KODAK INDUSTREX B 2000 Processor
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Cycle of Operation

Overview

Conditions:
- The processor is energized.
- The Flooded Replenishment Mode is set to "OFF".
- The Dryer is at the correct operating temperature.
- Water flow into the processor is occurring.

START

Check that the RE Circulation Pump is operating.

PUMP is operating?

No → 1

Yes →

Check that wash water SOLENOID (L1) is operating. Wash water flow into WASH TANK occurs - check overflow.

SOLENOID L1 operating?

No → 16

Yes →

Check that the DRYER BLOWER is operating.

A
NOTE:
After approximately 6 seconds check that the following are operating:

A

DRYER BLOWER operating?

Yes

Check that SAFELIGHT RECEPTACLE is energized.

SAFELIGHT energized?

No

WARNING:
Dangerous Voltage

No

Check that MAIN DRIVE MOTOR is operating.

MAIN DRIVE is operating?

No

NOTE:
Remove drive-side ACCESS PANEL to check for movement of CHAIN on DRIVE MOTOR.

Yes

Check that the DEVELOPER and DRYER INDICATOR LAMPS are energized.

Are DEVELOPER LAMPS energized?

No

6

B

Cycle of Operation
Is DRYER LAMP energized?

No → Turn DRYER KNOB fully clockwise.

Is DRYER LAMP energized?

Yes → [Flowchart continues with more steps]

No → ?

Check that the DEVELOPER TEMPERATURE DISPLAY is illuminated.

Is DEVELOPER TEMPERATURE DISPLAY illuminated?

Yes → Check that the developer is heating to correct temperature.

No → [Flowchart continues with more steps]

NOTE: Developer should be at the correct temperature with 20-40 minutes, determined by the starting temperature of the solutions in the TANK.

Is DEVELOPER temperature increasing?

No → [Flowchart continues with more steps]

Yes → Check that the DRYER is at the correct temperature. DRYER INDICATOR LAMP is deenergized.

Cycle of Operation

C

981079
Cycle of Operation
D

PUMP energized?

Yes

Check that FILM FEED AUDIO INDICATOR operates. 3 to 13 seconds after film leaves the DETECTOR ROLLERS.

No

13

AUDIO INDICATOR correct?

No

14

COUNTER increments?

No

15

Yes

Check that film exits the processor in correct time for selected cycle.

Yes

Film exits?

No

Check for mechanical binds in RACKS, CROSSOVERS, and main drive.

Yes

Operation Normal

Cycle of Operation
No. 1 No Recirculation - Recirculation Pump B3 is not operating.

Condition:

- All components are operating correctly except the Recirculation Pump B3.
- The Connector P/J9 is connected correctly.

**WARNING**

Dangerous Voltage

**CAUTION**

Possible damage from electrostatic discharge.

1

Check voltage at J9-2 to J9-3.

240 V ac ?

- **No**
  - Check voltage at TB3-2 to TB3-1.
  - **Voltage OK ?**
    - **Yes**
      - Repair or install a new RECIRCULATION PUMP.
    - **No**
      - **Continuity correct ?**
        - **No**
          - Repair or install new wires.
        - **Yes**
          - Install new parts.

- **Yes**
  - Check PUMP HEAD parts for wear, breakage and binding. Install new parts as necessary.
  - **Parts OK ?**
    - **No**
      - Install new parts.
    - **Yes**
      - Repair or install a new RECIRCULATION PUMP.

No Recirculation
Check the voltage (~240 V ac) between TB3-2 and TB3-1.

240 V ac?

Check for ~240 V ac at A5 POWER SUPPLY, PINS 1 and 4.

240 V ac?

Check FUSE 1 for continuity.

FUSE continuity?

Install a new FUSE F1.

Check the voltages at output of POWER SUPPLY (+12 VR and +12 VL).

12 V dc?

Install a new POWER SUPPLY A5.

Check wiring and CONNECTOR J101 for continuity.

Check for 120 V ac at coil of RELAY K6.

120 V ac?

Check for 120 V ac between TB3-4 and TB3-3.

120 V ac?

Repair or install new wiring to K6.

-120 V ac?

Yes

Install a new RELAY K6.

No

No

Yes

AC Power Distribution - 240 V ac

WARNING
Dangerous Voltage
1C

Check the voltage at TB3-1 to TB3-2 (220-240 V ac).

