EQUIPMENT MANUAL

SPIN SHINE™

MOTOR CITY WASH WORKS®

SPIN SHINE WHEEL BRUSH INSTALLATION MANUAL Rev 1

Part # SPINSHINEHYD001 – SPINSHINEELC001

TABLE OF CONTENTS

Equipment Utilities

APPLICATOR	SPINSHINEHYD001 (9ft Hydraulic Drive) (8ft Hydraulic Drive)		SPINSHINE360001 (9ft Electric Drive) (8ft Electric Drive)	
CONTROL PANEL SYSTEM	7SPINCTLPNL0005 With VFD and Hyd. Unit	7SPINCTLPNL0001 Without VFD	7SPINCTLPNL0003 With VFD	7SPINCTLPNL0001 Without VFD
ELECTRICAL	MOTOR: 1.5hp 230VAC 4.36FLA,3PH SIGNAL: (3) From CW Controller 24-120VAC/DC	MOTOR: N/A SIGNAL: (2) From CW Controller 24-120VAC/DC	MOTOR: (2)0.5hp 230VAC/1.78FLA-each Powered from Panel SIGNAL: (3) From CW Controller 24-120VAC/DC	MOTOR: (2)0.5hp 230VAC/1.78FLA-each Powered from MCC SIGNAL: (2) From CW Controller 24-120VAC/DC
PNEUMATICS	2 SCFM @ 100 PSI (max)		2 SCFM @ 100 PSI (max)	
HYDRAULIC	1.5GPM @ 800PSI	(1) Port on Hydraulic Power Pack	NOT APPLICABLE	

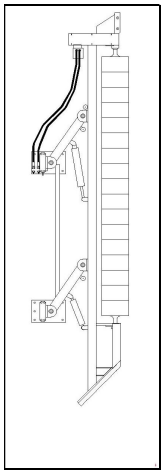
Equipment Specifications

- ☐ Two Spin Shine Wheel Brushes (D-S and P-S)
- ☐ Powder Coated Aluminum Construction
- ☐ Unique Auto Retract Function
- ☐ Corrosion Resistant Bearings Throughout Equipment
- ☐ Hydraulic or Electric Drive
- ☐ Feather Tipped Brushes
- ☐ Ultra-Low Lead-In and Exit Guide Rails
- ☐ 151” Tunnel Space Required for the Driver Side Applicator
- ☐ 116” Tunnel Space Required for the Passenger Side Applicator
- ☐ 120 VAC Air Panels

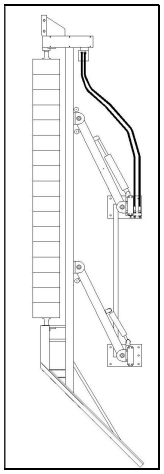
List of Contents

SPINSHINEHYD001 - SPINSHINE360001
7SPINCTLPNL0005 -7SPINCTLPNL0003 – 7SPINCTLPNL0001

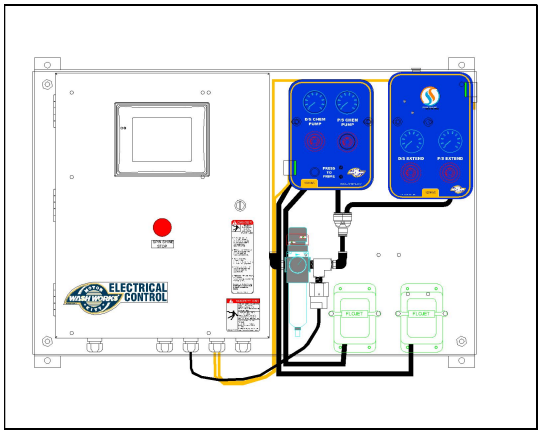
☑	1 -	Spin Shine Control Panel	Pic #3
☐	1 -	Spin Shine Brush Unit (D-S)	Pic #1
☐	1 -	Spin Shine Brush Unit (P-S)	Pic #2
☐	1 -	Hydraulic unit (7HYDPOWERSYS017)	Pic #4



Pic #1: D/S Unit



Pic #2: P/S Unit



Pic #3: Control Panel

Pic #4: Hydraulic Unit

Suggested Installation Tools and Materials

☑	Hammer Drill with 5/8” Drill bit	☐	(16) Wedge Anchor Bolts 5/8” x 6”
☐	Sledge Hammer	☐	Fasteners (to secure panel to wall)
☐	Set of Standard Combo Wrenches	☐	Screw Gun
☐	Measuring Tape	☐	Safety Goggles
☐	Standard Screw Drivers	☐	Torpedo Level
☐	Air Lines 3/8” Red and Blue	☐	½” chemical line tube
☐	1/2” Hydraulic Hose (for hydraulic driven unit)	☐	Metal cutting saw

Notes and Safety Symbols

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

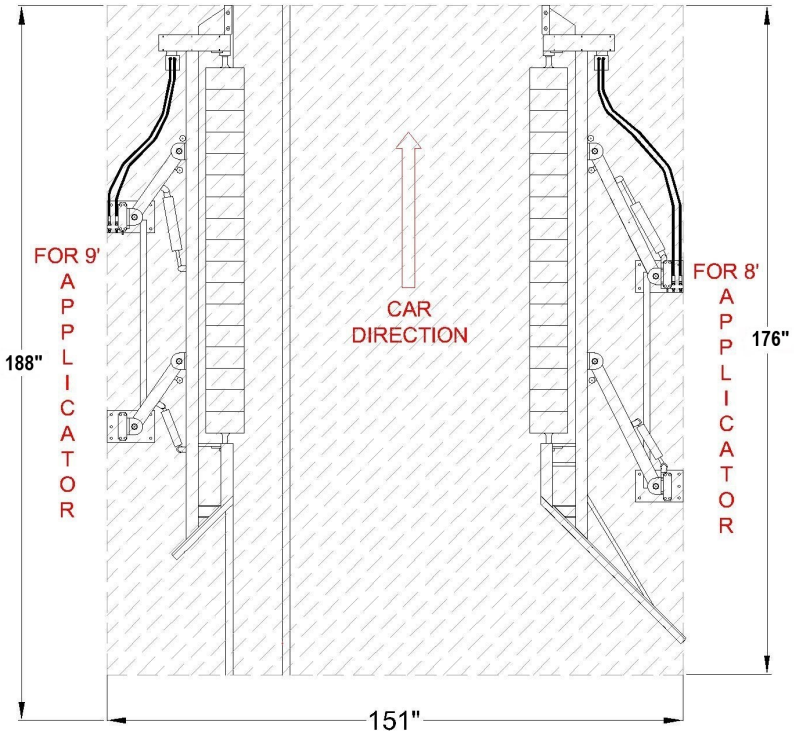
NOTE: **PROVIDES FURTHER INFORMATION!**

STOP! **A PRECAUTION IN ORDER TO AVOID EQUIPMENT MALFUNCTION OR ERROR!**

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

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

☐ **Locate** the area where your MCWW Spin Shine Brush will be installed and using Picture #5, verify that sufficient room will be available for the required working envelope.



Pic #5: Working Envelope

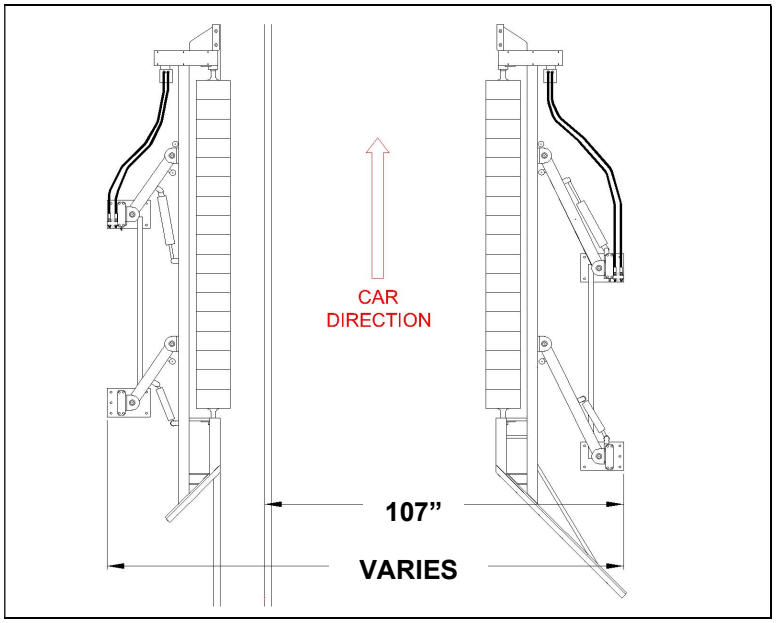
STOP!

READ BELOW IF YOU HAVE PURCHASED A MCWW SPIN SHINE ELECTRIC DRIVE.

YOUR MCWW SPINSHINE ELECTRIC DRIVE IS SHIPPED WITH BOTH ELECTRICAL CORDS NOT CONNECTED TO THE MOTOR.
IT IS HIGHLY RECOMMENDED TO CONNECT THE CORDS *BEFORE* INSTALLING THE UNIT ON THE FLOOR.
ACCESS TO THE MOTOR'S JUNCTION BOX IS QUITE RESTRICTED AFTER UNIT HAS BEEN INSTALLED ON THE FLOOR.

1- **USING A FORK LIFT TRUCK OR SAW HORSES, BRING THE UNIT TO WORKING HEIGHT AND REMOVE THE GUARD SURROUNDING THE MOTOR.**
2- **SELECT THE PROPER ELECTRICAL SCHEMATIC, WHICH IS SHOWN IN THE MOTOR JUNCTION BOX.**
3- **USE #6 RING TERMINALS TO CONNECT EACH WIRE TO THE MOTOR TERMINALS.**
4- **CLOSE THE MOTOR JUNCTION BOX AND REASSEMBLE THE MOTOR GUARD.**

☐ **Position** the Passenger's Side Spin Shine Brush **107"** from the **INSIDE EDGE OF THE INSIDE GUIDE RAIL** to the **BACK OF THE BRUSH BASE PLATE (**as shown below on Picture #6)**.** Using a marker, mark the location of both exit and entrance base plates to the floor.



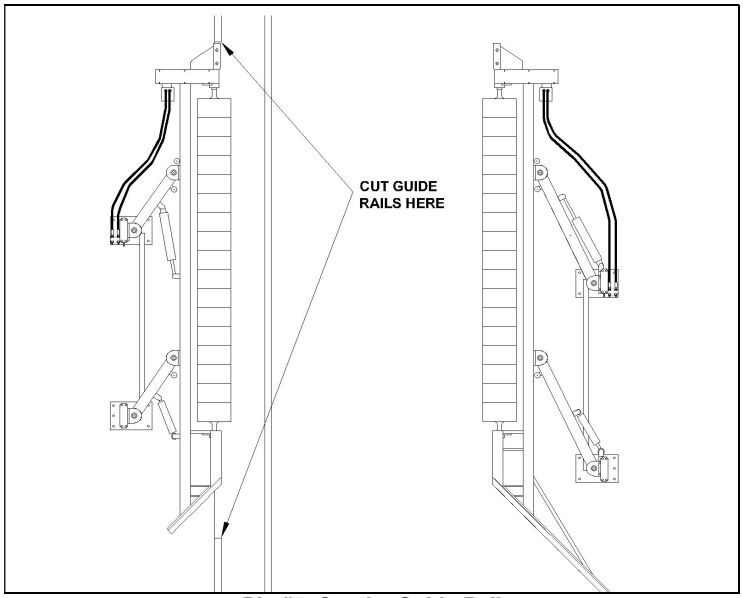
Pic #6: Distances from Conveyor Guide Rail

☐ **Position** the driver's side brush **FULLY RETRACTED** and make sure that both the **EXIT TRAILING EDGE** and the **ENTRANCE LEADING EDGE** of the plastic rail of the brush is **LINED UP WITH THE INSIDE EDGE** of **THE OUTSIDE GUIDE RAIL.** If the plastic rails of the brush are not perfectly aligned with the guide rail, move the base plate and relocate it. Using a marker, mark the location of both base plates to the floor.

☐ **Open** and close each brush and check for any interference with any existing equipment in your wash bay.

☐ **Extend** the driver's side brush completely and mark the conveyor outside guide rail on the **Entrance End** of the brush where the guide rail will have to be cut off in order to clear the brush push-bar when fully extended.

☐ **Retract** the brush and mark the conveyor's outside guide rail on the **EXIT END** of the brush when fully retracted. Verify again that the back edge of both brush's plastic rails are **aligned with the inside edge of the outside conveyor guide rail** when the applicator is fully retracted (see Picture #7 below).

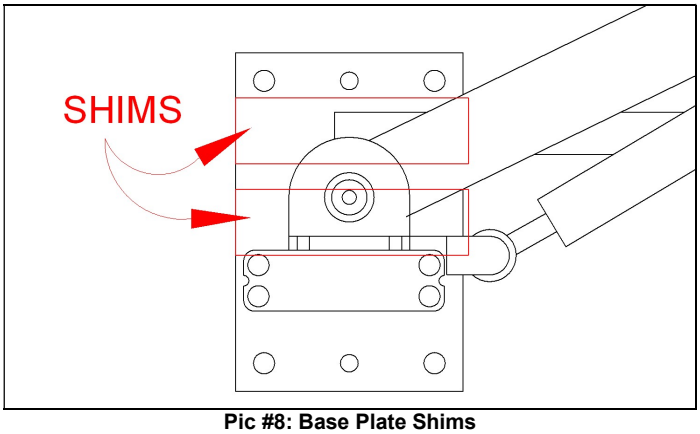


Pic #7: Cut the Guide Rail

☐ **Cut** the conveyor's outside guide rail between the two marks.

☐ **If needed, weld** some support to secure the guide rail properly. You may want to add a support weldment from the entrance guide rail to the base of the conveyor for added safety.

☐ **Fasten** each brush to the floor using **5/8"X 5 or 6" WEDGE ANCHOR BOLTS.** Extend the brush arms and level them by using the leveling bolts located in the front and in the back of the base plate. When leveled, fill the void under the base plate with **SHIMS** and tighten the anchor bolts (see Pic #8). The shims permit the entire base plate to firmly sit on solid ground, allowing a more stable base for the brush unit.



Pic #8: Base Plate Shims

☐ **Adjust** the height of the **PASSENGER'S SIDE UNIT** in a line with the bottom of the brush, **ABOUT 1/2" OFF THE FLOOR.** Loosen the fasteners securing the bearings in each base plate, and raise or drop the bearings according to the required height.

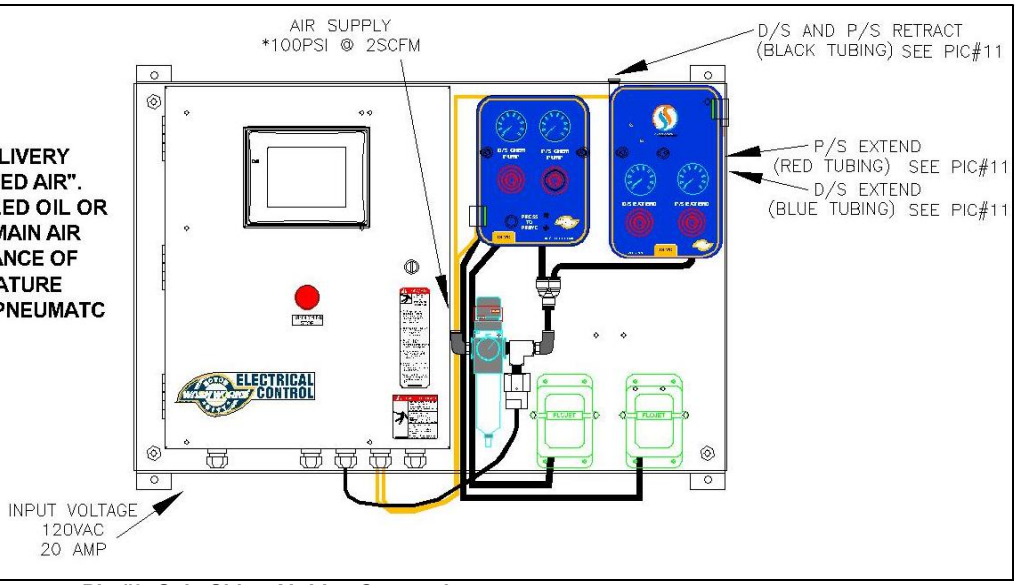
☐ **Adjust** the height of the **DRIVER'S SIDE** brush **ABOUT 1/2" OFF THE CONVEYOR TOP BRIDGE.** Verify that any dollies can ride freely under the brush frame without hitting it. If needed, **SLIGHTLY RAISE THE BRUSH HIGHER**. Loosen the fasteners securing the bearings in each base plate and raise or drop the bearings according to the required height.

Installation Instructions for the Spin Shine Control Panel:

☑ The Spin Shine Control Panel requires **ONE ELECTRICAL CIRCUIT (CHANNEL)** coming from the Single-Phase Distribution panel. The circuit has to be **120VAC-20amp for the 7SPINCTLPNL0003 and 7SPINCTLPNL0015 Control Panels**. The circuit has to be **120VAC-15amp for the 7SPINCTLPNL0001 Control Panel.**

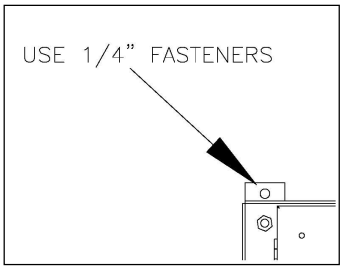
☐ The air panel also requires compressed Air at **100 PSI and capable of at least 2 SCFM** (See Picture #9).

*** NOTE:**
IT IS IMPERATIVE TO SUPPLY THE DELIVERY PANEL 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 DAMAGES TO THE PNEUMATC UNIT OR ITS COMPONENTS.



Pic #9: Spin Shine Air Line Connections

☐ **Mount** the Control Panel in the mechanical room or on any wall in a **CLEAN, DRY AREA.**



Pic #10: Panel Utilities

☐ **Secure** the panel to the wall using the 1/4" mounting hole in the four mounting brackets (as shown in Picture #10).

Pneumatic Installation:

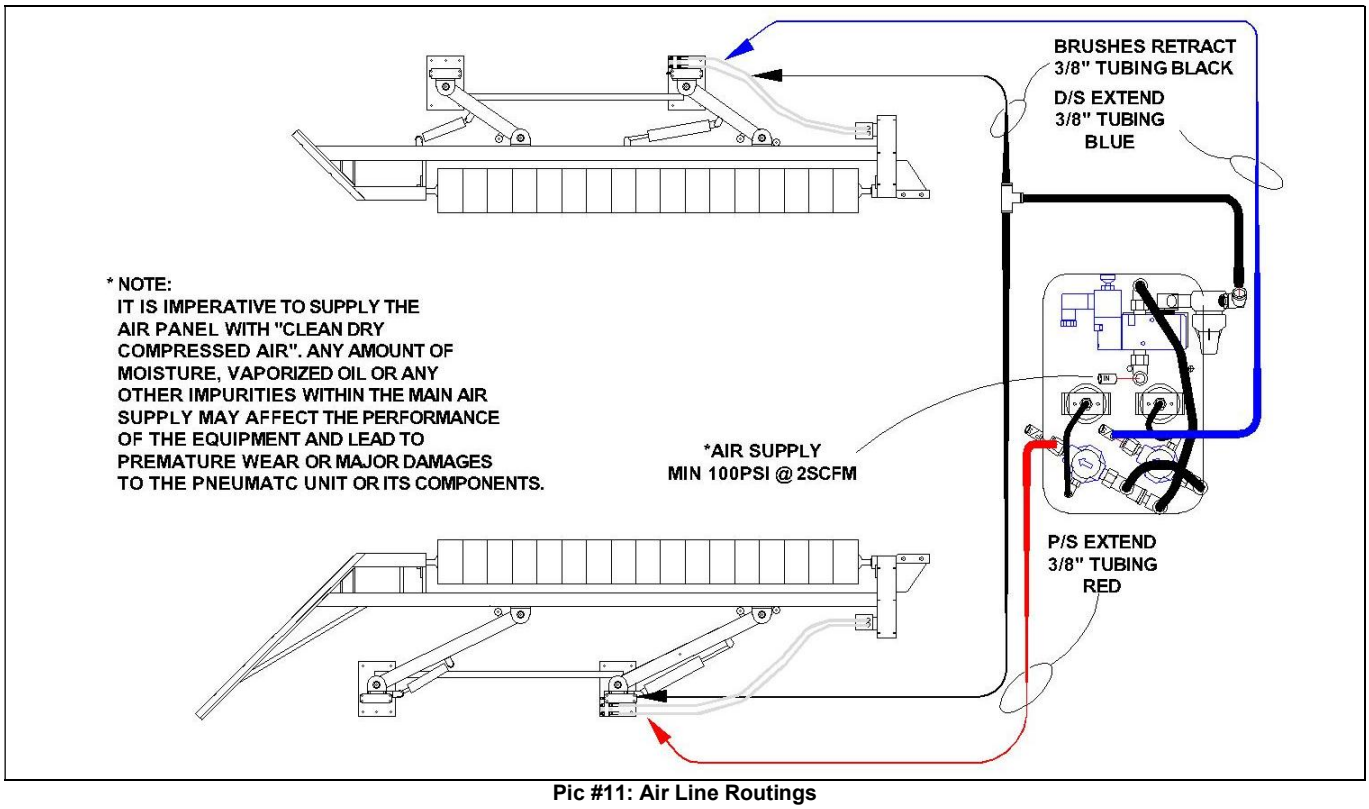
☑ **Locate** your source of compressed air and install a **3/8" AIRLINE TUBE** from the supply air valve to the air panel inlet port (see picture #9).

NOTE: IT IS IMPERATIVE TO SUPPLY THE DELIVERY PANEL 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 DAMAGES TO THE DELIVERY UNIT OR ITS COMPONENTS.

☐ **Using** the schematic shown on Picture #11, pull and connect **ONE 3/8" RED AIRLINE TUBE** from the **TEE FITTING MOUNTED ON THE 4 WAY VALVE** on the air panel to the exit side base plate of the **PS BRUSH.**

☐ **Pull** and connect **ONE 3/8" BLUE AIRLINE TUBE** from the **DS EXTEND AIR REGULATOR** located on the air Panel to the exit side base plate of the **DS BRUSH.**

☐ **Pull** and connect **ONE 3/8" BLACK AIRLINE TUBE** from the **4 WAY SOLENOID AIR VALVE** to the wash bay, **BETWEEN THE TWO BRUSHES** and tee off to **EACH BRUSH**.

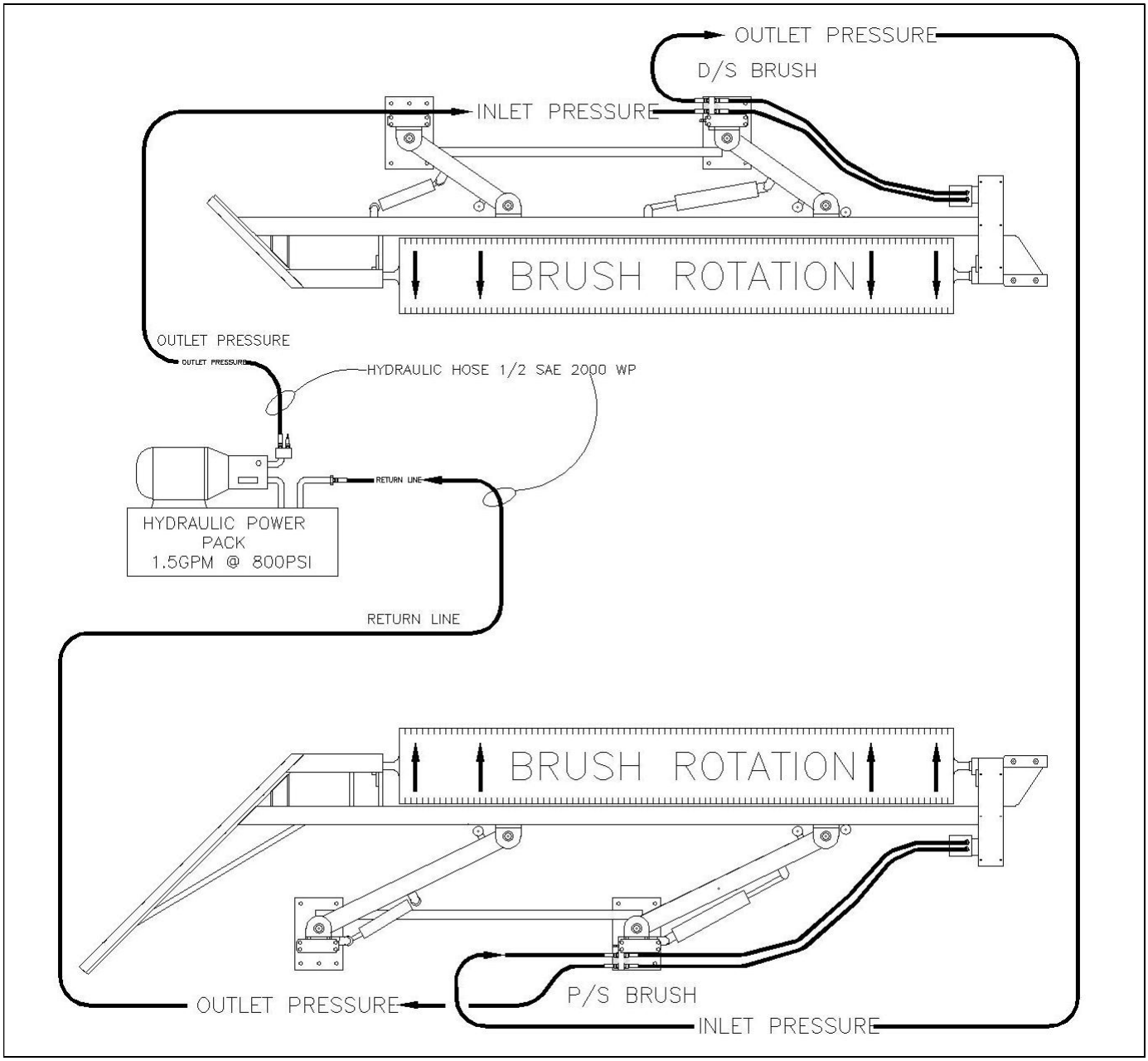


Pic #11: Air Line Routings

☐ **Connect ONE 3/8" BLACK AIRLINE TUBE** from the **4 WAY SOLENOID AIR VALVE** to the wash bay, **BETWEEN THE TWO BRUSHES** and tee off to **EACH BRUSH**.

Hydraulic Installation:

☑ If you are installing a **HYDRAULIC DRIVEN SPIN SHINE SYSTEM,** pull a **1/2" HOSE SAE 2000 WP** terminated with a **1/2" JIC FEMALE** fitting from the power pack hydraulic outlet circuit to the **EXIT END OF THE D/S BRUSH (**as shown in Picture #12) and connect it to the **PRESSURE (inward) 1/2" JIC MALE FITTING** mounted on the manifold block.

