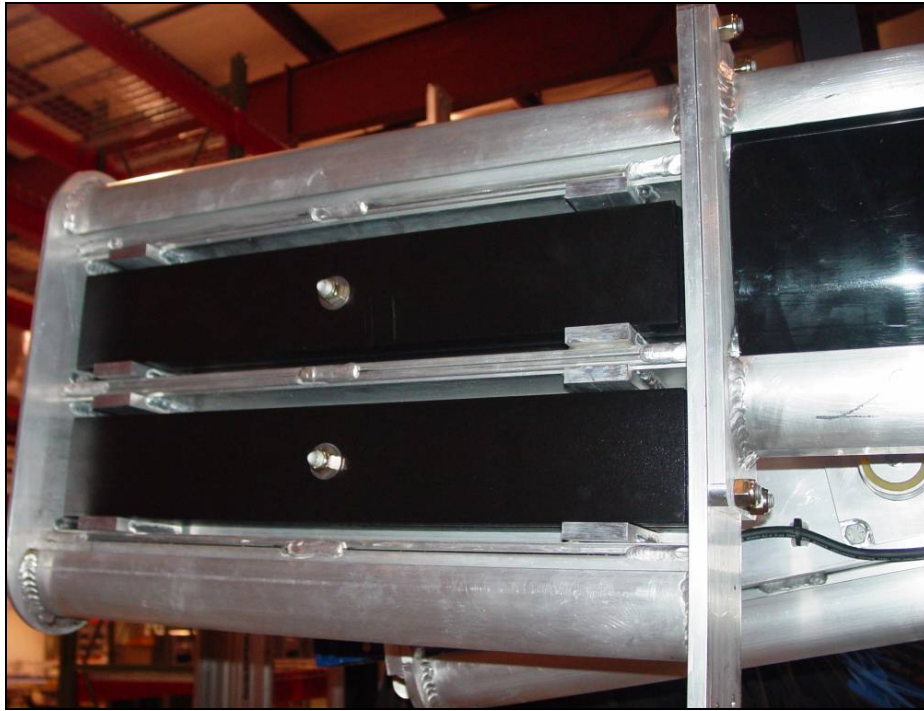


Pic #20: Counterweights



NOTE:

YOU MAY LEAVE THE TOP WHEEL BRUSH DOWN AND LOAD THE COUNTERWEIGHTS, ONE-AT-A-TIME USING A STEP LADDER



Pic #21: Counterweight Arm



STOP!

YOU MAY NEED TO ADD SOME ADDITIONAL COUNTERWEIGHTS AFTER THE TOP WHEEL HAS BEEN RUN. THE FOAM WILL ABSORB SOME WATER AFTER A BREAK-IN PERIOD, MAKING THE TOP WHEEL HEAVIER.

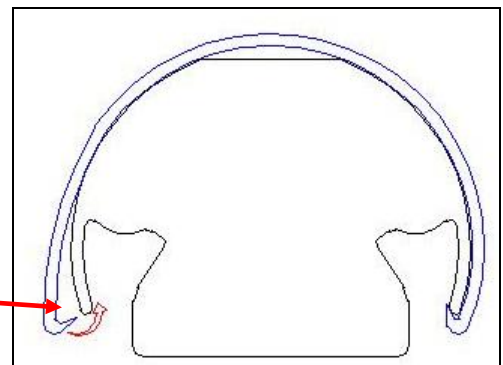
USE THE SPARE COUNTERWEIGHTS SUPPLIED WITH YOUR ACCELERATOR™ TOP WHEEL TO BALANCE THE TOP WHEEL.

- ☐ **After** you have secured the counterweights, raise and lower the top wheel manually and confirm that the wheel is **PROPERLY BALANCED**: Move the arms and make sure that the brush remains still at any position. Remove or add more weight if needed to “balance” the wheel.
- ☐ **Locate** the boxes containing the **COLOR SKINZ™** covers and install on each of the legs and arms (see below).



Pic #22 Color Skinz™

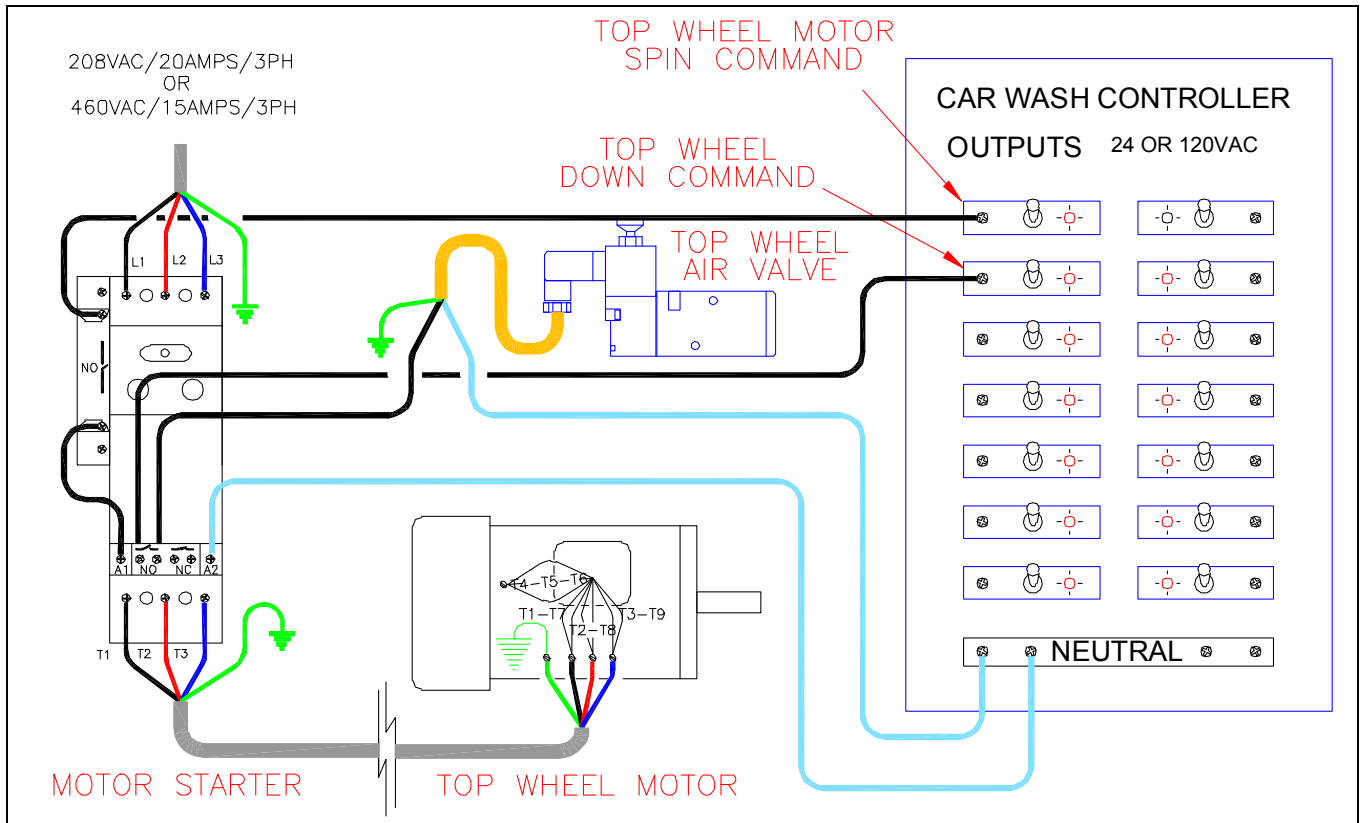
SELECT THE PROPER COLOR SKINZ™ COVER. SNAP ONE SIDE OF THE LIP, SLIDE THE COVER AROUND THE LEG AND FINALLY SNAP THE SECOND LIP PAST THE EXTRUSION EDGE (see Picture #23)



Pic #23 Color Skinz™

Electrical Installation :

- ☐ If you have purchased the **ELECTRIC DRIVE ACCELERATOR™ TOP WHEEL**, bring a cable from a separate starter unit to the **MOTOR CONNECTION BOX** (see Picture #24). Also, connect the motor cable to the **1.5 HP DRIVE MOTOR**. The motor has to be protected with an **OVERLOAD RELAY SET AT THE MOTOR RATED FULL LOAD CURRENT FOR THE PROPER VOLTAGE**.
- ☐ **Connect** the air valve to a output from the car wash controller in series with the **N.O. AUXILIARY CONTACTS** of the starter unit like shown on picture #24.



