



# TRUCK DETECTOR INSTALLATION MANUAL

Part # 7TOPWSNRASY0011  
FOR ACCELERATOR TOP WHEEL

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## Equipment Utilities

<b>ELECTRICAL</b>	<b>110 VAC, 1 PH, 1 AMP OR 240 VAC, 1 PH, 0.5 AMP</b>	<b>POWER: 110-240 VAC, 110W MOTORS: N/A</b>
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## Equipment Specifications and Features

- Convenient 110 to 240 VAC Single Phase “universal” voltage Supply Minimize Installation Cost.
- Compact Design: mount directly on the top wheel.
- Detect truck open bed as well as front hood higher than 40” off the ground.
- Allow for safe wash of Pickup trucks and full size van.

## Suggested Installation Tools and Materials

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Allen Wrenches | <input type="checkbox"/> Plastic Wire Ties |
| <input type="checkbox"/> 6 FT Step Ladder          | <input type="checkbox"/> Electricien?      |

## Notes and safety Symbols

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

**NOTES: PROVIDES FURTHER INFORMATION!**

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


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

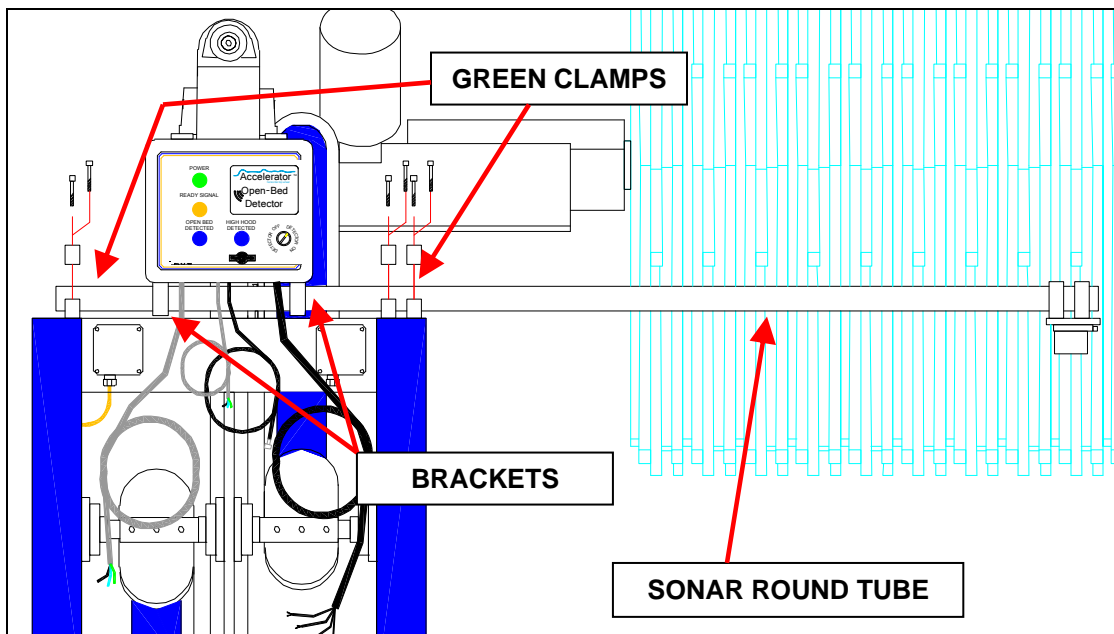
**Always follow all “Notes”, “Warning” and instructions. Not doing so may have serious consequences on the overall performance of the washing equipment and/or the safety of the people working on the equipment!**

Your **TRUCK DETECTOR SYSTEM** allows for the top wheel to safely wash pick-up trucks and full size van. The sensing systems detect trucks open bed and retract the brush, preventing it from going down the open box. It is so smart that it will even detect the difference between an open box and a tonneau cover!

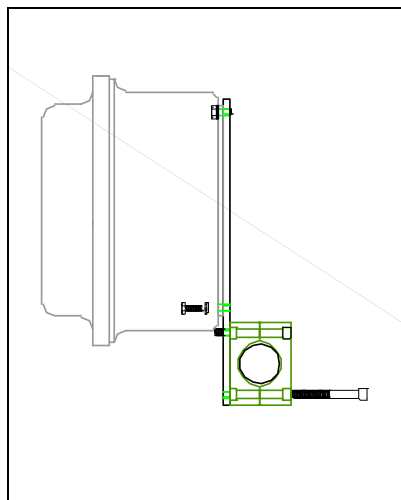
A second feature exclusives to the **TRUCK DETECTOR SYSTEM** is that it will sense if the vehicle coming into the top wheel has a front end higher than 40" and gently reposition the top wheel about 18 inches higher than its normal resting position, allowing the wheel to smoothly transitioned from the front grill area to the hood top surface without danger of being "stuck" on the front end of the vehicle. This action performed by the top wheel is provided by a "3 POSITION" cylinder mounted on the top wheel arm and the remarkable sonar sensing system embedded in your **TRUCK DETECTOR SYSTEM**.