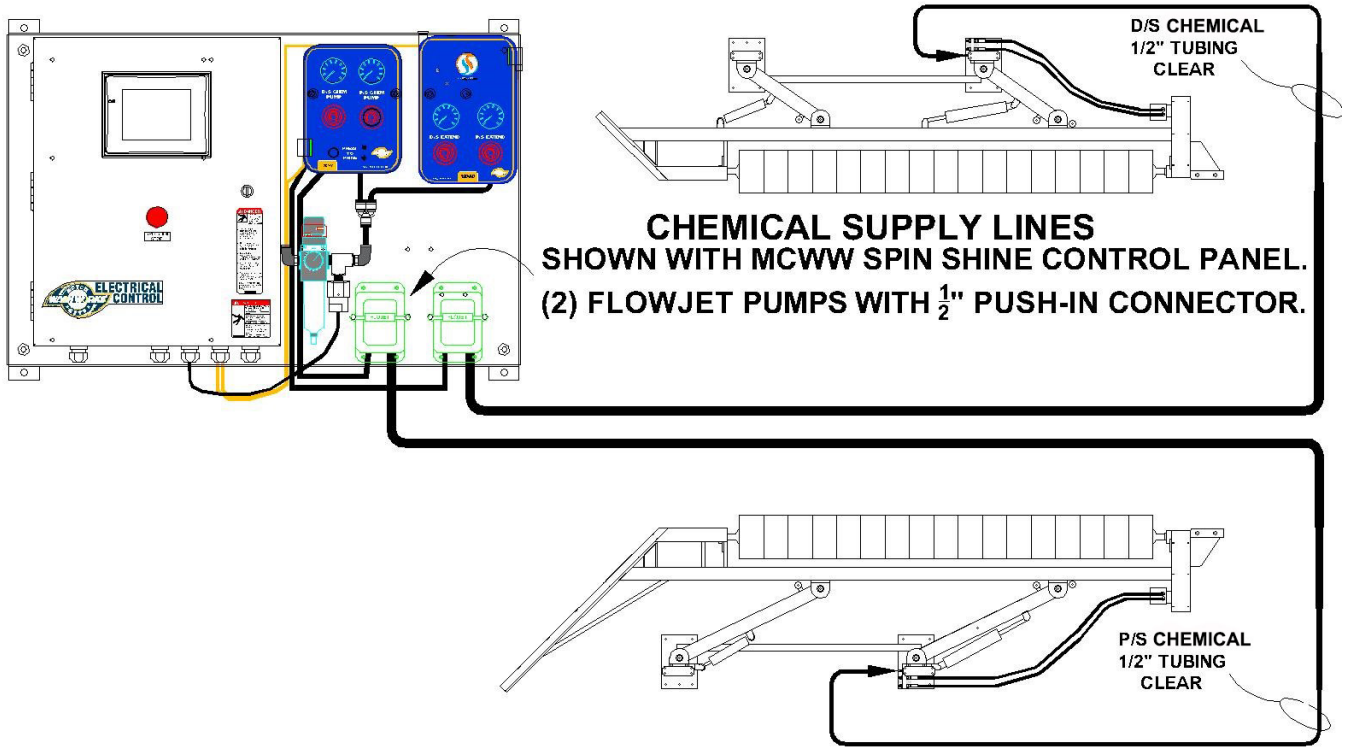


Pic #12: Hydraulic Lines Routings

☐ **Pull** and connect another **1/2" HYDRAULIC HOSE** terminated with two **1/2" JIC FEMALE** fittings from the **RETURN (outward) 1/2" JIC MALE** fitting located of the **D/S BRUSH MANIFOLD** to the **PRESSURE (inward) 1/2" JIC MALE** fitting located on the **P/S BRUSH MANIFOLD.**

☐ **Finally,** pull and connect another 1/2" hose between the **RETURN (outward) 1/2" JIC MALE** fitting located of the **P/S BRUSH MANIFOLD** to the **RETURN INLET** of your hydraulic power pack as shown in Picture #12.

Chemical (Solution) Line Installation:



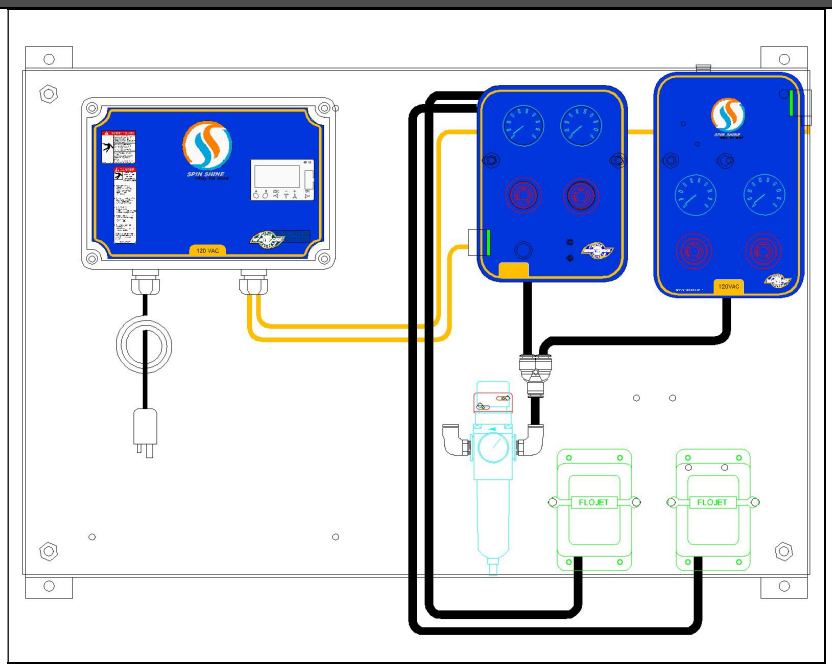
Pic #13: Chemical Line Routing

☑ **Using** polyethylene tubing 1/2” O.D. for the solution lines, pull two lines from the back-room unit (dilution station) to the **Spin Shine Applicator** area in the wash bay. Pull one line to the driver side applicator and the second line to the passenger side applicator. Terminate the solution line (1/2” O.D.) with a 1/2”X3/8” fitting (see Pic #12).

☐ Terminate the solution lines (1/2” O.D.) to the 1/2”X3/8” push in fittings, located on the top of the exit side floor mounted stand of the driver side and passenger side applicators (see Pic #12).

☐ Connect the solution discharge lines (1/2” O.D.) to the 1/2” push in fittings, located on the bottom of the FLOWJET pumps.

☐ Connect the solution pickup lines (3/4” O.D. Clear tubing with foot valve) to the 1/2” hose barb fittings, located on the bottom of the FLOWJET pumps.

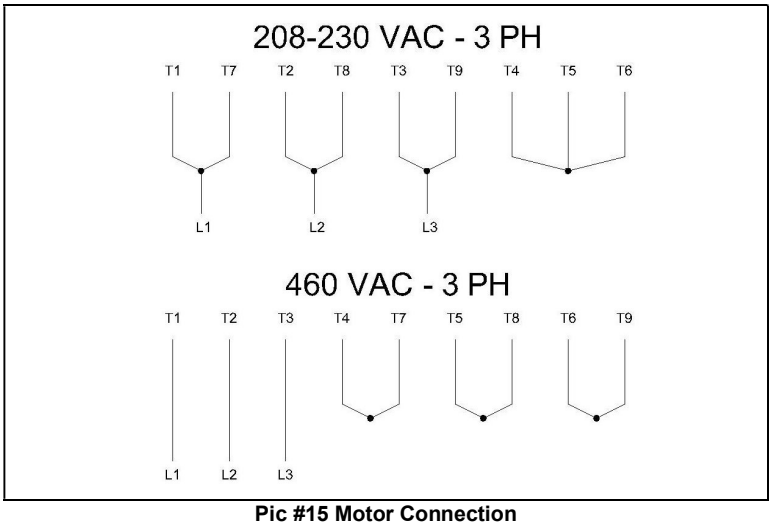


Pic #14: Spin Shine Control Panel 7ELECCTLPNL0001

☑ **If** you are installing an **Electric Spin Shine System that is controlled by the 7SPINCTLPNL0001, please note that MOTOR controls and protection** for the Electric Spin Shine Brush Motors are not provided and should be incorporated into the Motor Control Center.

☐ **Each MOTOR** driving the brushes is a **0.5 HP 3 PHASES MOTOR** that can be either supplied at **208/230 VAC** or **460 VAC.** Each starter thermal overload protection will have to be set at the **FULL LOAD CURRENT (FLA)** value for the voltage used to power the motor (see table below). The 'FLA' value of the motor can also be read off the motor name plate located on the side of the motor.

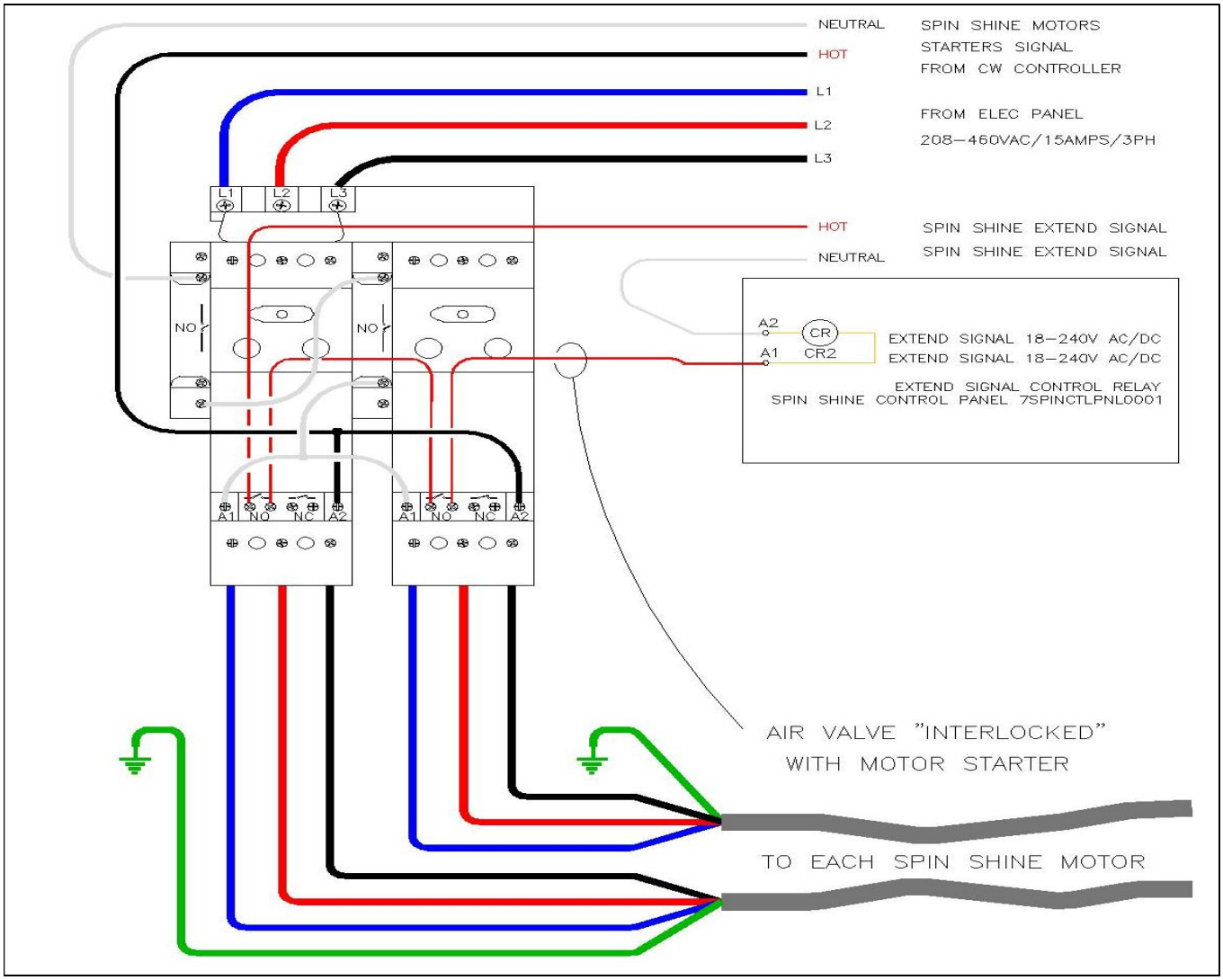
NOTE: **NEITHER OF THE MOTOR ELECTRICAL CABLES ARE CONNECTED TO THE MOTOR LEADS WHEN SHIPPED FROM THE MCWW FACTORY. OPEN THE MOTOR CONNECTION BOXES AND CONNECT TO THE MOTOR LEADS FOLLOWING THE APPROPRIATE CONNECTION DIAGRAM (PICTURE #15) OR ON THE MOTOR PLATE FOR PROPER VOLTAGE.**



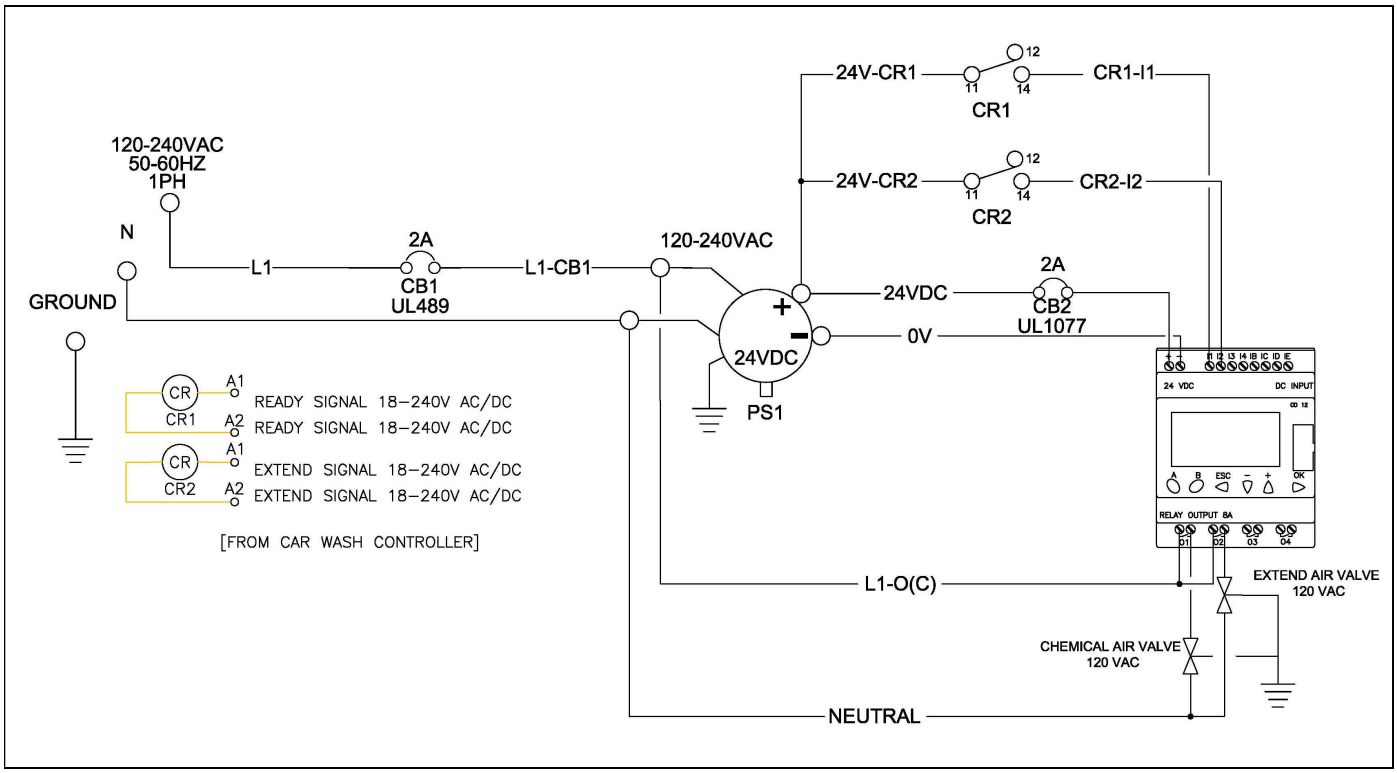
Pic #15 Motor Connection

WARNING!

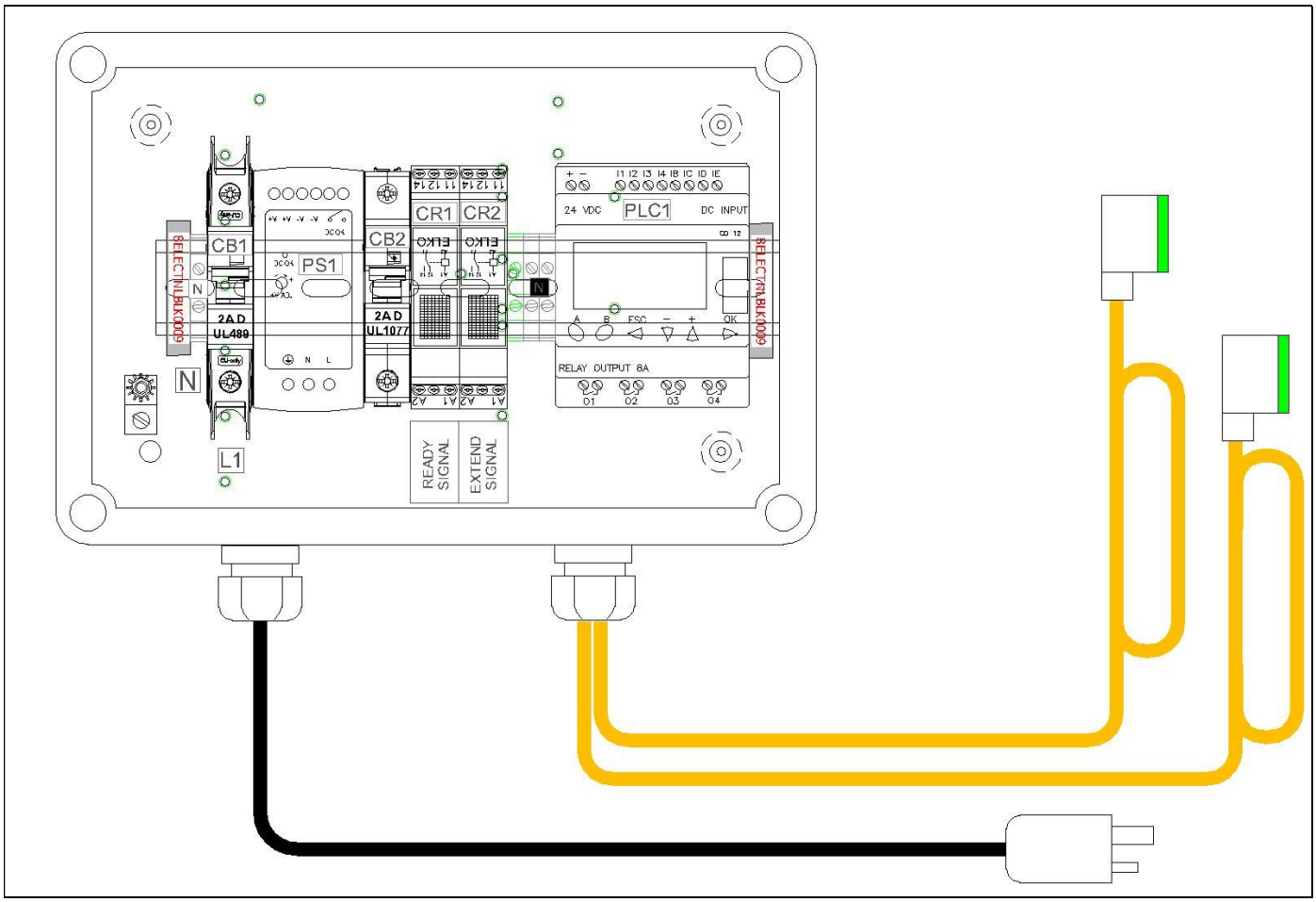
IT IS RECOMMENDED THAT THE AIR EXTEND SIGNAL TO THE SPIN SHINE PANEL BE INTERLOCKED WITH THE BRUSH ROTATION CONTROL (SEE PICTURE #18).



Pic #16: Extend Air Panel Interlock Example

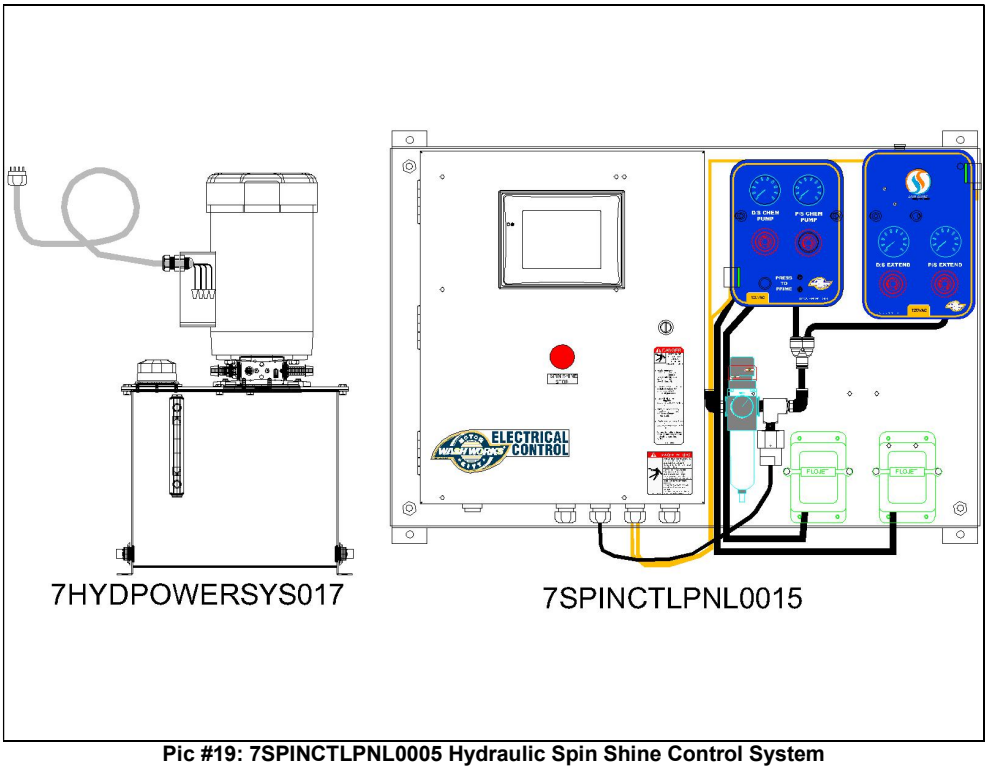


Pic #17: 7ELECCTLSPIN001 Electrical Schematic



Pic #18: 7ELECCTLSPIN001 Electrical Panel Layout

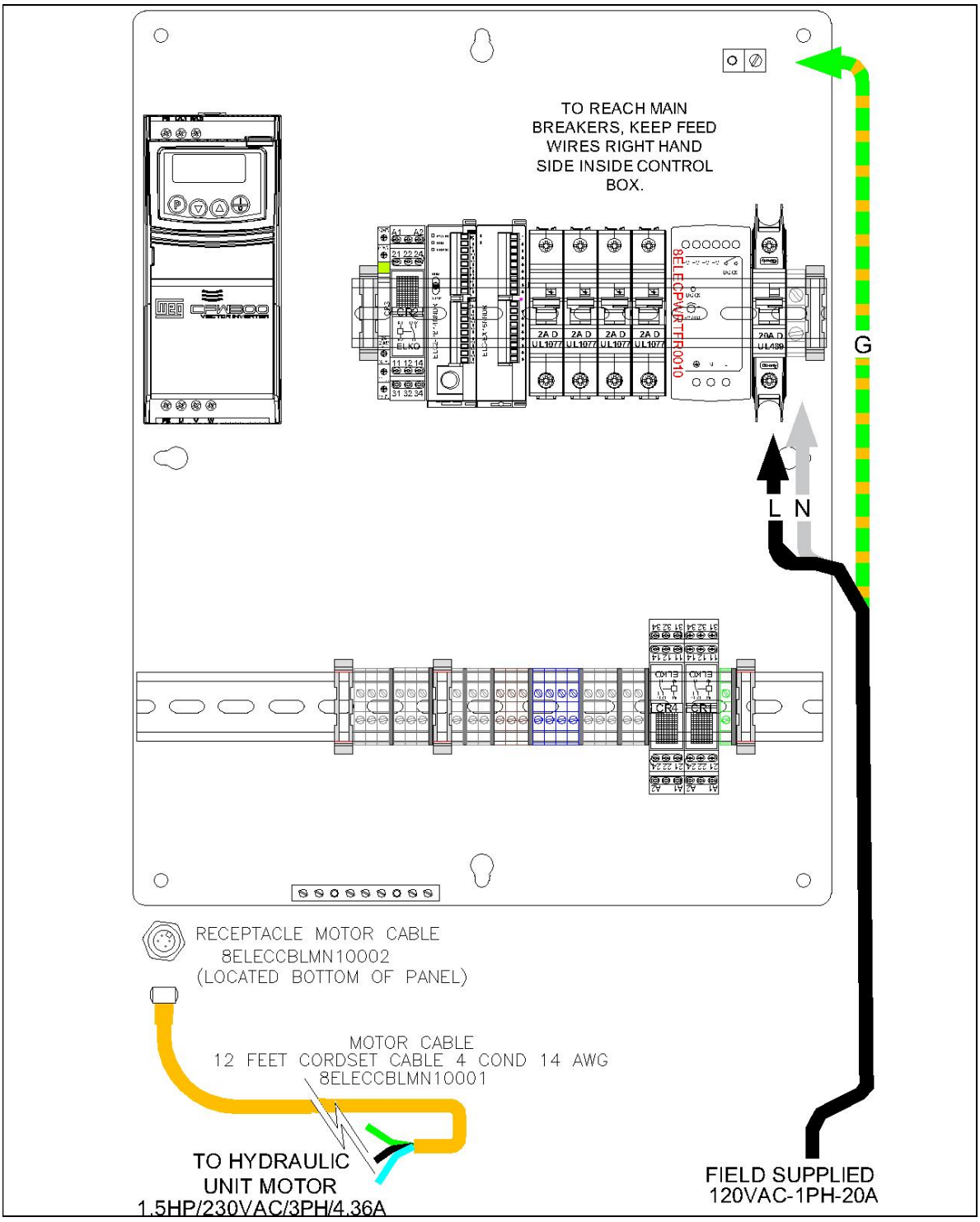
Electrical Installation: 7SPINCTLPNL0005 Power in 120VAC, Motor 230VAC ONLY!



