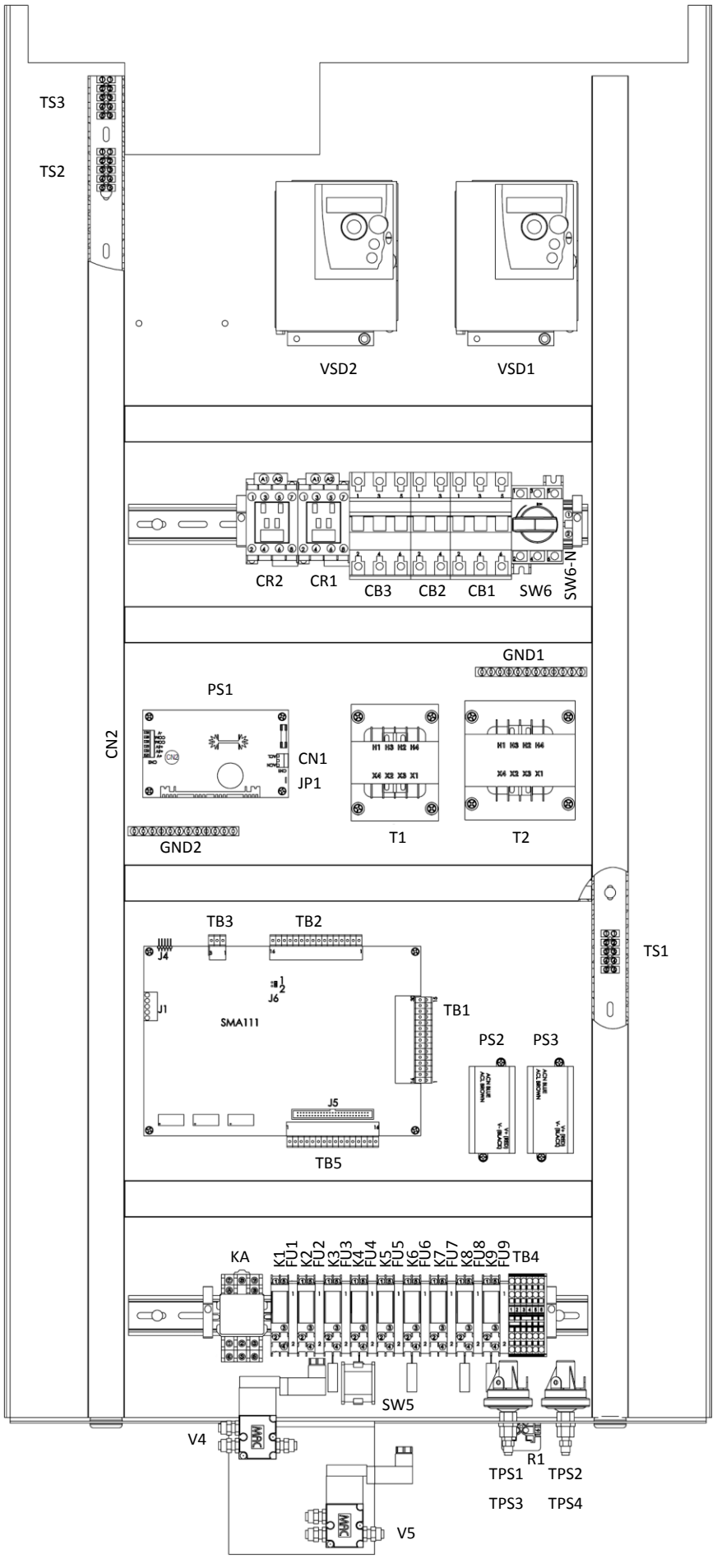

TS3
TS2
VSD2
VSD1
CR2
CR1
CB3
CB2
CB1
SW6
SW6-N
GND1
PS1
CN2
CN1
JP1
T1
T2
GND2
TB3
TB2
J4
J6
J1
SMA111
TB1
PS2
PS3
J5
TB5
TS1
KA
K1
FU1
K2
FU2
K3
FU3
K4
FU4
K5
FU5
K6
FU6
K7
FU7
K8
FU8
K9
FU9
TB4
SW5
V4
R1
TPS1
TPS2
TPS3
TPS4
V5

Is there an Alarm Relay alarm?

YES → The alarm relay feedback signal does not agree with relay's current state.
- Check feedback wires from KA-4 and KA-7.
- Silence alarms to clear this alarm.

NO ↓

Turn on bypass switch inside console. Is LED E1 on SMA111 board lit?

