This Manual Must Be Read Before Operating The Equipment

Diagnostic Instruction Guide

TRYNEX® INTERNATIONAL

Diagnostic Test Kit: STK-090

TRYNEX® INTERNATIONAL

Customer Copy

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Introduction

Model # STK-090 Test Kit

The Test Kit accompanying this Manual is designed to keep Snowex products operating at their full potential, to reduce confusion as to the what is wrong, and, more importantly to reduce downtime. To keep this Kit in top condition, do not expose the Test Box to extreme temperatures; and do not drop the Test Box as it contains fragile electronics. Above all, keep this Test Kit dry so the wire adapters and connectors do not get corroded. Close the Bag when not using it to prevent dust, debris and metal shavings from getting into the connections and Test Box.

The tools in this Kit are for testing Controls and Components of Snowex and Turfex Spreaders. What follows in this Manual are examples of how the Kit can be configured to test different components of the Spreader. When testing Controls it is important to follow the directions carefully as the Controllers are expensive to replace and contain fragile electronics. The Sample Configurations in this Manual are to serve as a guide only, it should not be a limitation of which Snowex components can be tested. Just remember to match wire polarity and connector type.

STK-090 will test these controller models:

D6230
D6316
D6507
D6527
D5525
D7130
D7171
D6474
D5716
T30762
T30802

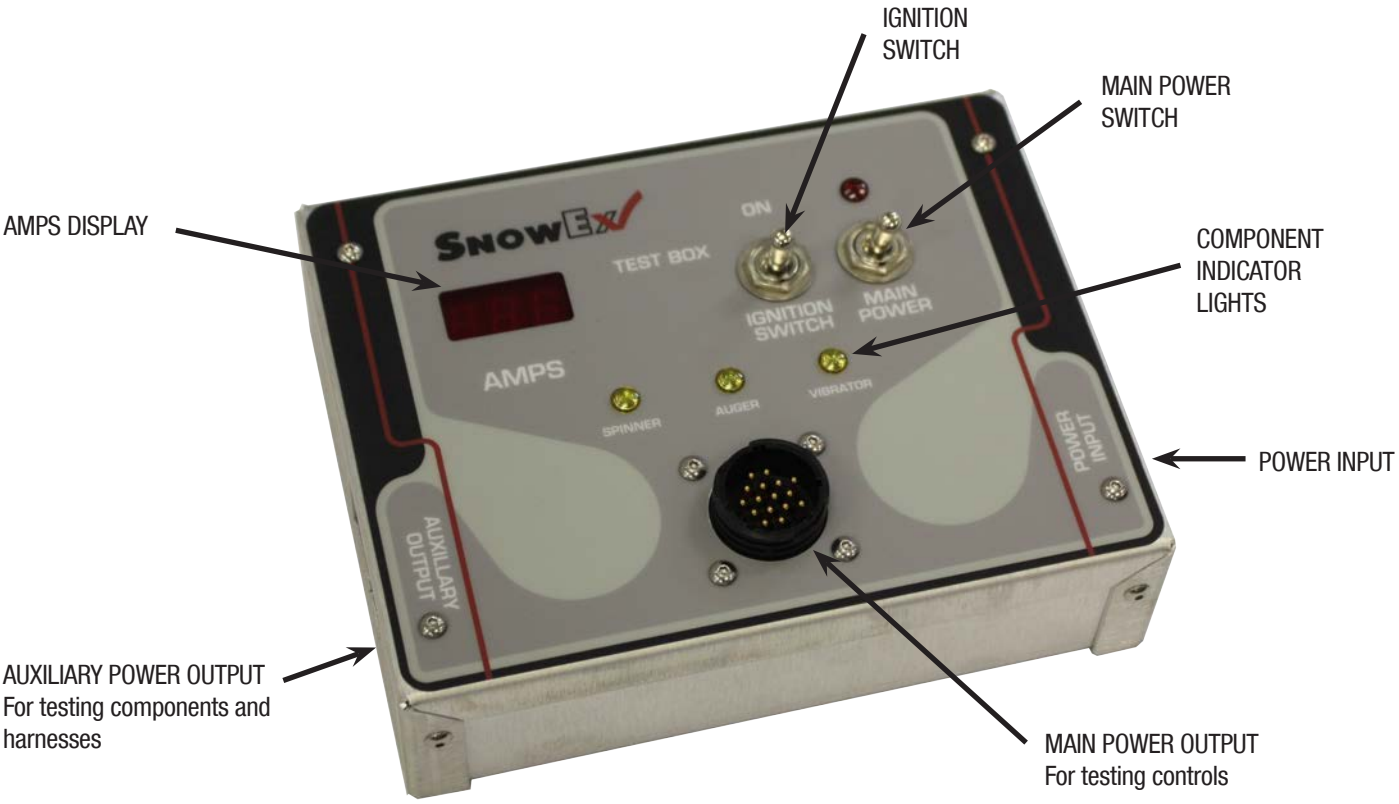
STK-090 will test these spreader harnesses:

STK-090 includes these connector adapters:

Using the Test Kit

Model # STK-090 Test Kit

TEST BOX



SET-UP FOR TESTING COMPONENT

Test Box connected to power source. Auxiliary output connected to D5127. D5127 can be attached to adapters for testing components.

SET-UP FOR TESTING CONTROL

Control adapter plugged-in to output plug in the center of Test Box. Test Box connected to power source (battery).

Using the Test Kit

Model # STK-090 Test Kit

CONTROL ADAPTER CONNECTION

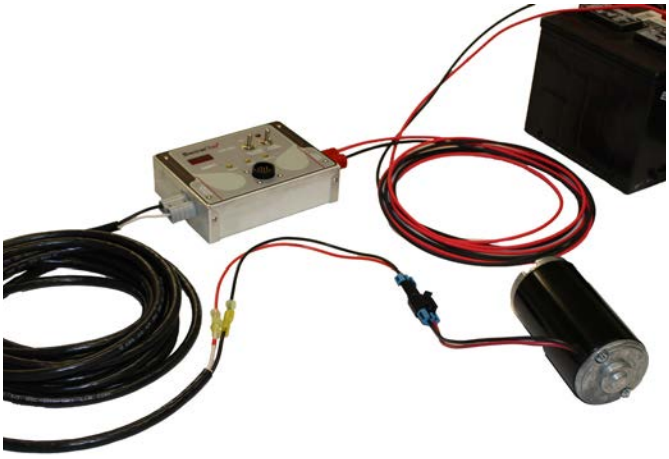
The control adapters and the test box control output are made with a 16-pin connection. Notice the slots and arrangement of the pins. The plug will only connect properly if the pins and slots are aligned correctly. Do not force the plug together. Once the plugs are connected, secure the connection by threading the collar onto the plug.

HARNESS TESTING

There are only two connections on the D6127 adapter. These can only test one circuit at a time by plugging the D6127 connections to the desired pair of wires on the harness adapter and plugging into the spreader harness.

COMPONENT TESTING

Plug D6127 into the Auxiliary output. Connect the adapter that fits the connector type of the component being tested to D6127. Plug in the component and test.



Master Parts LIst

Model # STK-090 Test Kit

Parts Included in this Test Kit:

- D5125 Electrical Test Box
- D5126 Control Harness | 144” Test Kit
- D5127 Power Cord | 324”
- D5128 Cord Adapter | 8” Female Maxx
- D5129 Control Adapter | D5525/D6527
- D5130 Control Adapter | D6230
- D5131 Control Adapter | D7130
- D5132 Control Adapter | D5716
- D5133 Connector Adapter | Packard 280
- D5134 Compact SnowEx Tool Bag
- D5136 Cord Adapter | V-Maxx Auger Motor
- D5137 Connector Adapter | Packard 480
- D6234 Butt Connector | 12 Gauge
- D6252 Splice Cord | 13” SAE 2 Conductor
- D6253 Splice Cord | 13” Female Standard
- D6254 Splice Cord | 14” Female
- D6344 Dielectric Grease | 1-1/2 oz.
- D7106 Spade Connector | Male
- D7107 Spade Connector | Female
- F50630 Cord Adapter | MS4500 Spinner Motor
- F50631 Connector Adapter | Wireless
- F50632 Control Module Adapter | X Series
- F50633 Control Adapter | SP-7000
- F50634 Control Adapter | MS4500
- F50638 Cord Adapter | TS300EG/SP-100
- F50652 Control Pendant Adapter | X Series
- F50656 Control Adapter | SP-575/SP-1075
- F50657 Control Adapter | SP-575/SP-1075 with Auxiliary Output

D5125

D5126

D5127

D5128

Master Parts LIst

Model # STK-090 Test Kit

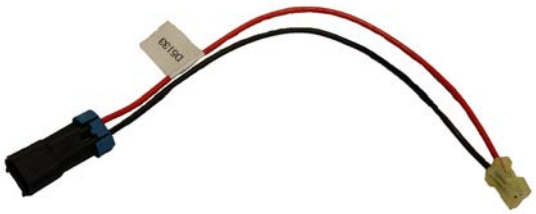
D5129

D5130

D5131

D5132

D5133



D5134

D5136

D5137

Master Parts LIst

Model # STK-090 Test Kit

D6234
x5

D6344
x5

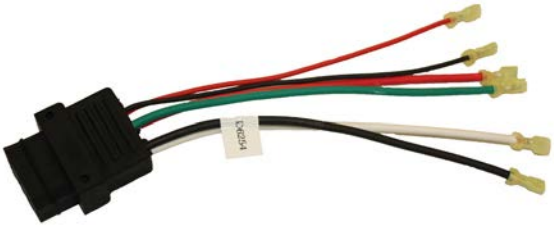
D6252

D7106
x5

D6253

D7107
x5

D6524



F50630

Master Parts LIst

Model # STK-090 Test Kit

F50631

F50632

F50633

F50634

F50638

F50652

F50656

F50657

Testing

D6474 / D7171 Control

Step 1: Connect test box to vehicle battery with D5126 adapter.

Step 2: Connect test lead D5131 to test box (figure 2), connect control (figure 1) to test lead ends (figure 2).

Step 3: Turn on “Main Power” switch (Figure 3).

Step 4: Turn on controller.

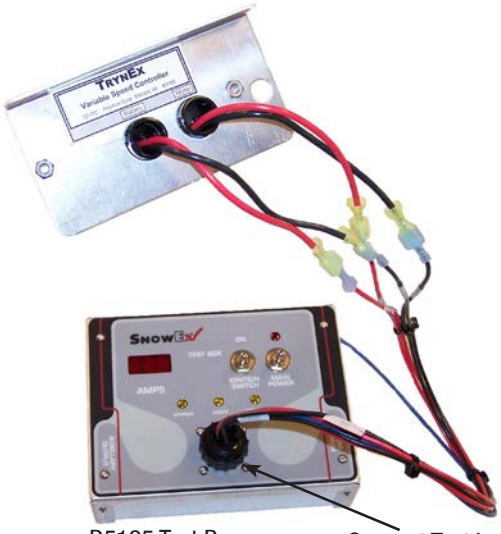
Step 5: Turn spinner speed knob on controller (D6474) ; you will see the indicator light go from bright to dim or on/off. The higher the speed, the brighter the light.

Step 6: If light fails to work, controller is defective.

Figure 1

D6474 Control

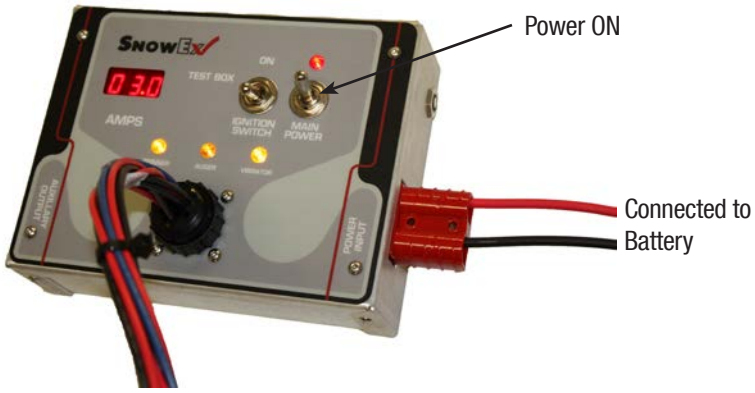
Figure 2



D5125 Test Box

Connect Test Lead D5131

Figure 3



Power ON

Connected to Battery

SPREADERS THAT CAN BE TESTED:

- SP-100
- SP-125
- SP-225
- SP-325
- TS-300EG
- TS-700E
- TS-1200E
- US-200

Testing

D6230 Control

Step 1: Connect test box to vehicle battery with D5126 adapter.

Step 2: Connect test lead D5129 to test box (figure 2), connect control (figure 1) to test lead ends (figure 2).

Step 3: Connect blue wire from test box to controller if so equipped (older D6230 models).

Step 4: Turn on ignition power switch (if blue wire is used).

Step 5: Turn on “Main Power” switch (Figure 3).

Step 6: Turn on Controller.