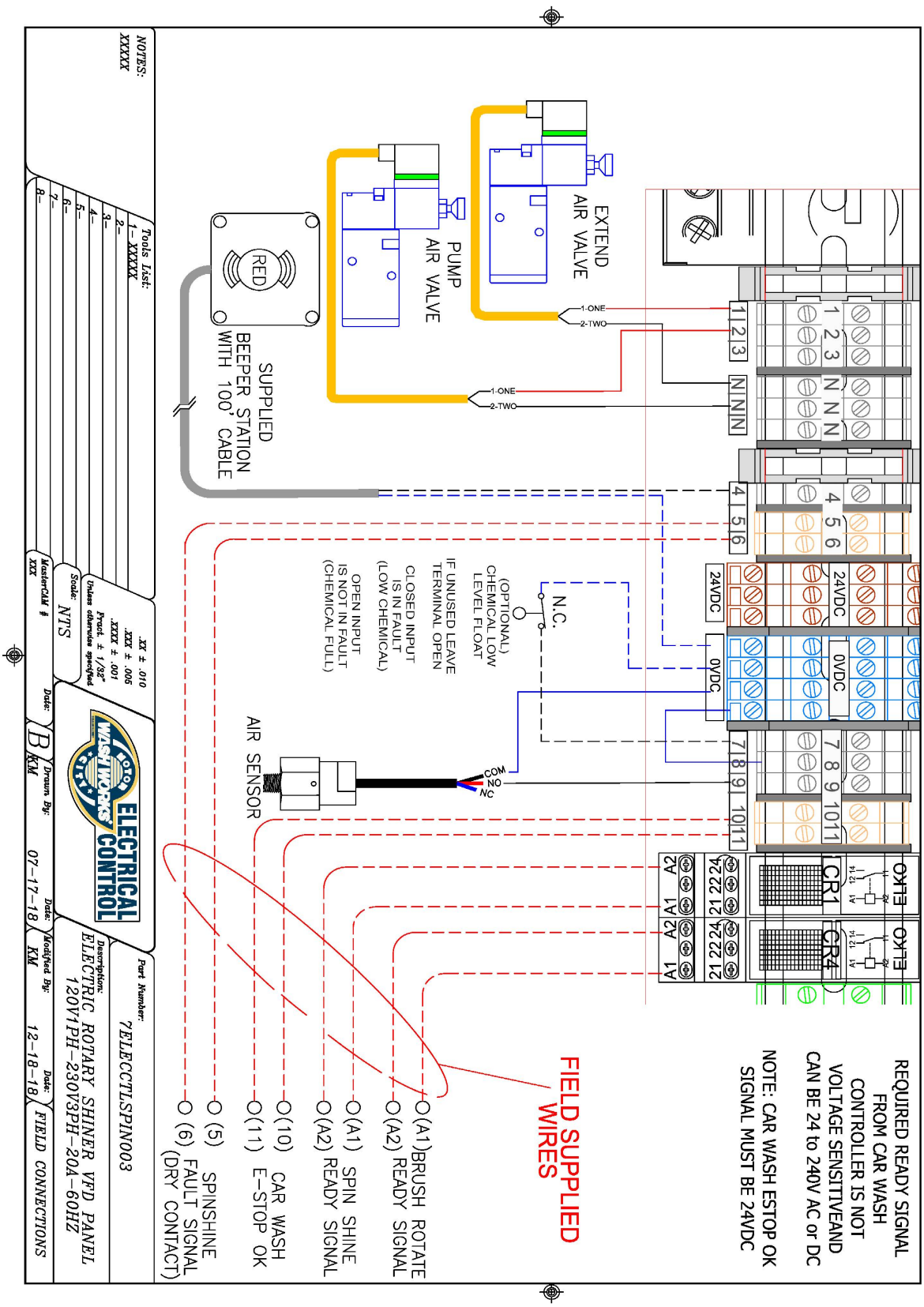
Pic #19: 7SPINCTLPNL0005 Hydraulic Spin Shine Control System

☑ **If** you are installing a **Hydraulic Spin Shine System that is controlled by the 7SPINCTLPNL0015 Control Panel, please note that the MOTOR** driving the Hydraulic unit is a **1.5 HP, 3-PHASE MOTOR** that is pre-wired for **230 VAC.**

NOTES: THE MOTOR IS PROVIDED WITH A 12FT 4-PIN CABLE CONNECTOR THAT CONNECTS DIRECTLY TO A 4-PIN FEMALE CONNECTOR LOCATED ON THE BOTTOM OF THE ELECTRICAL PANEL. (See Picture #20)

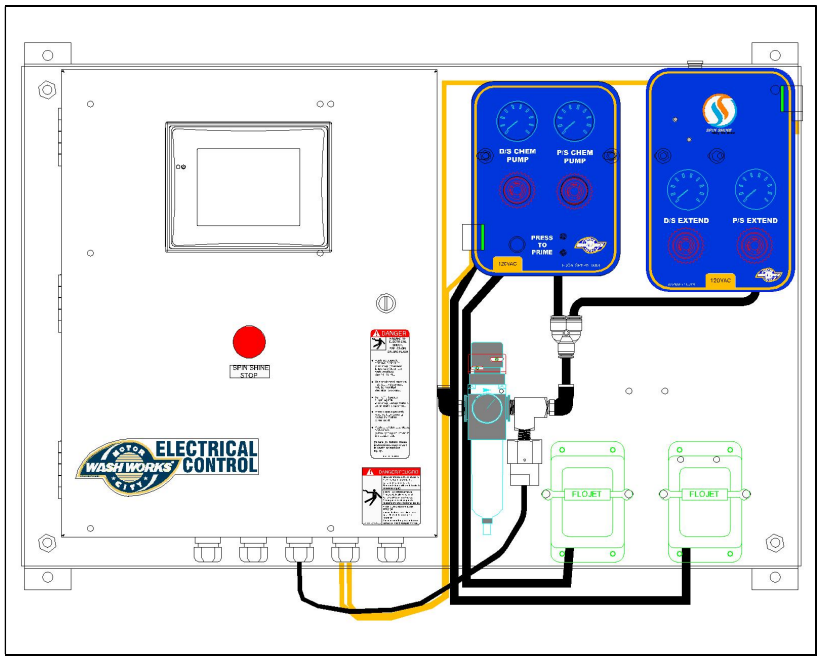


Pic #20: 7ELECCTLSPIN004 Electrical Panel 120VAC-230VAC Connections



Pic #21: 7ELECCTLSPIN004 Electrical Panel Field Connections for PLC Version 1.3 and up.

Electrical Installation: 7SPINCTLPNL0003 Power in 120VAC, Motor 230VAC ONLY!



Pic #22: 7SPINCTLPNL0003 Electric Spin Shine Control Panel

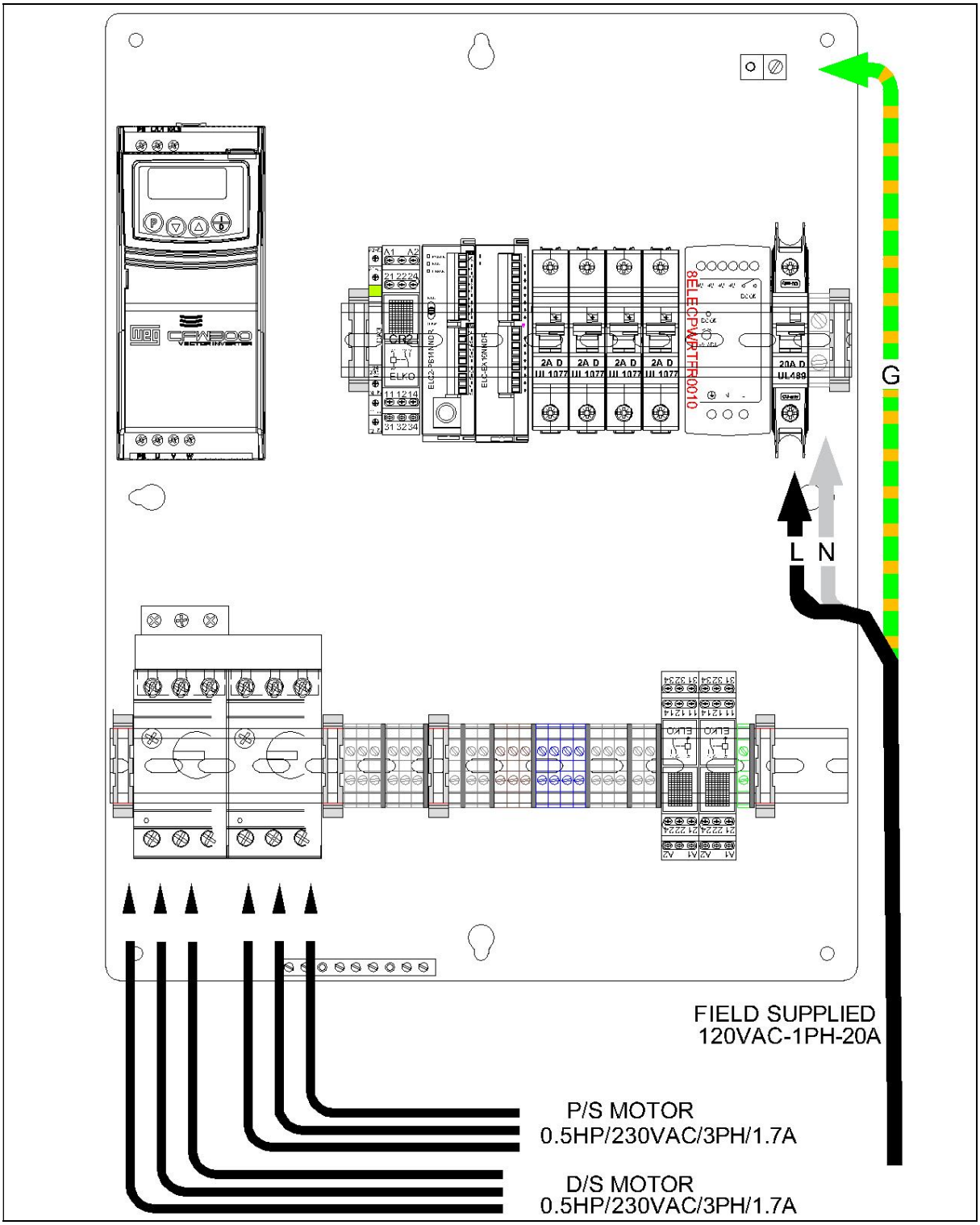
☑ **If** you are installing an **Electric Spin Shine System that is controlled by the 7SPINCTLPNL0003, please note that each MOTOR** driving the brushes is a **0.5 HP 3PHASE MOTOR** that **must** be wired **230 VAC.** Each thermal overload protection (Circuit Breaker) will have to be set at the **FULL LOAD CURRENT (FLA)** value for the 230VAC voltage used to power the motor (see table below). The FLA value of the motor can also be read off the motor name plate located on the side of the motor.

☐ **If** you have purchased the **ELECTRIC SPIN SHINE** with the **ELECTRIC SPIN SHINE CONTROL PANEL 7SPINCTLPNL0003,** connect each motor to CB6 and CB7. Connect the box to an electrical supply of **120 VAC/1PH/20 AMPS CIRCUIT ONLY!** (See Picture #23)

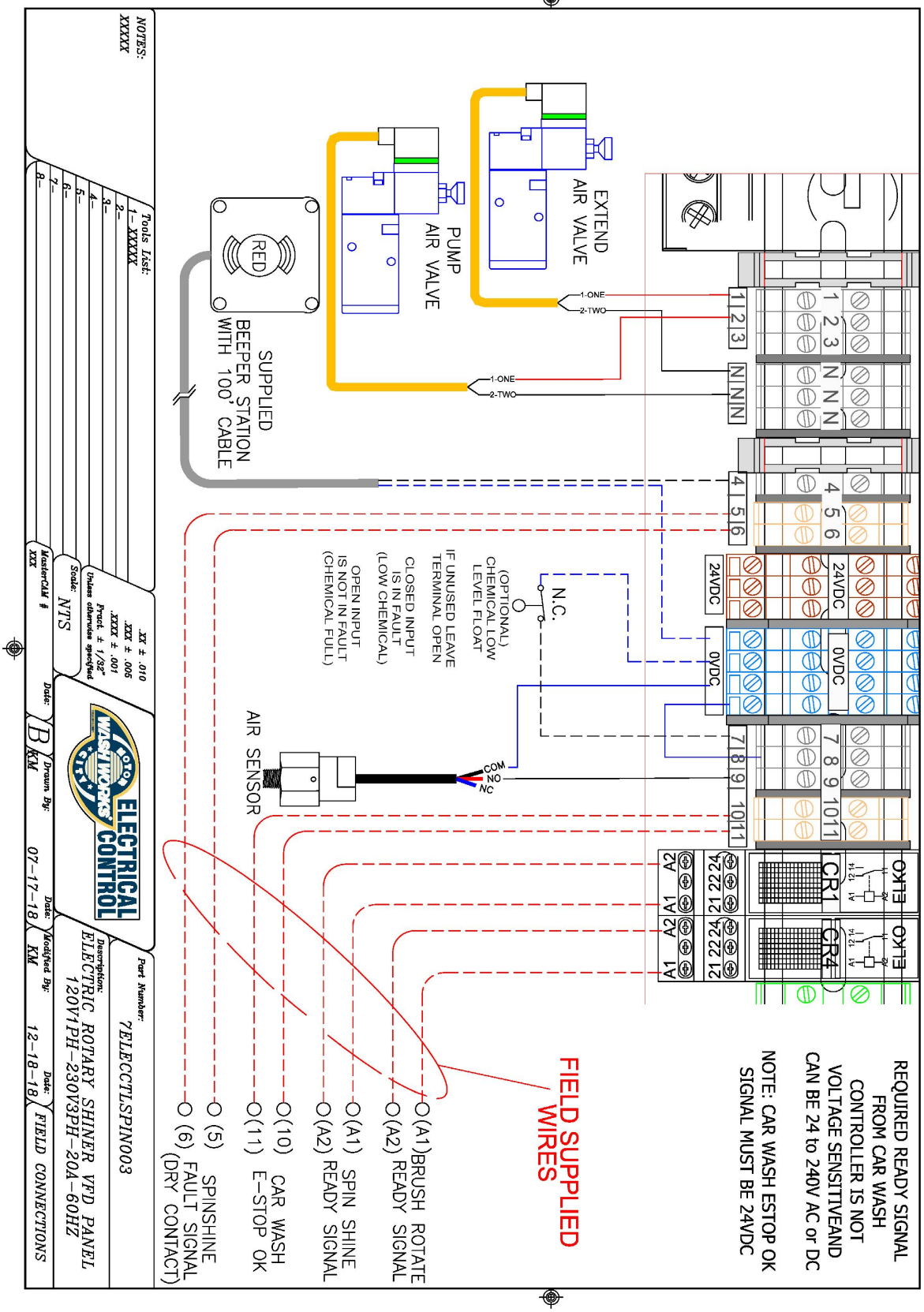
NOTES: THE MATERIAL REQUIRED FOR CONNECTING THE MOTORS, ARE THE CUSTOMER'S RESPONSIBILITY! ALL WORK HAS TO COMPLY WITH LOCAL AND NATIONAL CODES!

HP	208V	230V	460V
(0.5)	1.80A	1.70A	0.90A

Table #1: FLA for Three-Phase Squirrel Cage Motor 0.5HP, 1745RPM



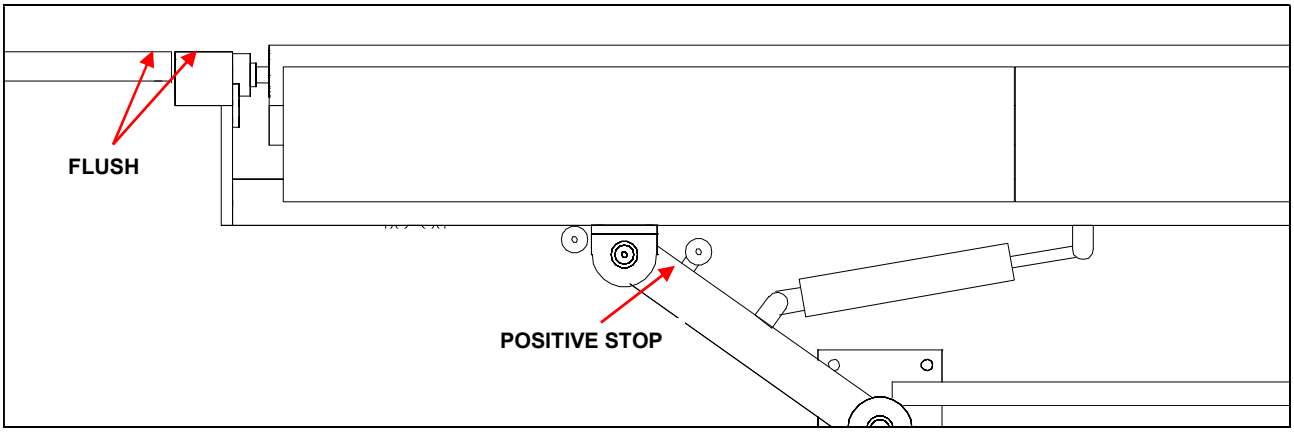
Pic #23: 7ELECCTLSPIN003 Electrical Panel 120VAC-230VAC Connections



Pic #24: 7ELECCTLSPIN003 Electrical Panel Field Connections for PLC version 1.3 and up.

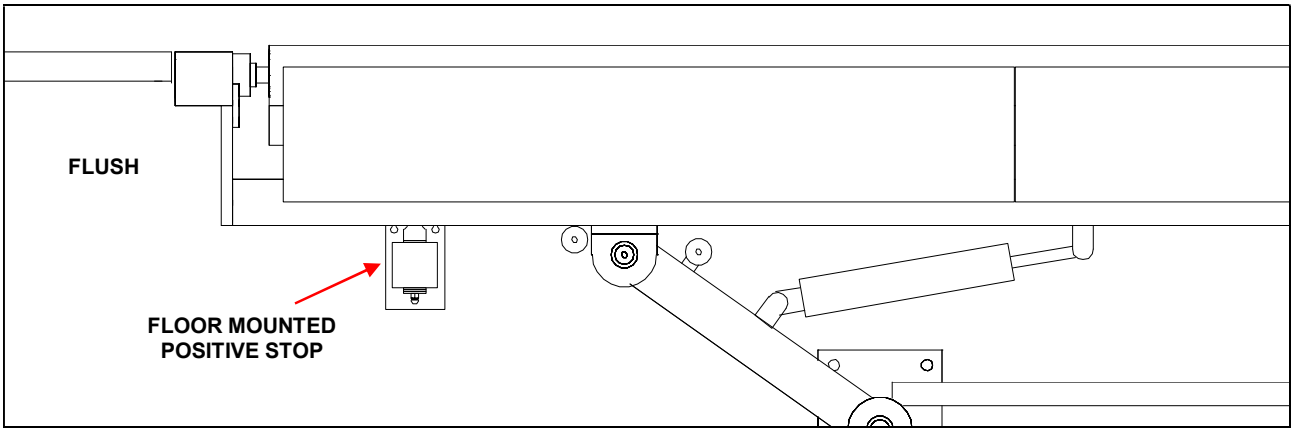
Driver's Side Positive Stop Installation:

☐ **After** start up, verify the positive stop adjustment on the applicator when fully retracted. Make sure the exit end of the applicator is **FLUSH WITH THE INSIDE EDGE OF THE OUTSIDE GUIDE RAIL** (see Picture #25). Adjust the positive stop (mounted on the applicator) as needed.



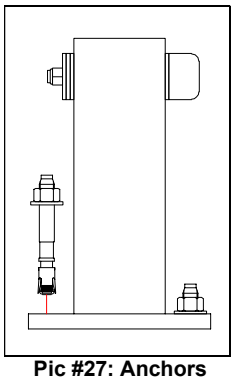
Pic #25: Guide Rail

☐ **Locate** the **FLOOR MOUNTED POSITIVE STOP** and position it behind the main beam on the exit end of the driver's side applicator (see Picture #26 below).

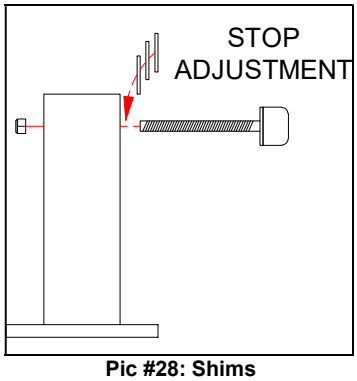


Pic #26: Floor Mounted Positive Stop

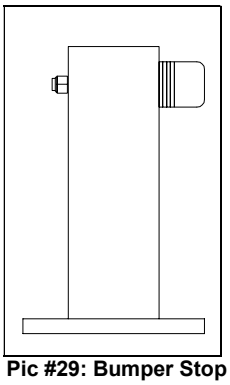
☐ **Secure** the floor-mounted positive stop to the floor using wedge anchor bolts (see Picture #27). You may insert shims behind the bumper stop for adjustment or relocate the bumper stop like shown on Picture #30 for height adjustment.



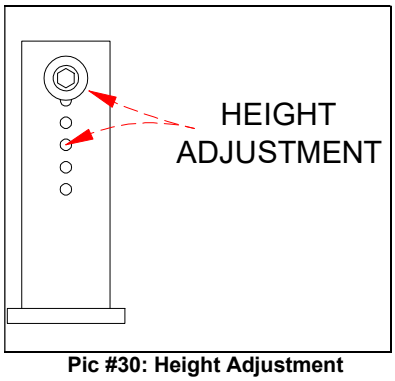
Pic #27: Anchors



Pic #28: Shims



Pic #29: Bumper Stop



Pic #30: Height Adjustment

Start-Up Procedures:

☑ **Turn ON** the air supply to the control panel and check for air leaks. Set the Main Supply Air Regulator between 60-80psi. **Close** the flow control fittings for both brushes and extend cylinders: **TWO FITTINGS FOR EACH CYLINDER.** Re-open each flow control fitting by unscrewing the knob **2 FULL TURNS.** Push the Extend air solenoid valve manual override button and set the **DRIVER'S SIDE EXTEND REGULATOR AT 20 PSI** and the **P/S EXTEND REGULATOR AT 30 PSI (NO MORE THAN 40 PSI).** Confirm that both Spin Shine Brushes are extended. If one of the brushes is retracted, check for proper air line connection. Check for air leaks. Release the override button.

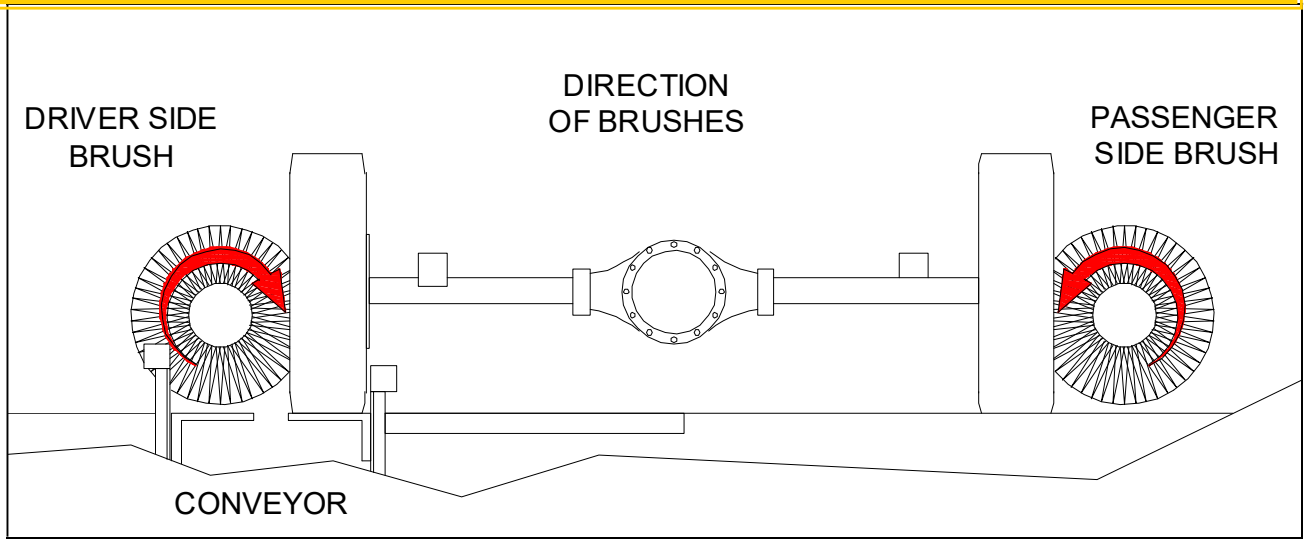
☐ Prime the chemical lines, from the FLOJET pumps to the applicators. Push the Chemical Pump air solenoid valve manual override button and set the **D/S and P/S CHEM PUMP'S REGULATORS to 40PSI.** Allow the chemical to flow through the lines until all the air is removed from the system. If it is a long distance from the pumps to the applicator, you might need to disconnect the chemical line from the ½" push-in connector on the applicator and place the lines in buckets. Manually run the pump until the solution is coming out in to the buckets, then reconnect the chemical lines to the applicators.

☐ **For HYDRAULIC DRIVEN BRUSH,** by-pass the hoses for each motor and turn **ON** the hydraulic unit to the brushes, increase the hydraulic flow and let it run for a minute. Stop the hydraulic unit and reconnect each motor to the hydraulic hoses and start the power unit again. Adjust the hydraulic flow until the brushes are spinning at about **60 RPM.** Check for leaks. Check for proper rotation of both brushes below.

☐ **It is recommended to change the hydraulic filter when the clogging filter gauge is at full range, 4-bar. Fluid is recommended to be changed after first 100hrs of operation, then every 3000hrs (or at least once yearly). Only ISO spec rated hydraulic fluid is compatible.**

WARNING!

THE BRUSHES HAVE TO ROTATE IN A DOWNWARD MOTION WHEN BRUSHING AGAINST THE VEHICLE'S WHEELS. IMPROPER ROTATION MAY RESULT IN EQUIPMENT AND/OR VEHICLE DAMAGE!



Pic #31 Brush Rotation

☐ **For ELECTRIC DRIVEN BRUSH,** manually jog **ON** each starter by forcing the output on from the Manual Functions in the Spin Shine HMI (see Page #28). Check for proper rotation (see notes above). In case of incorrect rotation, shut down the power to the starter unit and swap two wires coming from the starter to the motor and manually test again. While the motor is running, measure the current through each lead going to the motor by using an amp-meter. Verify that each motor is not pulling more current than specified on the motor name plate.

☐ **For ELECTRIC DRIVEN BRUSH** using **MCC**, turn ON the output controlling the Spin Shine motors and verify for proper rotation (see notes above). In case of incorrect rotation, shut off the power to the starter unit and swap two wires coming from the starter to the motor and manually test again. While the motor is running, measure the current through each lead going to the motor by using an Amp-meter.

☐ **Turn ON** the car wash controller and verify that both brushes extend and chemical sprays at the manifolds. Program the controller to have the brush extending on the side of the vehicle to have the brush to meet the wheel on the side, not too soon. Do not time the controller to extend the brushes in front of the vehicle!

WARNING!

CONFIRM THAT THE BRUSHES ARE EXTENDING ON THE SIDE OF THE VEHICLE. EXTENDING THE BRUSHES BEFORE THE VEHICLE MAY DAMAGE YOUR EQUIPMENT OR ITS COMPONENTS AND MAY VOID YOUR WARRANTY!

☐ **Test** with a car. Verify that the brushes extend and meet the front wheel on the side of the vehicle and do not penetrate too much on the vehicle's wheels. Adjust the penetration into the wheel by changing the **EXTEND AIR PRESSURE TO EACH BRUSH.**

WARNING!

INCREASING THE AIR PRESSURE OF THE AIR REGULATOR WILL INCREASE THE PENETRATION OF THE BRUSH INTO THE WHEEL. DO NOT APPLY TOO MUCH PRESSURE TO THE WHEEL. DOING SO MAY LEAD TO PREMATURE WEAR OF THE BRUSH, DAMAGE TO YOUR EQUIPMENT OR ITS COMPONENTS, AND MAY VOID YOUR WARRANTY!

Operation Procedures for Control Panel - 7SPINCTLPNL0001:

1. MAIN SCREEN:

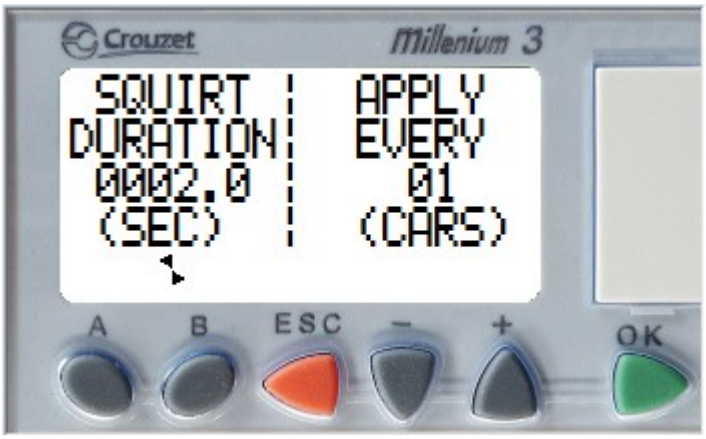


Figure 1

Figure 1 is the main screen that will appear upon initial power-up. This screen format will always stay the same, with the exception of the variable numeric inputs. This system allows for two variable features: (1) chemical squirt duration, and (2) vehicle application interval.

1.1. SQUIRT DURATION

This parameter controls the length of chemical application after the rising edge of the spin shine ready signal received from the car wash controller. EXAMPLE: As seen in Figure 1, the squirt duration is set to 2.0 seconds. The chemical pump will start on the rising edge of the Spin Shine ready signal and continue to stay on for 2.0 seconds.

OPERATION:

BUTTON	OPERATION
	SQUIRT DURATION INCREASE (+) INCREASES SQUIRT APPLICATION DURATION IN 0.5 SECOND INTERVALS
	SQUIRT DURATION DECREASE (-) DECREASEES SQUIRT APPLICATION DURATION IN 0.5 SECOND INTERVALS
	SQUIRT OVERRIDE PUSH AND RELEASE TO FORCE SQUIRT. SQUIRT TIME IS EQUAL TO THE SQUIRT DURATION.

Parameters are always instantaneously saved when changed, no confirmation is necessary

1.2. APPLICATION INTERVAL

This parameter controls the interval of vehicle chemical application. This will allow the user to skip chemical applications between cars and can be set to desired interval. EXAMPLE: To apply chemical to every car, set to 01. To apply to every other car, set parameter to 02. To apply to every third car set parameter to 03. Etc…

OPERATION:

BUTTON	OPERATION
	APPLICATION INTERVAL DECREASE (-) DECREASES APPLICATION BY ONE CAR.
	APPLICATION INTERVAL INCREASE (+) INCREASES APPLICATION BY ONE CAR.
	NOT USED.

Parameters are always instantaneously saved when changed, no confirmation is necessary

1.3. POWER FAILURE

In the instance of a power failure, the two parameters will be saved within the controller and when power is returned, operation will return to the last used settings.

