

**AGFA Division**  
**OMNI KNOWLEDGE DATABASE**  
**FIELD SERVICE BULLETIN**  
**COMPANY CONFIDENTIAL**  
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**PRODUCT:** Avantra 36/44 - FSB73  
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**DATE:** November 6, 1995  
**SUBJECT:** Avantra 36/44 Vacuum System Troubleshooting

**SYMPTOM:**

There has been problems reported from the field of the vacuum system in the Avantra 36/44 not functioning correctly, mainly at 220 volts.

The Usual symptom is the 3A. fuse located on the Transformer Housing Assembly blows when the system is powered up. This of course, will cause the vacuum pump not to operate at all. With the vacuum pump not operating, lifting and bubbling of the media off the Drum is likely.

**SOLUTION:**

The most likely reason for the fuse blowing is the Volt Sensing Relay is not properly adjusted. Since the Vacuum Pump will only operate at 110 volts, a method is needed to automatically detect the incoming line voltage and step it down from 220 volts to 110 volts. The Volt Sensing Relay performs this function (if adjusted correctly).

There also has been several cases of miswires to the transformer that would cause similar problems.

These problems usually don't affect 110 volt systems because if the detection circuit is not functioning correctly, the default condition is to supply line voltage directly to the Vacuum Pump.

Included on the following pages of this FSB is the Volt Sensing Relay Adjustment Procedure, a Vacuum System Interconnect drawing and a brief Vacuum System Troubleshooting guide.

## **VOLT SENSING RELAY** **ADJUSTMENT PROCEDURE**

The Volt Sensing Relay Adjustment Procedure is used to insure that the relay senses the change in line voltage during the appropriate voltage range. This will insure that systems operating at 220 volts will have the vacuum power stepped down from 220v. to 110v., which is required by the Vacuum pump. The alignment is performed as follows:

- 1) Turn the system OFF and unplug. Open the right hand side door (OCP side).
- 2) Locate and remove the Transformer Housing Assy. sheet metal cover in the bottom of the system.
- 3) Locate the Volt Sensing Relay. The relay is white with two adjustment screws on top (one marked "Pickup", the other marked "Dropout") and a green LED.
- 4) Turn both adjustment screws fully counter clockwise (to MIN).
- 5) Plug system back in. While monitoring the green LED on top of the relay, turn system ON. If the operating line voltage is 110 volts the green LED will be **OFF**. If the line voltage is 220 volts the green LED will be **ON**.
- 6) If the vacuum pump still is not operating, continues to blow fuses or the LED is not **ON** at 220 volts, refer to the Vacuum System Troubleshooting guide.

**NOTE:** It is important that the System's power switch is in the "OFF" position prior to plugging the system into the AC power source. This will allow the Volt Sensing Relay to sense the line voltage and switch over before the digital signal turns the Vacuum Pump ON.

# VACUUM SYSTEM

## TROUBLESHOOTING GUIDE

The following guide is designed to aid in troubleshooting the Avantra 36/44 Vacuum System. Figure 1 is a Vacuum System Troubleshooting flowchart that can be used in conjunction with this guide.

- 1) Turn the system ON and allow the boot sequence to complete. Using AVDIAG, choose "Align", then "Primitives". Next select "Vacuum ON". The vacuum pump should be running at this point.
- 2) If the pump is not running at this time, check the Vacuum Pump Fuse. Turn power OFF and unplug system. The fuse holder is located on the outside of the Transformer Housing Assy. (white sheetmetal box) in the bottom of the system. Refer to Figure 2. Check the fuse with an OHM meter, replace if necessary. Also insure that both adjustment screws on the Volt Sensing Relay are turned fully counter clockwise (to "MIN").
- 3) Plug system back in and turn power ON. If fuse continues to blow, turn system OFF, unplug system and disconnect the vacuum pump wires inside the Transformer Housing Assy. (Brown & Blue wires). Install a new fuse, plug system back in and turn power ON. Continue to step 4.
- 4) Using AVDIAG, turn Vacuum ON again with the "Primitive" command as in step 1. Check the AC line going into the Pump Assembly. Using A DVM measure the AC voltage across the following two points:

<i>Pin 2 - Solid State Relay</i>	}	<b>At 110v. ⇔ 110v.</b>
<i>Pin 1 - Volt Sensing Relay</i>		<b>At 220v. ⇔ 110v.</b>

- 5) If the voltage reading is OK, a defective Vacuum Pump is the most likely problem. Replace the Vacuum Pump.
- 6) If the voltage reading is wrong, check the AC coming into the Solid State Relay (SSR). Using A DVM measure the AC voltage across the following two points:

<i>Pin 1 - Solid State Relay</i>	}	<b>At 110v. ⇔ 110v.</b>
<i>Pin 1 - Volt Sensing Relay</i>		<b>At 220v. ⇔ 110v.</b>

- 7) If the voltage reading is wrong skip to step 10. If the voltage reading is OK, check the input side of the Solid State Relay. Using A DVM measure the DC voltage across the following two points:

*Pin 3 - Solid State Relay*  
*Pin 4 - Solid State Relay* } **+24vdc.**

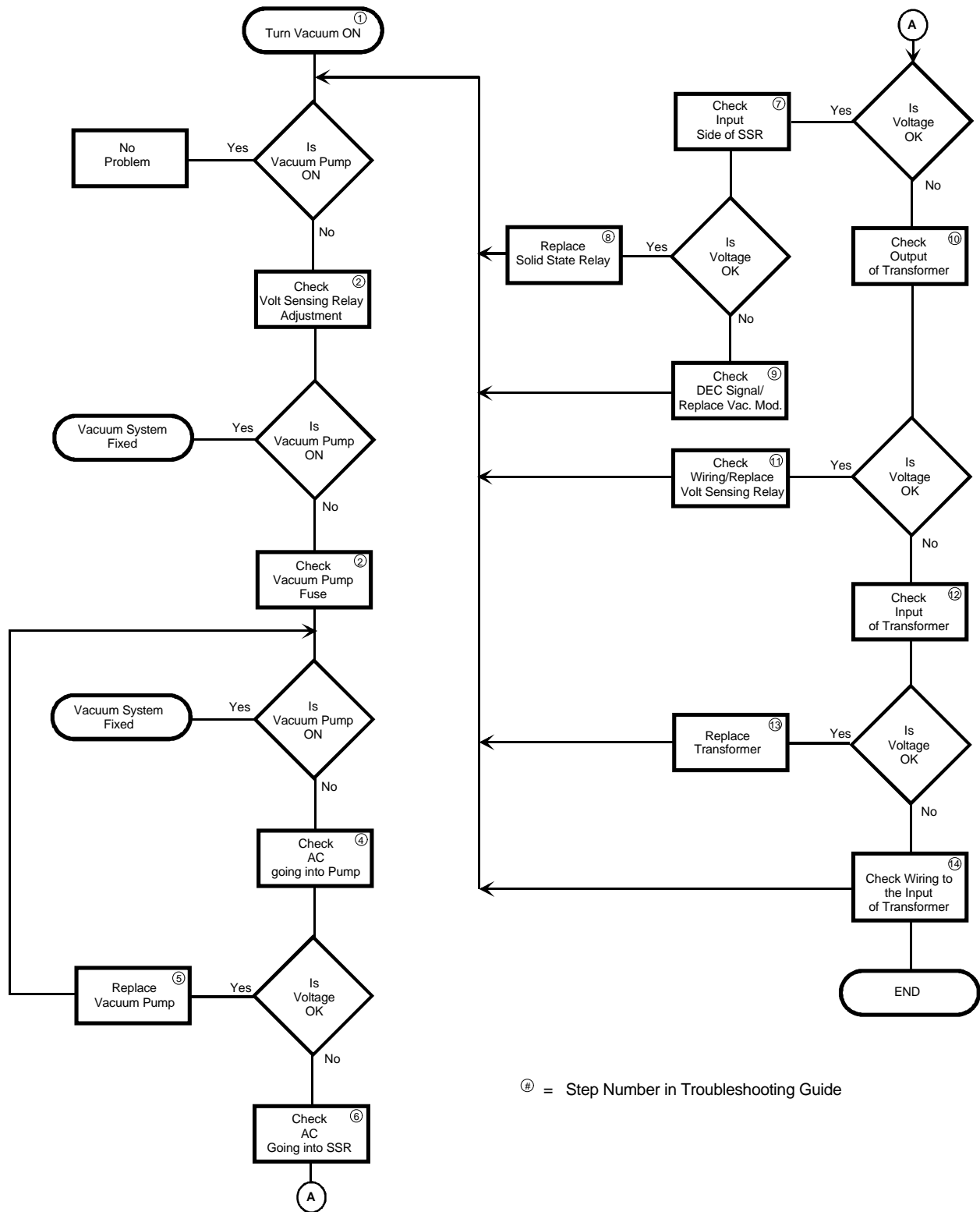
- 8) If the voltage reading is OK, a defective Solid State Relay is the probable cause. Replace the Solid State Relay.
- 9) If the voltage reading is wrong, a defective Vacuum Module PCB. or digital signal from the DEC board problem may exist.
- 10) Check the output of the Transformer. Using A DVM measure the AC voltage across the following two points:

*0v Outside - Orange Conn*  
*115v Outside - Orange Conn* } **At 110v. ⇔ 55v.**  
**At 220v. ⇔ 110v.**

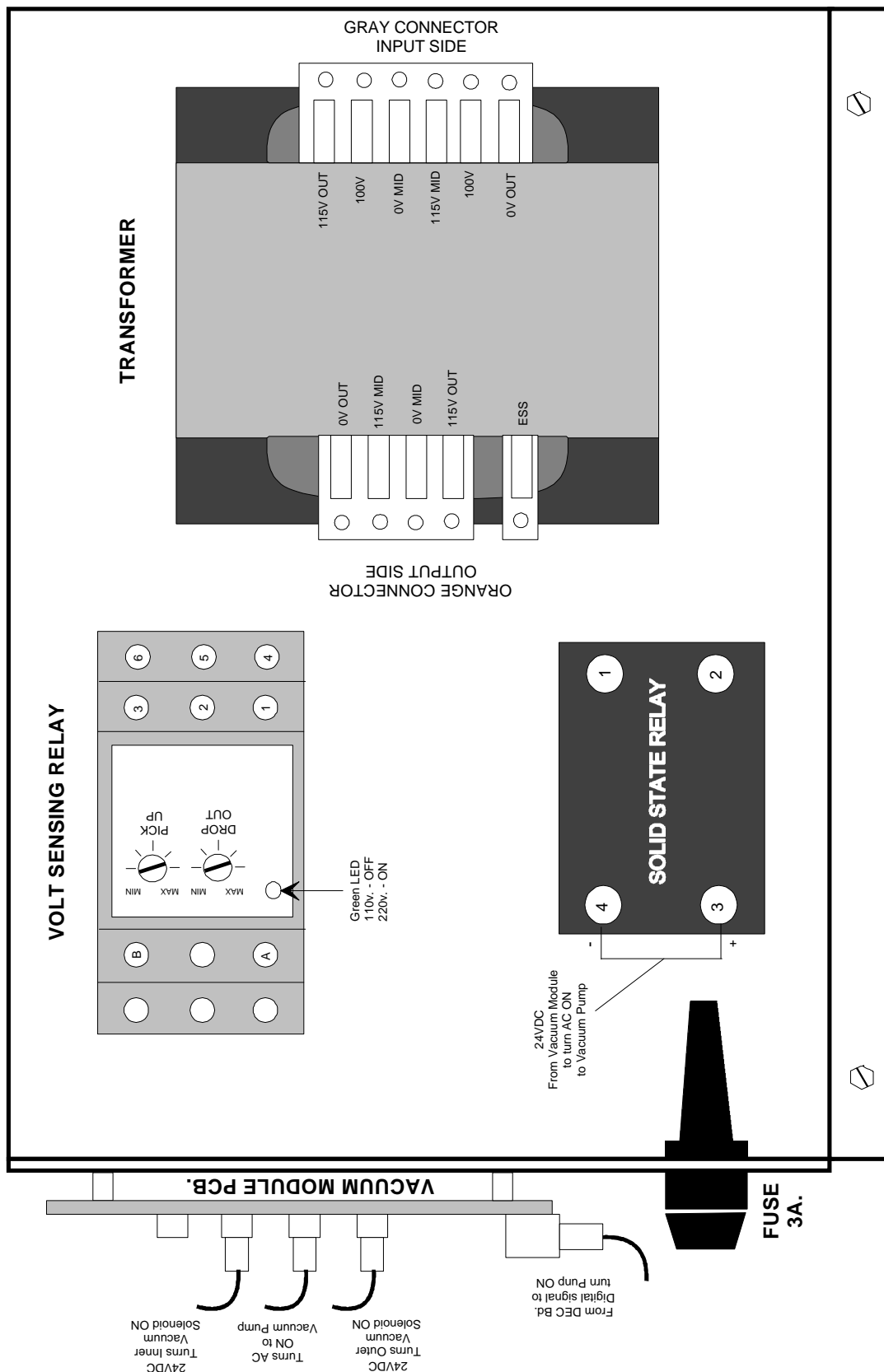
- 11) If the voltage reading is OK, a defective or miswired Volt Sensing Relay is the probable cause. Refer to Figure 3, Vacuum System Interconnect, for correct wiring. Replace the Volt Sensing Relay if wiring is OK.
- 12) If the voltage reading is wrong, check the input of the Transformer. Using A DVM measure the AC voltage across the following two points:

*0v Outside - Gray Conn*  
*115v Outside - Gray Conn* } **At 110v. ⇔ 110v.**  
**At 220v. ⇔ 220v.**

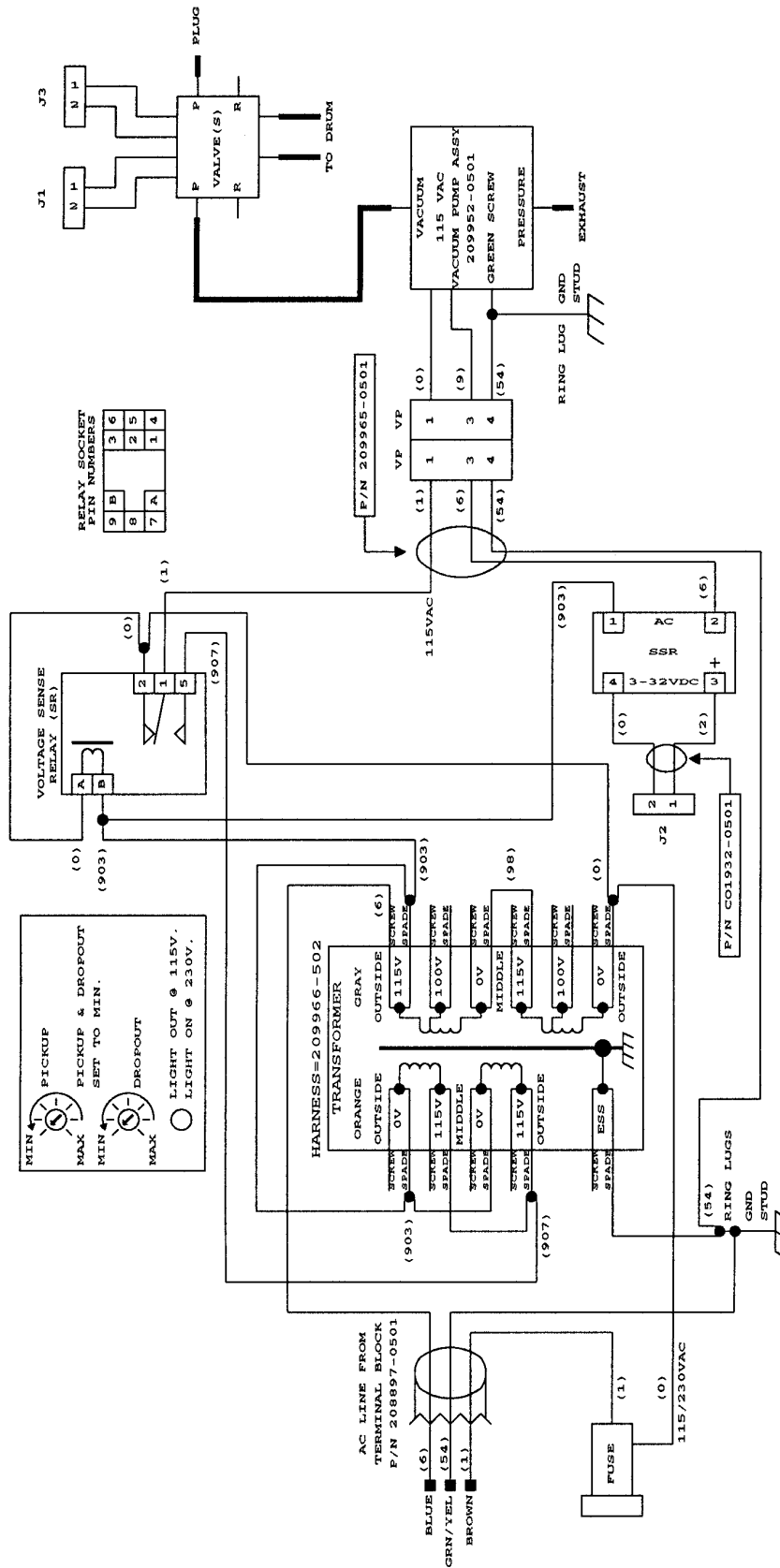
- 13) If the voltage reading is OK, A defective Transformer is the probable cause. Replace the Transformer.
- 14) If the voltage reading is wrong, check the wiring to the Transformer. Refer to Figure 3, Vacuum System Interconnect, for correct wiring.



**FIGURE - 1**  
**VACUUM SYSTEM**  
**TROUBLESHOOTING FLOWCHART**



**FIGURE - 2**  
**TRANSFORMER HOUSING ASSEMBLY**



**FIGURE - 3**  
**VACUUM SYSTEM INTERCONNECT**