NO →
- Replace faulty bypass switch.
- Replace SMA111 circuit board.

YES ↓

Is amber bypass light on console door lit?

NO →
- Follow Status Lights troubleshooting chart.

YES ↓

Turn off bypass switch inside console and on main screen. Is LED E1 on SMA111 board lit?

YES →
- Replace faulty bypass switch.
- Replace SMA111 circuit board.

NO ↓

Silence alarms so that alarm relay status indicator is not visible on the screen. Measure DC voltage across KA-B (+) and KA-A (-). Is voltage approximately 12 VDC?

NO →
- Replace U26 driver chip on SMA111 with PT1041.
- Replace SMA111 circuit board.

YES ↓

Is alarm relay KA coil activated?

NO →
- Replace alarm relay.

YES ↓

Create an audible alarm so that status indicator is visible on main screen. Measure DC voltage across KA-B (+) and KA-A (-). Is voltage approximately 12 VDC?

YES →
- Replace U26 driver chip on SMA111 with PT1041.
- Replace SMA111 circuit board.

NO ↓

Is LED E6 on SMA111 board lit?

YES →
- Check if alarm relay stuck in on position. Replace.
- Replace SMA111 circuit board.

NO ↓

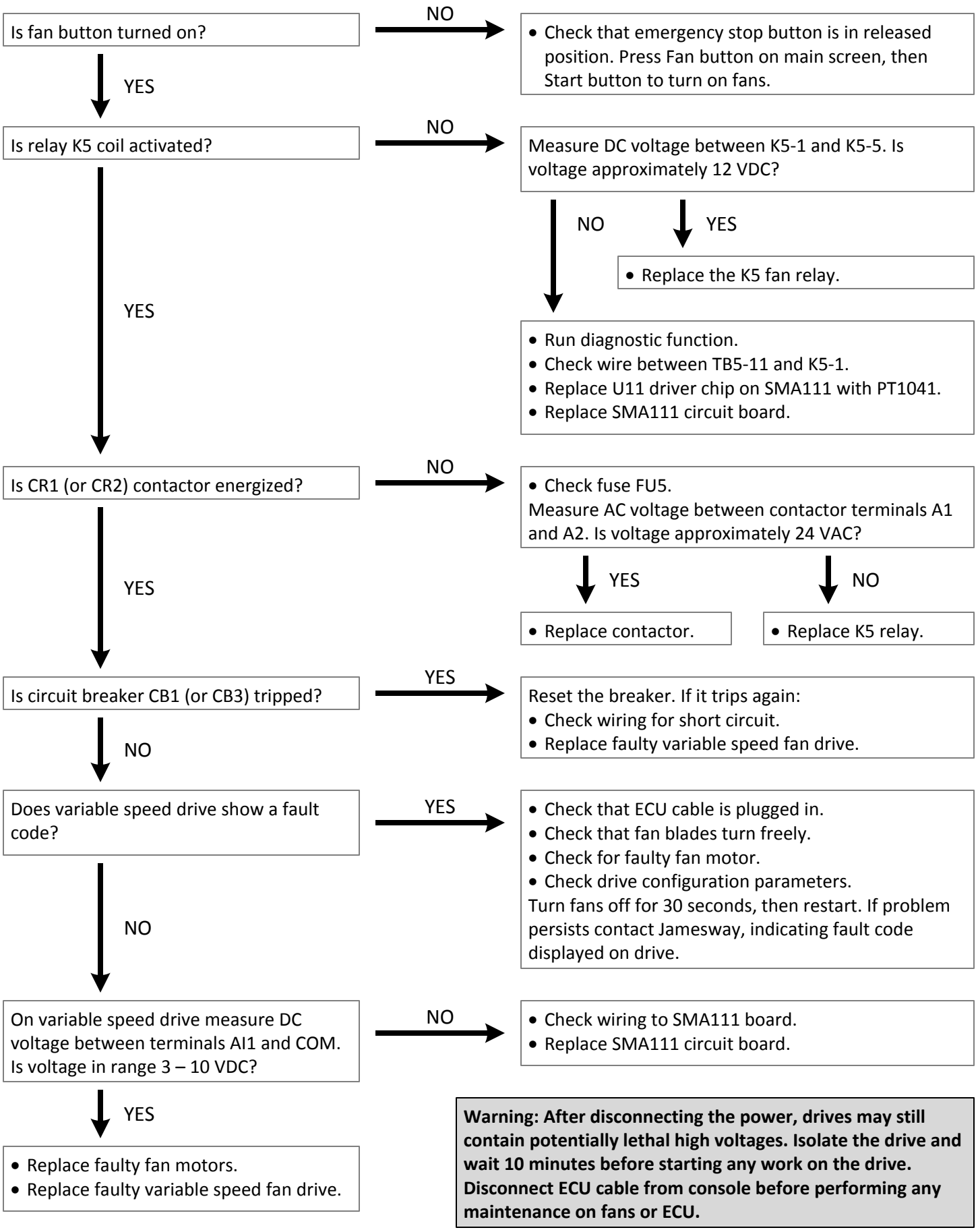
Silence alarms again. Is LED E6 on SMA111 board lit?