Main Screen:

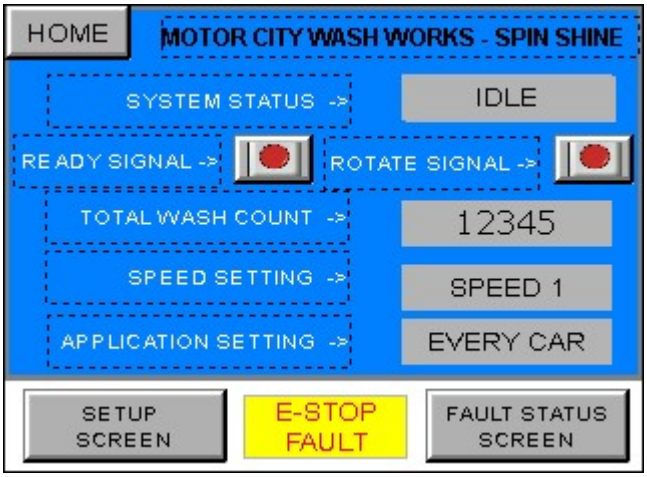


Image #1

This is the default screen that is shown at power-up. The HMI displays the different screens you may navigate to as well as SPIN SHINE STATUS INFORMATION: whether the equipment is shining a tire or indexing between cars or other.

This HMI Screen: Allows the user to NAVIGATE to other screens. SETUP SCREEN button will access the SETUP SCREEN options (see Image #2) and FAULT STATUS SCREEN button will access the FAULT STATUS SCREEN (see Image #6). **SYSTEM STATUS →**[Window] Shows the current state that the Spin Shine System is in:

SYSTEM STATUS →DISABLED: indicates that the Auto Spin Shine Mode is in the OFF state (see Image #2). The system will not respond to a ready signal in this mode.

SYSTEM STATUS →IDLE: indicates that the Auto Spin Shine Mode is in the ON state (see Image #2). The system will respond to a ready signal in this mode.

SYSTEM STATUS →APPLYING: indicates that the Auto Spin Shine Mode is in the ON state and ready signal is ON. (See: READY SIGNAL STATUS)

SYSTEM STATUS →INDEXING: indicates that the Auto Spin Shine Mode is in the ON state and Indexing between cars (or Ready Signals). When enabled, Indexing turns the brushes at a very slow speed for 5 seconds every 30 seconds. (Brush will rotate 180 degrees.)

SYSTEM STATUS →FAULT: indicates that the Auto Spin Shine system has a Fault (See Image #6).

SIGNAL STATUS → Shows the current state of the Ready signal and Brush Rotate signal from the Car Wash Controller. A red/green indicator shows the state of the signal. RED = no signal detected from the Car wash Controller. GREEN = signal detected from Car Wash Controller.

TOTAL WASH COUNT → Indicates how many times the system received a ready signal and activated for vehicles. (Number of cars that received the Spin Shine application.)

Continued:

SPEED SETTING→ Shows the current setting for the Brush Speed. (See page 5. BRUSH SPEED SCREEN) To access the BRUSH SPEED options press the SETUP SCREEN button then press the BRUSH SPEED button.

APPLICATION SETTING → Shows the current setting for chemical application frequency. (See Image #3) APPLICATION FREQUENCY SCREEN). To access the APPLICATION FREQUENCY options, press the SETUP SCREEN button then press the APPLICATION FREQUENCY button.

SETUP SCREEN:

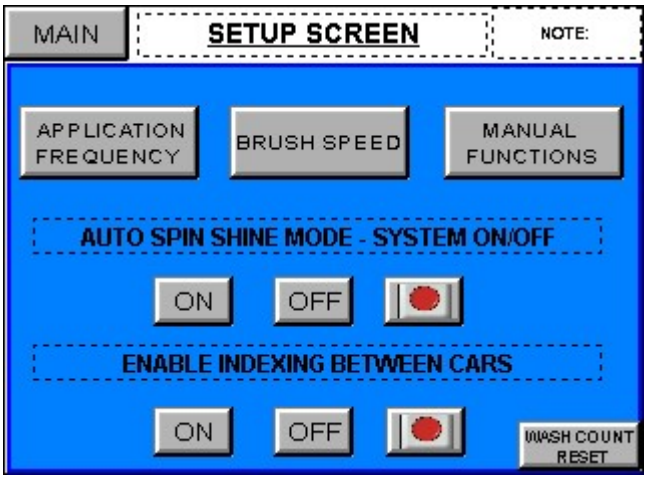


Image #2

This HMI Screen allows the user to NAVIGATE to other screens, turn the Automatic Spin Shine System ON or OFF, and Enable or Disable the Indexing option. The APPLICATION FREQUENCY button will access the APPLICATION FREQUENCY settings (see Image #3). The BRUSH SPEED button will access the BRUSH SPEED settings (see Image #4). The MANUAL FUNCTIONS button will access the MANUAL FUNCTIONS options (see Image #5). The MAIN button will take you back to the Main startup screen. The WASH COUNT RESET button will reset the TOTAL WASH COUNT back to zero.

AUTO SPIN SHINE MODE - SYSTEM ON/OFF: This is the main On/Off switch for the Automatic System. The ON button will turn on the Automatic Spine Shine application when the ready signal is received. The OFF button will turn off the Automatic Spine Shine application. (Only the manual functions will work in the OFF mode.) The red/green Indicator shows what mode the system is in. RED = The System is OFF. GREEN = The System is in Automatic mode.

ENABLE INDEXING BETWEEN CARS: The ON button will turn on the Indexing between cars option. The OFF button will turn OFF the INDEXING between cars option. The red/green Indicator shows if the Indexing option is enabled. RED = Indexing is OFF. GREEN = Indexing is ON.

APPLICATION FREQUENCY SCREEN:

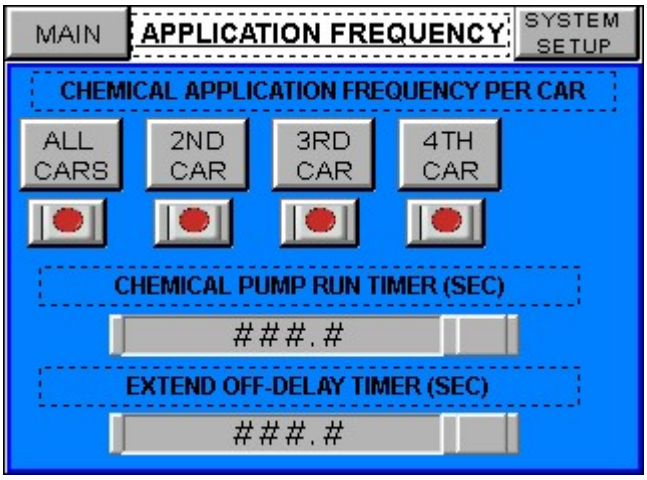


Image #3

This HMI Screen: Allows the user to NAVIGATE to other screens, set the chemical application frequency (per car), set the Chemical Pump Run Duration Timer and set the Brush Extend Off-Delay Timer. The MAIN button will take the user back to the Main default screen (see Image #1). The SYSTEM SETUP button will take the user to the Setup Screen (see Image #2).

CHEMICAL APPLICATION FREQUENCY PER CAR: This feature allows the user to select the interval at which the chemical will be applied to the brushes. The system uses the CWC ready signal to determine the car count. There are 4 options available, All CARS, 2ND CAR, 3RD CAR, AND 4TH CAR. Press the button for the desired option. The red/green Indicator below each button shows what option has been selected. RED = the option is <u>not</u> selected. GREEN = the option is selected.

ALL CARS button: This option will apply chemical to the brushes every time the system receives a Ready Signal from the CWC. The chemical pump is on only for the time set in the CHEMICAL PUMP RUN TIMER.

2nd CAR button: This option will apply chemical to the brushes every other (2nd) time the system receives a Ready Signal from the CWC. The chemical pump is on only for the time set in the CHEMICAL PUMP RUN TIMER.

3rd CAR button: This option will apply chemical to the brushes every 3rd time the system receives a Ready Signal from the CWC. The chemical pump is on only for the time set in the CHEMICAL PUMP RUN TIMER.

4th CAR button: This option will apply chemical to the brushes every 4th time the system receives a Ready Signal from the CWC. The chemical pump is on only for the time set in the CHEMICAL PUMP RUN TIMER.

CHEMICAL PUMP RUN TIMER (SEC): This is the run duration timer for the chemical application pump(s). <u>The chemical pump will only run for value that is set in the timer</u>. Seconds (1.0) and Tenths of a Second (0.1) can be entered in to the timer setting. By Pressing the Timer area on the screen, a numeric keypad will pop-up. Input the desired timer value then press Enter. **NOTE: if a time of 0.0 seconds is entered then the pump(s) will not turn on.**

Continued:

EXTEND OFF-DELAY TIMER (SEC): This is the Off-delay Timer for the brush extend valves. This Timer determines how long the brushes will remain extended after the CWC Ready Signal has turned off. Seconds (1.0) and Tenths of a Second (0.1) can be entered in to the timer setting. By pressing the Timer area on the screen, a numeric keypad will pop-up. Input the desired timer value then press Enter.

BRUSH SPEED SCREEN:

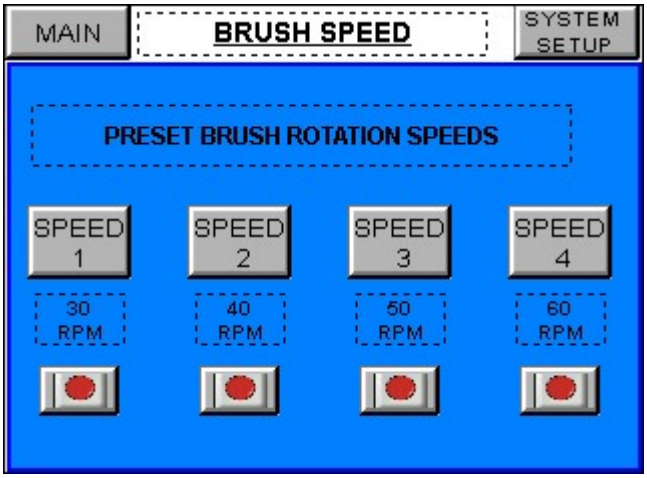


Image #4

This HMI Screen: Allows the user to NAVIGATE to other screens, and set the brush rotation speed. The MAIN button will take the user back to the Main default screen (see Image #1). The SYSTEM SETUP button will take the user to the Setup Screen (see Image #2).

PRESET BRUSH ROTATION SPEEDS: This is the brush speed setting that will be used to shine the tires. There are 4 speed options available, SPEED 1, SPEED 2, SPEED 3, and SPEED 4. Press the button for the desired option. The red/green indicator below each button shows what option has been selected. RED = the option is not selected. GREEN = the option is selected.

SPEED 1 button: This option will run the brushes at approximately 30 RPM.

SPEED 2 button: This option will run the brushes at approximately 40 RPM.

SPEED 3 button: This option will run the brushes at approximately 50 RPM.

SPEED 4 button: This option will run the brushes at approximately 60 RPM.

MANUAL FUNCTIONS SCREEN:

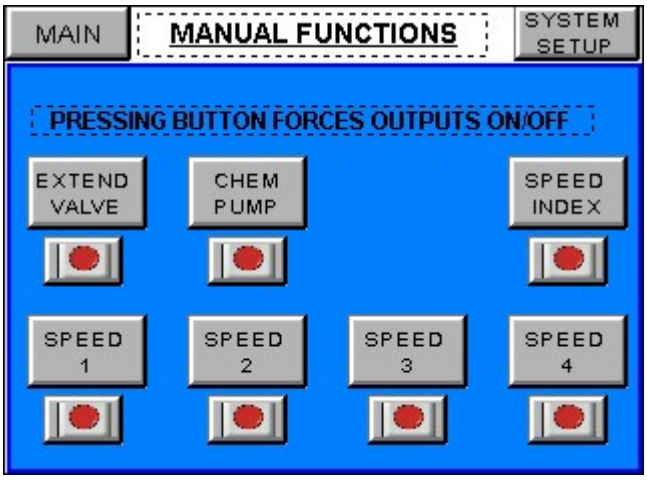


Image #5

This HMI Screen: Allows the user to NAVIGATE to other screens, and manually force on outputs for pump priming, testing and trouble shooting. The MAIN button will take the user back to the Main default screen (see Image #1). The SYSTEM SETUP button will take the user to the Setup Screen (see Image #2).

PRESSING BUTTON FORCES OUTPUTS ON/OFF: This feature is allowing the user to force on specific functions of the Spin Shine System. It can be used for chemical pump(s) priming, testing extend and retract air pressures and brush operation for maintenance and speed verification. Press the button for the desired function. The red/green Indicator below each button shows what function has been forced on. RED = the output(s) is not ON. GREEN = the output(s) on forced ON. Press a button one to turn ON function. Press the button again to turn OFF the function.

EXTEND VALVE button: When this button is activated the Extend Air Valve will turn on.

CHEM PUMP button: When this button is activated the Chemical Pump(s) will turn on.

SPEED INDEX button: When this button is activated the brushes will turn on and rotate at the Indexing Speed.

SPEED 1 button: When this button is activated the brushes will turn on and rotate at the Speed 1 setting.

SPEED 2 button: When this button is activated the brushes will turn on and rotate at the Speed 2 setting.

SPEED 3 button: When this button is activated the brushes will turn on and rotate at the Speed 3 setting.

SPEED 4 button: When this button is activated the brushes will turn on and rotate at the Speed 4 setting.

FAULT STATUS SCREEN:

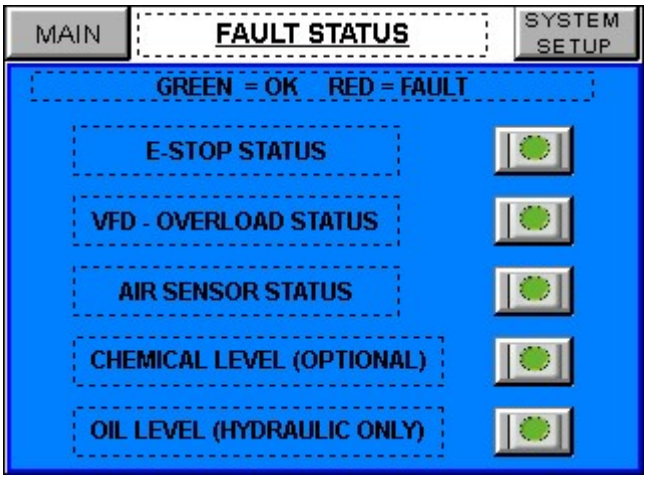


Image #6

This HMI Screen: Allows the user to NAVIGATE to other screens, as well as SPIN SHINE FAULT INFORMATION. The MAIN button will take the user back to the Main default screen (see Image #1). The SYSTEM SETUP button will take the user to the Setup Screen (see Image #2).

GREEN = OK RED=FAULT: there are 5 system statuses (inputs) that are constantly being monitored. When any one of them has a fault, its indicator will turn red until the fault condition is corrected. Once the condition is corrected the indicator will automatically turn back to green (OK). No reset is required.

E-STOP STATUS Fault: This fault means that the Spin Shine system emergency stop button has been pressed (activated) or that the Car Wash Controller e-stop OK signal is not being detected.

VFD – OVERLOAD STATUS: This fault means that the VFD has a fault and has activated the VFD's fault relay or that the motor overloads are in the 'tripped' or off position. (Electric motor model only.)

AIR SENSOR STATUS: This fault indicates that the air pressure sensor on the main air regulator is not detecting the required system air pressure.

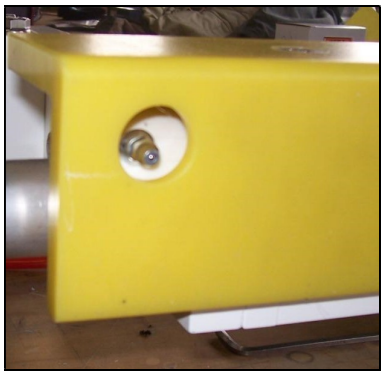
CHEMICAL LEVEL (OPTIONAL): This fault means that the Chemical tank level is low. This feature is optional. (If unused, leave terminal open, do not jump out with 0VDC.)

OIL LEVEL (HYDRAULIC ONLY): This fault is used on the hydraulic models only. It indicates that the hydraulic unit's tank oil level is low. (Input must be jumped out if not using a low-level switch. In order to bypass, jump terminal '8' to '0V'.)

Preventive Maintenance and Lubrication Procedures:

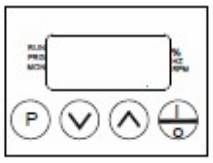
- ☐ **Check** Main Air Pressure Regulator on the Control Panel, **ONCE A DAY.** Open manual drain to expel accumulated liquids as needed. Keep liquids below baffle.
- ☐ **Check** Extend Air Panel (D/S and P/S) regulator pressure settings, **ONCE A DAY.**
- ☐ **Check** Chemical Pump Air Panel (D/S and P/S) regulator pressure settings, **ONCE A DAY.**
- ☐ **Grease (2)** Entrance and (2) Exit End Brush Bearings **ONCE A WEEK.** See below for greasing points.
- ☐ **Grease (8)** Brush Arms Bearings **ONCE A MONTH.** See below for greasing points.

1- ENTRANCE END BRUSH BEARING (2 FITTINGS)



2- EXIT END BRUSH BEARING (2 FITTINGS)

3- BRUSH ARMS BEARINGS (8 FITTINGS)



MENU	PARA-METER	DESCRIPTION	FACTORY SETTING	(2)0.5HP) SHINER MOTOR
P >	P100	Acceleration Time	5.0	1.0
	P101	Deceleration Time	10.0	1.0
	P121	Reference via HMI	3.0	60.0
	P124	Multispeed Ref. 1 (INDEX SPEED HMI)	3.0	6.0
	P125	Multispeed Ref. 2 (SPEED 3 HMI)	10.0	50.0
	P126	Multispeed Ref. 3 (SPEED 2 HMI)	20.0	40.0
	P127	Multispeed Ref. 4 (SPEED 4 HMI)	30.0	60.0
	P128	Multispeed Ref. 5 (SPEED 1 HMI)	40.0	30.0
	P220	LOC/REM Selection Source	0	1
	P222	REM Reference Sel.	1	8
	P263	DI1 Input Function	1	1
	P264	DI2 Input Function	8	13
	P265	DI3 Input Function	0	13
	P266	DI4 Input Function	0	13
	P271	DIs Signal	0	1
	P275	DO1 Output Function	13	13
	P399	Motor Rated Efficiency	67.0%	75.5%
	P400	Motor Rated Voltage	230	230
	P401	Motor Rated Current	1.0xInom	4.0
	P402	Motor Rated Speed	1720	1745
	P403	Motor Rated Frequency	60.0	60.0
	P404	Motor Rated Power	6	5
	P407	Motor Rated Power Factor	0.69	.71
	P005	Output Frequency (Motor)	READ ONLY	READ ONLY

*CHECK VALUE ON MOTOR NAME PLATE AND ADJUST ACCORDINGLY

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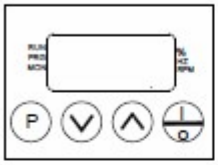
HYDRAULIC SPIN SHINE VFD PARAMETER SETTINGS – 7SPINCTLPNL0005

MENU	PARA-METER	DESCRIPTION	FACTORY SETTING	1.5HP SHINER MOTOR
P >	P100	Acceleration Time	5.0	1.0
	P101	Deceleration Time	10.0	1.0
	P121	Reference via HMI	3.0	60.0
	P124	Multispeed Ref. 1 (INDEX SPEED HMI)	3.0	6.0
	P125	Multispeed Ref. 2 (SPEED 3 HMI)	10.0	50.0
	P126	Multispeed Ref. 3 (SPEED 2 HMI)	20.0	40.0
	P127	Multispeed Ref. 4 (SPEED 4 HMI)	30.0	60.0
	P128	Multispeed Ref. 5 (SPEED 1 HMI)	40.0	30.0
	P220	LOC/REM Selection Source	0	1
	P222	REM Reference Sel.	1	8
	P263	DI1 Input Function	1	1
	P264	DI2 Input Function	8	13
	P265	DI3 Input Function	0	13
	P266	DI4 Input Function	0	13
	P271	DIs Signal	0	1
	P275	DO1 Output Function	13	13
	P399	Motor Rated Efficiency	67.0%	86.5%
	P400	Motor Rated Voltage	230	230
	P401	Motor Rated Current	1.0xInom	4.36
	P402	Motor Rated Speed	1720	1740
	P403	Motor Rated Frequency	60.0	60.0
	P404	Motor Rated Power	6	6
	P407	Motor Rated Power Factor	0.69	.71
	P005	Output Frequency (Motor)	READ ONLY	READ ONLY



*CHECK VALUE ON MOTOR NAME PLATE AND ADJUST ACCORDINGLY

8DCALPNLELC0020 09-11-18

NOTE: **PROVIDES FURTHER INFORMATION!**

STOP! **PRECAUTION TO TAKE TO AVOID EQUIPMENT MALFUNCTION OR ERROR! MAKE SURE ALL LOCKOUT/TAGOUT PRODEDURES HAVE BEEN MET TO ENSURE A SAFE WORK ENVIRONMENT WHEN SERVICING ANY AND ALL MOTOR CITY WASH WORKS EQUIPMENT!**

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

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 in order 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.

<https://store.motorcitywashworks.com/Team360/TireShiner/Documents/Media%20Links%20SpinShine.pdf>

