



# WHS Series Walnut Huller Sorter

## Brush and Belt Motor Electrical Installation

©2016

**Inspection Masters LLC**  
2320 Westgate Ct., Las Cruces, NM 88005  
P.O. Box 100, Las Cruces, NM 88004  
**Office:** (575) 647-8203

Rev 8.2016

## MOTOR ELECTRICAL INSTALLATION INSTRUCTIONS

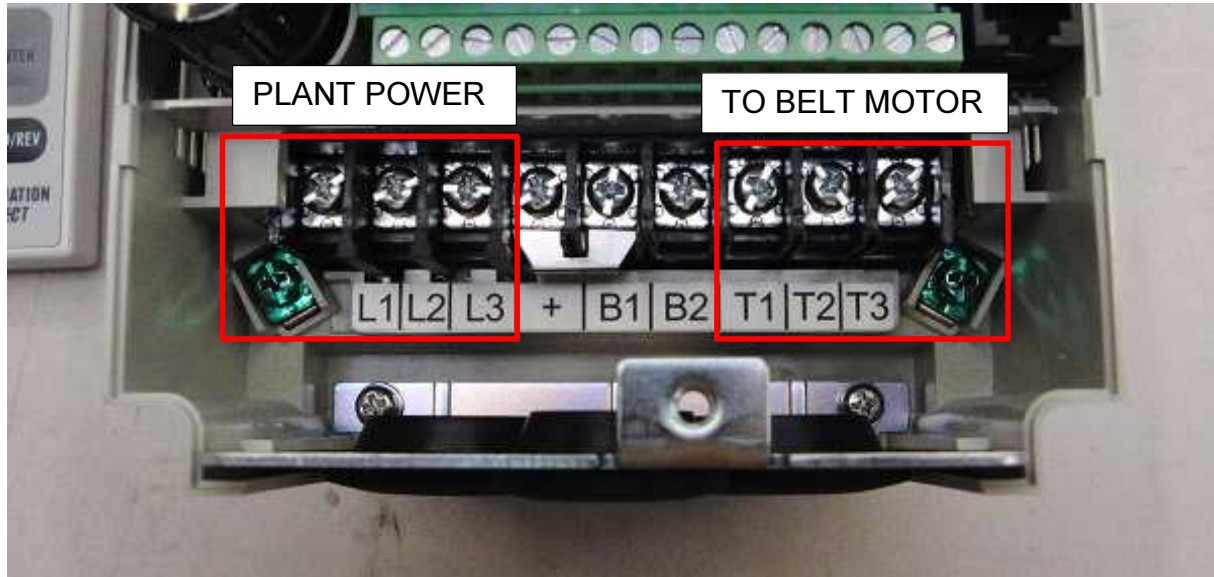
*THANK YOU FOR PURCHASING AN INSPECTION MASTERS SORTER.*

The WHS Walnut Huller Sorter is supplied with a DURA Pulse Variable Frequency Drive (VFD). The following provides instructions for installing the VFD and a starter switch into your plant's electrical system. Electrical installation should be performed by a qualified electrician.

1. Install the Variable Frequency Drive (VFD) for the Belt Motor in the Hulling Plant's electrical power center. Ensure an adequate flow of cooling air over the heatsink fins on the rear of the VFD case. Verify the correct voltage on the VFD by checking the description on the front cover: 230V VFD for 220-240VAC power, 460V VFD for 380-480VAC power. With your fingers, squeeze both sides of the display panel in the indents and pull it straight out. Loosen the screw, then pull up on the lower corners to remove the cover. Use a razor blade to slit the lines on all three rubber grommets to allow wires to pass through to the inside.

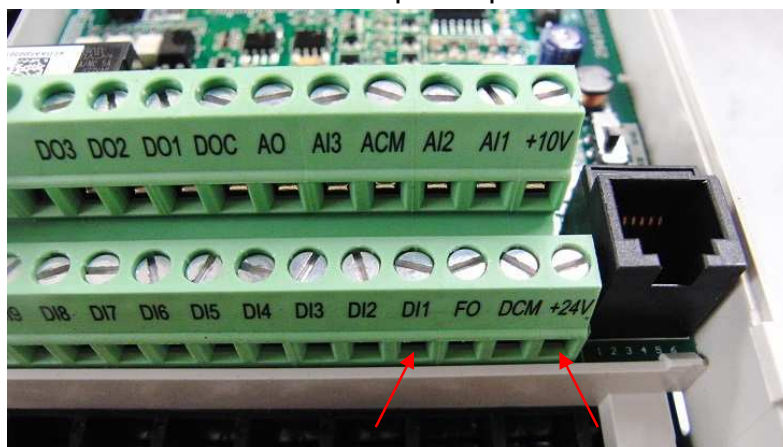


2. Connect three-phase plant power to the screw terminals on the left, marked L1, L2, and L3. Be sure to connect ground to the green terminal on the left. Connect wires that go to the Belt Motor to the screw terminals on the right, marked T1, T2, and T3. Be sure to connect ground to the green terminal on the right.

