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OPERATOR & PARTS MANUAL

ELECTRIC SPREADER CONTROLLER

(MODEL #-D3555PV)

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Introduction

This manual contains information about the proper use and operation of the D3555PV Spreader Controller as well as parts information, trouble-shooting tips, and safety information.

Power Specifications

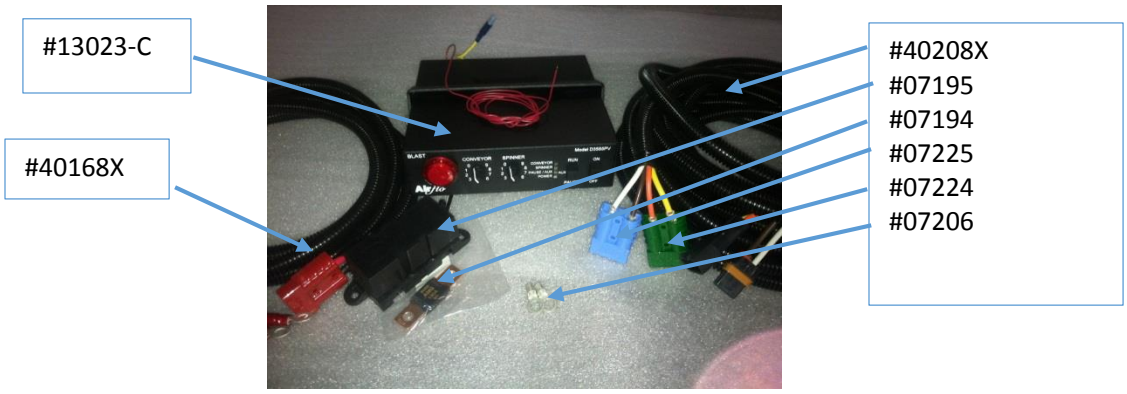
Spinner Circuit

- Designed Power Rating: 0-20A
- Average Operational Draw: 5-15A
- Maximum Draw: 35A

Conveyor/Auger

- Designed Power Rating: 0-38A
- Average Operational Draw: 20-32A
- Maximum Draw: 55A

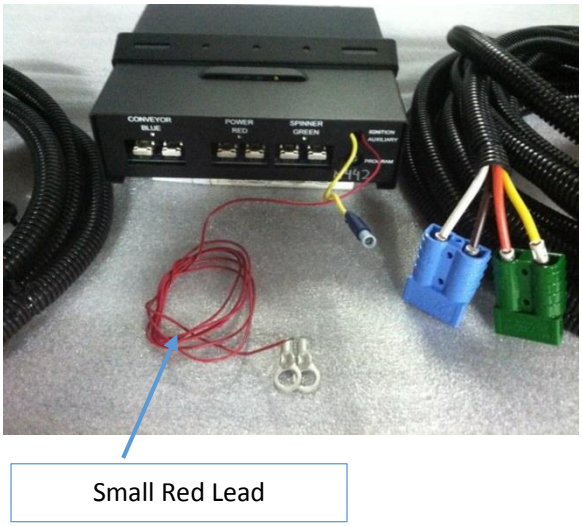
NOTE: The unit can provide up to 60A of current prior to "folding back". For more information on "folding back" please refer to the Hardware Protection section of this manual.