NO →
- Check relay feedback wiring.
- Replace SMA111 circuit board.

YES ↓

Alarm relay system is working normally.
- Check external alarm system wiring for possible faults.

Fans Do Not Turn On



Warning: After disconnecting the power, drives may still contain potentially lethal high voltages. Isolate the drive and wait 10 minutes before starting any work on the drive. Disconnect ECU cable from console before performing any maintenance on fans or ECU.

Is only one fan motor not running?

YES → Thermal overload may have been triggered.
- Let motor cool down and check that fan rotates freely.
- Check that all three phase wires are connected.
- Replace motor if necessary.

NO ↓

Are two or more fan motors not running?

YES → • Follow Fans Do Not Turn On troubleshooting chart.

NO ↓

On variable speed drive measure DC voltage between terminals AOV and COM. Is voltage above 4.0 VDC?

YES →
- Check that fan motors are turning freely.
- Use a clamp current meter to check for excessive current flowing to motor. Replace motor if necessary.
- Replace variable speed fan drive.

NO ↓

On variable speed drive measure DC voltage between terminals AOV and COM. Is voltage above 1.5 VDC?

YES → • Recalibrate fan currents in alarm setup screen.

NO ↓

Is jumper J6 on SMA111 circuit board on pins 1 and 2?

NO →
- Move J6 jumper to pins 1 and 2.
- Recalibrate fan currents in alarm setup screen.

YES ↓

Temporarily disconnect wires from SMA111 board TB2-15 and TB2-16. On variable speed drive measure DC voltage again between terminals AOV and COM. Is voltage in range 1.5 – 4.0 VDC?

YES → • Replace SMA111 circuit board.

NO ↓

- Replace variable speed fan drive.

Is there a sensor failure alarm?

YES

- Run diagnostics. Look up the analog and novram error codes in display user manual to determine cause.
- Replace temperature sensor.
- Replace SMA111 circuit board.

NO

Is hot water flowing continuously in heat exchanger? (Screen shows heating is off)

YES

Is relay K3 (or K8) coil activated?

YES

Measure DC voltage between K3-1 and K3-5. Is voltage approximately 12 VDC?

YES

- Replace U11 (or U9) driver chip on SMA111 with PT1041.
- Replace SMA111 circuit board.

NO

- Replace K3 (or K8) relay.

NO

- Check for trapped debris inside hot water valve. If diaphragm or plunger is damaged, use kit to repair.

NO

Is **cold** water flowing even though screen indicates cooling is off?

YES

- Check for debris inside cold water valve.
- Follow Cooling Not Working troubleshooting chart.

NO

Is relay K3 (or K8) coil activated? (Screen shows heating is on)

NO

- Check wire between TB5-14 and K3-1 (or TB5-6 and K8-1)
- Run diagnostics.
- Replace relay K3 (or K8).
- Replace SMA111 circuit board.

YES

Measure AC voltage between FU3-1 (or FU8-1) and TB4-1. Is voltage approximately 24 VAC?

YES

- Replace the valve coil.

NO

- Check fuse FU3 (or FU8).
- Replace relay K3 (or K8)

Notes:

1. If there is a temperature sensor failure, cooling runs continuously and heating will not turn on.
2. Heating is based on PID algorithm, point where it turns on is not fixed. Heating may even turn on when actual temperature is higher than the setpoint.
3. When setpoint is below 85 °F (29.4 °C) the high temperature alarm will sound only if actual rises above this threshold.

Cooling Not Working

Is there a sensor failure alarm?

YES →
- Run diagnostics. Look up the analog and novram error codes in display user manual to determine cause.
- Replace temperature sensor.
- Replace SMA111 circuit board.

NO ↓

Is cold water flowing continuously in heat exchanger? (Screen shows cooling is off)

YES →

Is relay K4 (or K9) coil activated?

YES ↓

Measure DC voltage between K4-1 and K4-5. Is voltage approximately 12 VDC?