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

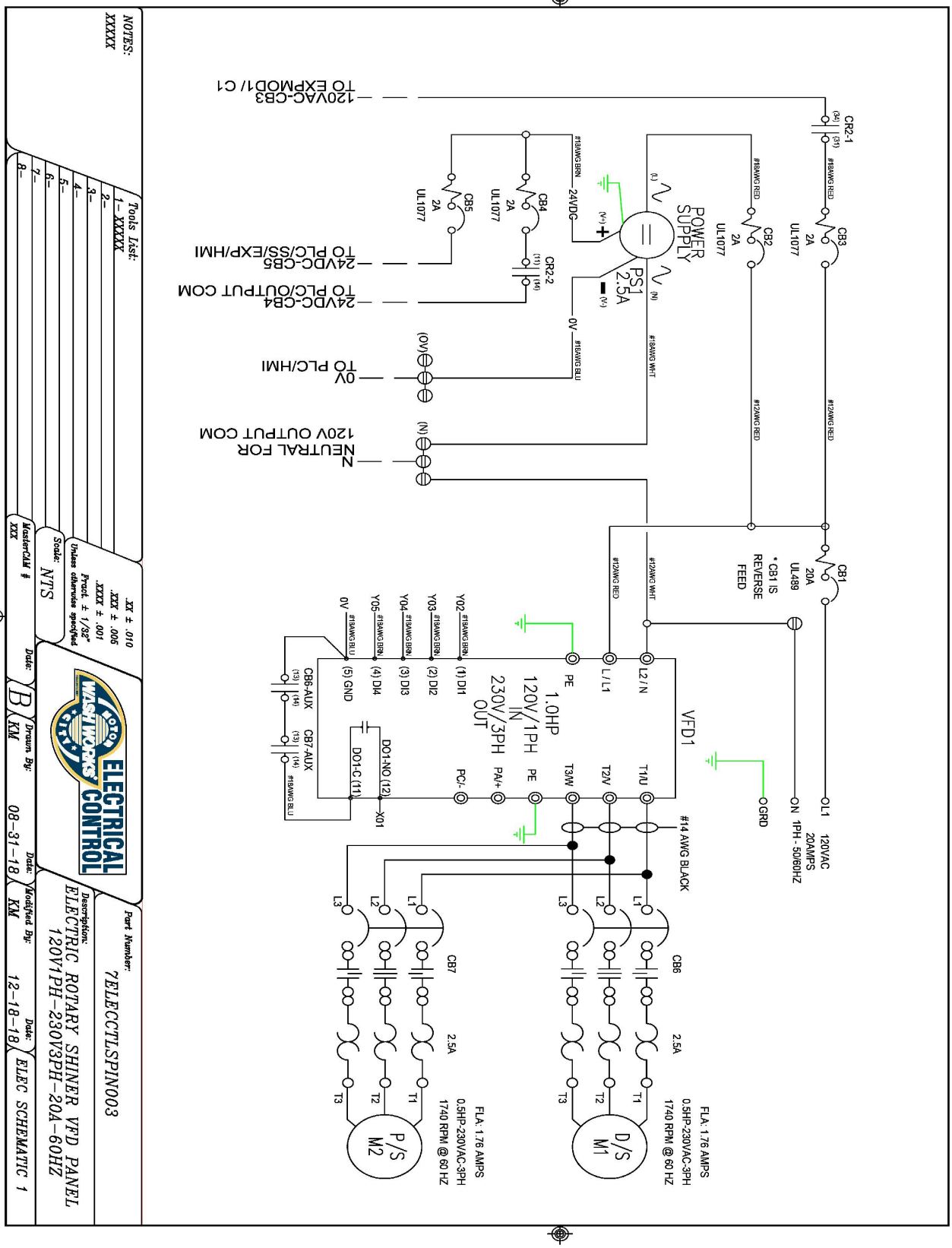
<MCWW Documentation Hub>

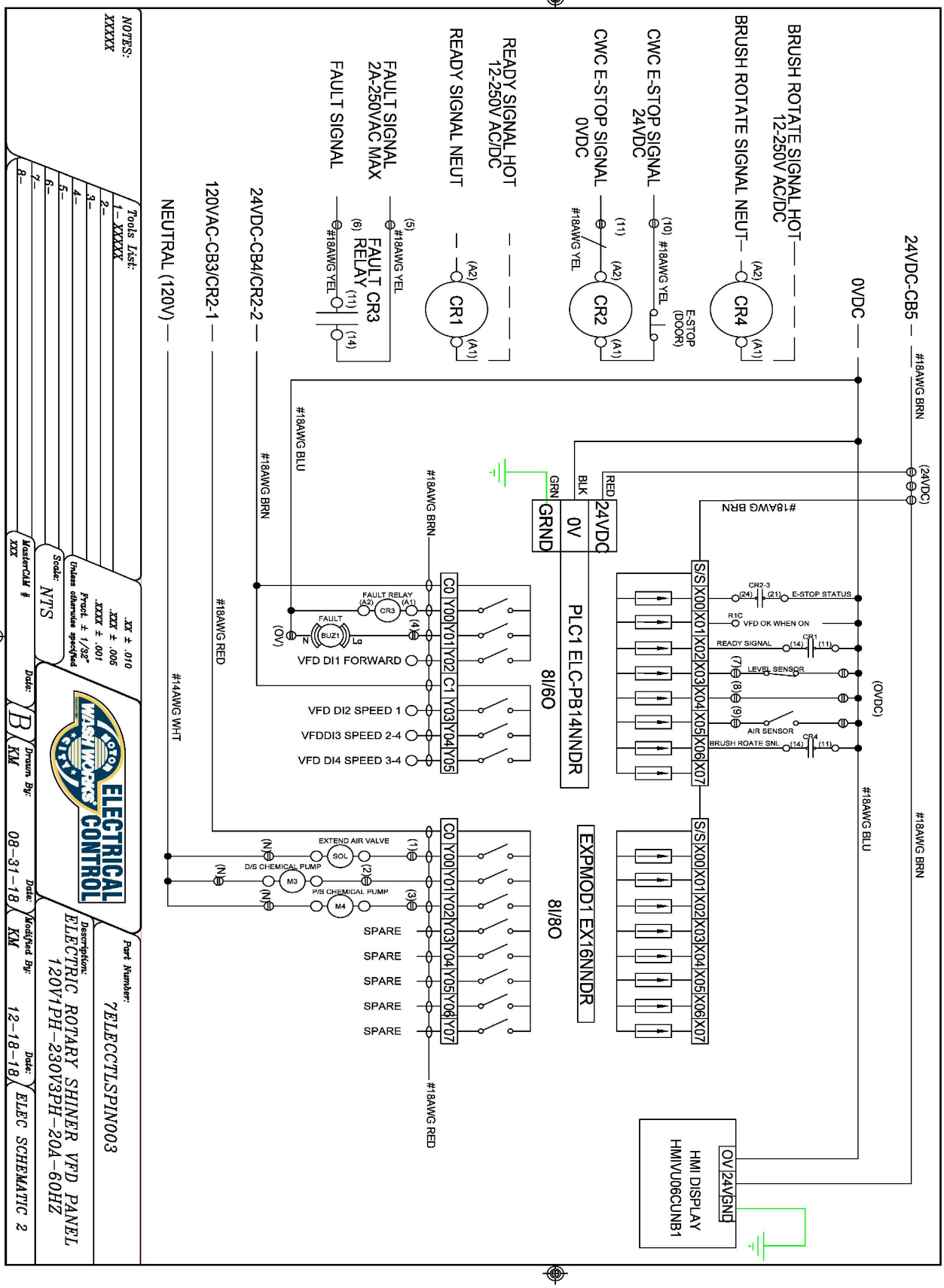
Possible Problems/Remedies

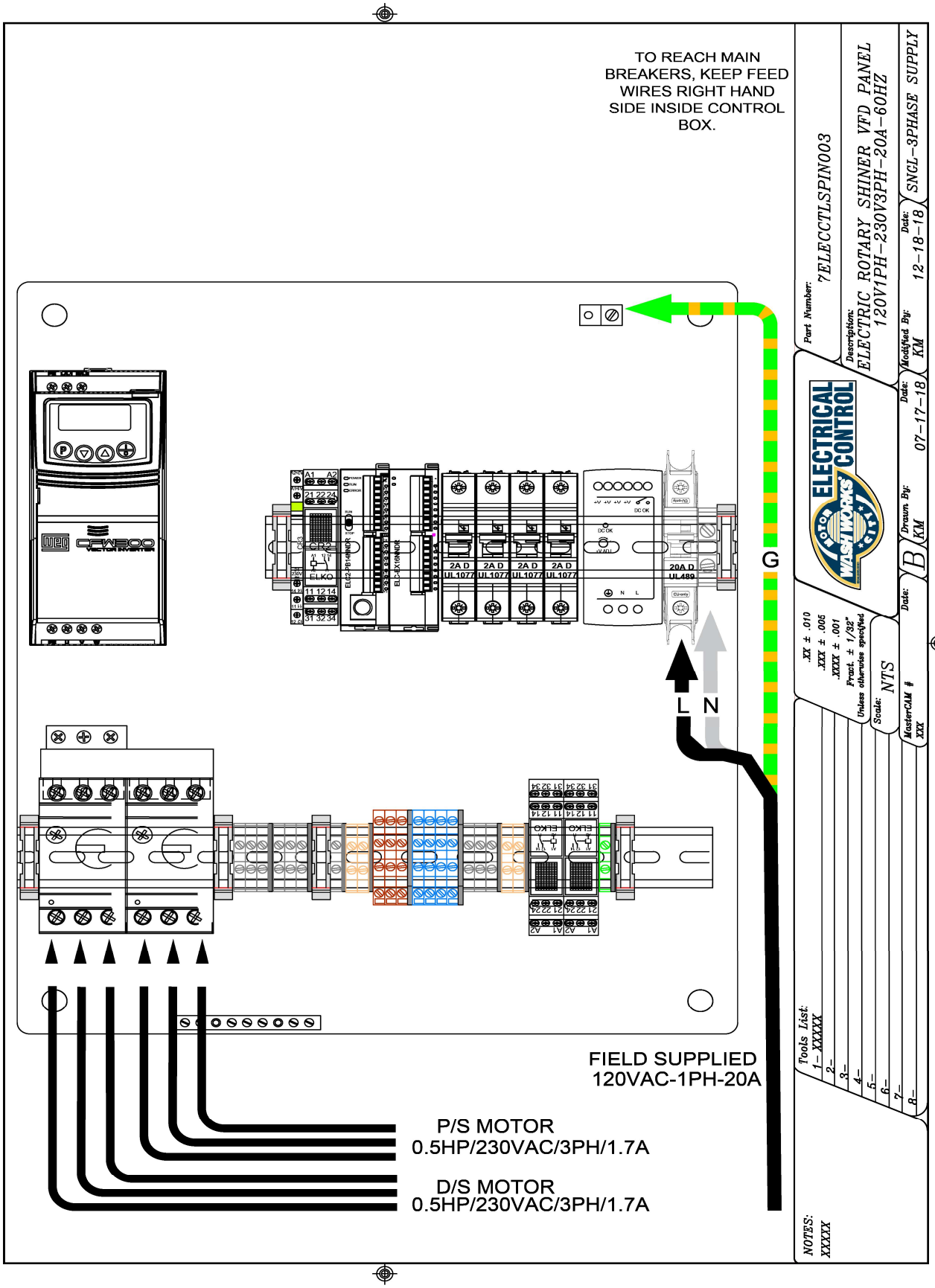
Equipment:	Problem:	Remedy:
Spin Shine	Brush(es) do not rotate automatically.	Check for run command from car wash controller. Check for fault on VFD. Check for continuity of 3phase motor leads. Check HMI for E-Stop present. Ensure HMI does not show an active fault.
Spin Shine	Brush(es) do not rotate in manually mode.	Check VFD for fault. Check for voltage at motor. (Electric drive, at motor on brush. Hydraulic drive, at motor on power pack.) Check HMI for fault. Check HMI for E-Stop present.
Spin Shine	Brush arms do not retract from wash bay.	Check air pressure. Verify there is no mechanical binding. Ensure that bearings are moving freely.

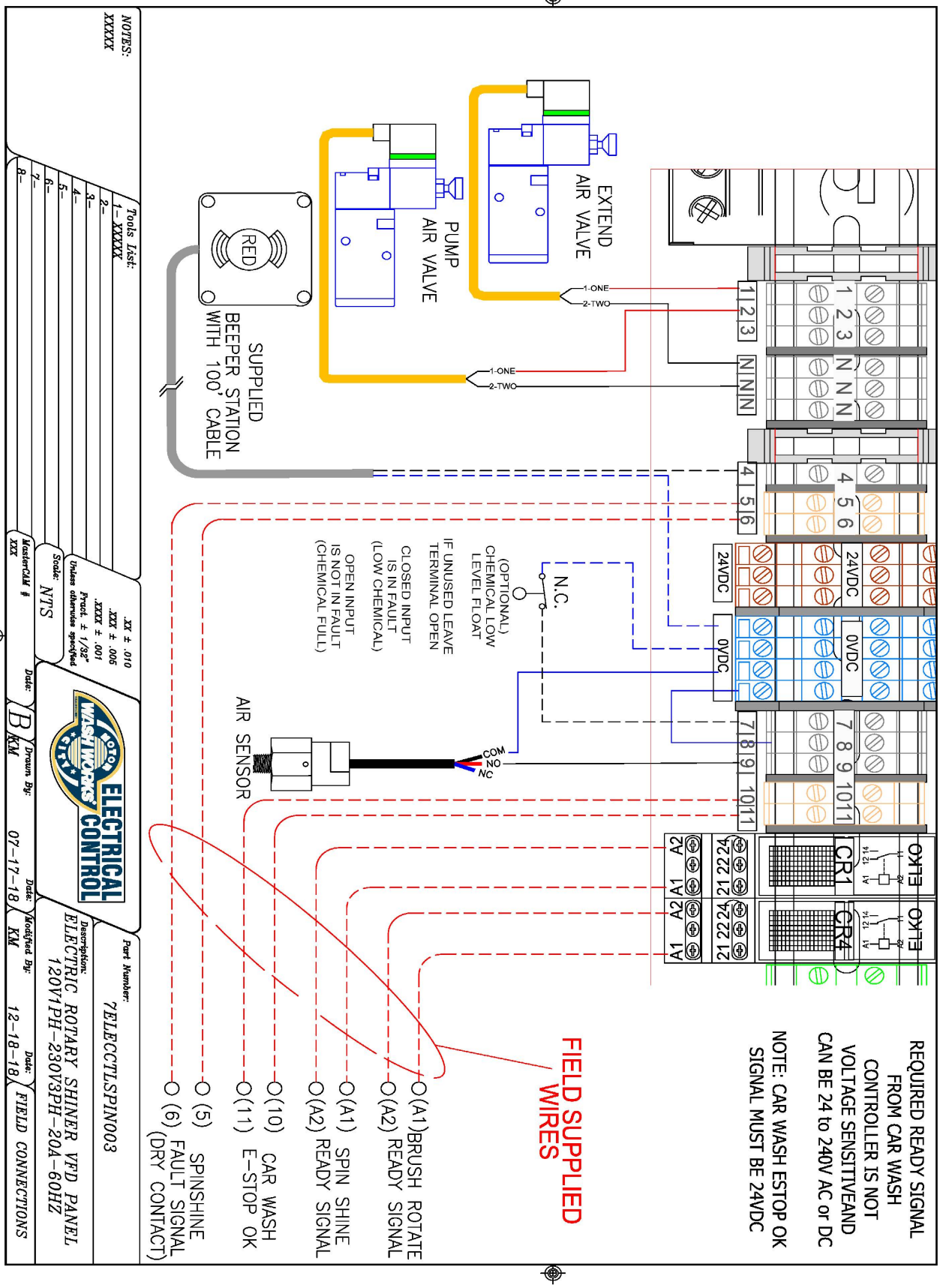
		Check for correct voltage at pneumatic valve. Check for kinked air lines or leaking from air cylinder.
Spin Shine	Brush arms do not extend in wash bay.	Check air pressure. Verify there is no mechanical binding. Ensure that bearings are moving freely. Check for correct voltage at pneumatic valve. Check for kinked air lines or leaking from air cylinder.

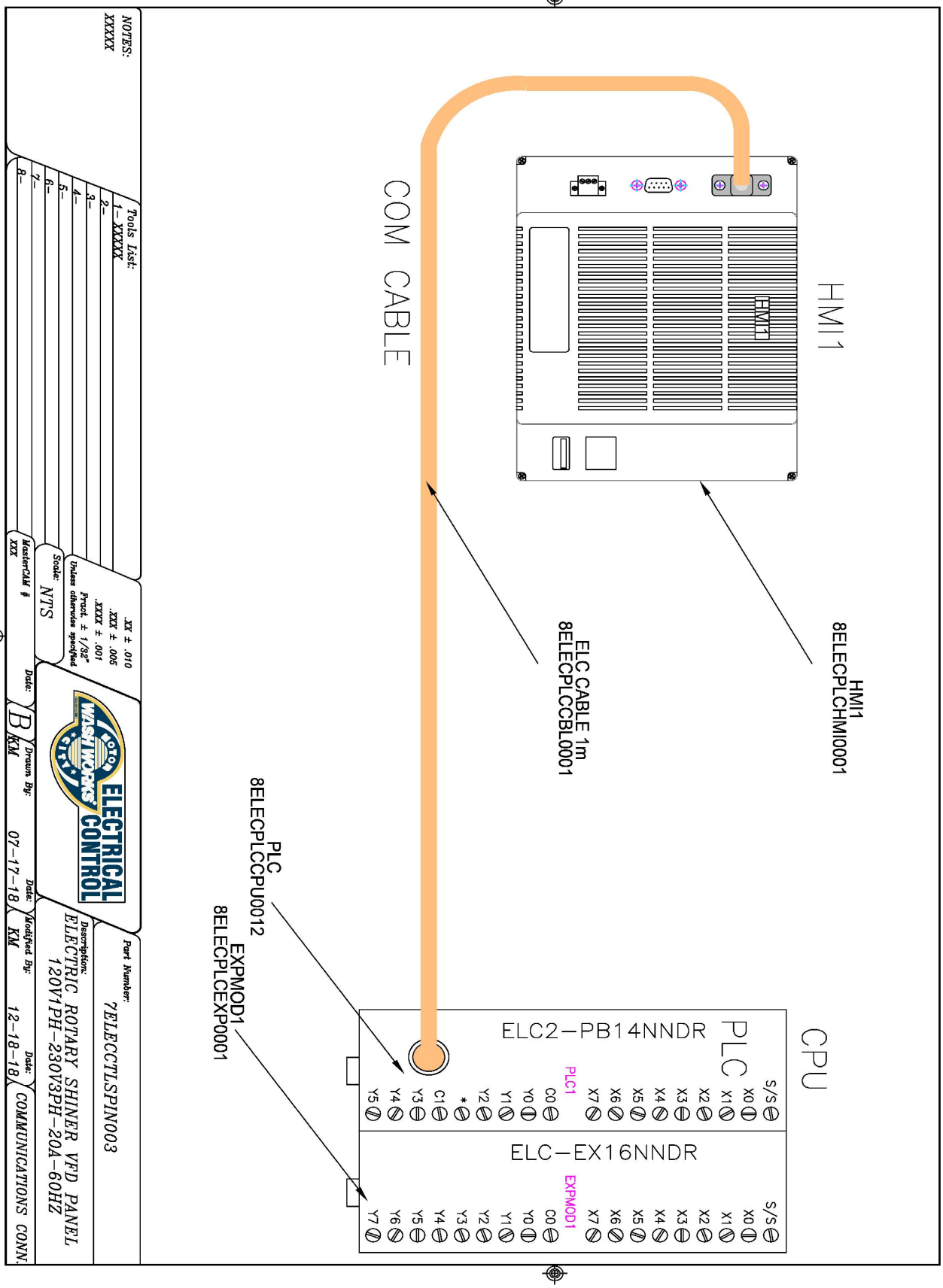
Electrical Panel – Electric Drive (120VAC):











EATON PLC INPUT/OUTPUT MAP SPIN SHINE (8-31-18)

PLC INPUTS:

- X00= E-STOP OK SIGNAL (COMING FROM CAR WASH E-STOP MASTER RELAY) (NC-0VDC)
- X01= VFD -OVERLOAD AUX FAULT (NC-0VDC)
- X02= SPIN SHINE READY SIGNAL (COMING FROM C W CONTROLLER) (NO-0VDC)
- X03= LEVEL SENSOR SIGNAL (OPTIONAL) (NC-0VDC)
- X04= OIL LEVEL SENSOR (HYDRAULIC) (NC-0VDC)
- X05= AIR SENSOR (LOW) (NO-0VDC)
- X06= BRUSH ROTATE SIGNAL (COMING FROM C W CONTROLLER) (NO-0VDC)
- X07= NOT USED

PLC OUTPUTS:

- Y00= FAULT RELAY (NO-24VDC)
- Y01= BEEPER (NO-24VDC)
- Y02= VFD DI1 (RUN/STOP) (NO-24VDC)
- Y03= VFD DI2 (SPEED 1) (NO-24VDC)
- Y04= VFD DI3 (SPEED 2-4) (NO-24VDC)
- Y05= VFD DI4 (SPEED 3-4) (NO-24VDC)

EXPANSION MODULE #1 (2ND INPUT MODULE):

- X20= NOT USED
- X21= NOT USED
- X22= NOT USED
- X23=NOT USED
- X24=NOT USED
- X25=NOT USED
- X26=NOT USED
- X27=NOT USED

EXPANSION MODULE #1 (2ND OUTPUT MODULE):

- Y20= EXTEND VALVE (NO-120VAC)
- Y21= CHEMICAL PUMP 1 (NO-120VAC)
- Y22= CHEMICAL PUMP 2 (NO-120VAC)
- Y23=
- Y24=
- Y25=
- Y26=
- Y27=

NOTES:
XXXXX

Tools List:
1– XXXXX
2–
3–
4–
5–
6–
7–
8–

.XX ± .010
.XXX ± .005
.XXXX ± .001
Fract. ± 1/32"
Unless otherwise specified

Scale: NTS

MasterCAM # XXX

Date:

B

ELECTRICAL CONTROL

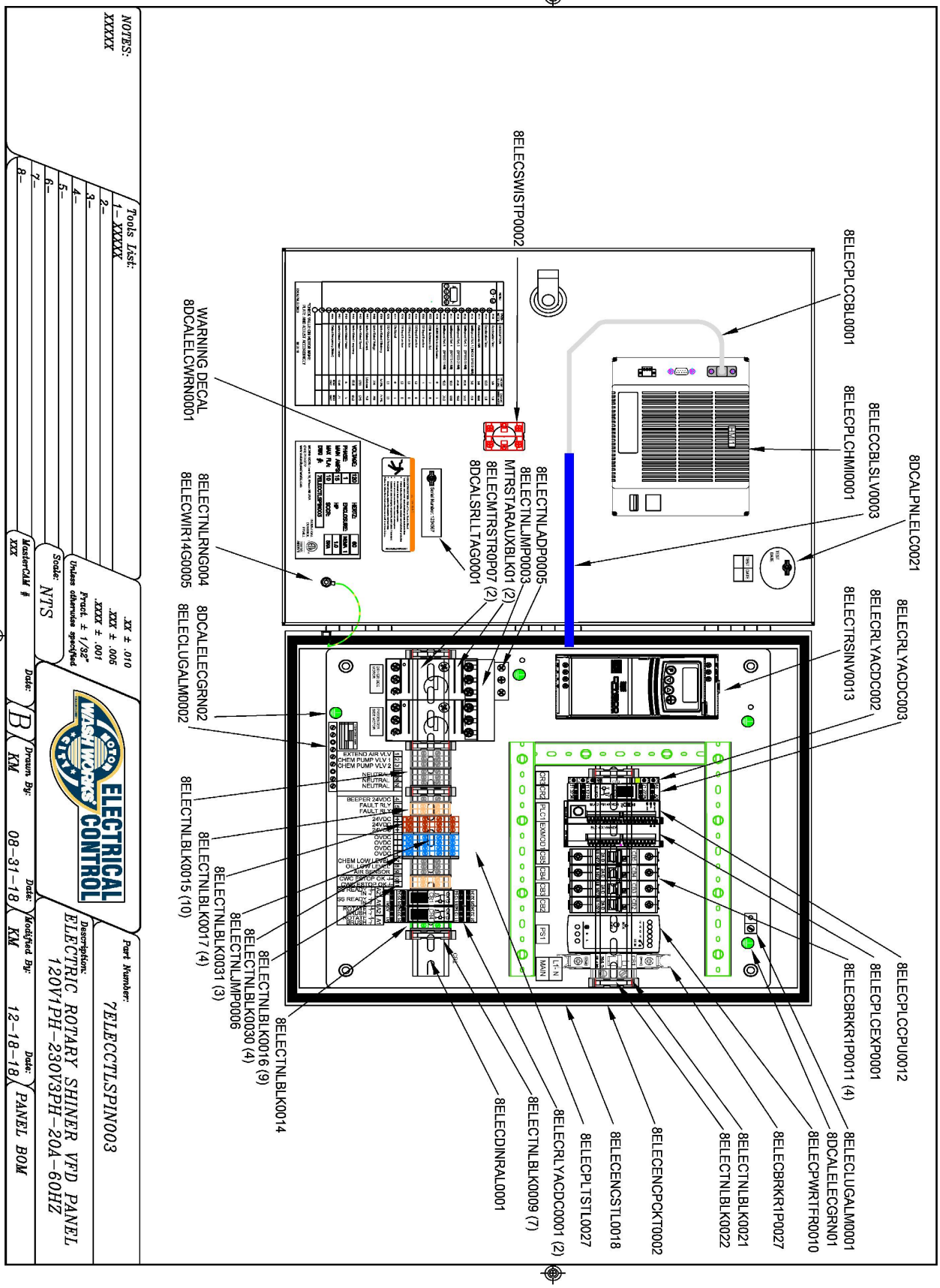
Part Number: 7ELECCTLSPIN003

Description: ELECTRIC ROTARY SHINER VFD PANEL 120V1PH–230V3PH–20A–60HZ

Drawn By: KM Date: 08–31–18

Modified By: KM Date: 12–18–18

I/O MAP



NOTES:
XXXXX

Tools List:
1- XXXXX
2-
3-
4-
5-
6-
7-
8-

.XX ± .010
.XXX ± .005
.XXXX ± .001
Fract. ± 1/32"
Unless otherwise specified

Scale: NTS

MasterCAM #
XXX

Date:

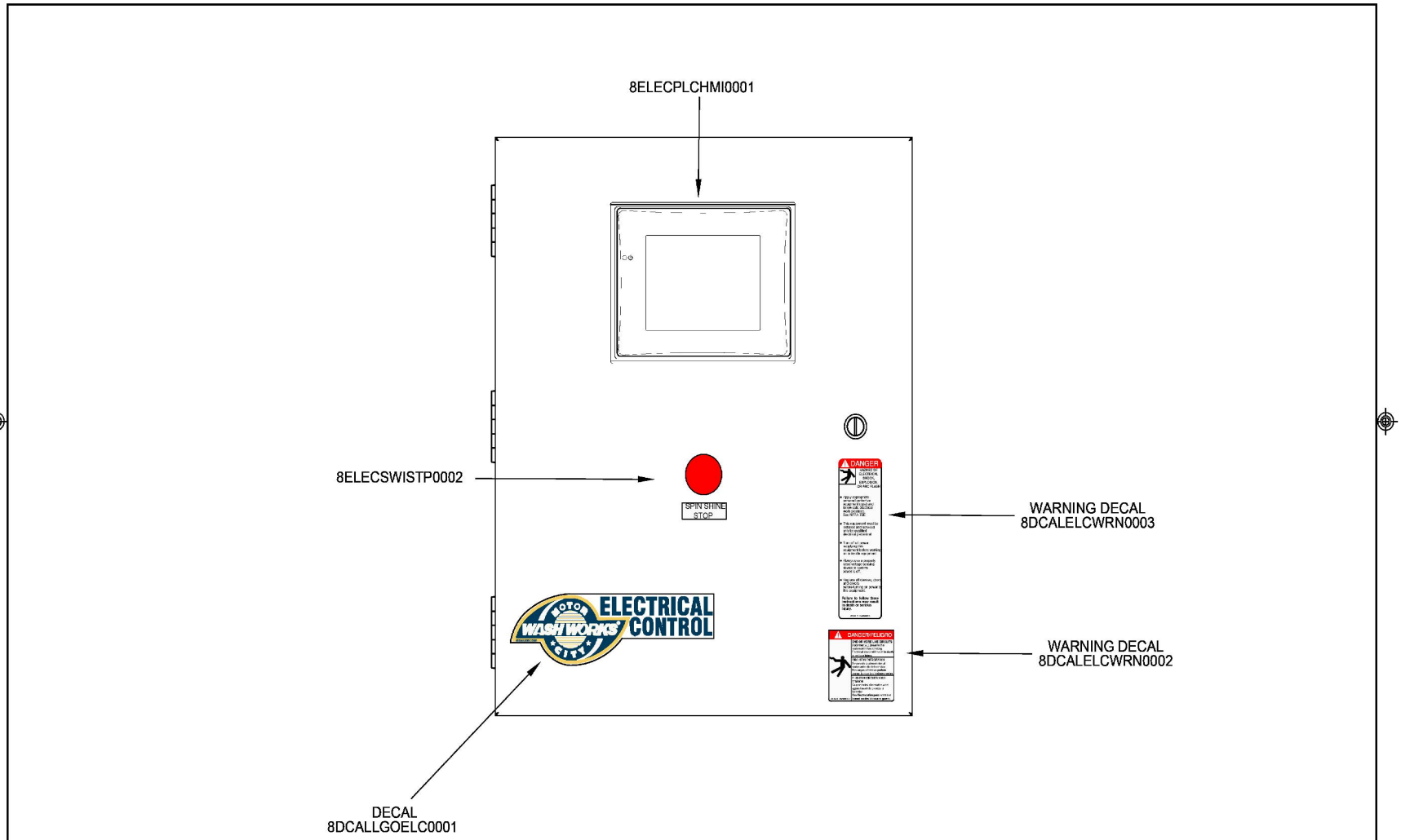
MOTOR CITY WASH WORKS ELECTRICAL CONTROL

Part Number: 7ELECCTLSPIN003

Description: ELECTRIC ROTARY SHINER VFD PANEL 120V1PH-230V3PH-20A-60HZ

Drawn By:	Date:	Modified By:	Date:
KM	08-31-18	KM	12-18-18

PANEL BOM



NOTES:
XXXXX

Tools List:
1– XXXXX
2–
3–
4–
5–
6–
7–
8–

.XX ± .010
.XXX ± .005
.XXXX ± .001
Fract. ± 1/32"
Unless otherwise specified

Scale: NTS

MasterCAM #
XXX

Date: B

Drawn By: KM
Date: 08–31–18

Modified By: KM
Date: 12–18–18

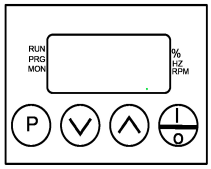
ELECTRICAL CONTROL

Part Number:
7ELECCTLSPIN003

Description:
ELECTRIC ROTARY SHINER VFD PANEL
120V1PH–230V3PH–20A–60HZ

PANEL BOM DOOR

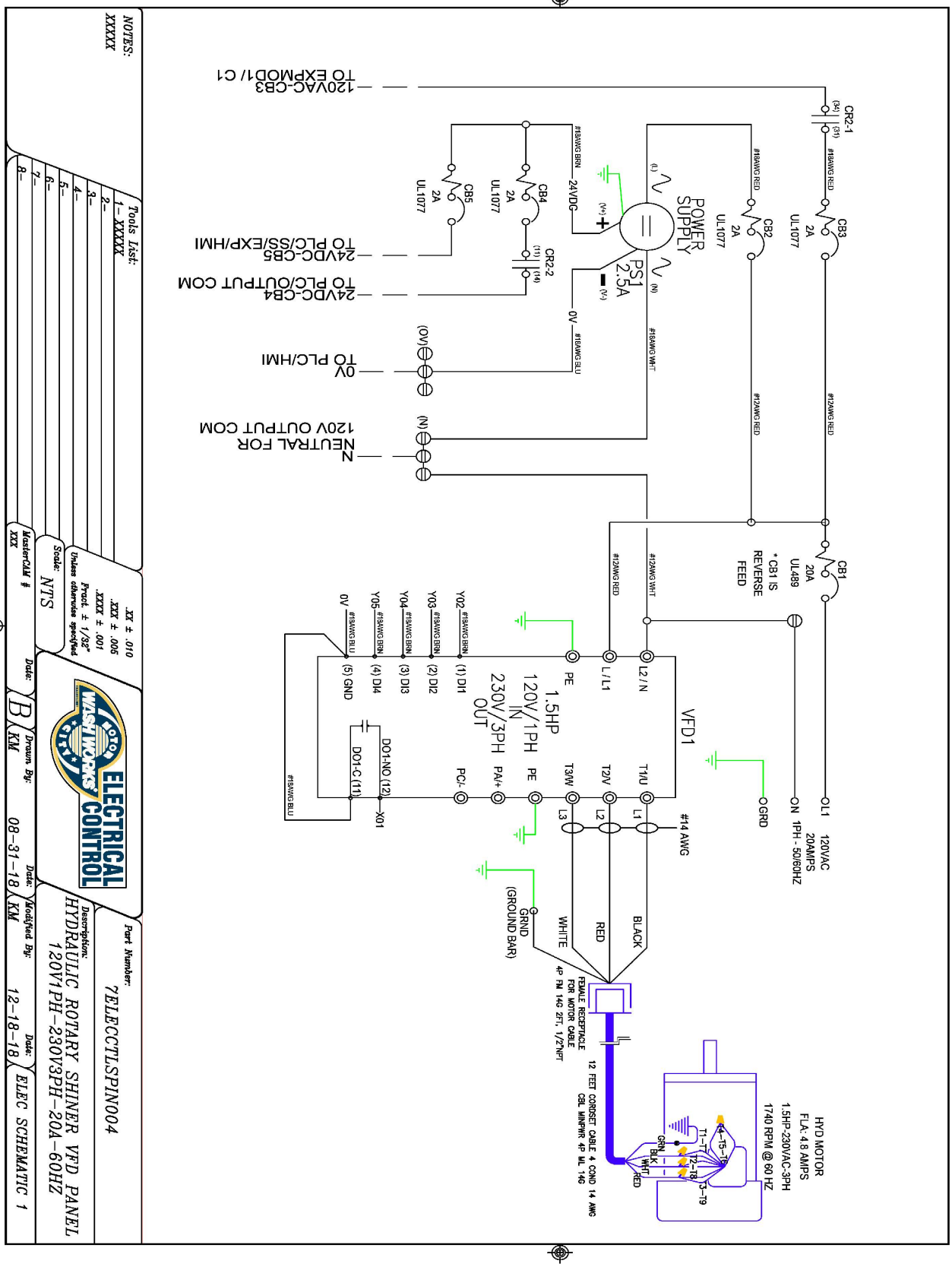
MENU	PARA-METER	DESCRIPTION	FACTORY SETTING	(2)0.5HP) SHINER MOTOR
P >	P100	Acceleration Time	5.0	1.0
	P101	Deceleration Time	10.0	1.0
	P121	Reference via HMI	3.0	60.0
	P124	Multispeed Ref. 1 (INDEX SPEED HMI)	3.0	6.0
	P125	Multispeed Ref. 2 (SPEED 3 HMI)	10.0	50.0
	P126	Multispeed Ref. 3 (SPEED 2 HMI)	20.0	40.0
	P127	Multispeed Ref. 4 (SPEED 4 HMI)	30.0	60.0
	P128	Multispeed Ref. 5 (SPEED 1 HMI)	40.0	30.0
	P220	LOC/REM Selection Source	0	1
	P222	REM Reference Sel.	1	8
	P263	DI1 Input Function	1	1
	P264	DI2 Input Function	8	13
	P265	DI3 Input Function	0	13
	P266	DI4 Input Function	0	13
	P271	DIs Signal	0	1
	P275	DO1 Output Function	13	13
	P399	Motor Rated Efficiency	67.0%	75.5%
	P400	Motor Rated Voltage	230	230
	P401	Motor Rated Current	1.0xInom	4.0
	P402	Motor Rated Speed	1720	1745
	P403	Motor Rated Frequency	60.0	60.0
	P404	Motor Rated Power	6	5
	P407	Motor Rated Power Factor	0.69	.71
	P005	Output Frequency (Motor)	READ ONLY	READ ONLY