Electric Spreader Controller & Harness Setup

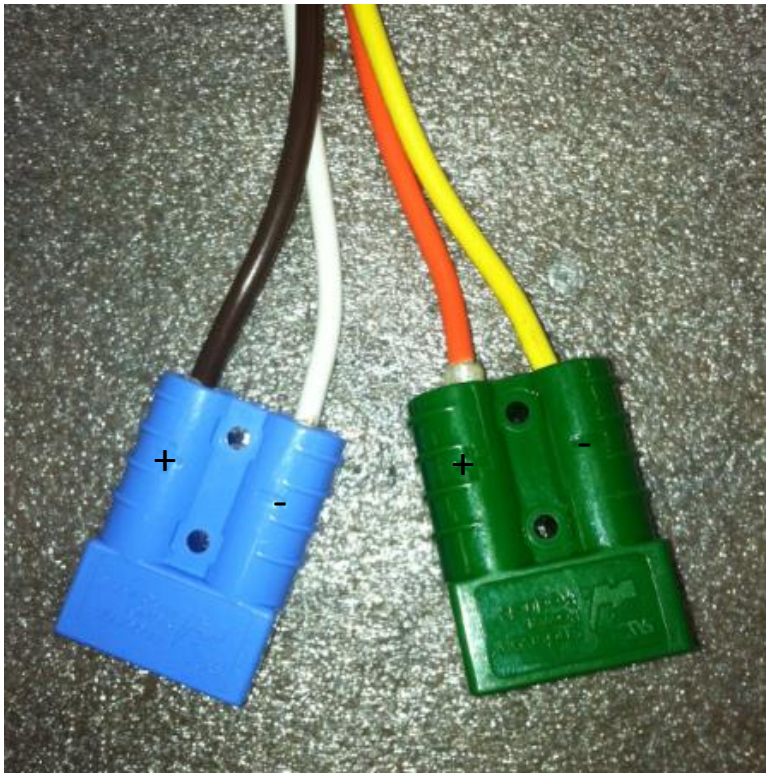
1. Refer to the image above to locate the following items for your kit.
   a. Part # 13023-C- In Cab Controller
   b. Part # 40208X- Spreader Side Wire Harness
   c. Part # 40168X- Vehicle Side Power Harness
   d. Part # 07195- Fuse Block
   e. Part # 07194- Fuse
   f. Part # 07225- Blue Disconnect
   g. Part # 07224- Green Disconnect
   h. Part # 07206-Battery Ring Connectors

2. Wire the Controller
   a. Route your power cable and connect the (-) black wire to the battery (-) lead. **NOTE: Black is (-) and Red is (+) and is labeled on the housing.**
   b. Mount the fuse block and attach the red leads to the (+) battery terminal.
   c. Slide the red connector on the power cable into the electrical port labeled “POWER RED” on the rear of the controller.
3. Attach your cab controller in a convenient location to operate.
4. Attach the small red lead to a (+) keyed ignition power source.



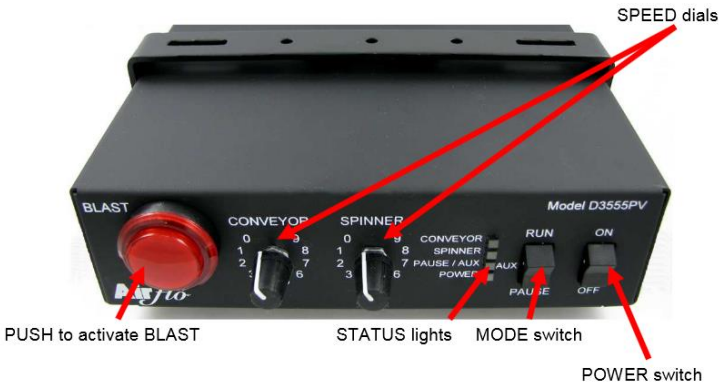
Small Red Lead

5. Route the motor control harness and connect the quick disconnects to the spinner and conveyor motors.



6. Insert the yellow wire with contact into the negative side of the green connector.
7. Insert the orange wire with contact into the positive side of the green connector.
8. Insert the white wire with contact into the negative side of the blue connector.
9. Insert the brown wire with contact into the positive side of the blue connector
10. Connect the all disconnects to the matching disconnects from the cab controller.

YOUR SPREADER IS READY TO OPERATE. REFER TO OPERATING INSTRUCTIONS.



Operating Instructions

Normal Operation-Setup

NOTICE!
When the spreader is initially turned on after set-up, the motors will spin backwards for up to 30 seconds to check for any debris, loose bolts or alignment issues. The motors will then spin forwards when this cycle is complete.

1. Turn POWER switch ON.
2. Chose mode of operation; RUN or RUN/AUX.
3. Set the SPEED DIALS to the desired speed settings.
4. To enable the unit for first time run condition, press the BLAST BUTTON.

CAUTION ⚠
If you push BLAST while in PAUSE MODE, you may accidently set the minimum running speed.

NOTE: The BLAST BUTTON is a safety feature. It also clears the spinner motor of debris.

Normal Operation – Shutdown

1. Turn MODE SWITCH to PAUSE.
2. Turn POWER SWITCH to OFF to deactivate the unit.

At Any Time You May:

- Vary the conveyor or spinner speeds using the dials.
- Press the BLAST BUTTON to deposit the maximum amount of material.

Calibrate Dial (Set Minimum Running Speed)

- Set the MODE SWITCH to PAUSE to pause the conveyor and spinner motors.
- Switch between RUN and RUN/AUX modes using the MODE switch.
- Press and hold the BLAST BUTTON for 3-5 seconds or until the LEDs blink to confirm that you have calibrated the dials.