240 V ac?

No

Check wiring and CONNECTORS P/J1-2, P/J1-12, P/J2-2 P/J2-12 for continuity.

Continuity?

No

Repair or install new wiring and CONNECTOR P/J 1 or P/J2, if necessary.

Yes

Check CB2 has not opened.

CB2 opened?

Yes

Reset CB2.

No

CB2 opened?

Yes

Install a new CB2.

No

1D

AC Power Distribution - 240 V ac
WARNING
Dangerous Voltage

Check the voltage input to EMI FILTER FL2 FROM TB2-4 to TB2-16(240 V ac).

240 V ac ?

No

Yes

Check the voltage output of EMI FILTER FL2 from D to E(~240 V ac).

240 V ac ?

No

Install a new EMI FILTER FL2.

Yes

Check the wiring from CB2 (wire numbers 11 and 12) for continuity.

Warning
Dangerous Voltage
Disconnect the main power.
Check the voltage from TB2-3 to TB2-5 (240 V ac).

240 V ac ?

Check CB1 has not opened.

Check incoming power and TRANSFORMER connections.

Is wiring correct ?

Install a new TRANSFORMER.

Check configuration of JUMPERS in TRANSFORMER BOX.

Check the input voltage between TB1-1 and TB1-2.

Ask the customer to call a local licensed electrician.

Within site specification ?

Repair or install new wiring from TB1-1 and TB1-2 to CB1.

Reset CB1.

Install a new CB1.
No. 2 Developer Cooling Solenoid L2 is not Operating

Condition: The water supply is turned on and the Wash Tank is full of water.

WARNING

Dangerous Voltage

CAUTION

Possible damage from electrostatic discharge.

Check that voltage between wires 53 and 54 on L2 is 120 V dc.

120 V dc ?

Yes

Install a new SOLENOID L2.

No

Check that voltage at P/J5-4 and 5 is 120 V dc.

120 V dc ?

Yes

Repair or install new wiring to P/J5-4 and 5.

No

Check that DC voltage at P/J102-10 and 12 is 120 V ac.

120 V dc ?

Yes

Install a new 100 Board.

No

Check for restrictions in cooling water line (kinks, ORIFICE, etc.)

Restrictions ?

Yes

Remove/repair restriction.

No
No. 3 Dryer Blower B1 is not Operating

Condition:

- The processor is not in "Standby" Mode.
- The Connector P/J13 is connected correctly.

**WARNING**

Dangerous Voltage

**CAUTION**

Possible damage from electrostatic discharge.

```
3

Check that STANDBY RELAY K1 is deenergized. Check for zero volts at K1-3 and 9.

K1 deenergized ?

No

Check that LED DS11 is deenergized. If DS11 is energized, the processor is in Standby.

DS11 on ?

Yes

Check or install a new 100 BOARD.

No

Yes

Check that voltage at P/J4-2 and 5 is 240 V ac.

240 V ac ?

No

Check the continuity of the wiring from P/J13-2 and 4 to TB3-1 and 2. Repair or install new wiring.

Yes

Install a new DRYER BLOWER MOTOR.
```
No. 4 Safelight is not Energized

Condition: The Detector Switches are adjusted correctly and film is not feeding.

**WARNING**

Dangerous Voltage

**CAUTION**

Possible damage from electrostatic discharge.

1. **Check that voltage between TB2-1 and TB2-2 is 120 V ac.**
   - If no, go to **See 120 V ac Power Diagnostics**.
   - If yes, go to **18**.

2. **Check that voltage between TB3-3 and TB3-4 is 120 V ac.**
   - If no, go to **Check wiring of CONNECTOR P/J1-1 and P/J1-14**.
   - If yes, disconnect P/J2, check that voltage between P2-1 and P2-14 is 120 V ac.

3. **Check that voltage between P2-1 and P2-14 is 120 V ac.**
   - If no, go to **See 120 V ac Power Diagnostics**.
   - If yes, go to **18**.
4A

Connect P/J2 and check that voltage from TB3-3 to F2-25 is 120 V ac.

120 V ac?

Yes

Check wiring at RECEPTACLE.

No

Check continuity of FUSE F2 and Wire No. 23 to RELAY K3-9.

Continuity?

Yes

Check that voltage across K3-6 and K3-9 is 120 V ac.

120 V ac?

Yes

Check that DS9 on 100 BOARD is 'ON'.

DS9 'ON'?

Yes

4B

No

4C

No

Install new FUSE F2.

