# CROSS-OVER™ INSTALLATION MANUAL

Part # WRAPCHYD[ . . . . . ]03
WRAPCELE[ . . . . . ]03
FOR COTTON CLOTH™, STAR FOAM or C-CHANNEL FOAM BRUSHES

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<td>Aluminum Structure with Color Skinz™ Snap-On UHMW Colored Covers… Great Appeal!</td>
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<td>Choice of Cleaning Media between Cotton Cloth™, C-Channel and Star Foam</td>
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## Equipment Utilities

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<tr>
<th>HYDRAULIC DRIVE WRAPCHYD[ . . . . . ]03</th>
<th>ELECTRIC DRIVE WRAPCELE[ . . . . . ]03</th>
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<tr>
<td><strong>ELECTRICAL</strong></td>
<td><strong>POWER:</strong> 120 VAC, 1 PH, 12 W VALVE UL® CERTIFIED</td>
</tr>
<tr>
<td></td>
<td><strong>MOTORS:</strong> 3 HP (2 X 1.5 HP)</td>
</tr>
<tr>
<td></td>
<td>13.2-6 AMP @ 208-460 VAC, 3 PH</td>
</tr>
<tr>
<td></td>
<td>UL® RECOGNIZED, CSA CERTIFIED, CE MARK, IEC IP 55</td>
</tr>
<tr>
<td><strong>HYDRAULIC</strong></td>
<td><strong>N/A</strong></td>
</tr>
<tr>
<td>6 GPM @ 1000 PSI</td>
<td></td>
</tr>
<tr>
<td><strong>PNEUMATICS</strong></td>
<td><strong>2 SCFM @ 100 PSI</strong></td>
</tr>
<tr>
<td>(INCLUDING OPTIONAL RETRACT PANEL)</td>
<td>(INCLUDING OPTIONAL RETRACT PANEL)</td>
</tr>
<tr>
<td><strong>WATER</strong></td>
<td><strong>RECLAIMED OR FRESH:</strong> 4 GPM @ 40 PSI</td>
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## Equipment Specifications and Features

- Convenient 115VAC Single Phase Supply Minimizes Installation Cost
- Compact Design: Utilizes only 14'-0" of Tunnel Space
- Only 10'-00" Overall Height
- Vehicle Clearance of More than 91"
- Supplied Standard with MCWW Foam Streamers™ for Added Lubrication and Cleaning
- Great Cleaning up to 180 CPH
- Aluminum Structure with Color Skinz™ Snap-On UHMW Colored Covers… Great Appeal!
- Electric or Hydraulic Drive Available
- Choice of Cleaning Media between Cotton Cloth™, C-Channel and Star Foam
Suggested Installation Tools and Materials

- Hammer Drill with 5/8" Drill bit
- Sledge Hammer
- Set of Standard Combo Wrenches
- Measuring Tape
- Standard Screw Drivers
- 3/8" OD Polyflow Tubing
- 2000 LBS Fork Lift Truck
- (8) Wedge Anchor Bolts 5/8" x 6"
- Set of Standard Ratchet and Sockets
- Torpedo Level
- Safety Goggles
- Reusable Hydraulic Fittings
- 1/2" Hydraulic Hose
- 1000 LBS Proof L-Clamp

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 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 Instructions for Cross-Over™ Wrap Around

Open all boxes and crates and verify that you have all the required components and your installation materials.

Locate where the wrap around will be installed and verify that the area is sufficiently large for your MCWW CROSS-OVER™ WORKING ENVELOPE and DIMENSIONS (see Picture #1 though #5).
Pic #1 Cross-Over™ with Cotton Cloth™ Overall Envelope

Pic #2 Cross-Over™ with Foam Overall Envelope
Pic #3 Cross-Over™ with Cotton Cloth™ Overall Dimensions

10' [120”]  

14' [168”]  

9’-9” (117”)

15’-5” [185”]

19’ [228”]

Pic #4 Cross-Over™ and Accelerator™ Top Wheel Overall Envelope
Remove the boxes, the WRAP AROUND HUB ASSEMBLIES, and the TWO LEGS from the main pallet and bring to your working area. Using the fork lift, insert the forks on each side of the head assembly center beam UNDER THE TOP CROSS BEAM as shown in Picture #6. Remove some of the top covers and secure one of the forks with a LARGE L or C-CLAMP (see below).