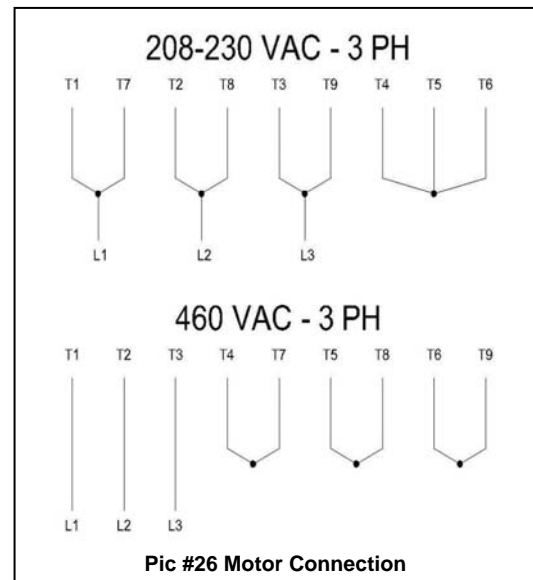
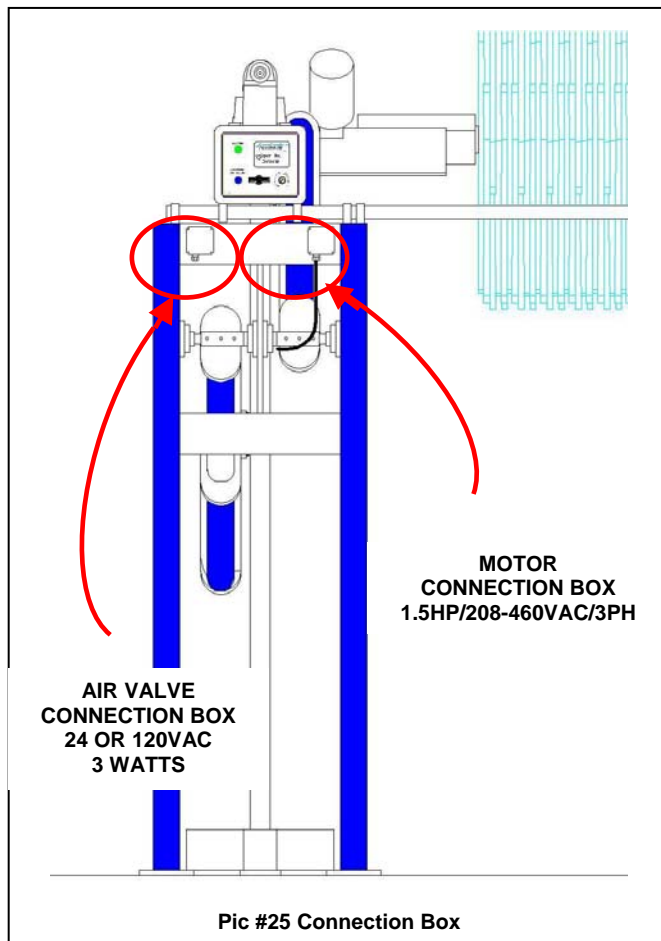
Pic #24 Motor Starter Connections



NOTE:
VERIFY THE VALVE VOLTAGE BEFORE CONNECTING
THE VALVE TO YOUR CAR WASH CONTROLLER



NOTE:
CONNECT THE AIR VALVE IN SERIES WITH
THE STARTER AUXILIARY CONTACTS
NOT DOING SO MAY LEAD TO SERIOUS DAMAGE TO
YOUR EQUIPMENT IN THE EVENT THE MOTOR IS NOT
RUNNING WHEN THE BRUSH IS DOWN



WARNING!

EACH MOTOR HAS TO BE PROTECTED WITH AN OVERLOAD RELAY

SET A THE MOTOR RATED FULL LOAD CURRENT

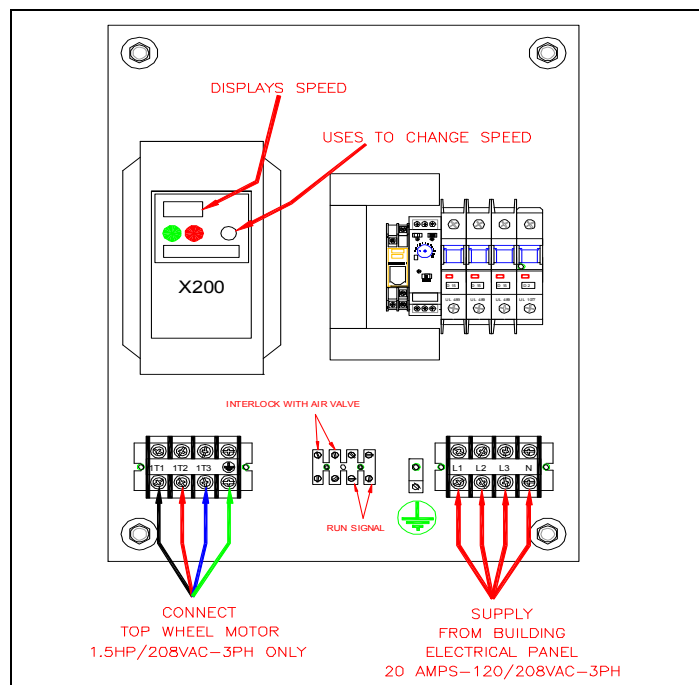
6.6 AMPS @ 208 VAC - 3PH

6.0 AMPS @ 230 VAC - 3PH

3.0 AMPS @ 460 VAC - 3PH

Optional Top Wheel Inverter (VFD):

- ☐ If you have purchased the optional **TOP WHEEL INVERTER** (see Picture #27 below) **YOU DO NOT NEED** a separate overload relay for motor protection: The inverter is set at the factory and provides proper protection to operate the top wheel motor without additional protection.

