Plockmatic BM 2000 Booklet Maker

Service Manual 3

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4. TROUBLESHOOTING

4.1 FAULT CODE DESCRIPITIONS

⚠ CAUTION

ESD Hazard! ESD (Electrostatic Discharge) can cause software crashes, data and/or communications problems. Failure to use proper ESD procedures will cause damage to electronic components (example: PCBs). ESD problems can be minimized by maintaining all machine ground connections, ensuring the proper handling of circuit boards/ sensors - Use ESD protection when working near PCBs. Failure to use ESD protection is likely to result in a PCB failure (☛ 3.1).

BM-001

Fault code BM-001, indicates that the Infeed motor (BM-M1) does not receive any displacement pulses.

Initial actions

- Check fuse F2 on transformer

Procedure

Enter the Service mode and select Infeed motor encoder (Q3) in sensors.
Slowly rotate the motor by hand and check the value of the Infeed motor encoder (Q3). **Q3 toggles between "0" and "1"?**

Y **N**

Disconnect the sensor plug Q3 to motor BM-M1. Measure between the red wire Q3 and the black wire Q3 (5V and Signal ground). **The voltage is approximately 5 VDC?**

Y **N**

Disconnect plug B.P14 from PCB "B". Measure between the J14-2 and J14-13 (5V and Signal ground). **The voltage is approximately 5 VDC?**

Y **N**

Replace PCB "B".

Replace wire harness.

Disconnect plug B.P14 from PCB "B". Check wires for Continuity / Short circuit from the white wire Q3 to B.P14-14, the black wire Q3 to B.P14-13, the red wire Q3 to B.P14-2. **Is there continuity and no Short circuit?**

Y **N**

Replace wire harness.

1. Replace motor BM-M1.
2. Replace PCB "B".

Turn motor BM-M1 one and a half turn in both directions by hand. You should be able to use about the same amount of force throughout the turn. **Are you able to turn the motor without using a lot of force?**

Y **N**

1. Remove the serrated belt and check if some part of the Infeed mechanism seems to harsh.
2. Replace motor BM-M1.

1. Replace motor BM-M1.
2. Replace PCB "B".

BM-002

Fault code BM-002, indicates that the Infeed motor (BM-M1) has a Short circuit.

Initial actions

- Check fuse F2 on transformer

Procedure

Disconnect the motor plug M1. Run the diagnostics again. **Fault code BM-003(Open circuit) is displayed?**

Y **N**

Disconnect plug B.P2 from PCB "B". Check wires for Short circuit across leads, the orange wire M1 to B.P2-8 (violet) and the violet wire M1 to B.P2-1 (orange). **Is there a Short circuit?**

Y **N**

Replace PCB "B".

Replace wire harness.

Replace motor BM-M1

BM-003

Fault code BM-003, indicates that the Infeed motor (BM-M1) has an Open circuit.

Initial actions

- Check fuse F2 on transformer

Procedure

Disconnect the motor plug M1. Enter the Service Mode and start infeed motor (BM-M1) in motors. Measure between the orange wire M1 and the violet wire M1 (PWM 36V and ground). **The voltage is approximately 36 VDC?**

Y **N**

Disconnect plug B.P2 from PCB “B”. Measure between J2-1 and J2-8 (PWM 36V and ground). **The voltage is approximately 36 VDC?**

Y **N**

Replace PCB “B”.

Replace wire harness.

Replace motor BM-M1

BM-004

Fault code BM-004, indicates that the Back jogger motor (BM-M2) had a Cycle time out.

Initial actions

- Check fuse F2 on transformer
- Enter the Service mode and select Back jogger motor (BM-M2) in motors.
- Make sure the that the Back jogger home position sensor (BM-Q4) is installed correctly.

Procedure

Enter the Service mode and select Back jogger home position sensor (BM-Q4) in sensors. **The Back jogger home position sensor indicates: 1 when the sensor is blocked, and: 0 when the sensor is unblocked?**

Y **N**

1. Replace sensor BM-Q4
2. Disconnect plug C.P13 to PCB “C”. Measure between J13-1 and J13-3 (5V and ground). **The voltage is approximately 5 VDC?**

Y **N**

Replace PCB “C”.

Disconnect the plug from sensor BM-Q4. Check wire for Continuity / Short circuit from, the white wire Q4 to to C.P13-2. **Is there Continuity and no Short circuit?**

Y **N**

Replace wire harness.

Connect plug C.P13 to PCB “C”. Measure between the red wire Q4 and the black wire Q4 (5V and ground). **The voltage is approximately 5 VDC?**

Y **N**

Replace wire harness.

Replace PCB “C”.

Turn motor BM-M2 one and a half turn in both directions by hand. You should be able to use about the same amount of force throughout the turn. **Are you able to turn the motor without using a lot of force?**

Y **N**

Are the two outer back joggers finger in their right position (ITEM)?

Y **N**

Position the two outer back jogger fingers in their correct position (ITEM).

1. Lubricate where needed.
2. Replace motor BM-M2.

1. Replace motor BM-M2.
2. Replace PCB “C”

BM-005

Fault code BM-005, indicates that the Back jogger motor (BM-M2) has a Short circuit.

Initial actions

- Check fuse F2 on transformer

Procedure

Disconnect the motor plug M2. Run the diagnostics again. **Fault code BM-006(Open circuit) is displayed?**

Y **N**

Disconnect plug C.P2 from PCB “C”. Check wires for Short circuit across leads, the orange wire M2 to C.P2-8 (violet) and the violet wire M2 to C.P2-1 (orange). **Is there a Short circuit?**

Y **N**

Replace PCB “C”.

Replace wire harness.

Replace motor BM-M2

BM-006

Fault code BM-006, indicates that the Back jogger motor (BM-M2) has an Open circuit.