Bring the head to the installation area. Raise the head assembly and SECURE THE TWO LEGS TO THE HEAD FRAME.

Position the BACK OF THE DRIVER’S SIDE LEG 45” AWAY FROM THE INSIDE EDGE OF THE INSIDE GUIDE RAIL (See Picture #7).
Snap a line on the entrance side of the base plate PERPENDICULAR to the conveyor direction as shown in Picture #8. Position the PASSENGER'S SIDE LEG BASE PLATE 29” FROM THE LINE.

Using FOUR 5/8”X6” WEDGE ANCHOR BOLTS secure the DRIVER'S SIDE LEG to the floor. Detach the CLAMP FROM THE FORK. Drop the forks slightly down to allow the passenger’s side leg to sit firmly on the floor and leave the fork lift in place as a safety precaution. LEVEL UP THE DRIVER'S SIDE

NOTE:
THE LEG GUSSET MUST BE ORIENTED INWARD
LEG as well as THE HEAD ASSEMBLY. Finally LEVEL THE PASSENGER’S SIDE LEG and secure to the floor.

LEVEL ALL DIRECTIONS

Remove the shipping straps from both arms. Locate the boxes containing the COLOR SKINZ™ covers and install on each leg, arm and frame cross beams.

Secure the PASSENGER’S SIDE CYLINDER AND SHOCK TO THE SECONDARY ARM as shown in picture #10.

STOP! DO NOT OVERTIGHTEN THE CYLINDER AND SHOCK FASTENERS TO THE CLEVISES. DOING SO MAY REDUCE THE MOVEMENT OF THE ARM
Remove the PASSENGER'S SIDE PRIMARY ARM POSITIVE STOP ASSEMBLY, FLIP AROUND AND SECURE TO THE CROSS BEAM as shown in Picture #11.

Star Foam Loading Instruction:

1. Bring the two HUB ASSEMBLIES to your working area and remove the two compression plates from the top of the hub (see Picture #13).

2. Open the washing material boxes and load in ONE 10” X 48”OD-1/4” BUN followed by TWO 8” X 48”OD-1/4” BUNS and another 10” X 48”OD-1/8” BUN onto the hub assembly (see Picture below). Next, load TWO 10” X 54”OD-1/8” BUNS, ONE 10” X 60”OD-1/4” BUN and finally ONE 8” X 60”OD-1/4” BUN. Reinstall the two compression plates and mount the hub to the main shaft.
**Cotton Cloth™ Loading Instructions:**

- Bring the two HUB ASSEMBLIES to your working area and remove the two compression plates from the top of the hub. Slide (4) PVC STRIPS into each channel (see Picture #14) and temporarily hold them in place with a small piece of masking tape.

- Open the washing material boxes and start loading the hub with THREE FOAM SPACERS followed by ONE COTTON CLOTH™ RING and then TWO FOAM SPACERS. Keep on until you've installed a total of 12 CLOTH RINGS (See Picture #15 below). Finish with THREE FOAM SPACERS.

- Next load ONE 10” X 48"OD-1/8” BUN, TWO 10” X 54"OD-1/8” BUNS, ONE 10” X 60” OD-1/4” and finally ONE 8” X 60"OD-1/4” BUN. Reinstall the two compression plates and mount the hub to the main shaft.

**C Channel Foam Loading Installation:**

- Mount the two HUB ASSEMBLIES on each arm as shown in picture #17 below. You may set the bottom of the hub BETWEEN 8” to 10” OFF THE FLOOR.

- To CHANGE THE HEIGHT OF THE HUBS remove one core from the hub assembly and loosen the CLAMPS holding the cores in place as shown in Picture #18 and 19. Raise or lower the entire core assembly. Retighten the clamps in the new position. Reinstall the core piece.
Open the washing material boxes and load the foam into the bottom hub as shown in Picture #20.
Repeat the same process for the top hubs on both wheels.
Electrical Installation:

Your MCWW CROSS-OVER™ WRAP AROUND requires a circuit connection of 120 VAC-15 AMPS protected with a GROUND FAULT DETECTION SYSTEM to power the air valves operating the SECONDARY ARM CYLINDERS.