Repair or install new wires from FL3 to K3.

Warning:

Dangerous Voltage
Check that voltage at J101-7 and TB4-2 is 12 V dc.

12 V dc?

Check wiring at CONNECTOR J101.

Check that voltage across K3-A and B is 12 V dc.

12 V dc?

Check wiring.

Install a new K3.

On the 100 BOARD, check that DSS is 'ON'.

DSS 'ON'?

Install new 100 BOARD.

Check adjustments of DETECTOR SWITCHES. See the Service Manual.
No. 5 Main Drive Motor B2 is not Operating

Condition: The processor is in "Bypassed" mode.

CAUTION

Possible damage from electrostatic discharge.

Check that top COVER and receiving-end ACCESS PANEL are installed on the processor.

COVER and ACCESS PANEL installed?

Yes

Check that INTERLOCK RELAY K4 is energized. CONTACTS 4 and 7 should be closed.

K4 energized?

Yes

Check that CONNECTORS P/J1, P/J2, and P/J3 are connected and locked.

CONNECTORS connected?

Yes

Disconnect the power. Continuity check wiring to P/J6, INTERLOCK SWITCHES S7 and S8, and wiring to TB4-2 and 7.

5A

5B

No

Install COVER and ACCESS PANEL.

No

Connect the CONNECTORS.

5B

5A

Main Drive Motor B2
Check that STANDBY RELAY K1 is deenergized. CONTACTS 1 and 7 are closed.

K1 deenergized?

No

Check that LED DS11 is deenergized. If DS11 is energized, processor is in STANDBY.

DS11 energized?

No

WARNING

Dangerous Voltage

Yes

Check that voltage at PJ3-18 and 19 is 120 V ac.

Press 'RUN' BUTTON. DS11 should deenergize; DS8 should energize.

DS11 energized?

No

Check that DS8 is energized.

Yes

Install a new 100 BOARD.

5C
5B

Continuity correct?

No

Repair or install new wiring. Install new SWITCHES, if necessary.

Yes

Check for 12 V relay voltage from POWER SUPPLY A5. LED DS21 should be energized.

No

Check that voltage input to POWER SUPPLY A5 is 240 V ac.

Yes

Install a new 100 BOARD.

No

WARNING

Dangerous Voltage

See AC Power Distribution.

No

240 V ac?

Yes

Install a new POWER SUPPLY A5.

Main Drive Motor B2
5C

Voltage correct?

Yes → Check wiring back to K4, K2, and TB3 for continuity. Check that P18-J18 is a good connection.

No → Check FUSES FL and FA on the DRIVE MOTOR CONTROLLER A5.

Yes → Connection good?

No → Repair or install new wiring.

Yes → FUSES OK?

No → Disconnect the power. Install new FUSES and connect the power.

Yes → FUSES OK?

No → Check for binding in the Drive System.

Yes → Install a new MOTOR.

---

5D

DS8 energized?

No → Check the wiring to 'RUN' BUTTON S1.

Yes → Install a new 100 BOARD.
No. 6 Developer LEDs DS5 (300 Bd) or DS6 (400 Bd) are Deenergized

Condition:

- The Developer LEDs are not illuminated.
- The Connectors PJ1,2,3 and PJ8 are connected and locked.
- The Solid-State Relay is not energized.

**CAUTION**

Possible damage from electrostatic discharge.

---

Check that LED DS15 is energized, DEVELOPER-HEATER SOLID STATE RELAY.

- DS15 energized?
  - Yes: Check that LED DS13 is energized, DEVELOPER-HEATER ENABLE RELAY.
    - DS13 energized?
      - Yes: Check that DEVELOPER-HEATER ENABLE RELAY K2 is energized and CONTACTS 7 and 4 are closed.
      - No: 6B
  - No: 6A

---

Developer LEDs DS5 and DS6
Check voltages at TP7 and TP8. VTP8 > VTP7.

VTP8 > VTP7 ?

Yes

6F

No

Normal Operation.

Check that LED DS12 is energized, DEVELOPER OVERTEMPERATURE THERMOSTAT is closed.

DS12 energized ?

Yes

Deenergize the processor. Wait several seconds. Energize the processor and check that LED DS13 is energized. If condition is repeated with normal developer temperature, check the temperature adjustments for the RECIRCULATION PUMP, HEATER, and THERMOWELL ASSEMBLY.

DS13 energized ?