Initial actions

- Check fuse F2 on transformer

Procedure

Disconnect the motor plug M2. Enter the Service Mode and start Back jogger motor (BM-M2) in motors. Measure between the orange wire M2 and the violet wire M2 (PWM 36V and ground). **The voltage is approximately 36 VDC?**

Y **N**

Disconnect plug C.P2 from PCB “C”. Measure between J2-1 and J2-8 (PWM 36V and ground). **The voltage is approximately 36 VDC?**

Y **N**

Replace PCB “C”.

Replace wire harness.

Replace motor BM-M2

BM-007

Fault code BM-007, indicates that the Back jogger positioning motor (BM-M3) does not receive any displacement pulses.

Initial actions

- Check fuse F2 on transformer

Procedure

Enter the Service mode and select Back jogger positioning motor encoder (Q5) in sensors.
Slowly rotate the motor and check the value of the Back jogger position motor encoder (Q5). **Q5 toggles between "0" and "1"?**

Y **N**

Disconnect the sensor plug Q5 to motor BM-M3. Measure between the red wire Q5 and the black wire Q5 (5V and Signal ground). **The voltage is approximately 5 VDC?**

Y **N**

Disconnect plug A.P1 from PCB "A". Measure between the J1-1 and J1-25 (5V and Signal ground). **The voltage is approximately 5 VDC?**

Y **N**

Replace PCB "A".

Replace wire harness.

Disconnect plug A.P1 from PCB "A". Check wires for Continuity / Short circuit from the white wire Q5 to A.P1-24, the black wire Q5 to A.P1-25, the red wire Q5 to A.P1-1. **Is there continuity and no Short circuit?**

Y **N**

Replace wire harness.

1. Replace motor BM-M3.
2. Replace PCB "A".

Enter Service mode and select Back jogger positioning motor (BM-M3) in motors. Run the motor to its upper end position and down to its lower end position. **The Back jogger positioning mechanism is moving easily up and down without harshing?**

Y **N**

Check the Back jogger positioning mechanism and lubricate where needed.

1. Replace motor BM-M3.
2. Replace PCB "A".

BM-008

Fault code BM-008, indicates that the Back jogger positioning motor (BM-M3) had a Cycle time out.

Initial actions

- Check fuse F2 on transformer
- Enter the Service mode and select Back jogger positioning motor (BM-M3) in motors.
- Make sure the that the Back jogger positioning home position switch (BM-SW1) is installed correctly.

Procedure

Enter the Service mode and select Back jogger positioning home position switch (BM-SW1) in sensors. **The Back jogger positioning home position switch (BM-SW1) indicates: 1 when the switch is pressed, and: 0 when the switch is not pressed?**

Y **N**

1. Replace switch SW1.
2. Disconnect the plugs from switch BM-SW1. Check wire for Continuity / Short circuit from the white wire SW1 to C.P13-5 and the black wire from C.P13-6. **Is there Continuity and no Short circuit?**

Y **N**

Replace wire harness.

Replace PCB "C".

Enter Service mode and select Back jogger positioning motor (BM-M3) in motors. Run the motor up to its upper end position and down to its lower end position. **The Back jogger positioning mechanism is moving easily up and down without harshing?**

Y **N**

Check the Back jogger positioning mechanism.

1. Replace motor BM-M3.
2. Replace PCB "C".

BM-009

Fault code BM-009, indicates that the Back jogger positioning motor (BM-M3) has a Short circuit.

Initial actions

- Check fuse F2 on transformer

Procedure

Disconnect the motor plug M3. Run the diagnostics again. Fault code BM-010(Open circuit) is displayed?

Y

N

Disconnect plug C.P2 from PCB “C”. Check wires for Short circuit across leads, the orange wire M3 to C.P2-10 (violet) and the violet wire M3 to C.P2-3 (orange). Is there a Short circuit?

Y

N

Replace PCB “C”.

Replace wire harness.

Replace motor BM-M3

BM-010

Fault code BM-010, indicates that the Back jogger positioning motor (BM-M3) has an Open circuit.

Initial actions

- Check fuse F2 on transformer

Procedure

Disconnect the motor plug M3. Enter the Service Mode and start Back jogger positioning motor (BM-M3) in motors. Measure between the orange wire M3 and the violet wire M3 (PWM 36V and ground). **The voltage is approximately 36 VDC?**

Y

N

Disconnect plug C.P2 from PCB “C”. Measure between J2-3 and J2-10 (PWM 36V and ground). **The voltage is approximately 36 VDC?**

Y

N

Replace PCB “C”.

Replace wire harness.

Replace motor BM-M3

BM-011

Fault code BM-011, indicates that the Side jogger motor (BM-M4) does not receive any displacement pulses.

Initial actions

- Check fuse F2 on transformer

Procedure

Enter the Service mode and select Side jogger motor encoder (Q6) in sensors.
Slowly rotate the motor and check the value of the Side jogger motor encoder (Q6) channel A and B. **Q6 channel A and channel B both toggles between "0" and "1"?**

Y **N**

Disconnect the sensor plug Q6 to motor BM-M4. Measure between the red wire Q6 and the black wire Q6 (5V and Signal ground). **The voltage is approximately 5 VDC?**

Y **N**

Disconnect plug B.P14 from PCB "B". Measure between the J14 -1 and J14-3 (5V and Signal ground). **The voltage is approximately 5 VDC?**

Y **N**

Replace PCB "B".

Replace wire harness.

Disconnect plug B.P14 from PCB "B". Check wires for Continuity / Short circuit from the white wire Q6 to B.P14-4, the gray wire Q6 to B.P14-7, the black wire Q6 to B.P14-3, the red wire Q6 to B.P14-1. **Is there continuity and no Short circuit?**

Y **N**

Replace wire harness.

1. Replace motor BM-M4.
2. Replace PCB "B".

Move the sideguides by hand 3 times between its inner position and its outer position. **The Side guides moves easily in and out without harshing?**

Y **N**

Check the Side jogger mechanism.