THE CROSS OVER REQUIRES A SEPARATE
15AMPS, 120VAC, 1PH
ELECTRICAL CIRCUIT

TO AVOID EQUIPMENT MALFUNCTION
DO NOT CONNECT ANY OTHER ELECTRICAL DEVICE
ON THE SAME CIRCUIT FEEDING YOUR CROSS-OVER™

WARNING!

THE MATERIAL REQUIRED FOR CONNECTING
THE CROSS-OVER™ ARE THE
CUSTOMER’S RESPONSIBILITY!

ALL WORK HAS TO COMPLY WITH
LOCAL AND NATIONAL CODES!

You may power your CROSS-OVER™ WRAP AROUND on either the Driver's Side or the Passenger's Side CONNECTION BOXES as shown in picture #24 below.
If you have purchased the **ELECTRIC DRIVE CROSS-OVER™**, connect each **1.5 HP MOTOR** to a separate starter unit. Each motor has to be protected with an **OVERLOAD RELAY SET AT THE MOTOR RATED FULL LOAD CURRENT FOR THE PROPER VOLTAGE**.

**NOTE:** BOTH MOTOR ELECTRICAL CABLES ARE NOT CONNECTED TO THE MOTOR LEADS WHEN SHIPPED FROM THE MCWW FACTORY. OPEN THE MOTOR CONNECTION BOXES AND CONNECT TO THE MOTOR LEADS FOLLOWING THE APPROPRIATE CONNECTION DIAGRAM BELOW OR ON THE MOTOR PLATE (PICTURE #26) FOR PROPER VOLTAGE.

**Pic #25 Electrical Schematic**

**Pic #26 Motor Connection**
WARNING!
EACH MOTOR HAS TO BE PROTECTED WITH AN OVERLOAD RELAY SET AT THE MOTOR RATED FULL LOAD CURRENT FOR THE PROPER VOLTAGE:
6.6 AMPS @ 208 VAC - 3PH
6.0 AMPS @ 230 VAC – 3PH
3.0 AMPS @ 460 VAC – 3PH

WARNING!
EACH MOTOR STARTER AUXILIARY CONTACT HAS TO BE CONNECTED IN SERIES WITH THE OPTIONAL AIR RETRACT PANEL (SEE PICTURE #22)
OR
IF YOUR CROSS-OVER™ IS NOT EQUIPPED WITH THE RETRACT AIR PANEL, CONNECT THE OVERLOAD CONTACTS WITH THE EMERGENCY STOP CIRCUIT (SEE PICTURE #28)

Pic #27 Starter with Air Panel
If you have purchased the ELECTRIC DRIVE CROSS-OVER™ with the MCWW OVERDRIVE® INVERTER BOX connect each motor to terminal #2 and terminal #3. Connect the box to a supply of 120-208 VAC/3PH/30 AMPS CIRCUIT ONLY! (See picture #29)

Connect the RUN SIGNAL INPUT (terminal #6) to one function of your car wash controller.

Connect the retract air panel to one function of your car wash controller and through TERMINALS 4, 5.

**WARNING!**
THE D/S AND P/S AIR VALVE INTERLOCK CONTACT HAS TO BE CONNECTED IN SERIES WITH THE OPTIONAL AIR RETRACT PANEL (SEE PICTURE #29)

IF YOUR CROSSOVER® WRAP IS EQUIPPED WITH A DIFFERENT VFD, VERIFY THAT RETRACT AIR PANEL IS CONNECTED IN SERIES WITH THE VFD’S FAULT CONTACTS. IN THE EVENT OF A FAULT FROM THE VFD THE WRAP HAS TO BE RETRACTED TO AVOID POSSIBLE DAMAGES TO THE CAR OF THE EQUIPMENT
Pneumatic Installation:

☐ Your MCWW CROSS-OVER™ WRAP AROUND requires an air supply capable of 2 SCFM @ 100 PSI.

**WARNING!**
IT IS IMPERATIVE TO SUPPLY THE CROSS-OVER™ 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 CROSS-OVER™ DELIVERY SYSTEM OR ITS COMPONENTS

☐ Bring a 3/8” OD polyflow tubing air line from the main compressed air supply to the MIDDLE OF THE TOP CROSS BEAM and connect it to the existing 3/8” push-on fitting (see Picture # 30).