No

Check or install a new 100 BOARD.

Yes

Operation complete. Developer solution should heat now that K2 is energized.

Developer LEDs DS5 and DS6
**WARNING**

Dangerous Voltage

- **6C**
  - **K2** energized?
    - Yes: Check that SOLID STATE RELAY U2 is energized.
      - No: Check that voltage is <2 V at U2-1 and 2.
    - No: Check wiring from the 100 BOARD P101-0 to K2 for continuity and check the COIL on the RELAY.
      - Yes: Check wiring from the 100 BOARD (J101-11,21) to U2 for continuity. Check that the wiring is correct at U2-3 and 4.
      - No: Check wiring from U2 to K2 and K2 to DEVELOPER HEATER for continuity.
        - Yes: Check SOLID-STATE RELAY U2 or install a new RELAY U2.
        - No: Repair or install new wiring.

- **U2** energized?
  - Yes: Check that DEVELOPER LEDs DS5 and DS6 on 300 BOARD and DS6 on 400 BOARD are energized.
  - No: DS5 or DS6 energized?
    - Yes: Normal operation.
    - No: 6D
Check that voltage between TB4-8 and TB4-11 is 12 V dc.

12 V dc?

- No: Repair the wiring.
- Yes: Install a new DEVELOPER LED DSS or DS6.

Disconnect P6 from the ELECTRICAL BOX. Check the continuity (zero or open) at P6-1 to P6-5.

- Continuity of P6 correct?
  - No: Check for a temperature that is too high.
  - Yes: Check wiring from the 100 BOARD P101-4 to P1/6-5 for continuity. Repair or install new wiring or install a new CONNECTER, if necessary.

- Temperature too high?
  - No: Install a new OVER-TEMPERATURE THERMOSTAT.
  - Yes: Check for a short-circuit in U2 'ON' or wiring.

Developer LEDs DSS and DS6
Check the THERMISTOR. Disconnect P18 from the ELECTRICAL BOX. Measure resistance between P18-2 and P18-3. At 25°C (77°F) approximately 50 kΩ.

Resistance correct?

Yes

Check the wiring from J18 to P/J6-4 and 6 and P101-41,46 on the 100 BOARD.

Wiring correct?

Yes

IF VTP8 > VTP7 still and DEVELOPER TANK temperature is below setpoint temperature, install a new 100 BOARD.

No

Install a new THERMISTOR.

Repair the wiring.
No. 7 Dryer Lamp DS5 is Deenergized

Assumption: Dryer temperature is below setpoint.

Condition: The Connectors P/J1, 2, 4 and P/J14 are connected and locked.

**CAUTION**
Possible damage from electrostatic discharge.

1. Check that DRYER HEATER SOLID-STATE RELAY LED DS19 is energized.
2. DS19 energized?
   - No → 7B
   - Yes → Continue
3. Check voltage at U1 between PINS 3 and 4 is 12 V.
4. VOLTAGE correct?
   - No → Check wiring from P1-19 and P1-12 to RELAY U1 for continuity.
   - Yes → Continue
5. Check output voltage at U1 between PINS 1 and 2 is < 2 V ac.
6. Continuity?
   - No → Repair or install new wiring.
   - Yes → 7A

Dryer Lamp DS5 is Off
7A

< 2 V ac ?

Yes

Deenergize the processor.
Check Wiring from U1, Pin 1
to DRYER HEATERS.

No

Install a new RELAY U1.

Wiring correct ?

Yes

Repair or install new
wiring. Install a new
CONNECTOR, if necessary.

No

Check for ~17 Ohms
at the HEATER
at room temperature.

Resistance correct ?

Yes

Install a new DRYER
HEATER.

No

Check that voltage between
U1-3 and U1-4
is 12 V dc.

12 V dc ?

Yes

Check continuity from
TB4-4 to J101-30 and
TB4-10 to J101-12.

No

Repair or install new
wiring on CABLE
CONNECTORS.

OK ?

Yes

Repair or install new
wiring or CABLE/
CONNECTOR.

No

Check wiring and CONNECTORS
to P/J7-37 and 16, and P/J401-23
and 24 for continuity.

Continuity correct ?

Yes

Install a new LAMP DS5
on the 400 BOARD.

Dryer Lamp DS5 is Off
Dryer Lamp DS5 is Off

7B

Yes

Check voltages between TP2 and TP3. If VTP2> VTP3 DS19 is energized.