1. Replace motor BM-M4.
2. Replace PCB "B".

BM-012

Fault code BM-012, indicates that the Side jogger motor (BM-M4) has a Short circuit.

Initial actions

- Check fuse F2 on transformer.
- Check fuse F3 above Side jogger motor (BM-M4).

Procedure

Disconnect the motor plug M4. Run the diagnostics again. **Fault code BM-013(Open circuit) is displayed?**

Y **N**

Disconnect plug B.P2 from PCB "B". Check wires for Short circuit across leads, the orange wire M3 to B.P2-10 (violet) and the violet wire M3 to B.P2-3 (orange). **Is there a Short circuit?**

Y **N**

Replace PCB "B".

Replace wire harness.

Replace motor BM-M4

BM-013

Fault code BM-013, indicates that the Side jogger motor (BM-M4) has an Open circuit.

Initial actions

- Check fuse F2 on transformer

Procedure

Disconnect the motor plug M4. Enter the Service Mode and start Side jogger motor (BM-M4) in motors. Measure between the orange wire M4 and the violet wire M4 (PWM 36V and ground). **The voltage is approximately 36 VDC?**

Y **N**

Disconnect plug B.P2 from PCB “B”. Measure between J2-3 and J2-10 (PWM 36V and ground). **The voltage is approximately 36 VDC?**

Y **N**

Replace PCB “B”.

Replace wire harness.

Replace motor BM-M4

BM-014

Fault code BM-014, indicates that the Stapler motor (BM-M5) had a Cycle time out.

Initial actions

- Check fuse F2 on transformer
- Make sure that the stapler motor home position switch is installed correctly.

Procedure

Enter the Service mode and select Stapler motor home position switch (BM-SW3) in sensors. **The Stapler motor home position switch indicates :1 when the switch is pressed, and :0 when the switch is not pressed?**

Y **N**

1. Replace switch BM-SW3.

2. Disconnect the plugs from switch BM-SW3. Check wire for Continuity / Short circuit from, the white wire SW3 to B.P13-11, from the black wire SW3 to B.P13-12. **Is there Continuity and no Short circuit?**

Y **N**

Replace wire harness.

Replace PCB “B”.

Turn the motor by hand and check the clinch mechanism. **Does it run as it should (ITEM)?**

Y **N**

1. Remove any jammed staples.
2. Lubricate the Clinch.

Remove the stapler heads (ITEM). **Does the stapler heads run as they should?**

Y **N**

1. Make sure that there is no jammed staples in the stapler head.
2. Lubricate the stapler head.
3. Replace the stapler head.

Turn the motor by hand. **Is the rest of the stapler mechanism moving easily?**

Y **N**

1. Check stapler mechanism and lubricate where needed.
2. Replace motor BM-M5.

Replace motor BM-M5.

BM-015

Fault code BM-015, indicates that the Stapler motor (BM-M5) has a Short circuit.

Initial actions

- Check fuse F2 on transformer

Procedure

Disconnect the motor plug M5. Run the diagnostics again. **Fault code BM-016(Open circuit) is displayed?**

Y **N**

Disconnect plug B.P3 from PCB “B”. Check wires for Short circuit across leads, the orange wire M5 to B.P3-6 (violet) and the violet wire M5 to B.P3-7 (orange). **Is there a Short circuit?**

Y **N**

Replace PCB “B”.

Replace wire harness.

Replace motor BM-M5

BM-016

Fault code BM-016, indicates that the Stapler motor (BM-M5) has an Open circuit.

Initial actions

- Check fuse F2 on transformer

Procedure

Disconnect the motor plug M5. Enter the Service Mode and start Stapler motor (BM-M5) in motors. Measure between the orange wire M5 and the violet wire M5 (PWM 36V and ground). **The voltage is approximately 36 VDC?**

Y **N**

Disconnect plug B.P3 from PCB “B”. Measure between J3-7 and J3-6 (PWM 36V and ground). **The voltage is approximately 36 VDC?**

Y **N**

Replace PCB “B”.

Replace wire harness.

Replace motor BM-M5

BM-017

Fault code BM-017, indicates that the Staple/fold positioning motor (BM-M6) does not receive any displacement pulses.

Initial actions

- Check fuse F2 on transformer

Procedure

Enter the Service mode and select Staple/fold positioning motor encoder (Q9) in sensors.
Slowly rotate the motor and check the value of the Staple/fold positioning motor encoder (Q9). **Q9 toggles between "0" and "1"?**

Y **N**

Disconnect the sensor plug Q9 to motor BM-M6. Measure between the red wire Q9 and the black wire Q9 (5V and Signal ground). **The voltage is approximately 5 VDC?**

Y **N**

Disconnect plug B.P14 from PCB "B". Measure between the J14-9 and J14-10 (5V and Signal ground). **The voltage is approximately 5 VDC?**

Y **N**

Replace PCB "B".

Replace wire harness.

Disconnect plug B.P14 from PCB "B". Check wires for Continuity / Short circuit from the white wire Q9 to B.P14-11, the black wire Q9 to B.P14-10, the red wire Q9 to B.P14-9. **Is there continuity and no Short circuit?**

Y **N**

Replace wire harness.

1. Replace motor BM-M6.
2. Replace PCB "B".

Enter Service mode and select Staple/fold positioning motor (BM-M6) in motors. Run the motor to its upper end position and down to its lower end position. **The Staple/fold positioning mechanism is moving easily up and down without harshing?**

Y **N**

Check the Staple/fold positioning mechanism and lubricate where needed.

1. Replace motor BM-M6.
2. Replace PCB "B".

BM-018

Fault code BM-018, indicates that the Staple/fold positioning motor (BM-M6) had a Cycle time out.

Initial actions

- Check fuse F2 on transformer
- Enter the Service mode and select Staple/fold positioning motor (BM-M6) in motors.
- Make sure that the Staple/fold positioning home position switch (BM-SW4) is installed correctly.