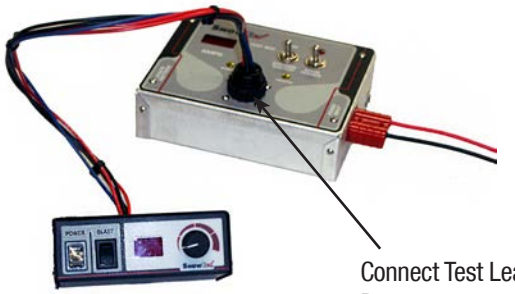
Step 7: Turn spinner speed knob or press blast switch on controller (D6230) or press blast switch and arrow keys (D6125); you will see the indicator light go from bright to dim or on/off. The higher the speed, the brighter the light.

Step 8: If light fails to work, controller is defective.

Figure 1

D6230 Controller

Figure 2



Connect Test Lead
D5129

Figure 3

SPREADERS THAT CAN BE TESTED:

SP-575
SP-1075 .

Testing

D6527 / D7240 Control

Step 1: Connect test box to vehicle battery with D5126 adapter.

Step 2: Connect test lead D5129 to test box (figure 2), connect control (figure 1) to test lead ends (figure 2).

Step 3: Connect blue wire from test box to controller if so equipped.

Step 4: Turn on ignition power switch (if Blue Wire is used).

Step 5: Turn on “Main Power” switch (Figure 3).

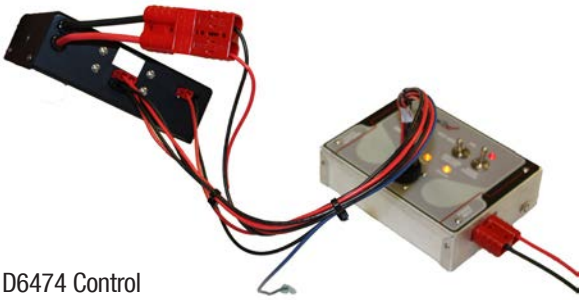
Step 6: Turn on controller.

Step 7: Turn spinner speed knob on controller; the higher the speed, the brighter the spinner indicator light. If light fails to operate, unit is defective.

Step 8: Turn auger speed knob on controller; the higher the speed, the brighter the auger indicator light. If light fails to operate, unit is defective.

Step 9: Turn on vibrator switch on controller. If vibrator indicator light fails to operate, unit is defective.

Figure 1



D6474 Control

Figure 2

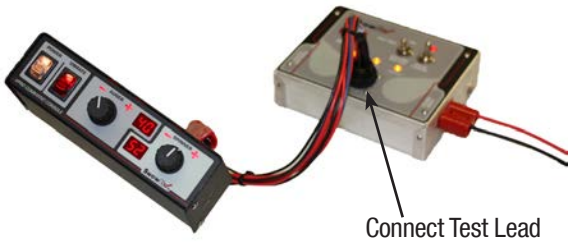


Figure 3

MODELS THAT CAN BE TESTED:

- MS-1875
- MS-2000
- SP-1575
- SP-1875
- SP-3000
- SP-6000

Testing

D5525 Control

Step 1: Connect test box to vehicle battery with D5126 adapter.

Step 2: Connect test lead D5129 to test box (figure 2), connect control (figure 1) to test lead ends (figure 2).

Step 3: Turn on “Main Power” switch. (Figure 3).

Step 4: Turn on controller.

Step 5: Turn spinner speed knob on controller; the higher the speed, the brighter the spinner indicator light. If light fails to operate, unit is defective.

Step 6: Turn auger speed knob on controller; the higher the speed, the brighter the auger indicator light. If light fails

to operate, unit is defective.

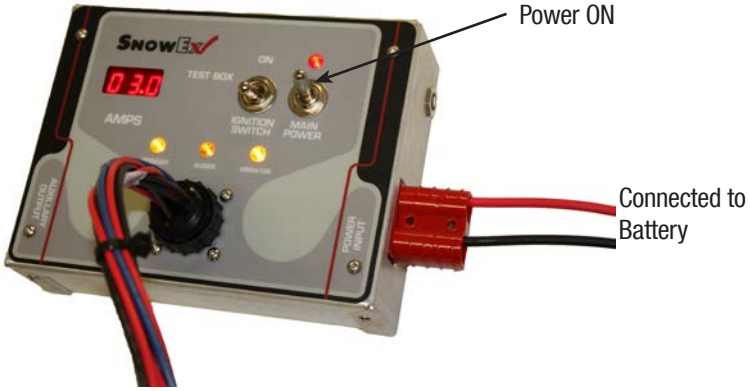
Step 7: Turn on vibrator switch on controller. If vibrator indicator light fails to operate unit is defective.

Figure 1

D5525 Controller

Figure 2

Figure 3



MODELS THAT CAN BE TESTED:

SP-7500
SP-7550

Testing

D5716 Control

Step 1: Connect test box to vehicle battery with D5126 adapter.

Step 2: Connect test lead D5132 to test box (figure 2), connect control (figure 1) to test lead ends (figure 2).

Step 3: Turn on “Main Power” switch, (Figure 3).

Step 4: Turn on controller.

Step 5: Turn spinner speed knob on controller; the higher the speed, the brighter the spinner indicator light. If light fails to operate, unit is defective.

Step 6: Turn auger speed knob on controller; the higher the speed, the brighter the auger indicator light. If light fails to operate, unit is defective.

Step 7: Turn on vibrator switch on controller. If vibrator indicator light fails to operate, unit is defective.

Figure 1

D5716 Controller

Figure 2

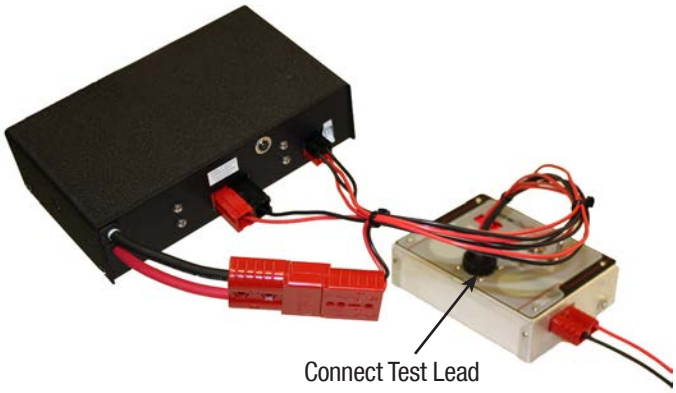
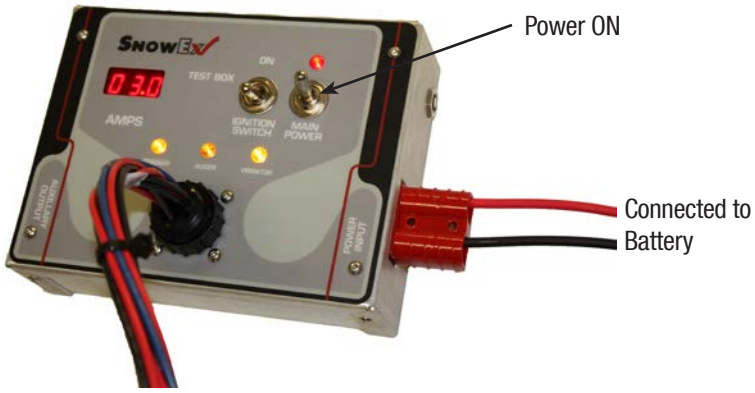


Figure 3



MODELS THAT CAN BE TESTED:

SP-2400
SP-8500
SP-8550
SP-9300
SP-9500

Testing

F50541 Spreader Control / F50543 Control Pendant

Step 1: Connect F50632 Test Lead to the Spreader Control Module.

Step 2: Connect the Test Lead to the Test Box (connected to a battery). Connect Control Module to Pendant using the F50652 Pendant Adapter.

Step 3: Turn the Main Power Switch on the Test Box to “On.”

Step 4: Push the “On” button on Control Pendant. Push “Start.” The Auger and Spinner Indicator lights on the Test Box should turn on. Change the Auger and Spinner speeds. The light should change brightness with the change in speed. If either light fails to operate, the Control Module and Pendant are defective.

Step 5: Push the Vibrator button on Pendant. If indicator light fails to operate, the Control Module and Pendant are defective.

Figure 1

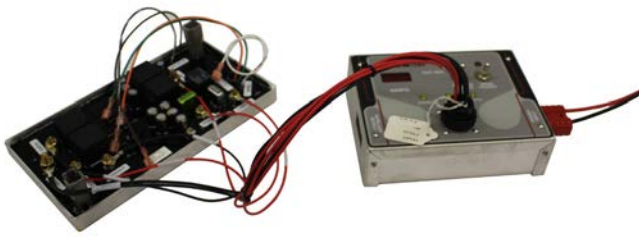


Figure 2

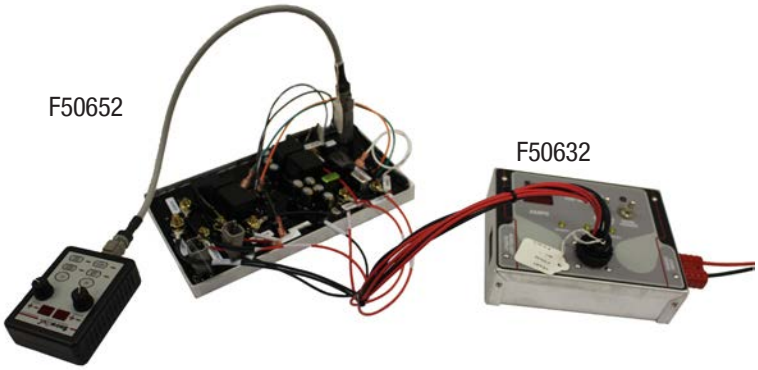
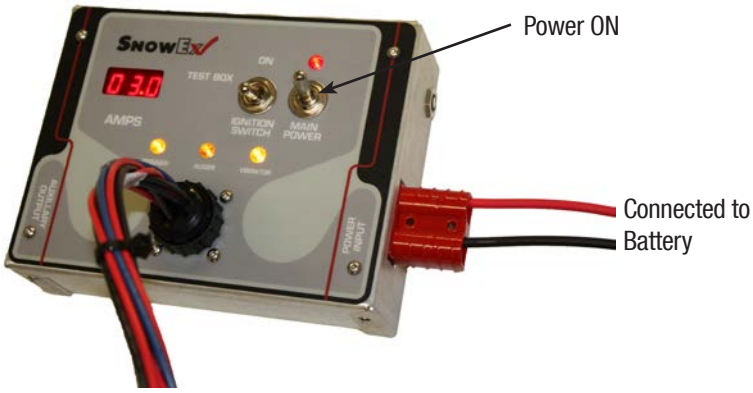


Figure 3



MODELS THAT CAN BE TESTED:

SP-9300X
SP-9500x
SP-9800X

Testing

F50576 Spreader Control / F50607 Control Pendant

Step 1: Connect F50656 Test Lead to the Spreader Control Module.

Step 2: Connect the Test Lead to the Test Box (connected to a battery). Connect Control Module to Pendant using the F50652 Pendant Adapter.

Step 3: Turn the Main Power Switch on the Test Box to “On.”

Step 4: Push the “On” button on Control Pendant. Push “Start.” The Spinner Indicator light on the Test Box should turn on. Change the Spinner speed. The light should change brightness with the change in speed. If either light fails to operate, the Control Module and Pendant are defective.

Figure 1

Figure 2

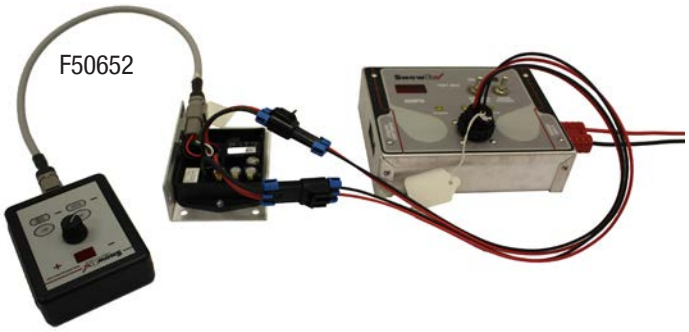
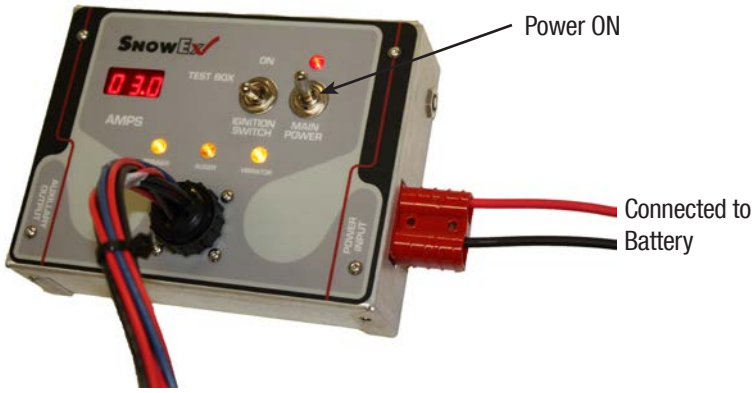


Figure 3



MODELS THAT CAN BE TESTED:

SP-575X
SP-1075X

Testing

F50596 Spreader Control / F50574 Control Pendant

Step 1: Connect F50657 Test Lead to the Spreader Control Module.

Step 2: Connect the Test Lead to the Test Box (connected to a battery). Connect Control Module to Pendant using the F50652 Pendant Adapter.