## Truck Detection Installation:

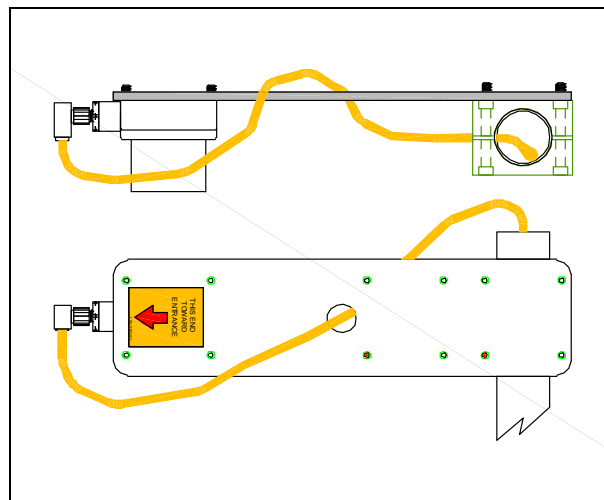
-  **Open** all boxes and crates and verify that you have all the required components as well as all your installation material.
- Secure** the round tube on top of the Top Wheel (see Picture #1) using the green clamps and then mount the **DETECTOR CONTROL BOX** to the round tube like shown Picture 1 and 2 below. Finally, mount the **SONAR MOUNT ASSEMBLY** at the end of the round tube, with the arrow pointing toward the entrance (see Picture #3).



Pic #1: Open Bed Detector



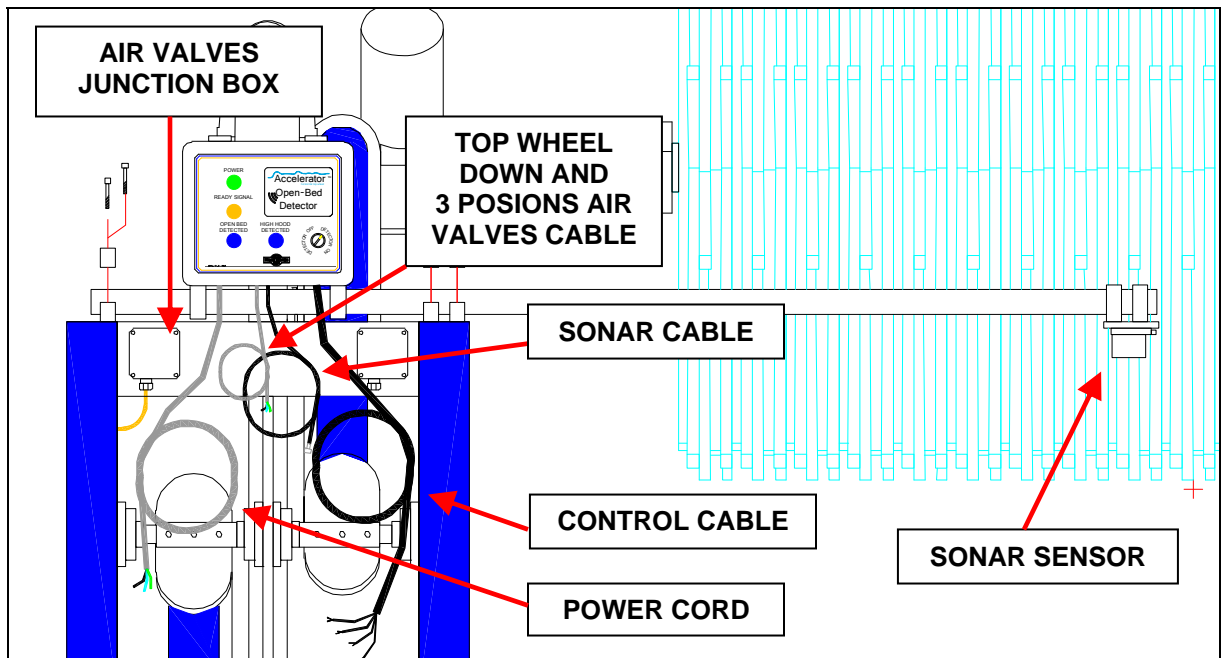
Pic #2: Control Box




Pic #3: Sonar Mount Assembly with Sonar Cable

Your detector comes with four electrical cables penetrating the box (see Picture below):

- **3 CONDUCTORS 14 AWG POWER CORD:** To be connected to a **SEPARATE** power source of **110 VOLT or 240 VOLTS AC (max)**.
- **8 CONDUCTORS (4 PAIRS) 18 AWG CONTROL CABLE:** Connected to the car wash controller.
- **SHORT 5 CONDUCTORS 18 AWG AIR VALVE CABLE:** Two conductors to be connected **IN SERIES** with the **TOP WHEEL DOWN** air valve solenoid and 2 conductors connected **IN PARALLELE** to the 3 position cylinder solenoid valve (if your top wheel is equipped with the 3 POSITION cylinder assembly).
- **YELLOW SENSOR CABLE** terminated with a Micro DC connector: For the sonar unit.