Procedure

Enter the Service mode and select Staple/fold positioning home position switch (BM-SW4) in sensors. **The Staple/fold positioning home position switch (BM-SW4) indicates: 1 when the switch is pressed, and: 0 when the switch is not pressed?**

Y **N**

1. Replace switch SW4.
2. Disconnect the plugs from switch BM-SW4. Check wire for Continuity / Short circuit from the white wire SW4 to B.P13-5 and from the black wire SW4 to B.P13-6. **Is there Continuity and no Short circuit?**

Y **N**

Replace wire harness.

Replace PCB "B".

Enter Service mode and select Staple/fold positioning motor (BM-M6) in motors. Run the motor to its upper end position and down to its lower end position. **The Staple/fold positioning mechanism is moving easily up and down without harshing?**

Y **N**

Check the Staple/fold positioning mechanism and lubricate where needed.

1. Replace motor BM-M6.
2. Replace PCB "B".

BM-019

Fault code BM-019, indicates that the Staple/fold positioning motor (BM-M6) has a Short circuit.

Initial actions

- Check fuse F2 on transformer

Procedure

Disconnect the motor plug M6. Run the diagnostics again. **Fault code BM-020(Open circuit) is displayed?**

Y **N**

Disconnect plug B.P2 from PCB “B”. Check wires for Short circuit across leads, the orange wire M6 to B.P2-11 (violet) and the violet wire M6 to B.P2-4 (orange). Is there a Short circuit?

Y N

Replace PCB “B”.

Replace wire harness.

Replace motor BM-M6

BM-020

Fault code BM-020, indicates that the Staple/fold positioning motor (BM-M6) has an Open circuit.

Initial actions

- Check fuse F2 on transformer

Procedure

Disconnect the motor plug M6. Enter the Service Mode and start Staple/fold positioning motor (BM-M6) in motors. Measure between the orange wire M6 and the violet wire M6 (PWM 36V and ground). **The voltage is approximately 36 VDC?**

Y **N**

Disconnect plug B.P2 from PCB “B”. Measure between J2-4 and J2-11 (PWM 36V and ground). **The voltage is approximately 36 VDC?**

Y **N**

Replace PCB “B”.

Replace wire harness.

Replace motor BM-M6

BM-021

Fault code BM-021, indicates that the Set transport motor (BM-M7) has a Short circuit.

Initial actions

- Check fuse F2 on transformer

Procedure

Disconnect the motor plug M7. Run the diagnostics again. **Fault code BM-022(Open circuit) is displayed?**

Y **N**

Disconnect plug C.P3 from PCB “C”. Check wires for Short circuit across leads, the orange wire M7 to C.P3-6 (violet) and the violet wire M7 to C.P3-7 (orange). **Is there a Short circuit?**

Y **N**

Replace PCB “C”.

Replace wire harness.

Replace motor BM-M7

BM-022

Fault code BM-022 indicates that the Stapled set transport motor (BM-M7) has an Open circuit.

Initial actions

- Check fuse F2 on transformer

Procedure

Disconnect the motor plug M7. Enter the Service Mode and start Stapled set transport motor (BM-M7) in motors. Measure between the orange wire M7 and the violet wire M7 (PWM 36V and ground). **The voltage is approximately 36 VDC?**

Y **N**

Disconnect plug C.P3 from PCB “C”. Measure between J3-7 and J3-6 (PWM 36V and ground). **The voltage is approximately 36 VDC?**

Y **N**

Replace PCB “C”.

Replace wire harness.

Replace motor BM-M7

BM-023

Fault code BM-023, indicates that the Pre fold transport motor (BM-M8) does not receive any displacement pulses.

Initial actions

- Check fuse F2 on transformer

Procedure

Enter the Service mode and select Pre fold transport motor encoder (Q10) in sensors.
Slowly rotate the motor by hand and check the value of the Pre fold transport motor encoder (Q10). **Q10 toggles between “0” and “1”?**

Y **N**

Disconnect the sensor plug Q10 to motor BM-M8. Measure between the red wire Q10 and the black wire Q10 (5V and Signal ground). **The voltage is approximately 5 VDC?**

Y **N**

Disconnect plug C.P14 from PCB “C”. Measure between the J14-9 and J14-13 (5V and Signal ground). **The voltage is approximately 5 VDC?**

Y **N**

Replace PCB “C”.

Replace wire harness.

Disconnect plug C.P14 from PCB “C”. Check wires for Continuity / Short circuit from the white wire Q10 to C.P14-14, the black wire Q10 to C.P14-13, the red wire Q10 to C.P14-9. **Is there continuity and no Short circuit?**

Y **N**

Replace wire harness.

1. Replace motor BM-M8.
2. Replace PCB “C”.

Turn motor BM-M8 one and a half turn in both directions by hand. You should be able to use about the same amount of force throughout the turn. **Are you able to turn the motor without using a lot of force?**

Y **N**

1. Check if some part of the pre fold transport mechanism seems to harsh.
2. Replace motor BM-M8.

1. Replace motor BM-M8.
2. Replace PCB “C”.

BM-024

Fault code BM-024, indicates that the Pre fold transport motor (BM-M8) has a Short circuit.

Initial actions

- Check fuse F2 on transformer

Procedure

Disconnect the motor plug M8. Run the diagnostics again. **Fault code BM-025(Open circuit) is displayed?**

Y **N**

Disconnect plug C.P2 from PCB “C”. Check wires for Short circuit across leads, the orange wire M8 to C.P2-9 (violet) and the violet wire M8 to C.P2-2 (orange). **Is there a Short circuit?**

Y **N**

Replace PCB “C”.

Replace wire harness.

Replace motor BM-M8

BM-025

Fault code BM-025, indicates that the Pre fold transport motor (BM-M8) has an Open circuit.