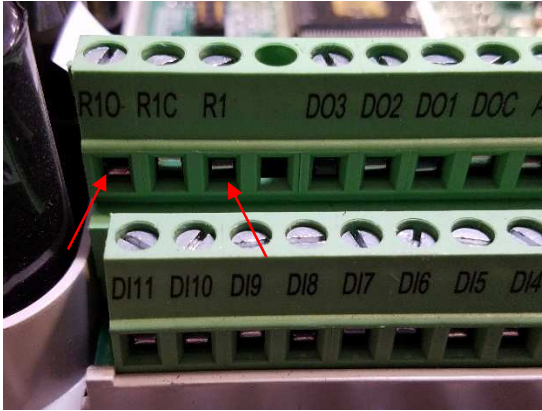


3. Connect a switch or relay contacts across the terminals marked DI1 and +24V. This allows remote control of starting and stopping the belt. **DO NOT APPLY ANY POWER TO THESE TERMINALS OR THE VFD WILL BE DAMAGED.**

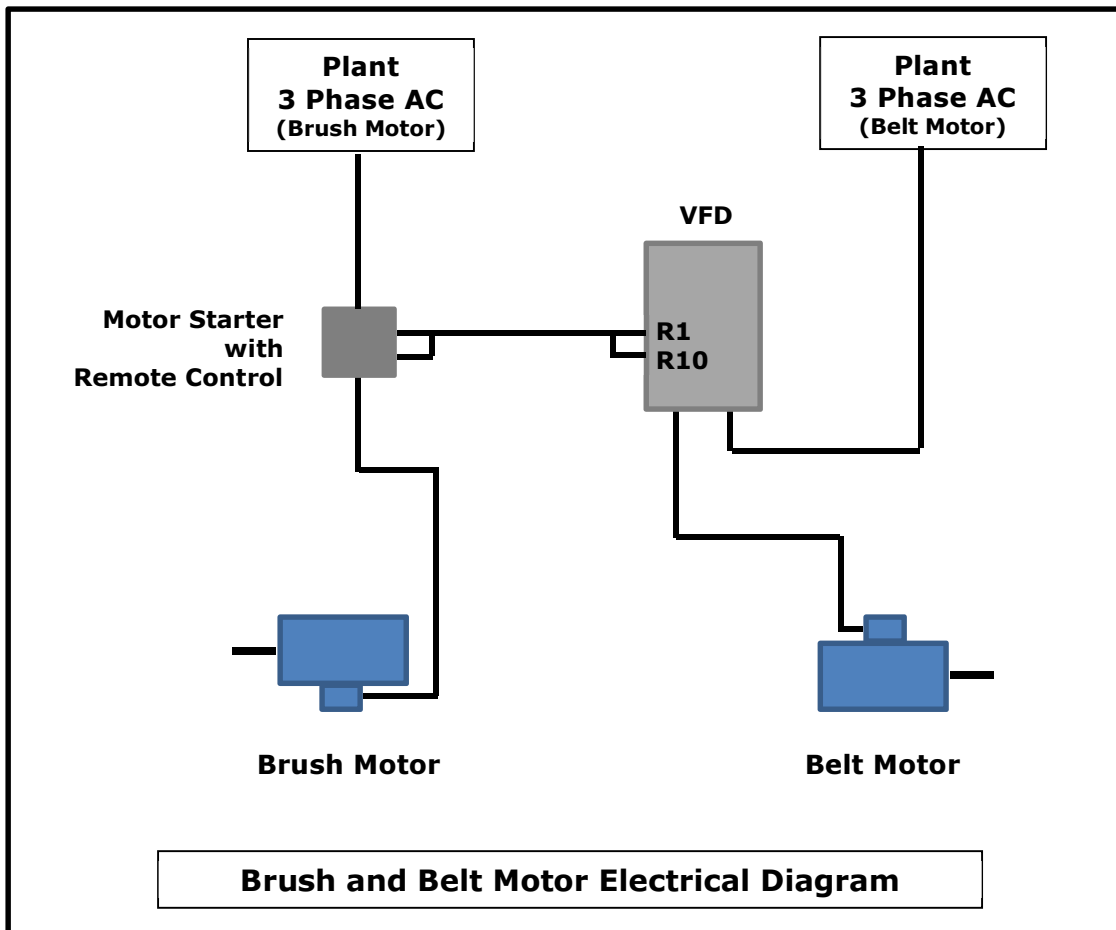
**NOTE:** Do not attempt to start and stop the Belt Motor by turning power to the VFD on and off. Keep the power on and use the control terminals.



