EQUIPMENT MANUAL

300GTE™ DUALLY™ COMBO

MOTOR CITY WASH WORKS®

TABLE OF CONTENTS

EQUIPMENT UTILITIES

	ELECTRIC DRIVE	HYDRAULIC DRIVE
TOP WHEEL	208VAC – 4.9 FLA - 3PH – 60HZ 480VAC – 2.4 FLA - 3PH – 60HZ Control: 24, 120VAC, 24VDC UL® RECOGNIZED Pneumatic: 3 SCFM Wash Water: 3GPM @ 60 PSI (Fresh or Rec) Foamer Water: 1 GPM	N/A
WRAPS	208VAC – (2) 4.9 FLA - 3PH – 60HZ 480VAC – (2) 2.4 FLA - 3PH – 60HZ UL® RECOGNIZED Control: 24, 120VAC, 24VDC Pneumatic: 1 SCFM Wash Water: 4 GPM @ 60 PSI (Fresh or Rec) Foamers Water: 2 GPM	Hyd: 6 GPM @ 900PSI Control: 24, 120VAC, 24VDC Pneumatic: 1 SCFM Wash Water: 4 GPM @ 60 PSI (Fresh or Rec) Foamers Water: 2 GPM

INTRODUCTION & SYMBOLS

NOTE: *Provides further information and details.*

STOP! *Precaution to take to avoid equipment malfunction or error.*

WARNING! *Dangerous situation which may cause equipment damage, personal injuries, or fatalities.*

Check Box: *Utilize the Check Box to stay organized with completion of important procedures.*

Always follow all notes, warnings, and instructions. Failure to do so may have serious consequences on the overall performance of the equipment and/or safety of the people working on the equipment.

UNLOADING & UNCRATING

☑ Upon receiving your MCWW Equipment, open all boxes and crates; 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 to your Motor City Wash Works representative for any damage to your equipment.

COMBO FEATURES

- 2” Pivot Shafts
- 2” Double Row Spherical Roller
- Heavy Duty Extended Aluminum Structure
- Capable of washing at 180 CPH without sacrificing quality
- Counter Rotating Design
- Bumper to Bumper Washing from 18” off the ground
- Electric Drive Top Wheel
- Electrical or Hydraulic Drive Wraps
- 90” Wide Top Wheel
- Available with our Patented Color SkinzTM & Glowash
- Powerful cleaning in less than 21 Ft
- Extended Life, High Density, Foam Wash Material with Composite Core

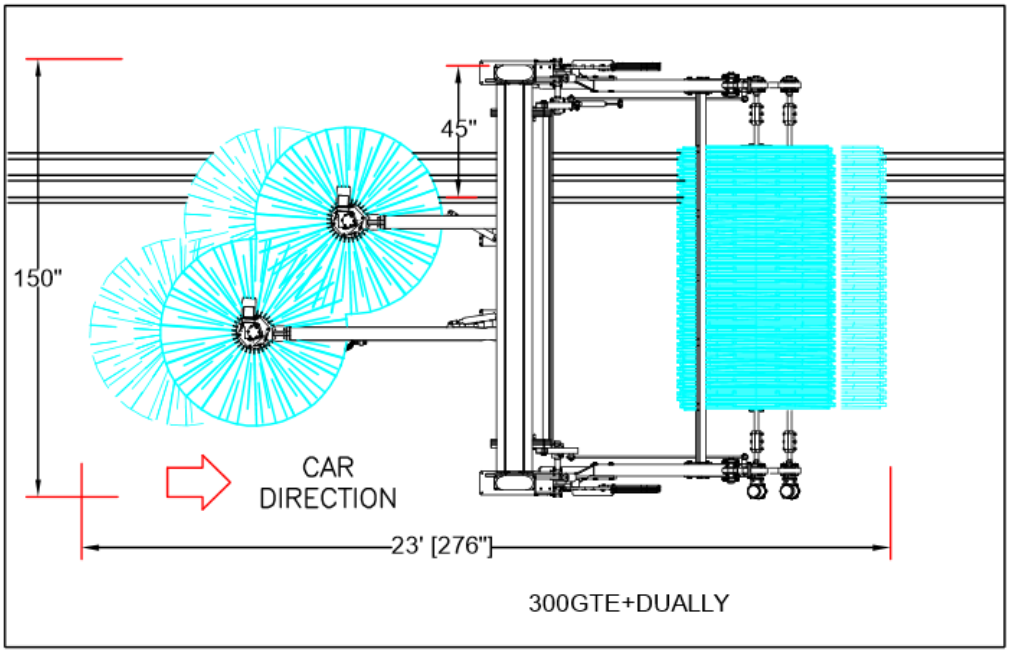
INSTALLATION TOOLS

- ☐ 1: Forklift Truck (2000 Lbs. Capacity)
- ☐ 2: Safety Goggles
- ☐ 3: Torpedo Level
- ☐ 4: Sledgehammer
- ☐ 5: 1/2” Drive Ratchet Set
- ☐ 6: Measuring Tape
- ☐ 7: 3/8” OD Polyflow Tubing
- ☐ 8: Wedge Anchor Bolts 5/8” x 6”
- ☐ 9: Hammer Drill with 5/8” Drill bit
- ☐ 10: Set of Standard Combo Wrenches
- ☐ 11: Set of Standard Ratchet & Sockets
- ☐ 12: ½” Hydraulic Hose
- ☐ 13: Reusable Hydraulic Fittings
- ☐ 14: 1000 LB Proof L-Clamp

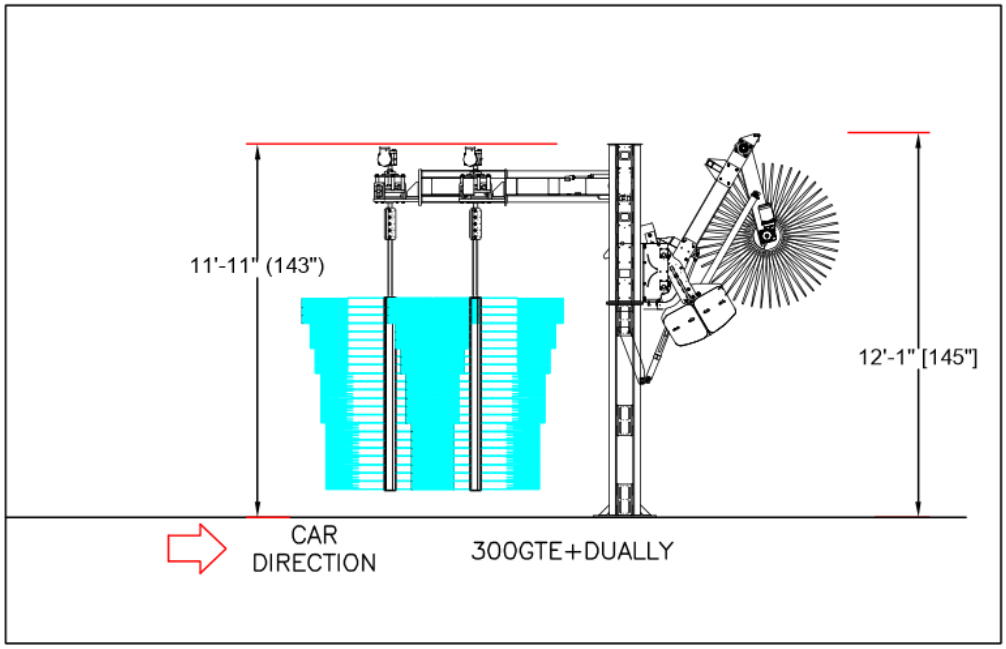
INSTALLATION PROCEDURES

☐ Open all boxes & crates, verify all required components & installation materials arrived.

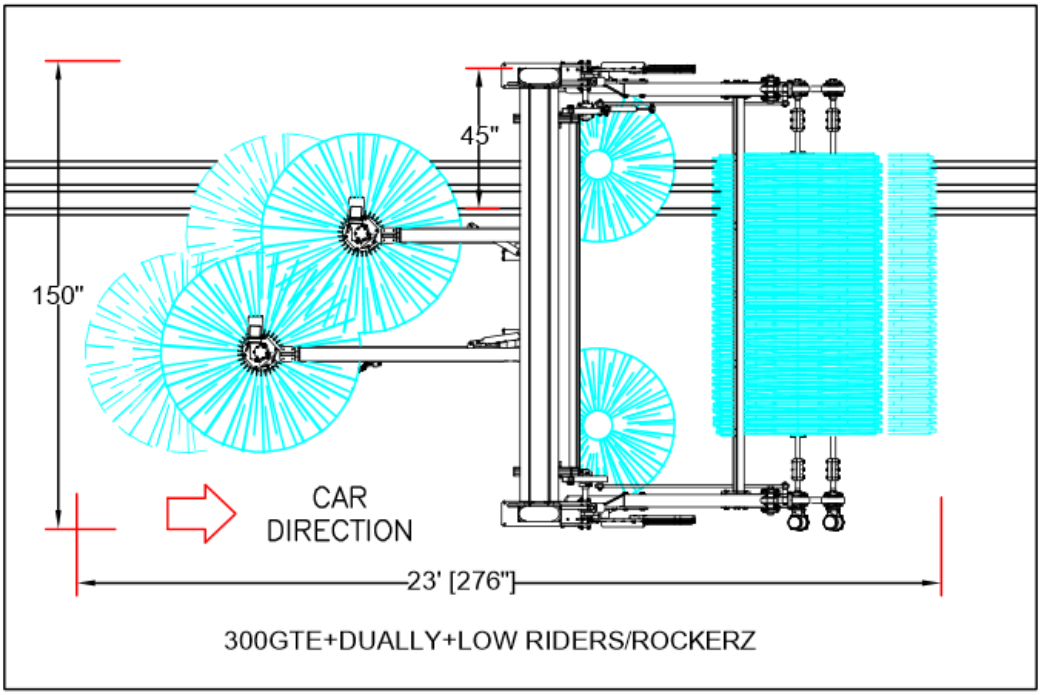
☐ Locate where the 300GTE Dually will be installed and verify the area is sufficiently large for your MCWW 300GTE Dually working envelope & Dimensions **(see pictures 1A-1D)**



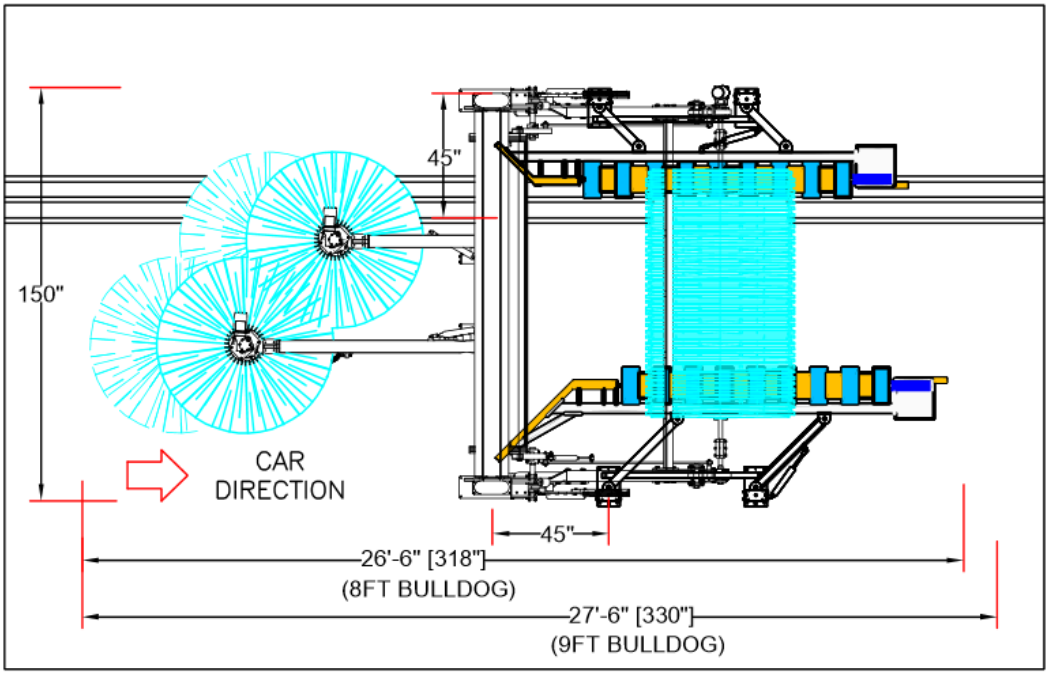
Picture # 1A



Picture #-1B

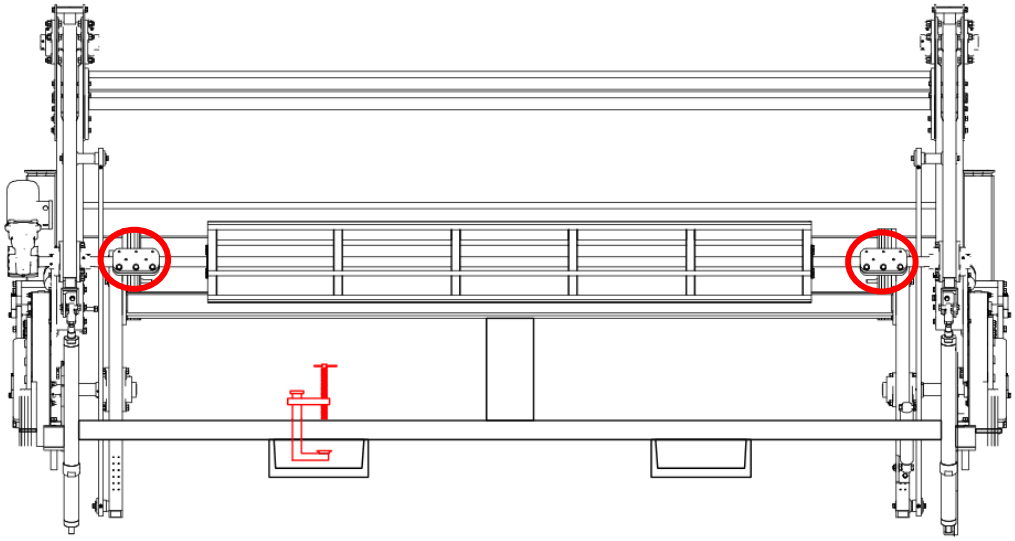


Picture #-1C



Picture #-1D

☐ Remove the 300GTE hub assemblies and the two legs from the main pallet & bring to the working area. Using a forklift, insert the forks on each side of the lifting brace **(as shown in Picture #2).** Secure one of the forks with a large L or C-Clamp.

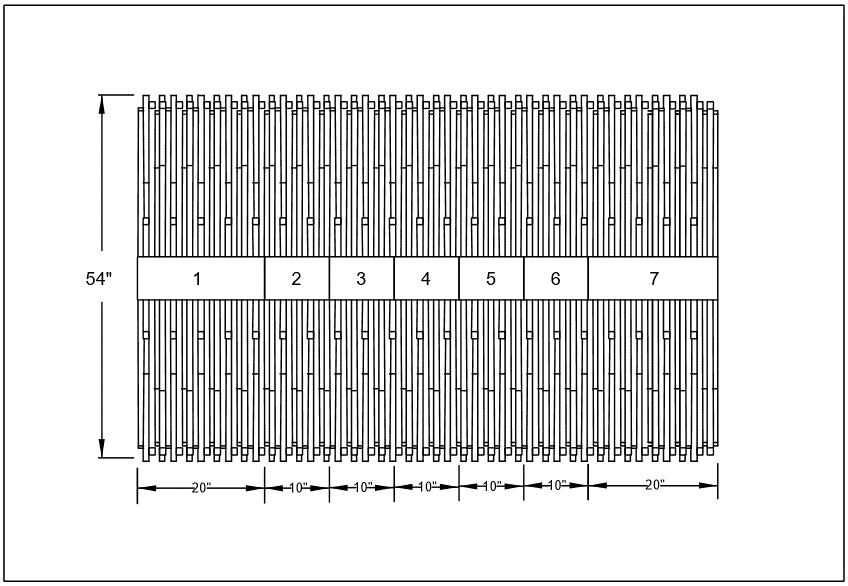


Picture #-2

☐ Remove the brush hub from the assembly by removing both shaft clamps located on either side of the hub **(Circled in Picture #-2)**, lowering it to the floor. Then remove the bolts holding the shaft to the hub.

STOP!
Verify that you have the correct foam & cloth material before loading the hubs. Wash material comes in many lengths, thicknesses & configurations. Not following proper loading instruction may lead to equipment malfunction.

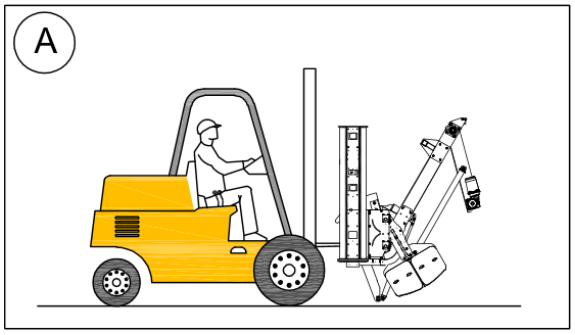
☐ Open the box of washing material and begin loading the hub following the layout below **(See Picture #3)** Begin with **one 20”** foam buns followed with **five 10”** foam buns. Finally, load the **last 20”** foam bun and reinstall the compression plate and mount the hub back to the assembly.



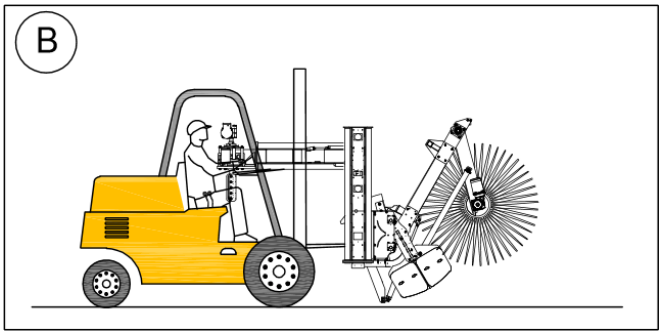
Picture #-3

☐ Bring the head assembly to the installation area **(DO NOT REMOVE SHIPPING STRAPS ON TOP WHEEL)**. Before raising the head assembly to the legs, install both wrap arms to the head assembly. **(See picture #4A-B)**

NOTE: *Your Dually Top Wheel May Not Have the Optional "Add-On" GTE Wrap Arms Assembly.*

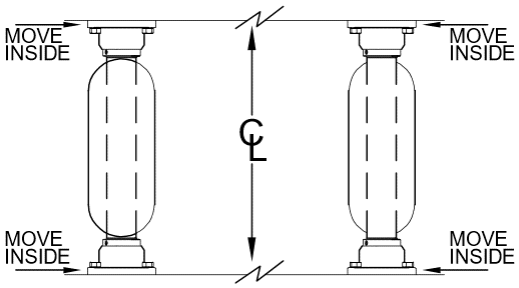


Picture #-4A

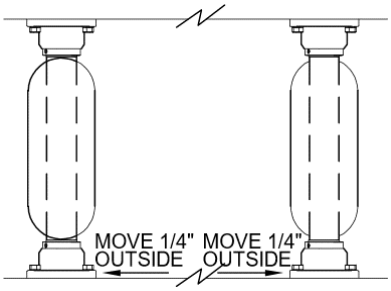


Picture #4-B

☐ When securing Wrap Arm bearings, slide both top and bottom bearings to the equipment center line. Secure both top bearings then slide both bottom bearings ¼" away from the center line and secure both bottom bearings.**(See Picture #5A-5B)**



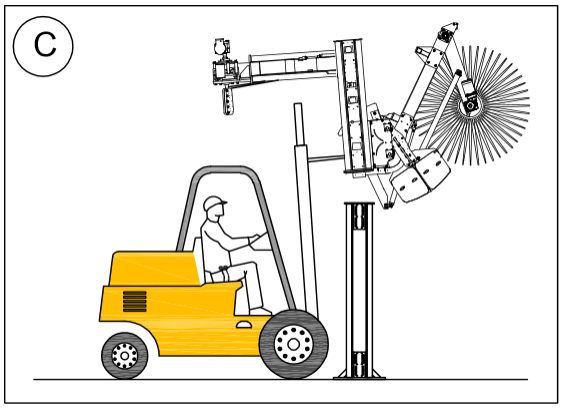
Picture #-5A



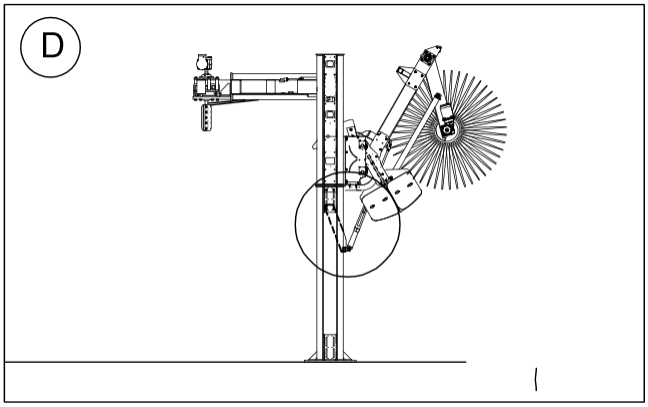
Picture #-5B

☐ Attach both bowling ball/drive assemblies to each arm.

☐ Wait to connect cylinders and dampeners to both arms after head assembly is attached to the legs. **(See Picture #6A-6B)**

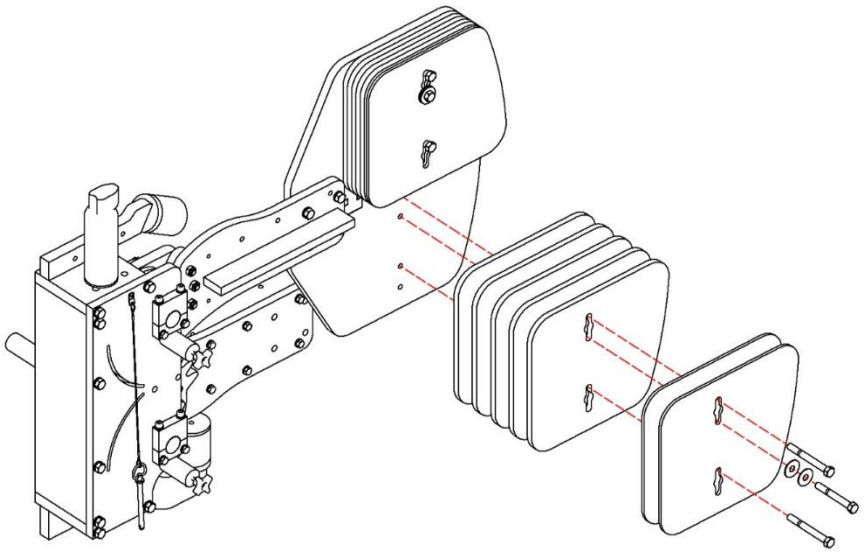


Picture #-6A



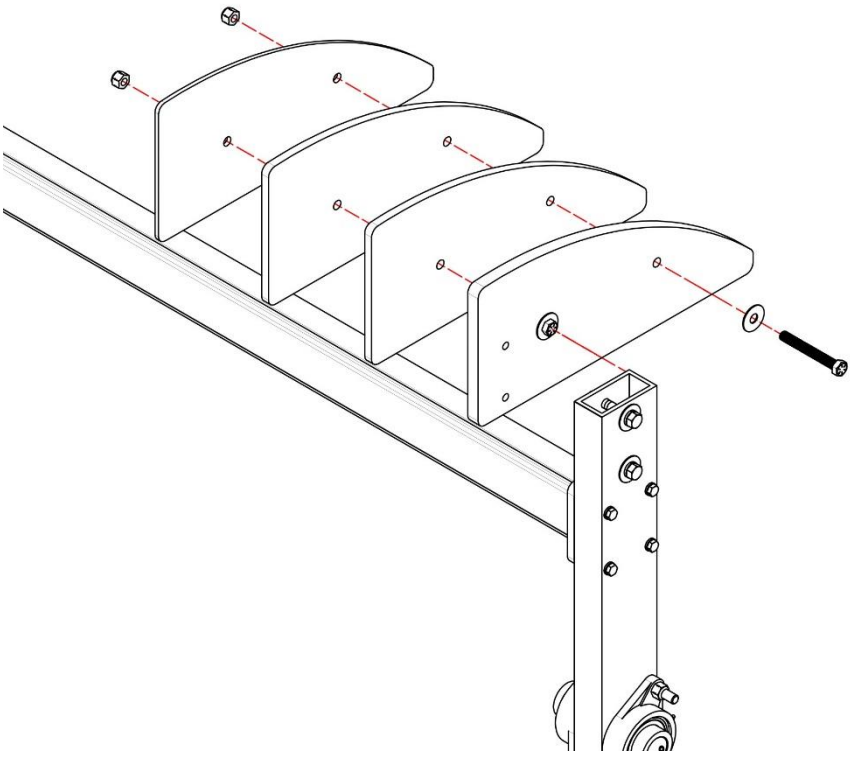
Picture #-6B

☐ Raise the head assembly & **secure the two legs to the head frame**. Then locate your Dually Top Wheel Primary Arm Counterweights. Install 10X ½" & 3X ¼" primary counterweights per side.**(See Picture #-7)** Once weights are secured unstrap the shipping straps on the Dually Top Wheel.