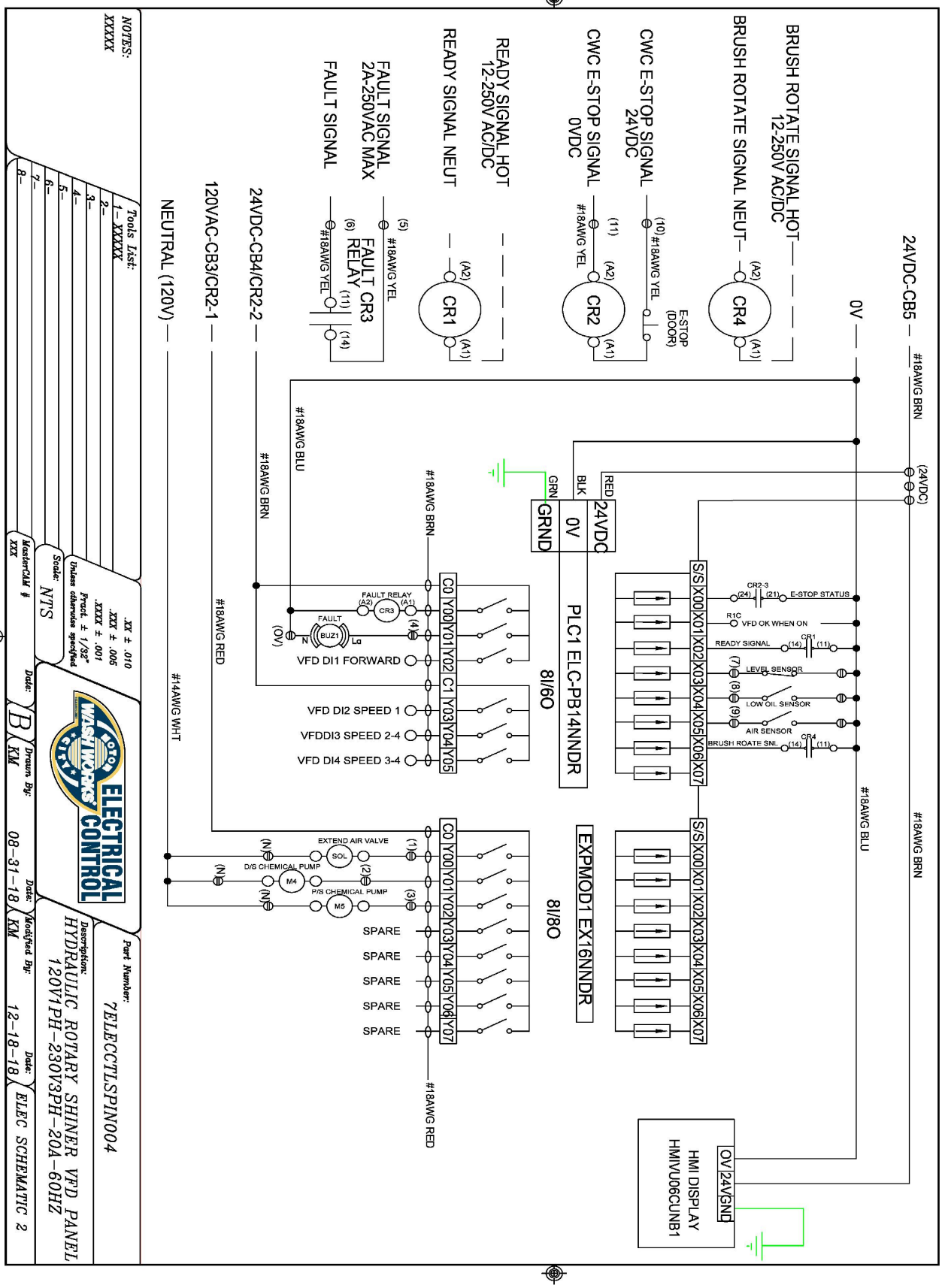


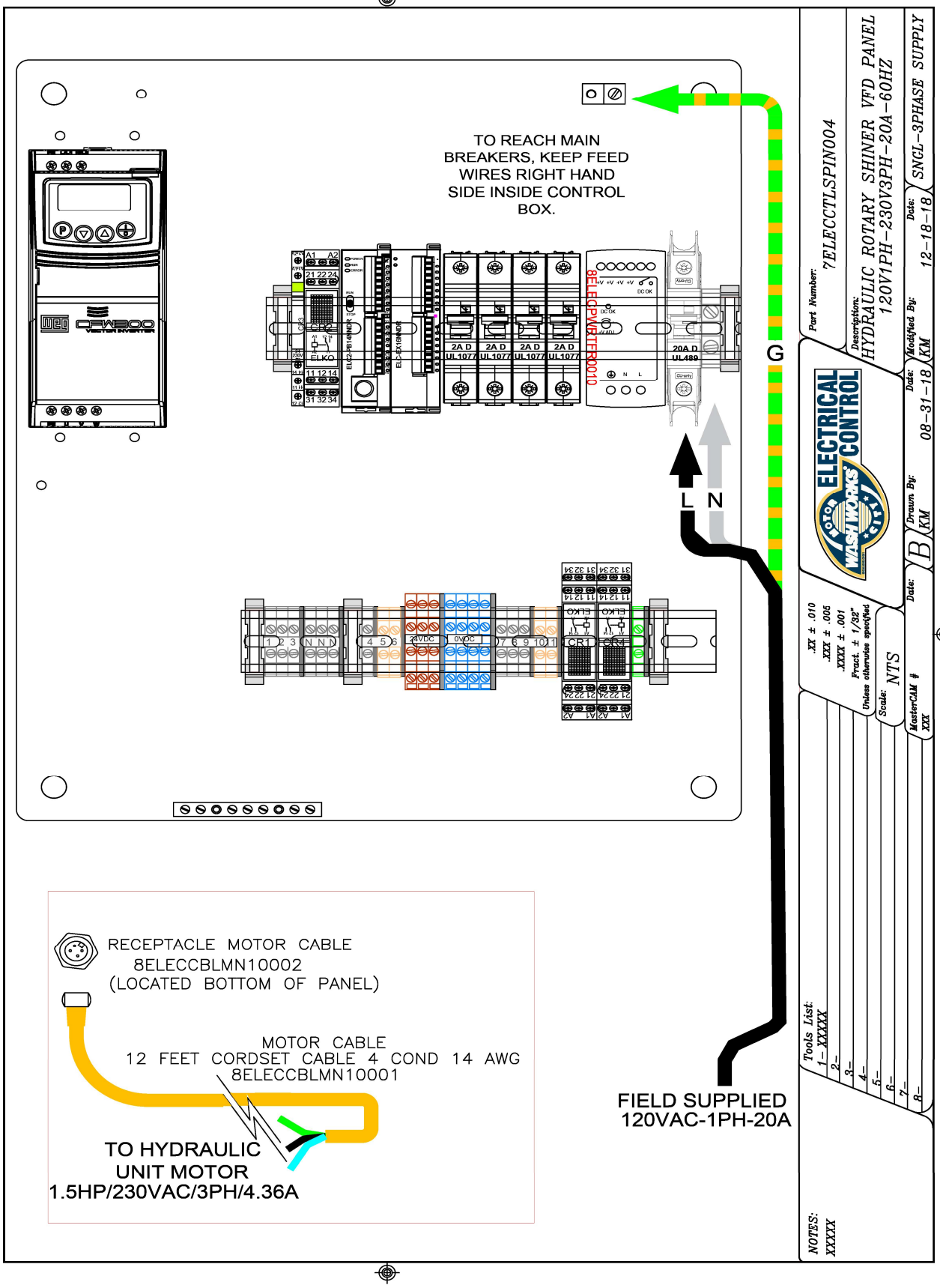
*CHECK VALUE ON MOTOR NAME PLATE AND ADJUST ACCORDINGLY

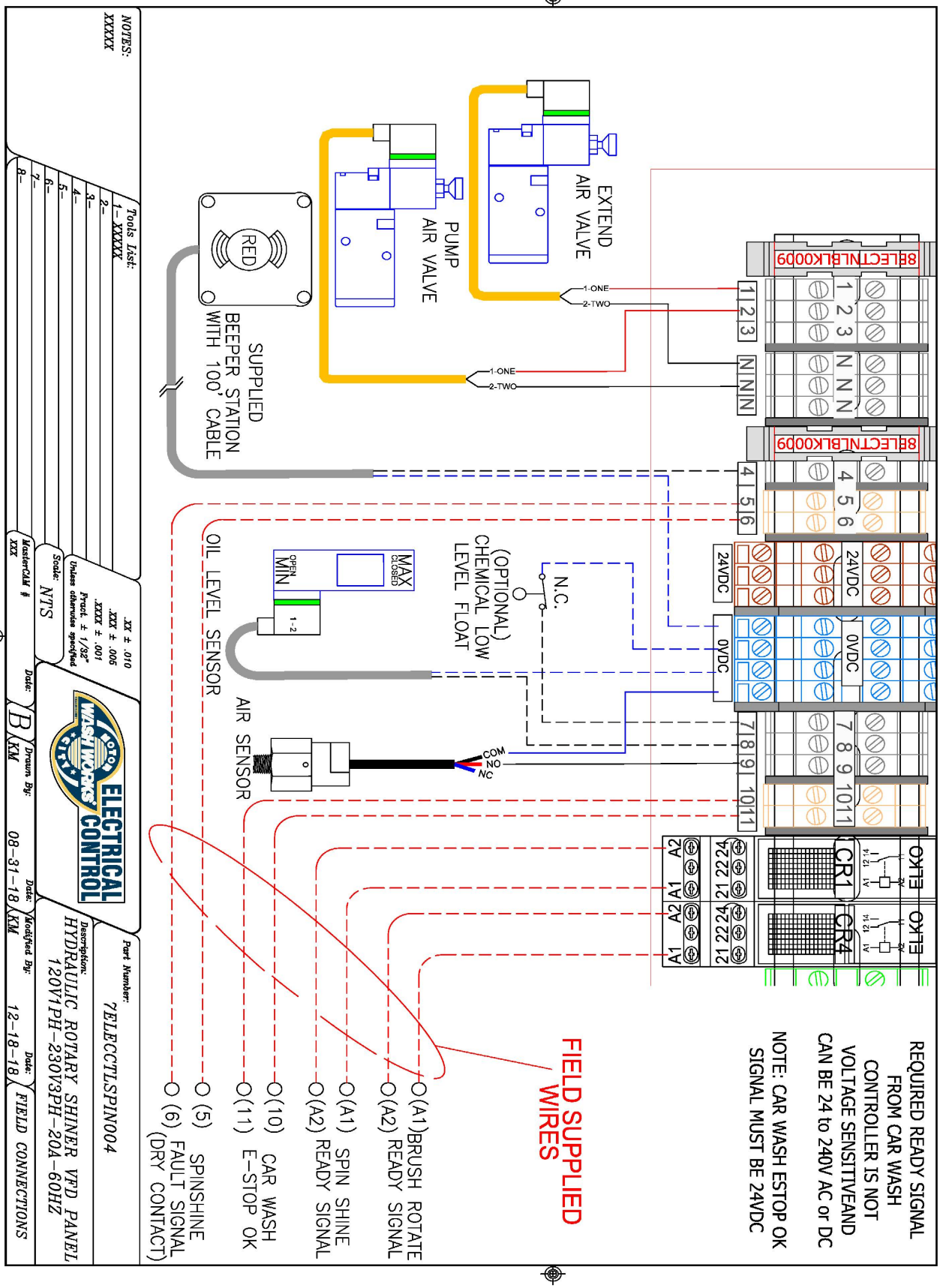
8DCALPNLELC0020 08-21-18

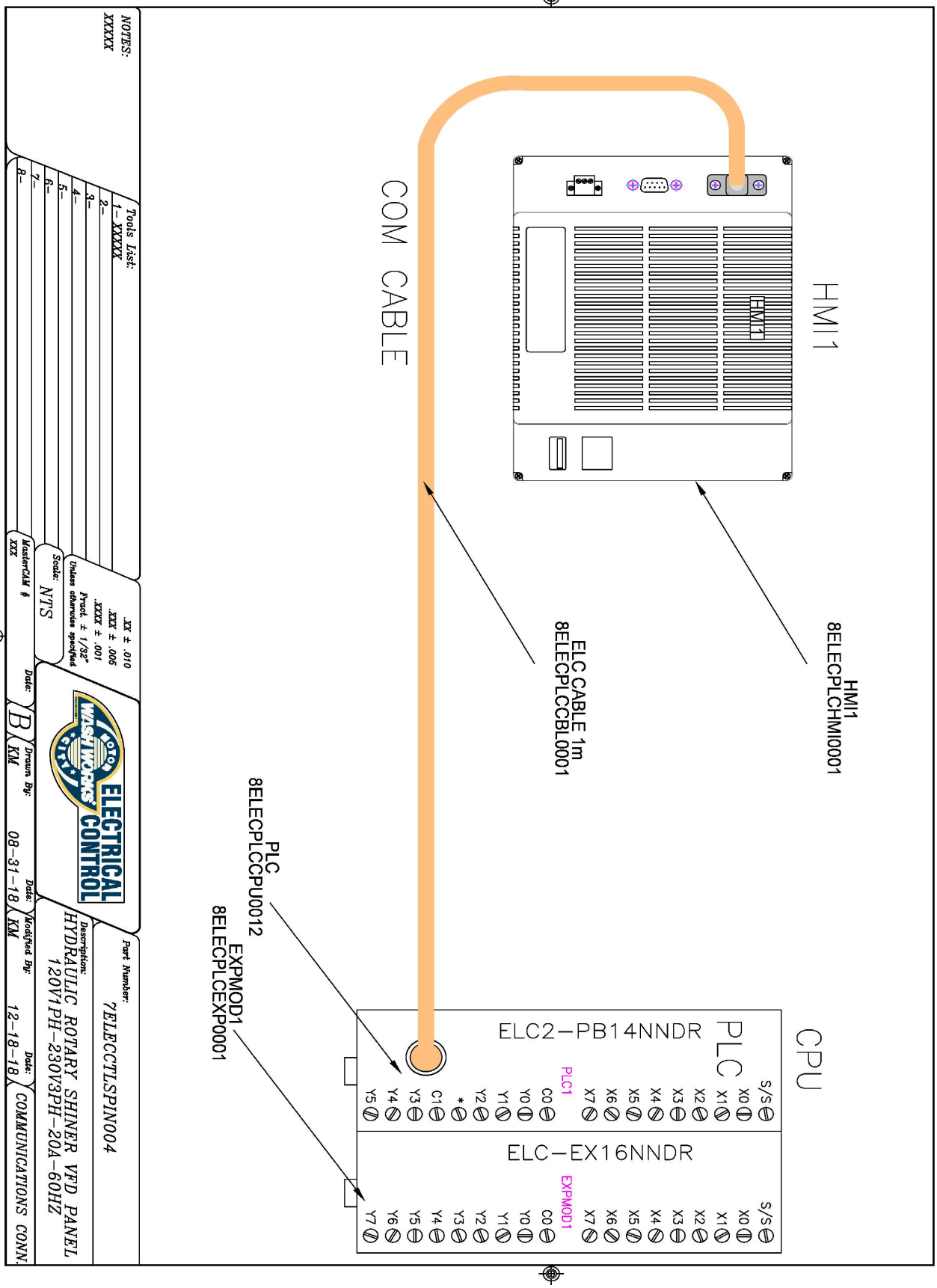
Electrical Panel – Hydraulic Drive (120VAC):








NOTES:
XXXXX
Tools List:
1- XXXXX
2-
3-
4-
5-
6-
7-
8-
.XX ± .010
.XXX ± .005
.XXXX ± .001
Fract. ± 1/32"
Unless otherwise specified
Scale:
NTS
MasterCAM #
XXX
Date:
B
Drawn By:
KM
08-31-18
Modified By:
KM
12-18-18
Date:
FIELD CONNECTIONS
Part Number:
7ELECCTLSPIN004
Description:
HYDRAULIC ROTARY SHINER VFD PANEL
120V1PH-230V3PH-20A-60HZ
MOTOR CITY WASH WORKS
ELECTRICAL CONTROL
EXTEND AIR VALVE
PUMP AIR VALVE
1-ONE
2-TWO
SUPPLIED BEEPER STATION WITH 100' CABLE
RED
8ELECTNLBLK0009
1 2 3
N N N
4 5 6
24VDC
0VDC
7 8 9 10 11
(OPTIONAL) CHEMICAL LOW LEVEL FLOAT
N.C.
OPEN MIN
MAX CLOSED
1-2
OIL LEVEL SENSOR
AIR SENSOR
COM
NO
NC
CR1
CR4
ELKO
A1 A2
21 22 24
REQUIRED READY SIGNAL FROM CAR WASH CONTROLLER IS NOT VOLTAGE SENSITIVEAND CAN BE 24 to 240V AC or DC
NOTE: CAR WASH ESTOP OK SIGNAL MUST BE 24VDC
FIELD SUPPLIED WIRES
(A1) BRUSH ROTATE
(A2) READY SIGNAL
(A1) SPIN SHINE
(A2) READY SIGNAL
(10) CAR WASH
(11) E-STOP OK
(5) SPINSHINE
(6) FAULT SIGNAL
(DRY CONTACT)



EATON PLC INPUT/OUTPUT MAP SPIN SHINE (8-31-18)

PLC INPUTS:

- X00= E-STOP OK SIGNAL (COMING FROM CAR WASH E-STOP MASTER RELAY) (NC-0VDC)
- X01= VFD -OVERLOAD AUX FAULT (NC-0VDC)
- X02= SPIN SHINE READY SIGNAL (COMING FROM C W CONTROLLER) (NO-0VDC)
- X03= LEVEL SENSOR SIGNAL (OPTIONAL) (NC-0VDC)
- X04= OIL LEVEL SENSOR (HYDRAULIC) (NC-0VDC)
- X05= AIR SENSOR (LOW) (NO-0VDC)
- X06= BRUSH ROTATE SIGNAL (COMING FROM CAR WASH CONTROLLER)
- X07= NOT USED

PLC OUTPUTS:

- Y00= FAULT RELAY (NO-24VDC)
- Y01= BEEPER (NO-24VDC)
- Y02= VFD DI1 (RUN/STOP) (NO-24VDC)
- Y03= VFD DI2 (SPEED 1) (NO-24VDC)
- Y04= VFD DI3 (SPEED 2-4) (NO-24VDC)
- Y05= VFD DI4 (SPEED 3-4) (NO-24VDC)

EXPANSION MODULE #1 (2ND INPUT MODULE):

- X20= NOT USED
- X21= NOT USED
- X22= NOT USED
- X23=NOT USED
- X24=NOT USED
- X25=NOT USED
- X26=NOT USED
- X27=NOT USED

EXPANSION MODULE #1 (2ND OUTPUT MODULE):

- Y20= EXTEND VALVE (NO-120VAC)
- Y21= CHEMICAL PUMP 1 (NO-120VAC)
- Y22= CHEMICAL PUMP 2 (NO-120VAC)
- Y23=
- Y24=
- Y25=
- Y26=
- Y27=

NOTES:
XXXXX

Tools List:
1– XXXXX
2–
3–
4–
5–
6–
7–
8–

.XX ± .010
.XXX ± .005
.XXXX ± .001
Fract. ± 1/32"
Unless otherwise specified

Scale: NTS

MasterCAM #
XXX

Date:

B

Drawn By: KM Date: 08–31–18

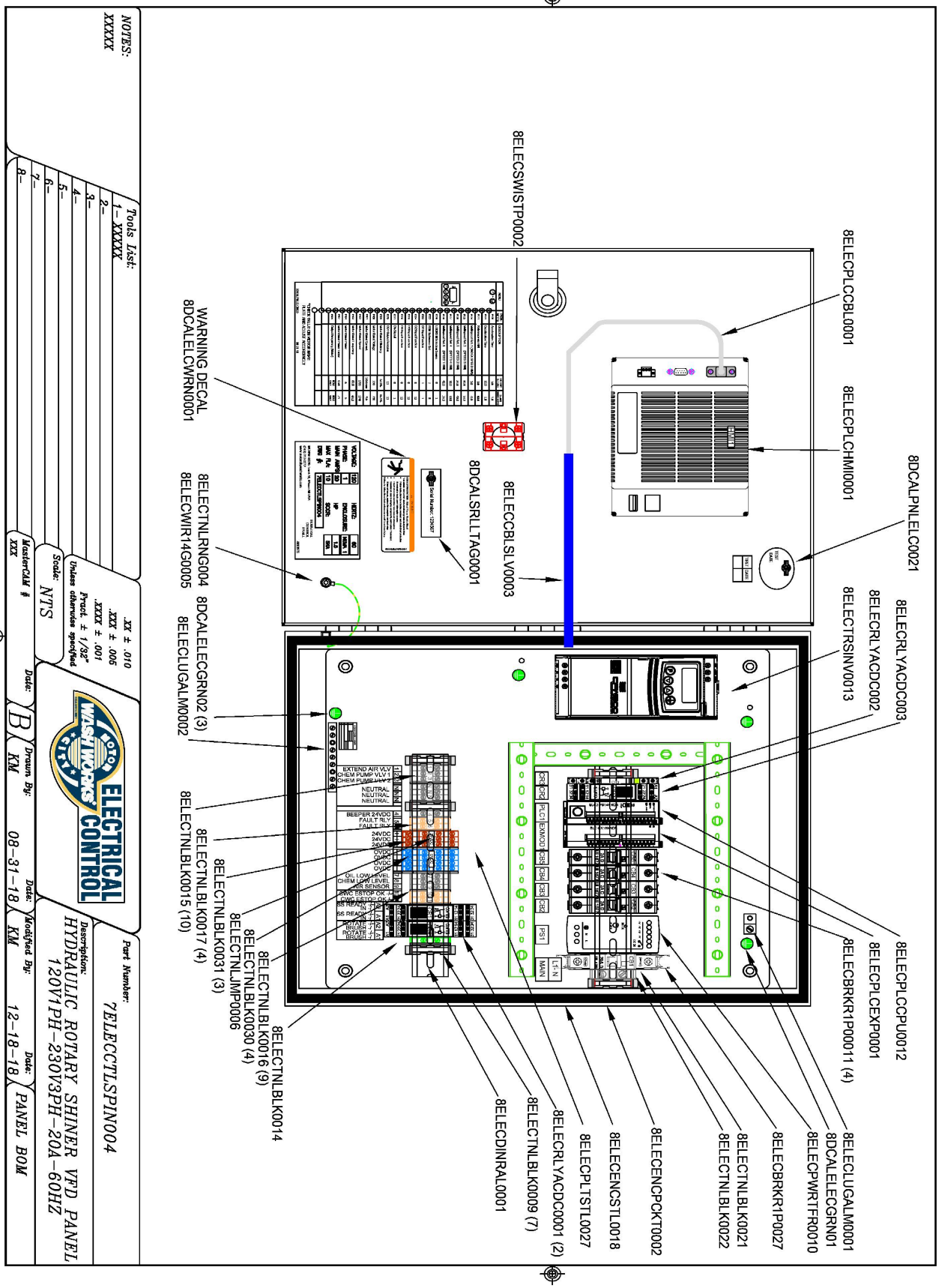
Modified By: KM Date: 08–31–18

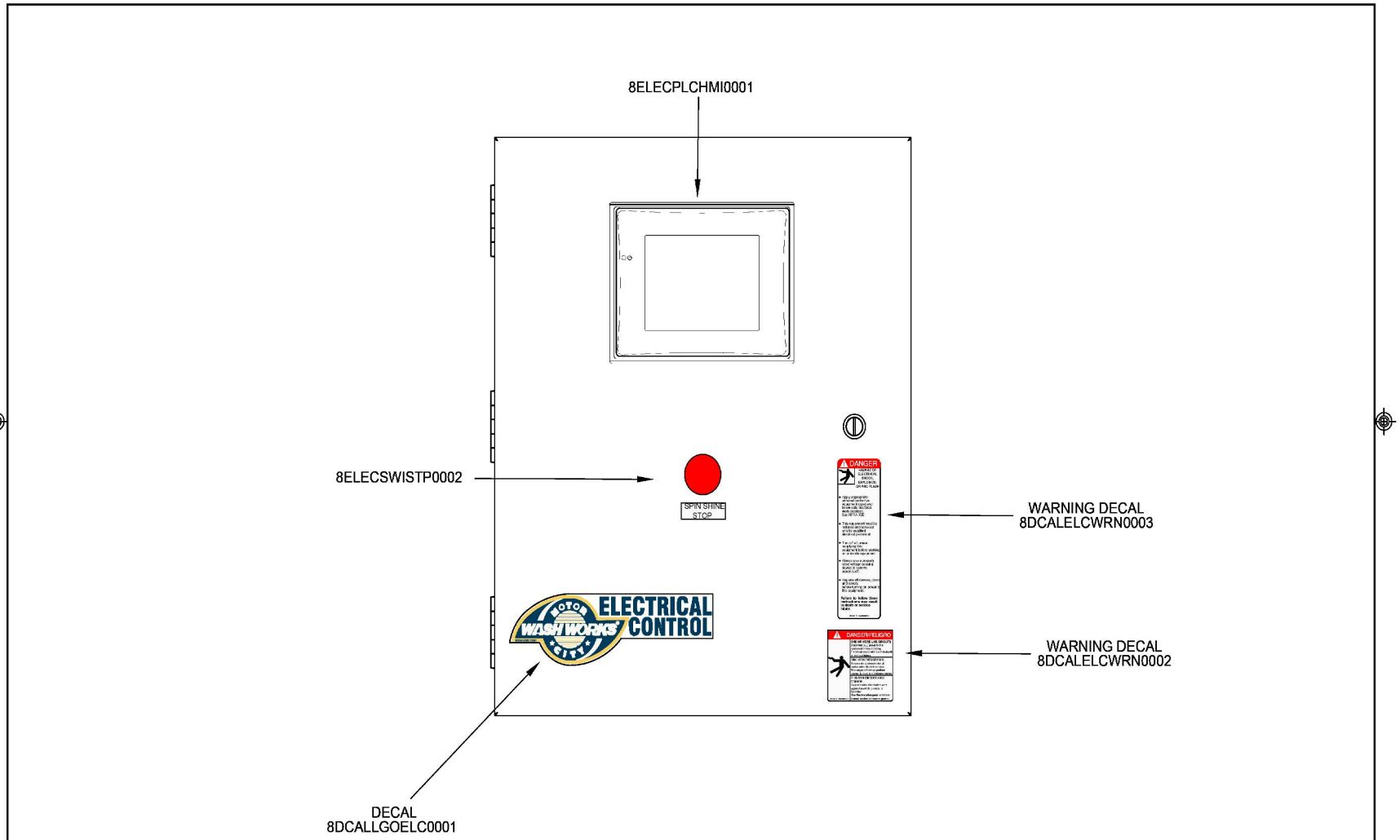
MOTOR CITY WASH WORKS ELECTRICAL CONTROL