Initial actions

- Check fuse F2 on transformer

Procedure

Disconnect the motor plug M8. Enter the Service Mode and start Pre fold transport motor (BM-M8) in motors. Measure between the orange wire M8 and the violet wire M8 (PWM 36V and ground). **The voltage is approximately 36 VDC?**

Y **N**

Disconnect plug C.P2 from PCB “C”. Measure between J2-2 and J2-9 (PWM 36V and ground). **The voltage is approximately 36 VDC?**

Y **N**

Replace PCB “C”.

Replace wire harness.

Replace motor BM-M8

BM-026

Fault code BM-026, indicates that the Fold roller motor (BM-M9) does not receive any displacement pulses.

Initial actions

- Check fuse F2 on transformer

Procedure

Enter the Service mode and select Fold roller motor encoder (Q11) in sensors.
Slowly rotate the motor by hand and check the value of the Fold roller motor encoder (Q11). **Q11 toggles between "0" and "1"?**

Y
N
Disconnect the sensor plug Q11 to motor BM-M9. Measure between the red wire Q11 and the black wire Q11 (5V and Signal ground). **The voltage is approximately 5 VDC?**

Y
N
Disconnect plug C.P14 from PCB "C". Measure between the J14-12 and J14-10 (5V and Signal ground). **The voltage is approximately 5 VDC?**

Y
N
Replace PCB "C".

Replace wire harness.

Disconnect plug C.P14 from PCB "C". Check wires for Continuity / Short circuit from the white wire Q11 to C.P14-11, the black wire Q11 to C.P14-10, the red wire Q11 to C.P14-12. **Is there continuity and no Short circuit?**

Y
N
Replace wire harness.

1. Replace sensor Q11.
2. Replace PCB "C".

Turn motor BM-M9 one and a half turn in both directions by hand. You should be able to use about the same amount of force throughout the turn. **Are you able to turn the motor without using a lot of force?**

Y
N
1. Check the fold transmission.
2. Replace motor BM-M9.

1. Replace motor BM-M9.
2. Replace PCB "C".

BM-027

Fault code BM-027, indicates that the Fold roller motor (BM-M9) has a Short circuit.

Initial actions

- Check fuse F2 on transformer

Procedure

Disconnect the motor plug M9. Run the diagnostics again. **Fault code BM-028(Open circuit) is displayed?**

Y
N
Disconnect plug C.P3 from PCB "C". Check wires for Short circuit across leads, the orange wire M9 to C.P3-3 (violet) and the violet wire M9 to C.P3-2 (orange). **Is there a Short circuit?**

Y
N
Replace PCB "C".

Replace wire harness.

Replace motor BM-M9

BM-028

Fault code BM-028, indicates that the Fold roller motor (BM-M9) has an Open circuit.

Initial actions

- Check fuse F2 on transformer

Procedure

Disconnect the motor plug M9. Enter the Service Mode and start Fold roller motor (BM-M9) in motors. Measure between the orange wire M9 and the violet wire M9 (PWM 36V and ground). **The voltage is approximately 36 VDC?**

Y **N**

Disconnect plug C.P3 from PCB “C”. Measure between J3-2 and J3-3 (PWM 36V and ground). **The voltage is approximately 36 VDC?**

Y **N**

Replace PCB “C”.

Replace wire harness.

Replace motor BM-M9

BM-029

Fault code BM-029, indicates that the Fold knife motor (BM-M10) had a Cycle time out.

Initial actions

- Check fuse F2 on transformer
- Make sure that the Fold knife motor home position switch (BM-SW5) is installed correctly.

Procedure

Enter the Service mode and select Fold knife motor home position switch (BM-SW5) in sensors. **The Fold knife motor home position switch indicates :1 when the switch is pressed, and :0 when the switch is not pressed?**

Y **N**

1. Replace switch BM-SW5.

2. Disconnect the plugs from switch BM-SW5. Check wire for Continuity / Short circuit from, the white wire SW5 to B.P13-8, from the black wire SW5 to B.P13-9. **Is there Continuity and no Short circuit?**

Y **N**

Replace wire harness.

Replace PCB “B”.

1. Check fold mechanism for obstacles.
2. Replace motor BM-M10.

BM-030

Fault code BM-030, indicates that the Fold knife motor (BM-M10) has a Short circuit.

Initial actions

- Check fuse F2 on transformer

Procedure

Disconnect the motor plug M10. Run the diagnostics again. **Fault code BM-031(Open circuit) is displayed?**

Y **N**

Disconnect plug B.P3 from PCB “B”. Check wires for Short circuit across leads, the orange wire M10 to B.P3-3 (violet) and the violet wire M10 to B.P3-2 (orange). **Is there a Short circuit?**

Y **N**

Replace PCB “B”.

Replace wire harness.

Replace motor BM-M10

BM-031

Fault code BM-031, indicates that the Fold knife motor (BM-M10) has an Open circuit.

Initial actions

- Check fuse F2 on transformer

Procedure

Disconnect the motor plug M10. Enter the Service Mode and start Fold knife motor (BM-M10) in motors. Measure between the orange wire M10 and the violet wire M10 (PWM 36V and ground). **The voltage is approximately 36 VDC?**

Y **N**

Disconnect plug B.P3 from PCB “B”. Measure between J3-3 and J3-2 (PWM 36V and ground). **The voltage is approximately 36 VDC?**

Y **N**

Replace PCB “B”.

Replace wire harness.

Replace motor BM-M10

BM-032

Fault code BM-032, indicates that the Fold stop positioning motor (BM-M11) does not receive any displacement pulses.

Initial actions

- Check fuse F2 on transformer

Procedure

Enter the Service mode and select Fold stop positioning motor encoder (Q13) in sensors.
Slowly rotate the motor and check the value of the Fold stop positioning motor encoder (Q13) channel A and B. **Q13 channel A and channel B both toggles between “0” and “1”?**

Y **N**

Disconnect the sensor plug Q13 to motor BM-M11. Measure between the red wire Q13 and the black wire Q13 (5V and Signal ground). **The voltage is approximately 5 VDC?**

Y **N**

Disconnect plug C.P14 from PCB “C”. Measure between the J14 -1 and J14-3 (5V and Signal ground). **The voltage is approximately 5 VDC?**

Y N

Replace PCB “C”.