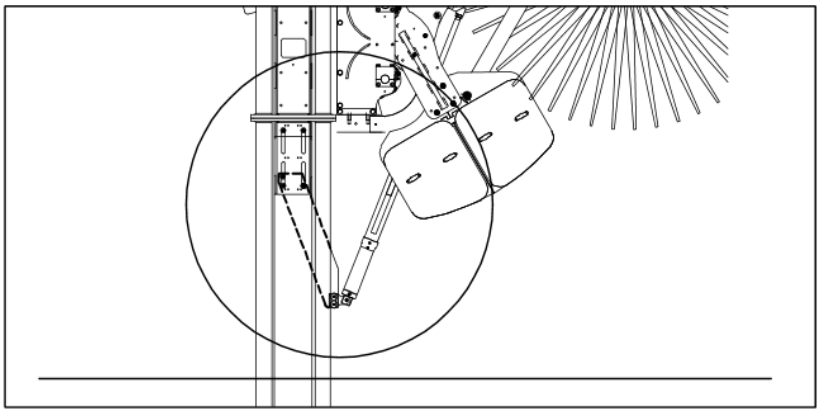
Picture #-7

☐ Then locate your Dually Top Wheel Secondary Arm Counterweights. Verify there are one ¾", one ¼", & two ½" installed. **(See Picture #-8)**

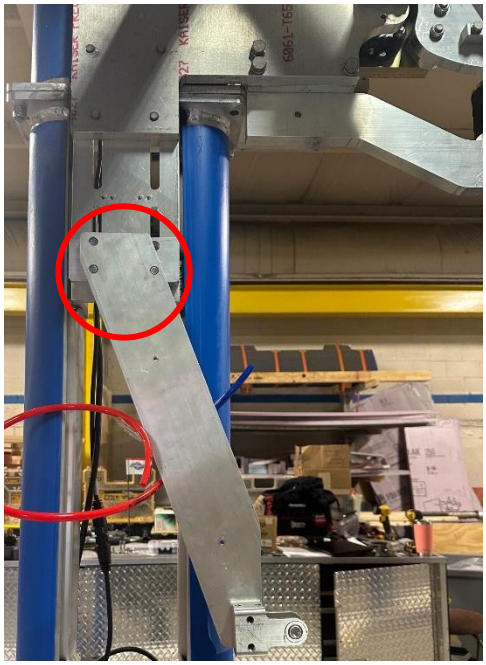


Picture #-8

☐ Locate both primary arm brackets & air cylinders. Using the hardware provided secure the primary arm bracket to the leg on both D/S & P/S, follow with securing both cylinders. **(See Picture #9A-9B)**

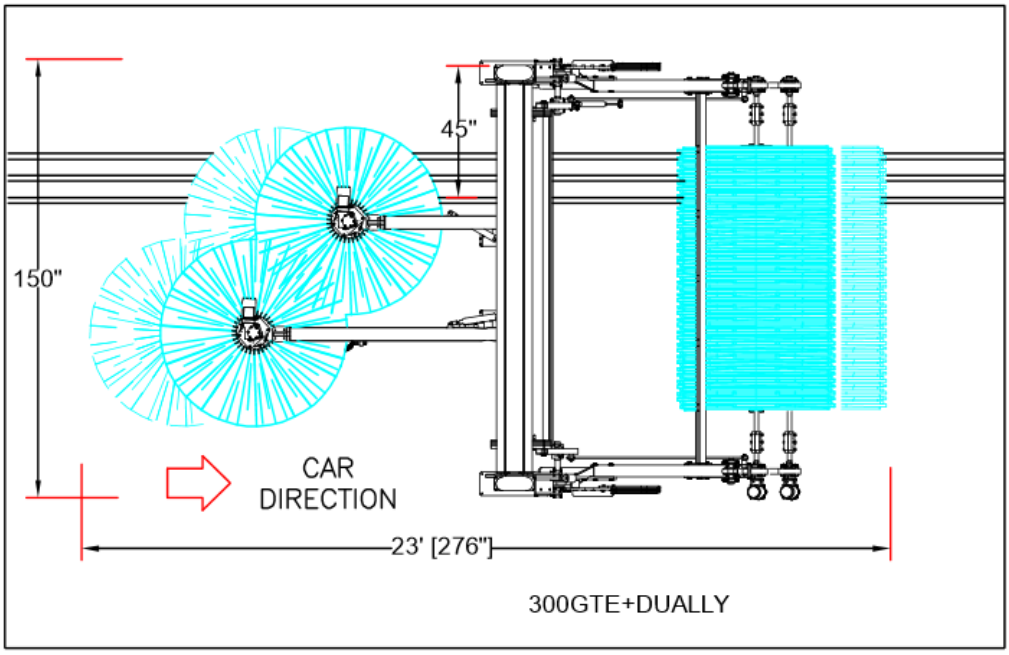


Picture #-9A



Picture #-9B

☐ Position the back of the driver's side leg 45" away from the inside edge of the inside guide rail **(see picture #-10).**

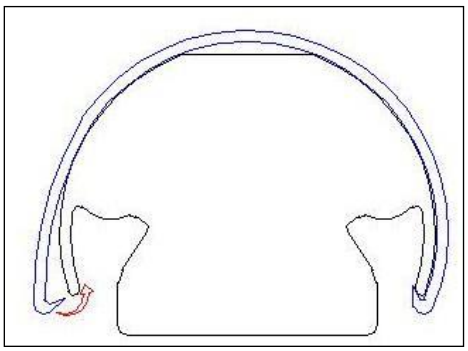


Picture #-10

☐ 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 side leg to sit firmly on the floor. **(Leave the forklift in place as a safety precaution)** Level the driver's side leg and the head assembly. Finally, level the passenger side leg and secure to the floor.

☐ Locate the boxes containing the Color Skinz™ covers and install on each leg, arm, and frame cross beams. **(See Picture #-11)**

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 #-)

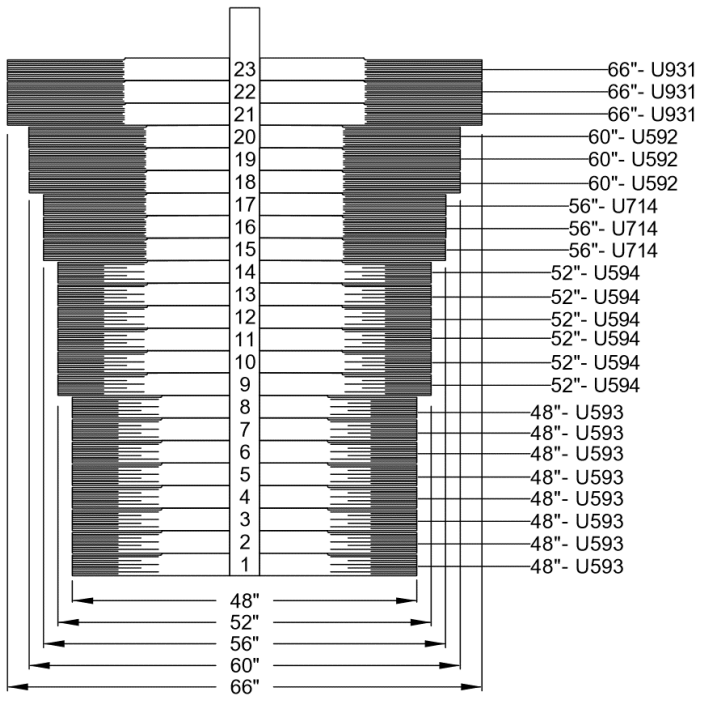


Picture #-11

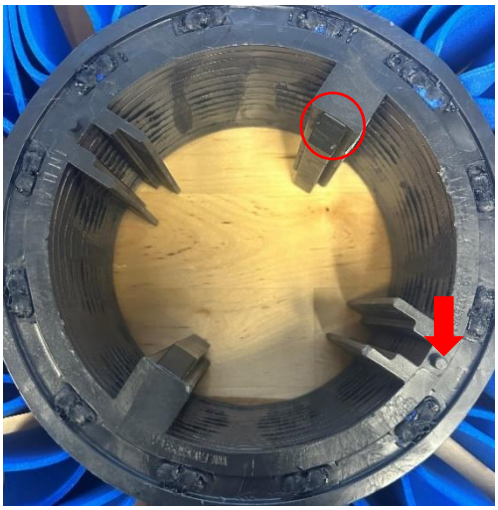
300GT FOAM LOADING INSTRUCTION

- ☐ Remove the six bolts holding the main shaft of the brush hub.
- ☐ Open the box of washing material and begin loading the hub following the layout below **(See Picture #-12).** Begin with **eight 48”** foam starting with the male side facing downward following the channels **(See Picture #13A-13B)** allowing the female side to sit in place. Follow with **six 52”** foam buns, **three 56”**, **three 60”**, then lastly **three 66”**. Ensure each foam bun is flush with no gaps. Re-install main shaft and mount the shaft clamp.

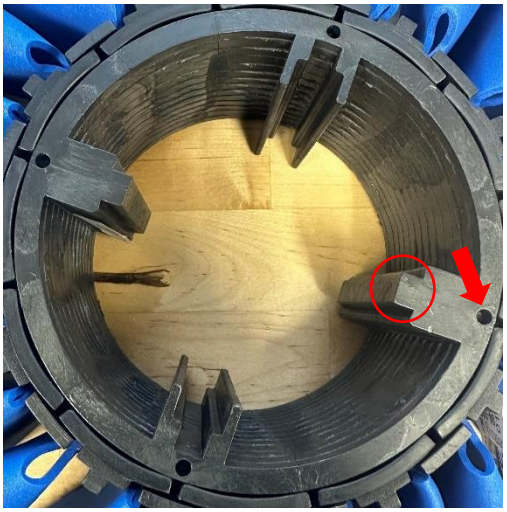
STOP!
Verify that you have the correct foam & cloth material before loading the hubs. Wash material comes in many lengths, thicknesses & configurations. Not following proper loading instruction may lead to equipment malfunction.



Picture #-12



Picture #-13A



Picture #-13B

ELECTRICAL INSTALLATION 300GT WRAPS

Control Voltage:

☐ Your MCWW 300GT Wraps requires a 24VDC or 24-120VAC signal to the Wrap air panels: ONE Signal to Wrap extend valve and TWO separate signals (D/S and P/S) to the Mirror Bump air valves

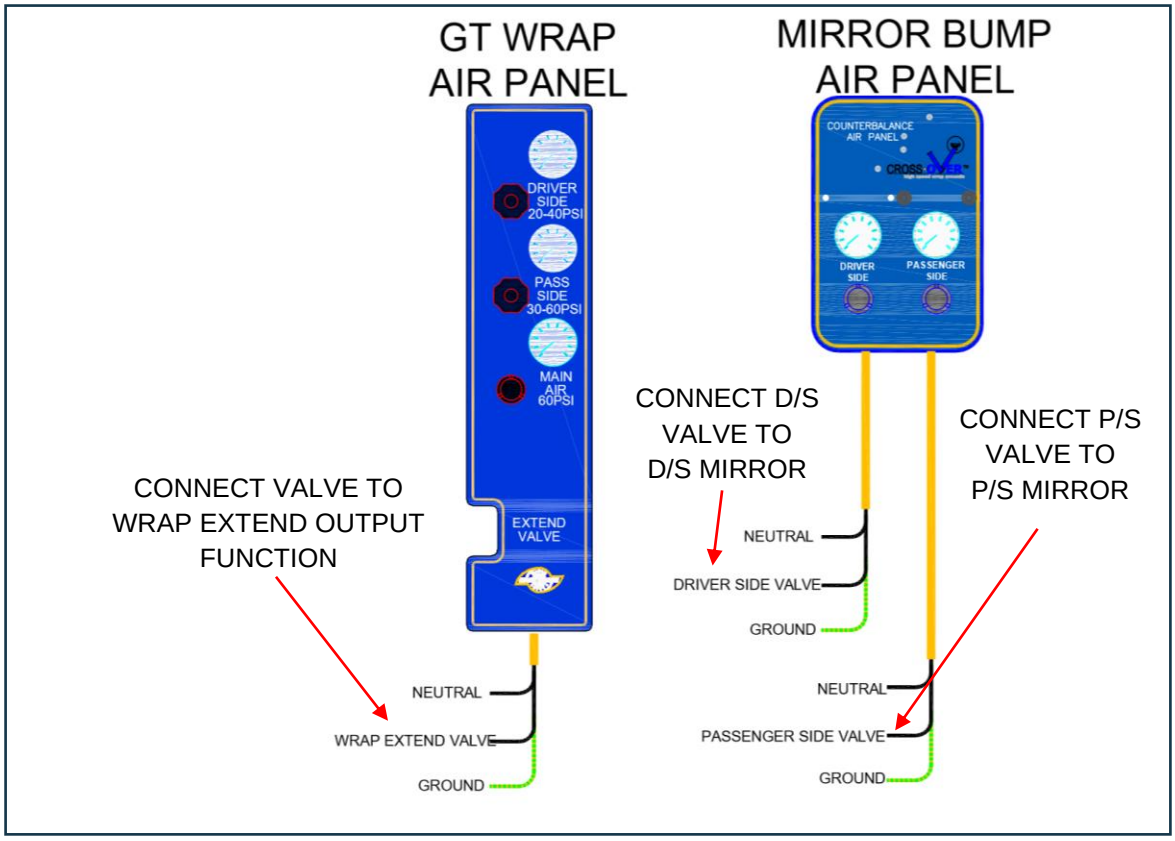
Note: Ensure voltage of air valves BEFORE sending power as they can be ordered in 24VDC or 24, 120VAC configurations.
Note 2: Control voltage may differ for Export equipment. See valve body for correct operating voltage.

WARNING!

The material required for connecting the 300GT Wrap is the customer's responsibility.

All work must comply with local and national codes.

WRAP AIR PANELS:

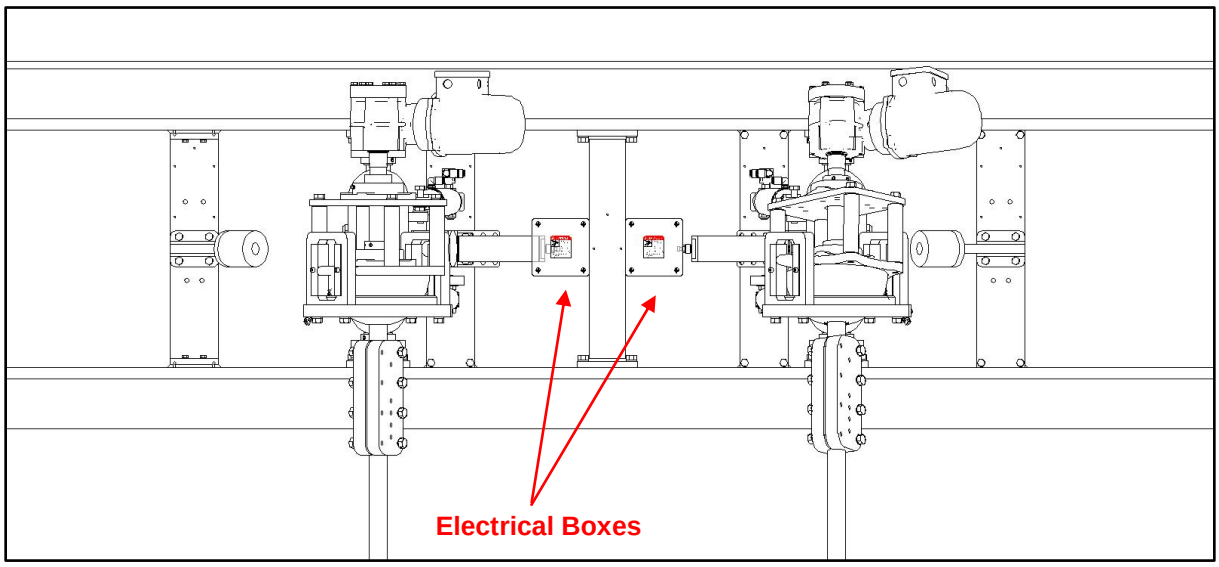


Picture #-14

3PH Voltage:

☐ Connect each MOTORS to Soft Starter or VFDs. **DO NOT RUN MOTORS WITH-ACROSS-THE-LINE STARTERS: THE STARTING MECHANICAL SHOCK WILL PREMATURELY DAMMAGE THE GEARMOTOR!**
Each motor must be protected with overload device set at the motor rated full load current for the proper voltage.

Both motors are connected (at the factory) to extended electrical cables, each terminated in a junction box. This is where the electrician will make the connections. No connection is needed in the motor connection box.

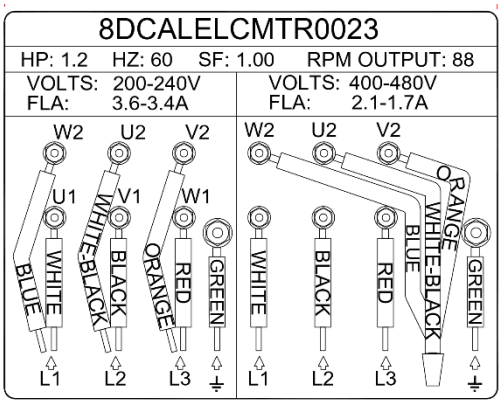


Picture #-15

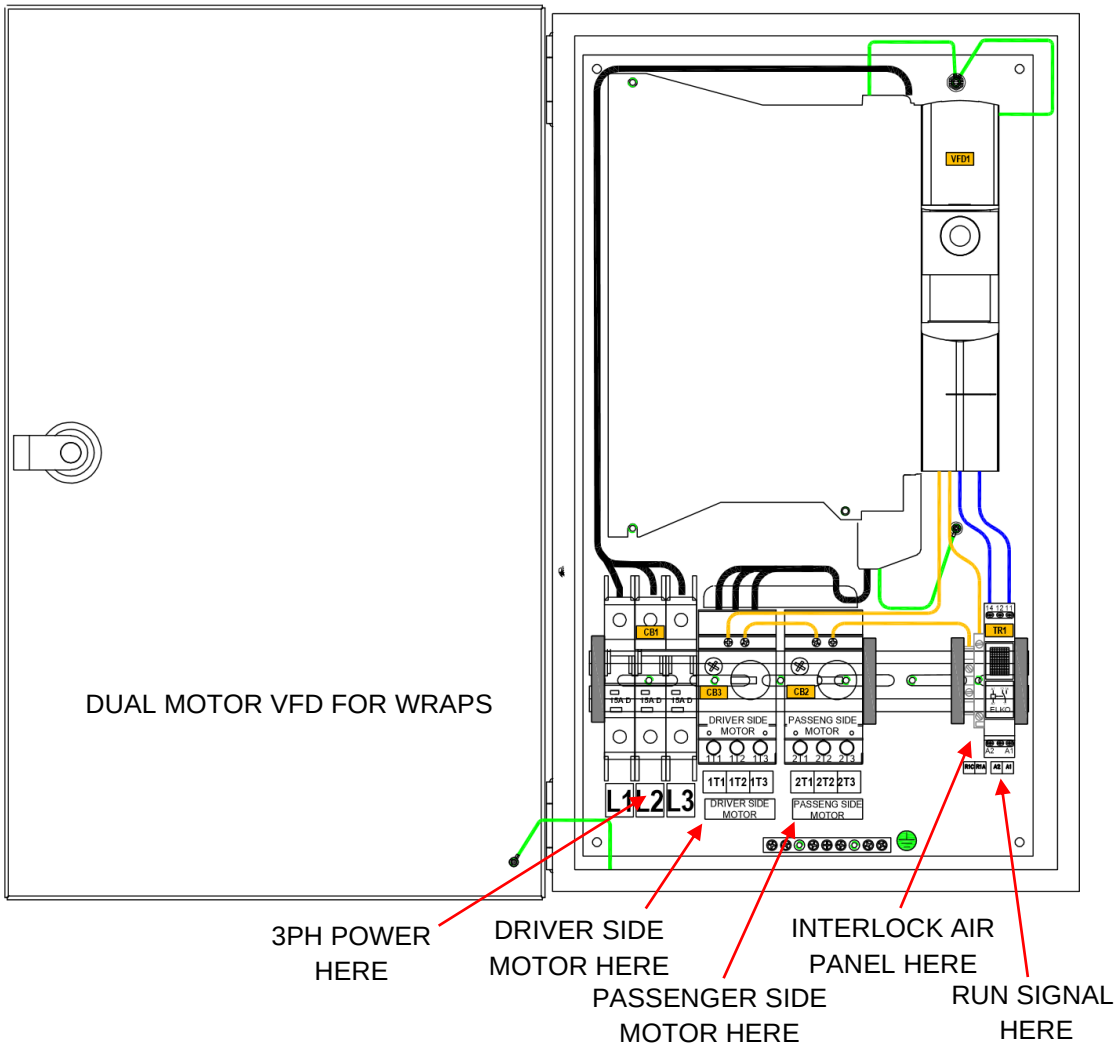
☐ Use the connection diagram below to connect the motor for proper voltage:

208-240VAC:
L1 to WHITE+BLUE
L2 to BLACK+WHITE/BLACK
L3 to RED+ORANGE
GROUND to GREEN

400-480VAC:
L1 WHITE
L2 to BLACK
L3 to RED
Together: BLUE+WHITE/BLACK+ORANGE
GROUND to GREEN



MCWW WRAP VFD:



WARNING!

Each motor must be protected with an overload sensor set at the motor rated full load current for the proper voltage:

4.9 AMPS @ 208 VAC - 3PH

4.8 AMPS @ 230 VAC – 3PH

2.4 AMPS @ 460 VAC – 3PH

WARNING!

Each motor soft starter or VFD auxiliary contact must be connected in series with the optional air retract panel (see picture #-)

ELECTRICAL INSTALLATION DUALLY TOP WHEEL

Control Voltage:

☐ Your MCWW Dually Top Wheel requires 24VDC or 24-120VAC signal to air panels:
ONE Signal to Top Wheel Down valve, ONE signal to Forward Rotation command and ONE signal to Reverse Rotation to the VFD panel

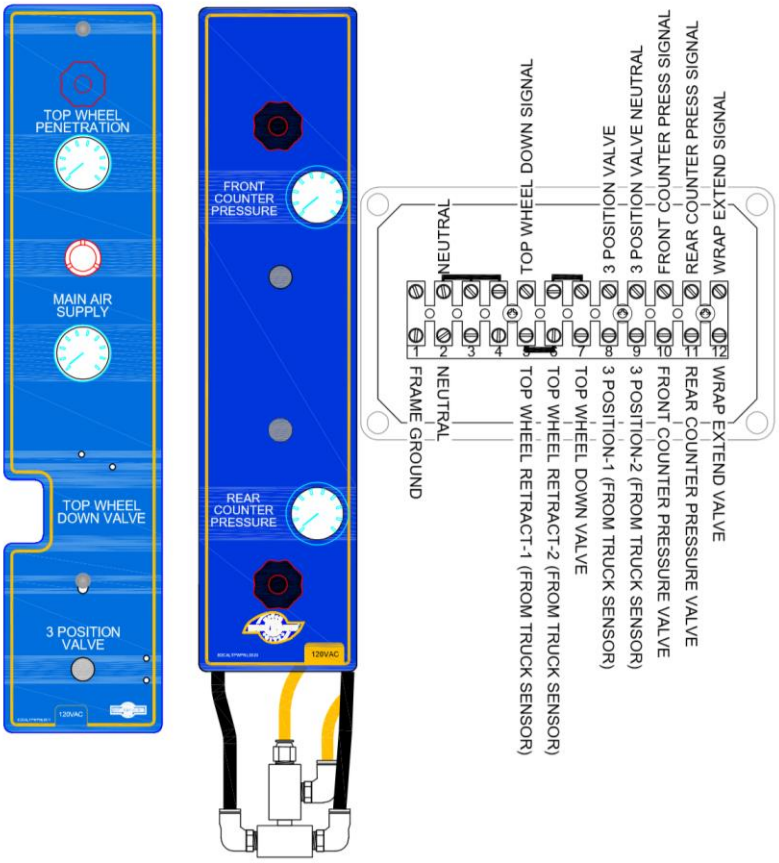
Note: Ensure voltage of air valves BEFORE sending power as they can be ordered in 24VDC or 24, 120VAC configurations.
Note 2: Control voltage may differ for Export equipment. See valve body for correct operating voltage.

WARNING!

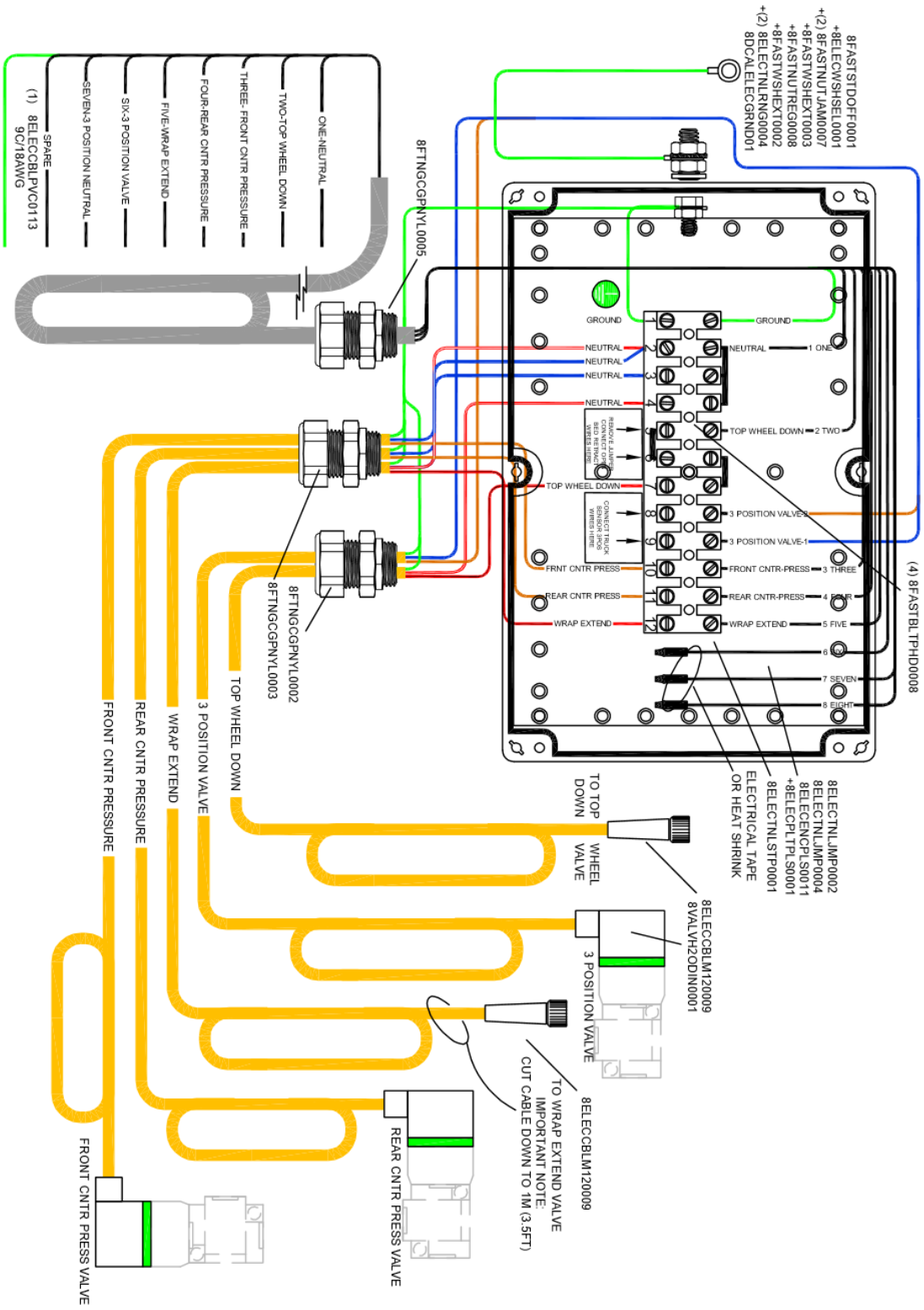
The material required for connecting the Dually is the customer's responsibility.

All work must comply with local and national codes.