YES ↓

- Replace U11 (or U9) driver chip on SMA111 with PT1041.
- Replace SMA111 circuit board.

NO ↓

- Replace K4 (or K9) relay.

NO ↓

Is **hot** water flowing even though screen indicates heating is off?

YES →
- Check for debris inside hot water valve.
- Follow Heating Not Working troubleshooting chart.

NO ↓

Is relay K4 (or K9) coil activated? (Screen shows cooling is on)

NO →
- Check wire between TB5-13 and K4-1 (or TB5-5 and K9-1)
- Run diagnostics.
- Replace relay K4 (or K9).
- Replace SMA111 circuit board.

YES ↓

Measure AC voltage between FU4-1 (or FU9-1) and TB4-1. Is voltage approximately 24 VAC?

YES →
- Replace the valve coil.

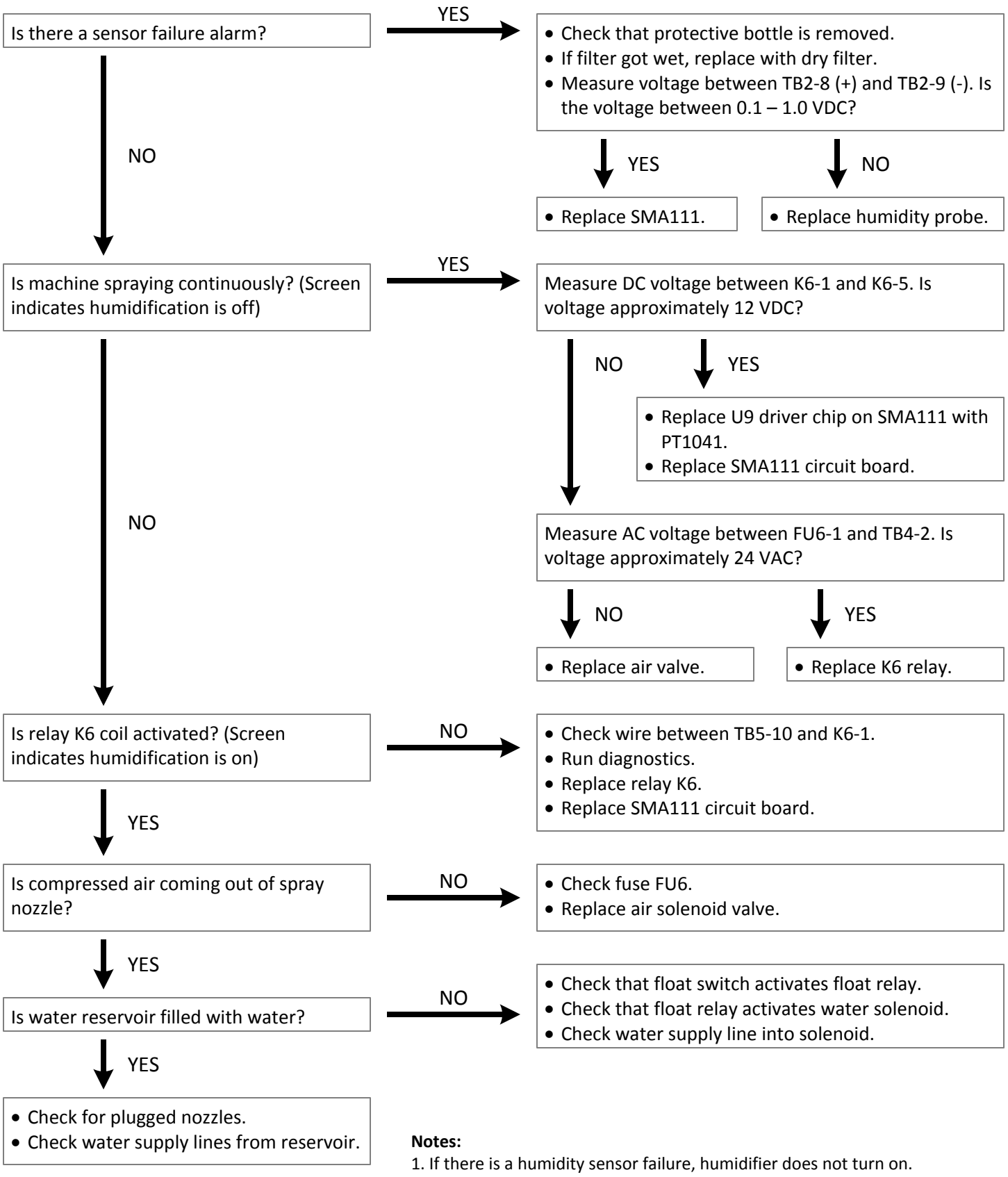
NO ↓

- Check fuse FU4 (or FU9).
- Replace relay K4 (or K9)

Notes:

1. If there is a temperature sensor failure, cooling stays on until the problem is resolved.
2. Cooling is based on PID algorithm, point where it turns on is not fixed. Cooling may even turn on when actual temperature is lower than the setpoint.