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**Picture #30 Utilities Location**

HYDRAULIC SUPPLY
6 GPM @ 1000 PSI (min)
(2) 1/2” JIC FEMALE

WATER SUPPLY
5 GPM @ 40 PSI (min)
3/4” NPT FEMALE

STREAMERS SUPPLY
3/8” OD FOR AIR
1/2” OD FOR SOLUTION

AIR SUPPLY
2 SCFM @ 100 PSI
3/8” OD PUSN-ON FITTING
Optional Retract Air Panel Installation:

- **Bring** a 3/8" OD polyflow tubing air line from the main compressed air line to the RETRACT AIR PANEL. Pull another 3/8" OD AIR LINE from the air panel to a tee above your MCWW CROSS-OVER™ and connect to the ROD END FITTINGS FOR BOTH SECONDARY CYLINDERS (see Picture #32 and 33 below).

- **Connect** the air panel SOLENOID VALVE to ONE 120 VAC OUTPUT FUNCTION from the car wash controller and trough the STARTER PANEL or the INVERTER PANEL (see picture # 27 AND 29).
CONNECT 3/8” AIR LINE TO RETRACT AIR PANEL

Pic #32 Retract Air Panel

Pic #33 Secondary Cylinder
Optional Mirror Bump Air Panel Installation:

- Bring a 3/8” OD polyflow tubing air line from the main compressed air line to the AIR PANEL. Pull one ORANGE 3/8” OD from the PASSENGER SIDE REGULATOR to the PASSENGER SIDE PRIMARY CYLINDER and connect to the ROD END OF THE CYLINDER (see Picture #34 below).

- Pull one PURPLE 3/8” OD AIR LINE from the DRIVER SIDE REGULATOR to the DRIVER SIDE PRIMARY CYLINDER and connect to the ROD END OF THE CYLINDER (see Picture #34 below).

Connect the DRIVER SIDE SOLENOID VALVE to one OUTPUT FROM THE CAR WASH CONTROLLER and program the output to TURN ON 12’ BEFORE THE FRONT OF THE CAR AND STAY ON UNTIL THE DRIVER’S SIDE WHEEL HAS PASSED BEYOND THE MIRROR AREA (OR ABOUT 9’ LONG).
Connect the PASSENGER SIDE SOLENOID VALVE to a second OUTPUT FROM THE CAR WASH CONTROLLER and program the output to TURN ON 12' BEFORE THE FRONT OF THE CAR AND STAY ON UNTIL THE PASSENGER’S SIDE WHEEL HAS PASSED BEYOND THE MIRROR AREA (ABOUT 9’ LONG).

Pic #36 Same on Passenger Side

TURN ON PASSENGER SIDE AIR PANEL 12” BEFORE THE FRONT OF THE CAR REACHES THE WHEEL

Pic #37 Turn Air Panel OFF Beyond Mirror Area

TURN OFF DRIVER SIDE AIR PANEL BEYOND MIRROR AREA

TURN OFF PASSENGER SIDE AIR PANEL BEYOND MIRROR AREA
Set the air pressure of each air panel regulator to about 10 TO 20 PSI LESS THAN THE PRIMARY CYLINDER AIR PRESSURE. EXAMPLE:

- IF THE PRIMARY ARM AIR CYLINDER REGULATOR IS SET AT 50 PSI, THEN SET THE MIRROR BUMP AIR PANEL REGULATOR AT 30 PSI. TO DECREASE THE BRUSH PRESSURE TO THE MIRROR AREA, INCREASE THE REGULATOR TO 35 PSI.

- IF THE PRIMARY ARM AIR CYLINDER REGULATOR IS SET AT 40 PSI, THEN SET THE MIRROR BUMP AIR PANEL REGULATOR AT 20 PSI. TO DECREASE THE BRUSH PRESSURE TO THE MIRROR AREA, INCREASE THE REGULATOR TO 25 PSI.