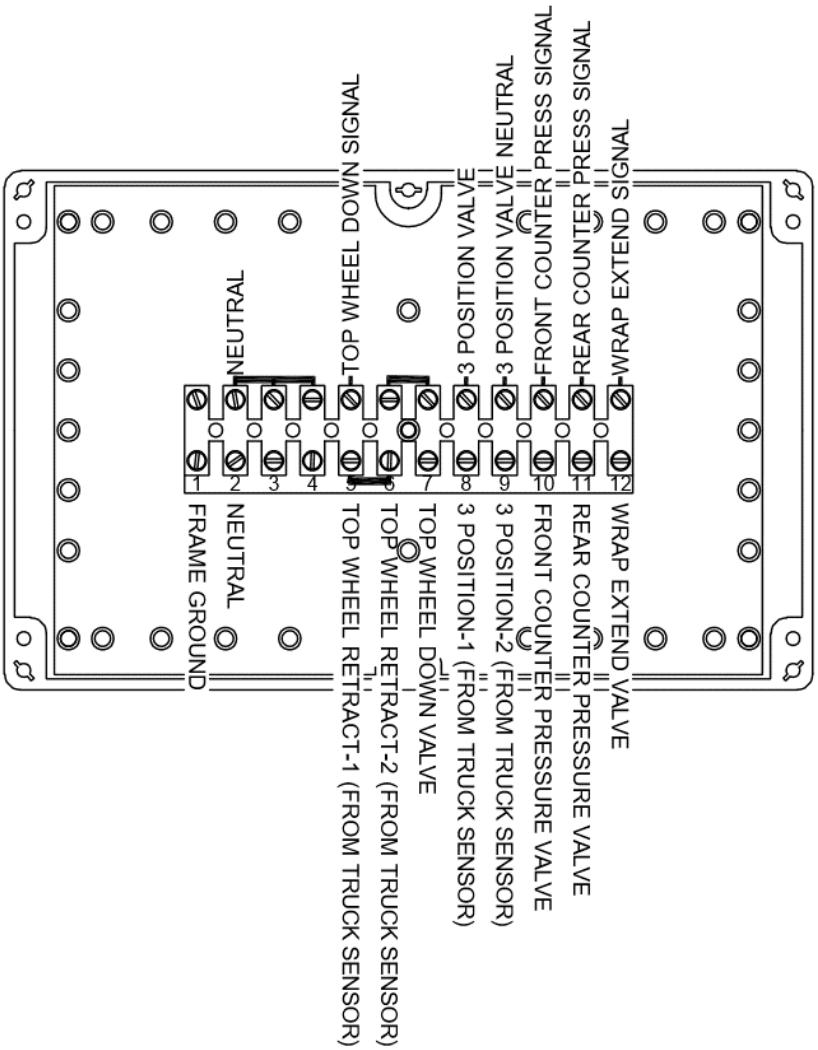
Dually Air Panels:



Dually Air Panel Assembly



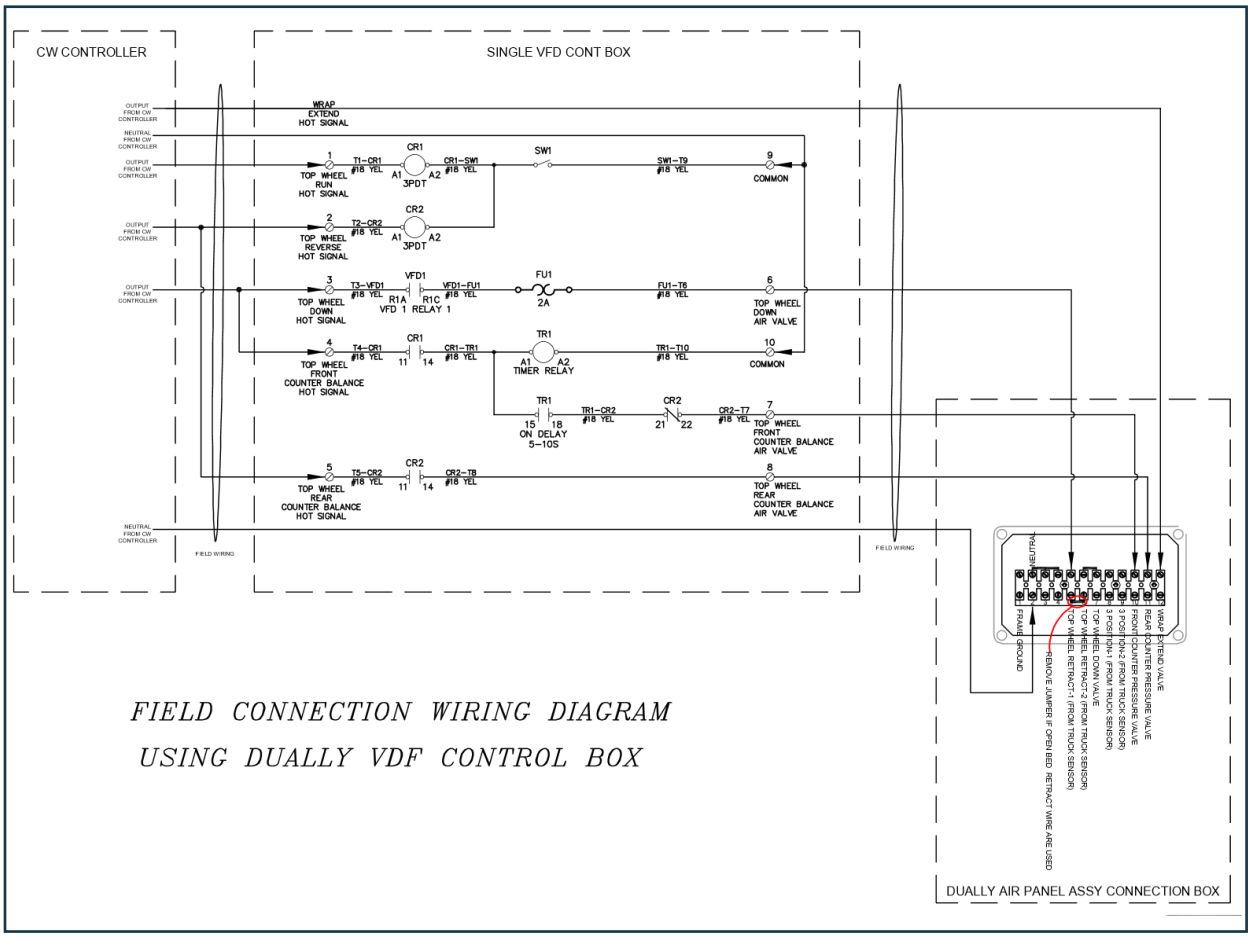
300 GT Dually Air Panel Electrical Schematic



300 GT Dually Terminal Landing

☐ Your Dually air panel assembly comes mounted to a frame and is to be mounted in the mechanical room. All air valves are pre-wired and terminated in a junction box equipped with a connection umbilical cord. The umbilical cord need to be terminated in the MCWW Dually VFD panel or in your CruzControl Motor Control Center. Connect the air panel assembly into the MCWW Dually VFD panel following the wire diagram below.

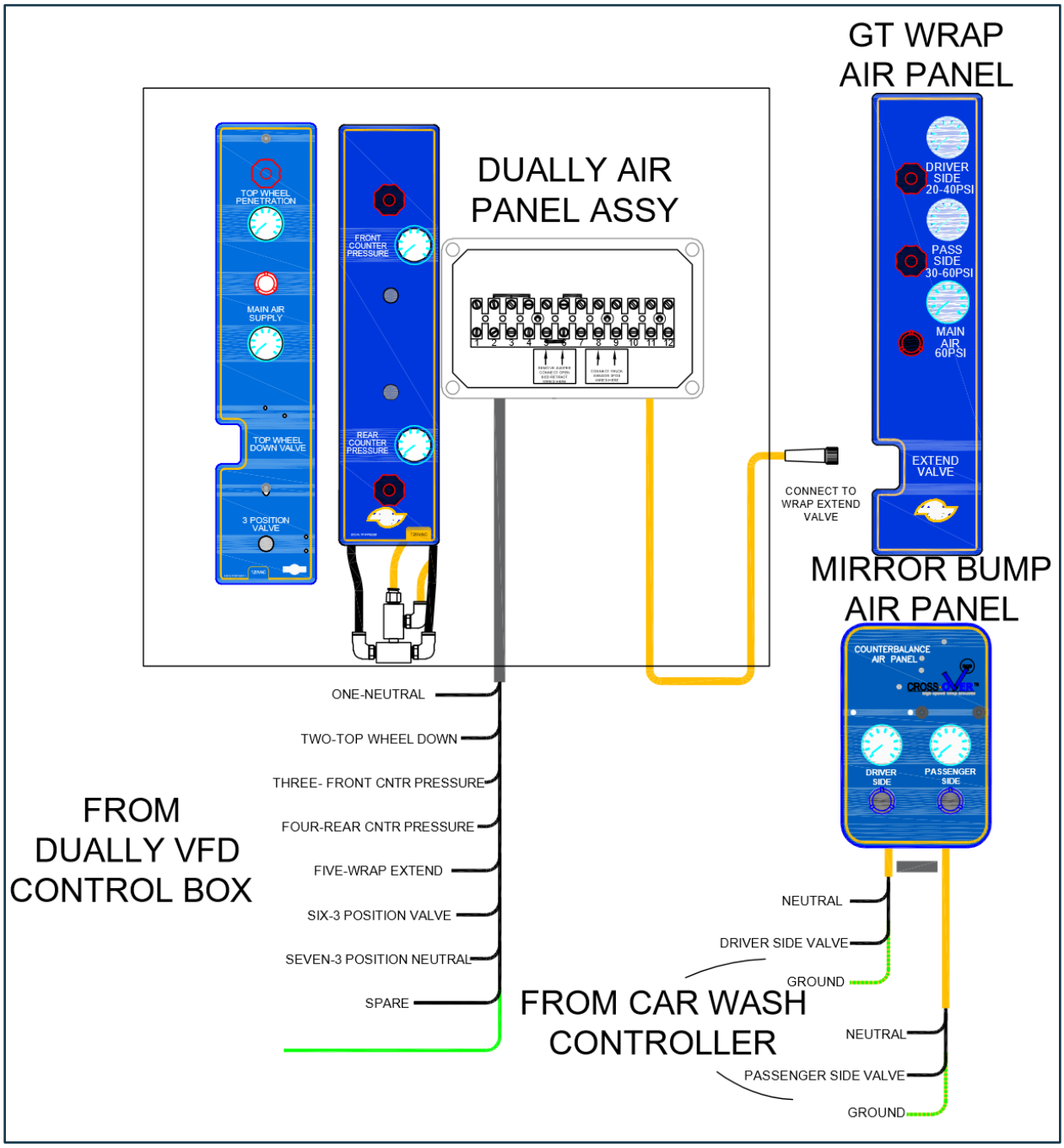
All required control wires will start in the carwash controller then route to the Dually VFD panel then finally (via the umbilical cord) to the Dually Air Panel assembly.



FIELD CONNECTION WIRING DIAGRAM
USING DUALLY VDF CONTROL BOX

NOTE:

The Dually Air Panel assembly comes with an additional Wrap Extend Air Valve cable. The cable is terminated with a Micro DC connector to plug directly to the Wrap Extend Air Valve. If you have purchased the Dually with the optional 300GT entrance wraps, you may use the cable to connect the Wrap Extend air valve to avoid an additional wire running to the car wash controller output function.



Relation between the Dually Air Panel Assy and the GT Wrap air panels

Truck Detector Assembly:

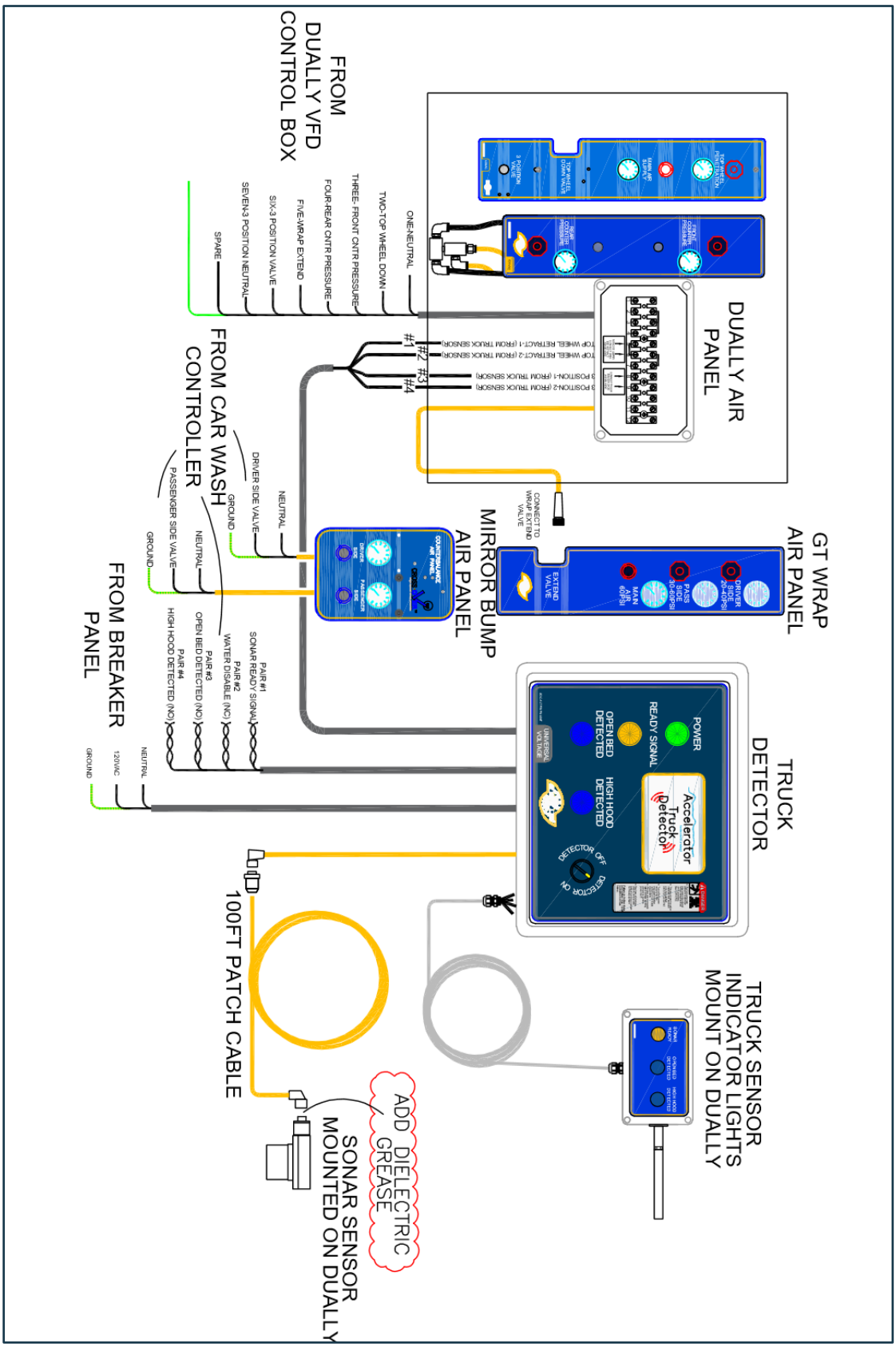
☐ Your Truck Detector will be installed and wired in the backroom. Mounted to the wall, beside the Dually Air Panel Assembly, you truck Detector will monitor vehicle height and raise the top wheel brush to a higher position, facilitating the brush transition from the front of a tall vehicle (think Pickup trucks) to the hood.
It will also sense a pickup truck with an open bed and retract the top brush right after the cabin, avoiding the brush to go down into the box.

☐ Connect the truck detector power cable to a 120VAC breaker circuit source capable of at least 2A.
Connect the control cable into the Dually Air Panel junction box, following connection diagram below. Finally, unroll and wire the umbilical cord to the car wash controller and connect pair #1 (READY SIGNAL) to an output function. The output function can be of any voltage between **24-120Volt AC or DC**.
The three other pairs are connected to a set of **RELAY CONTACTS** used for feedback to the car wash controller. If desired, you may want to connect each of the pair to specific car wash input functions:

Pair #2: Water Disable
NC contacts. Connect this relay to an input to turn the wash water and foamer solenoid valves OFF when the brush is retracted over an open bed.

Pair #3: Open Bed Detected
NO Contacts. Connect this relay to an input to identify a vehicle with an open bed and program other functions down the tunnel to retract or turn OFF above the open bed.

Pair #3: High Hood Detected
NO Contacts. Connect this relay to an input to identify a vehicle with a high hood and program other functions to raise top wheel further down the tunnel.

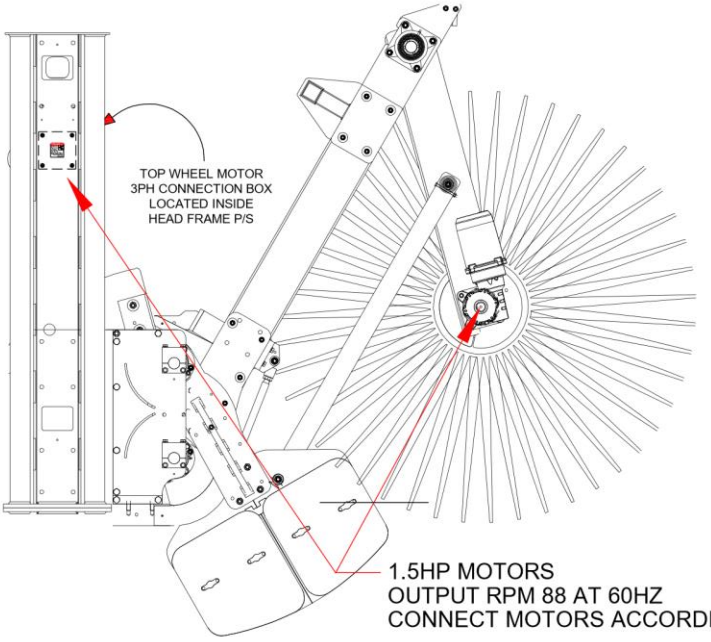


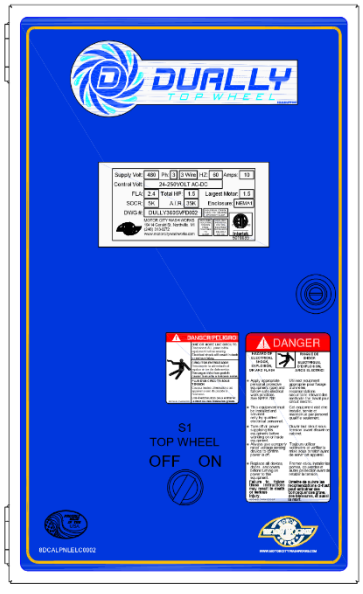
Relation between the Dually Air Panel, GT Wrap air panels and Truck Detector

3PH Voltage:

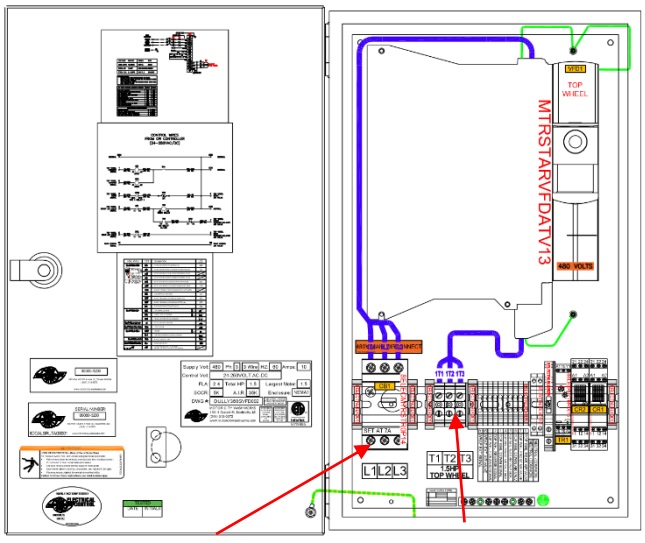
☐ Connect the MOTOR to a MCWW Dually VFD panel only. The MCWW Dually VFD is the only panel design specifically to control your Dually. It uses the VFD in combination with specific timing devices to adequatelycontrol motor speed and rotational direction, KUCKLING of the secondary arm and both COUNTERBALANCE air pressures, insuring proper penetration of the top wheel brush over the vehicle.

The top wheel motor is connected (at the factory) to an extended electrical cable, which terminates in a junction box. This is where the electrician will make the connections. No connection is needed in the motor connection box.





SINGLE VFD PANEL FRONT VIEW



3PH POWER HERE

MOTOR CONNECTIONS

HYDRAUIC INSTALLATION 300GT WRAPS

☐ **Your** MCWW GTE300 Wraps requires a HYDRAULIC SUPPLY CAPABLE OF 6 GPM @ 900 PSI connected to two hoses (one pressure and one return line) located on the **DRIVER'S SIDE of the UNIT (Picture #16).**

☐ **Use the hydraulic schematic** shown in **Picture #16** as an installation guide.

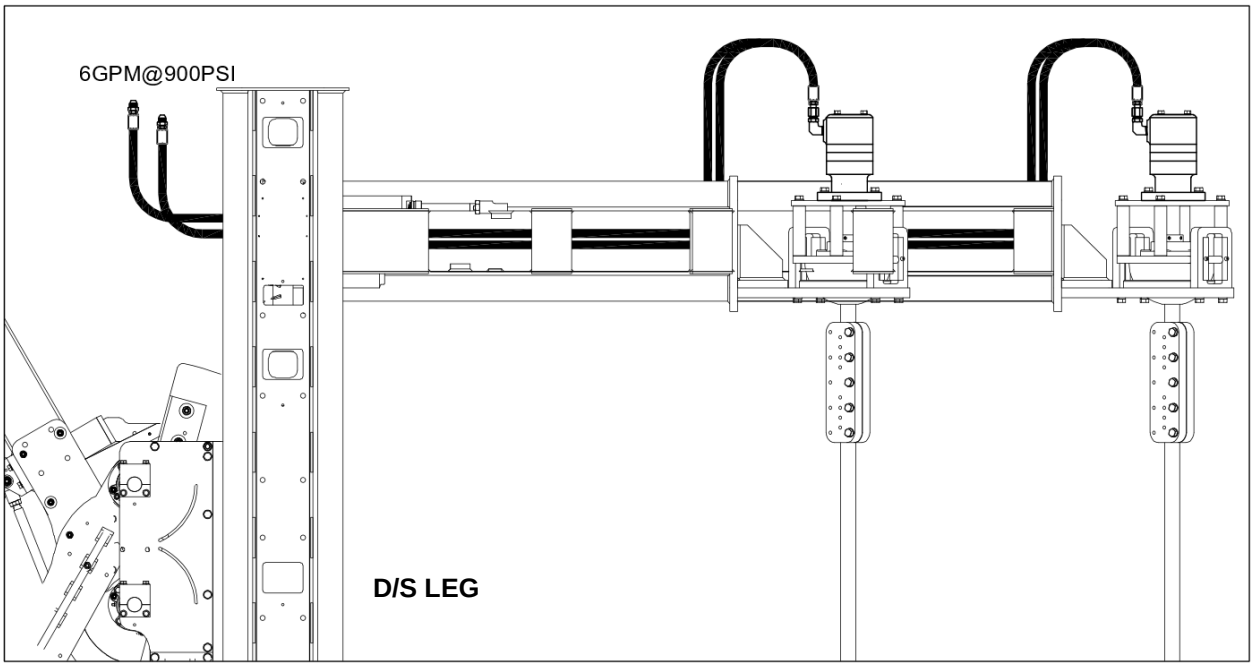
NOTE:

The hydraulic supply can only be connected to the driver's side of the 300GTE

WARNING!

Do not operate your 300GTE Wraps 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 300GTE Wrap hydraulic system or its components.



Picture #-16

PNEUMATIC INSTALLATION 300GT WRAPS

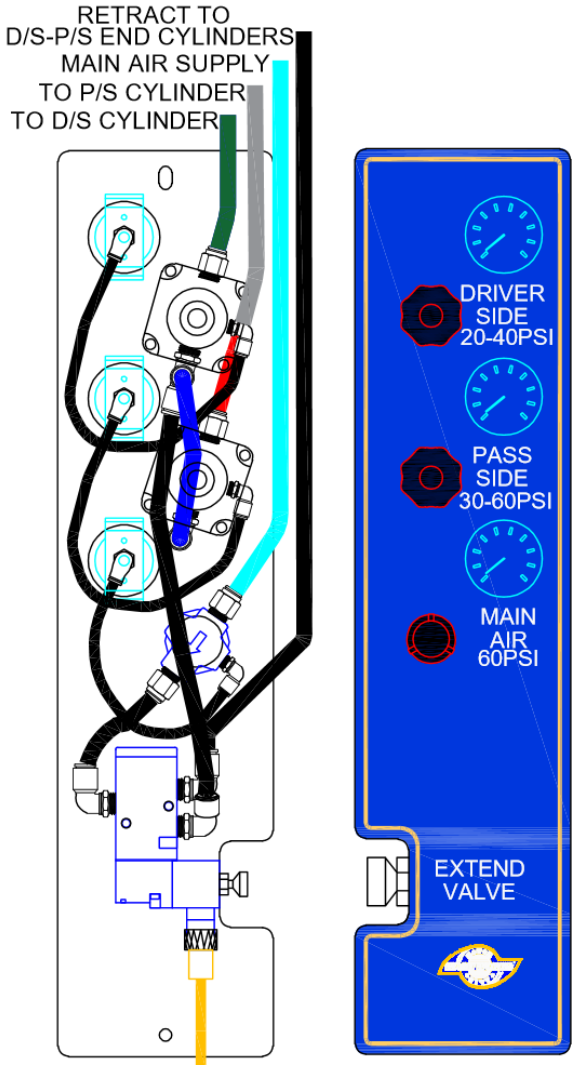
☐ **Your MCWW 300GT WRAPS** requires an air supply capable of **1 SCFM @ 100 PSI.**

WARNING!

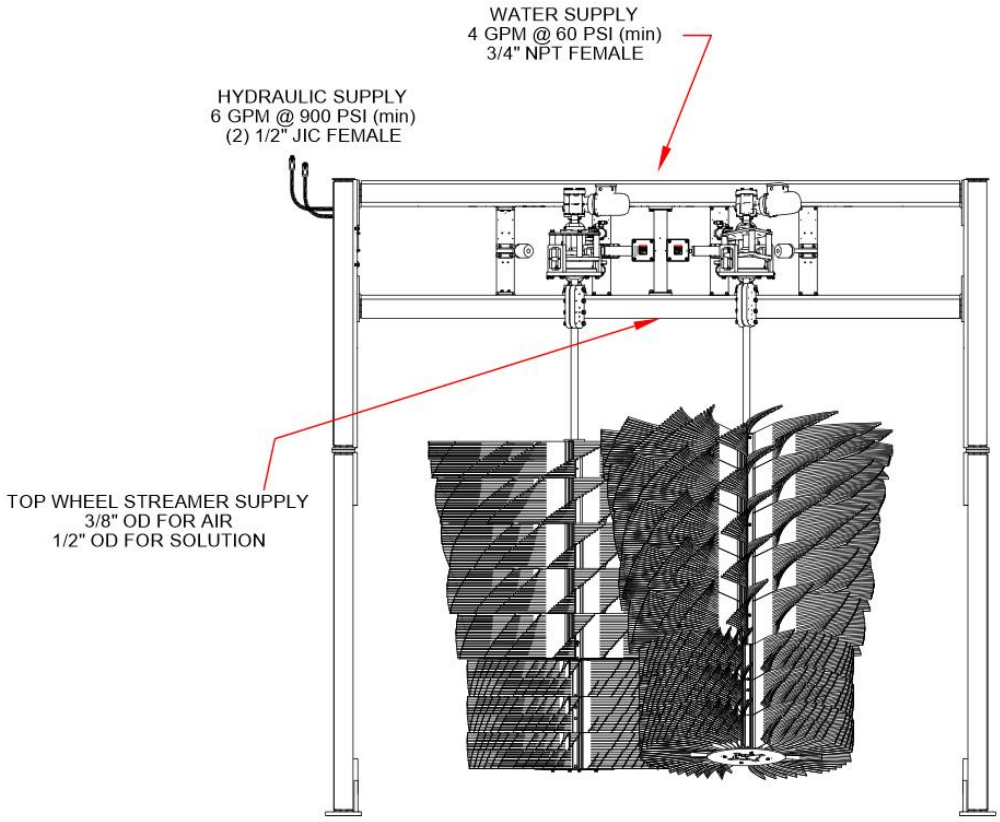
It is imperative to supply the 300GTE Wrap pneumatics system with clean, dry, compressed air.

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 300GTE Wrap delivery system or its components.