Humidification Not Working



Notes:

1. If there is a humidity sensor failure, humidifier does not turn on.
2. If there is a low temperature condition, humidifier does not turn on.
3. Humidifier does not turn on for five minutes after dehumidification cycle.
4. Humidifier turns on only after the day in cycle programmed in the Humidity Setup screen, unless it is disabled in profile step.
5. Hatchers do not show a high humidity alarm until actual is 15% RH above setpoint during hatching.
6. Sensor filter getting wet causes temporary sensor failure, which may take many hours to dry out and clear.
7. High humidity alarm is disabled when the damper setpoint is 0.

Carbon Dioxide Sensor Not Working

Is protective cap installed on sensor?
- YES → • Remove the cap.
- NO ↓

Was the sensor improperly calibrated? For example was the sensor accidentally calibrated on ambient air?
- YES → • Use the reset calibration function to return the zero and/or span calibration to factory settings. If the readings return to normal, recalibrate sensor.
- NO ↓

Is there a carbon dioxide sensor alarm?
- YES → A carbon dioxide setpoint is active but there is no signal from the sensor.
  • Enter a fixed damper setpoint and continue troubleshooting.
- NO ↓

Is there a high carbon dioxide alarm?
- YES → • Check that damper intake and exhaust are operating correctly.
  • Check for proper room and plenum pressures.
  • Increase damper opening to reduce carbon dioxide level.
- NO ↓

Measure DC voltage across terminals TB4-6 (+) and TB4-4 (-). Is voltage approximately 24 VDC?
- NO → • Replace 24 VDC power supply PS3.
- YES ↓

Measure DC voltage across terminals TB2-11 (+) and TB2-12 (-). Is voltage in range 0.05 – 3.00 VDC?
- NO → • Replace the carbon dioxide sensor.
- YES ↓

- If calibration gas is available, inject 5000 ppm span gas. Is voltage across TB2-11 and TB2-12 approximately 0.833 VDC?
- If gas is not available, multiply voltage across TB2-11 and TB2-12 by 6000. Is this number within +/- 500 ppm of CO2 test instrument?

NO →
- Check filter elements on sensor, cleaning or replacing if necessary.
- Replace carbon dioxide sensor.

YES ↓

Reset the zero and span concentrations back to factory settings. Does carbon dioxide read normally?
- NO →
  • Check filter elements on sensor, cleaning or replacing if necessary.
  • Replace carbon dioxide sensor.
- YES ↓

- Recalibrate zero and span points using calibration gases or meter as per instructions.

Damper Not Working

Measure DC voltage across fuse FU1. Is it approximately 24 VDC?

YES → • Replace fuse FU1. If it blows again check for short circuit in wiring or replace faulty damper motor.

NO ↓

Change damper setpoint to 100 %. Measure DC voltage between TB1-25 (+) and TB1-30 (-). Is voltage approx. 10 VDC?

NO → • Replace first damper motor.
• Replace SMA111 circuit board.

YES ↓

On first damper motor, is actuator at stop position “0”?

NO → • Check for 24 VDC across red and black wires.
• Check that direction of rotation is set to CW.
• Replace first damper motor.

YES ↓

At second (or third) damper motor, measure DC voltage between White (+) and Black (-). Is voltage approx. 10 VDC?

NO → • Check for 24 VDC across red and black wires.
• Replace first damper motor.

YES ↓

On second (or third) damper motor, is actuator at stop position “0”?

NO → • Check for 24 VDC across red and black wires.
• Check that direction of rotation is set to CW.
• Replace first damper motor.

YES ↓

Measure DC voltage between TB2-13 (+) and TB2-14 (-). Is voltage approx. 10 VDC?

NO → • Replace second (or third) damper motor.

YES ↓

Measure DC damper feedback voltage between TP18 (orange) and TP21 (black). Is voltage approximately 1 VDC?

NO → • Replace SMA111 circuit board.

YES ↓

Change damper setpoint to 0 %. Wait for dampers to close. Measure DC voltage between TB2-13 (+) and TB2-14 (-). Is voltage approximately 2 VDC?