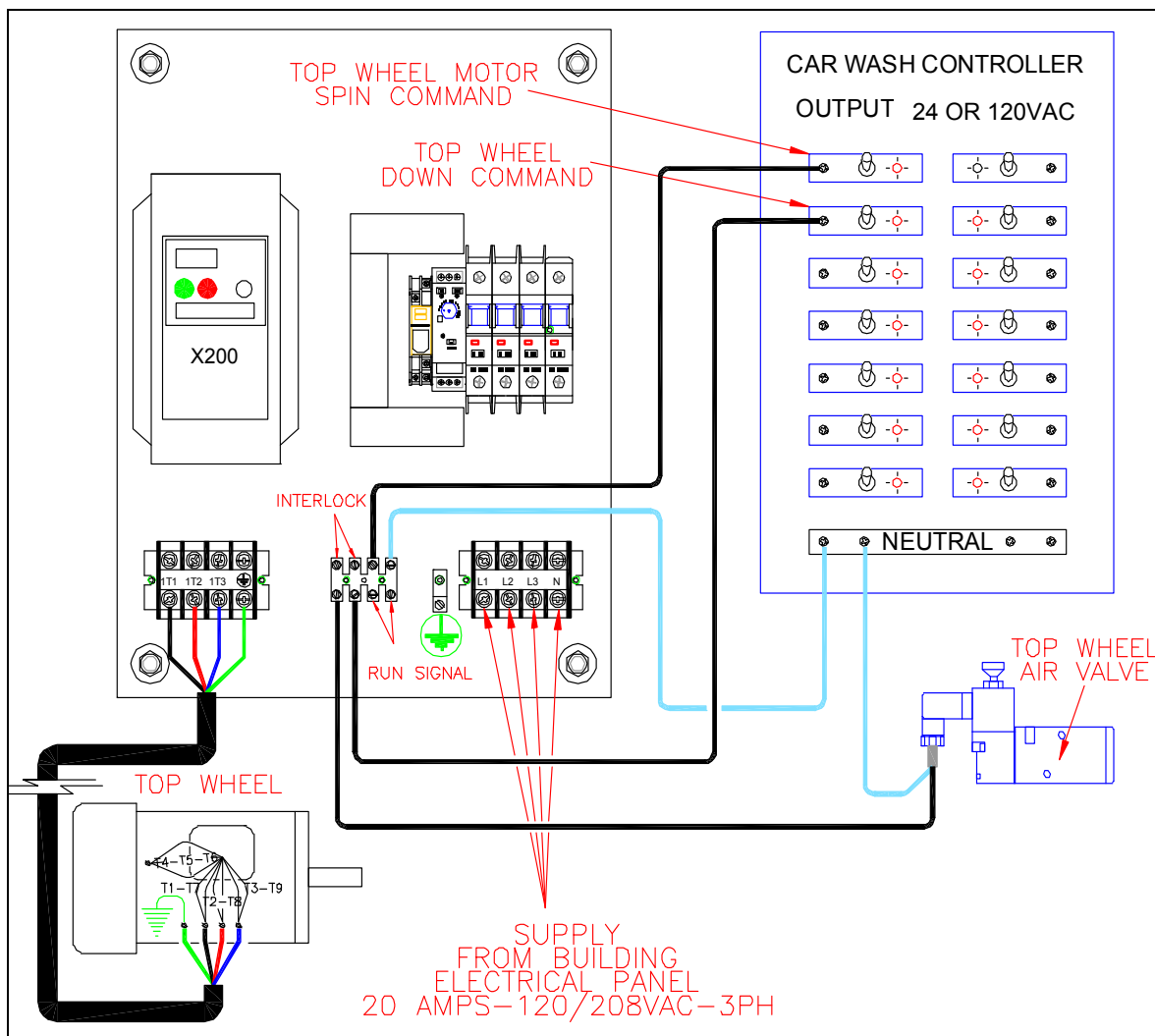


Pic #27: MTRSTRSNGVFD001



SUPPLY INVERTER BOX WITH 120-208 VAC/3 PHASE ONLY!

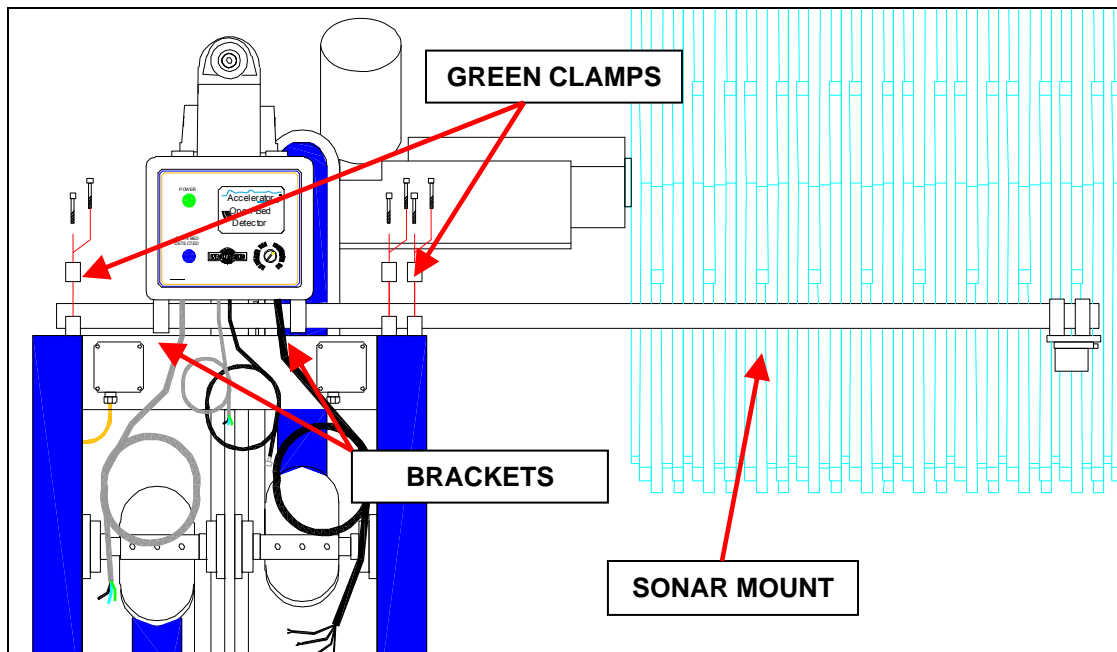
- ☐ **Connect** the motor terminals (**T1-T2-T3**) to the motor connection box (see Picture #28).
- ☐ **Connect** the **SPIN COMMAND** to **ONE OUTPUT FUNCTION (120VAC)** from your car wash controller (see Picture #28).
- ☐ **Finally**, connect the air valve to **ONE OUTPUT FUNCTION** thru the **INTERLOCK SAFETY CONTACTS** terminals (see Picture #28)



Pic #28: Inverter Connection Diagram

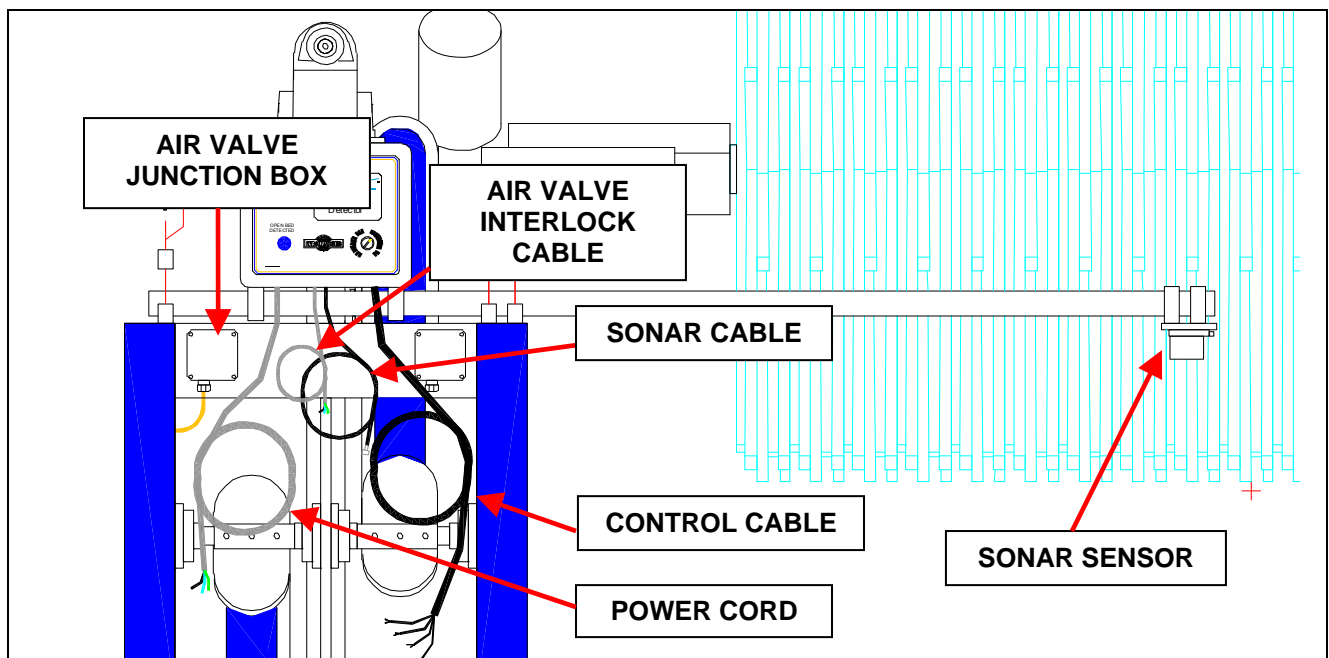
Optional Open Bed Detection System:

- ☐ **Secure** the sonar mount on top of the frame (see Picture #29) using the green clamps and then mount the **DETECTOR CONTROL BOX** on the brackets provided with your system.