Step 3: Turn the Main Power Switch on the Test Box to “On.”

Step 4: Push the “On” button on Control Pendant. Push “Start.” The Spinner Indicator light on the Test Box should turn on. Change the Spinner speed. The light should change brightness with the change in speed. If either light fails to operate, the Control Module and Pendant are defective.

Step 5: Push the Vibrator button on Pendant. If indicator light fails to operate, the Control Module and Pendant are defective.

Figure 1

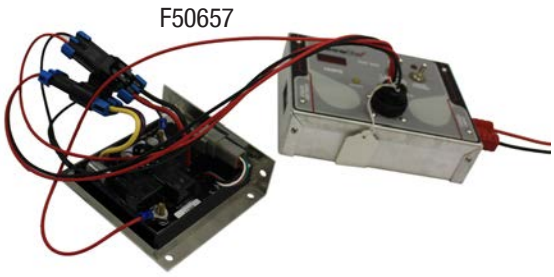


Figure 2

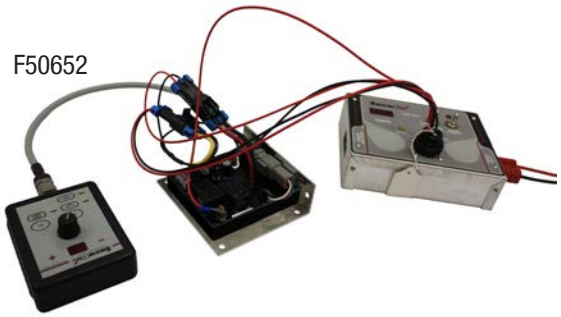
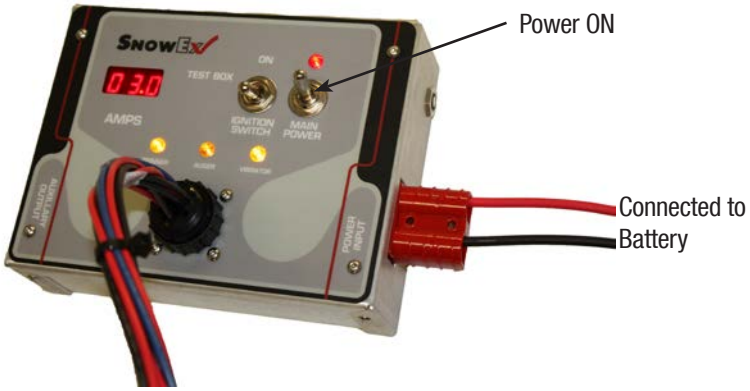


Figure 3



MODELS THAT CAN BE TESTED:

SD-600
SD-1400
SP-575V

Testing

T30762 Control / D5587 Pendant

Step 1: Connect F50633 Test Lead to the Spreader Control Module.

Step 2: Connect the Test Lead to the Test Box (connected to a battery). Connect Control Module to Pendant using the T30787 Data Cable (from spreader).

Step 3: Turn the Main Power Switch on the Test Box to “On.”

Step 4: Push the “On” button on Control Pendant. Push “Start.” The Auger and Spinner Indicator lights on the Test Box should turn on. Change the Auger and Spinner speeds. The light should change brightness with the change in speed. If either light fails to operate, the Control Module and Pendant are defective.

Step 5: Push the Vibrator button on Pendant. If indicator light fails to operate, the Control Module and Pendant are defective.

Figure 1

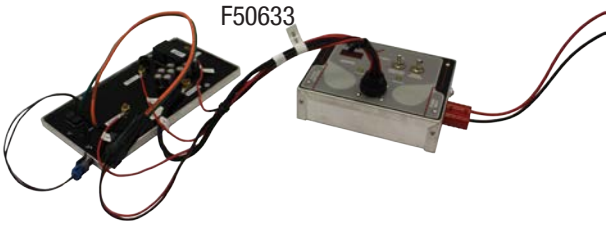


Figure 2

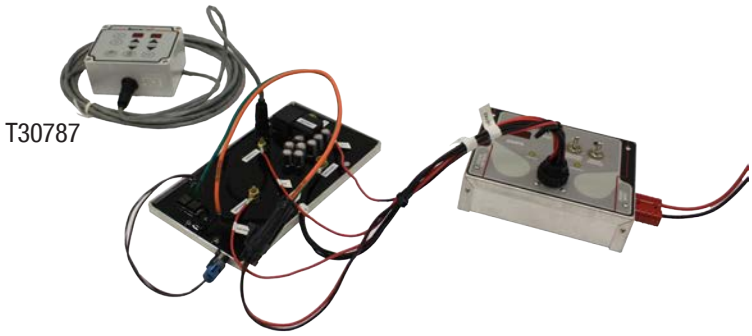
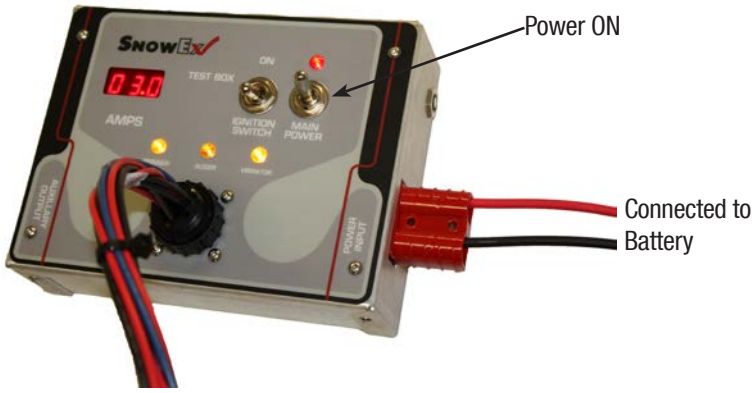


Figure 3



MODELS THAT CAN BE TESTED:

SP-7000

Testing

T30802 Control / T30786 Pendant

Step 1: Connect F50634 Test Lead to the Spreader Control Module.

Step 2: Connect the Test Lead to the Test Box (connected to a battery). Connect Control Module to Pendant using the T30787 Data Cable (from spreader).

Step 3: Turn the Main Power Switch on the Test Box to “On.”

Step 4: Push the “On” button on Control Pendant. Push “Start.” The Auger and Spinner Indicator lights on the Test Box should turn on. Change the Auger and Spinner speeds. The light should change brightness with the change in speed. If either light fails to operate, the Control Module and Pendant are defective.

Step 5: Push the Vibrator button on Pendant. If indicator light fails to operate, the Control Module and Pendant are defective.

Figure 1 F50634

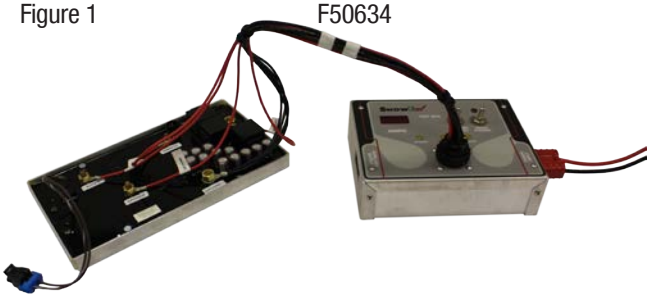
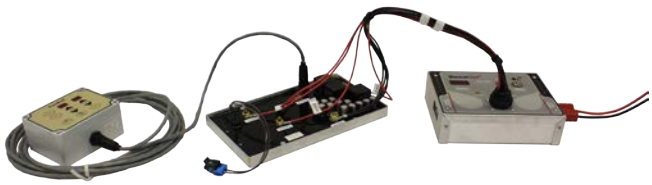
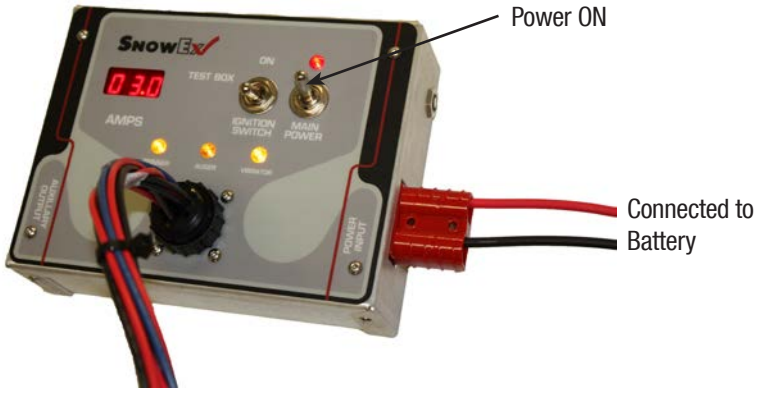


Figure 2



T30787

Figure 3



MODELS THAT CAN BE TESTED:

MS4500 .

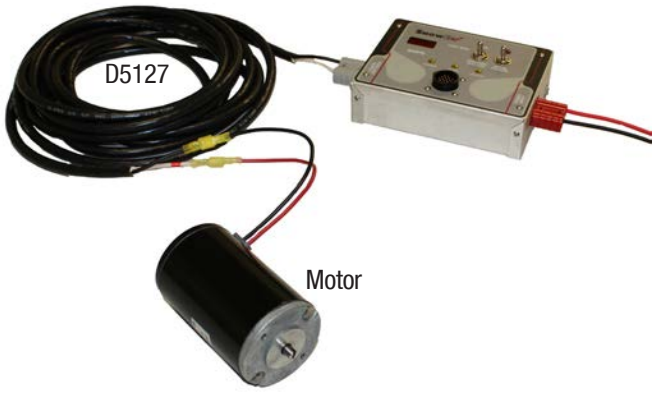
Sample Configurations

Introduction to Testing Other Spreader Components:

This STK-090 Complete Test Kit has been designed to test electrical components on all Snowex and Turfex Spreaders. Please note that although Snowex generally uses the same connectors and plug molds, Snowex may introduce a new design of components that cannot be tested. What follows are sample configurations to give the operator an idea of how the adapters in this kit can be used to test components. Do not reverse the polarity of the wires as this may damage the spreader and the test box.

In general, match the connector style of the component to the correct adapter which can be connected to the Power Cord (D5127)

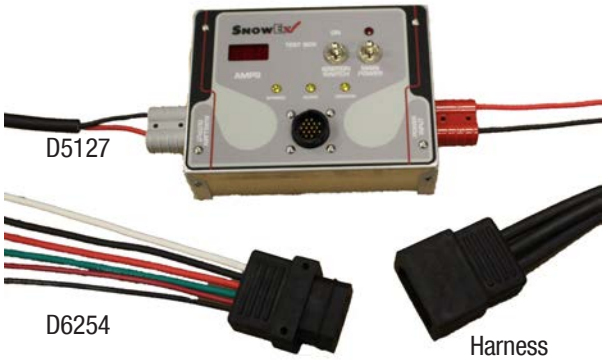
Motor with Spade Connectors



Motor with SAE 2 Connectors

Standard Tailgate Harness

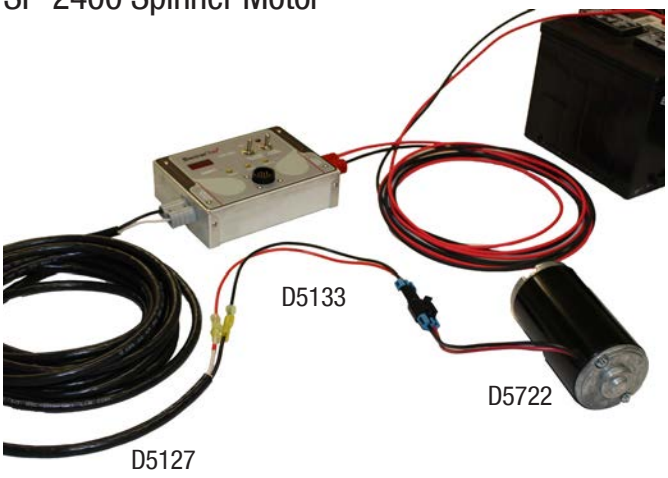
V-Pro Spreader Harness
V-Maxx Auxiliary Harness



Sample Configurations

Vibrator

SP-2400 Spinner Motor



MS4500 Spinner Motor

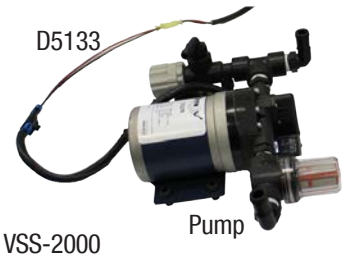
TS-300EG / SP-100 Spreader Harness

*The actuator and spinner are tested separately.

SR-110 / SR-210 Motor

Pumps

PWS
VSS-1000



VSS-2000
VSS-3000

Amperage Data Chart

Your test box is equipped with a load amperage meter which can be used to assist with electrical diagnostics. Below is a chart that will bracket amperage loaded and unload conditions. Please keep in mind that motors will have a plus / minus of 3 percent between types and manufacturing batches. This chart is for reference only and should be used as a guide for making recommendations to your customer or for warranty review prior to shipping parts back to the factory.