VTP2 > VTP3 ?

No

Check DRYER THERMISTOR. Disconnect PJ25 from ELECTRICAL BOX. Measure resistance between PJ25-2 and 3. Should read 50 Ω at 25 °C (77 °F).

Yes

Check or Install a new 100 BOARD.

Resistance correct ?

No

Install a new THERMISTOR.

Yes

Check wiring from PJ25-2 and 3 to PJ7-1 and 5 to P101-35 and 36 on the 100 BOARD for continuity.

Yes

7C
Dryer Lamp DSS is Off

7C

- Continuity correct?
  - Yes: Check DRYER temperature adjustment R1. See the adjustment procedure.
  - No: Repair or install new wiring.

- Adjustment correct?
  - Yes: Disconnect P/J401. Check that resistance of R1 at P/J401-1 and 2 is ~50K Ω.
  - No: Adjust.

- Resistance correct?
  - Yes: If VTP2 > VTP3 and DRYER temperature is below setpoint, install a new 100 BOARD.
  - No: Install a new 400 BOARD.
No. 8 Developer Meter is not Energized

CAUTION
Possible damage from electrostatic discharge.

Check:
- P/J401 is connected at the 400 BOARD.
- P/J7 is connected at the ELECTRICAL BOX.
- J101 is connected at the 100 BOARD.

Connected?
No
Make the necessary connections.

Yes

Check for 5 V dc on the 100 BOARD. DS18 should be energized.

Is DS18 energized?
No
8A

Yes

Disconnect P/J401 at the 400 BOARD. Check for +5V dc between PIN 18 and PIN 20.

5 V dc?
No

Repair or install new wiring and/or CONNECTOR from J101 on the 100 BOARD to J401 on the 400 BOARD.

Yes

Install a new 400 BOARD.
Check that DS17 is energized.

DS17 energized?

Yes

DS13 energized?

Yes

Install a new 100 BOARD.

No

Check 12-volt logic at the POWER SUPPLY.

K2 energized?

Yes

Check K2-4 and 7 CONTACTS are closed.

No

Install a new K2.

CONTACTS closed?

Yes

Disconnect the main power. Remove the CONNECTOR from the 100 BOARD. Connect the power. Recheck 12-volt logic at POWER SUPPLY.

No

12-volt logic?

Yes

Check ac input to POWER SUPPLY.

No

240 V ac Input?

Yes

Install a new POWER SUPPLY.

No

1B

8B

WARNING

Dangerous Voltage
Disconnect the main power, remove CONNECTOR and check 12-volt logic at CONNECTOR J101.

12-volt logic?

Yes

Install a new 100 BOARD.

No

Repair or install new wiring to CONNECTOR J101.
No. 9 Developer Temperature is not Increasing

Condition: Connector P/J8 is connected correctly.

**WARNING**

Dangerous Voltage

**CAUTION**

Possible damage from electrostatic discharge.

1. **Check that DS5 and DS6 are energized.**
   - **No**
     - See DEVELOPER LAMPS, DS5 and DS6 are Deenergized.
     - **Yes**
       - Measure voltage at J8-3 and 5 inside the ELECTRICAL BOX.

2. **DS5/DS6 energized?**
   - **No**
     - See DEVELOPER LAMPS, DS5 and DS6 are Deenergized.
   - **Yes**
     - Measure voltage at J8-3 and 5 inside the ELECTRICAL BOX.

3. **240 V ac?**
   - **No**
     - Check the voltage between TB3-2 and TB3-1.
   - **Yes**
     - Install a new HEATER.

4. **Voltage 240 V dc?**
   - **No**
     - See AC Power Diagnostics.
   - **Yes**
     - Repair or install new wiring.
No. 10 Dryer is not Heating

Condition: The Connector P/J14 is connected correctly.

**WARNING**

Dangerous Voltage

**CAUTION**

Possible damage from electrostatic discharge.

10

Actuate DRYER ADJUSTMENT POTENTIOmeter R1 to 'MAX'. Check that DRYER LAMP DS5 on the 400 BOARD is illuminated.

DS19 energized?

No → 7

Yes → Check voltage between P/J14-1 and P/J14-2.

208 V ac?

No → See AC Power Diagnostics. AC diagnostics(208 V ac).

Yes → 10A
Dryer is not Heating

10A

Check condition of OVERTEMPERATURE THERMOSTAT. Check that the RESET BUTTON is out.