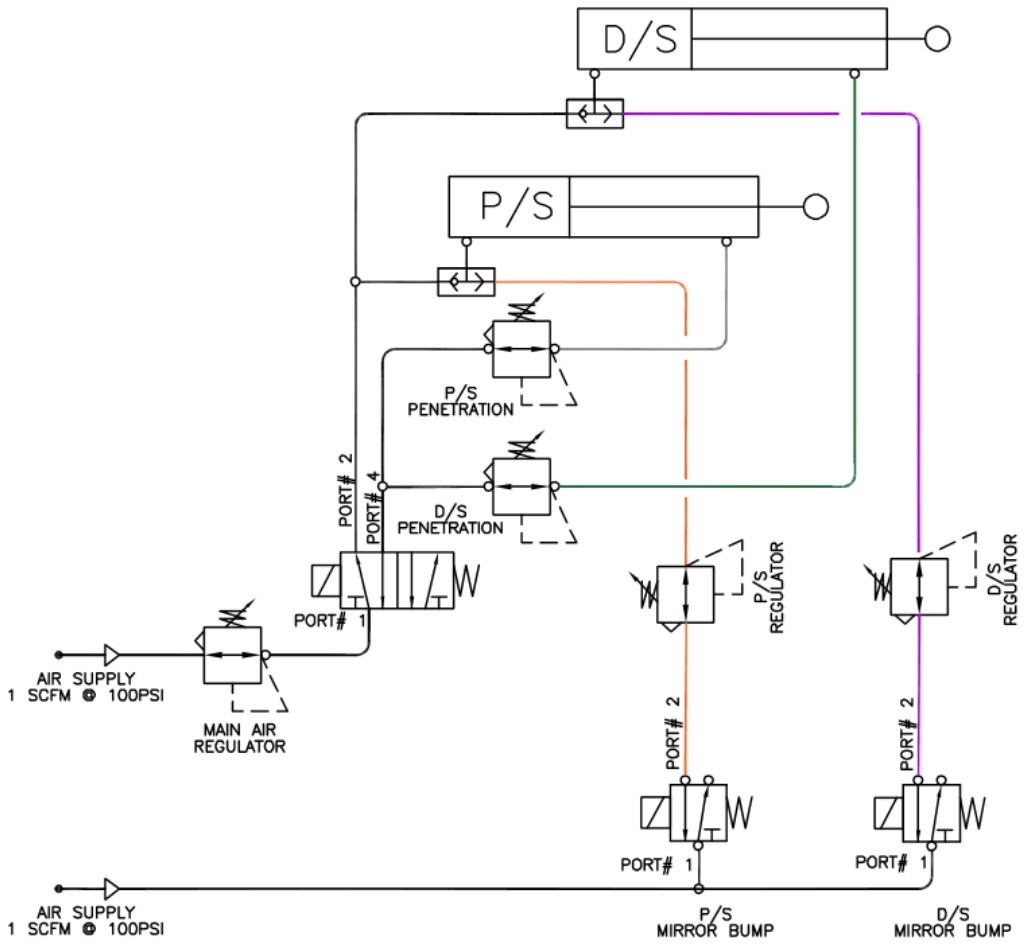
☐ **Bring** a **3/8" OD** polyflow tubing air line from the main compressed air supply to the **main air regulator on your air panel** and connect it to the existing 3/8" push-on fitting **(See Picture #-17).**



Picture #-17



Picture #-18 Utility Location



Picture #-19 Wraps Pneumatic Schematic

☐ **Following the air panel diagram (see picture #-19) bring** three **3/8" OD** polyflow tubing airline (green, grey, and black) from the wrap air panel to your 300GTE Wrap**.** Connect airlines from regulators to cylinders:

Black: From air valve to both end cylinders (opposite side from the rod), at the shuttle valves. You will need a T fitting to connect both cylinders.
Green: From D/S regulator to D/S cylinder rod end
Grey: From P/S regulator to P/S cylinder rod end

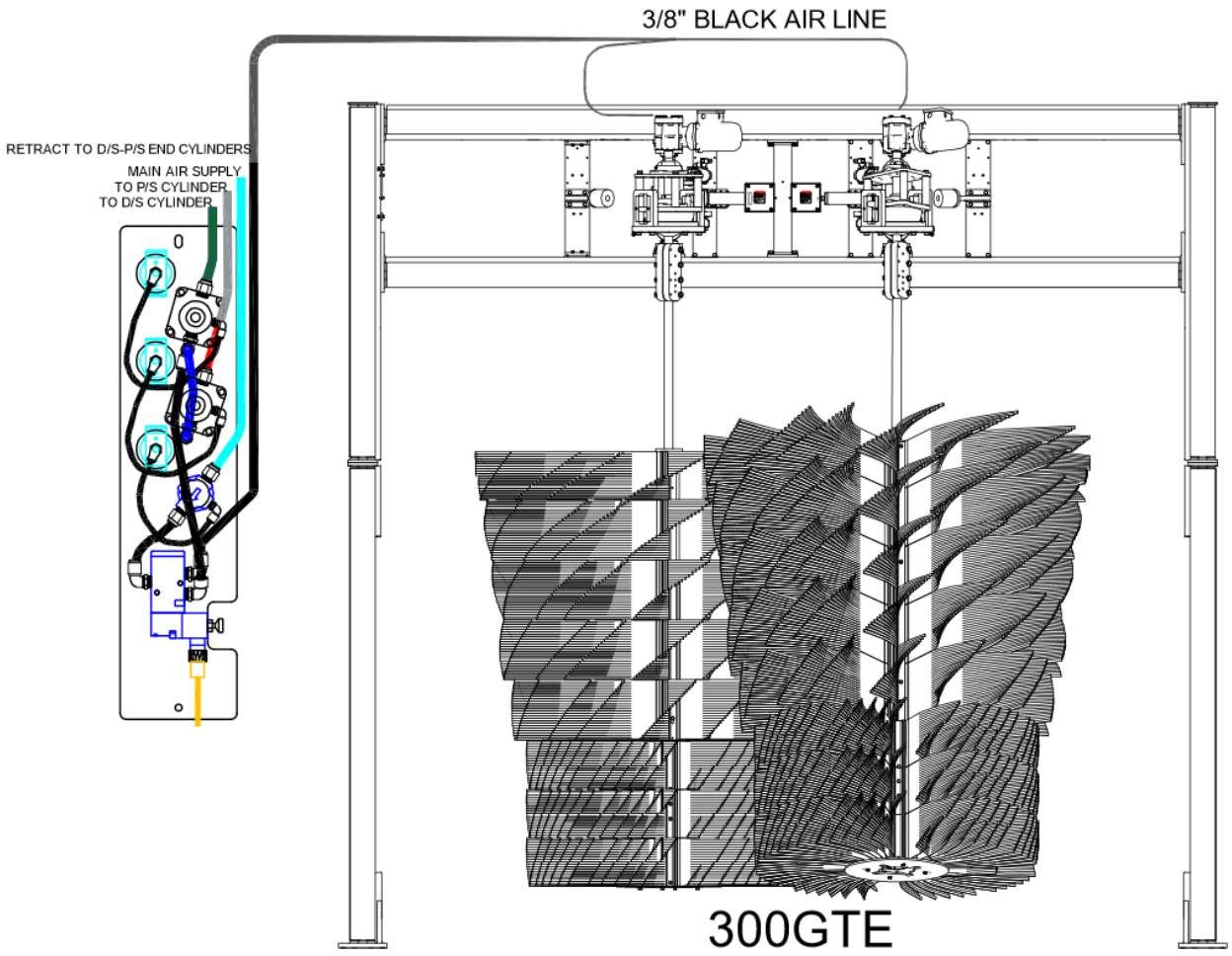
☐ **Recommended 300GTE Wraps Starting Air Pressures**

Main Air Pressure: 60 PSI

Driver Side Air Pressure: 30-40 PSI

Passenger Side Air Pressure: 40-60PSI

☐ **Connect** the air panel **SOLENOID VALVE** to **ONE 120 VAC OUTPUT FUNCTION** from the car wash controller and through the **STARTER PANEL** or the **INVERTER PANEL (See Picture #-20).**


3/8" BLACK AIR LINE
RETRACT TO D/S-P/S END CYLINDERS
MAIN AIR SUPPLY
TO P/S CYLINDER
TO D/S CYLINDER
300GTE

Picture #-20

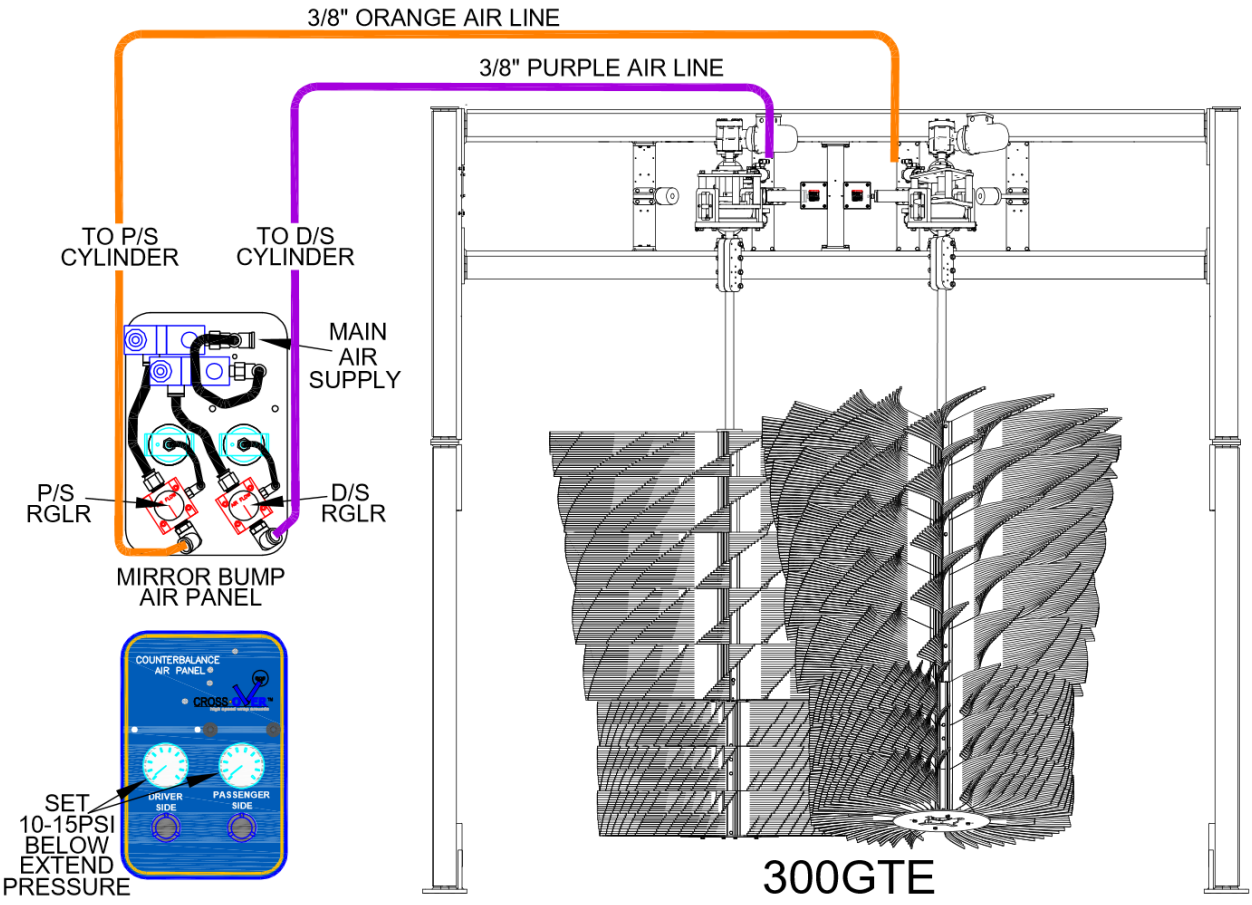
300GT WRAPS MIRRIOR BUMP INSTALLATION

☐ **Bring** a **3/8" OD** polyflow tubing air line from the main compressed air supply to the **counterbalance air panel** and connect it to the existing 3/8" push-on fitting **(See Picture #-21).**

☐ **Following the air panel diagram (see picture #-19) bring** two **3/8" OD** polyflow tubing airline (orange & purple) from the counterbalance air panel to your 300GTE Wrap**.** Connect airlines from regulators to cylinders:

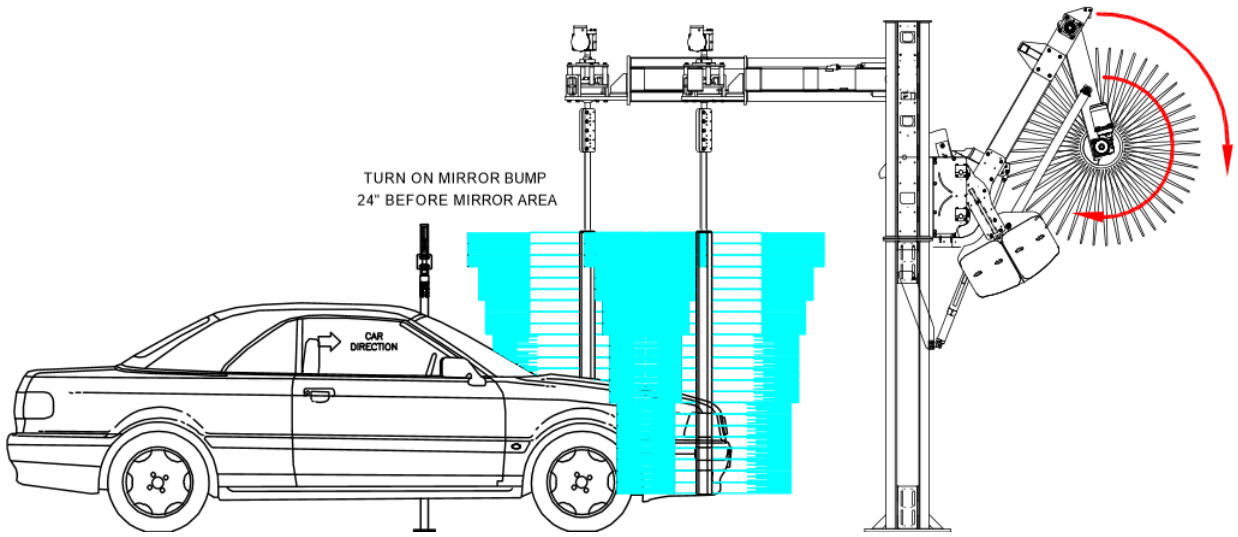
Orange: From P/S regulator to P/S cylinder end (opposite side from the rod) at the other open shuttle valve port.

Purple: From D/S regulator to D/S cylinder end (opposite side from the rod) at the other open shuttle valve port.



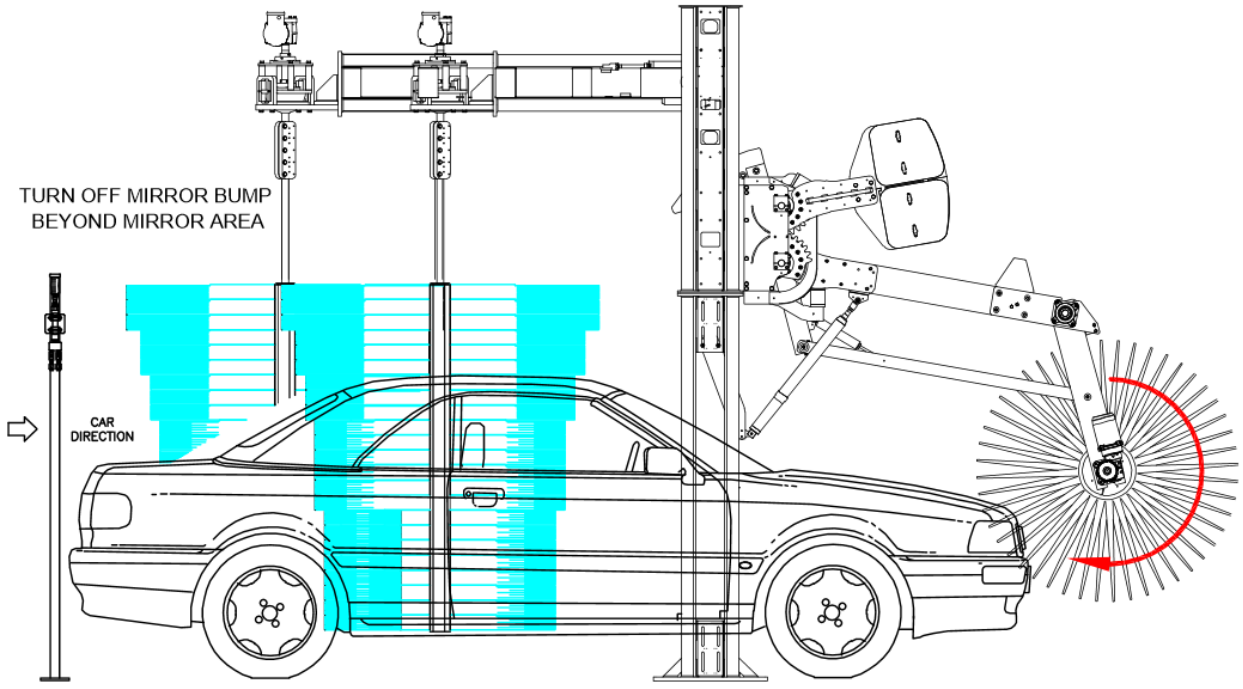
Picture #-21 Bump Air Panel

☐ **Connect** the **driver's side solenoid valve** to one **output from the car wash controller** and program the output to **turn on 24" before the mirrors area. Keep on till the vehicle passes the area.**



Picture #-22

☐ **Connect** the **passenger side solenoid valve** to a second **output from the car wash controller** and program the output to **turn on 24" before the mirrors area. Keep on till the vehicle passes the area.**



Picture #-23

☐ **Set** the air pressure of each air panel regulator to about **10 TO 20 PSI less than the primary cylinder air pressure.**

FOR EXAMPLE:

- **If the primary air cylinder regulator is set at 50 PSI, then set the counterbalance "mirror bump" air panels regulator air at 30 PSI. To decrease the brush pressure to the mirror area, increase the regulator to 35 PSI.**
- **If the primary air cylinder regulator is set at 40 PSI, then set the counterbalance "mirror bump" air panel regulator at 20 PSI. To decrease the brush pressure to the mirror area, increase the regulator to 25 PSI.**

OPTIONAL LICENSE PLATE BUMP

☐ **Your** MCWW License Plate Bump Retract system is designed to “move the brush away” from the center front of the vehicle by about 16 to18” by pushing the inside of both wrap arms.

☐ **Install** both (D/S and P/S) license plate bump kit to the 300GTE Wrap between the shock dampener & the air cylinder using the provided mounting plate & hardware

☐ **Bring** a **3/8” OD** polyflow tubing air line from the main compressed air supply to the **license plate bump panel** and connect it to the existing 3/8” push-on fitting **(See Picture #-24).**

☐ **Bring two 3/8” OD (See Picture #-24)** polyflow tubing airline (grey) one from the D/S regulator to the D/S LP Bump Cylinder and one from the P/S regulator to the P/S LP bump cylinder on the 300GTE Wrap**.**

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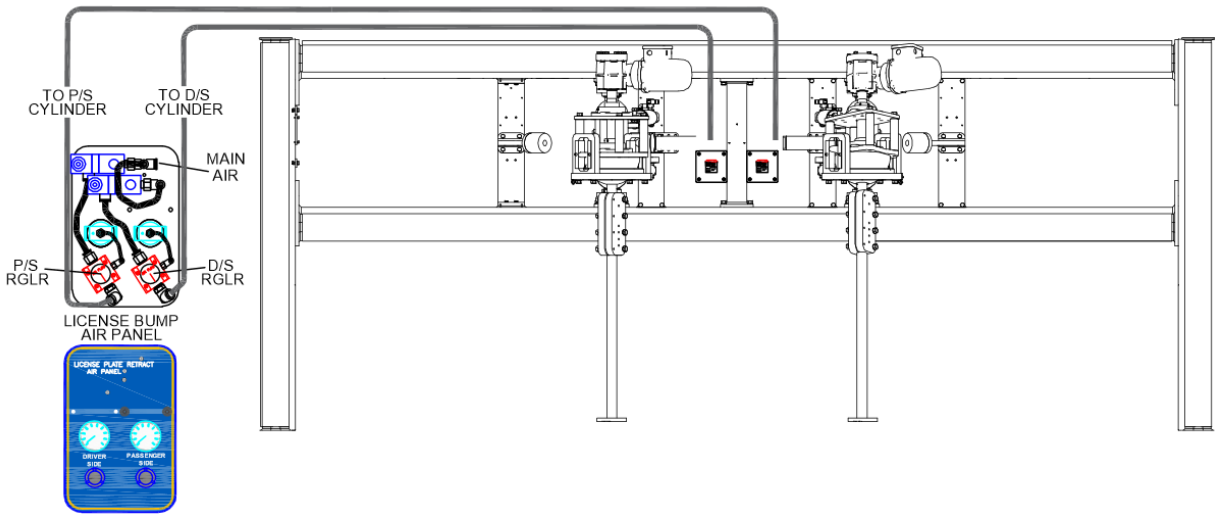


Picture #-24

PNEUMATIC INSTALLATION DUALLY TOP WHEEL

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

WARNING!

It is imperative to supply the Dually Top Wheel pneumatics 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 Dually Top Wheel delivery system or its components.

☐ **Bring** a **3/8" OD** polyflow tubing air line from the main compressed air supply to the **Dually Top Wheel air panel main air supply fitting & T it to the bottom rear counter pressure solenoid valve (See Picture #-25-26).**

☐ **Following the air panel diagram (See Picture #-25) bring three 3/8" OD** polyflow tubing airline (Blue, Red, & Clear) from the Dually Top Wheel air panel to your Dually Top Wheel**.** Connect airlines from regulators to cylinders:

Red: From top wheel penetration regulator to top head beam and T it to the rod end cylinder on both D/S & P/S cylinder **(See Picture #25 -26)**

Clear: From 3-position solenoid valve **(Port#-2)** to top head beam and T it to the cylinder end (opposite side from the rod) on both D/S & P/S cylinder **(See Picture #25 -26)**

Blue: From middle shuttle valve port to top head beam and T it to the cylinder end middle on both D/S & P/S cylinder **(See Picture #-25-26)**

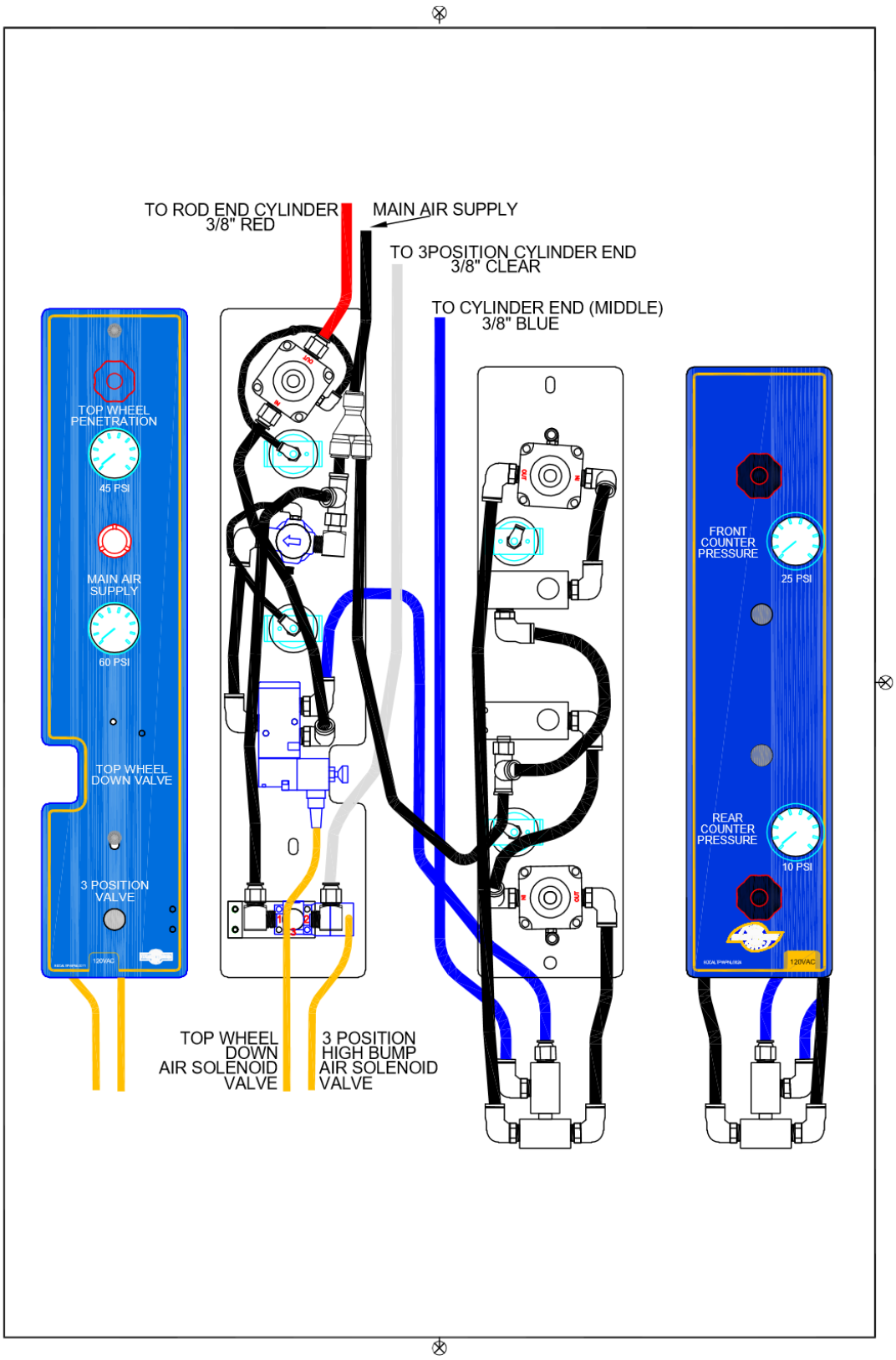
☐ **Recommended Dually Top Wheel Starting Air Pressures**