Replace wire harness.

Disconnect plug C.P14 from PCB “C”. Check wires for Contiuity / Short circuit from the white wire Q13 to C.P14-4, the gray wire Q13 to B.P14-7, the black wire Q13 to B.P14-3, the red wire Q13 to B.P14-1. **Is there continuity and no Short circuit?**

Y **N**

Replace wire harness.

1. Replace motor BM-M11.
2. Replace PCB “C”.

Move the Fold stop by hand 3 times between its upper position and its lower position. **The Fold stop moves easily up and down without harshing?**

Y **N**

1. Check the Fold stop mechanism.
2. Replace motor BM-M11.

1. Replace motor BM-M11.
2. Replace PCB “C”.

BM-033

Fault code BM-033, indicates that the Fold stop motor (BM-M11) has a Short circuit.

Initial actions

- Check fuse F2 on transformer.

Procedure

Disconnect the motor plug M11. Run the diagnostics again. **Fault code BM-34 (Open circuit) is displayed?**

Y **N**

Disconnect plug C.P2 from PCB “C”. Check wires for Short circuit across leads, the orange wire M11 to C.P2-11 (violet) and the violet wire M11 to C.P2-4 (orange). **Is there a Short circuit?**

Y **N**

Replace PCB “C”.

Replace wire harness.

Replace motor BM-M11

BM-035

Fault code BM-035, indicates that the Set transport edge stapling solenoid (BM-SOL1) has an Open circuit.

Initial actions

- Check fuse F2 on transformer
- Make sure the connectors are properly connected to the solenoid.

Procedure

Power off the machine. Remove connectors from solenoid SOL1. Measure on the contacts on the solenoid. **Is there an open circuit?**

Y **N**

Reinstall connectors. Measure between the violet connector on the solenoid and B.P2-12 on PCB ”B”. **Is there continuity?**

Y **N**

Replace wire harness.

Measure between the orange connector on the solenoid and D.P11-2 on the PCB “D”. **Is there continuity?**

Y **N**

Replace wire harness.

Replace PCB “B”

Replace solenoid SOL1.

BM-036

Fault code BM-036, indicates that the Left paper stop edge stapling solenoid (BM-SOL2) has an Open circuit.

Initial actions

- Check fuse F2 on transformer
- Make sure the connectors are properly connected to the solenoid.

Procedure

Power off the machine. Remove connectors from solenoid SOL2. Measure on the contacts on the solenoid. **Is there an open circuit?**

Y **N**

Reinstall connectors. Measure between the violet connector on the solenoid and C.P2-19 on PCB "C". **Is there continuity?**

Y **N**

Replace wire harness.

Measure between the orange connector on the solenoid and D.P11-3 on the PCB "D". **Is there continuity?**

Y **N**

Replace wire harness.

Replace PCB "C"

Replace solenoid SOL2.

BM-037

Fault code BM-037, indicates that the Right paper stop edge stapling solenoid (BM-SOL3) has an Open circuit.

Initial actions

- Check fuse F2 on transformer
- Make sure the connectors are properly connected to the solenoid.

Procedure

Power off the machine. Remove connectors from solenoid SOL3. Measure on the contacts on the solenoid. **Is there an open circuit?**

Y **N**

Reinstall connectors. Measure between the violet connector on the solenoid and B.P2-13 on PCB "B". **Is there continuity?**

Y **N**

Replace wire harness.

Measure between the orange connector on the solenoid and D.P11-4 on the PCB "D". **Is there continuity?**

Y **N**

Replace wire harness.

Replace PCB "B"

Replace solenoid SOL3.

BM-038

Fault code BM-038, indicates that the Paper stop/set transport solenoid (BM-SOL4) has an Open circuit.

Initial actions

- Check fuse F2 on transformer
- Make sure the connectors are properly connected to the solenoid.

Procedure

Power off the machine. Remove connectors from solenoid SOL4. Measure on the contacts on the solenoid. **Is there an open circuit?**

Y **N**

Reinstall connectors. Measure between the violet connector on the solenoid and B.P2-14 on PCB "B". **Is there continuity?**

Y **N**

Replace wire harness.

Measure between the orange connector on the solenoid and D.P11-5 on the PCB "D". **Is there continuity?**

Y **N**

Replace wire harness.

Replace PCB "B"

Replace solenoid SOL4.

BM-039

Fault code BM-039, indicates that the Counter (BM-SOL5) has an Open circuit.

Initial actions

- Check fuse F2 on transformer
- Make sure the connectors are properly connected to the solenoid.

Procedure

Power off the machine. Remove connectors from solenoid SOL5. Measure on the contacts on the solenoid. **Is there an open circuit?**

Y **N**

Reinstall connectors. Measure between the violet connector on the solenoid and C.P2-13 on PCB "C". **Is there continuity?**

Y **N**

Replace wire harness.

Measure between the orange connector on the solenoid and D.P11-1 on the PCB "D". **Is there continuity?**

Y **N**

Replace wire harness.

Replace PCB "C"

Replace Counter.

BM-050

Fault code BM-050, indicates that the Infeed paper path sensor (BM-Q1) is faulty.

Initial actions

- Make sure that the Infeed paper path sensor (BM-Q1) is installed correctly.

Procedure

1. Replace sensor BM-Q1.
2. Disconnect plug A.P1 from PCB “A”. Measure between J1-1 and J1-3 (5V and ground). **The voltage is approximately 5 VDC?**

Y **N**
Replace PCB “A”

Disconnect plug from sensor BM-Q1. Check wire continuity from the white wire Q1 to A.P1-2. **Is there Continuity?**

Y **N**
Replace wire harness

Connect plug A.P1 to PCB “A”. Measure between the red wire Q1 and the black wire Q1 (5V and ground). **The voltage is approximately 5 VDC?**

Y **N**
Replace wire harness.