4. Connect the remote start of a Motor Starter (user supplied) for the Brush Belt across the terminals marked R1 and R10.



Reinstall the cover and display panel.



## Chapter 2: Installation and Wiring

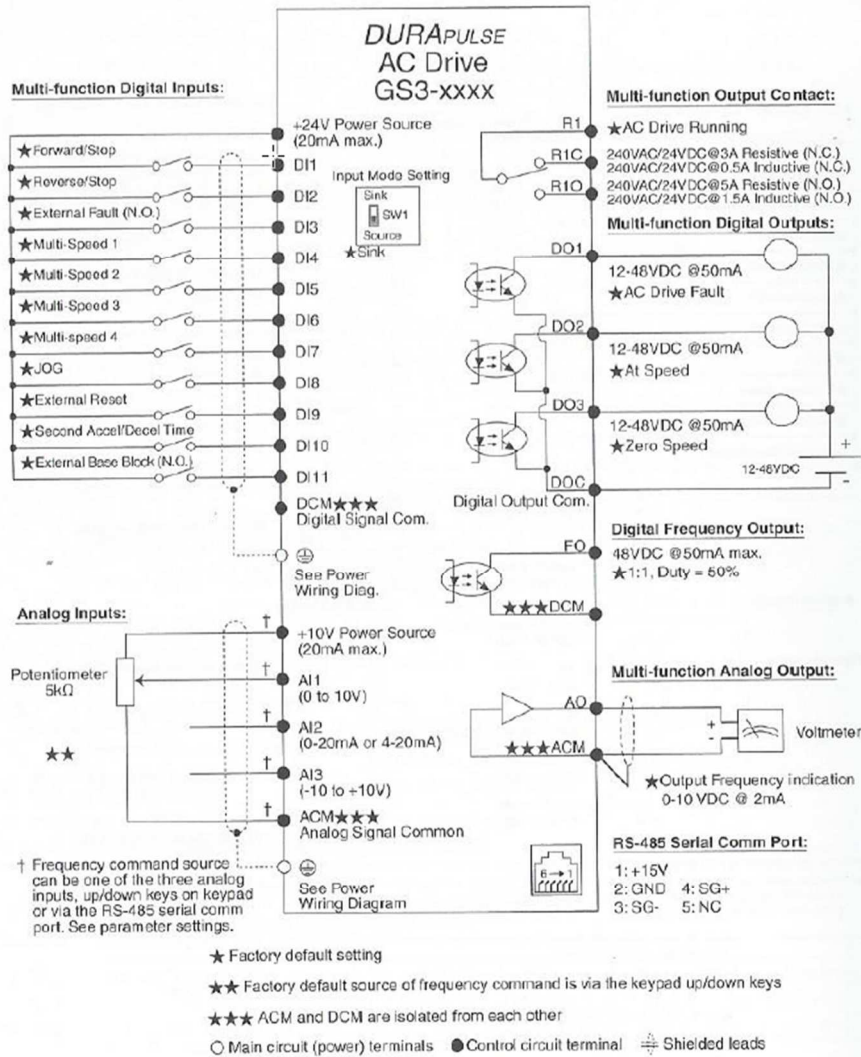
### Control Wiring Diagram – Sourcing Inputs



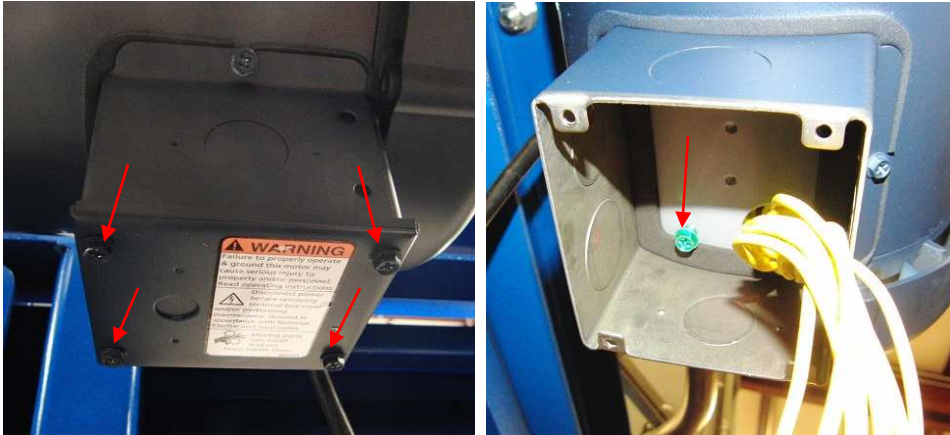
Users must connect wiring according to the circuit diagram shown below.