Main Air Pressure: 60 PSI

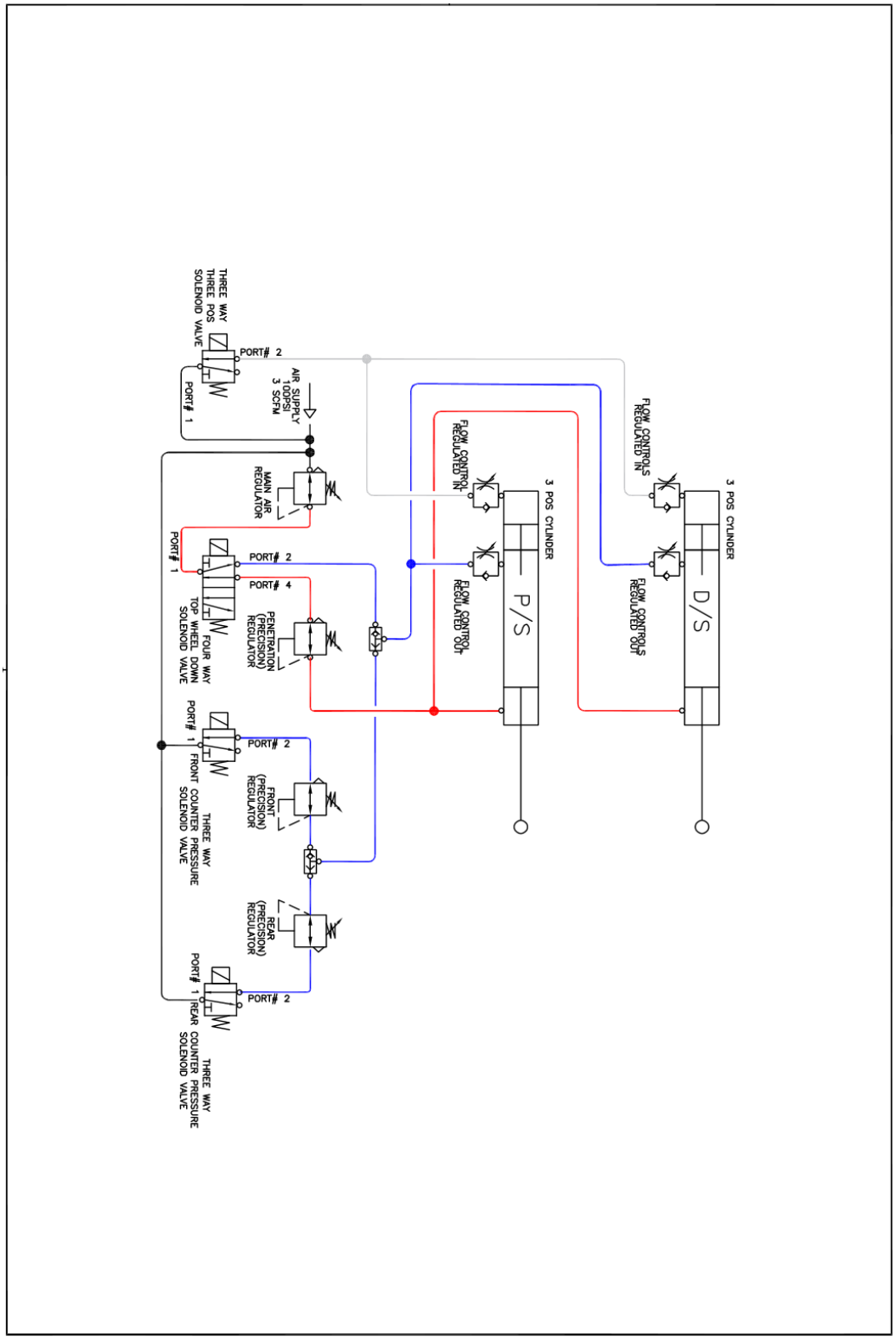
Penetration Air Pressure: 45 PSI

Front Counterbalance Air Pressure: 25 PSI

Rear Counterbalance Air Pressure: 10 PSI

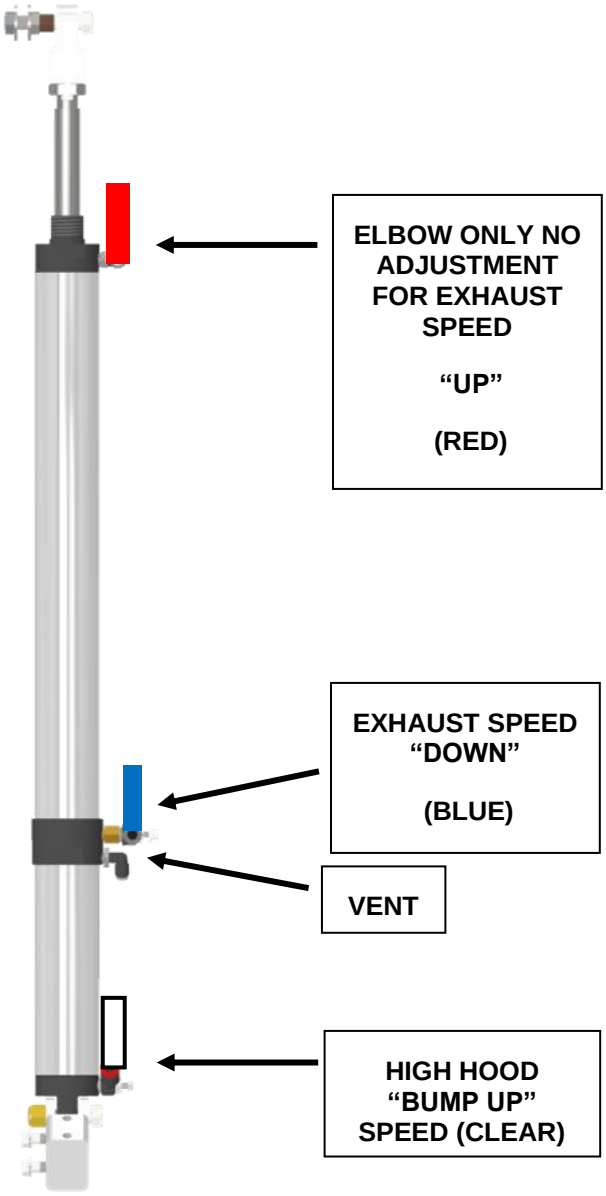


Picture #-25 Dually Air Panel



Picture #-26 Dually Pneumatic Schematic

3 POSITION CYLINDER DUALLY TOP WHEEL

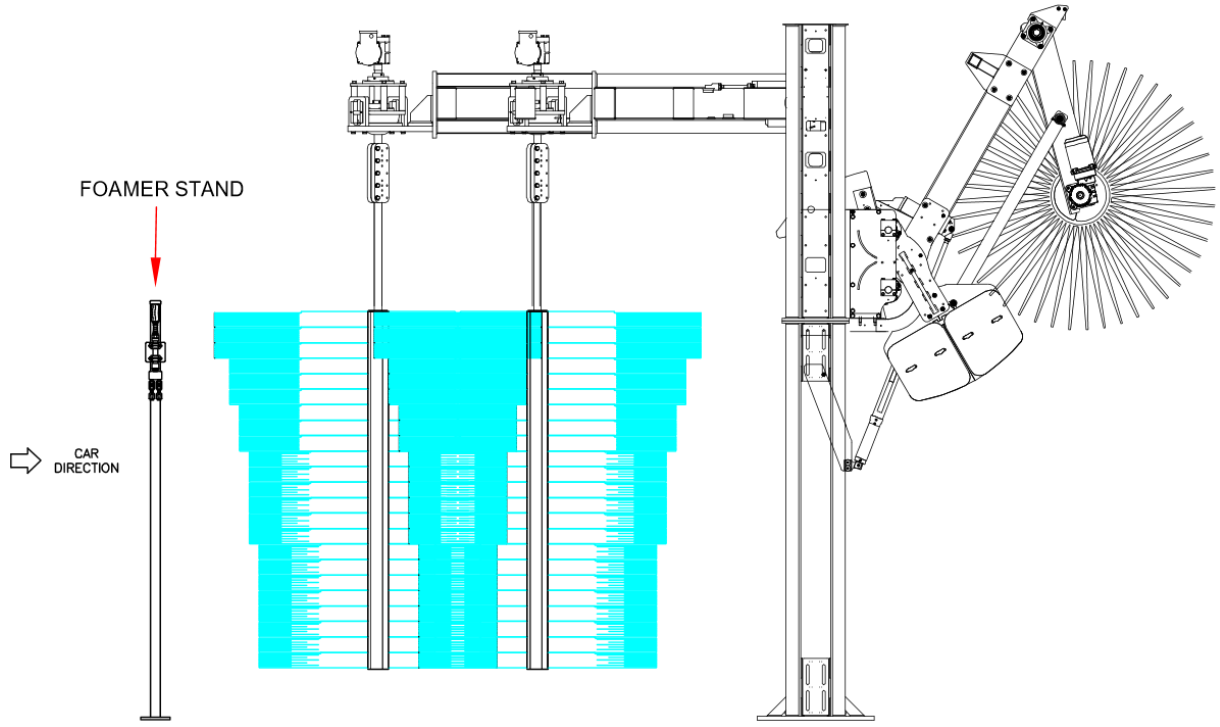


Adjusting the needle valve can “speed” or “slow” the movement of the brush when coming down. Turning counterclockwise opens the valve to allow air to escape faster. Turning the valve clockwise closes the valve to slow the exhaust limiting the air slowing the brush while going down.

High Hood bump valve works opposite. Faster air flow in requires opening the valve “counterclockwise” if the hood bumps too fast close the valve “clockwise” to slow the air flow into the cylinder.

FOAMER INSTALLATION

☐ **Bring two 1/2" OD and two 3/8” OD** polyflow tube from a chemical delivery system to the **foamer stands for the 300GTE Wraps** and connect to the existing push-on fittings **(See Picture #-27).**



Picture #-27

☐ Mount the foamer for the Dually Top Wheel to the middle of the bottom cross beam on the exit side**. Bring one 1/2" OD and one 3/8” OD** polyflow tube from a chemical delivery system to the **MIDDLE OF THE BOTTOM CROSS BEAM** and connect to the existing push-on fitting.

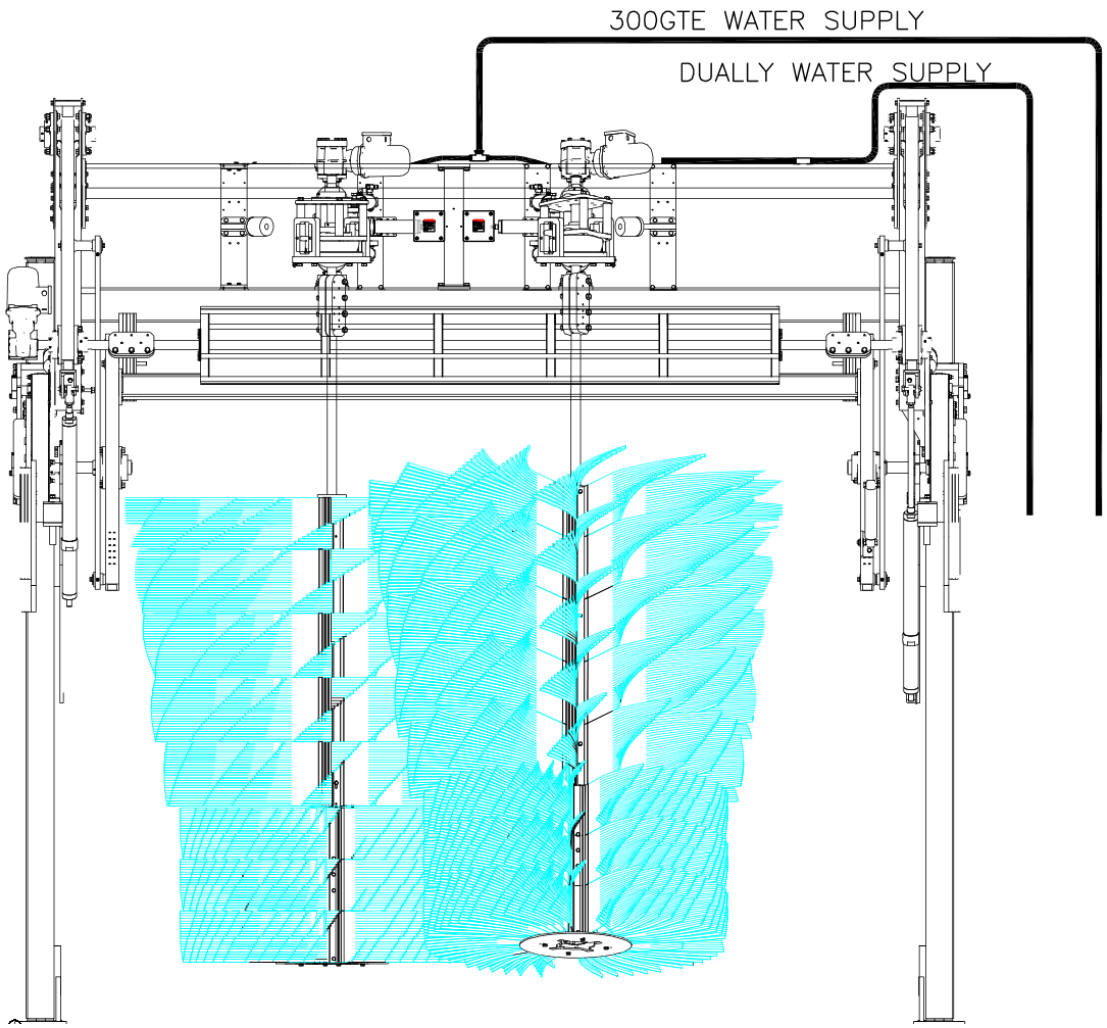
WATER FEED INSTALLATION

☐ Your MCWW 300GTE Dually requires a water supply of 4 GPM for both wrap wheels and a water supply of 3 GPM for the top wheel. Reclaim or fresh water can be used. Install one 1/2" water hose from a water dilution station to the middle of the top cross beam using the supplied T fitting to deliver water to the D/S & P/S wrap.

☐ Install one ½” water hose from a water dilution station to the middle of the cross beam using the supplied fitting to deliver water to the Dually Top Wheel manifold.

NOTE:

If the length of the hose between the dilution station and your 300GTE Dually is more than 50 feet, we recommended installing a water supply capable of at least 4GPM @ 40 PSI using a ¾” NPT hose



Picture #-28 Water Connection

START UP PROCEDURES

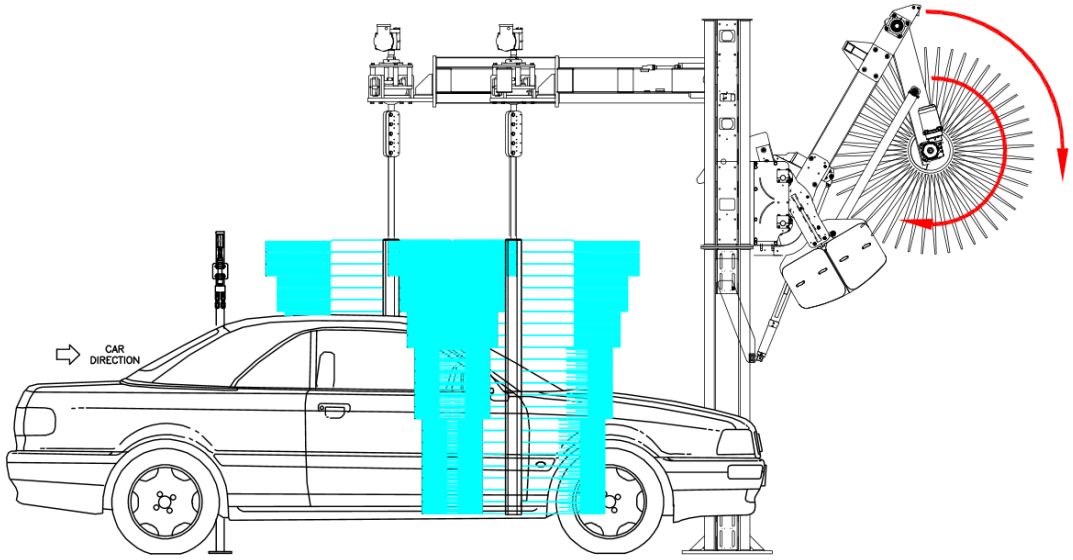
- ☐ Set the driver's side arm regulator air pressure at 30-40 PSI**.** Follow setting the passenger side arm regulator at 40-60 PSI. Verify for no air leaks.
- ☐ Manually turn on the wrap extend valve and verify the two wheels are extending into the middle of the bay. Adjust flow control fittings located on air cylinders as needed.
- ☐ Manually turn on mirror bump (counterbalance) and verify for no leaks and adjust PSI to 5-10 PSI below the extend pressure.
- ☐ Manually turn on the air valve (push in the solenoid valve a ¼ turn) for the front License Plate Bump and verify the wheels move away from the center line.
- ☐ Set the main regulator air pressure to 60 PSI. Continue with the front counterbalance air pressure and set to 25-35 PSI following with the rear counterbalance set at 10 PSI.
- ☐ Manually turn on the top wheel extend valve and verify the top wheel is extending downward. Adjust flow control fittings located on air cylinders as needed.
- ☐ Manually turn on the front counterbalance and verify there are no leaks follow with the rear counterbalance checking the same.
- ☐ Manually turn on the streamer soap foamer to the top wheel, adjust the foamer and position it to spray evenly along the top of the vehicle. Turn off the chemical delivery station.
- ☐ Manually turn on the streamer soap foamer to the wraps, adjust the foamer and position the streamer heads to spray the foam to cover both sides of the vehicle. Turn off the chemical delivery station.
- ☐ Manually turn on the water distribution and confirm that the spray nozzles cover the top wheel**.** Turn off your dilution station.
- ☐ Manually turn on the water distribution and adjust the spray nozzles to cover the wrap wheel from the lower hub to the top hub**.** Turn off your dilution station.

☐ Verify each output are connected to the proper end device.

NOTE:

Your Dually Top Wheel should not come down unless the top wheel is spinning due to the interlock

☐ Your Dually Top Wheel is an electric drive using a Variable Frequency Drive (VFD), that allows for wheel speed adjustments. Manually turn on the motor spin output from your car wash controller and confirm that the starting rotation of the wheel is against the vehicle direction (see Picture below). Correct direction as needed.

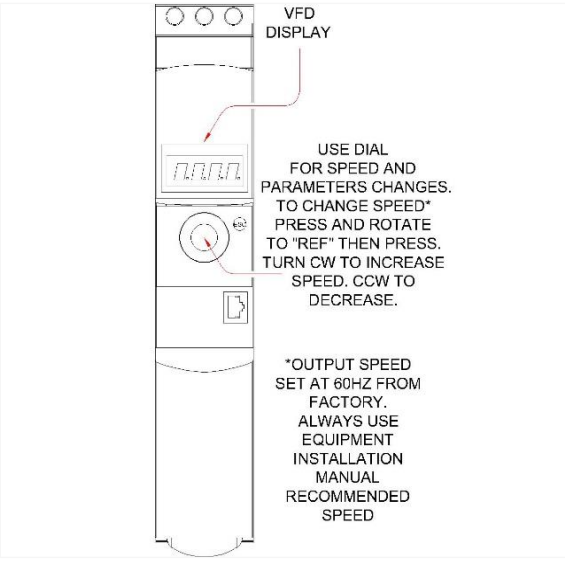


Picture #-29 Wheel Direction

NOTE:

Your Dually Top Wheel is driven by a Variable Frequency Drive (VFD), you may adjust the speed of the wheel between 80-90 RPM.

☐ Refer to **picture #-30** if you need to change the speed of your Dually Top Wheel brush



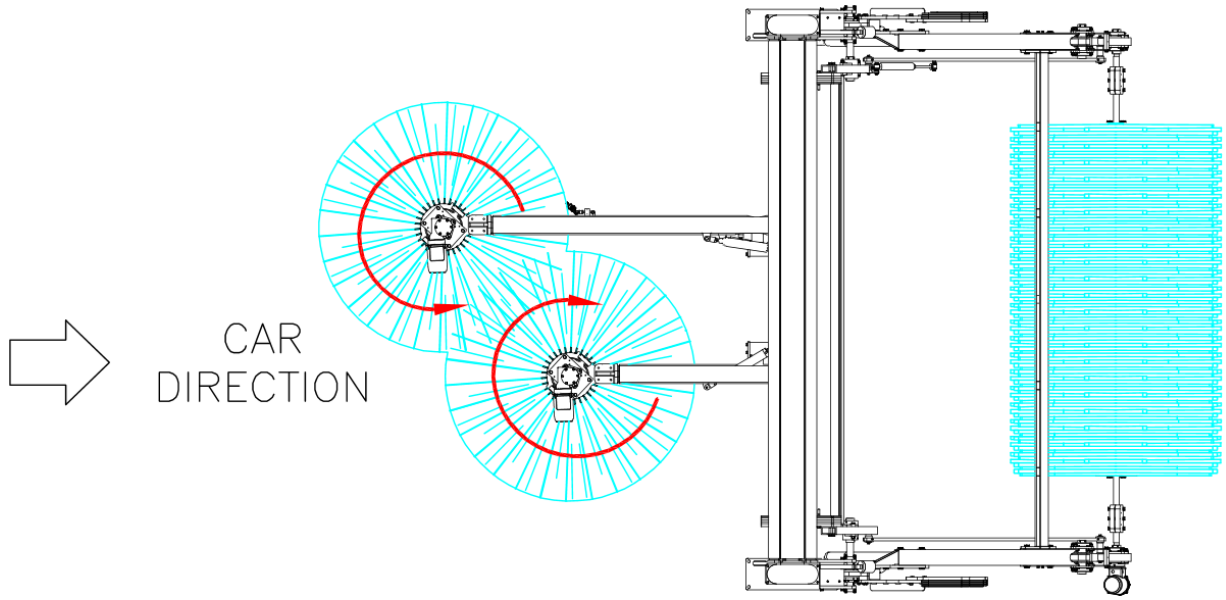
Picture #-30 Change Speed For Schneider ATV32 VFD

☐ 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 fittings are adjusted as needed.

☐ While the wheel is still spinning, turn off the spin output function and confirm that the top wheel completely retracts up and away from the vehicle. Turn off the top wheel down output function.

☐ Repeat the same process when testing the reverse output function.

☐ If your 300GTE Wrap is an electric drive using a Variable Frequency Drive (VFD), that allows for wheel speed adjustments. Manually turn on the motor spin output from your car wash controller and confirm that the starting rotation of the wheel is against the vehicle direction **(See Picture #-31).** Correct direction as needed.



Picture #-31

☐ Refer to **picture #-30** if you need to change the speed of your 300GTE wraps

☐ With the wheel still spinning, turn on the D/S & P/S wrap extend output function from your car wash controller and confirm the wraps are extending into the center of the bay. If the wraps are not extending, or takes too long extending to the center, verify that the flow control fittings are adjusted as needed.

☐ While the wraps are still spinning, turn off the spin output function and confirm that the wraps completely retracts away from the center of the tunnel. Turn off the wrap extend output function.

☐ If your 300GTE wraps are hydraulic driven confirm before starting the hydraulic unit that there is hydraulic fluid in the pump. Manually turn on the hydraulic function output for a few seconds and confirm the pump is spinning in the correct direction.

☐ Manually turn on your hydraulic power unit and set the hydraulic flow control valve to a wheel speed of 88 RPM for the 300GTE Wraps. **Check for leaks.** You may use a non-contact tachometer to accurately measure RPM, or by placing a piece of tape on the cloth/foam and counting the rotations per 15 seconds. Multiply this by 4 to calculate current RPM.

☐ Verify direction of wraps. **(See Picture #-31)**

☐ Turn on the wrap extend and confirm the wheels are extending into the middle of the bay.

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

NOTE:

If the 300GTE Wrap is an electric drive, the wheel speed is preset at 88RPM. Using a Variable Frequency Drive (VFD), instead of starter units, allows for wheel speed adjustments.

☐ Program each output in your car wash controller following the directions below.

SEQUENCE OF OPERATIONS

Note: verify all end device are voltage specific to the site

- ☐ Dually Output list
  - Top Wheel down air valve
    - Turn on five feet before vehicle
  - Top wheel lubricating soap water valve
    - Turn on when vehicle meets brush
  - Top wheel soap foamer
    - Turn on to cover entire vehicle
  - Top wheel motor forward run
    - Turn on at same time as top wheel down
    - Keep on for the duration of the vehicle
  - Top wheel motor reverse run
    - Turn on when brush reaches top portion of windshield
    - Turn off reverse after turning off the forward run
  - Optional: sonar ready signal
    - Turn on at front of vehicle
    - Turn off at end of vehicle
    - Do not use look back function
- ☐ Wrap Output list
  - Wrap extend air valve
    - Turn on five feet before vehicle
  - D/S counterbalance air valve
    - Turn on at front tire
    - Keep on for five feet
  - P/S counterbalance air valve
    - Turn on at front tire
    - Keep on for five feet
  - Optional: LP Bump air valve
    - Turn on at front of vehicle
    - Turn off beyond the front of vehicle
  - Wrap lubricating soap water valve
    - Turn on when vehicle meets brush
  - Wrap soap foamer
    - Turn on to cover both sides of vehicle
  - D/S Wrap motor run
    - Turn on at the same time as the wrap extend
    - Keep on duration of vehicle
  - P/S Wrap motor run
    - Turn on at the same time as the wrap extend
    - Keep on duration of vehicle
  - Hydraulic: Wrap motors run
    - Turn on at the same time as the wrap extend
    - Keep on duration of vehicle

☐ 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 Wrap Wheels are contouring around the front bumper of vehicle.

WARNING!

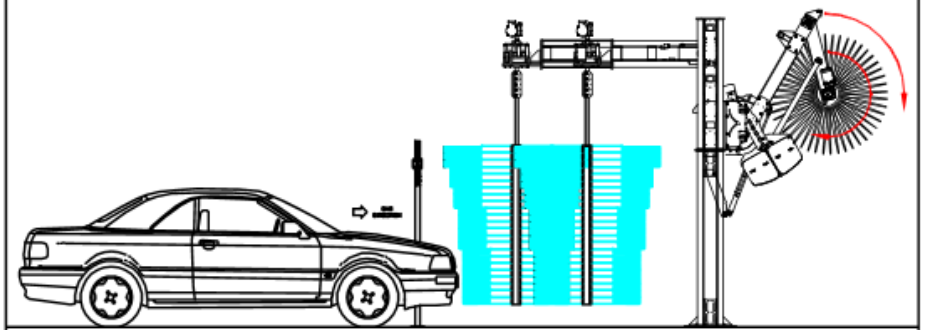
For an electric drive 300GTE Wrap, turn off each overload relay, one at a time, and confirm that the conveyor stops or that the wrap arm retracts. Failure to do so may lead to major equipment damage if one of the two wrap motor overload replays trips or malfunctions.

☐ Run a car through the wash to verify that your MCWW Dually TOP Wheel is operating properly. Increase or decrease the penetration air regulator to increase or decrease the wheel penetration on the car.

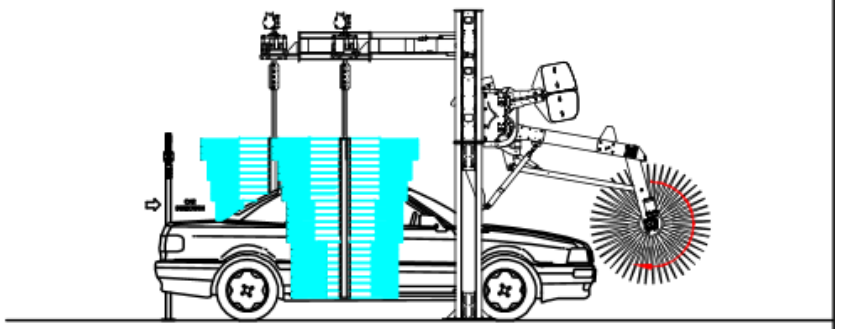
- The Dually Top Wheel front counterbalance will turn on before the front bumper of the vehicle has reached the brush. The air valve should turn on and assist with the penetration of the Dually Top Wheel Brush.
- Confirm your Dually Top Wheel is reversing rotation when the brush is at mid roof of the vehicle and your front counterbalance is turning off and the rear counterbalance is turning on.
- 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.