Check voltage to JIP2:7 and 10.

No

BUTTON out?

Yes

WARNING

Dangerous Voltage

- Disconnect the main power.
- Manually reset BUTTON.
- Connect the main power.
- Check that the RESET BUTTON is in.

208 V ac?

No

Check output voltage at D and E of EMI FILTER FL1 is 208 V ac.

No

Check that voltage between TB2-5 and TB2-15 is ~208 V ac.

No

208 V ac?

Yes

Repair or install new wiring from PJ4 and PJ14.

No

10B

YES

Install a new EMI FILTER FL1.

No

INSTALL a new DRYER HEATER.

NOTE:
Wait for DRYER TO cool down.

208 V ac?

Yes

Install a new DRYER HEATER.

No

INSTALL a new EMI FILTER FL1.
10B

Check that voltage between TB2-5 and TB2-15 is ~ 208 V ac.

208 V ac?

No

Check that CB1 is not opened.

Yes

Check TRANSFORMER wiring. Install a new TRANSFORMER, if necessary.

CB1 opened?

No

Check that voltage source from TB1-1 to TB1-2 is within specification.

Yes

Reset CIRCUIT BREAKER CB1

CB1 opened?

No

Within specification?

Yes

Ask the customer to call a local electrician.

No

Install a new CB1.

Repair or install new wiring from TB1-2 and TB1-1 to CB1.
No. 11 Processor Will Not Go into the Standby Mode

CAUTION

Possible damage from electrostatic discharge.

11

Is DS16 flashing longer than 15 min 42 seconds.

DS16 energized?

No

Yes

Install a new 100 BOARD.

Check that each of the following LEDs are deenergized: DS5, DS8 and DS10.

NOTE:
If any of these are energized, the processor will not go into Standby Mode.

LEDs energized?

No

Install a new 100 BOARD.

Yes

Check that RUN BUTTON on 300 BOARD is not 'IN'. Install a new 300 BOARD, if necessary.
No. 12 Processor Will Not Come Out of "Standby"

Condition:
- The processor is in the "Bypassed" mode.
- The processor remains in "Standby" after 9 minutes 30 seconds.

CAUTION
Possible damage from electrostatic discharge.

12

Check that DRYER CONTROL is energized.

DRYER CONTROL energized?

No → Adjust DRYER CONTROL.

Yes → Install a new 100 BOARD.
No. 13 Replenishment is not Occurring

Condition: The Connector P/J12 is connected correctly.

**CAUTION**

Possible damage from electrostatic discharge.

13

Actuate DETECTOR SWITCHES S3 OR S4. DS5 should energize.

DS5 energized?

- No
  - Check that CONNECTORS S3 and S4 are connected.

- Yes
  - Check that DS14 energizes.

DS14 energized?

- No
  - Install a new 100 BOARD.

- Yes
  - Check that K5 is energized.

No REPLENISHMENT 13A

Connected?

- No
  - Connect.

- Yes
  - Check adjustment. See the adjustment section of service manual.
13A

K5 energized?

No

Check that voltage at COIL of K5 is 12 V dc.

Yes


240 V ac?

No

See ac Power Diagnostics.

Yes

Install a new REPLENISHMENT MOTOR B4.

12 V dc?

No

Check the continuity of the wiring and CONNECTOR from BOARD to K5. Repair as necessary.

Yes

Install new K5 RELAY.

WARNING

Dangerous Voltage.
No. 14 Film Feed Audio Indicator DS7 is not Operating

Condition:
- The Connectors P/J6, 19, 101, and 301 are connected correctly.
- Film is being fed into the processor.

**CAUTION**
Possible damage from electrostatic discharge.

14

Check that LED DS6 energizes momentarily, approximately 10 seconds after the film leaves the DETECTOR ROLLERS.

No

DS6 energized momentarily?

Yes


Check that DS5 is energized.

DS5 energized?

No

See the DETECTOR SWITCH adjustment in the Service Manual.

Yes

Install a new 100 BOARD.

Continuity OK?

No

Install new wiring and CONNECTORS J6 and J19 as necessary.

Yes

Install a new 300 BOARD.

No Audio Indicator DS7
No. 15 Counter M1 is not Operating.

Condition: Film is being fed into the processor.

**CAUTION**
Possible damage from electrostatic discharge.

15

Check that LED DS6 energizes momentarily, approximately 10 seconds after the film leaves the DETECTOR ROLLERS.