Foamers Installation:

Bring ONE 1/2" OD and ONE 3/8" OD polyflow tube from a dilution station to the MIDDLE OF THE TOP CROSS BEAM and connect to the existing push-on fittings (see Picture # 34).

NOTE: THE DILUTION STATION SHOWN IN PICTURE #38 IS NOT INCLUDED WITH YOUR CROSS-OVER™ WRAP AROUND UNIT
IT CAN BE PURCHASED SEPARATELY THROUGH YOUR LOCAL MCWW DISTRIBUTOR
PART# FOAMDLUTNSTN0001
Your **MCWW CROSS-OVER™** requires a water supply of 4 to 5 GPM for both wheels. Reclaim or fresh water can be used. Install a 1/2" water hose from a dilution station to the **MIDDLE OF THE TOP CROSS BEAM** (Picture # 39).

**NOTE:** WE RECOMMENDED INSTALLING A WATER SUPPLY CAPABLE OF AT LEAST 4 GPM @ 40 PSI USING A 3/4" NPT HOSE IF THE LENGTH OF THE HOSE BETWEEN THE DILUTION STATION AND YOUR CROSS-OVER™ IS MORE THAN 50 FEET

**NOTE:** THE DILUTION STATION SHOWN IN PICTURE #40 IS NOT INCLUDED WITH YOUR CROSS-OVER™ WRAP AROUND UNIT IT CAN BE PURCHASED SEPARATELY THROUGH YOUR LOCAL MCWW DISTRIBUTOR PART# APPLDLNSTN004

![Pic #40 Water Connection](image-url)
Hydraulic Installation:

- Your MCWW CROSS-OVER™ requires a HYDRAULIC SUPPLY CAPABLE OF 6 GPM @ 1000 PSI connected to two hoses (one pressure and one return line) located on the DRIVER’S SIDE of the UNIT (Picture # 41).

- Use the HYDRAULIC SCHEMATIC shown in Picture #40 as an installation guide.

**NOTE:**

THE HYDRAULIC SUPPLY CAN BE CONNECTED TO EITHER SIDE (DRIVER’S SIDE or PASSENGER’S SIDE) OF THE CROSS-OVER™ TOP CROSS BEAM BY:

1. DISCONNECTING THE SHORT (36”LONG) HOSE ON THE DRIVER’S SIDE
2. CONNECTING THE “CROSS OVER” HOSE TO THE DRIVER’S SIDE ARM
3. DISCONNECTING THE “CROSS OVER” HOSE FROM THE PASSENGER’S SIDE ARM
4. RECONNECTING THE SHORT (36”LONG) HOSE TO THE PASSENGER SIDE ARM

**WARNING!**

DO NOT OPERATE YOUR CROSS-OVER™ WRAP AROUND UNIT WITH A HYDRAULIC SYSTEM OPERATION AT A PRESSURE ABOVE 1250 PSI. OPERATING AT A PRESSURE ABOVE 1250 PSI MAY AFFECT THE PERFORMANCE OF THE EQUIPMENT AND LEAD TO PREMATURE WEAR OR MAJOR DAMAGE TO THE CROSS-OVER™ HYDRAULIC SYSTEM OR ITS COMPONENTS.

Pic #40 Hydraulic Schematic
Start-Up Procedures:

☐ Manually turn on your HYDRAULIC POWER UNIT and set the hydraulic flow control valve for a WHEEL SPEED OF 88 RPM for a CROSS-OVER™ WRAP AROUND using COTTON CLOTH™.

If your CROSS-OVER™ WRAP AROUND is equipped with C-CHANNEL FOAM, set the WHEEL SPEED between 88 to 100 RPM.

☐ Check all hydraulic lines for leaks. Turn the hydraulic power unit OFF.

NOTE: IF THE CROSS-OVER™ WRAP AROUND IS ELECTRIC DRIVE, THE WHEEL SPEED IS PRESET AT 88 RPM. USING A VARIABLE SPEED DRIVE (VFD) INSTEAD OF STARTER UNITS ALLOWS FOR WHEEL SPEED ADJUSTMENTS. REFER TO RECOMMENDATIONS ABOVE FOR OPTIMAL WHEEL SPEED ADJUSTMENT

☐ Set the DRIVER'S SIDE ARM air pressure at 35 PSI for the PRIMARY ARM REGULATOR and 20 PSI for the SECONDARY ARM REGULATOR. Close the exhaust fitting NEEDLE VALVE (See Picture #37) and REOPEN TWO FULL TURNS AND ONE HALF TURN (2-1/2 TURNS).