Pic #4: Open Bed Detector Cables



**WARNING!**  
**THE MATERIAL REQUIRED FOR CONNECTING  
THE DETECTOR SYSTEM IS THE CUSTOMER'S  
RESPONSIBILITY!**  
**ALL WORK HAS TO COMPLY WITH  
LOCAL AND NATIONAL CODES!**

### Power Cable:

- Pull** the power cable into the mechanical room. Secure cable properly. Pull an electrical run (cable or conduit) from the car wash lighting panel to the cable end (if the cable isn't long enough to reach the panel). Terminate the wires in a junction box and connect the supply to a 120 or 220 VAC, 1 phase, 10 or 15 AMPS breaker.

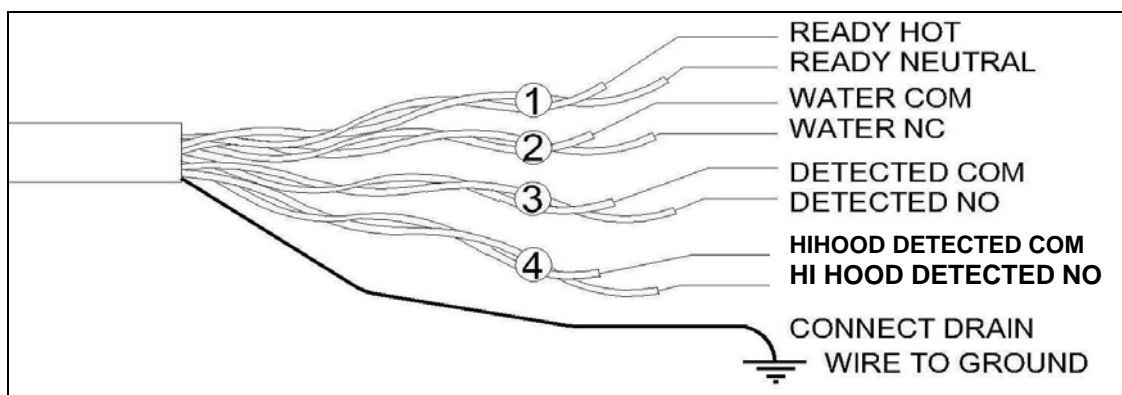


**THE DETECTOR REQUIRES A SEPARATE  
15AMPS (MAX), 120 or 220VAC, 1PH  
ELECTRICAL CIRCUIT**

**TO AVOID EQUIPMENT MALFUNCTION  
DO NOT CONNECT ANY OTHER ELECTRICAL DEVICE  
ON THE SAME CIRCUIT FEEDING THE DETECTOR**

## Control Cable:

- **Pull** the control cable into the mechanical room. Secure cable properly. Pull an electrical run (cable or conduit) from the car wash **CAR WASH CONTROLLER** to the cable end (if the cable isn't long enough to reach the controller). Terminate the wires in a junction box and connect the wires according to instruction below:
  - 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. The signal can be any voltage from **24-240 VOLTS AC/DC**.
  - You may also want to connect the **WATER CONTROL WIRES** (pair #2) in series with the top wheel foamer dilution station. Your **TRUCK DETECTOR** will then turn **OFF** the foamer above an open bed being detected.
  - You may use the **TRUCK 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 every time a truck with an open bed is detected. This signal may allow your car wash controller to "FLAG" the open bed and turn off dryer producers or another top wheel for example.
  - Finally, you may use the **HIGH HOOD DETECTED** wires (wire pair #4) to send an input signal to your car wash controller if needed. The detector will close a set of contacts every time a truck with a hood higher than 40" is detected. This signal may allow your car wash controller to "FLAG" this vehicle and reposition the next top wheel for example.