Motors

PART NUMBER	NORMAL RANGE	FAILURE POINT: INSTALLED ON SPREADER	FAILURE POINT: NO LOAD "BENCH TEST"
D6106	4.5 to 6.5	30 amps	15 amps
D6319	4.5 to 6.5	30 amps	15 amps
D6320	4.5 to 6.5	30 amps	15 amps
D6410	4.5 to 6.5	28 amps	14 amps
D6827	3.5 to 5.5	32 amps	16 amps
D5722	6.0 to 8.0	33 amps	16 amps
D6825	5.0 to 8.5	35 amps	15 amps
D5522	2.6 to 4.3	33 amps	15 amps
D6872	7.5 to 9.5	36 amps	17 amps
D6887	3.5 to 5.5	32 amps	16 amps
D6214	4.5 to 6.5	30 amps	15 amps

Vibrators

PART NUMBER	NORMAL RANGE
D6174	2 to 8
D6161	2 to 8
D6515	6 to 15
D6899	5 to 12

NOTE: High amp draw reading with motor installed on spreader could result from mechanical binding issue. For best results test motor on bench without anything attached to it. Compare against chart to determine motor integrity.

Troubleshooting

PWS, SL, TL, VSS and US Series Spraying Systems

Warning: First read all warning instructions and safety messages before servicing the Sprayer.

Preliminary checks

- Be sure all electrical connections are tight and clean.
- Be sure nothing is obstructing the nozzles.

In Cab Pre-Wet Error and Warning Codes

All error/warning indications have a one second pause then the flash code repeats.

Control Behavior

- If there is a “motor open” or “over-pressure signal” at the power-on cycle, the control will flash a number one warning until the condition is corrected. it will then continue with its normal operation mode. If a “motor open” or “over-pressure” signal occurs during normal operation, the control on/off lamp will flicker or produce a number one. Even though the warning is flashing, the system will continue to operate uninterrupted.

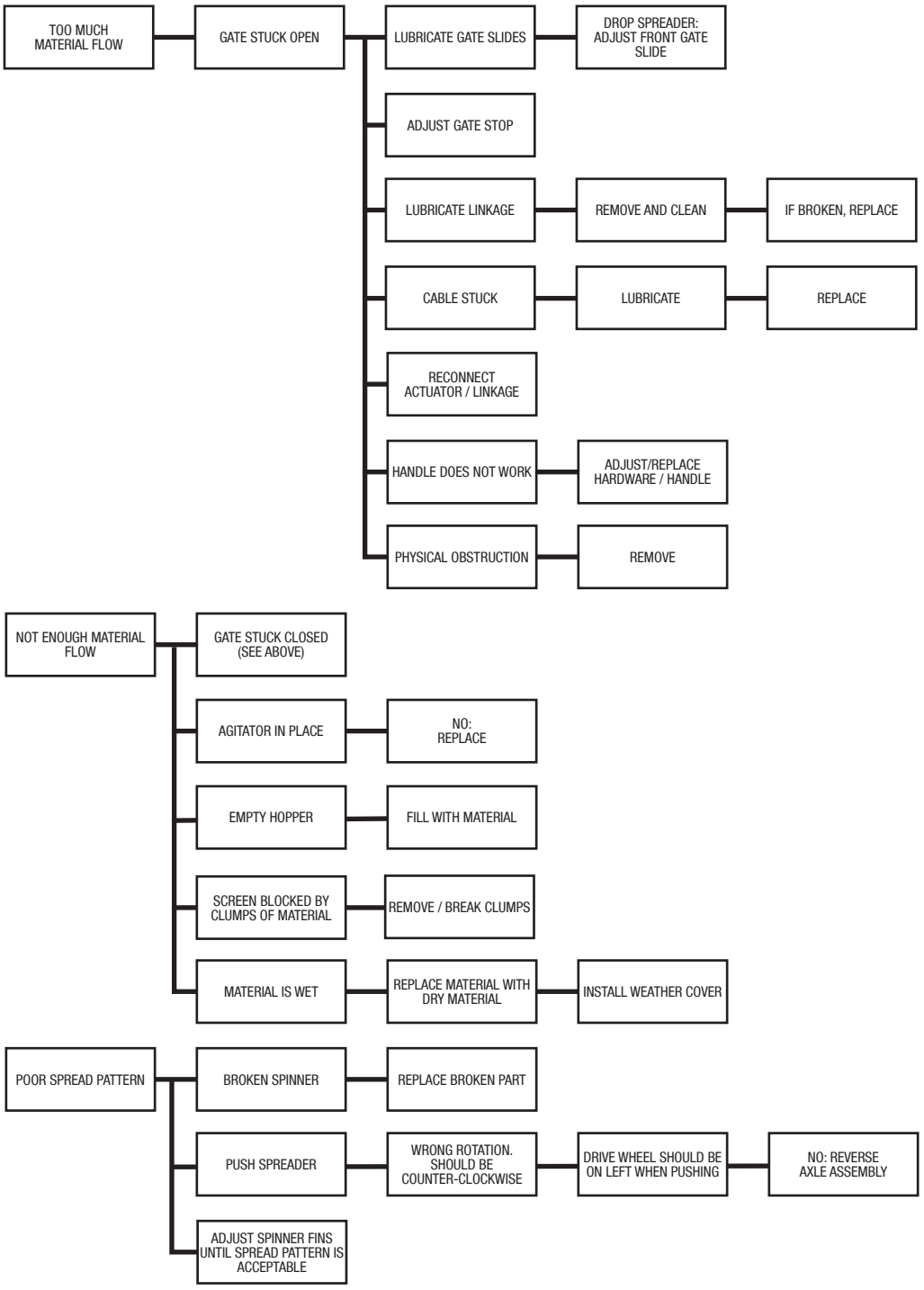
Error Codes (All of these will cause the control to stop.)

- At power-on:
  - Low battery 5 Flashes
  - Motor Short 4 Flashes
- During Operation:
  - Overload 3 Flashes
  - Over-Temp. 2 Flashes

PROBLEM	POSSIBLE CAUSE	SOLUTION
Pump doesn’t run.	Loose electrical connections. Blown fuse. Pump seized.	Check all connections. Replace fuse. Replace pump.
Controller shut down.	Poor electrical connections. Electrical short. Controller failure.	Clean or replace connectors. Use dielectric grease. Check electrical connections. Check for bare wires. Replace controller.
Liquid not spraying.	Empty tank. Full Strainer. Pump not running. Obstructed nozzle.	Fill tank. Clean or replace filter element. Refer to Problem 1. Remove and clean.