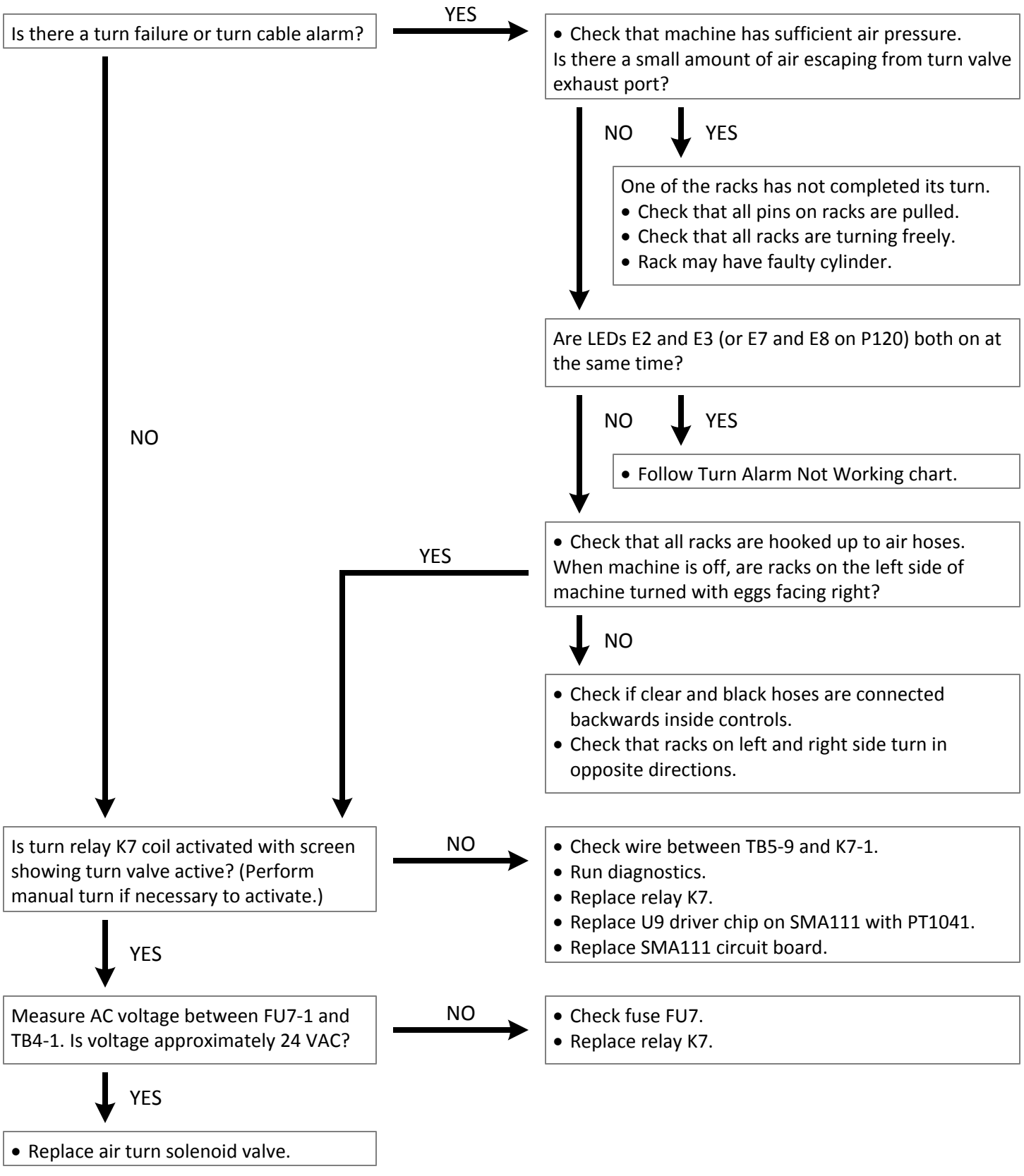
NO → • Check that all damper motors rotated to closed position.
• Replace SMA111 circuit board.

YES ↓

On all damper motors, is actuator at end stop position “1”?

YES → • Check that damper flaps inside intake and exhaust ducts are in fully closed position. Loosen clamps nuts and adjust damper flaps is necessary.

NO → • Replace faulty damper motor.