Pic #5: Control Cable

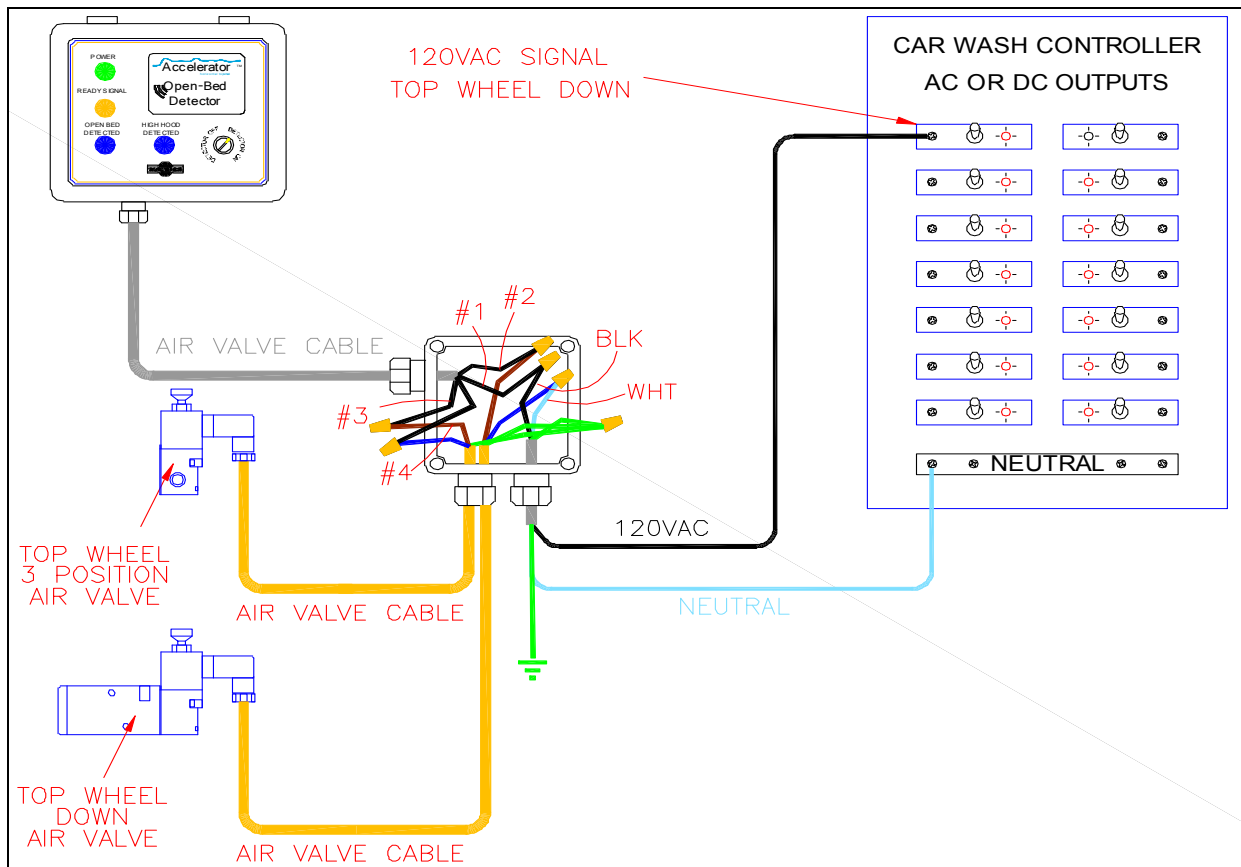
## Air Valves Cable:

□ Connect the **AIR VALVE CABLE** to top wheel down and 3 position valve leads inside the **AIR VALVE JUNCTION BOX** (see Picture #6).

- Connect wire #1 and #2 **IN SERIES** with the wires coming from the car wash controller **TOP WHEEL DOWN** output and then connect to the top wheel down valve. The wires #1 and 2 are connected to a **NORMALLY CLOSED RELAY CONTACTS** and will open the circuit to the top wheel down valve when an open bed is detected. Do not connect the cable ground wire to the top wheel down valve cable ground! The top wheel down valve cable ground wire should be connected with the ground wire coming from the top wheel down wash controller output.
- Connect wire #3 and #4 **IN PARALLEL** directly the 3 position air solenoid valve. Connect the ground wire from the cable to the 3 position valve **ONLY!** The pair number four is used only if your top wheel is equipped with a **3 POSITION CYLINDER ASSEMBLY**. The 3 position cylinder assembly will “raise” the top wheel to a higher position when a truck’s hood entering the top wheel envelope is higher than 40” from finish floor. This feature allow the top wheel to transition safely from the front of the truck to the hood w/o risking being stuck in the front of the truck, avoiding damages to vehicle and equipment. The height to the detected hood is fixed at 40” (+/- 1”) by the sonar location. Therefore, no adjustment required.