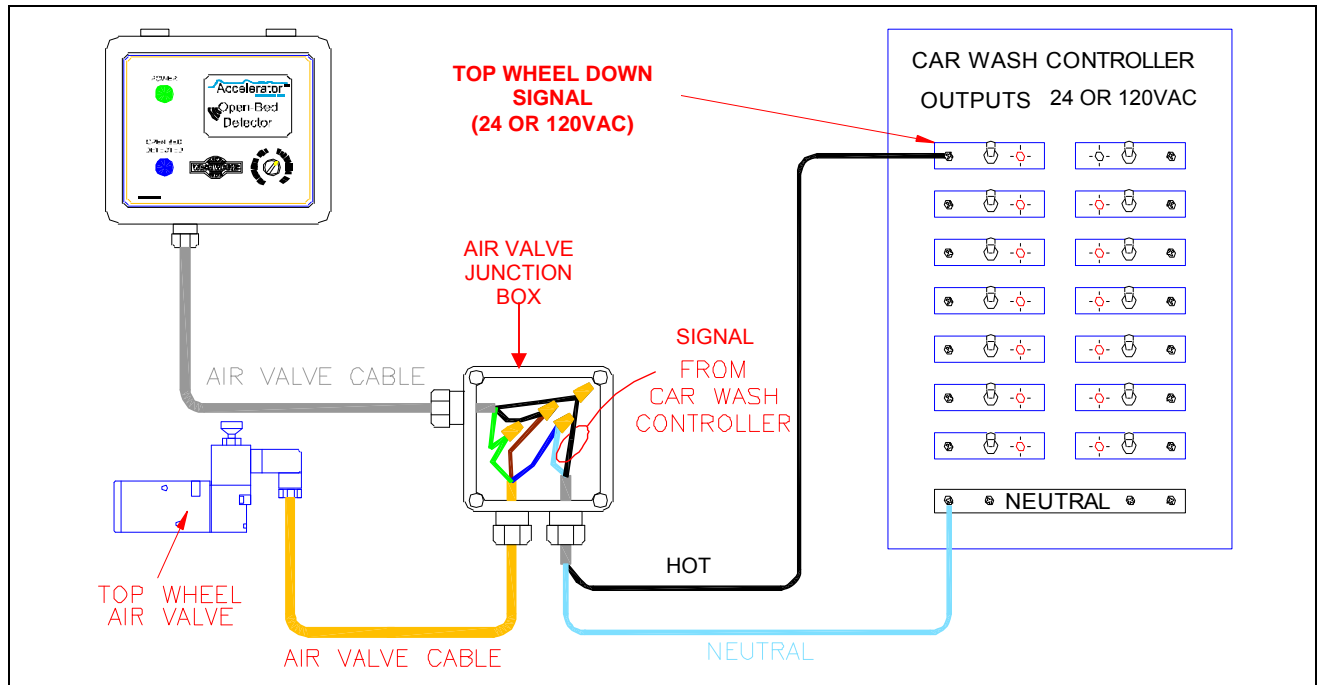
Pic #29: Open Bed Detector

- ☐ Your detector comes with four electrical cables connected to the box (see Picture below):
 - **A GREY POWER CORD:** To be connected to a **SEPARATE 120VAC- 15AMPS** power source.
 - **A (SHORT) GREY AIR VALVE CABLE:** To be connected **IN SERIES** with the air valve solenoid.
 - **A BLACK CABLE:** For the sonar sensor.
 - **AND FINALLY A BLACK CONTROL CABLE:** Connected to the car wash controller.



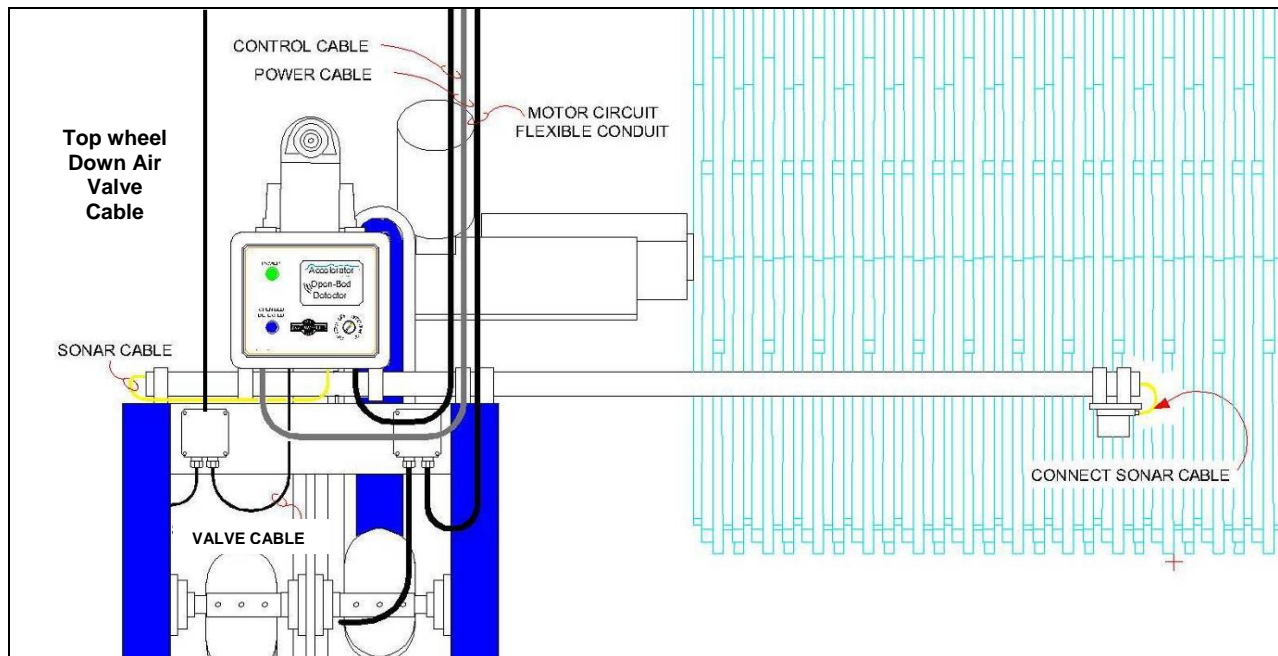
Pic #30: Open Bed Detector Cables

- ☐ **Connect** the power cable to a **120VAC-15AMPS SEPARATE ELECTRICAL CIRCUIT**.
- ☐ **Connect** the **AIR VALVE CABLE** to the air solenoid valve leads inside the **AIR VALVE JUNCTION BOX** (see Picture #31).