☐ Set the PASSENGER'S SIDE ARM air pressure at 40 PSI for the PRIMARY ARM REGULATOR and 25 PSI for the SECONDARY ARM REGULATOR. Close the exhaust fitting NEEDLE VALVE (See Picture #37) and REOPEN TWO FULL TURNS AND A HALF TURN (2-1/2 TURNS).

☐ MANUALLY TURN ON the STREAMER SOAP FOAMER DILUTION STATION to the wrap, adjust the foamers and position the STREAMER HEADS TO SPRAY THE FOAM TO COVER BOTH SIDES OF THE VEHICLE. Turn OFF the dilution station. Consult your MCWW Dilution Station Installation manual for adjustment.

☐ Manually turn on the WATER DILUTION STATION and adjust the SPRAY NOZZLES TO COVER the wheel from the LOWER HUB to the TOP ONE. 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 both WRAP AROUND WHEELS:

- Confirm wheel speed under vehicle load with the HYDRAULIC POWER UNIT SET AT 1000 PSI. Open the hydraulic flow control valve or increase the hydraulic power unit pressure as needed to reach recommended speed value previously specified. DO NOT EXCEED 1250 PSI AT THE HYDRAULIC UNIT!
- Confirm that both arms are “KNUCKLING” around the front fender of the vehicle. Adjust as needed (see OPERATION manual section for adjustment).
- Confirm that both SECONDARY ARMS are “OPENING” fast enough and following the vehicle in order to properly clean the REAR OF THE VEHICLE (see OPERATION manual section for this particular adjustment).

WARNING!
FOR AN ELECTRIC DRIVE CROSS-OVER™, TURN OFF EACH OVERLOAD RELAY ONE AT A TIME AND CONFIRM THAT THE CONVEYOR STOPS OR THAT THE WRAP AROUND ARM RETRACTS. FAILURE TO DO SO MAY LEAD TO MAJOR EQUIPMENT DAMAGE IF ONE OF THE TWO WRAP MOTOR OVERLOAD RELAYS TRIPS OR MALFUNCTIONS.
CROSS-OVER™ AIR PANEL

PRIMARY ARM REGULATOR and GAUGE
- Increasing the regulator air pressure will speed up the “knuckling in” of the secondary arm
- It will also increase the pressure on the front of the vehicle

SECONDARY ARM REGULATOR and GAUGE
- Increasing the regulator air pressure will speed up the “knuckling out” of the secondary arm
- It will also increase the pressure on the rear of the vehicle
- Decreasing the air pressure will speed up the “knuckling in” of the secondary arm

AIR SOLENOID VALVE MANUAL OVERRIDE BUTTON
- The air valve is used to release the air pressure from the secondary cylinder
- It is used to reduce the pressure on the side of the vehicle
- Use the manual override button to test the valve

AIR SOLENOID VALVE EXHAUST NEEDLE VALVE
- The needle valve is used to slow the air exhausting from the secondary cylinder
- The more the exhaust valve is opened the valve will allow the arm to knuckle faster around the front and on the side of the vehicle.
**Operation:**

When your MCWW CROSS-OVER™ is at rest, the wheels stand in the middle of the wash bay, both in line with the wash bay "center-line". The PRIMARY ARM sits against the positive stop, pushed by the PRIMARY CYLINDERS (See Picture #42). The SECONDARY ARM also sits against a positive stop, pushed by the SECONDARY CYLINDERS.

With the primary arm and secondary arm sitting at rest, both PRIMARY LIMIT SWITCHES (see Picture #42) are held **ON**. The THREE WAY SOLENOID VALVE is connected through a set of NORMALLY OPEN CONTACTS into the LIMIT SWITCH (see Picture #44).
When the vehicle is being pulled through the wash, it makes contact and pushes the wheel, because of the rotation of the wheel (CCW for D/S and CCW for P/S) and because of its geometry, the PRIMARY ARM leaves its resting position, releasing the PRIMARY LIMIT SWITCH (see Picture #41) turning OFF the solenoid valve, releasing the air slowly from the SECONDARY ARM.
The ARM ASSEMBLY PIVOTS AND MOVES WITH THE FRONT OF THE VEHICLE TOWARD THE SIDE cleaning the front grill area up to the head light (see Picture #45).