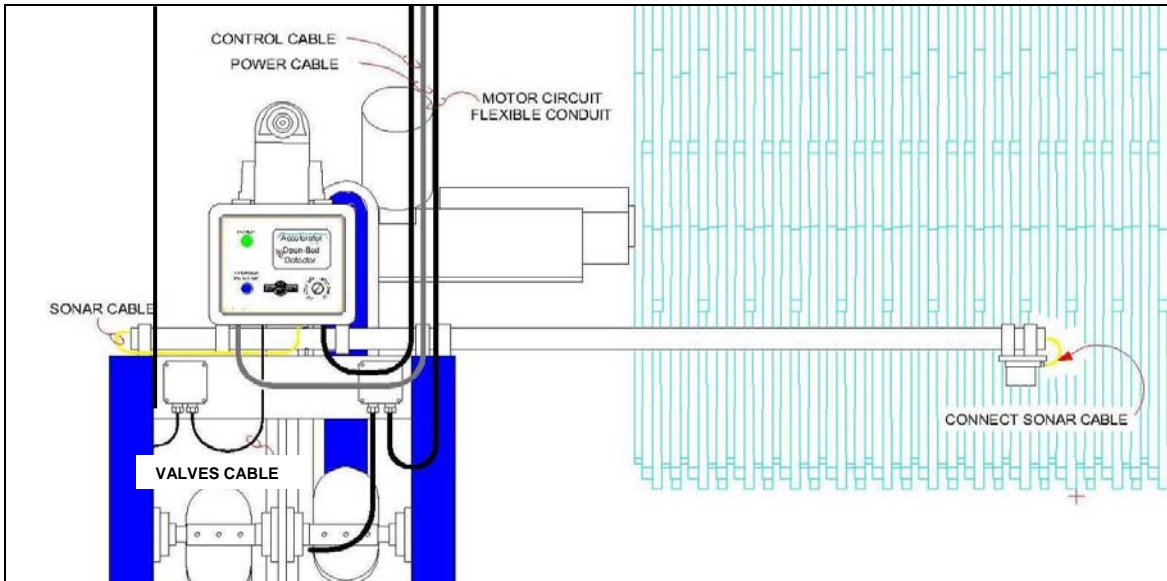
**WARNING!**  
**THE VOLTAGE FROM THE TRUCK DETECTOR TO THE 3 POSITION VALVE IS DICTATED BY THE SONAR READY SIGNAL VOLTAGE! VERIFY THE THAT THE VOLTAGE OF THE READY SIGNAL IS COMPATIBLE WITH THE 3 POSITION SOLENOID AIR VALVE!**



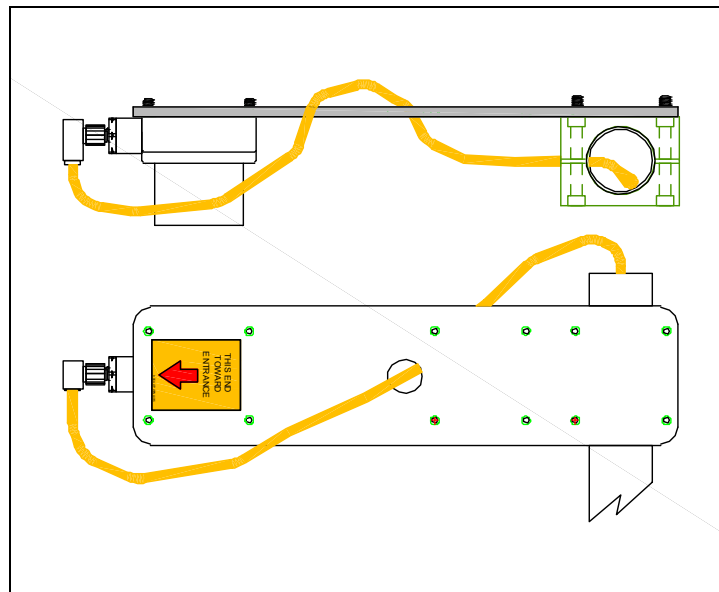
Pic #6: Air Valve Junction Box

## Sonar Cable:

- Pull the **SONAR CABLE** through the round tube and connect the end of the cable (terminated with a M12 Micro DC connector) to the sonar sensor (see Picture 8).