**WARNING:** Do not plug a modem or telephone into the DURAPULSE RJ-12 Serial Comm Port, or permanent damage may result.



5. Run the wires from the VFD to the Belt Motor in suitable conduit. On the Motor, remove and save the four screws, the cover, and the gasket on the electrical box. Knock out one of the holes on the box and attach the conduit to the box. Connect the ground wire to the green screw inside the box.



6. Connect the three-phase power wires from the VFD (T1, T2, T3) to the motor wires (T1 through T9) as follows:

**Low Voltage (220-240VAC):**

Connect T1 (VFD) to T1 and T7 with a wire nut.  
Connect T2 (VFD) to T2 and T8 with a wire nut.  
Connect T3 (VFD) to T3 and T9 with a wire nut.  
Connect T4, T5, and T6 together with a wire nut.

**High Voltage (380-480VAC):**

Connect T1 (VFD) to T1 with a wire nut.  
Connect T2 (VFD) to T2 with a wire nut.  
Connect T3 (VFD) to T3 with a wire nut.  
Connect T4 to T7 with a wire nut.  
Connect T5 to T8 with a wire nut.  
Connect T6 to T9 with a wire nut.

Replace the gasket, cover, and four screws.

## 7. Program the Belt Motor VFD per this procedure:

Press PROGRAM to begin.

Use UP or DOWN arrows to change groups.

Press ENTER to select group, then use arrows to change items within the group.

Press ENTER to select item, then use arrows to change setting for the item.

Press ENTER to accept the change.

Press PROGRAM to back up to next higher level.

Repeat steps until all variables are set.

Press DISPLAY to exit.

Group.Item	Description	Value
P0.00	MOTOR VOLTAGE	480 * or 230 *
P0.01	MOTOR AMPERAGE	3.1 * or 6.2 *
P0.02	MOTOR FREQUENCY	60
P0.03	MOTOR BASE RPM	1725
P0.04	MOTOR MAX RPM	1750
P1.00	STOP METHODS	0
P1.01	ACCEL TIME	5
P1.02	DECEL TIME	5
P2.00	VOLTS/HERTZ SETTING	1
P3.00	1st SOURCE OP CMD	1
P4.00	FRQCMD1 SOURCE	1
P6.00	THERMAL O'LOAD	2
P6.01	AUTO RESTART FLT	10
P8.00	USER DISPLAY	0

**\* IMPORTANT: 480 must be set with 3.1, and 230 must be set with 6.2.**

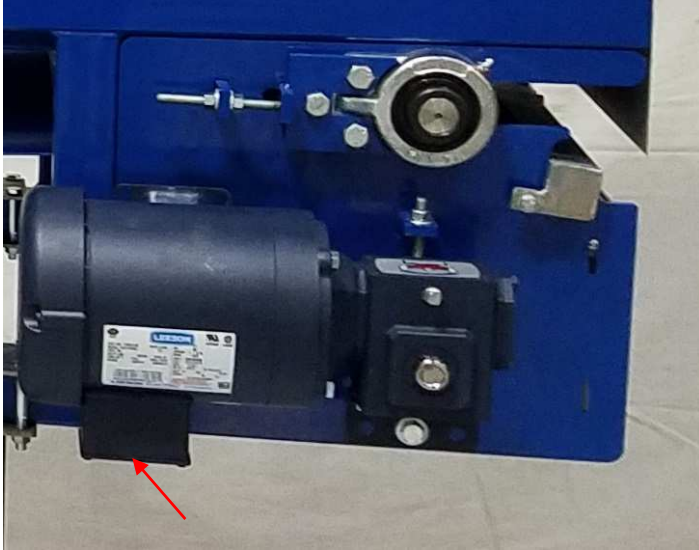
Use remote switch to START motor.

Press FWD/REV to change direction.

Press STOP to stop motor.

**While running, use arrows to change Belt motor frequency to 58.5 Hz. This sets the belt speed for proper eject timing.**

8. Run three-phase power and ground from the plant power panel through the Brush Motor Starter to the Brush Motor on the Wash System; there is no VFD required for this motor. The conduit attached to this motor must be flexible to allow the Brush Motor to adjust up and down. Connect power to the Motor the same way as in step 14 above.



***IMPORTANT:*** *The Brush Motor and Belt Motor circuits must be configured so that they start and stop together. Do not run either motor without the other to avoid premature Belt wear.*

***IMPORTANT:*** *Check for proper motor direction for BOTH motors. The top side of the Belt must run from the Input Hopper towards the Acquisition Cabinet. Press "FWD/REV" on the Belt Motor VFD to change direction, if needed. The Brush must rotate in the OPPOSITE direction of Belt travel at point of contact. Swap any two power leads on the Brush Motor to change direction, if needed.*