OPERATIONS

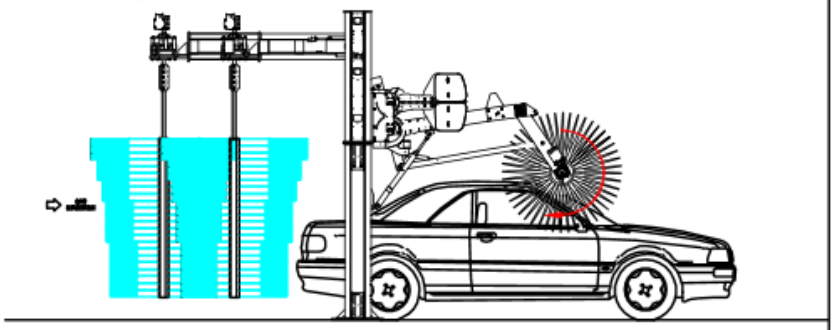
1- TURN ON WRAP FOAMERS, MOTORS AND EXTEND
2- TURN ON WRAP LUBRICATION SOAP DILUTION STATION
3- TURN ON TOP WHEEL DOWN, MOTOR RUN FORWARD



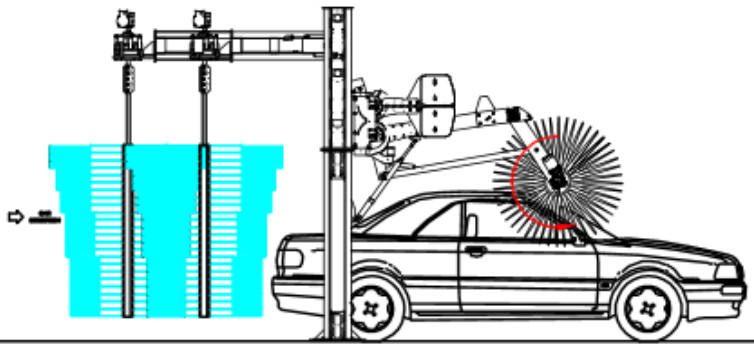
4- TURN MOMENTARILY ON MIRROR BUMP AIR VALVE FOR EACH MIRROR
5- TURN ON TOP WHEEL FOAMER AND LUBRICATING SOAP DILUTION STATION
6- TURN ON FRONT COUNTER BALANCE AIR VALVE (SET BETWEEN 10-15PSI) BEFORE FRONT OF VEHICLE REACHES THE TOP BRUSH
7- TURN WRAP FOAMER OFF



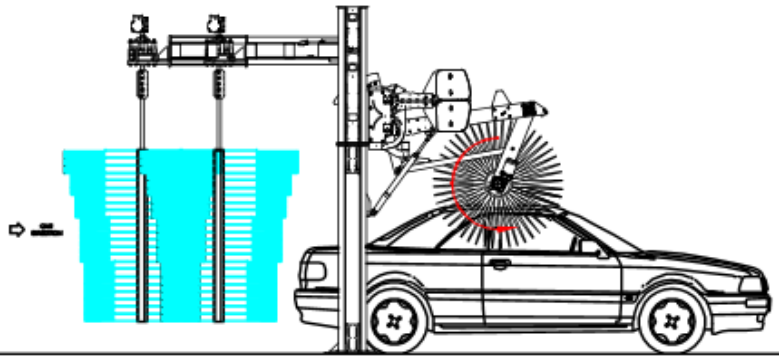
8- WHEN TOP BRUSH REACHES TOP OF WINDSHIELD:
1- TURN OFF FORWARD DIRECTIONAL COMMAND TO TOP WHEEL AND REVERSE ROTATION SIMULTANEOUSLY
2- TURN OFF FRONT COUNTERBALANCE AIR VALVE AND TURN ON REAR COUNTERBALANCE SIMULTANEOUSLY
9- TURN WRAP EXTEND, MOTOR RUN OFF AND WRAP LUBRICATING SOAP

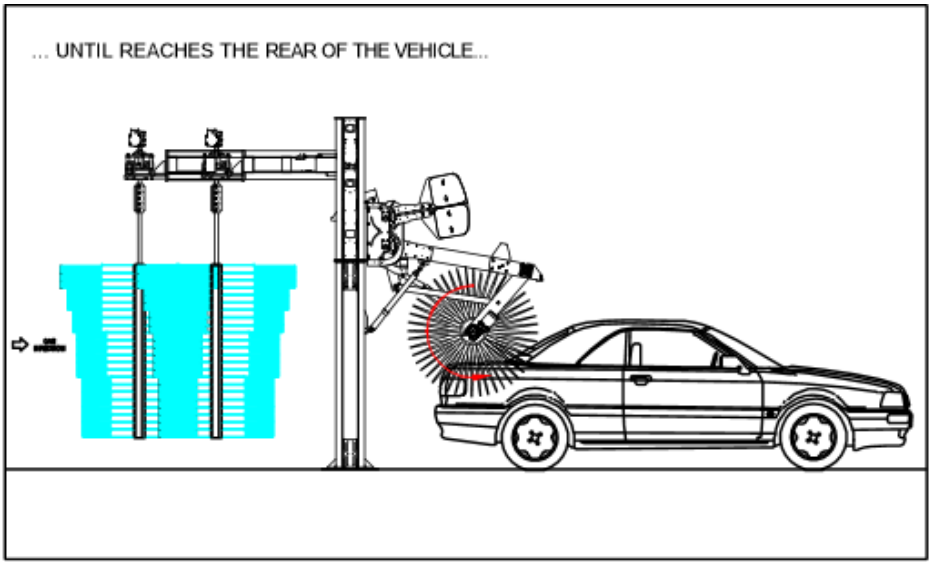


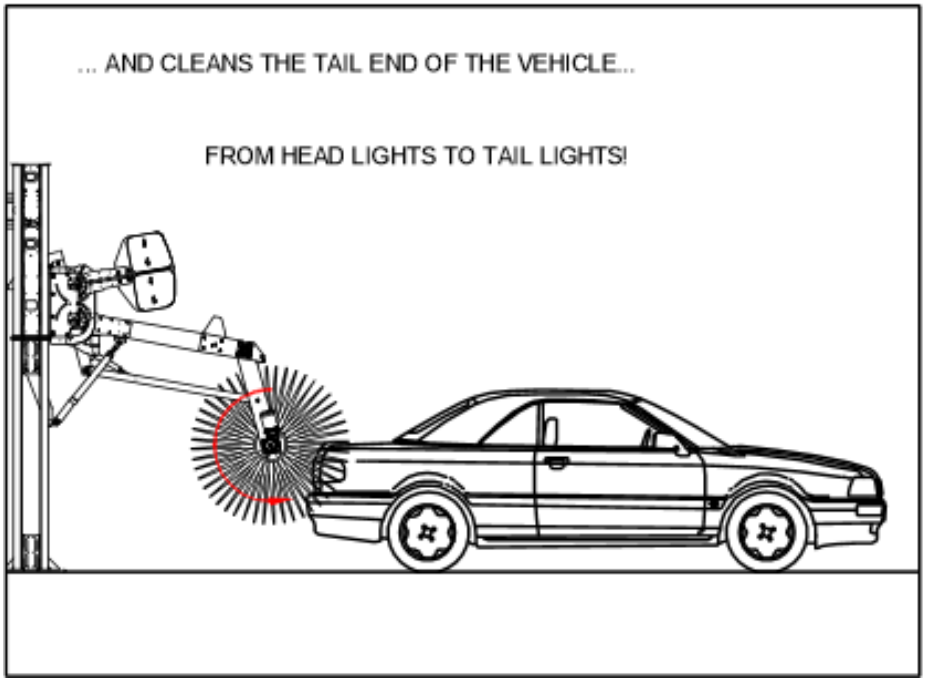
10-THE TOP WHEEL WILL "KNUCKLE" BACK TOWARD THE REAR OF THE VEHICLE



11-THE TOP WHEEL WILL NOW CLEAN THE VEHICLE TOP SURFACE ROTATING "WITH" THE VEHICLE DIRECTION...




... UNTIL REACHES THE REAR OF THE VEHICLE...


... AND CLEANS THE TAIL END OF THE VEHICLE...
FROM HEAD LIGHTS TO TAIL LIGHTS!

MAINTENANCE

Daily:

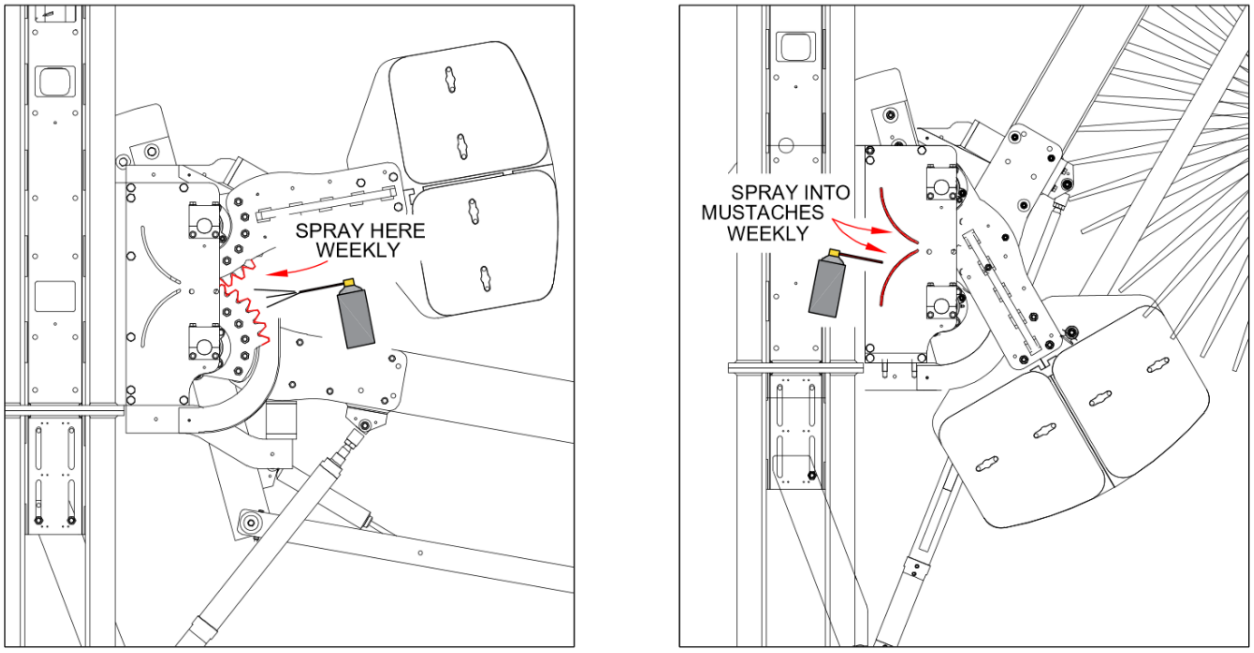
- Check top wheel & wraps for proper vehicle coverage
- Check top brush & wraps and are free of debris
- Check top brush & wraps for missing foam material
- Check all nozzles are spraying properly
- Check all foam coverage
- Check top wheel & wraps for leaks
- Check truck sensor

Weekly:

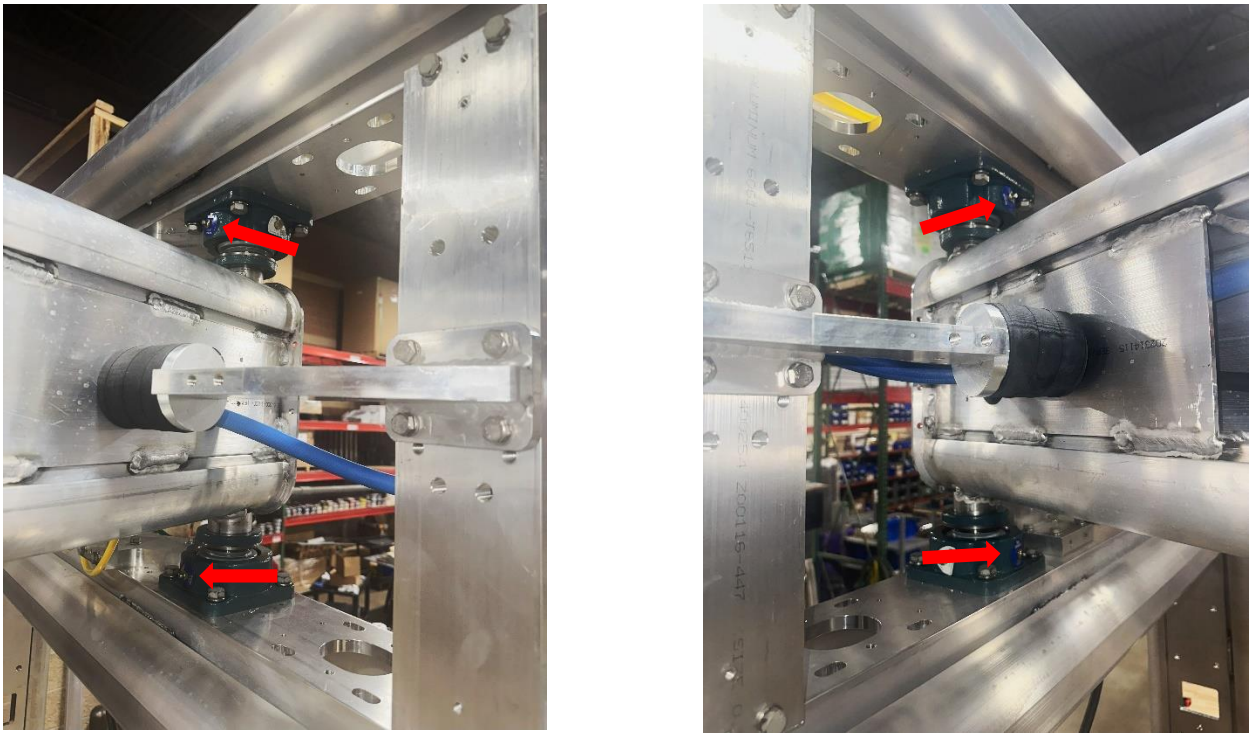
- Record all Top Wheel air pressures listed:
  - Main Air
  - Top Wheel Penetration Air
  - Front Counter Air
  - Rear Counter Air
- Record all Wrap air pressure listed:
  - Main Air
  - Driver's Side Air
  - Passenger Side Air
  - Drivers Side Mirror Bump Air
  - Passenger Side Mirror Bump Air
- Check Wrap mirror bump timing
- Grease Top Wheel gears with heavy lithium grease **(See Picture#-32)**

Monthly:

- Check & grease all bearings with heavy water resistance mineral grease

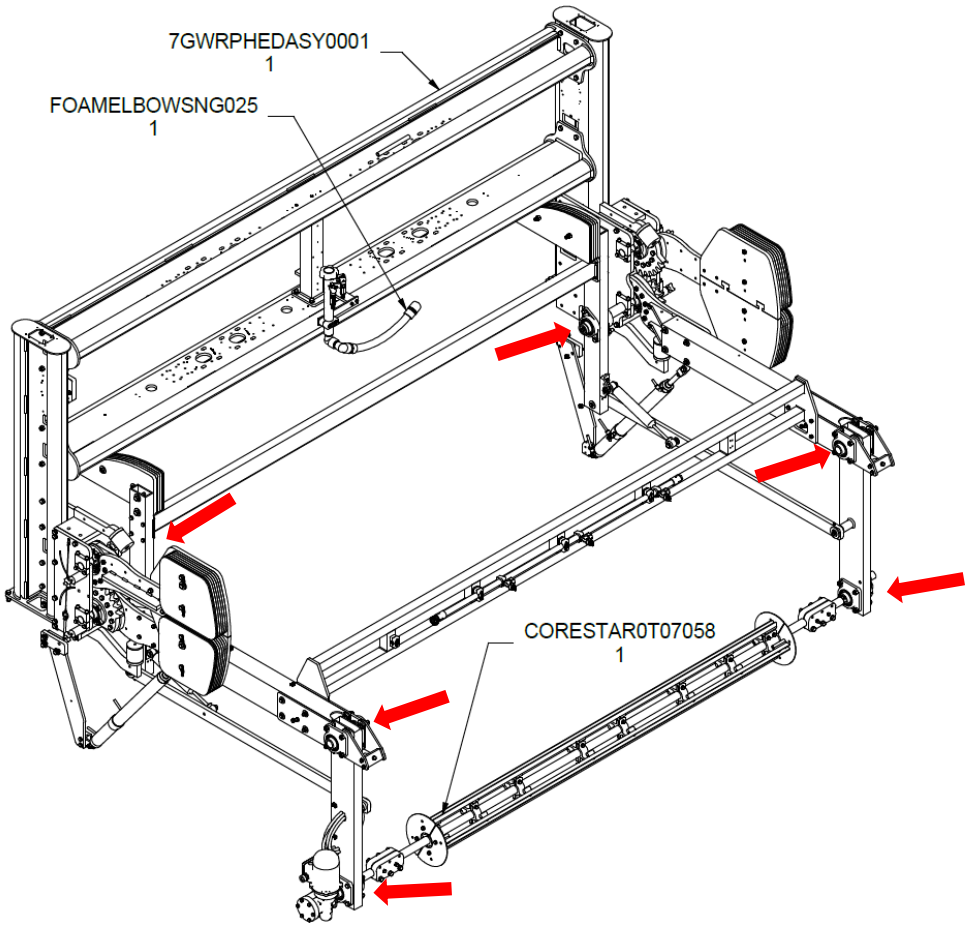


Picture #-32



Picture #-33 Wrap Grease Points

All grease points listed **in picture #-34** have an **exterior & interior** grease fitting making a total of 12.



Picture #-34 Dually Top Wheel Grease Points

TROUBLESHOOTING

Troubleshooting Guide: 300GTE Dually

Troubleshooting is a form of problem solving, often applied to repair failed products or processes on a machine or a system. It is a logical, systematic search for the source of a problem to solve it and make the product or process operational again. It is imperative to understand that all problems have a cause and solution.

Many times, you may not have an actual fault, and just a simple adjustment may resolve your issue please click on the below link for 'How To' videos.

<store.motorcitywashworks.com/Team360/Conveyor/Documents/Media%20Links%20Conveyor.pdf>

For all MCWW current manuals, videos, bulletins and information click the below link.

<store.motorcitywashworks.com/team360/>

POSSIBLE PROBLEMS/REMEDIES

Equipment:	Problem:	Remedy:
300GTE Wraps	Brush(es) does not rotate.	Check for mechanical binding stopping rotation. Check that motor is getting rated voltage or drive is faulted. Ensure that VFD Hz reading is ramping upward. Separate motor from gearbox to see if motor spins freely. If so, gearbox may be seized.
300GTE Wraps	Brush Arm(s) do not extend into center of wash bay.	Check that cylinder is not leaking. Check that MAC valve is de-energizing to allow air to flow to the correct port.

		Check that MAC valve is receiving required power.
300GTE Wraps	Brush Arm(s) do not retract from center of wash bay	Check that air cylinder is not leaking. Check that MAC valve is energized allowing air to flow to the correct port.
300GTE Wraps	Brush wobbles or appears bent.	This problem is typically event driven causing damage to the drive shaft. Inspect the hub clamps.
300GTE Wraps	Brush(es) do not come to center before vehicle arrives.	Check retract ready signal is on soon enough to allow brushes to center before vehicle arrives. Verify the air pressure is set high enough.

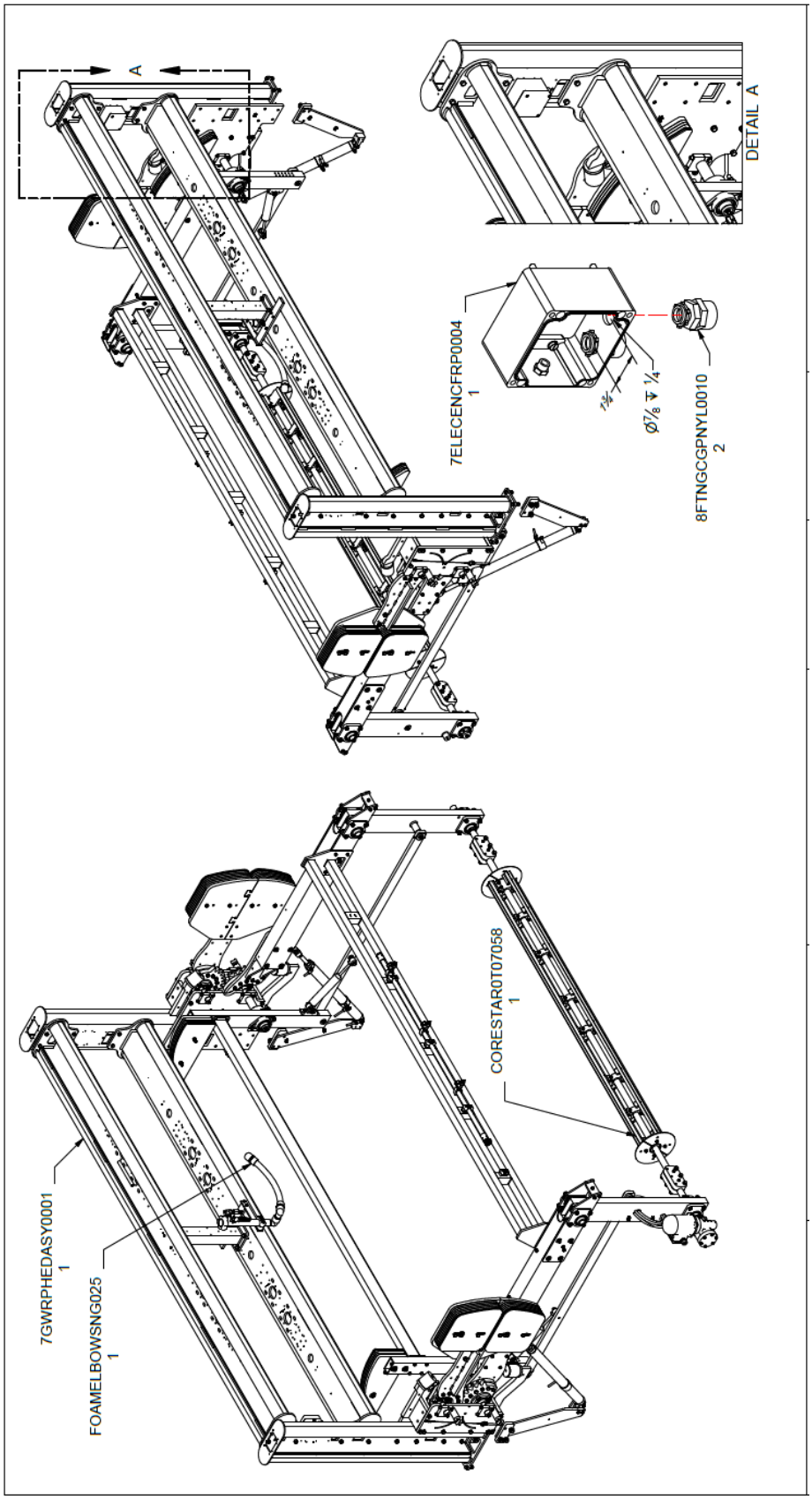
300GTE Wraps	Brush(es) do not complete the washing of the rear of a vehicle.	Verify retract signal is not turning off to soon. Verify brush spin signal is not turning off before wash is completed.

Dually Top Wheel	Slow to come down and/or retract.	Ensure counterweight and brush arms are balanced. Ensure Main air regulator is at minimum 60 PSI. Ensure air exhaust valves on cylinder are open enough to allow air to escape.
Dually Top Wheel	Does not rotate automatically or manually.	Check Top Wheel VFD for error code. Inspect gearbox & motor for failure. Inspect for mechanical

		operation failure of hub/drive shaft.
Dually Top Wheel	Does not retract.	Ensure manual air valve button is not locked into the “ON” position.
Dually Top Wheel	Does not extend down.	Check top wheel VFD for error code. Ensure manual air valve button will allow top wheel to extend. Also ensure counterbalance is not running on before top wheel is down.
Dually Top Wheel	Top Wheel is not chasing rear of vehicle	Add secondary arm counterweights

SUPPORT DOCUMENTS

Please refer to the below support documents for additional assistance regarding your equipment.



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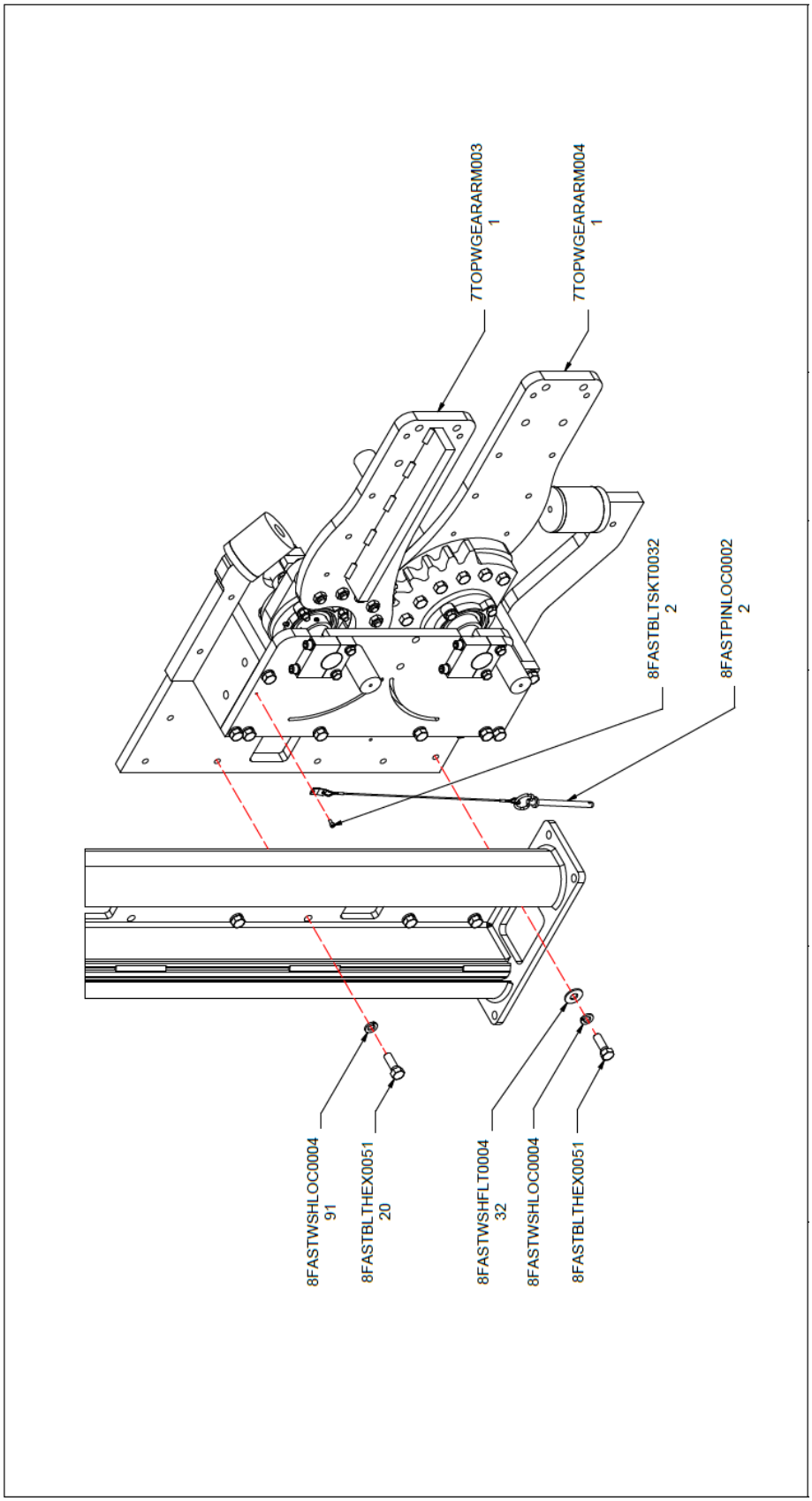