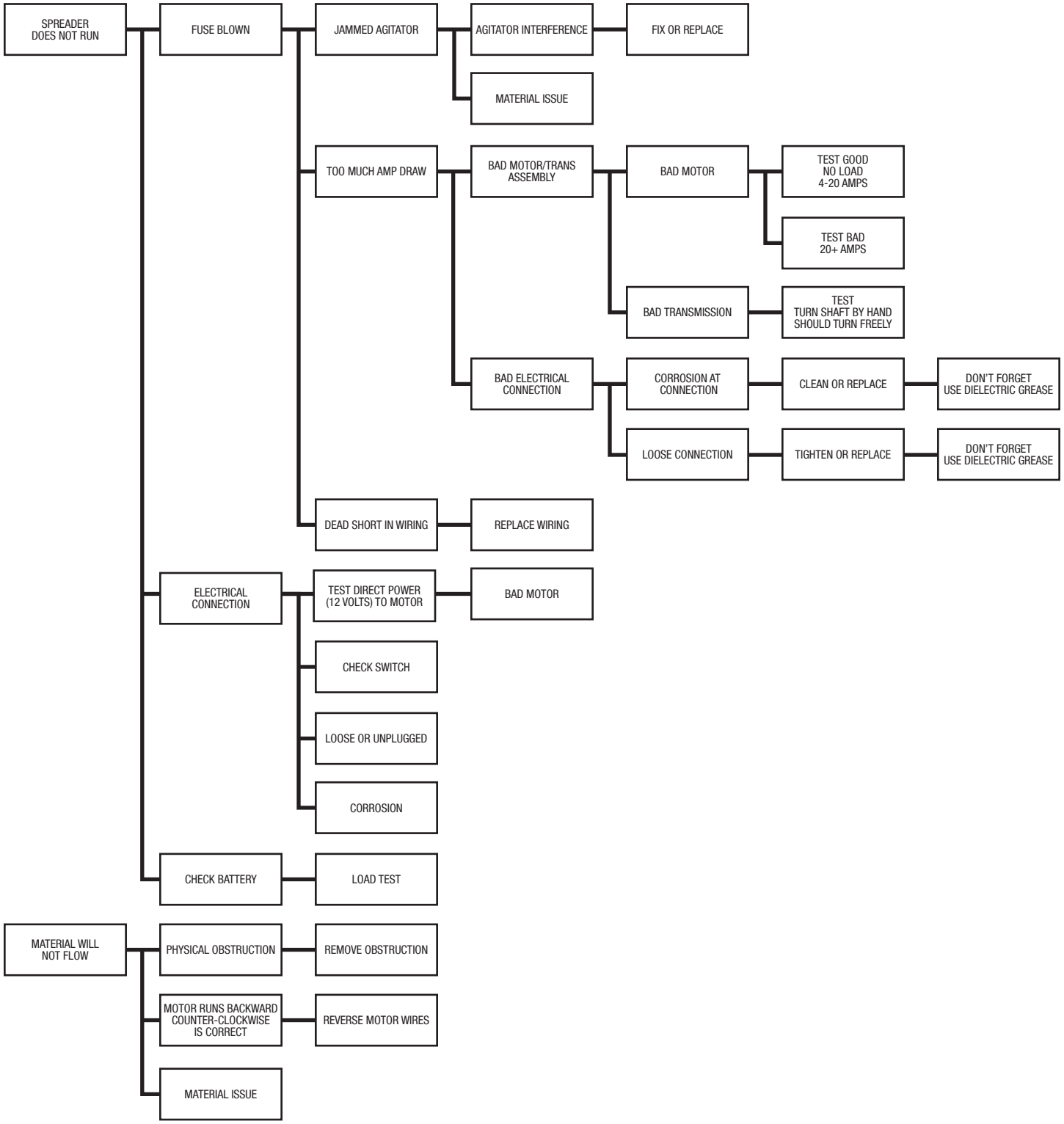
Troubleshooting

SD95 / SP65 / SP85 / TS65 / TS85 / TS95 / TS700GR / TS700P / TS1200P / TS1200GR



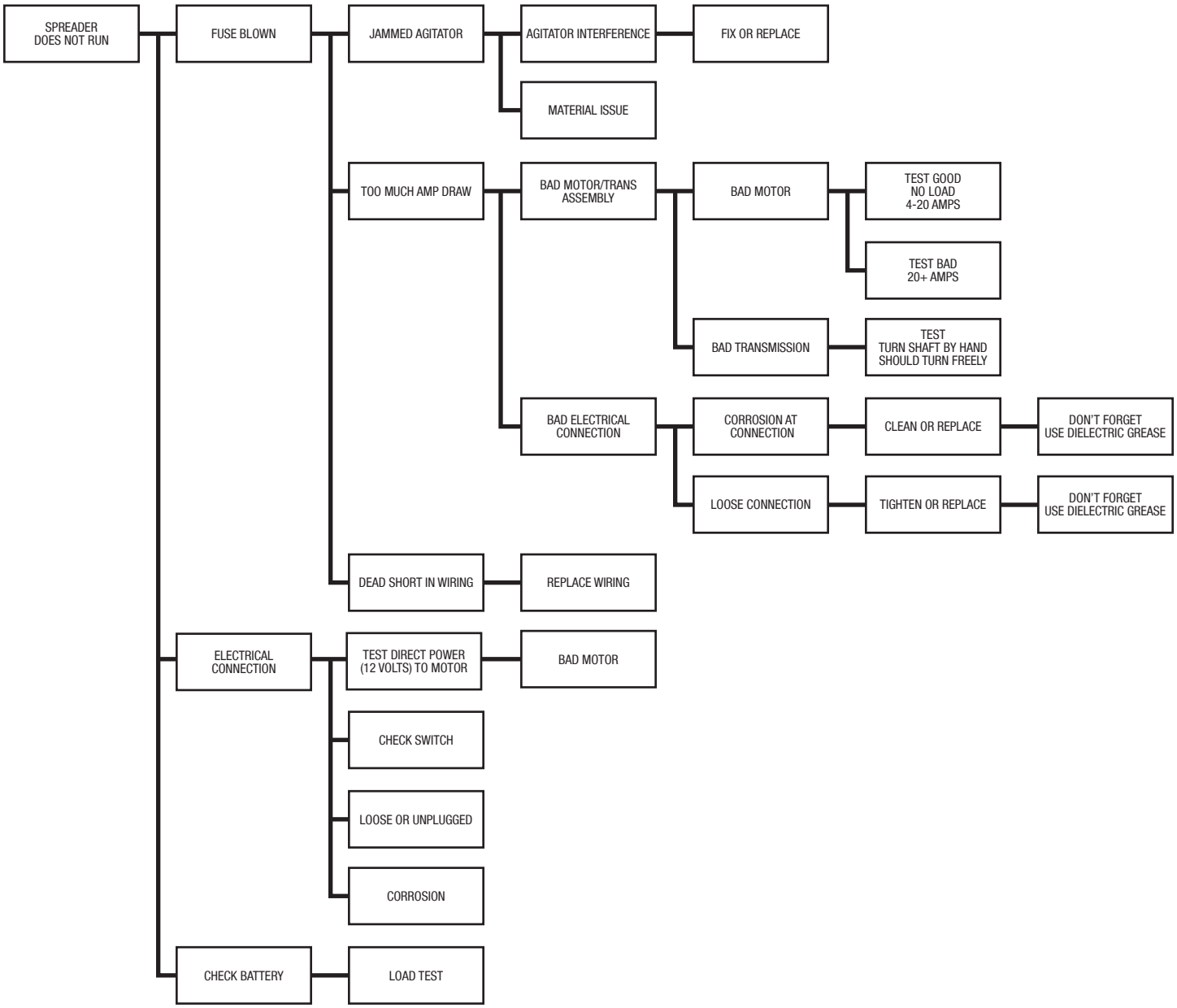
Troubleshooting

SP225 / SP325 / US200

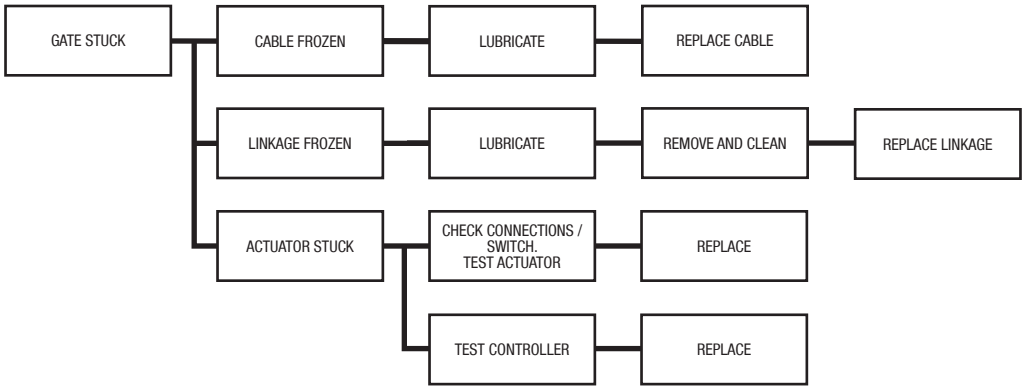


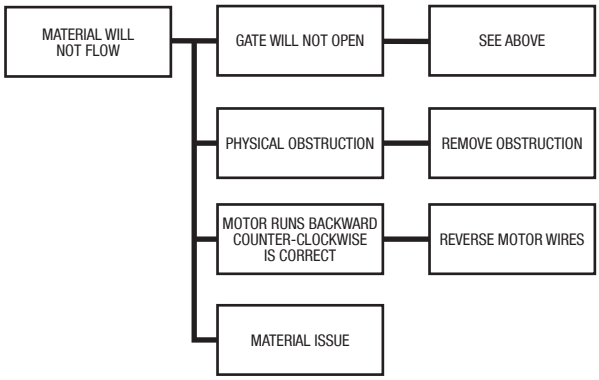
Troubleshooting

SP100 / SP125 / TS300 / TS300EG / TS700E / TS1200E / US100



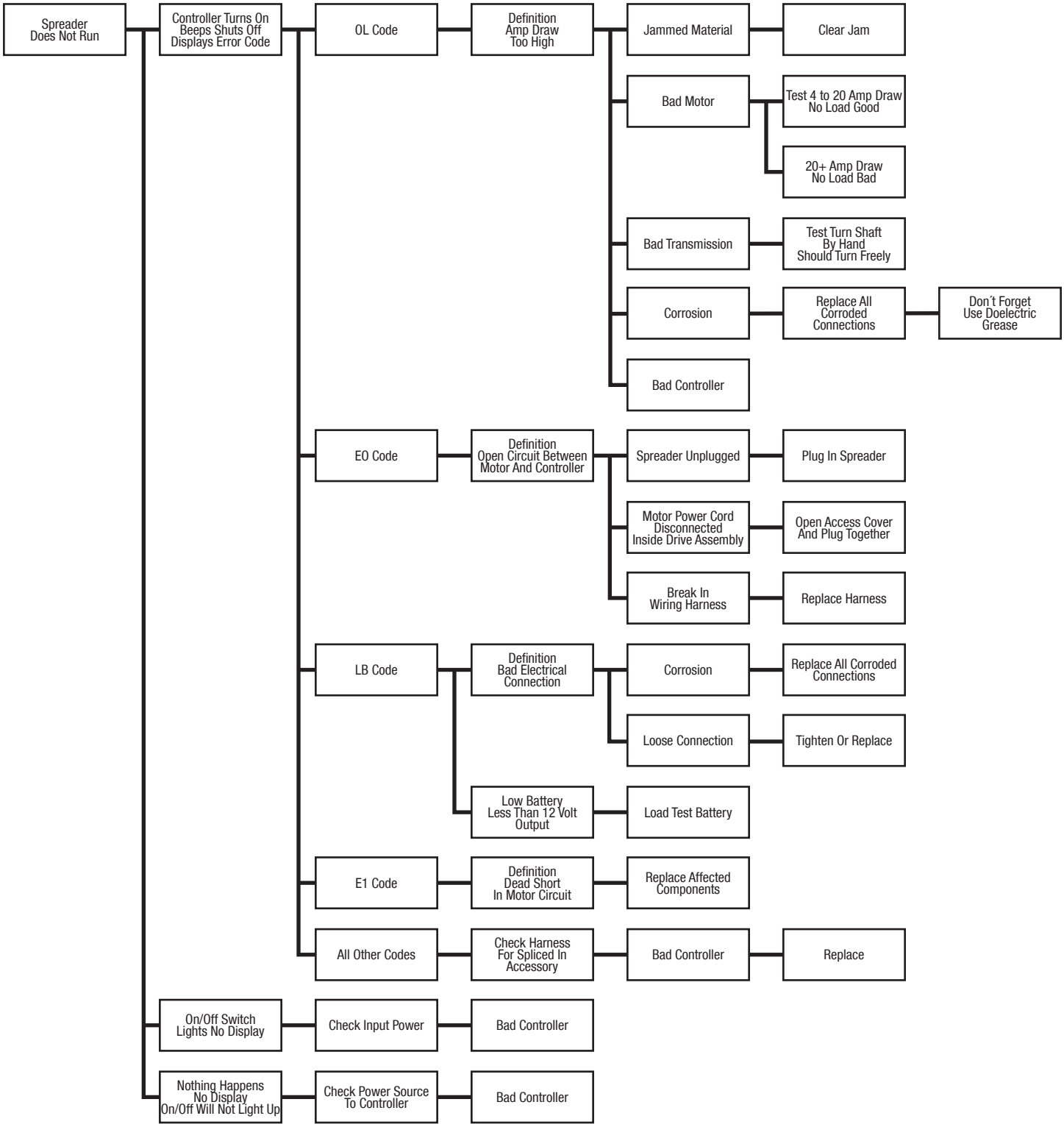
SP100 / SP125 / TS300 / TS300EG / TS700E / TS1200E / US100