Pic #7: Open Bed Detector Cables Connected




Pic #8: Sonar Cable

# Pneumatic Installation:

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

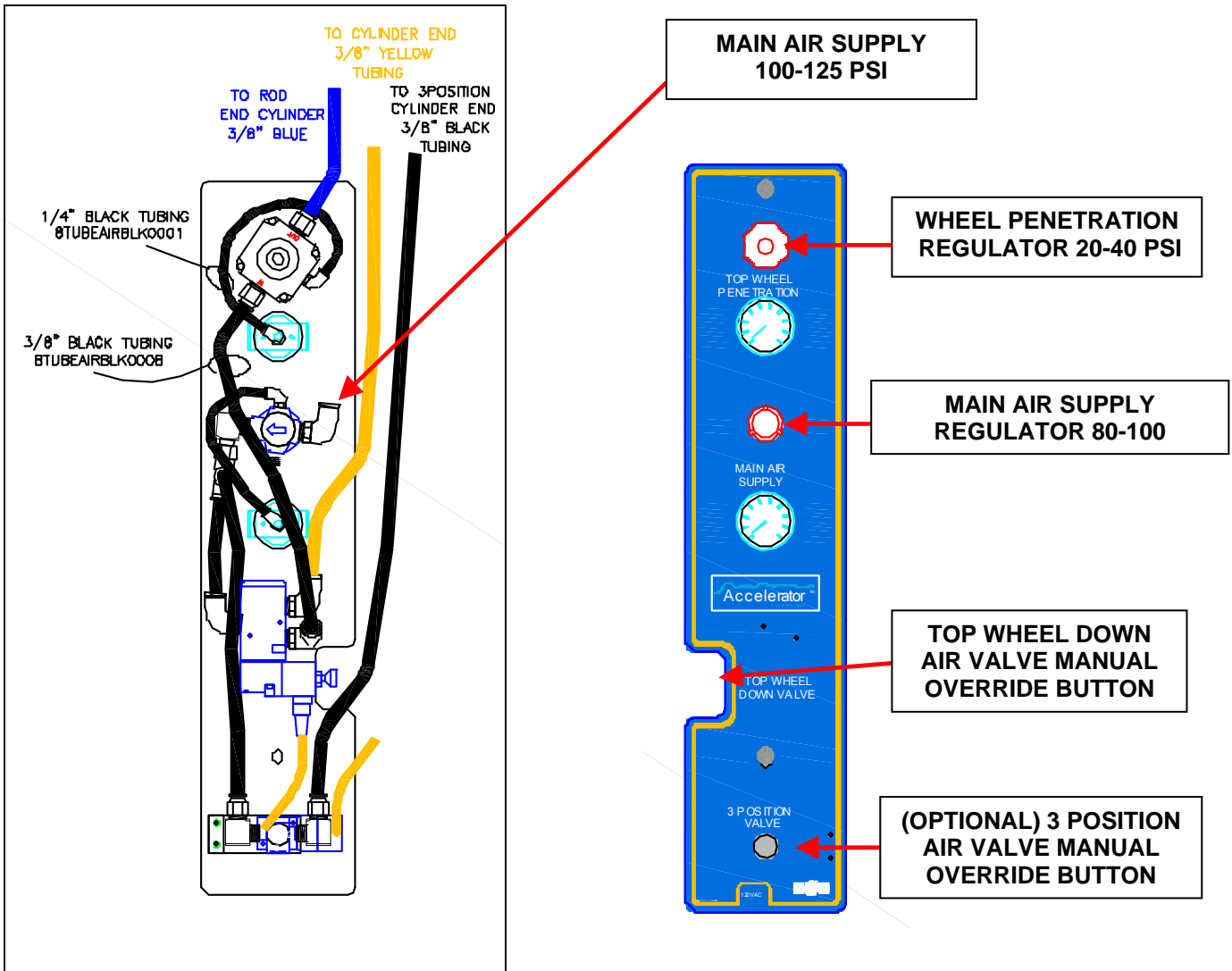
**WARNING!**

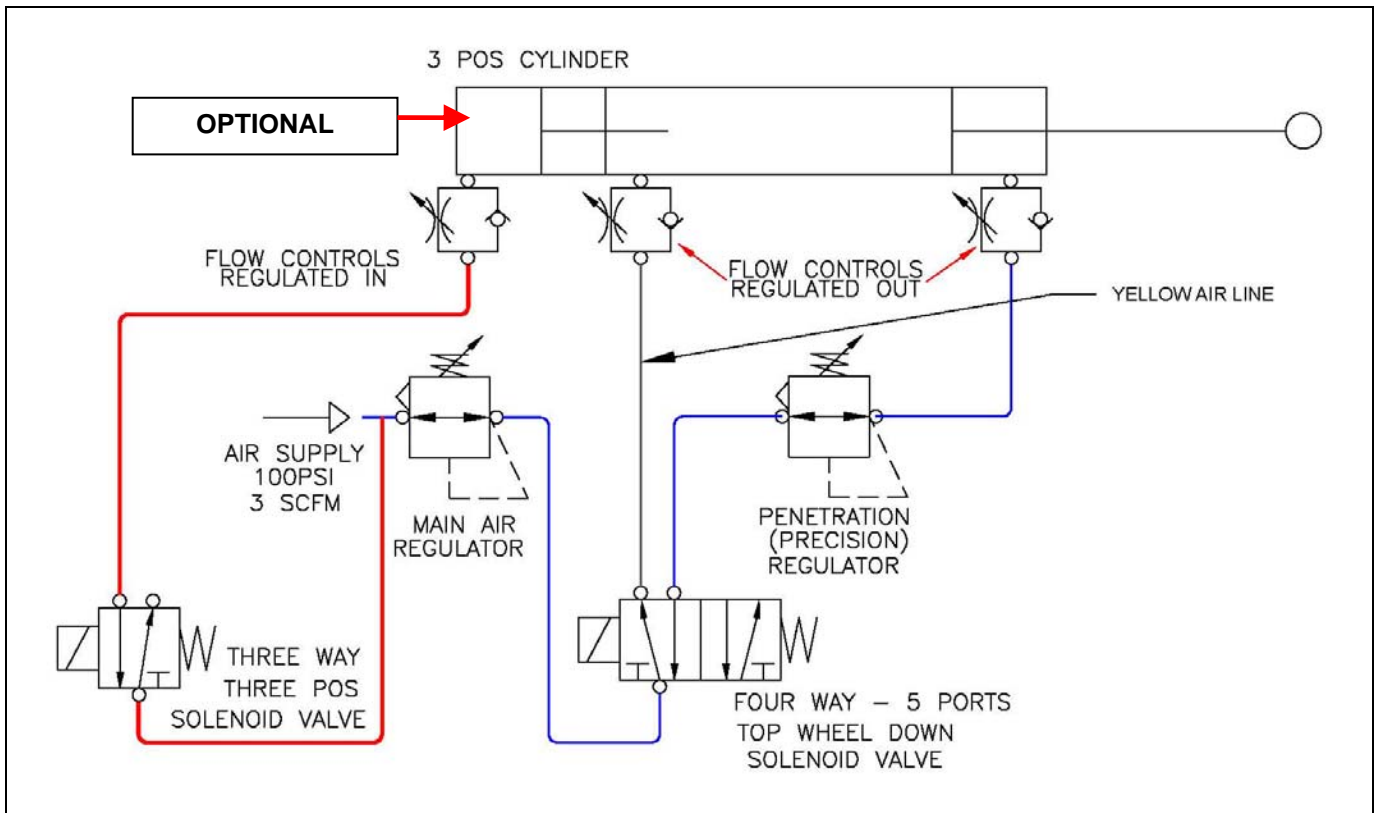
**IT IS IMPERATIVE TO SUPPLY THE ACCELERATOR™ PNEUMATIC SYSTEM WITH CLEAN, DRY, COMPRESSED AIR.**



**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.**

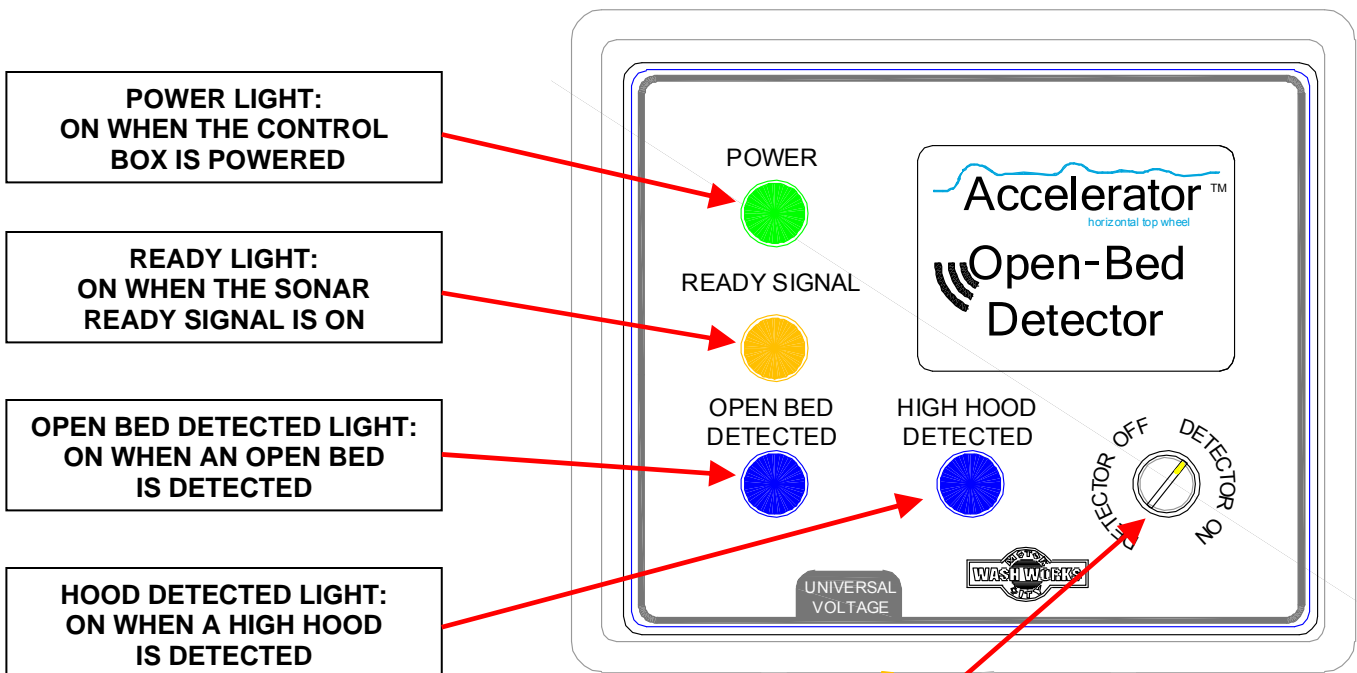
- Bring a 3/8" OD polyflow tubing air line from the main compressed air supply to the AIR PANEL MAIN AIR SUPPLY FITTING (see Picture # 9).