When the wheel reaches the front corner of the vehicle, the SECONDARY ARM PIVOTS and starts to “KNUCKLE” BACK under the brush rotation combined with the PRIMARY CYLINDER pulling the arm back (see Picture #47).

After the SECONDARY ARM starts to knuckle back, the PRIMARY ARM is pulling back on the secondary arm allowing the wheel to brush along the entire side of the vehicle, profiling around mirrors and antennas. If the brush becomes too “sluggish” while on the side of the vehicle, try closing (1/2 turn at a time) the SECONDARY ARM EXHAUST NEEDLE VALVE. If the arm doesn’t knuckle back, try increasing the primary regulator air pressure or decrease the secondary air pressure.
When the primary arm reaches its initial resting position, the PRIMARY LIMIT SWITCH is then activated, restarting the three way valve, and applying pressure to the PRIMARY ARM again (See Picture #48). The primary arm is now fully knuckled back and ready to extend and clean the rear area of the vehicle.

After the rear of the vehicle reaches the wheel, the SECONDARY ARM (being pressurized to open) will rotate and “wipe” the rear of the vehicle (see Picture #49).

If the secondary arm is not “wiping” the rear of the vehicle fast enough and can’t keep up with the conveyor speed, INCREASE THE SECONDARY AIR PRESSURE (see Picture #41).
Finally, the secondary arm will finish its travel (wiping) and **OVERLAPPING** the middle area of the vehicle rear end (see Picture #51).
SECONDARY ARM SHOCK LOCATION

Photo #1 shows the shock bolt located on the secondary arm in the LESS DAMPENING POSITION #1

Photo # 2 shows the shock bolt location on the secondary arm in the MORE DAMPENING POSITION #2

START OUT USING POSITION #2

IF YOUR CONVEYOR SPEED IS SO FAST THAT THE WHEEL DOES NOT WASH ACROSS THE REAR OF THE VEHICLE THEN USE POSITION #1

PHOTO #1
Maintenance:

DAILY:

- Check for hydraulic leaks, chaffed hoses electrical cable, etc..
- Visually inspect for any signs 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.
- 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 (see Picture #48) and clean the nozzle by inserting a small piece of wire (a small paper clip wire will do fine!) in the nozzle opening.
- Check for proper coverage of the two Streamer™ Foamers if applicable.
- Check for the overall performance of the equipment on the vehicle: Profiling, cleaning, etc.
- Wash down your equipment and the surrounding area at the end of each day.
MONTHLY:

Each piece of MCWW equipment is assembled with the highest quality bearings which have been factory pre-lubricated, therefore it does not require supplemental grease for at least the first month of operation. Use any 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 #49-54).
- Wash your equipment with a solution made of a mild degreaser and water. Rinse thoroughly.
- Perform daily maintenance.
Pic #48 Nozzle Body

Pic #49 Driver Side Wheel Bearings

Grease Points

Pic #50 Passenger Side Wheel Bearings

Grease Points
Pic #51 D/S Secondary Arm Bearings

Pic #52 P/S Secondary Arm Bearings

Pic #53 P/S Primary Arm Bearings

Pic #54 D/S Primary Arm Bearings

**Warranty and Return Procedure:**
Motor City Wash Works warrants this product to be free of defects in material and/or workmanship for a period of one year. 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, 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 MCWW’s 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.
# CROSS-OVER™ INSTALLATION MANUAL