DS6 energized momentarily?

No

Check that DS5 is energized.

Yes

Disconnect P27B. Check continuity from P27A to TB4-2 and P27B-2 to Pin 6 on the 100 BOARD.

DS5 energized?

No

See the DETECTOR SWITCH adjustment in the Service Manual.

Yes

Repair or install new wiring.

Continuity OK?

No

Yes

Install a new 100 BOARD.

Install a new COUNTER M1.

No Counter M1
Standby Mode

Overview

START

After film feeds out of the processor, wait 1 to 2 minutes for processor to go into Standby.

In to Standby?

No → 11

Yes

After approximately 8 min 30 seconds, processor should come out of Standby.

Out of Standby?

No → 12

Yes

Check that wash water is flowing.

Wash water flowing?

No → 16

Yes

U20-2 is in the 'OFF' position.

U20-2 off?

No → 17

Yes

Normal operation.
No. 16 Wash Water not Flowing - Mode 1, Out of Standby

Condition:

- Mode 1 - wash water is flowing. Dip Switch U20-2 is in the "Off" position.
- Mode 2 - wash water is not flowing, until the "RUN" Button is pressed or the developer solution needs cooling. Dip Switch U20-2 is in the "On" position.

CAUTION

Possible damage from electrostatic discharge.

Check that SWITCH U20-2 is in the 'OFF' position.

U20-2 'OFF'? No Set U20-2 to 'OFF'.

Yes

Check that DS1 on the 106 BOARD is energized.

DS1 energized? No 16A

Yes 16B
Check that DS2 is energized.

**WARNING**
Dangerous Voltage

DS2 energized?

Check that incoming voltage is 120 V ac at P/iJ102-1 to 3.

120 V ac?

Check that DC voltage is -120 V dc at P/iJ5-1 to 2.

Greater than 0.3 °F?

Check that the developer temperature is greater than 0.3 °F or more above customers setting.

Install a new 100 BOARD.

See AC Power Diagnostics.

No

Yes

No

Yes

16A
WARNING

Dangerous Voltage

Check that incoming voltage is \(-120\text{ V ac}\) at TB3-1 to 2.

\(\text{No}\) \rightarrow See AC Power Diagnostics.

\(\text{Yes}\)

Check that DC voltage is \(-120\text{ V dc}\) at PJ5-1 to 2.

\(\text{No}\) \rightarrow Check wiring continuity from J2 to J102.

\(\text{Yes}\) \rightarrow Install a new WASH WATER SOLENOID.

Continuity correct?

\(\text{No}\) \rightarrow Repair or install new wiring.

\(\text{Yes}\) \rightarrow Install a new 100 BOARD.
No. 17 Wash Water Flowing - Mode 2, Out of Standby

Condition:

- Mode 1 - wash water is flowing. Dip Switch U20-2 is in the "Off" position.
- Mode 2 - wash water is not flowing, until the "RUN" Button is pressed or the developer solution needs cooling. Dip Switch U20-2 is in the "On" position.

**CAUTION**

Possible damage from electrostatic discharge.

17

Check that SWITCH U20-2 is in the 'ON' position.

U20-2 on?

No Set SWITCH U20-2 to the 'ON' position.

Yes

Check that DS1 on the 100 BOARD is not energized.

DS1 not energized?

No 17A

Yes Install a new 100 BOARD.
17A

Check that DS2 is not energized.

DS2 not energized?

No → Install a new WASH WATER SOLENOID.

Yes →

Check that the developer temperature is greater than 0.2 °C (0.3 °F) above customer setting.

Greater than (0.3 °F) 0.2 °C?

No → Install a new 100 BOARD.

Yes → Normal operation.
No. 18  AC Power Diagnostics 120 V ac

WARNING

Dangerous Voltage

CAUTION

Possible damage from electrostatic discharge.

18

Check for 120 V ac between TB2-1 and TB2-2.

120 V ac?

Yes

System is normal.

No

Check that CB1 has not tripped.

CB1 tripped?

Yes

Reset CB1.

No

Check that voltage from TB3-3 to CB3-B is 120 V ac.

18A
WARNING

18A

120 V ac?

Yes

Repair or install new wiring to K6.

No

Check that CB3 has not tripped.

Yes

No

Check that CB3 tripped?

Check that voltage between TB3-3 and CB3-A is 120 V ac.