Pic #31: Air Valve Junction Box

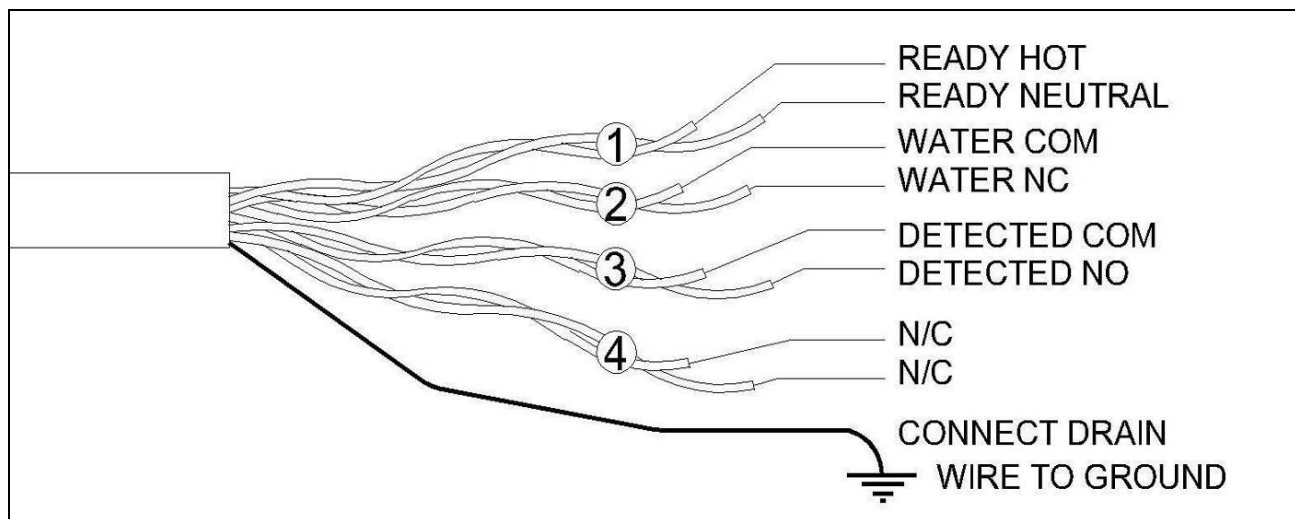
- ☐ **Pull** the **SONAR CABLE** through the sonar mount and connect the end of the cable (terminated with a M12 Micro DC connector) to the sonar sensor (see Picture 32).
- ☐



Pic #32: Open Bed Detector Cables Connected

☐ Finally, the control cable is currently provided with **FOUR PAIR OF WIRES** (see Picture #33):

- Connect the **READY SIGNAL WIRES** (pair #1) to **ONE FUNCTION OF THE CAR WASH CONTROLLER**. This signal is used to turn ON the detection process when a car is present under the sonar. The function has to be programmed to turn ON with the front of the vehicle and turn OFF with the rear of the vehicle.
- You may also want to connect the **WATER CONTROL WIRES** (pair #2) in series with the foamer dilution station. Your **OPEN BED DETECTOR** will then turn **OFF** the foamer every time a truck with an open bed is being detected.
- You may also use the **OPEN BED DETECTED** wires (wire pair #3) to send an input signal to your car wash controller if needed. The detector will close a set of contacts which are internally connected to the **"DETECTED"** pair of wires every time a truck with an open bed is detected.



Pic #33: Control Cable

Pneumatic Installation:

☐ Your **MCWW ACCELERATOR™ TOP WHEEL** requires a supply of compressed air capable of **3 SCFM @ 100 PSI**.

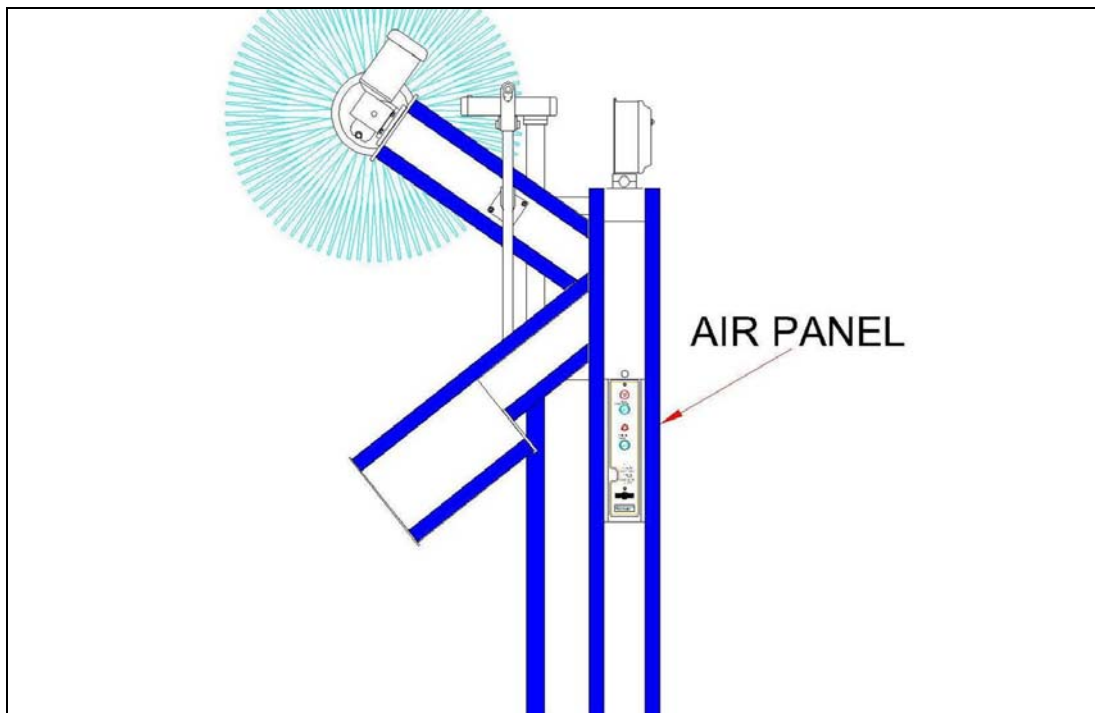


WARNING!