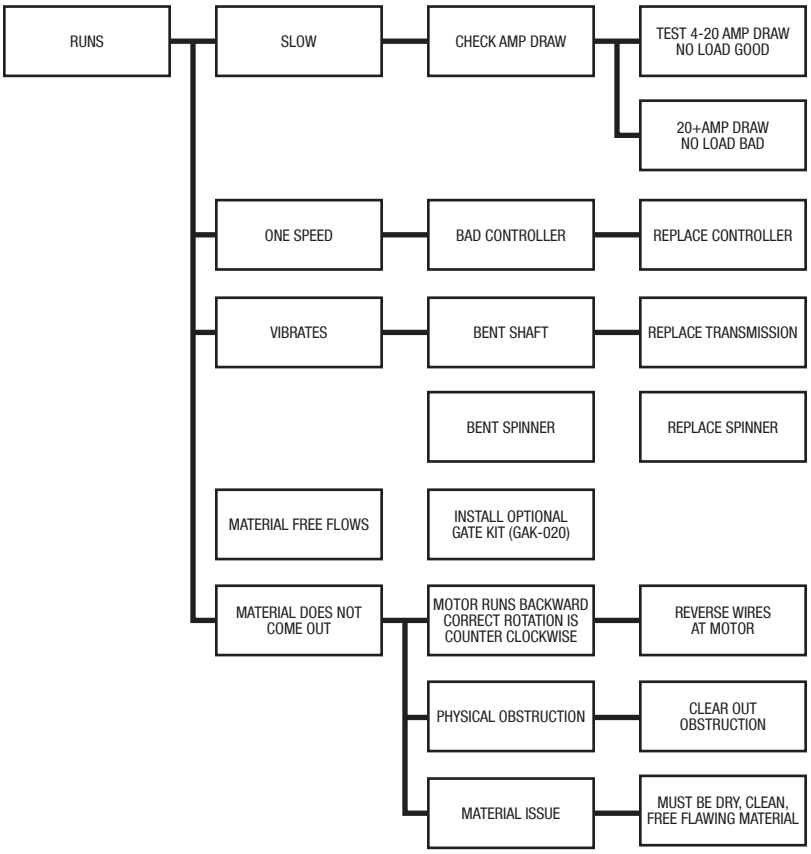
Troubleshooting

SP575 / SP1075 All Sub-Models



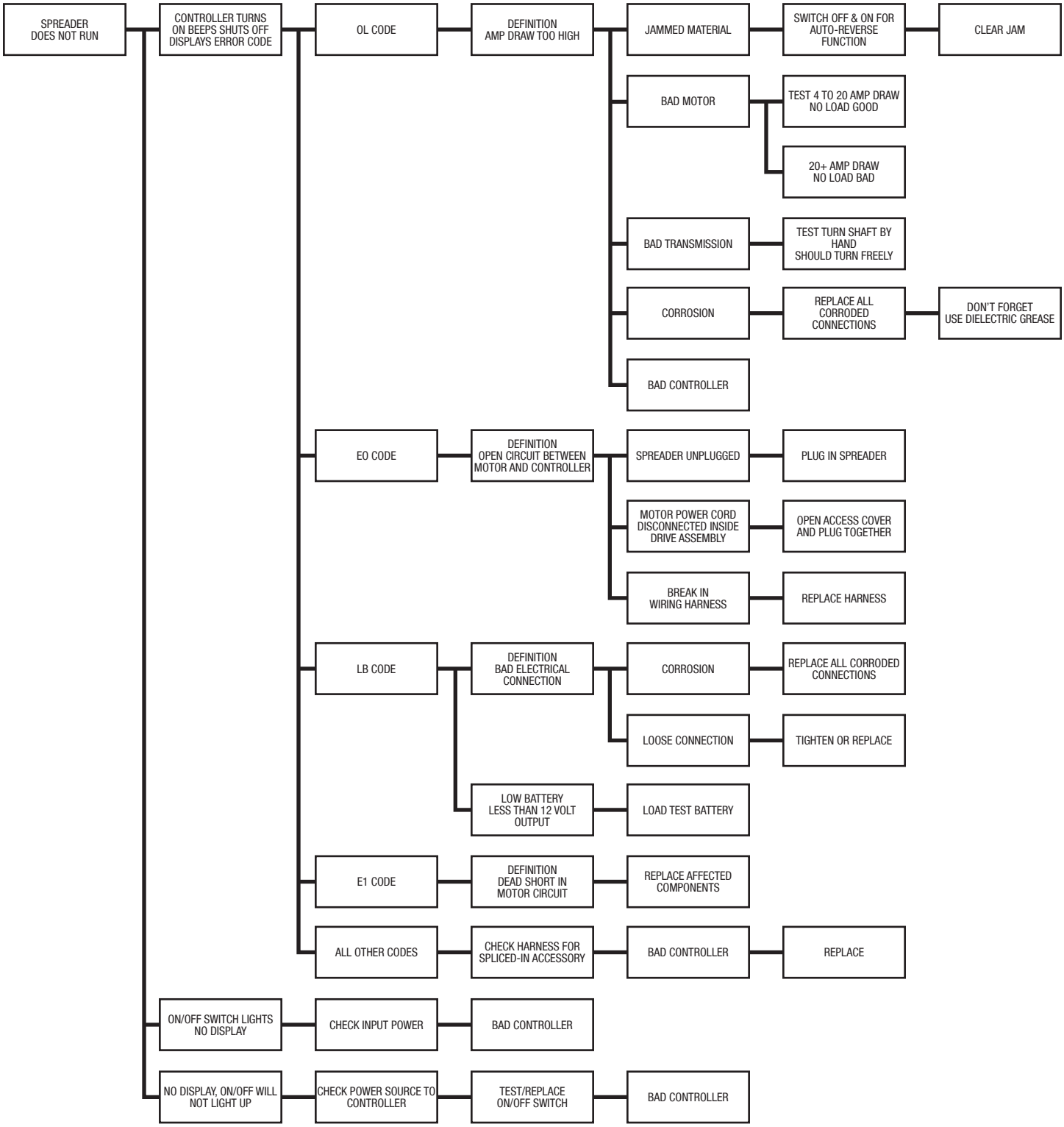
Troubleshooting

SP575 / SP1075 All Sub-Models



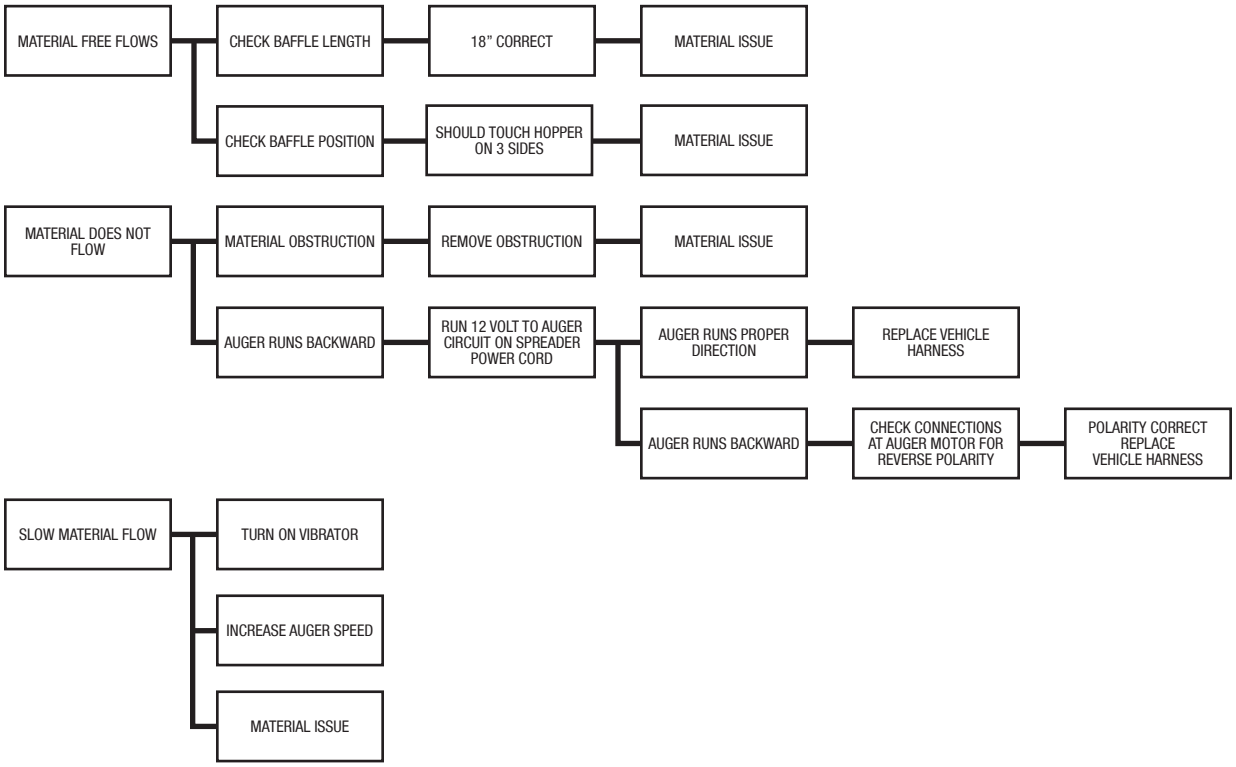
Troubleshooting

MS1875 / MS2000 / SP1575 / SP1875 / SP3000 / SP6000



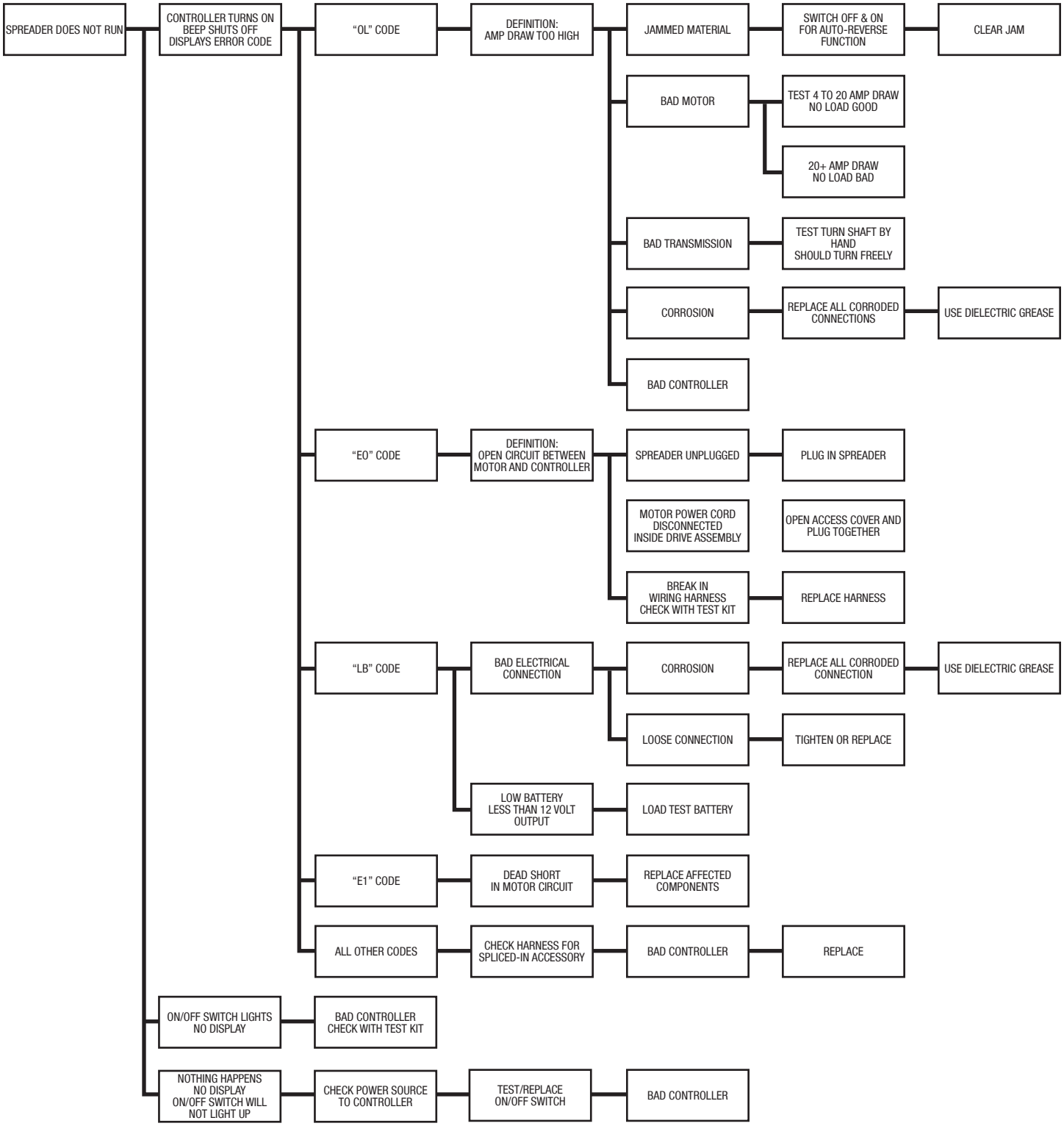
Troubleshooting

MS1875 / MS2000 / SP1575 / SP1875 / SP3000 / SP6000



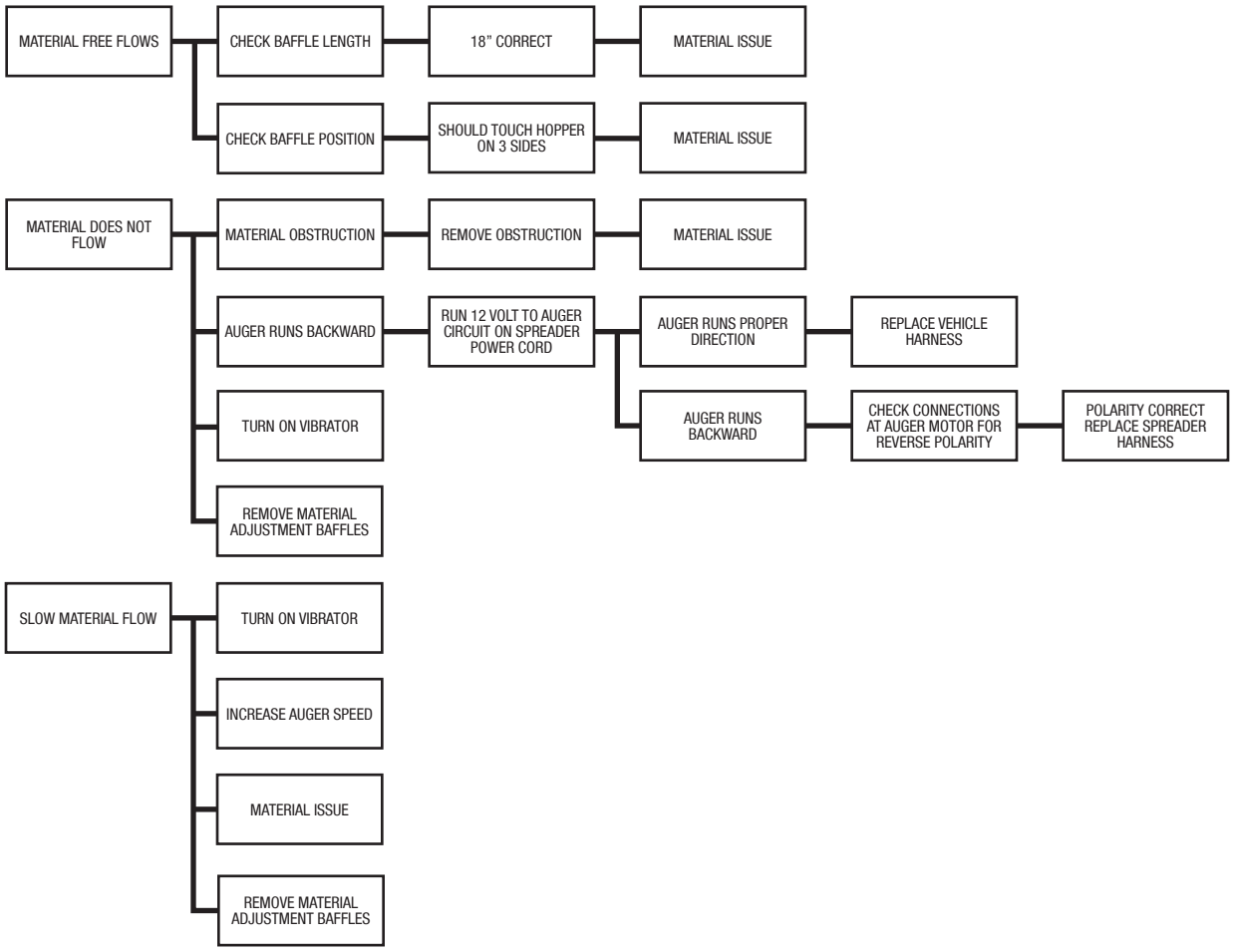
Troubleshooting

Model # SP2200 / SP2400



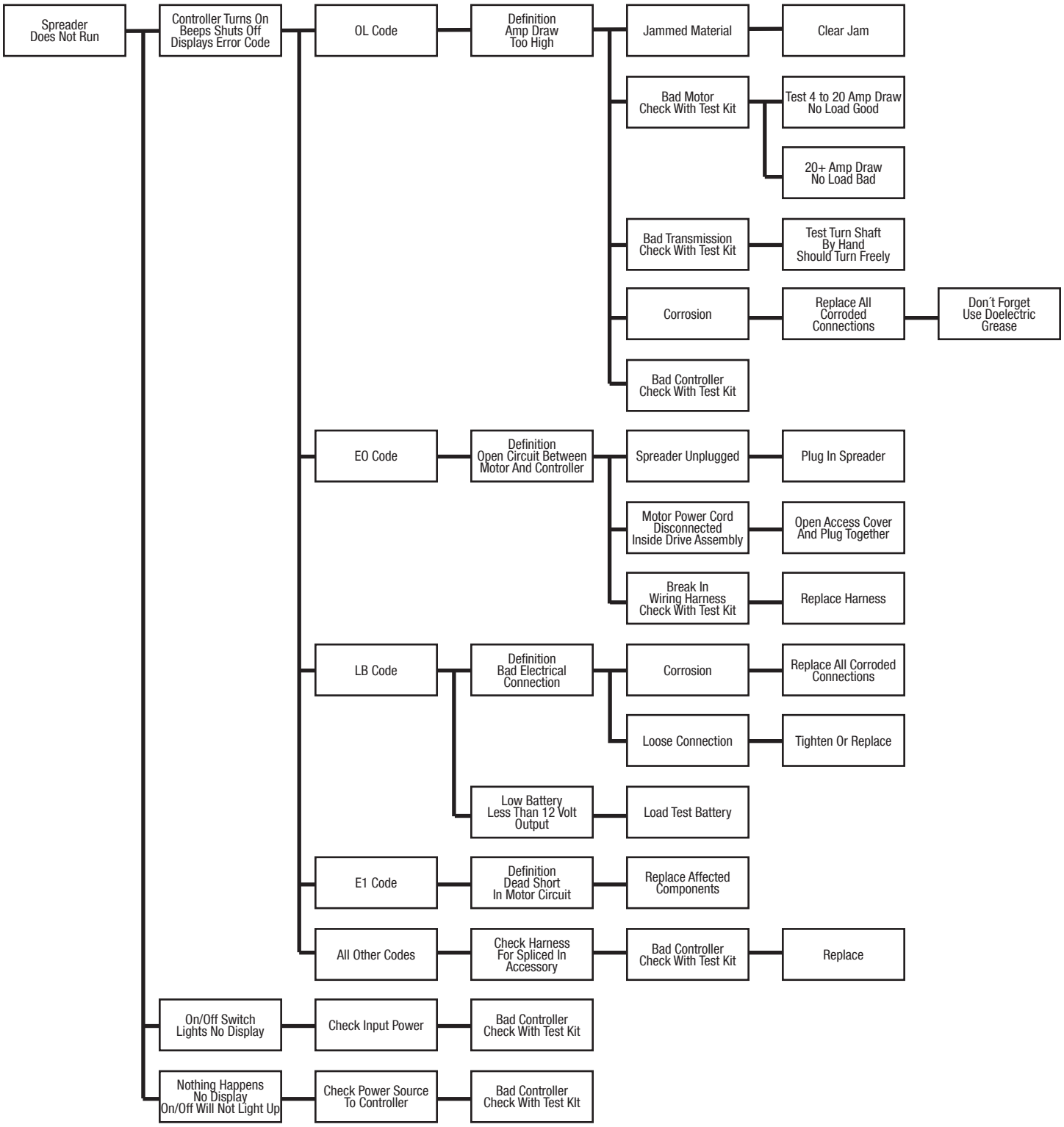
Troubleshooting

Model # SP2200 / SP2400



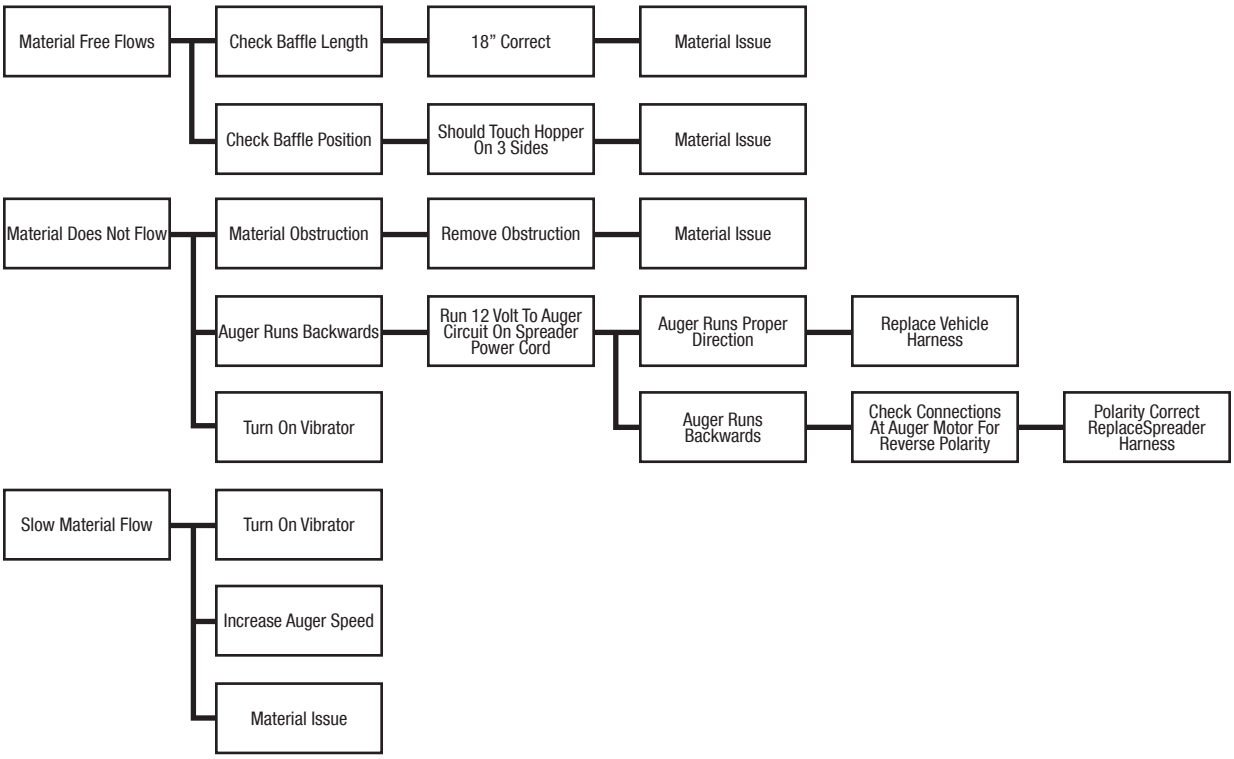
Troubleshooting

Model # SP7500 / SP7550



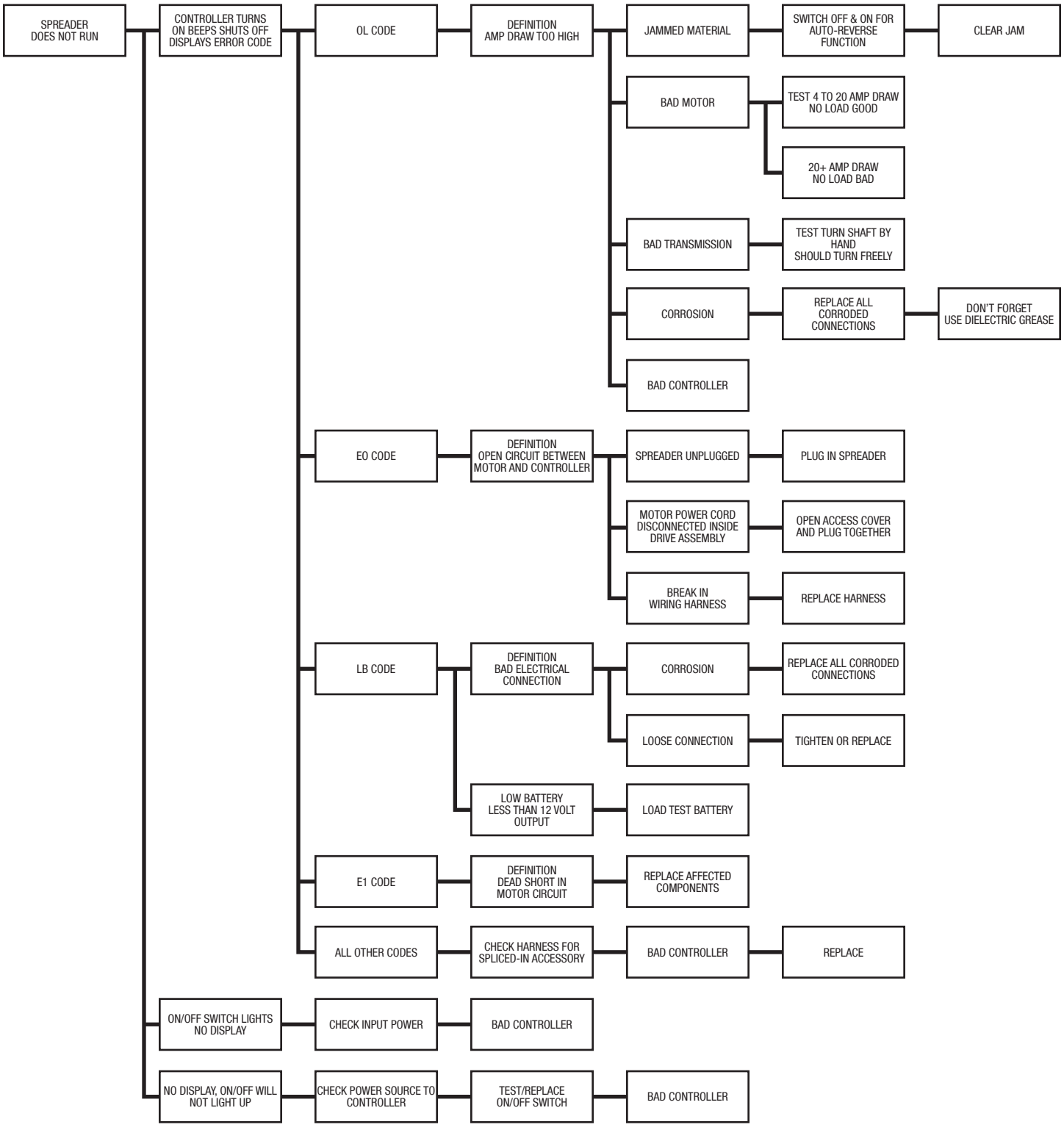
Troubleshooting