No

Check that voltage between TB3-3 and TB3-A is 120 V ac.

Yes

Install a new CB3.

120 V ac?

Yes

Repair or install new wiring.

No

Check that voltage between TB2-1 and TB2-2 is 120 V ac.

18B

AC Power Diagnostics - 120 V ac
AC Power Diagnostics - 120 V ac
**WARNING**

Dangerous Voltage

- **180**

- **120 V ac**
  - Yes: Check wiring between TB2-3 and CB1-C and install new wiring, if necessary.
  - No: Check that voltage between CB1-A and TB2-1 is 120 V ac.

- **120 V ac**
  - Yes: Install a new CB1.
  - No: Check that voltage between TB1-1 and TB2-1 is 120 V ac.

- **120 V ac**
  - Yes: Check wiring.
  - No: Call building electrician.
No. 19 Developer is Overheating

Condition: Developer Cooling Solenoid L2 is operating. If Solenoid L2 is not operating, see procedure No. 2 on page 13.

**CAUTION**
Possible damage from electrostatic discharge.

19
Yes

Check that LED DS15 is deenergized.

DS15 deenergized?
No

Change the cycle.

Yes

DS15 deenergized?
No

19A

Adjust R82A or R82B or R82C counterclockwise until DS15 is not illuminated.

Yes

DS15 not illuminated?
No

Install a new 100 BOARD.

Yes

See the adjustment procedure.
Check that voltage at PINS 3 and 4 of U2 is $-12$ V dc.

-12 V dc?

Yes

Check that wiring is correct.

Wiring correct?

No

Correct wiring.

Yes

Install a new 100 BOARD.

No

Measure voltage across HEATER and TB3-2 to TB3-1. If 180 V or less, install a new HEATER.

-2 V ac?

Yes

Install a new U2.

No
### 100 Circuit Board - Functions of the LEDs

The following functions occur when the LEDs on the 100 CIRCUIT BOARD are illuminated.

<table>
<thead>
<tr>
<th>LED</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS1</td>
<td>Input Water Solenoid L1 is energized.</td>
</tr>
<tr>
<td>DS2</td>
<td>Cooling Water Solenoid L2 is energized.</td>
</tr>
<tr>
<td>DS3</td>
<td>Blinking indicates operation of the clear time clock.</td>
</tr>
<tr>
<td>DS4</td>
<td>Panel Meter is energized.</td>
</tr>
<tr>
<td>DS5</td>
<td>Detector Switches S3 or S4 is energized.</td>
</tr>
<tr>
<td>DS6</td>
<td>Blinks when the Film Counter and audio alarm operate.</td>
</tr>
<tr>
<td>DS7</td>
<td>Blinking indicates operation of the Standby Clock.</td>
</tr>
<tr>
<td>DS8</td>
<td>Switches S1, S3, S4, S6, or interface are actuated.</td>
</tr>
<tr>
<td>DS9</td>
<td>Safelight Receptacle is energized.</td>
</tr>
<tr>
<td>DS10</td>
<td>Replenishment Test Switch S2, on the 400 Circuit Board, is energized.</td>
</tr>
<tr>
<td>DS11</td>
<td>Standby Relay K1 is energized.</td>
</tr>
<tr>
<td>DS12</td>
<td>Developer Overtemperature Switch S2 is energized.</td>
</tr>
<tr>
<td>DS13</td>
<td>Developer Heater Relay K2 is energized.</td>
</tr>
<tr>
<td>DS14</td>
<td>Replenisher Relay K5 is energized.</td>
</tr>
<tr>
<td>DS15</td>
<td>Developer Heater Solid State Relay U2 is energized.</td>
</tr>
<tr>
<td>DS16</td>
<td>Blinking indicates Clear time Timer is operating.</td>
</tr>
<tr>
<td>DS17</td>
<td>12-V dc logic supply to the 100 Circuit Board is occurring.</td>
</tr>
<tr>
<td>DS18</td>
<td>5-V dc logic supply, on the 100 Circuit Board, is operating correctly.</td>
</tr>
<tr>
<td>DS19</td>
<td>Dryer Heater Solid State Relay U1 is energized.</td>
</tr>
<tr>
<td>DS20</td>
<td>Blinking indicates Standby Timer is operating.</td>
</tr>
<tr>
<td>DS21</td>
<td>12-V dc relay supply to the 100 Circuit Board is occurring.</td>
</tr>
</tbody>
</table>