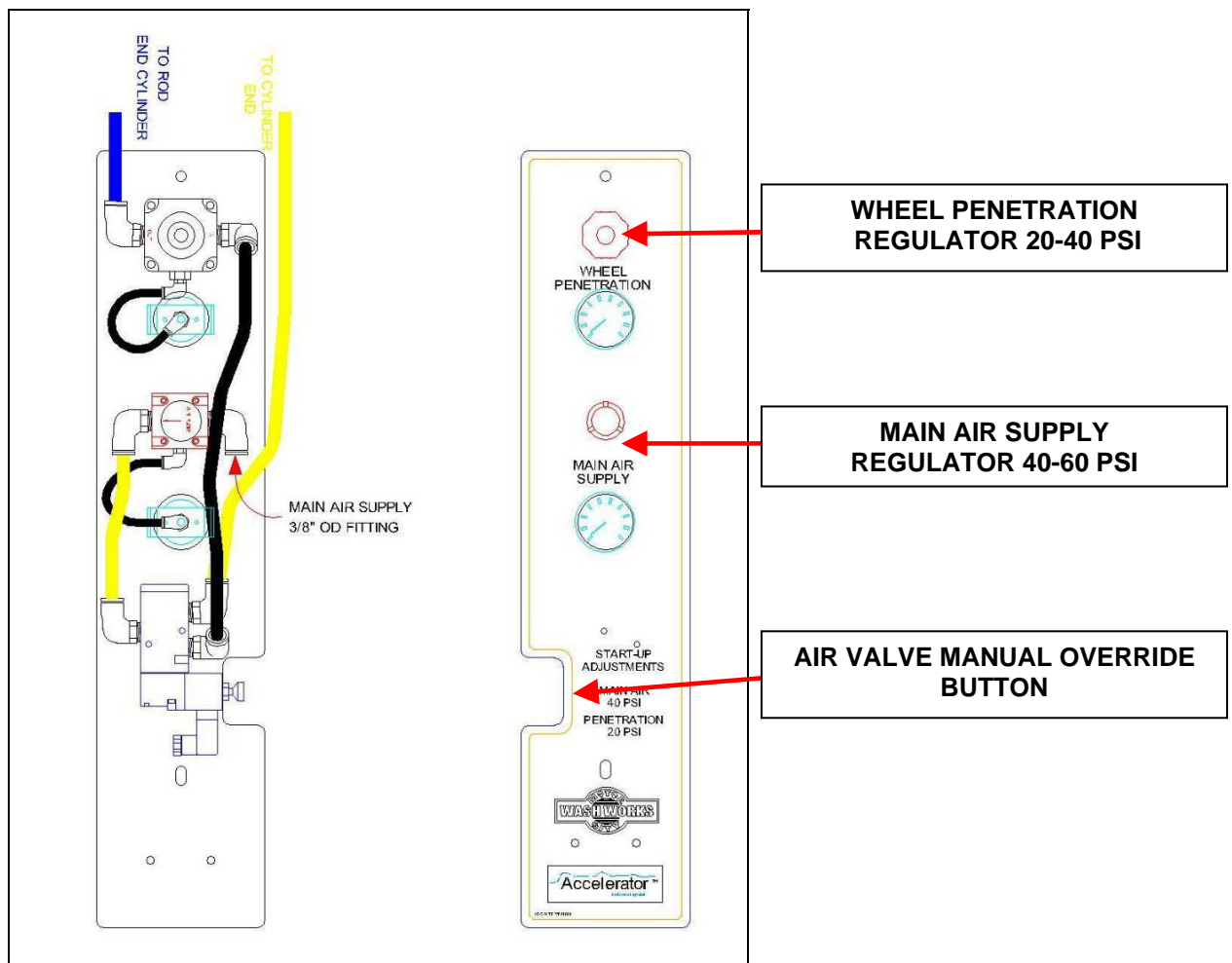
IT IS IMPERATIVE TO SUPPLY THE ACCELERATOR™ PNEUMATIC SYSTEM WITH "CLEAN DRY COMPRESSED AIR"

ANY AMOUNT OF MOISTURE, VAPORIZED OIL OR ANY OTHER IMPURITIES WITHIN THE MAIN AIR SUPPLY MAY AFFECT THE PERFORMANCE OF THE EQUIPMENT AND LEAD TO PREMATURE WEAR OR MAJOR DAMAGE TO THE ACCELERATOR™ DELIVERY SYSTEM OR ITS COMPONENTS

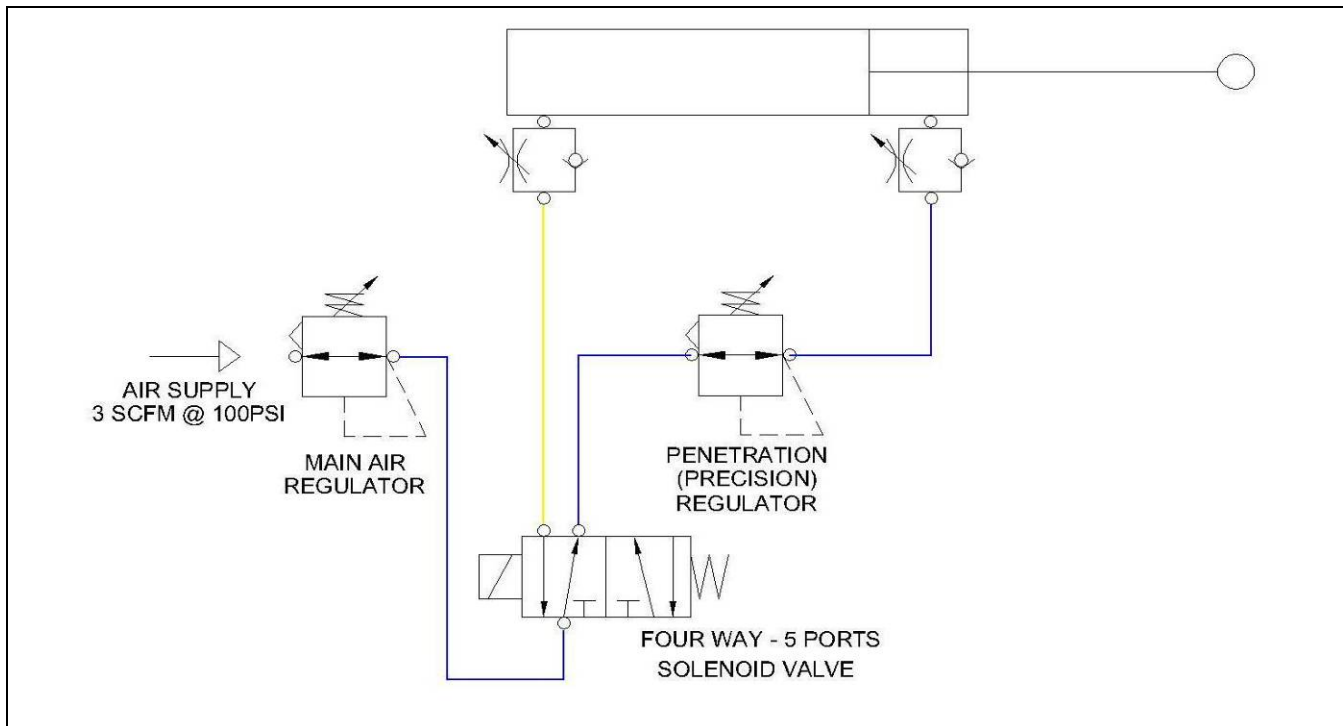
☐ Bring a **3/8" OD polyflow tubing air line** from the main compressed air supply to the **AIR PANEL MAIN AIR SUPPLY FITTING** (see Picture # 35).



Pic #34 Air Panel Location



Pic #35 Air Panel



Pic #36 Pneumatic Schematic

Water Feed Installation:

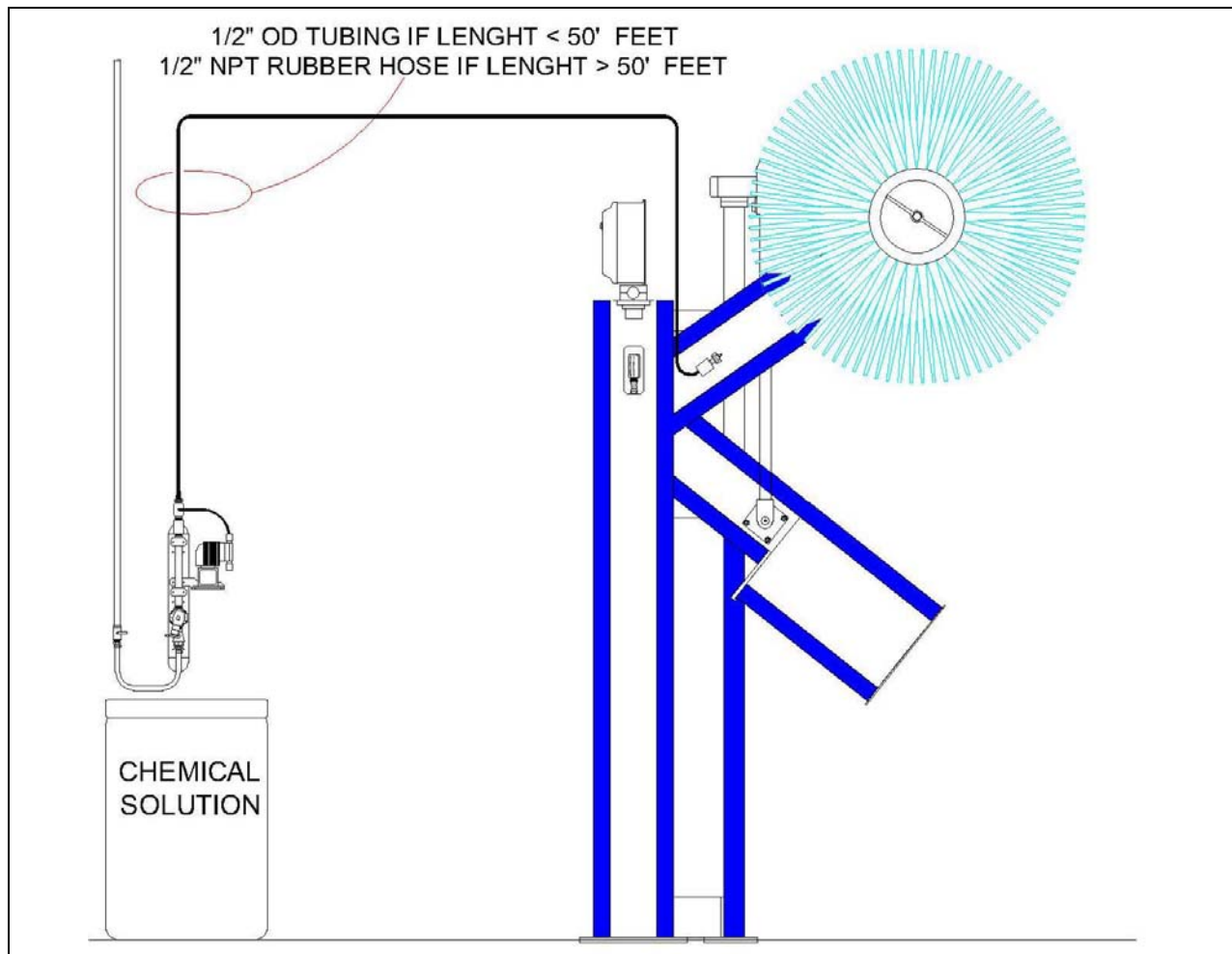
- ☐ Your **ACCELERATOR™ TOP WHEEL** requires a water supply of 2 to 3 GPM. Reclaim or fresh water can be used. Install a 1/2" OD Polyflow tubing from a dilution station to the **WATER MANIFOLD** (Picture # 37) located on the wheel arm.
- ☐



NOTE:
USE 1/2" NPT HOSE
IF THE LENGTH OF THE HOSE BETWEEN
THE DILUTIONSTATION AND YOUR
MCWW ACCELERATOR™ IS MORE THAN 50 FEET



NOTE: THE DILUTION STATION SHOWN IN
PICTURE #37 IS NOT INCLUDED WITH YOUR
ACCELERATOR™ TOP WHEEL UNIT
IT CAN BE PURCHASED SEPARATELY THROUGH
YOUR LOCAL MCWW DISTRIBUTOR
PART# APPLDLNSTN004



Pic #37: Water Feed

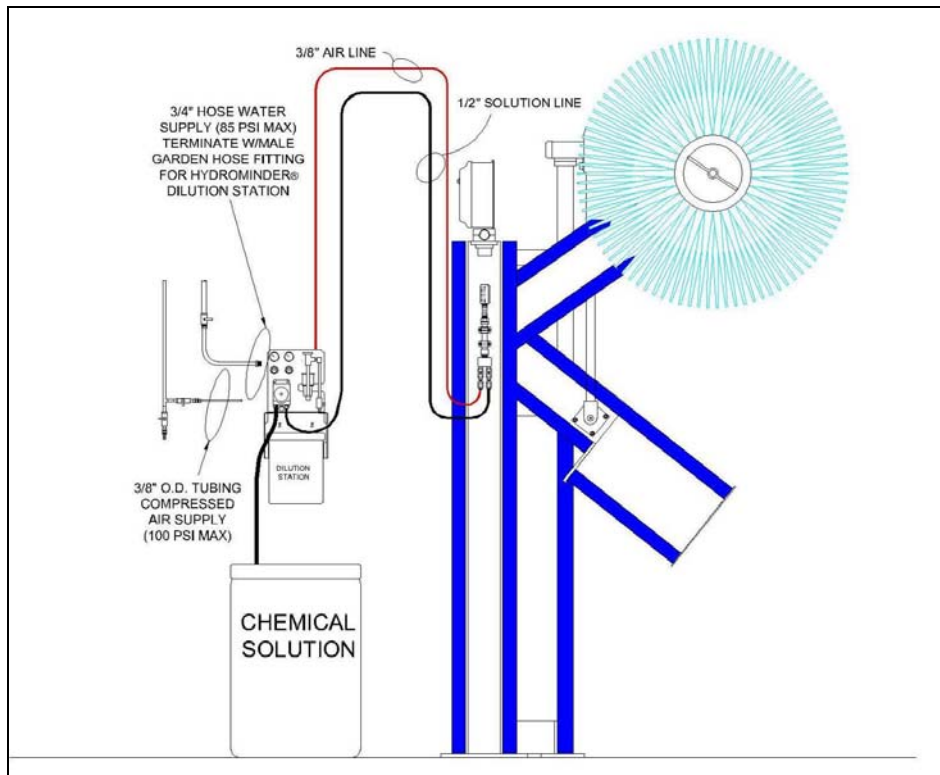
Foamer Installation:

- ☐ Bring **ONE 1/2" OD** and **ONE 3/8" OD** polyflow tubing from a dilution station to the **FOAMER STREAMER** and connect to the push-on fitting (see Picture # 38).



NOTE: THE DILUTION STATION SHOWN IN PICTURE #38 IS NOT INCLUDED WITH YOUR ACCELERATOR™ TOP WHEEL UNIT

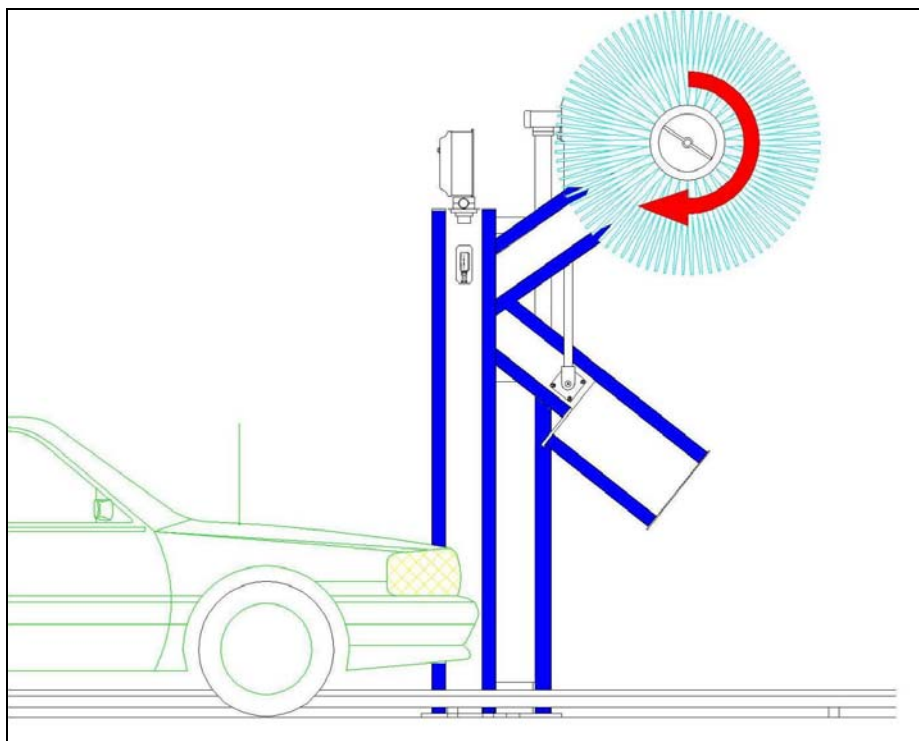
**IT CAN BE PURCHASED SEPARATELY THROUGH YOUR LOCAL MCWW DISTRIBUTOR
PART# FOAMDLUTNSTN0001**



Pic #38: Foamer Streamer

Start Up and Operation:

- ☐ Turn THE **"MOTOR SPIN" OUTPUT ON MANUALLY** from your car wash controller and confirm that the rotation of the wheel is **AGAINST THE VEHICLE DIRECTION** (see Picture below). If the direction is not the same as shown on the picture below, turn OFF the motor and the main switch and swap two line wires to reverse the motor direction.