**Equipment Utilities**

<table>
<thead>
<tr>
<th>HYDRAULIC DRIVE WRAPHYD[ . . . ]03</th>
<th>ELECTRIC DRIVE WRAPCELE[ . . . ]03</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ELECTRICAL</strong></td>
<td><strong>POWER</strong></td>
</tr>
<tr>
<td>120 VAC, 1 PH, 12 W VALVE UL® CERTIFIED</td>
<td>120 VAC, 1 PH, 12 W VALVE UL® CERTIFIED</td>
</tr>
<tr>
<td></td>
<td><strong>MOTORS</strong></td>
</tr>
<tr>
<td></td>
<td>3 HP (2 X 1.5 HP)</td>
</tr>
<tr>
<td></td>
<td><strong>3 AMP @ 208-240 VAC, 3 PH</strong></td>
</tr>
<tr>
<td><strong>HYDRAULIC</strong></td>
<td><strong>UL® RECOGNIZED, CSA CERTIFIED, CE MARK, IEC IP 55</strong></td>
</tr>
<tr>
<td>6 GPM @ 1000 PSI</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>PNEUMATICS</strong></td>
<td><strong>2 SCFM @ 100 PSI</strong> (INCLUDING OPTIONAL RETRACT PANEL)</td>
</tr>
<tr>
<td>(INCLUDING OPTIONAL RETRACT PANEL)</td>
<td>2 SCFM @ 100 PSI <strong>(INCLUDING OPTIONAL RETRACT PANEL)</strong></td>
</tr>
<tr>
<td><strong>WATER</strong></td>
<td><strong>WATER</strong></td>
</tr>
<tr>
<td>RECLAIMED OR FRESH:</td>
<td>RECLAIMED OR FRESH:</td>
</tr>
<tr>
<td>4 GPM @ 40 PSI</td>
<td>4 GPM @ 40 PSI</td>
</tr>
</tbody>
</table>

**Equipment Specifications and Features**

- Convenient 115VAC Single Phase Supply Minimizes Installation Cost
- Compact Design: Utilizes only 14’-0” of Tunnel Space
- Only 10’-00” Overall Height
- Vehicle Clearance of More than 91”
- Supplied Standard with MCWW Foam Streamers™ for Added Lubrication and Cleaning
- Great Cleaning up to 180 CPH
- Aluminum Structure with Color Skinz™ Snap-On UHMW Colored Covers… Great Appeal!
- Electric or Hydraulic Drive Available
- Choice of Cleaning Media between Cotton Cloth™, C-Channel and Star Foam
Wrap license plate bump kit.

The air panel should be located in the equipment room and then you will need 4 airlines running out to the tunnel. A red and gray one for each wheel. There will be a new 3 position cylinder for each wheel [one for the driver secondary arm and one for the passenger secondary arm]. Remove the existing cylinder, attach the extension mounts for the new one, mount the new cylinders, run the new airlines and wire up the panel. You will need one output from the carwash controller for each wheel.

TYPICAL SEQUENCE OF OPERATION:

WRAP WHEEL RETRACTED- As the vehicle approaches remove the retract as normal. At the same time energize the License Plate Bump valve which will position the wrap wheel into the offset position for washing the front. As the wheel washes across the front, remove the License Plate Bump signal, this will allow the wheel to wash the rest of the vehicle in a normal mode.

FOR THE NEXT VEHICLE CLOSE BEHIND- Energize the License Plate Bump which will put the wheel in the offset position in front of the vehicle so you can wash again.

IF THERE IS NO VEHICLE CLOSE BEHIND, JUST DO THE NORMAL WRAP RETRACT UNTIL THE NEXT VEHICLE IS PRESENT AND THEN REPEAT THE SEQUENCE ABOVE.
TYPICAL SEQUENCE OF OPERATION


FOR THE NEXT VEHICLE CLOSE BEHIND. ENERGIZE THE LICENSE PLATE BUMP WHICH WILL PUT THE WHEEL IN THE OFFSET POSITION IN FRONT OF THE VEHICLE READY TO WASH AGAIN.

IF THERE IS NO VEHICLE CLOSE BEHIND JUST DO THE NORMAL WRAP RETRACT UNTIL THE NEXT VEHICLE IS PRESENT.

THE REAR CLEVIS MOUNT OF THE 3 POSITION CYLINDER HAS MOUNTING HOLES AND WILL GIVE YOU AN ADJUSTABLE OFFSET DIMENSION 10", 16", AND 22".

LICENSE PLATE BUMP AIR CIRCUIT FOR ONE WRAP WHEEL

PART NUMBER:

AIR SCHEMATIC FOR WRAP LICENSE PLATE BUMP

Scale: 1:1 in

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