Pic #10 Top Wheel w/3 Position Cylinder Pneumatic Schematic

**Operation:**

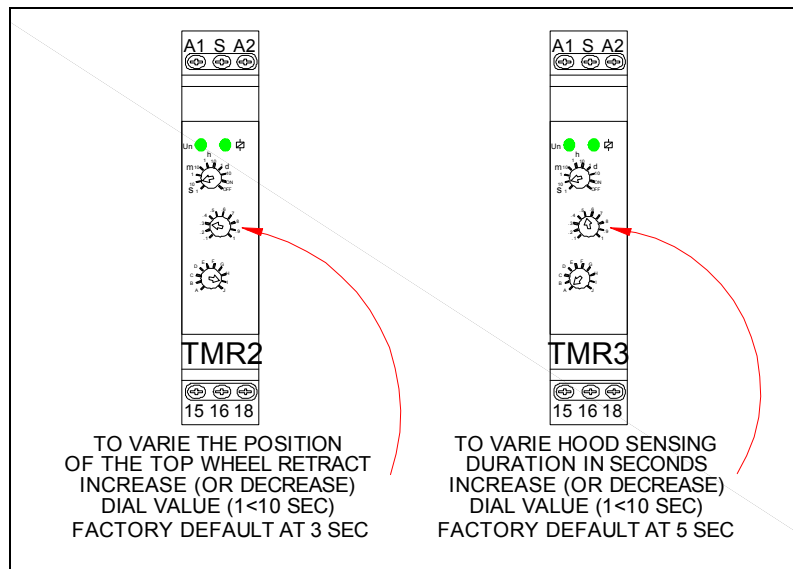


Pic #11 Control Panel

**HOOD DETECTED LIGHT:  
ON WHEN A HIGH HOOD  
IS DETECTED**



- 1- When the ready signal is ON, the sonar sensor turns ON and starts to map the vehicle underneath. If the hood of the vehicle is taller than 40 inches, the truck detector will then turn ON the 3 POSITION cylinder solenoid valve output, raising the top wheel to a higher starting position. The truck detector will monitor the hood for only a short period of time. The time period is adjusted at a factory default of 5 seconds. To vary the time period, rotate the middle dial of timer TMR3 in the control box (see picture below). Increasing the time period will allow the sonar to map a longer portion of the vehicle. If the time period is too long, the sonar may sense the roof of a small car and raise the top wheel. Reduce the time value therefore.



Pic #12 Timer TMR2 and TMR3 Adjustment

- 2- The sonar will then keep on mapping the vehicle, looking for truck open bed. If the vehicle underneath has an open bed, the detector will then turn ON (a few seconds later) its open bed detected relay output, opening its contacts and disabling the top wheel down air solenoid valve. The relay will remain ON for the duration of the vehicle until the sonar ready signal is turned OFF. To vary the time period between the moments the open bed is detected to the time where the top wheel retract, use TMR2. Increasing the value of the middle dial will slow the reaction time of the top wheel retract. If the top wheel retracts too soon and rises short of the truck cab after it has detected an open bed: increase the time. If the top wheel doesn't retract soon enough and come down in the bed of an open bed vehicle before retract: lower the time value.

## Warranty and Return Procedure:

**Motor City Wash Works** warrant this product to be free of defect in material and/or workmanship for a period of **one year** from the date of the purchase by the customer from MCWW. During the warranty period MCWW will at its discretion, at no charge to the customer, repair or replace this product if found defectives, 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 cost to MCWW is assumed by the customer. This is only a summary of **MCWW Limited Warranty**. Please, communicate with MCWW for our complete warranty.

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