Pic #39: Wheel Direction



NOTE:

IF YOUR ACCELERATOR™ TOP WHEEL MOTOR IS DRIVEN BY A STARTER, THE WHEEL SPEED IS PRESET AT 88 RPM

IF YOU ARE USING THE TOP WHEEL INVERTER, YOU MAY ADJUST THE SPEED OF THE WHEEL FROM 88 RPM TO 120 RPM BY TURNING THE INVERTER ADJUSTMENT KNOB TO THE DESIRED SPEED. THE INVERTER SCREEN DISPLAYS THE ACTUAL WHEEL SPEED (SEE PREVIOUS PICTURE #27)

- ☐ **With** the wheel still spinning, turn **ON** the “**TOP WHEEL DOWN**” **OUTPUT FUNCTION** from your car wash controller and confirm the wheel is coming down. If the wheel is not coming down or takes too long to come down, verify that the **FLOW CONTROL BANJO FITTING AT THE BASE OF THE CYLINDER** is fully open or at least **OPEN BY 5 FULL TURNS (COUNTER CLOCKWISE)**. You may also increase the **PENETRATION AIR PRESSURE** from **20 PSI** to **30 PSI** or **40 PSI**.
- ☐ **While** the wheel is still spinning, turn **OFF** the “**SPIN**” **OUTPUT FUNCTION** and confirm that the top wheel completely retracts up, away from the vehicle. Turn **OFF** the “**TOP WHEEL DOWN**” **OUTPUT FUNCTION**.
- ☐ Manually turn **ON** the **WATER DILUTION STATION** and confirm that the **SPRAY NOZZLES COVERS** the wheel. Turn **OFF** your dilution station. Consult your MCWW Dilution Station Installation manual for adjustment.
- ☐ **Run** a car through the wash and verify proper operation of your **MCWW ACCELERATOR TOP WHEEL**. Increase or decrease the “**PENETRATION**” air regulator for increase or decrease of wheel penetration on the car.
- ☐ **While** the wheel is down on a vehicle, measure with a clamp amp-meter the current through the motor. The current should never reach a value higher than 6.6 amps.

Maintenance:

DAILY:

- Check for hydraulic leaks, chaffed hoses electrical cable, etc.
- Visually inspect for any sign of wear.
- Move the arms manually and duplicate its regular motion and look for abnormalities: A loose fastener may allow some parts to move or rub and may create a dark “stain” running down the equipment.
- Inspect belts for wear and/cuts or cracks and replace as needed.



WARNING!

IMMEDIATELY REPLACE A BELT SHOWING ANY ABNORMALITY LIKE WEAR MARKS, CRACKS, RUST OR CUTS AS IT MAY HAVE BEEN CAUSED BY A MISADJUSTMENT OF THE SAFETY BELT (DOUBLE BELT) OR BY CHEMICALS USED IN YOUR WASH PROCESS WHICH WILL AFFECT THE INTEGRITY OF THE BELT CASING OVER A PERIOD OF TIME

- Start the day with a “TEST WASH” and check for proper operation.
- While you are watching the TEST WASH, check for clogged nozzles. If a nozzle is clogged, remove the nozzle body and clean the nozzle by inserting a small piece of wire (a small paper clip wire will be fine!) in the nozzle opening.
- Check also for proper coverage of the Streamer™ Foamer.
- Check for the overall performance of the equipment on the vehicle: Profiling, cleaning, etc..
- Wash down your equipment and the area around at the end of each day.

MONTHLY:

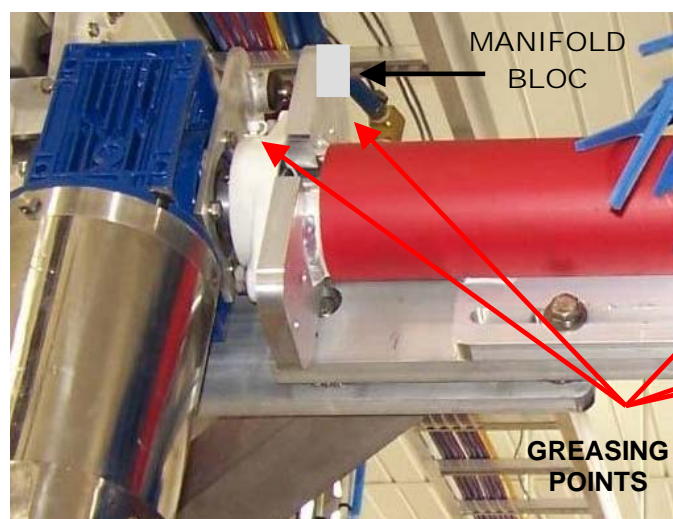
Each piece of MCWW equipment is assembled with the highest quality bearings and have been factory pre-lubricated, therefore, they do not require supplemental grease for the first month of operation.

Use a lithium-based NLGI #2 grease (ex: Exxon Mobil MOBILITH AW2).

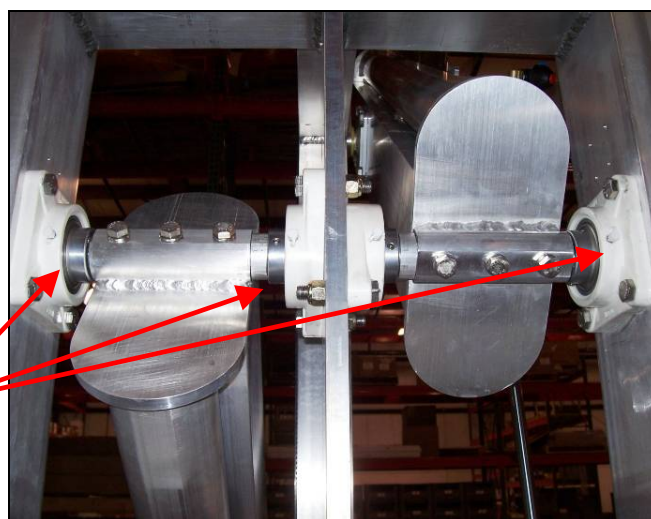


WARNING!
OVERLUBRICATION IS A MAJOR CAUSE OF BEARING FAILURES!
LUBRICATE CONSERVATIVELY!

- After the first month of operation, grease each bearing (see Picture #40 and 41).
- Wash your equipment with a solution made of a mild degreaser and water. Rinse thoroughly.
- Perform daily maintenance.



Pic #40 Top Wheel Axle Bearing



Pic #41 Top Wheel Arms Bearings

Warranty and Return Procedure:

Motor City Wash Works warrants this product to be free of defect in material and/or workmanship for a period of **one year** from the date of purchase. During the warranty period MCWW will at its discretion, at no charge to the customer, repair or replace this product if found defective, with a new or refurbished unit, but not to include costs of removal or installation. Any product returned to MCWW for warranty has to have a **Return Material Authorization Number**. All shipping costs to MCWW are assumed by the customer. This is only a summary of the **MCWW Limited Warranty**. Please, communicate with MCWW for our complete warranty.

Prior to returning any product to MCWW, the customer must call in for a **Return Material Authorization Number** and a copy of our **Return Material Authorization Form** must be completed. The **RMA** number must be written clearly on the outside of the shipping package and a copy of the form must be included in the package.