Model # SP7500 / SP7550



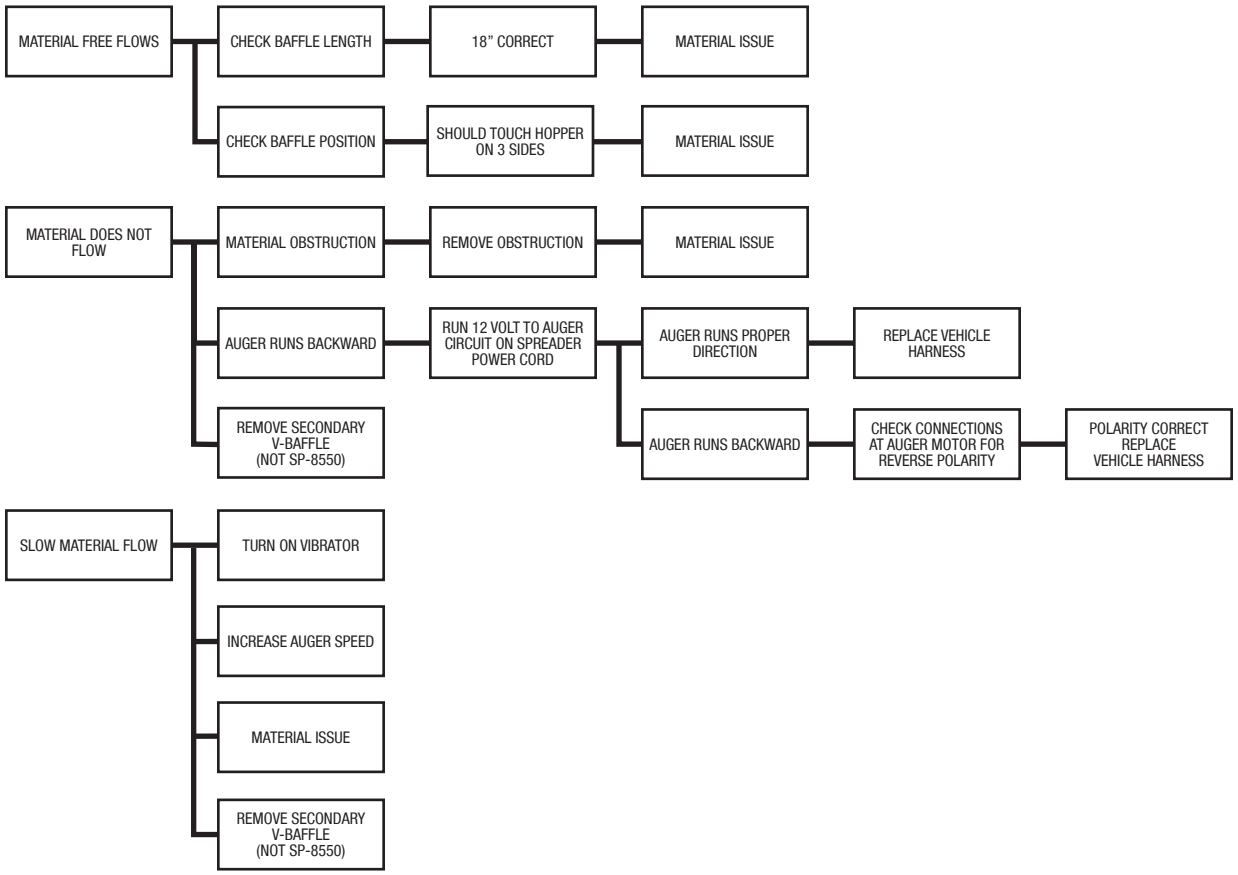
Troubleshooting

Model # SP8500 / SP8550 / SP9300 / SP9500



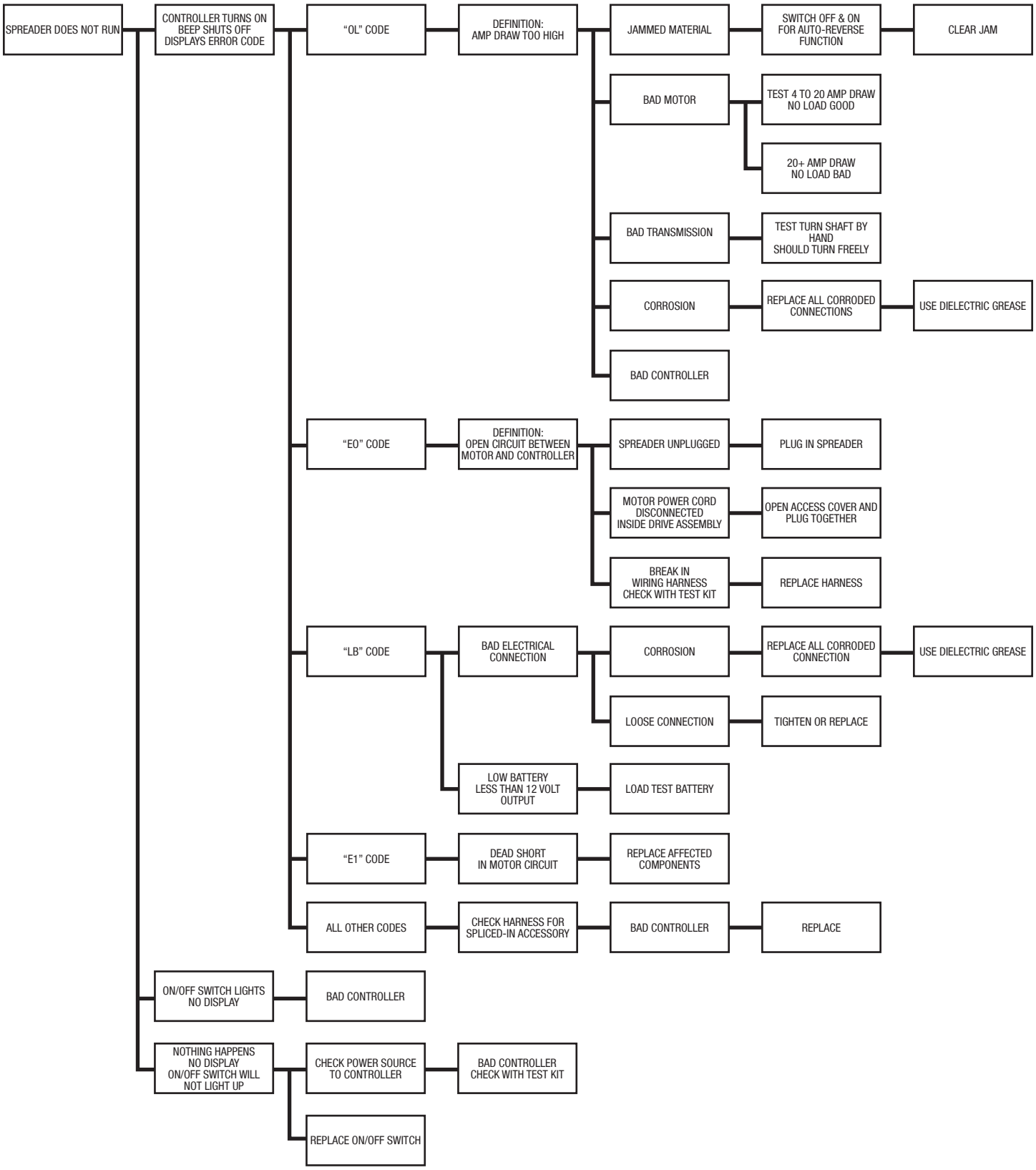
Troubleshooting

Model # SP8500 / SP8550 / SP9300 / SP9500



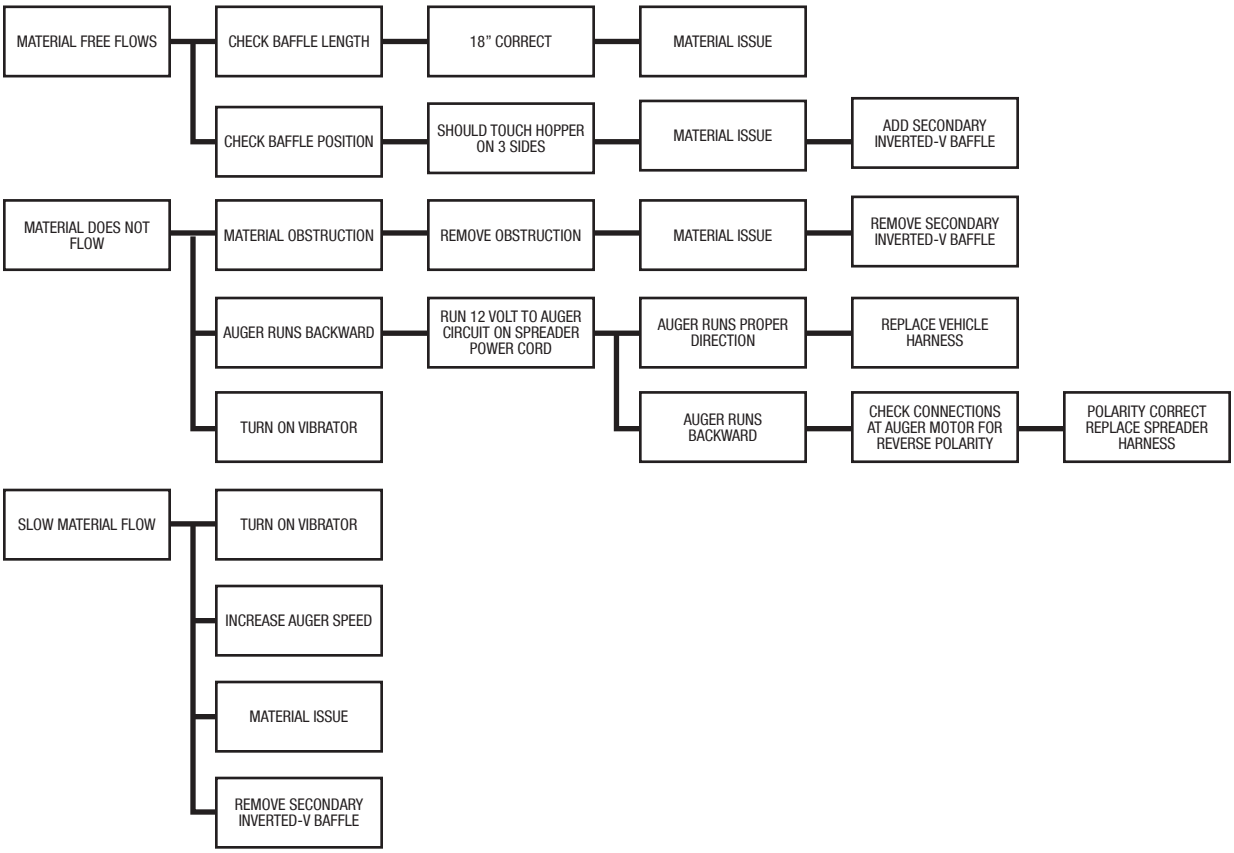
Troubleshooting

Model # SP9300X, SP9500X, SP9800X



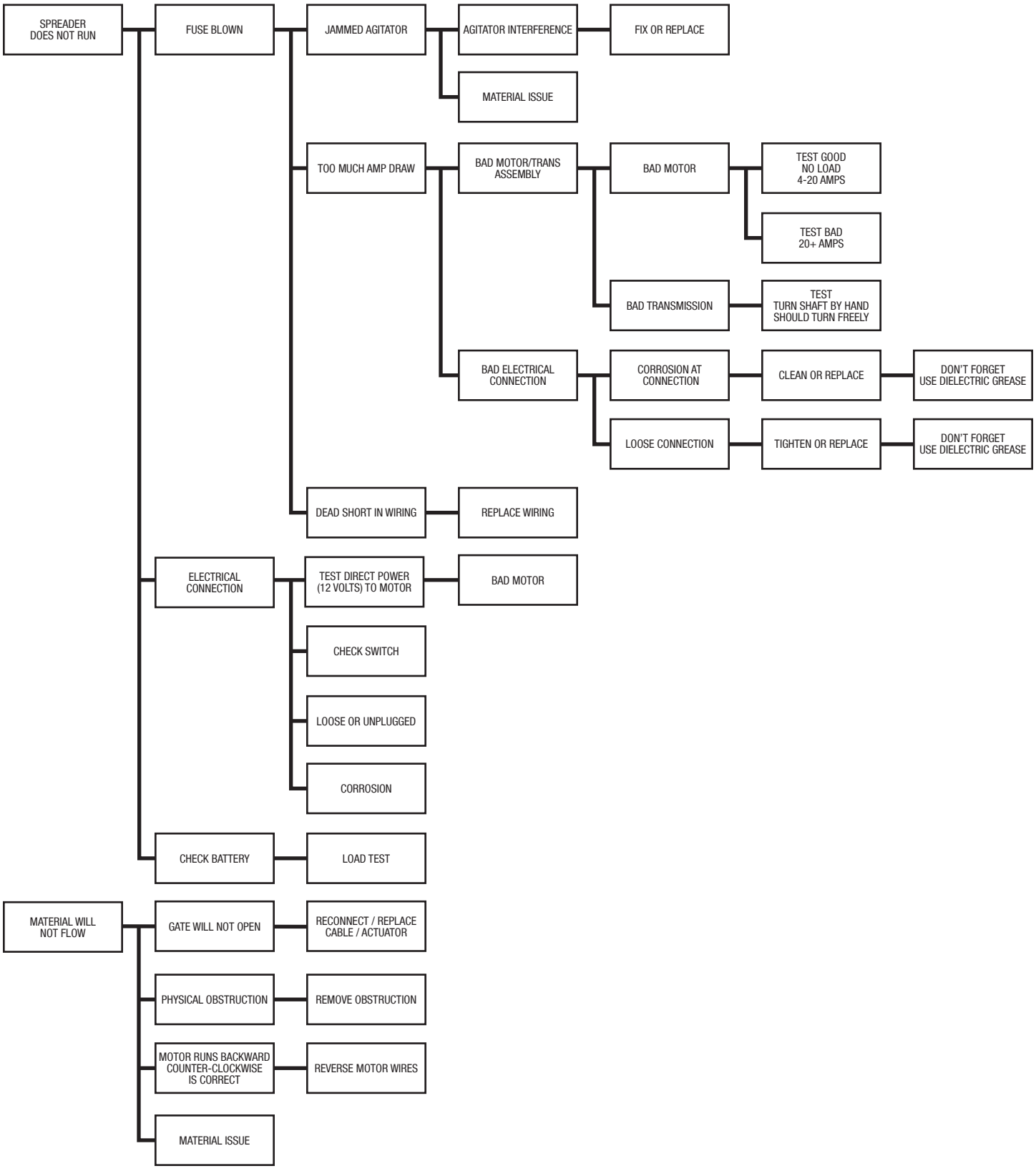
Troubleshooting

Model # SP9300X, SP9500X, SP9800X



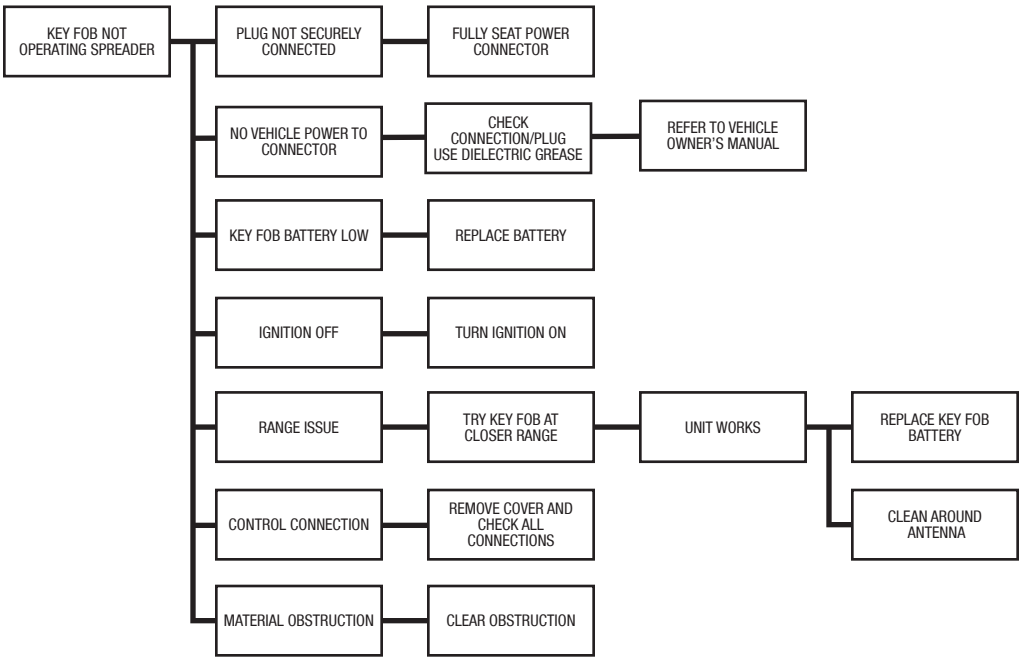
Troubleshooting

Model # SR110 / SR210



Troubleshooting

Model # SR110 / SR210



Notes

Notes

Notice to Dealers:

Effective March 15, 2013 only dealers that purchase and register their upgraded test kit on the website will retain / receive 'Authorized Dealer' status. The Authorized Dealer & Test Kit Registration Form is available under the 'Dealer Login' on the website at www.snowexproducts.com. Those who purchase the test kit upgrade will be reimbursed at their posted shop labor rate for warranty. Dealers who decline will be reimbursed at the standard rate of $50/hour unless otherwise mandated by federal, state or local law.

Upgrade Whip Kits [F50650] include a new serial number that must be pasted on the Test Box over the old serial number.

The Serial Number can be found on the bottom of the Test Box in the left corner.

Warranty Information:

Record your warranty information here for quick reference:

Test Box Model Number: _____

Test Box Serial Number: _____