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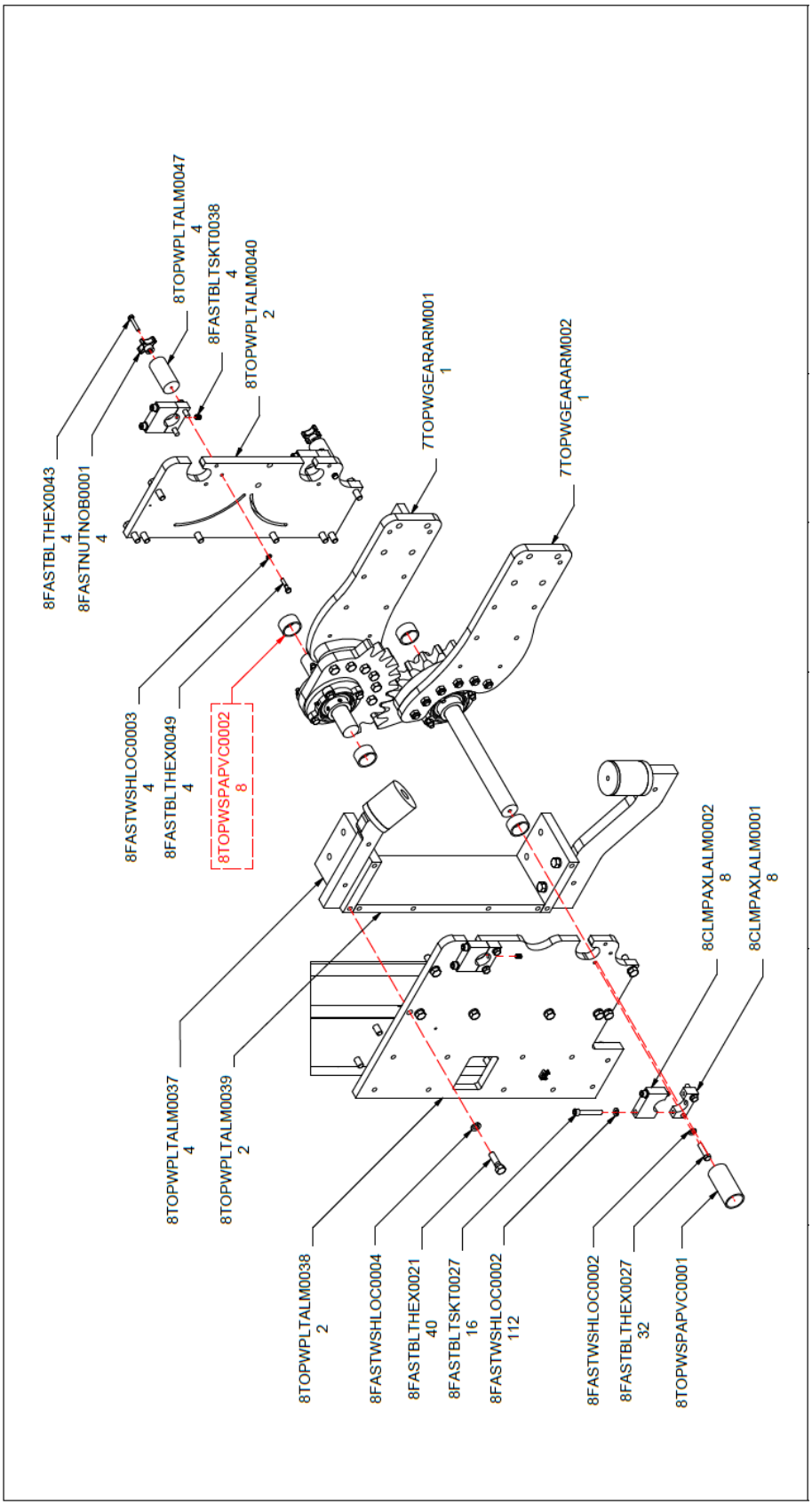

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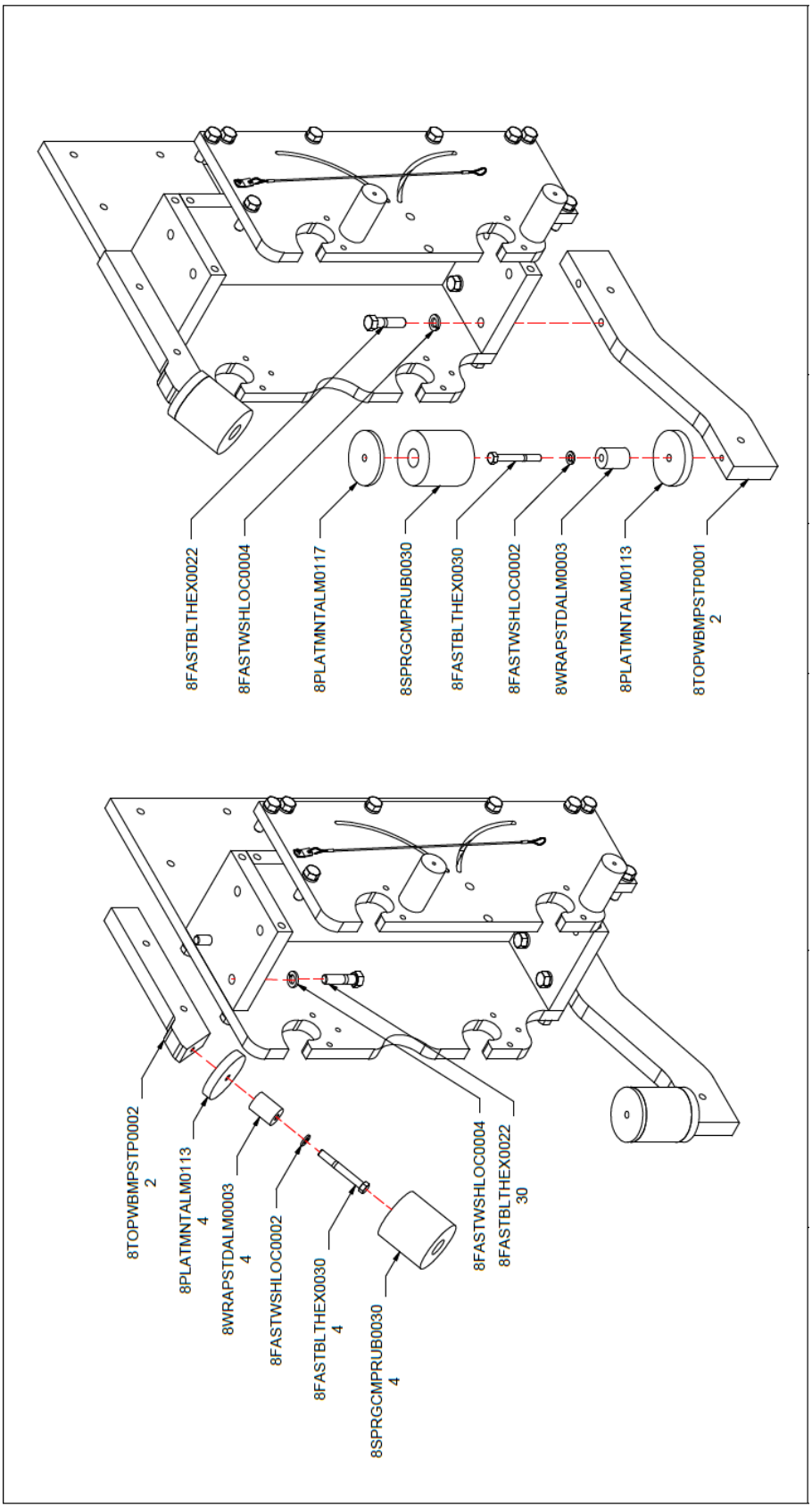

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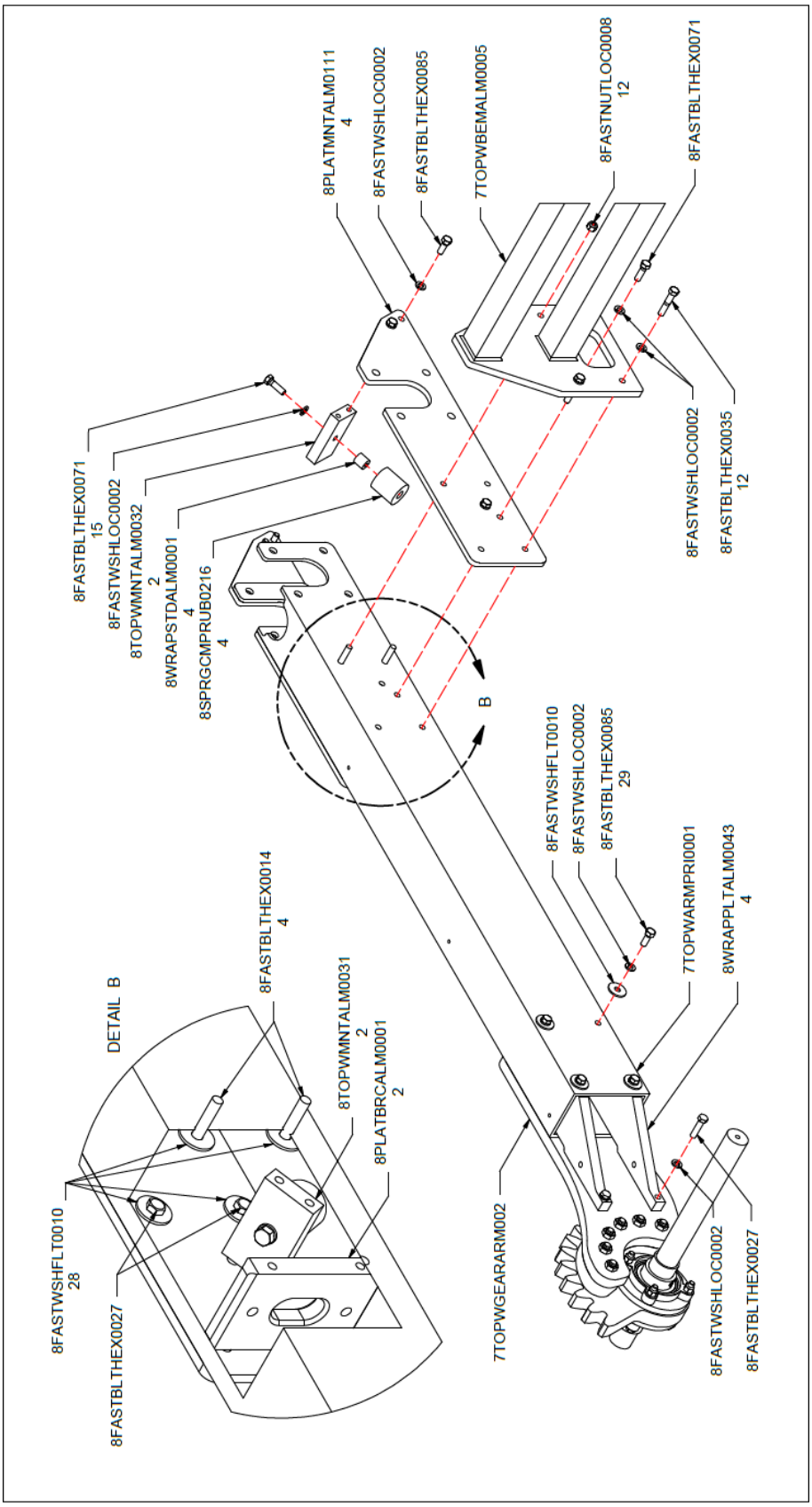

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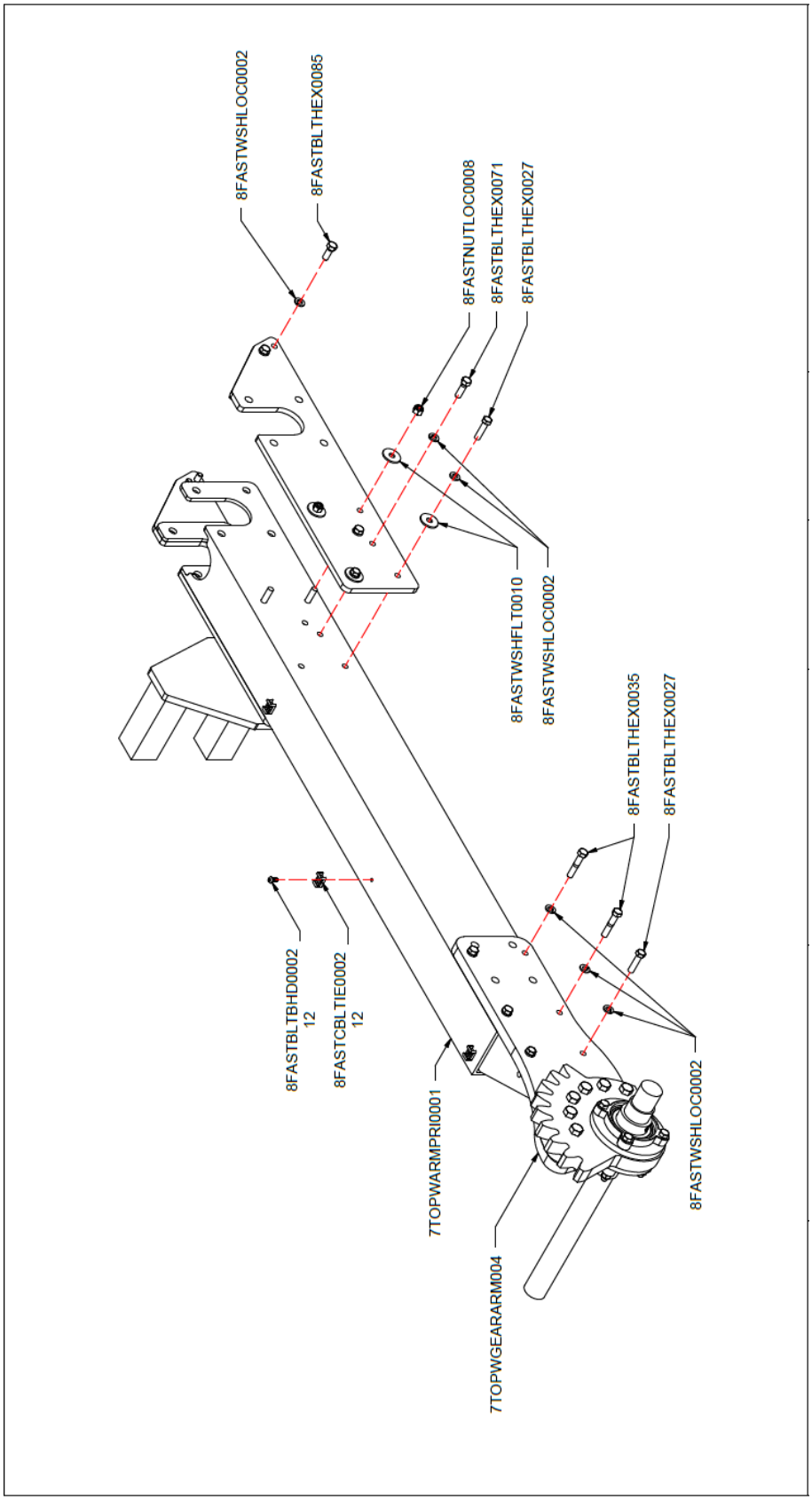

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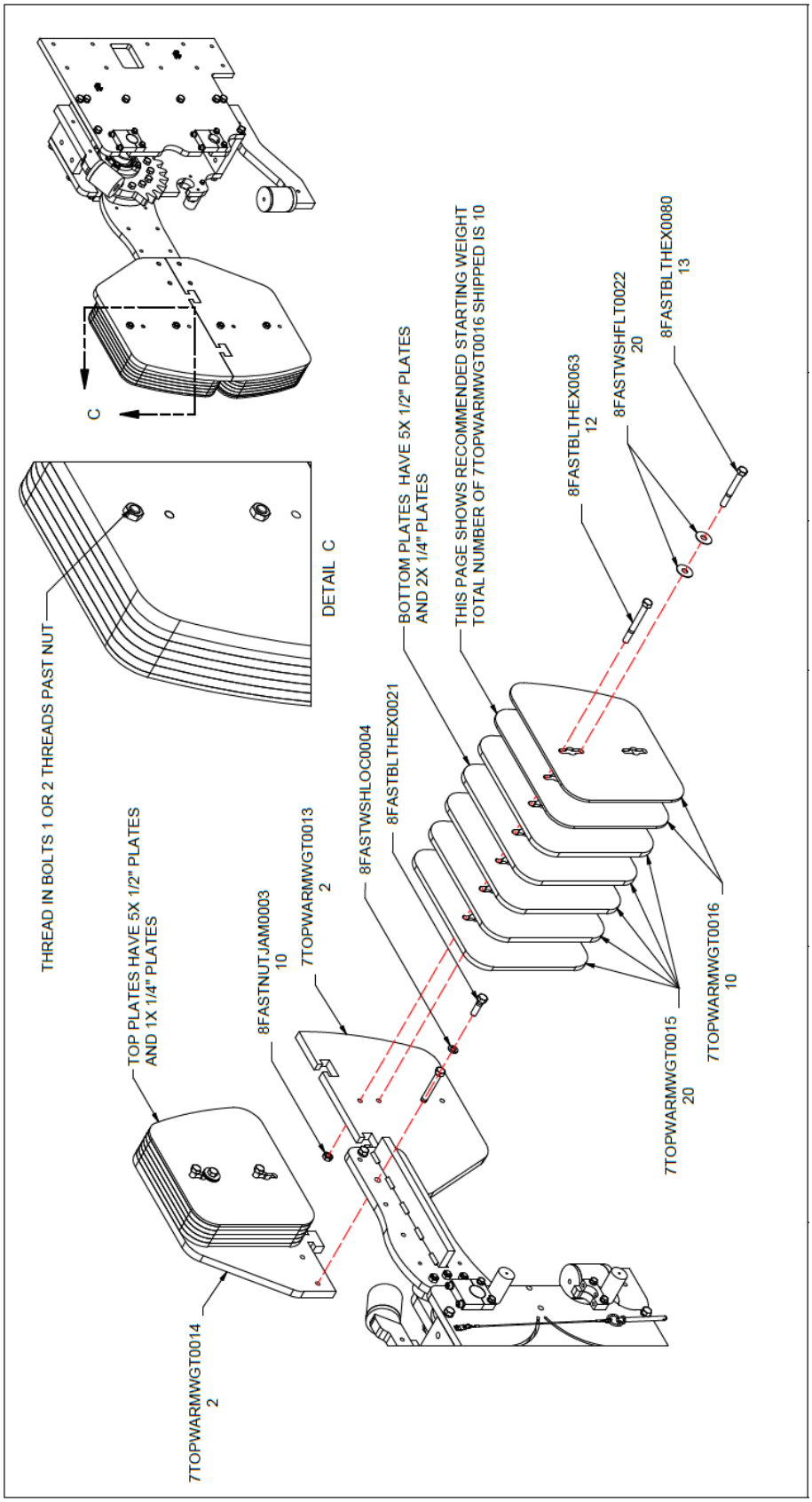

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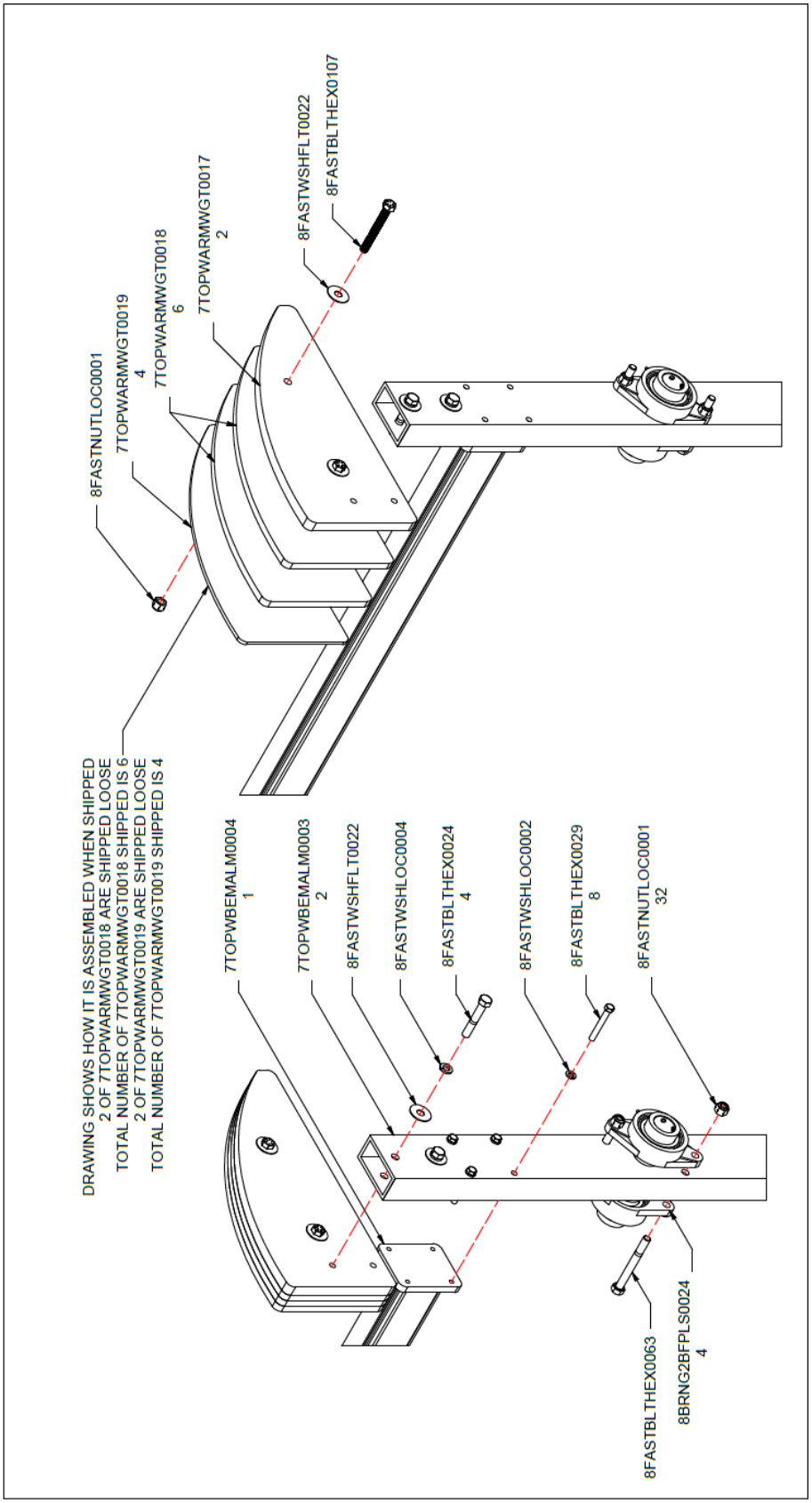

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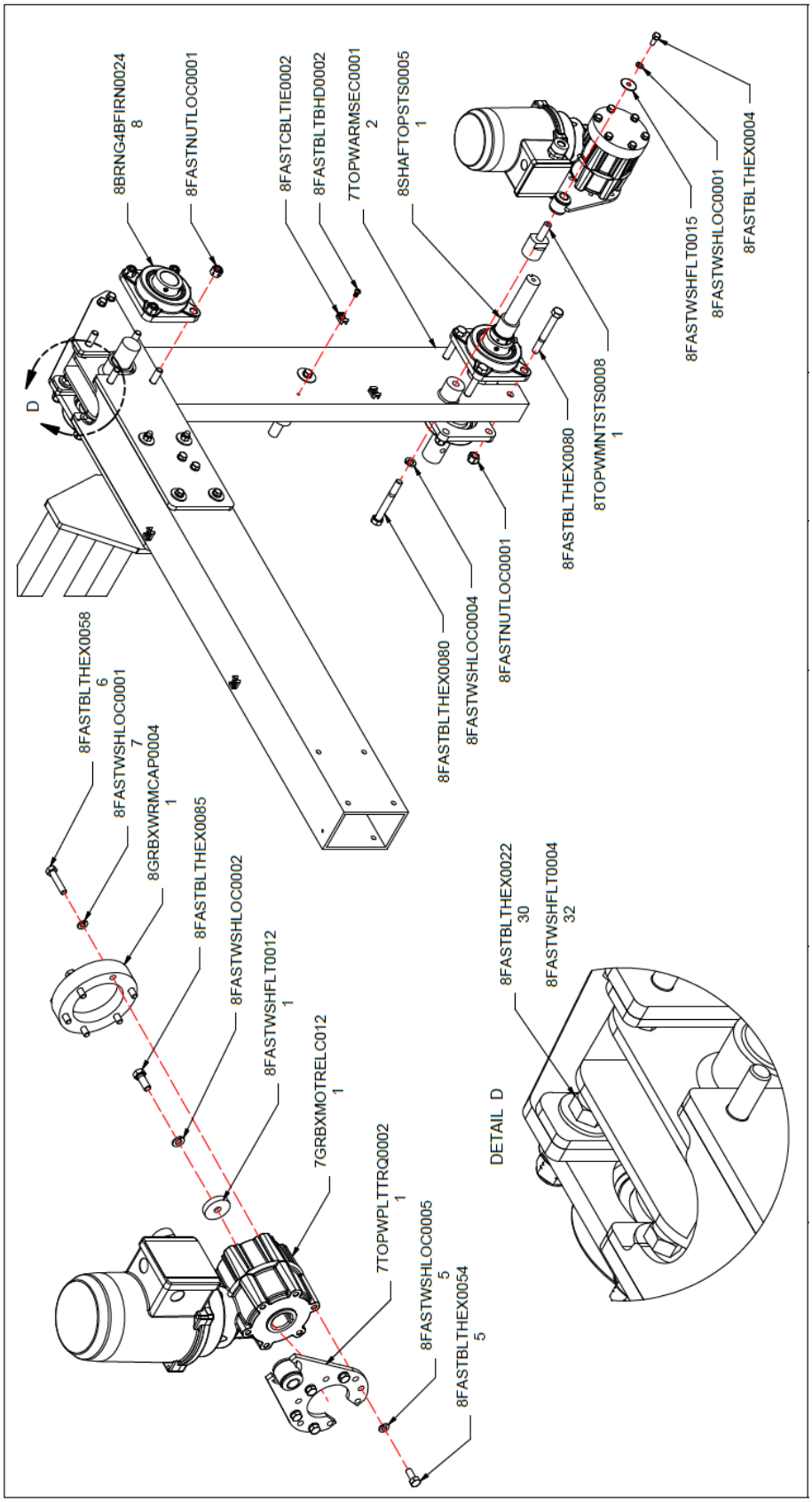

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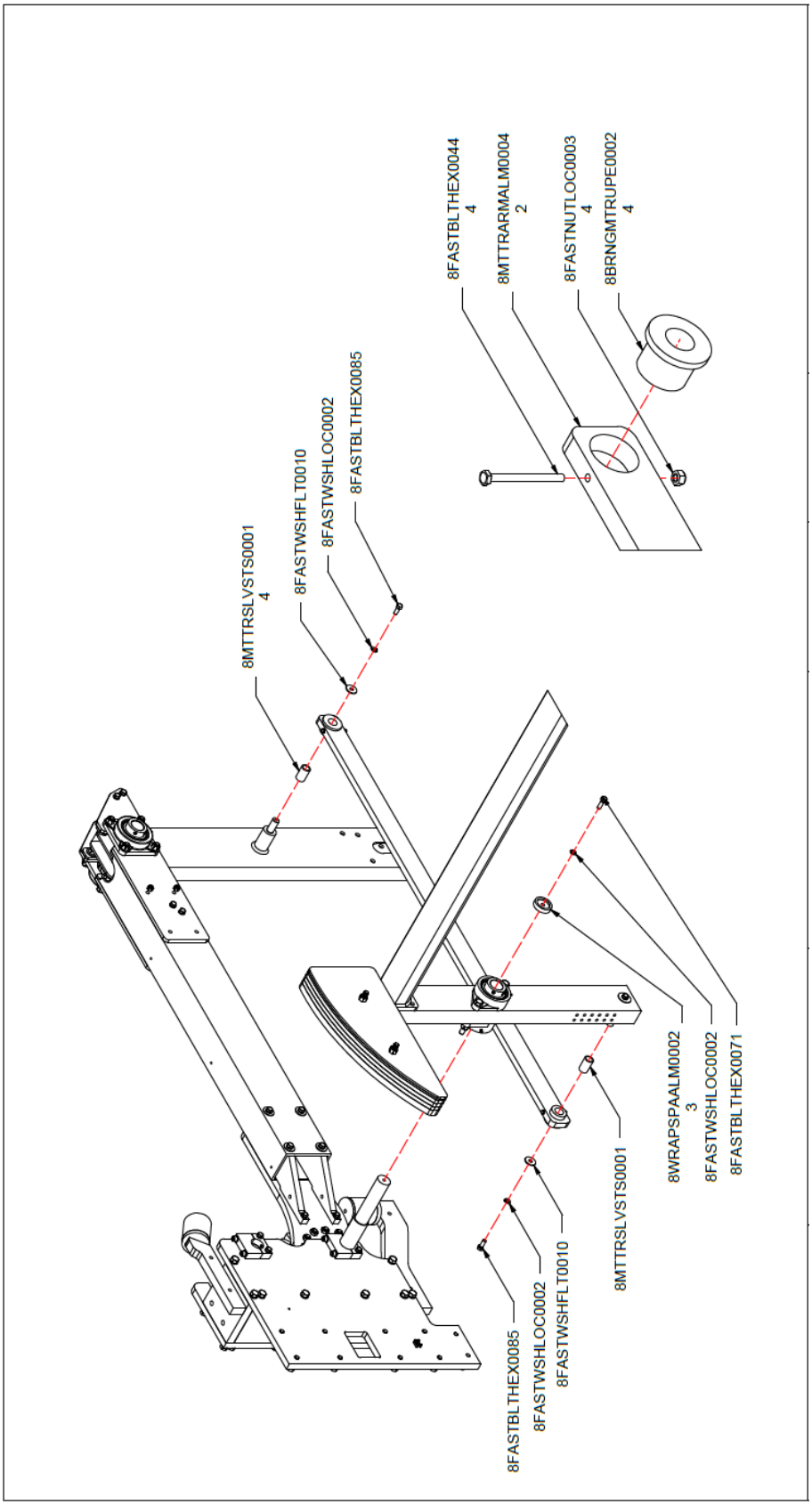