Is there a turn failure or turn cable alarm?
YES
• Check that machine has sufficient air pressure.
Is there a small amount of air escaping from turn valve exhaust port?
NO
YES
One of the racks has not completed its turn.
• Check that all pins on racks are pulled.
• Check that all racks are turning freely.
• Rack may have faulty cylinder.
Are LEDs E2 and E3 (or E7 and E8 on P120) both on at the same time?
NO
YES
• Follow Turn Alarm Not Working chart.
NO
YES
• Check that all racks are hooked up to air hoses.
When machine is off, are racks on the left side of machine turned with eggs facing right?
NO
• Check if clear and black hoses are connected backwards inside controls.
• Check that racks on left and right side turn in opposite directions.
Is turn relay K7 coil activated with screen showing turn valve active? (Perform manual turn if necessary to activate.)
NO
• Check wire between TB5-9 and K7-1.
• Run diagnostics.
• Replace relay K7.
• Replace U9 driver chip on SMA111 with PT1041.
• Replace SMA111 circuit board.
YES
Measure AC voltage between FU7-1 and TB4-1. Is voltage approximately 24 VAC?
NO
• Check fuse FU7.
• Replace relay K7.
YES
• Replace air turn solenoid valve.

Have you waited at least five minutes after rack turn?

NO → Machine allows a minimum five minutes plus delay programmed in Alarm Delays screen before showing a turn failure alarm.

YES ↓

On SMA111 board are LEDs E2 and E3 (or E7 and E8 on P120) both on at the same time?

YES → • Racks are not turning. Refer to Racks Are Not Turning troubleshooting chart.
• Turn pressure switch is stuck in ON position or its adjustment screw has been rotated too far.

NO ↓

Are LEDs E2 and E3 (or E7 and E8 on P120) both off?

YES → One of the lights should be on at all times.
• Check that machine has air pressure.
• Replace faulty pressure switch.
• Replace SMA111 circuit board.

NO ↓

Block one of the racks and perform a manual rack turn. Is the solenoid valve exhausting a small amount of air?

NO → • Turn system is not working. Refer to Racks Are Not Turning troubleshooting chart.

YES ↓

Is relay K7 coil activated?

NO → • If LED E2 is not lit, adjust left turn pressure switch TPS1 set screw until E2 illuminates, then rotate screw ½ turn further.
• If E2 still does not illuminate replace TPS1.
On P120 LED E7 and TPS3 work similarly for rear zone.

YES ↓

• If LED E3 is not lit, adjust right turn pressure switch TPS2 set screw until E3 illuminates, then rotate screw ½ turn further.
• If E3 still does not illuminate replace TPS2.
On P120 LED E8 and TPS4 work similarly for rear zone.

↓

Remove blockage from rack. Perform a manual rack turn to block in opposite direction. Is relay K7 coil on?

NO ↓

• If LED E2 is not lit, adjust left turn pressure switch TPS1 set screw until E2 illuminates, then rotate screw ½ turn further.
• If E2 still does not illuminate replace TPS1.
On P120 LED E7 and TPS3 work similarly for rear zone.

YES ↓

• If LED E3 is not lit, adjust right turn pressure switch TPS2 set screw until E3 illuminates, then rotate screw ½ turn further.
• If E3 still does not illuminate replace TPS2.
On P120 LED E8 and TPS4 work similarly for rear zone.

↓

Are LEDs E2 and E3 (or E7 and E8 on P120) both on at the same time?

NO → • Above steps were not followed correctly. Repeat.

YES → • Wait five minutes plus programmed delay time to verify turn failure alarm works.

Note: Option DIP switch SW3-2 needs to be closed for standard turn system. Open the switch to enable the mercury turn cord system, where TB1-2 is left turn signal, TB1-3 is right turn signal, and TB1-7 is turn cord continuity signal.

On PTA704 PC/104 computer board, are the following voltages in correct range?
- Red (+) to Black (-) 5.0 VDC +/- 0.1 V
- Yellow (+) to Black (-) 12.0 VDC +/- 0.6 V

NO →
- Check for loose wire connections at power supply.
- Reseat connector at power supply.
- If 5 VDC is only slightly off, adjust at power supply.
- Replace PT2324 power supply.

↓ YES

A few seconds after turning on the power, does computer board beep exactly one time?

NO →
- Check for loose wires to power supply.
- Replace computer board with PTA704.

↓ YES

Does the LCD background light up just before the beep tone sounds? (Look for light leaking out rear side of LCD panel)

NO →
- Check the backlight cable from CN7 of computer board to side of LCD panel.
- Replace LCD panel.

↓ YES

Does the cyan coloured “Silicon Motion” message show briefly on the screen when beep tone sounds?