Replace PCB “A”

BM-051

Fault code BM-051, indicates that the Hand feed start sensor (BM-Q2) is faulty.

Initial actions

- Make sure that the Hand feed start sensor (BM-Q2) is installed correctly.

Procedure

1. Replace sensor BM-Q2.
2. Disconnect plug A.P1 from PCB “A”. Measure between J1-1 and J1-16 (5V and ground). **The voltage is approximately 5 VDC?**

Y **N**
Replace PCB “A”

Disconnect plug from sensor BM-Q2. Check wire continuity from the white wire Q2 to A.P1-15. **Is there Continuity?**

Y **N**
Replace wire harness

Connect plug A.P1 to PCB “A”. Measure between the red wire Q2 and the black wire Q2 (5V and ground). **The voltage is approximately 5 VDC?**

Y **N**
Replace wire harness.

Replace PCB “A”

BM-052

Fault code BM-052, indicates that the Start edge stapling sensor (BM-Q7) is faulty.

Initial actions

- Make sure that the Start edge stapling sensor (BM-Q7) is installed correctly.

Procedure

1. Replace sensor BM-Q7.
2. Disconnect plug A.P1 from PCB “A”. Measure between J1-4 and J1-6 (5V and ground). **The voltage is approximately 5 VDC?**

Y **N**
| Replace PCB “A”

Disconnect plug from sensor BM-Q7. Check wire continuity from the white wire Q7 to A.P1-5. **Is there Continuity?**

Y **N**
| Replace wire harness

Connect plug A.P1 to PCB “A”. Measure between the red wire Q7 and the black wire Q7 (5V and ground). **The voltage is approximately 5 VDC?**

Y **N**
| Replace wire harness.

Replace PCB “A”

BM-053

Fault code BM-053, indicates that the Start saddle stapling sensor (BM-Q8) is faulty.

Initial actions

- Make sure that the Start saddle stapling sensor (BM-Q8) is installed correctly.

Procedure

1. Replace sensor BM-Q8.
2. Disconnect plug A.P1 from PCB “A”. Measure between J1-7 and J1-9 (5V and ground). **The voltage is approximately 5 VDC?**

Y **N**
| Replace PCB “A”

Disconnect plug from sensor BM-Q8. Check wire continuity from the white wire Q8 to A.P1-8. **Is there Continuity?**

Y **N**
| Replace wire harness

Connect plug A.P1 to PCB “A”. Measure between the red wire Q8 and the black wire Q8 (5V and ground). **The voltage is approximately 5 VDC?**

Y **N**
| Replace wire harness.

Replace PCB “A”

BM-054

Fault code BM-054, indicates that the Fold sensor (BM-Q12) is faulty.

Initial actions

- Make sure that the Fold sensor (BM-Q12) is installed correctly.

Procedure

1. Replace sensor BM-Q12.
2. Disconnect plug A.P1 from PCB “A”. Measure between J1-10 and J1-12 (5V and ground). **The voltage is approximately 5 VDC?**

Y **N**
| Replace PCB “A”

Disconnect plug from sensor BM-Q12. Check wire continuity from the white wire Q12 to A.P1-11. **Is there Continuity?**

Y **N**
| Replace wire harness

Connect plug A.P1 to PCB “A”. Measure between the red wire Q12 and the black wire Q12 (5V and ground). **The voltage is approximately 5 VDC?**

Y **N**
| Replace wire harness.

Replace PCB “A”

BM-055

Fault code BM-055, indicates that the Exit sensor (BM-Q14) is faulty.

Initial actions

- Make sure that the Exit sensor (BM-Q14) is installed correctly.

Procedure

1. Replace sensor BM-Q14.
2. Disconnect plug A.P1 from PCB “A”. Measure between J1-1 and J1-22 (5V and ground). **The voltage is approximately 5 VDC?**

Y **N**
| Replace PCB “A”

Disconnect plug from sensor BM-Q14. Check wire continuity from the white wire Q14 to A.P1-21. **Is there Continuity?**

Y **N**
| Replace wire harness

Connect plug A.P1 to PCB “A”. Measure between the red wire Q14 and the black wire Q14 (5V and ground). **The voltage is approximately 5 VDC?**

Y **N**
| Replace wire harness.

Replace PCB “A”

BM-150

Fault code BM-150, indicates that the 36V input is high.

Initial actions

- Make sure that contact P8 on interlock PCB (PCB “D”) is correctly installed.
- Make sure that contact P15 on cpu PCB (PCB “A”) is correctly installed.
- Make sure that the transformer in the machine is wired correctly.

Procedure

Power on machine. Measure incoming voltage on Rectifier (White and Blue). **The voltage is approximately 26V?**

Y **N**
Replace transformer.

Measure outgoing voltage on rectifier (Red and Black). **The voltage is approximately 36V?**

Y **N**
Replace rectifier.

Power off the machine. Measure between the black connector on the rectifier and P6-3 on interlock PCB. **Is there continuity?**

Y **N**
Replace wire harness.

Measure between the red connector on the rectifier and P6-1 on interlock PCB. **Is there continuity?**

Y **N**
Replace wire harness.

Replace interlock PCB.

BM-151

Fault code BM-151, indicates that the 36V input is low.

Initial actions

- Check fuse F2.
- Check the voltage protection plug P7 on the interlock PCB. The resistance must be more than 1 Mohm.
- Make sure that contact P8 on interlock PCB (PCB “D”) is correctly installed.
- Make sure that contact P15 on cpu PCB (PCB “A”) is correctly installed.
- Make sure that the transformer in the machine is wired correctly.

Procedure

Power on machine. Measure incoming voltage on Rectifier (White and Blue). **The voltage is approximately 26V?**

Y **N**
Replace transformer.

Measure outgoing voltage on rectifier (Red and Black). **The voltage is approximately 36V?**

Y **N**
Replace rectifier.