Part Number: 7ELECCTLSPIN004

Description: HYDRAULIC ROTARY SHINER VFD PANEL 120V1PH–230V3PH–20A–60HZ

I/O MAP





NOTES:
XXXXX

Tools List:
1– XXXXX
2–
3–
4–
5–
6–
7–
8–

.XX ± .010
.XXX ± .005
.XXXX ± .001
Fract. ± 1/32"
Unless otherwise specified

Scale: NTS

MasterCAM #
XXX

Date:

B

Drawn By: KM
Date: 08–31–18

Modified By: KM
Date: 12–18–18

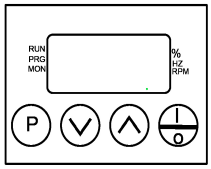
ELECTRICAL CONTROL

Part Number:
7ELECCTLSPIN004

Description:
HYDRAULIC ROTARY SHINER VFD PANEL
120V1PH–230V3PH–20A–60HZ

PANEL BOM DOOR

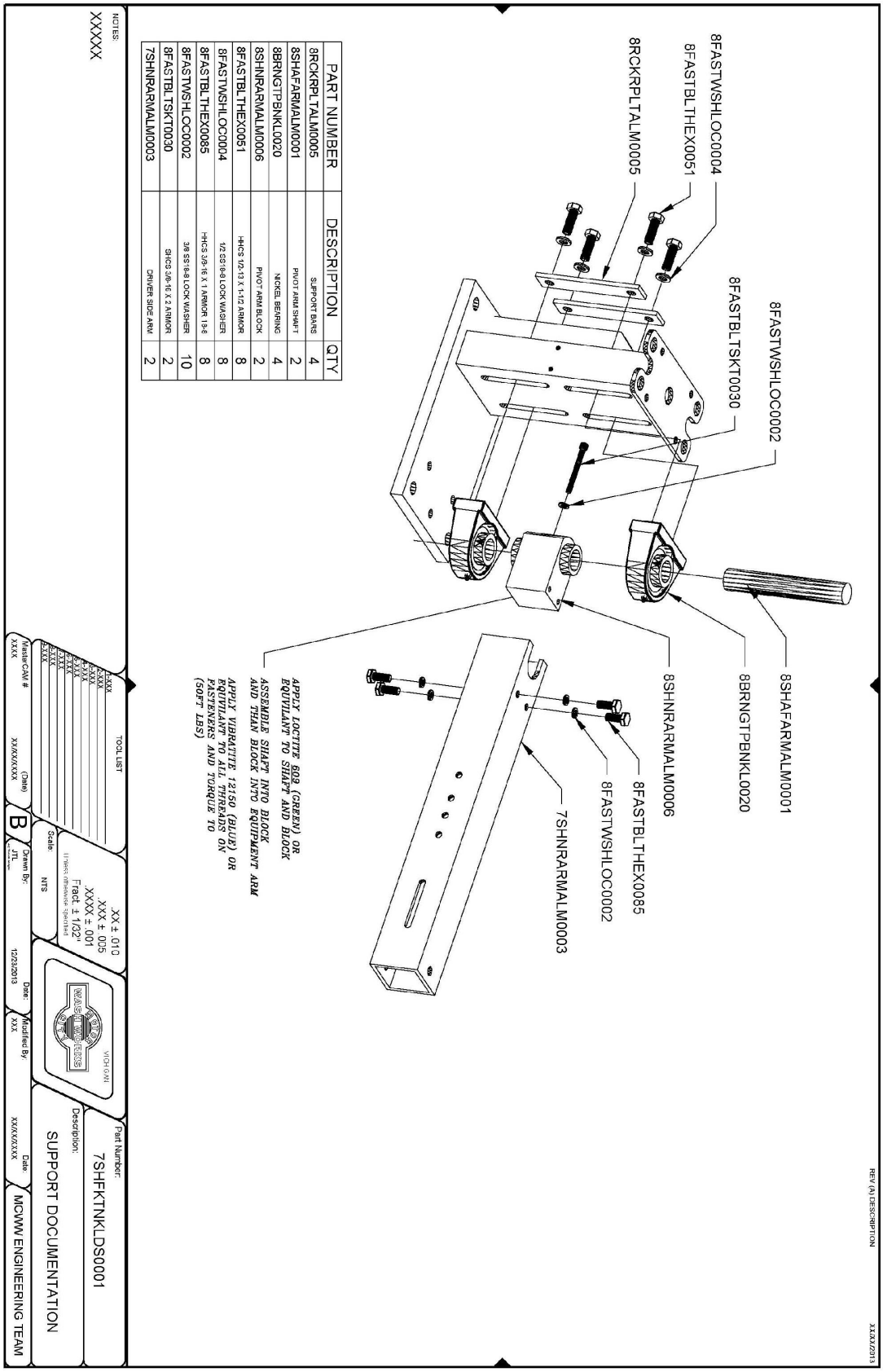
MENU	PARA-METER	DESCRIPTION	FACTORY SETTING	1.5HP SHINER MOTOR
P >	P100	Acceleration Time	5.0	1.0
	P101	Deceleration Time	10.0	1.0
	P121	Reference via HMI	3.0	60.0
	P124	Multispeed Ref. 1 (INDEX SPEED HMI)	3.0	6.0
	P125	Multispeed Ref. 2 (SPEED 3 HMI)	10.0	50.0
	P126	Multispeed Ref. 3 (SPEED 2 HMI)	20.0	40.0
	P127	Multispeed Ref. 4 (SPEED 4 HMI)	30.0	60.0
	P128	Multispeed Ref. 5 (SPEED 1 HMI)	40.0	30.0
	P220	LOC/REM Selection Source	0	1
	P222	REM Reference Sel.	1	8
	P263	DI1 Input Function	1	1
	P264	DI2 Input Function	8	13
	P265	DI3 Input Function	0	13
	P266	DI4 Input Function	0	13
	P271	DIs Signal	0	1
	P275	DO1 Output Function	13	13
	P399	Motor Rated Efficiency	67.0%	86.5%
	P400	Motor Rated Voltage	230	230
	P401	Motor Rated Current	1.0xInom	4.36
	P402	Motor Rated Speed	1720	1740
	P403	Motor Rated Frequency	60.0	60.0
	P404	Motor Rated Power	6	6
	P407	Motor Rated Power Factor	0.69	.71
	P005	Output Frequency (Motor)	READ ONLY	READ ONLY



*CHECK VALUE ON MOTOR NAME PLATE AND ADJUST ACCORDINGLY

8DCALPNLELC0020 12-11-18

Support Documents:



PART NUMBER	DESCRIPTION	QTY
8RCKRPLTALM0005	SUPPORT BARS	4
8SHAFARMALM0001	PIVOT ARM SHAFT	2
8BRNGTPBNKL0020	NICKEL BEARING	4
8SHNRARMALM0006	PIVOT ARM BLOCK	2
8FASTBLTHEX0051	HHCS 1/2-13 X 1-1/2 ARMOR	8
8FASTWSHLOC0004	1/2 SS18-8 LOCK WASHER	8
8FASTBLTHEX0085	HHCS 3/8-16 X 1 ARMOR 18-8	8
8FASTWSHLOC0002	3/8 SS18-8 LOCK WASHER	10
8FASTBLTSKT0030	SHCS 3/8-16 X 2 ARMOR	2
7SHNRARMALM0003	DRIVER SIDE ARM	2

NOTES:
XXXXX

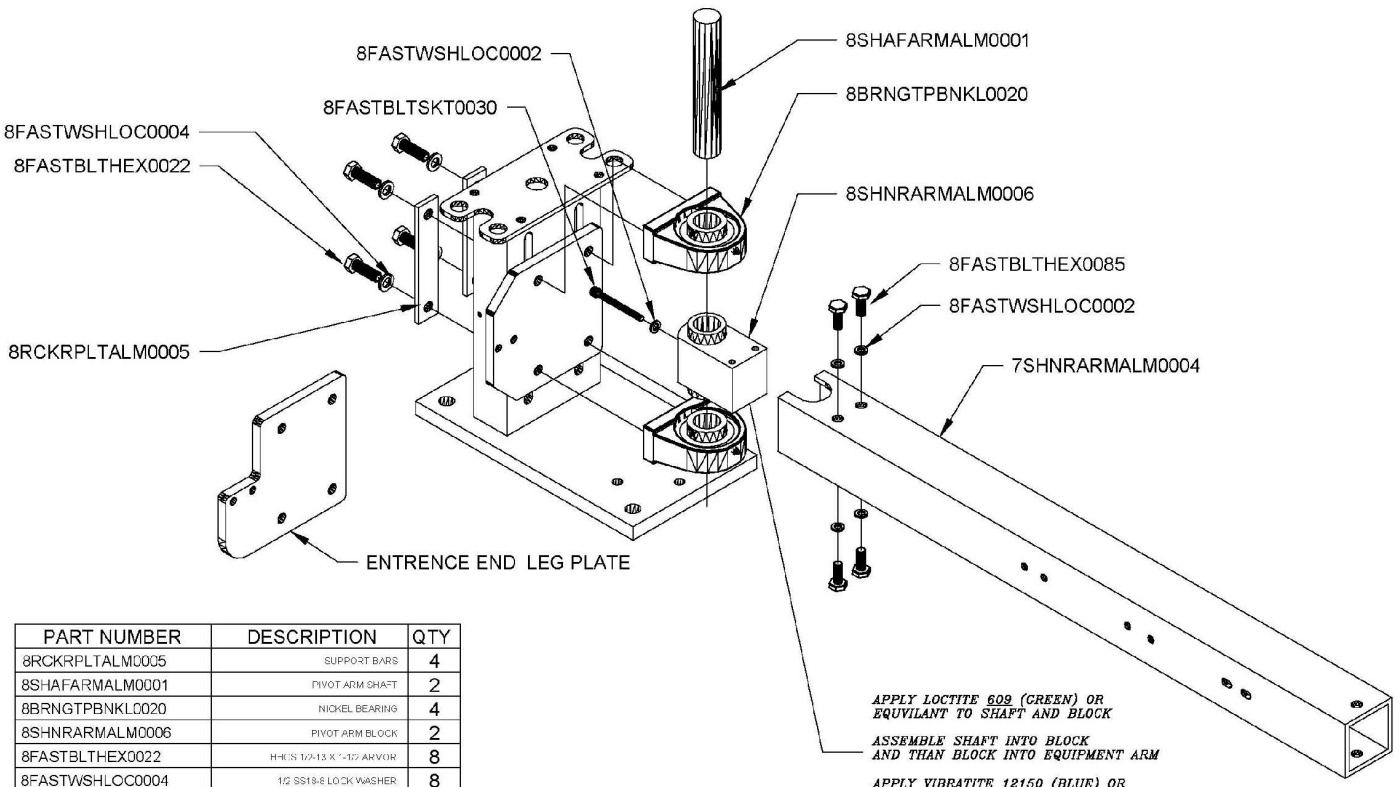
TOOL LIST

.XX ± .010
.XXX ± .005
.XXXX ± .001
Fract ± 1/32"
Unless otherwise specified

Scale: NTS
Drawn By: JTL
Date: 12/23/2013
Modified By: XXX
Date: XXXX/XX/XX
Master CAM #: XXXX
(Date): XX/XX/XXXX
B

Part Number: 7SHFKTNKLDS0001
Description: SUPPORT DOCUMENTATION
MCWW ENGINEERING TEAM

REV (A) DESCRIPTION XX/XX/2013



PART NUMBER	DESCRIPTION	QTY
8RCKRPLTALM0005	SUPPORT BARS	4
8SHAFARMALM0001	PIVOT ARM SHAFT	2
8BRNGTPBNKL0020	NICKEL BEARING	4
8SHNRARMALM0006	PIVOT ARM BLOCK	2
8FASTBLTHEX0022	HHCS 1/2-13 X 1-1/2 ARVOR	8
8FASTWSHLOC0004	1/2 SS18-8 LOCK WASHER	8
8FASTBLTHEX0085	HHCS 3/8-16 X 1 ARMOR 18-8	8
8FASTWSHLOC0002	3/8 SS18-8 LOCK WASHER	10
8FASTBLTSKT0030	SHCS 3/8-16 X 2 ARVOR	2
7SHNRARMALM0004	PASSENGER SIDE ARM	2

NOTES:
XXXX

TOOL LIST
1=XXX
2=XXX
3=XXX
4=XXX
5=XXX
6=XXX
7=XXX
8=XXX

.XX ± .010
.XXX ± .005
.XXXX ± .001
Fract. ± 1/32"
Unless otherwise specified

Scale: N.T.S

MICHIGAN

Part Number: 7SHFKTNKLPS0001

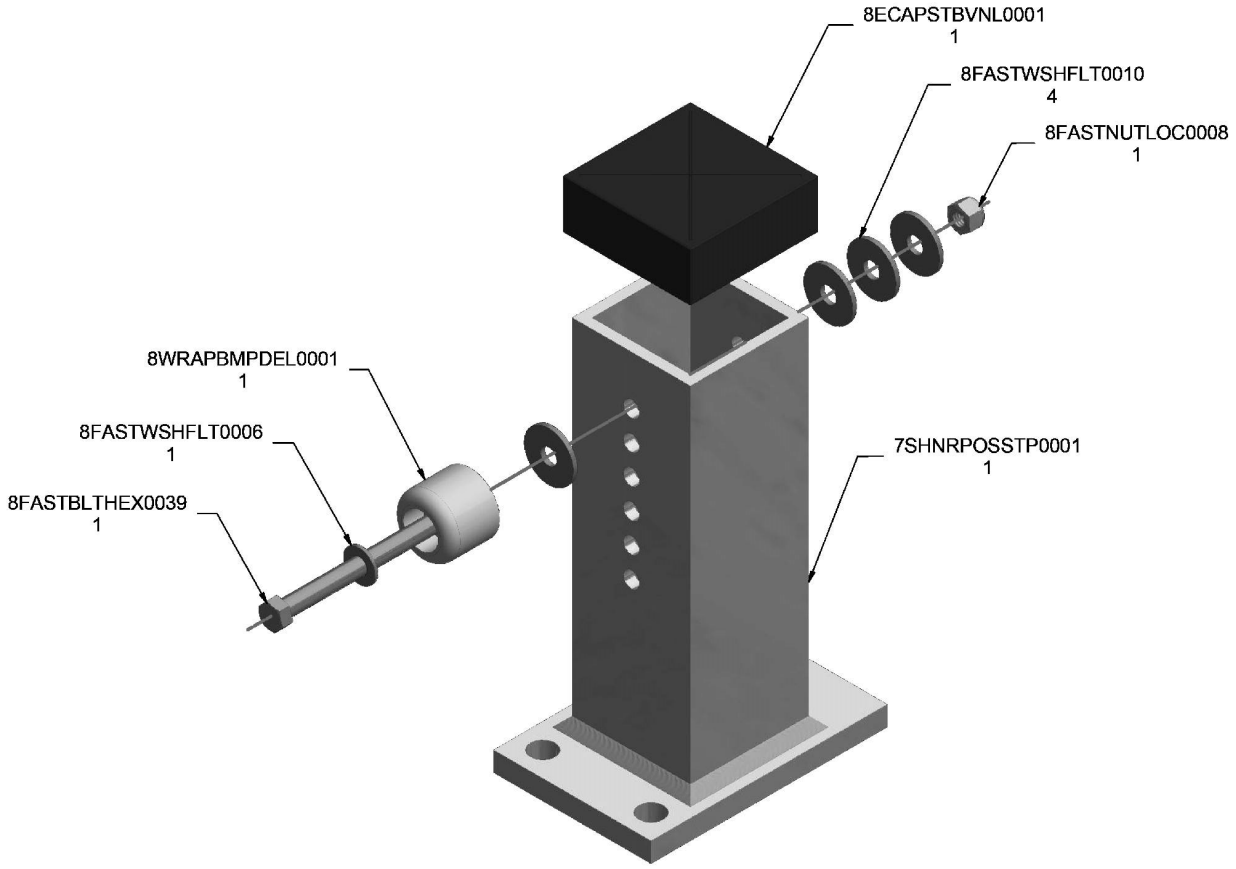
Description: NICKEL BEARING REPLACEMENT KIT

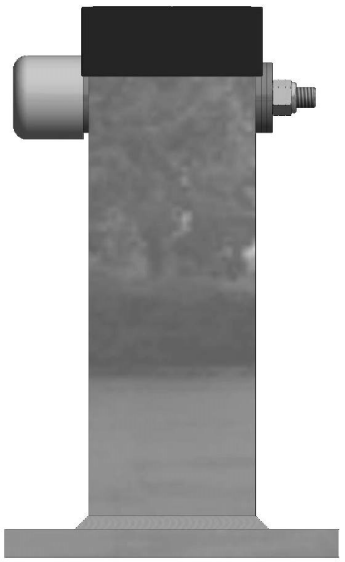
MasterCAM #	(Date)		Drawn By:	Date:	Modified By:	Date:	
XXXX	XX/XX/XXXX	B	JTL	01/09/2014	XXX	XX/XX/XXXX	MCWW ENGINEERING TEAM

NOTES	MASTERCAM NUMBER	TOLERANCE	REVISION	PART NUMBER
	1- TOOL LIST	XX ± .010		7BRSHSHRASY0004
	2-	XXX ± .005		
	3-	XXXX ± .001		
	4-	FRACT ± 1/32"		
	5-	UNLESS OTHERWISE SPECIFIED		
	6-			
	7-			
	8-			

DESCRIPTION	SHEET SIZE	SCALE
SHINER BRUSH 9' ELC	B	NTS

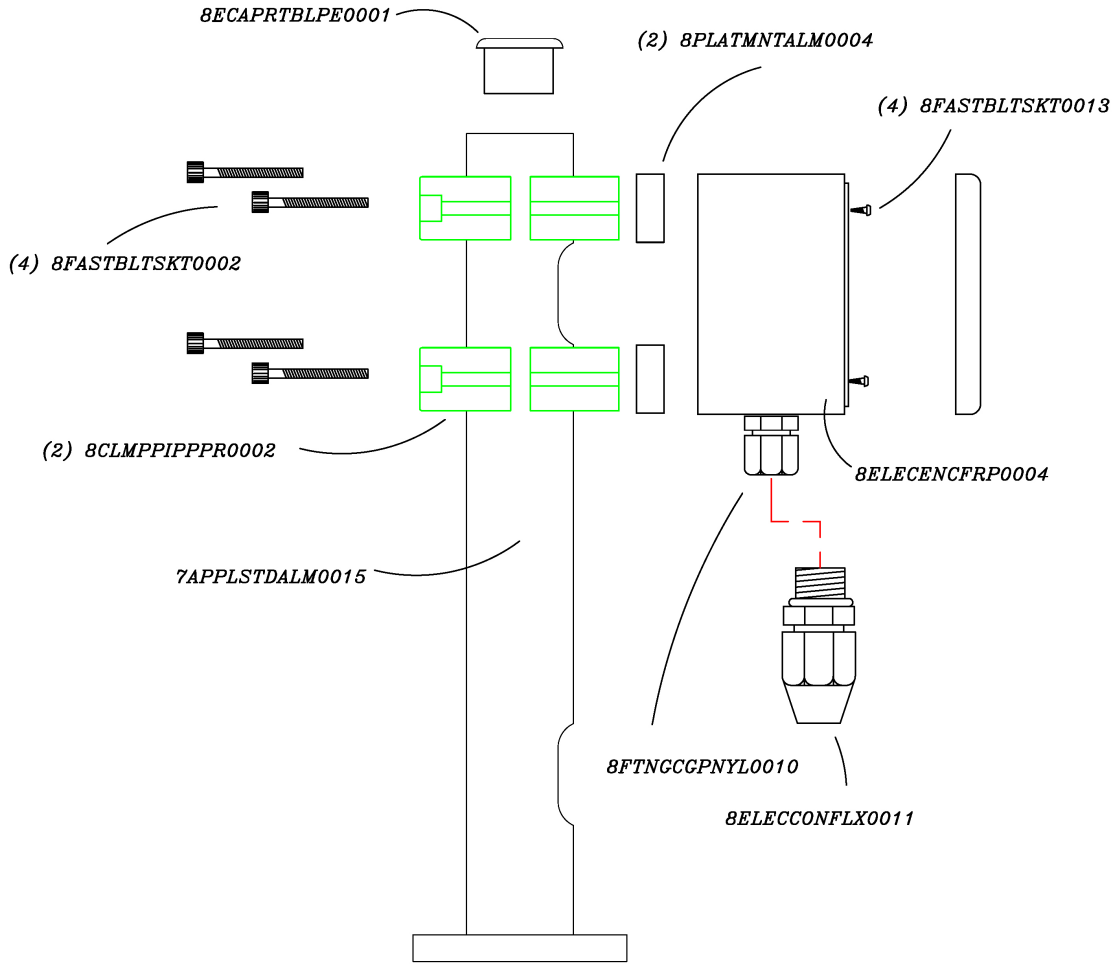
DRAWN BY	DATE
ANDREW MARCINAK	4/1/2018

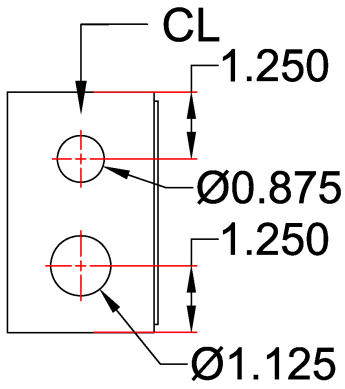




MOTOR CITY WASH WORKS	NOTES	MASTERCAM NUMBER TOOL LIST 1- 2- 3- 4- 5- 6- 7- 8-	TOLERANCE .XX ± .010 .XXX ± .005 .XXXX ± .001 FRACT ± 1/32" UNLESS OTHERWISE SPECIFIED	REVISION	PART NUMBER: 7SHNRPOSSTPASY1 DESCRIPTION: SHNR POSITIVE STOP ASSEMBLY SHEET SIZE: B SCALE: 1:2 DRAWN BY: Jason Lanigan DATE: 5/25/2017	

Rev: Date:





ENCLOSURE
BOTTOM VIEW

TOOL LIST:

.XX ± .010
.XXX ± .005
.XXXX ± .001
Fract. ± 1/32"
Unless otherwise specified

Scale: NTS

MASTERCAM #: (Date)

B

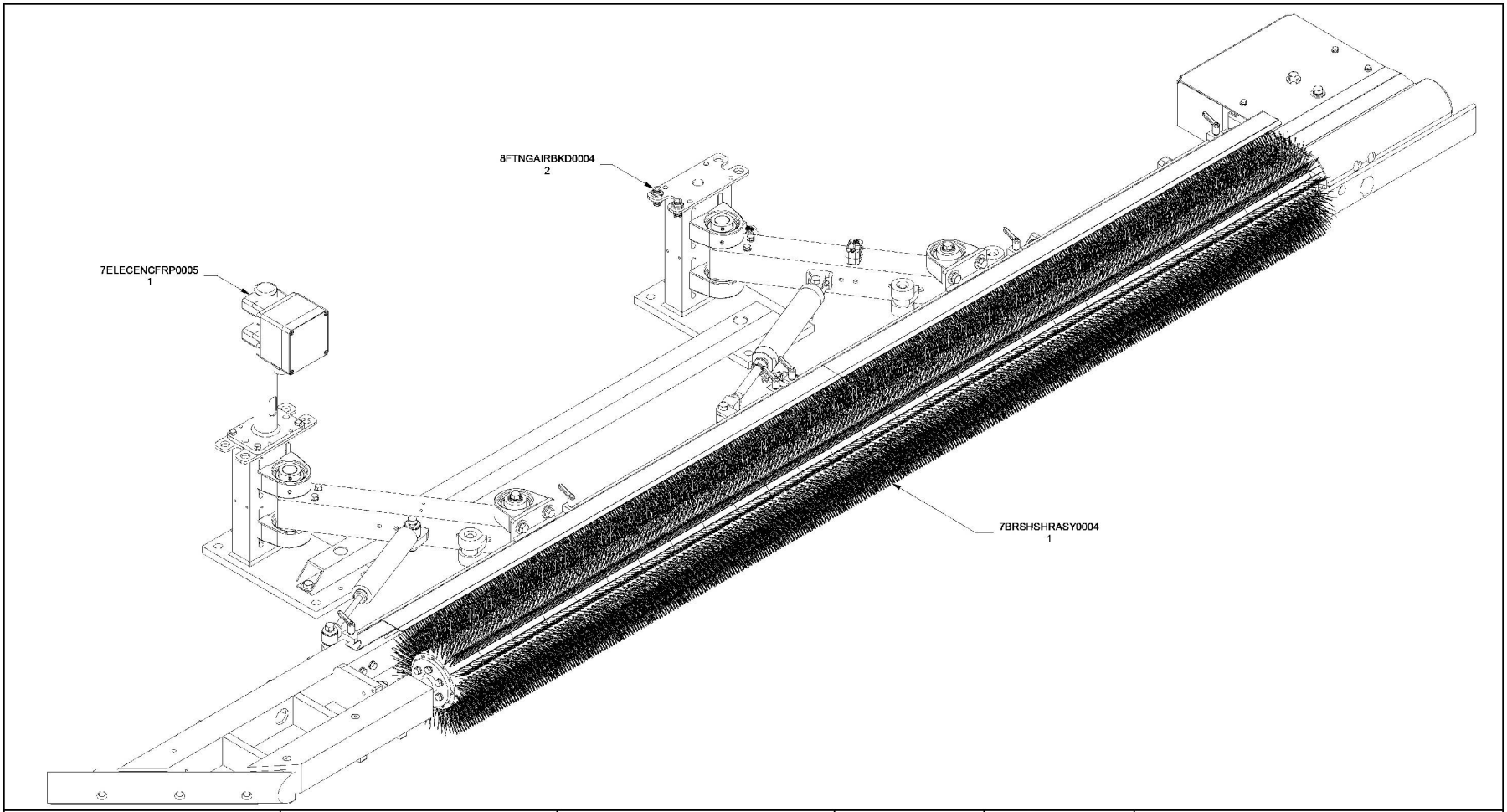
Drawn By: MML Date: 2-9-19

Modified By: Date:

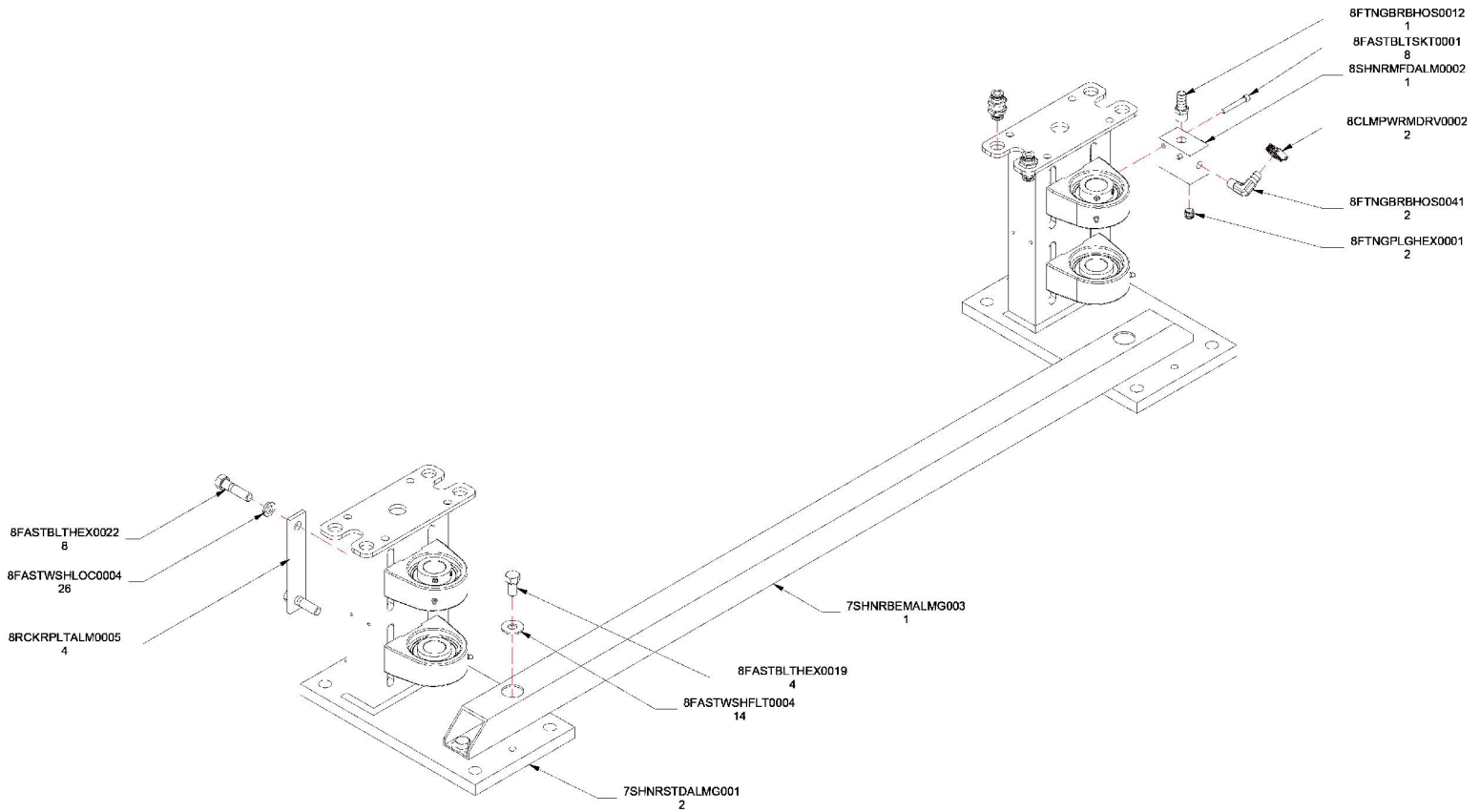
Part Number: 7ELECENCFRP0005

Description: ELECTRICAL FRP ENC STAND ASSY W/X-FLEX CONNECTOR

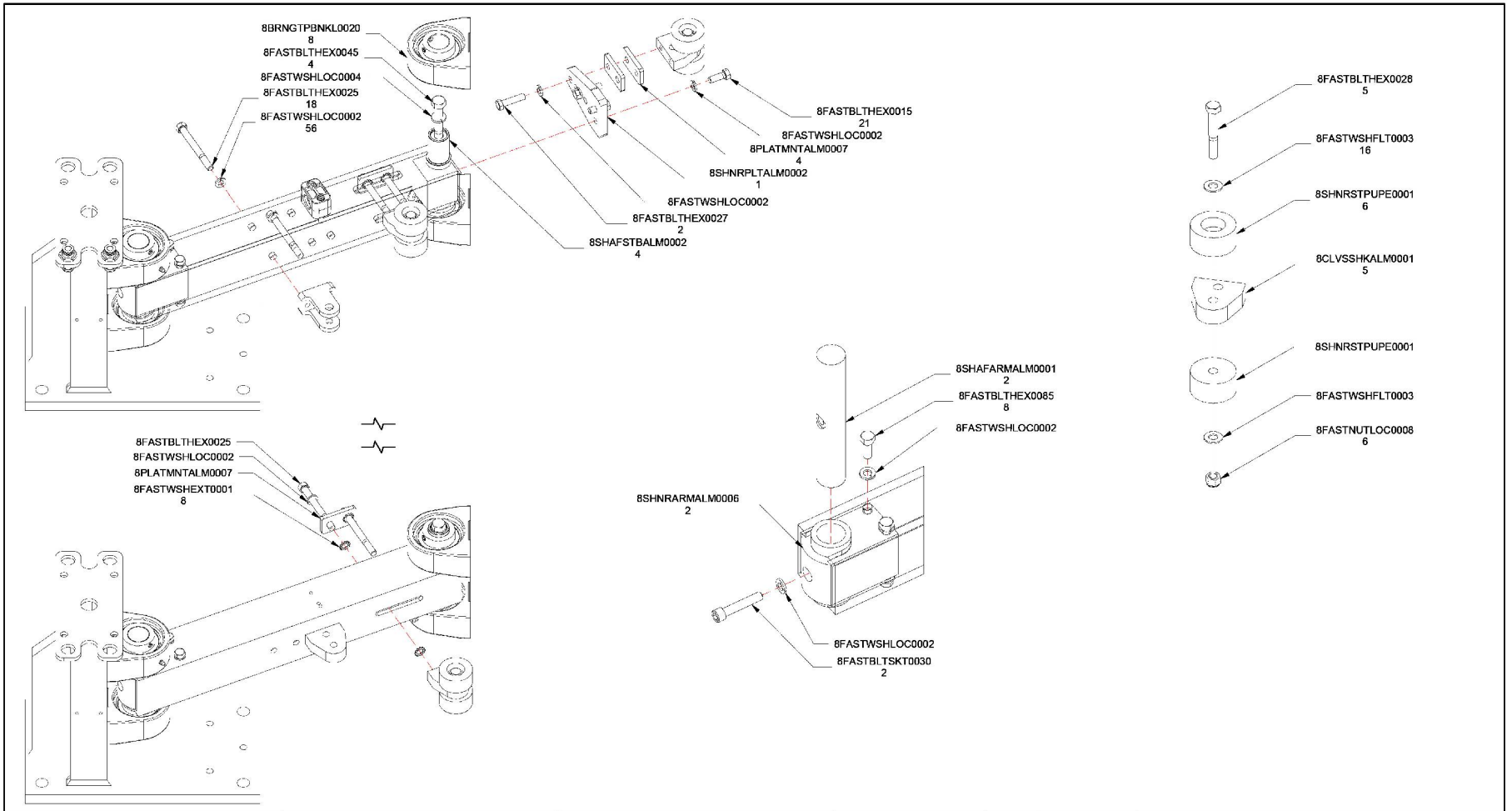
MECANICAL TEMPLATE



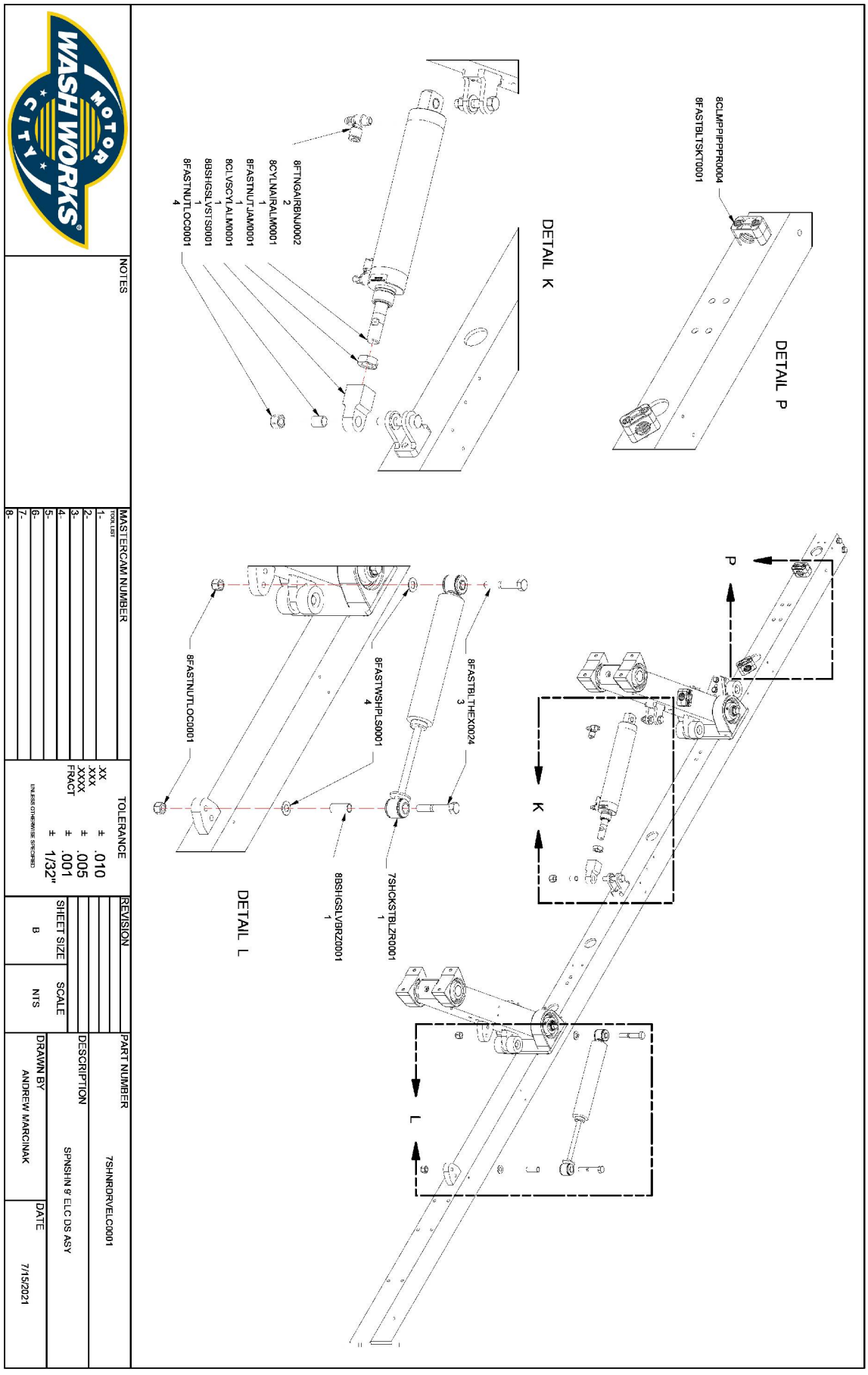
MOTOR WASH WORKS CITY	NOTES	MASTERCAM NUMBER TOOL LIST 1- 2- 3- 4- 5- 6- 7- 8-	TOLERANCE .XX ± .010 .XXX ± .005 .XXXX ± .001 FRACT ± 1/32" UNLESS OTHERWISE SPECIFIED	REVISION	PART NUMBER 7SHNRDRVELC0001 DESCRIPTION SPNSHN 9' ELC DS ASY	
				SHEET SIZE B	SCALE NTS	DRAWN BY ANDREW MARCINAK DATE 7/15/2021

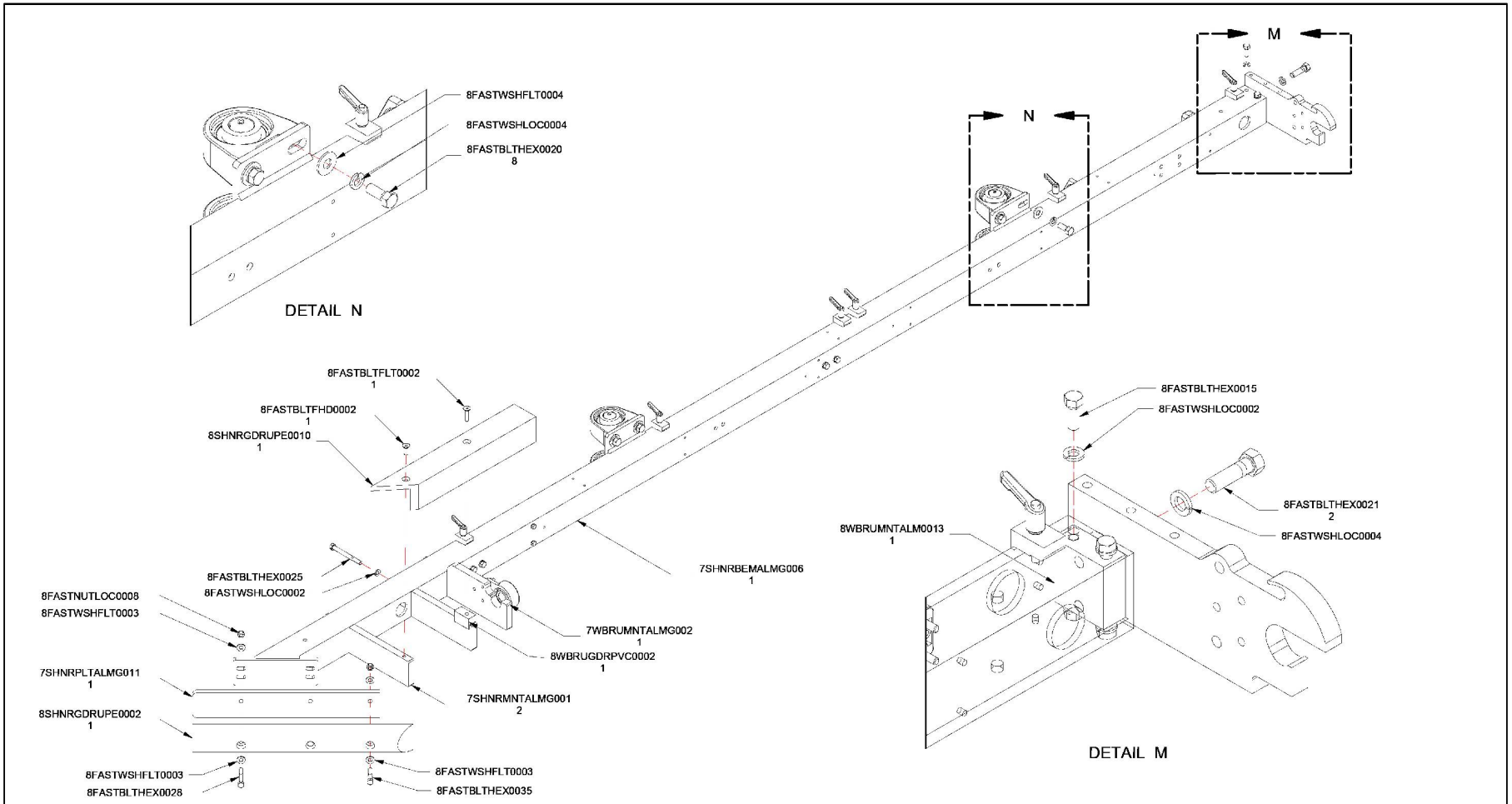


MOTOR WASH WORKS CITY	NOTES	MASTERCAM NUMBER TOOL LIST 1- 2- 3- 4- 5- 6- 7- 8-	TOLERANCE .XX ± .010 .XXX ± .005 .XXXX ± .001 FRACT ± 1/32" UNLESS OTHERWISE SPECIFIED	REVISION SHEET SIZE: B SCALE: NTS	PART NUMBER: 7SHNRDRVELC0001 DESCRIPTION: SPNSHN 9' ELC DS ASY DRAWN BY: ANDREW MARCINAK DATE: 7/15/2021

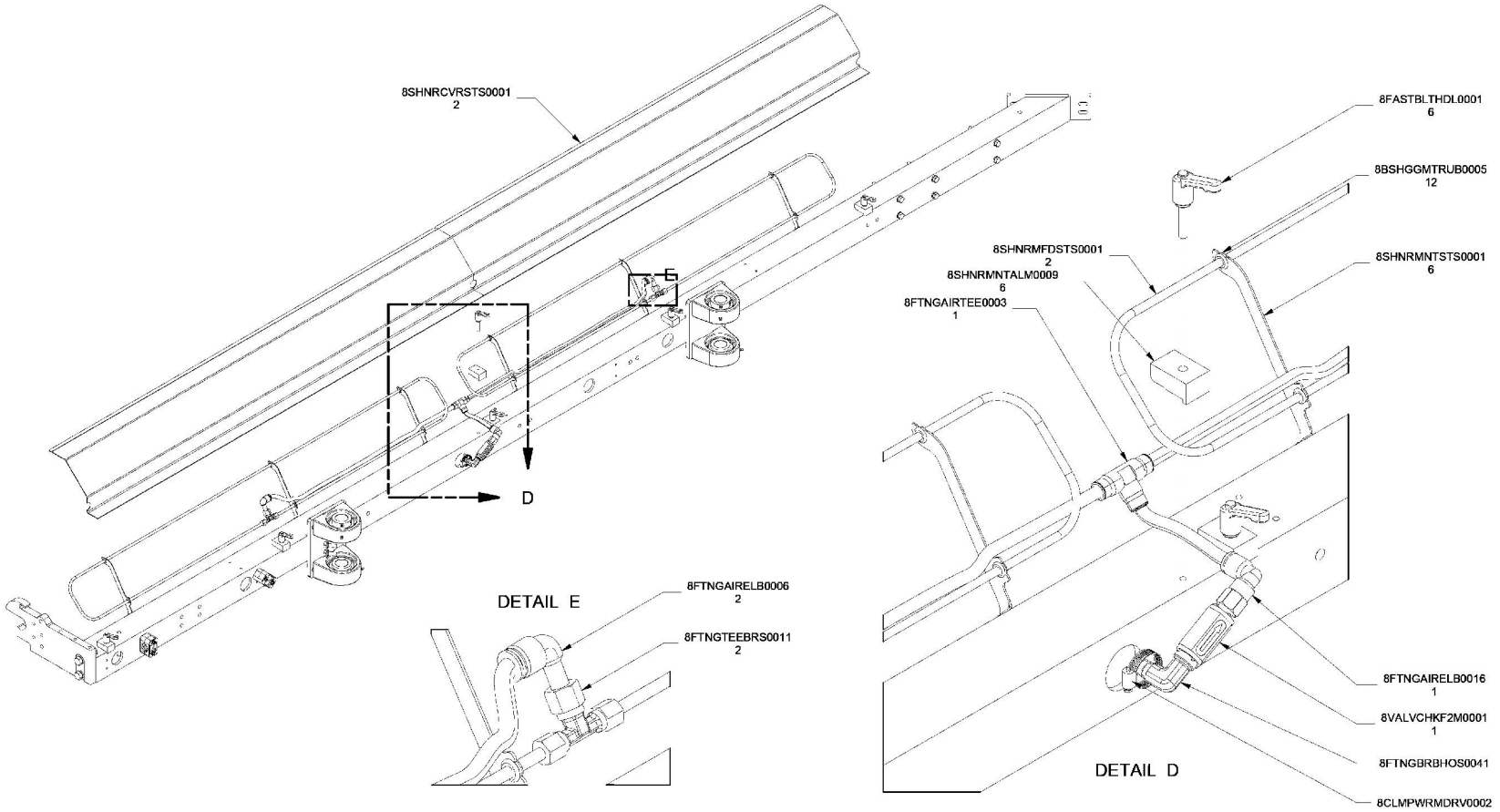


MOTOR WASH WORKS CITY	NOTES	MASTERCAM NUMBER TOOL LIST 1- 2- 3- 4- 5- 6- 7- 8-	TOLERANCE .XX ± .010 .XXX ± .005 .XXXX ± .001 FRACT ± 1/32" UNLESS OTHERWISE SPECIFIED	REVISION SHEET SIZE: B SCALE: NTS	PART NUMBER: 7SHNRDRVELC0001 DESCRIPTION: SPNSHN 9' ELC DS ASY DRAWN BY: ANDREW MARCINAK DATE: 7/15/2021

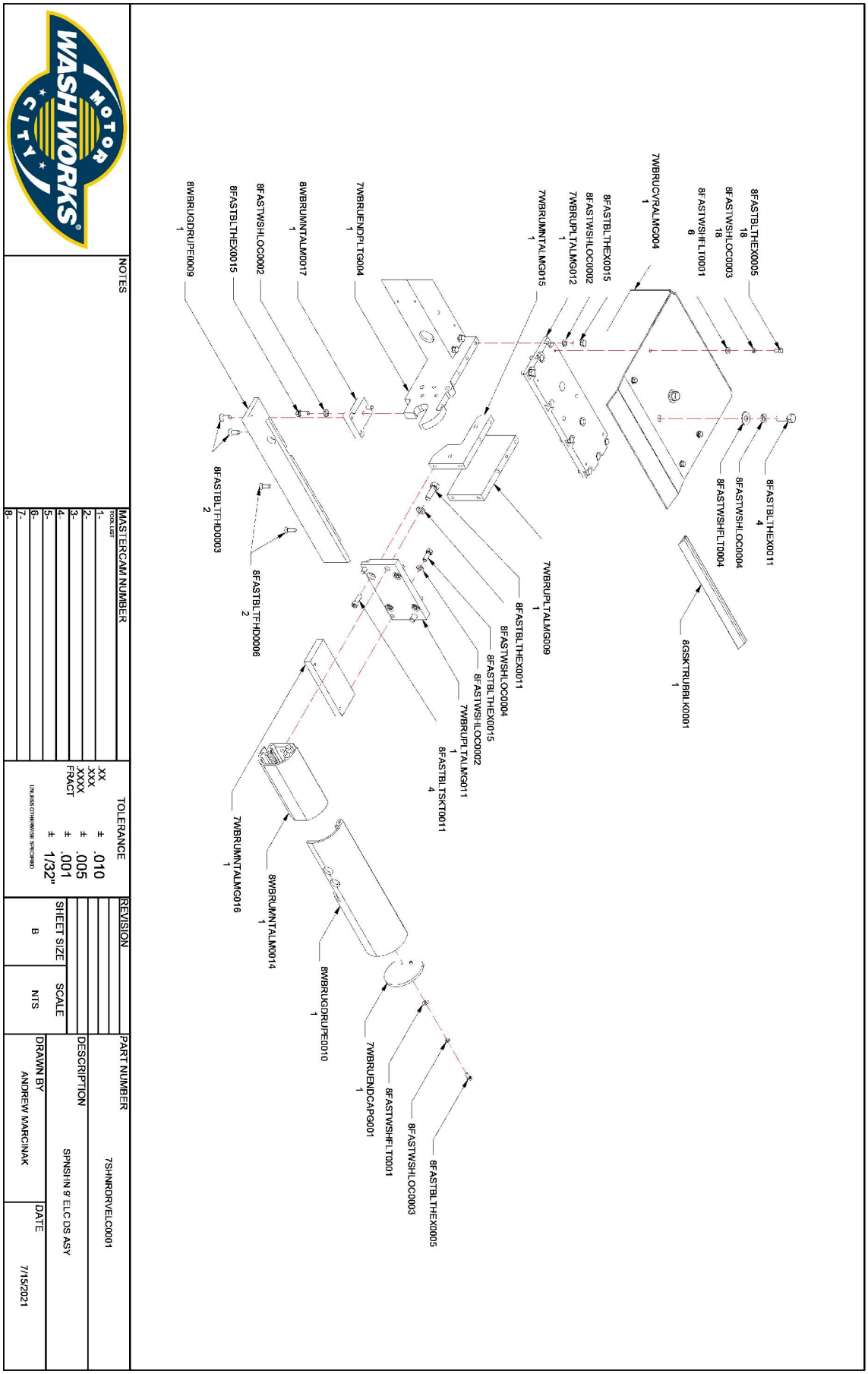




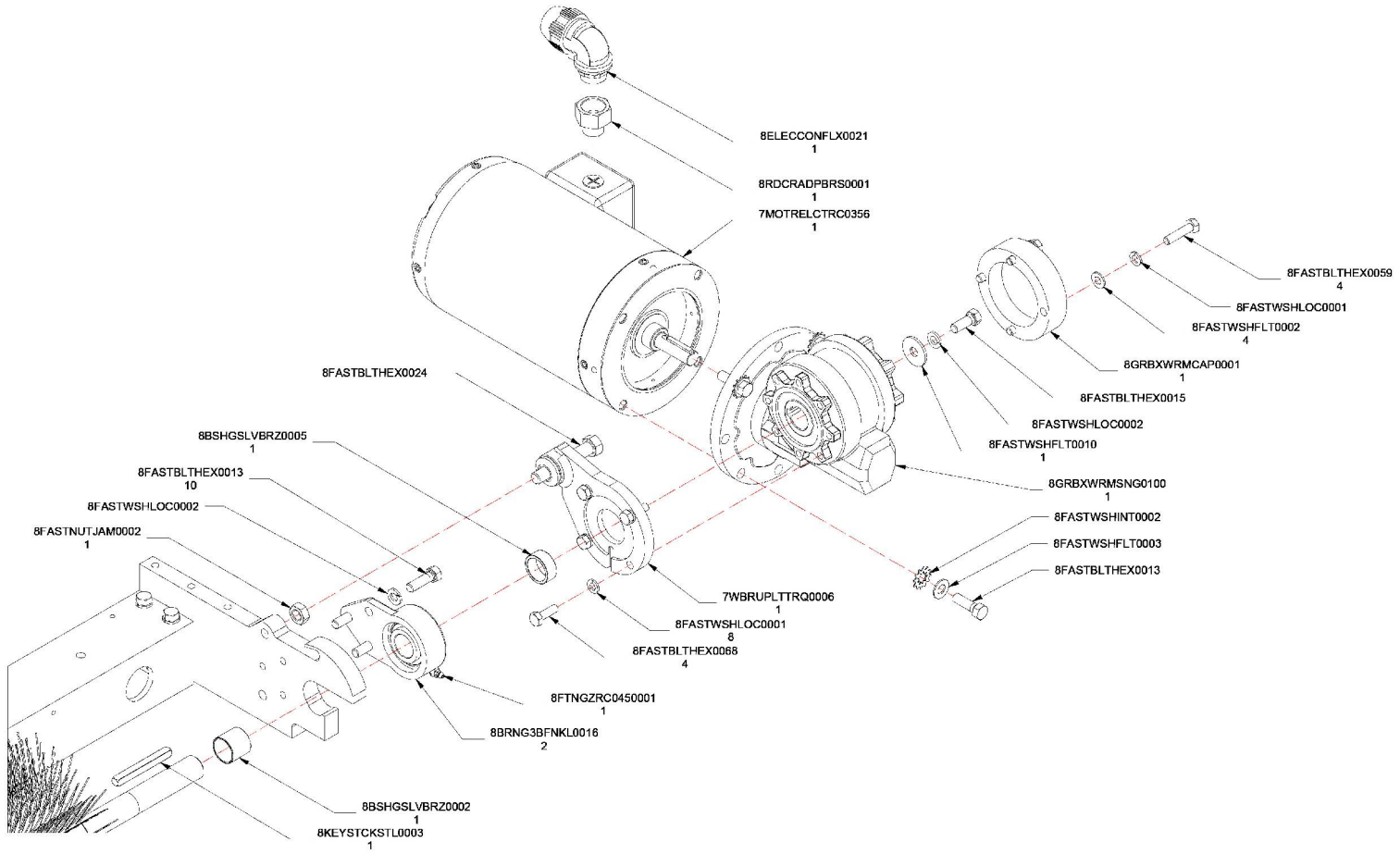
MOTOR WASH WORKS CITY	NOTES	MASTERCAM NUMBER TOOL LIST 1- 2- 3- 4- 5- 6- 7- 8-	TOLERANCE .XX ± .010 .XXX ± .005 .XXXX ± .001 FRACT ± 1/32" UNLESS OTHERWISE SPECIFIED	REVISION	PART NUMBER 7SHNRDRVELC0001 DESCRIPTION SPNSHN 9' ELC DS ASY	
				SHEET SIZE B	SCALE NTS	DRAWN BY ANDREW MARCINAK DATE 7/15/2021



MOTOR WASH WORKS CITY	NOTES	MASTERCAM NUMBER TOOL LIST 1- 2- 3- 4- 5- 6- 7- 8-	TOLERANCE .XX ± .010 .XXX ± .005 .XXXX ± .001 FRACT ± 1/32" UNLESS OTHERWISE SPECIFIED	REVISION SHEET SIZE: B SCALE: NTS	PART NUMBER: 7SHNRDRVELC0001 DESCRIPTION: SPNSHN 9' ELC DS ASY DRAWN BY: ANDREW MARCINAK DATE: 7/15/2021



NOTES	MASTERCAM NUMBER	TOLERANCE	REVISION	PART NUMBER	7SHNRDRVELC0001
	TOOL LIST	XX ± .010		DESCRIPTION	SPNSHN 9' ELC DS ASY
	1.-	XXX ± .005			
	2.-	XXXX ± .001			
	3.-	FRACT ± 1/32"			
	4.-	UNLESS OTHERWISE SPECIFIED			
	5.-		SHEET SIZE	SCALE	DRAWN BY
	6.-		B	NTS	ANDREW MARCINAK
	7.-				DATE
	8.-				7/15/2021



MOTOR WASH WORKS CITY	NOTES	MASTERCAM NUMBER TOOL LIST 1- 2- 3- 4- 5- 6- 7- 8-	TOLERANCE .XX ± .010 .XXX ± .005 .XXXX ± .001 FRACT ± 1/32" UNLESS OTHERWISE SPECIFIED	REVISION	PART NUMBER 7SHNRDRVELC0001	
					DESCRIPTION SPNSHN 9' ELC DS ASY	
				SHEET SIZE B	SCALE NTS	DRAWN BY ANDREW MARCINAK
						DATE 7/15/2021

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.

Motor City Wash Works, Inc.
48285 Frank Street
Wixom, Michigan 48393 USA

p: 866.362.6377 • f: 248.313.0271
e: techsupport@motorcitywashworks.com
w: motorcitywashworks.com

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