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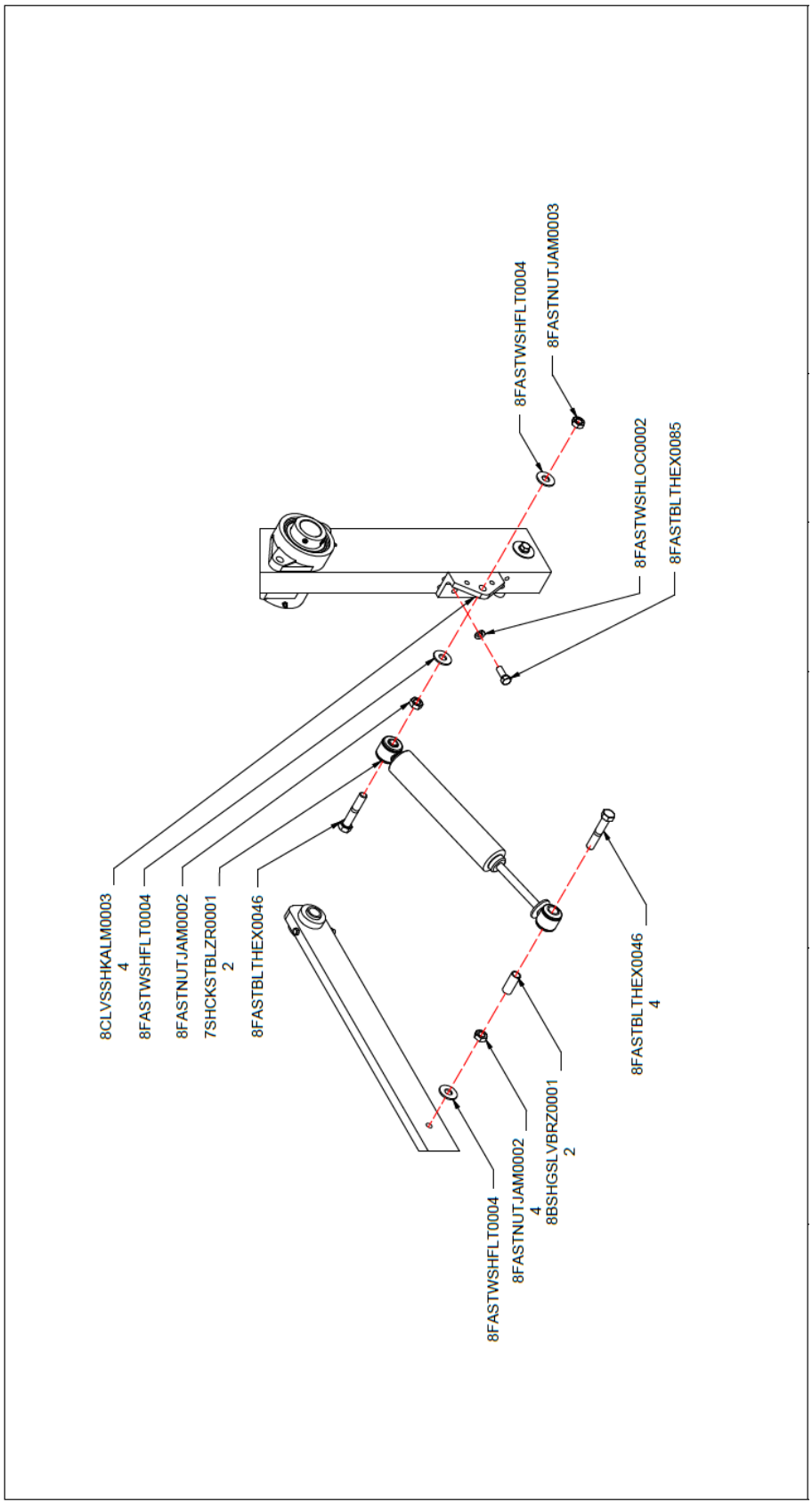

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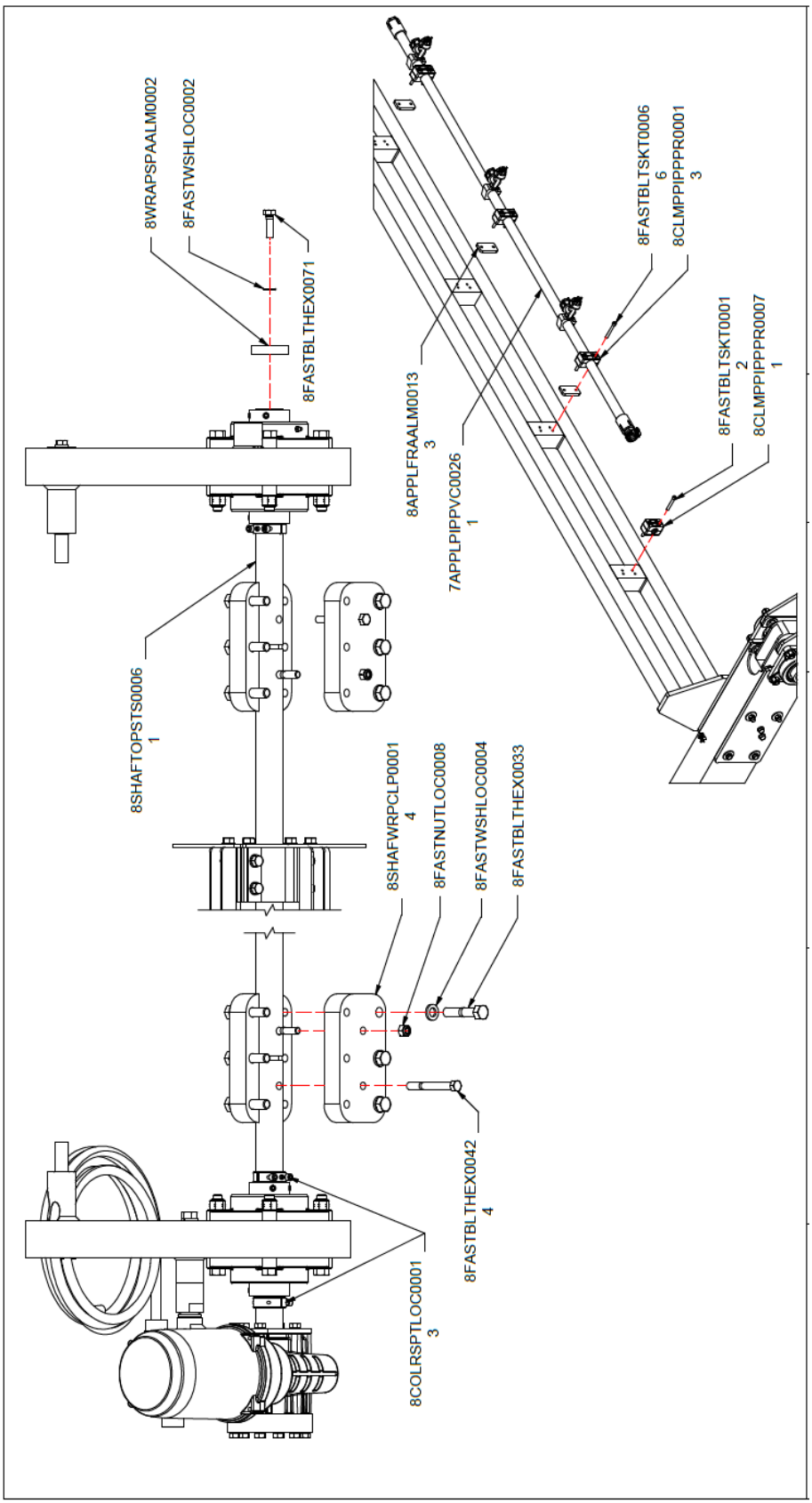

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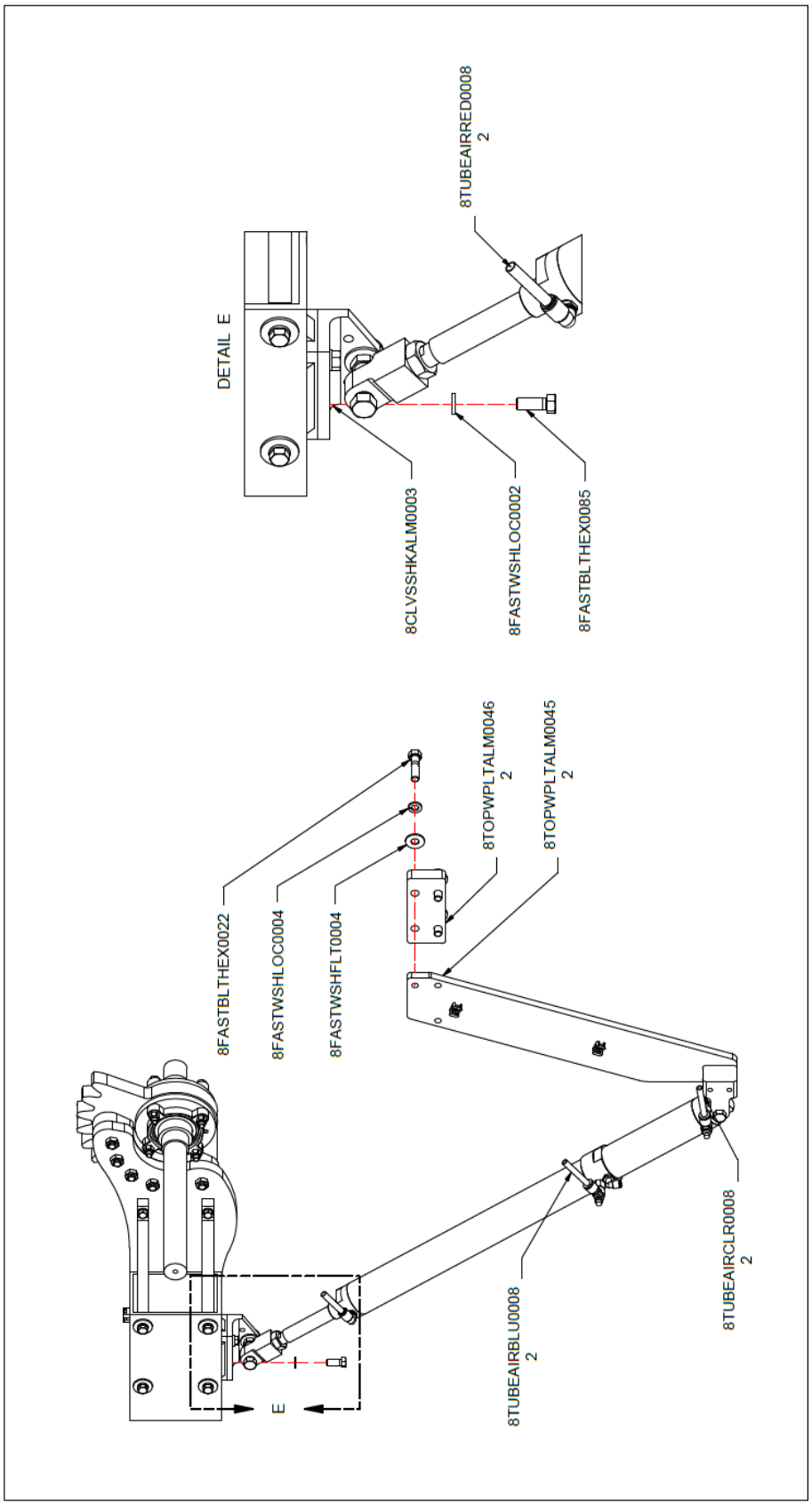

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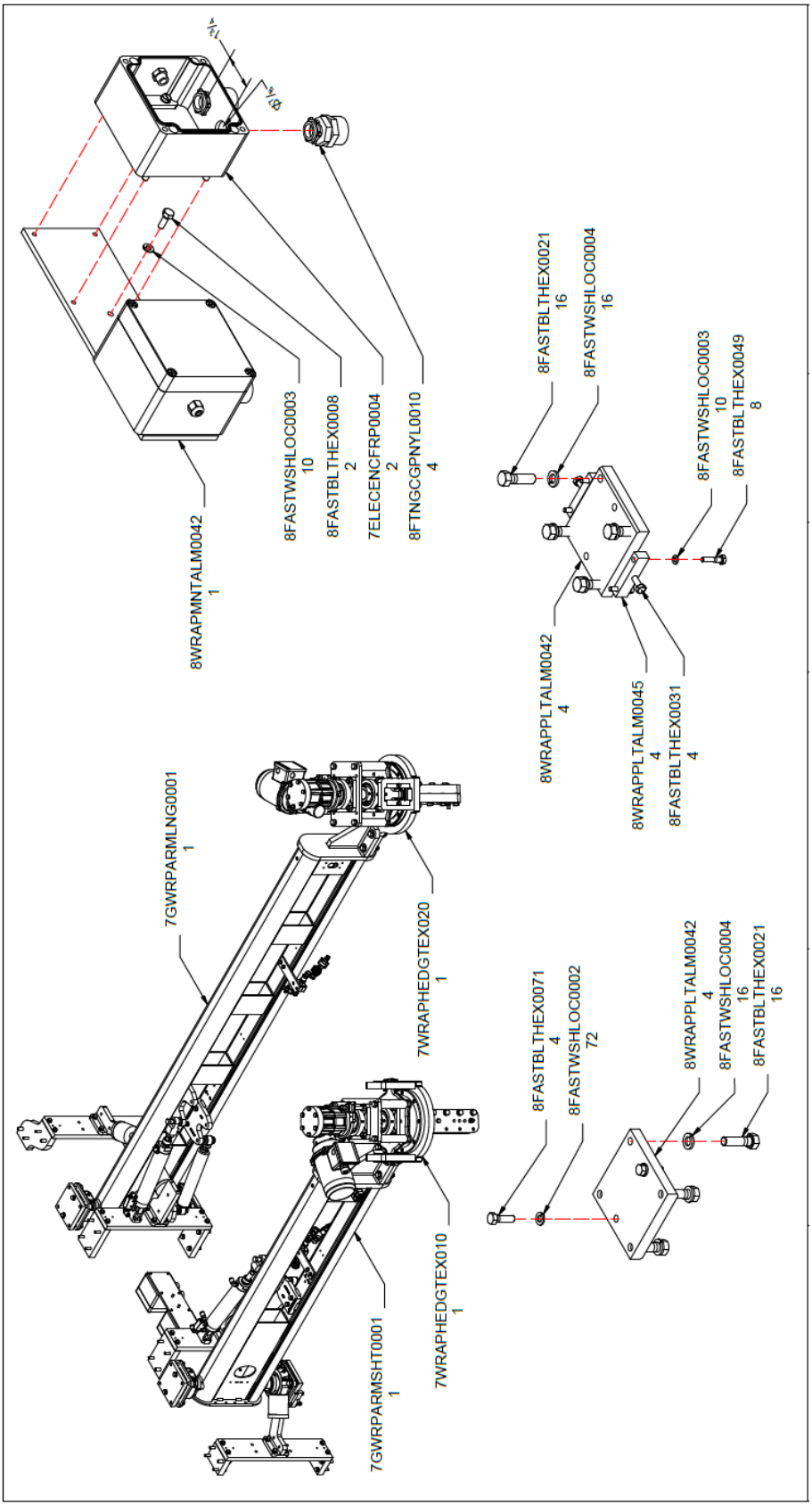

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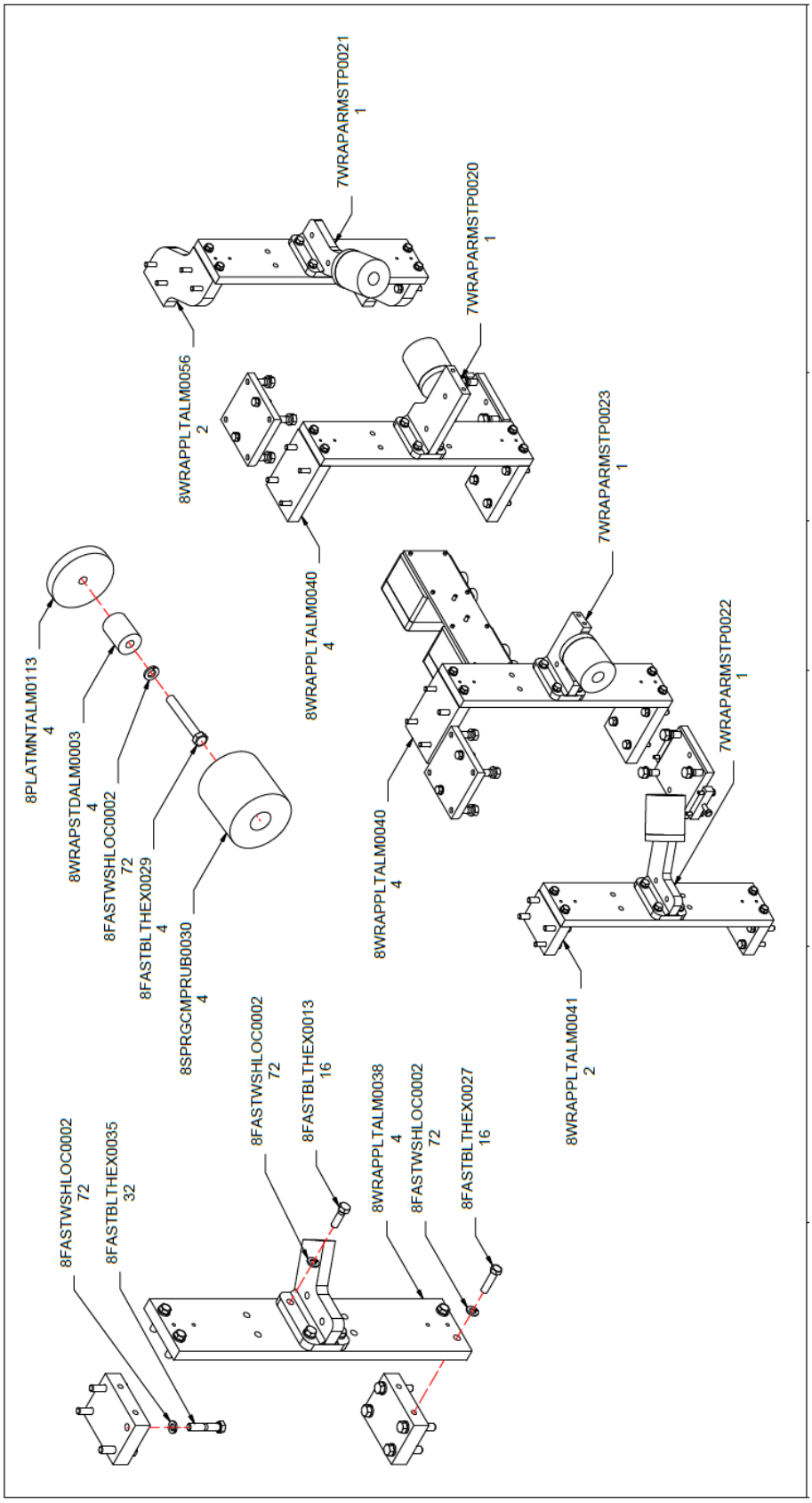

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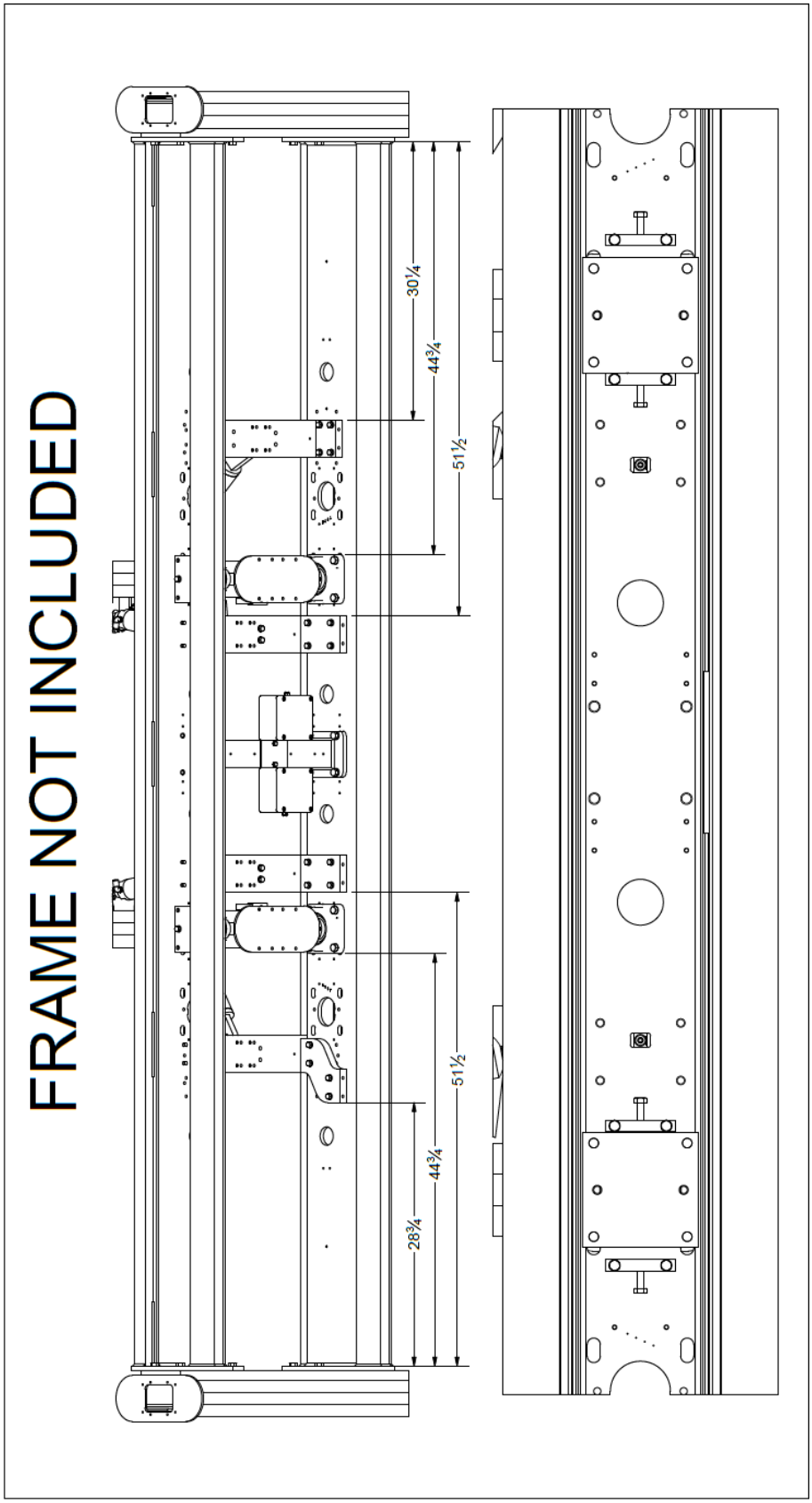

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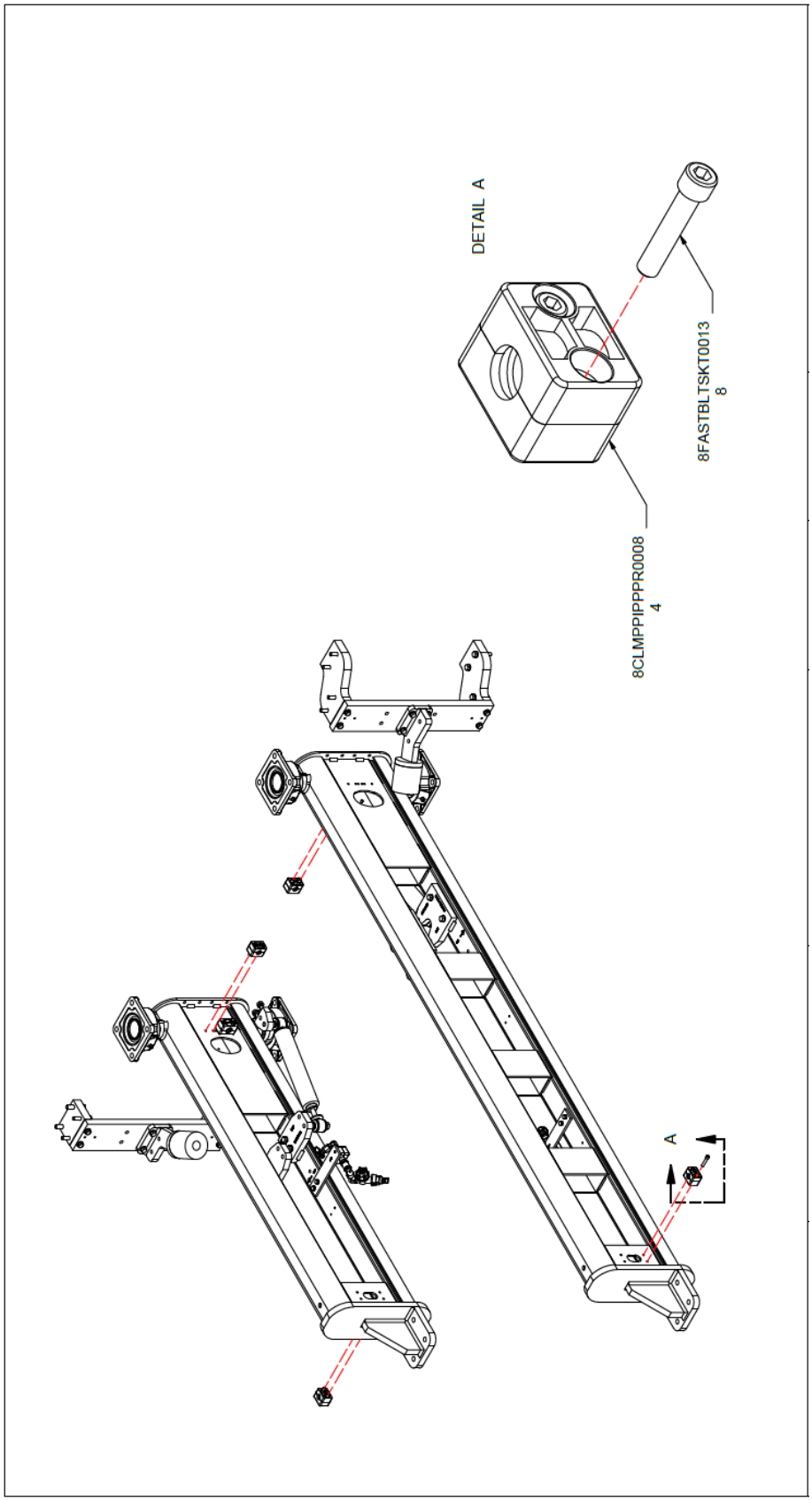

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DESCRIPTION: GTE WRP ADD
208/480V 60HZ ASSY

WARRANTY & RETURN POLICY

Motor City Wash Works warrants this product to be free of defect in material and/or workmanship for a period of **13 months from the date of shipment**. 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 must 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, contact 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.

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