Management of Spreader Control Performance

Preventative Maintenance

NOTE: The following guidelines will help eliminate the possibility of the presence of impacted or frozen material when investigating a performance issue.

1. All material in the spreader is used by the end of the day.
2. The bed of the truck is clean.
3. The truck is stored appropriately at night.
4. The spreader is fed new material the following day.
5. The chain and any associated grease fittings are kept lubricated. **NOTE: Be sure to use low temperature grease for the spinner bearings.**
6. Never leave the hopper/sander loaded overnight.
7. Never overload the sander with more material than stated in your specs.
8. The motor(s) and all mechanical linkages should be easy to move by hand. Depending on the particular system you may also be able to move the auger/conveyor.

If all of the mechanisms can be moved by hand then investigating the root cause of any controller issues can begin.

Blink Codes for all Models

Any time a spreader controller experiences a problem with one or both motors, the indicator light for each motor will blink a certain number of times to indicate which issue the motor is experiencing. The table shown below lists the different types of blink codes associated with motor issues.

STATUS LED Blink Codes	
Number of Blinks	Condition
SOLID	Ignition Off
2	Jam (high current)
3	Overheat
4	Battery voltage low
5	Battery voltage high

Basic Troubleshooting Guidelines

Ignition Off / Disconnected – Both Status Lights on Solid

This means either the vehicle power is not turned on, or the controller has been disconnected from the vehicle ignition. When uninstalling the unit or moving it to another vehicle, it is important to remember to reconnect the unit to the ignition and not to damage the unit when disconnecting it.

If both status LEDs are on solid while the ignition wire is connected to the truck ignition and the vehicle power is on, then the unit should be returned for service or replaced. This all depends on whether or not a valid warranty or service agreement is in place.

Jam – One or Both Status Lights Blink Twice

This code indicates that something is causing the system to draw too much power. Possible causes for this issue are frozen material, a mechanical shaft or linkage could be bent out of its true form or there could be a foreign object obstructing the motion of the spinner or conveyor.

The motor will go into auto-reverse and then forwards again in an attempt to clear up the jam. If the motor cannot clear up the jam and begins to draw to much current, the unit will shut down for safety. If this code should appear, then please refer to the section of this manual titled "Excessive Power" for troubleshooting guidance.

Overheat – One or Both Status Lights Blink Three Times

This code indicates that the unit is experiencing too much heat. This can be due to overworking the unit, working the unit for long periods of time, or that the unit has been placed too close to the AC unit while the heat is on. In this case, the unit will need to be shut down so that it can cool off. If the problem continues to persist, then the unit may need to be returned for service or replaced. This all depends on whether or not there is a valid warranty or service agreement in place.

Voltage Bad – One or Both Status Lights Blink Four or Five Times

This code indicates that there is an issue with the unit's electrical system.

Motor Speed Malfunction

A motor speed malfunction is when the speed of the motor cannot be turned down. This usually occurs because the low-end speed is calibrated to the maximum possible speed. To correct this issue, simply recalibrate the low-end speed by following the steps below.

1. Make sure MODE SWITCH is set to PAUSE.
2. Make sure POWER SWITCH is ON.
3. Turn the SPEED DIALS to the desired minimum speed settings.
4. Press and hold the BLAST BUTTON for 3 seconds.
5. Release the BLAST BUTTON to lock in the desired speed settings.
6. The PAUSE/AUX light will blink once to confirm the settings are locked in.

Why is my motor spinning backwards?

In the event of a jam or mechanical defect that prevents the motor from moving the conveyor/auger forward, the motor will go into auto-reverse to try and clear up the jam.

I tried to jump my motor and fried the controller!

Many times when a motor is bound up, an attempt to jump it is made by adding a second battery to the problematic motor. It is important to pay attention to the polarity here otherwise the unit can be destroyed and/or fatigued significantly.

Pinched Wires

It is important to make sure when installing the Spreader to the Spreader Controller not to pinch any of the wires between any of the components of the chassis. This can cause some of the wires to become shorted together.

Unit Compatibility

These units are able to drive a variety of spreader systems. The following are Buyers and SnowEx models that the D3555PV can drive:

Compatibility Chart			
Buyers and SnowEx Models			
Buyers		SnowEx	
ATVS15	TGSUV1B	375	11875
TGSUVPROA	TG01	575	Vee-Pro
TGS01A	TGS01B	1075	V-Maxx
TGS05	TGS05A		
TGS05B			

Excessive Power Draw

An indication of excessive power draw is given by either the spinner or conveyor /auger lights blinking twice. Excessive power draw can be caused by a mechanical defect or an inappropriate load.