NO →
- Check the video cable from CN4 of computer board to side of LCD panel. Make sure that connector is pushed in straight on side of LCD panel
- Replace LCD panel with PT2414.
- Replace computer board with PTA704.

↓ YES

Does the “GRUB loading” message and Platinum boot logo appear a few seconds after the beep tone?

NO →
- Flash disk is not inserted or has become corrupted. Replace PTA683 compact flash card on rear side of computer board.
- Contact Jamesway noting error message shown.

↓ YES

Does the main Platinum screen come up?

NO → ↑

↓ YES

Does the display show “Touch screen controller is not connected” message?

YES →
- Check that touch controller cable is plugged into USB port.
- Replace touch controller board.

↓ NO

Does the display respond to touch screen presses erratically or not at all?

YES →

Turn off power and completely wipe away all water from screen, especially along bottom edge. After turning power back on does touch screen respond?

↓ NO

- Ensure both touch screen tails are securely pushed into latch connectors.
- Replace touch screen controller.
- Replace touch screen.

YES →

↓ NO

Continue next page.

↓

When pressing touch screen, is finger sensed in the wrong spot?

YES → The touch screen needs to be recalibrated.
1. Turn off power, then turn back on
2. While Platinum boot logo is shown, swipe finger from left edge to right edge of screen, then release
3. When target on white screen appears, press finger as close to centre of target as possible and release
4. Repeat with the next four targets

NO ↓

Does the Main screen display machine type and number?

NO → The display is not receiving any information from the SMA111 machine controller board.
- Check communication cable between display and SMA111 board (metal pins facing up).
- Check proper switch settings on SMA111 board.

YES ↓

Does display show a communication alarm?

YES → Are the numbers such as temperature or humidity actual still changing?

NO ↓

YES → Machine is no longer receiving signal from Hatchcom or Master Sentry on fibre optic port.

NO ↓

Display is no longer receiving any information from machine controller board.
- Check communication cable between display and SMA111 board (metal pins facing up).

Does machine respond to commands from display?

NO →
- Make sure that you are not in Remote mode. The command might be going to a remote machine.
- Check E11 LED light on SMA111 board. It should blink whenever it receives a command from display or network.

YES ↓

- Contact Jamesway explaining problem with display.

Notes:

1. To disconnect touch screen tails from controller, lift up the black latch. To reconnect leave the latch in released position, then carefully insert the tails, taking care that they are pushed in straight, then press down on latch to lock ribbon tail in place.
2. Fibre optic communications problems can be determined by examining LED E10 on SMA111 board. It lights up whenever a signal is received. It should blink rapidly when network is running normally. If LED is on continuously, light is entering system and disrupting all communication. Intermittent communication problems can be caused by improperly polished connector, damaged cable, or ambient light entering the system.
3. Only use touch calibration when finger is sensed in the wrong spot on screen, it will not fix failed touch screen or controller.

Status Lights

Measure DC voltage across black (+) and white (-) wires. Is it approximately 12VDC?

NO → • Verify that the status light is supposed to be on.
• Replace U26 driver chip on SMA111 circuit board with PT1041.
• Replace SMA111 circuit board.

YES ↓

• Replace the LED light assembly.

Interior Light

Is the light button on?

NO → • Turn on light button. If fans are running, lights will turn off automatically after 10 minutes.

YES ↓

Measure DC voltage between K2-1 and K2-5. Is voltage approximately 12 VDC?

NO → • Check wire between TB5-12 and K2-1.
• Replace U11 (or U9) driver chip on SMA111 with PT1041.
• Replace SMA111 circuit board.

YES ↓

Is relay K2 coil activated?

NO → • Replace relay K2.

YES ↓

Measure DC voltage between TB4-5 and TB4-4. Is voltage approximately 12 VDC?

NO → • Disconnect LED light bar to test for short circuit.
• Replace power supply PS2 with PT2402.

YES → • Check wiring from FU2-1 to LED light bar.
• Replace LED light bar.

Emergency Stop

Release emergency stop button. Measure DC voltage between K1-1 and K1-5. Is it approximately 12 VDC?

NO → • Replace emergency stop switch element.

YES ↓

Is relay K1 activated?

NO → • Replace relay K1.

YES ↓

Is LED E1 on SMA111 board lit?

YES → • Replace emergency stop switch element.
• Replace SMA111 circuit board.

NO ↓

Push emergency stop button. Is LED E1 on SMA111 board lit?

NO → • Replace emergency stop switch element.
• Replace SMA111 circuit board.

YES ↓

Measure DC voltage between K1-1 and K1-5. Is it approximately 12 VDC?

NO → • Replace relay K1.