Follow the steps below to check for excessive power draw on the ***spinner circuit***:

1. Turn the truck off and select one of the wires that is connected to the spinner motor. **NOTE: It does not matter whether or not it is positive or negative.**
2. Disconnect that wire from the motor and attach a Clamp DC Amp Meter to the wire.
3. Start the truck and then activate the spinner.

WARNING ⚠
Make sure that no one is near any moving parts to avoid injury and damage to the Amp Meter.

4. The Amp Meter should read around 46 amps for the first second. Shortly after, the current should settle within a range of 5-20 amps depending on the speed of the motor and the amount of salt being fed through the spinner. If the current ramps up above 20 amps for more than 2-4 seconds, the controller will shut down and blink. This indicates that the spinner shaft requires an excessive amount of torque. Possible causes include:
    - Shaft misalignment
    - Shaft is frozen
    - Bad carrier bearing
    - Motor malfunction
    - Short Circuit
5. Observe the spinner in operation. If the spinner does not jam then it is working appropriately.

Follow the steps below to check for excessive power draw on the ***auger/conveyor circuit:***

1. Turn the truck off and select one of the wires that is connected to the spinner motor. **NOTE: It does not matter whether or not it is positive or negative.**
2. Disconnect that wire from the motor and attach the DC Amp Meter to the wire.

CAUTION ⚠

Do not attempt to apply an external source of power (battery/jump pack etc.) to either motor while being hooked to the controller to trouble shoot the motors. This will cause power to feed backwards into the controller causing it to burn up when turned back on.

3. Inspect:
    - The chain, including master links.
    - The sprockets.
    - All lubrication points (the chain, carrier bearings) to ensure proper lubrication
4. Start the truck and then activate the spinner.

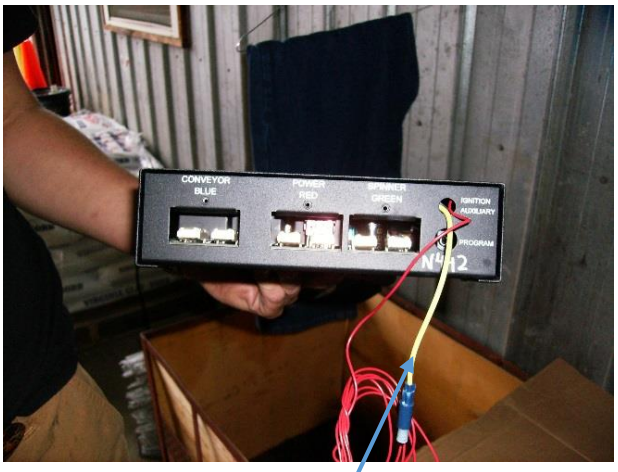
WARNING ⚠

Make sure that no one is near any moving parts to avoid injury and damage to the Amp Meter.

5. The Amp Meter should read around 60 amps for the first second. Shortly after, the current should settle within a range of 5-38 amps depending on the speed of the motor and the amount of salt being fed through the spinner. If the current ramps up above 38 amps for more than 2-4 seconds, the controller will shut down and blink. This indicates that the spinner shaft requires an excessive amount of torque. Possible causes include:
    - Damaged chain
    - Damaged sprockets
    - Improper lubrication
    - Shaft misalignment
    - Shaft frozen
    - Bad carrier bearing
    - Motor malfunction
    - Short circuit

ADVISORY-Not Recommended!

It is not recommended that the yellow auxiliary wire be used to connect with any type of vibrators.



Yellow Aux Wire

Safety Features

Hardware Protection

"Folding back" or "fold-back" refers to a controller limiting the amount of power that goes to a motor. This is a safety feature that helps protect the motor's electrical windings, the trucks charging system, and the wiring harness.

NOTE: The ultimate safe-guard is the fuse in-line at the battery. No spreader system should be operated without an appropriately sized fuse in-line with the main power cable coming from the battery.

Injury Prevention

The controller has an ignition wire that will be tied to the trucks ignition sensor. This wire will only allow power to be distributed to the controller when the truck is running which prevents any of the motors from spinning while the truck is not being operated.

Amp Meters

Name: Uni-Trend

Model: UT-203

Name: Mastech

Model: MS2108A

Name: Amprobe

Model: ACDC-52NAV