Power off the machine. Measure between the black connector on the rectifier and P6-3 on interlock PCB. **Is there continuity?**

Y **N**
Replace wire harness.

Measure between the red connector on the rectifier and P6-1 on interlock PCB. **Is there continuity?**

Y **N**
Replace wire harness.

Replace interlock PCB.

BM-152

Fault code BM-152, indicates that the 36V output is high.

Procedure

Power on machine and close covers. Measure between P6-1 and P6-3 on the interlock PCB. **The voltage is approximately 36V?**

Y **N**

The voltage is more than 43V?

Y **N**

The voltage is less than 26V?

Y **N**

Replace interlock PCB.

Go to 36V output low Fault code description BM-153.

Go to 36V input high Fault code description BM-150.

Measure between P4-1 and P4-2 on the interlock PCB. **The voltage is more than 43V?**

Y **N**

The voltage is less than 26V?

Y **N**

Replace interlock PCB.

Go to 36V output low Fault code description BM-153.

Replace the interlock PCB.

BM-153

Fault code BM-153, indicates that the 36V output is low.

Initial Actions

- Make sure that all the connectors to the interlock PCB are correctly installed.

Procedure

Power on machine and close covers. Measure between P6-1 and P6-3 on the interlock PCB. **The voltage is approximately 36V?**

Y **N**

The voltage is less than 26V?

Y **N**

The voltage is more than 43V?

Y **N**

Replace interlock PCB.

Go to 36V input high Fault code description BM-150.

Go to 36V input low Fault code description BM-151.

Measure between P4-1 and P4-2 on the interlock PCB. **The voltage is less than 26V?**

Y **N**

The voltage is more than 43V?

Y **N**

Replace interlock PCB.

Go to 36V output high Fault code description BM-152.

Replace the interlock PCB.

BM-154

Fault code BM-154, indicates that the 24V output is high.

Initial Actions

- Make sure that all the connectors to the interlock PCB are correctly installed.
- Enter service, and run Trimmer motors M5/6, make sure that they run correctly.

Procedure

Power on machine and close covers. Measure between J14-11 and J14-8 and between J12-11 and J12-8 on the interlock PCB. **The voltage is approximately 24V at both measurements?**

Y **N**

Measure between J6-1 and J6-3 on the interlock PCB. **The voltage is approximately 36V?**

Y **N**

The voltage is more than 43V?

Y **N**

The voltage is less than 26V?

Y **N**

Replace interlock PCB.

Go to 36V input low Fault code description BM-151.

Go to 36V input high Fault code description BM-150.

Replace interlock PCB.

Replace the interlock PCB.

BM-155

Fault code BM-155, indicates that the 24V output is low.

Initial Actions

- Make sure that all the connectors to the interlock PCB are correctly installed.
- Enter service, and run Trimmer motors M5/6, make sure that they run correctly.

Procedure

Power on machine and close covers. Measure between J14-11 and J14-8 on the interlock PCB. **The voltage is approximately 24V?**

Y **N**

Measure between J6-1 and J6-3 on the interlock PCB. **The voltage is approximately 36V?**

Y **N**

The voltage is more than 43V?

Y **N**

The voltage is less than 26V?

Y **N**

Replace interlock PCB.

Go to 36V input low Fault code description BM-151.

Go to 36V input high Fault code description BM-150.

Replace interlock PCB.

Replace the interlock PCB.

BM-156

Fault code BM-156, indicates that one of the interlock switches in the system is faulty.

Initial Actions

- Check that the transformer is tapped to the correct voltage (ITEM).
- If a trimmer is not installed, make sure that the interlock jumper is installed in the booklet maker.
- If a trimmer is installed, make sure that the interlock cable is installed in the trimmer and the booklet maker.
- Make sure that all the connectors to the interlock PCB are correctly installed.

Procedure

Use the interlock cheaters to close all covers. Measure between P1-1 and P1-2 on the booklet maker interlock switch. **Is there continuity?**

Y **N**

Replace the booklet maker interlock switch.

Measure between P1-4 and P1-5 on the booklet maker interlock switch. **Is there continuity?**

Y **N**

Replace the booklet maker interlock switch.

Measure between P1-1 and P1-2 on the trimmer interlock switch. **Is there continuity?**

Y **N**

Replace the trimmer interlock switch.

Measure between P1-4 and P1-5 on the trimmer interlock switch. **Is there continuity?**

Y **N**

Replace the trimmer interlock switch.

Replace the interlock PCB.

BM-157

Fault code BM-157, indicates that the 36V output relay is faulty.

Initial Actions

- Check fuse F2.

Procedure

Power on the machine. Measure between P6-1 and P6-3 on the interlock PCB. **The voltage is approximately 36V?**

Y **N**

The voltage is less than 26V?

Y **N**

The voltage is more than 43V?

Y **N**

Replace interlock PCB.

Go to 36V input high fault description BM-150.

Go to 36V input low Fault code description BM-151.

Measure between J5-1 and J5-2. T**he voltage is approximately 36VDC?**

Y **N**

The voltage is less than 26V?

Y **N**

The voltage is more than 43V?

Y **N**

Replace interlock PCB.

Go to 36V output high Fault code description BM-152.

Go to 36V output low Fault code description BM-153.

Replace interlock PCB.

BM-158

Fault code BM-158, indicates that there is a communication lost problem.

Initial Actions

- Make sure that the communication cable between the booklet maker and trimmer is properly connected.

Procedure

Power off the machine. Remove all the connectors to the trimmer. Power on the machine. **Is there still communication lost?**

Y **N**

Replace the communication cable between the booklet maker and the trimmer.

Replace the interlock PCB.

BM-159

Fault code BM-159, indicates that the PCB “B” is not connected.

Initial Actions

- Make sure that all connectors are properly connected to PCB “B”.
- Make sure that all the dipswitches on the PCB “B” are set correctly.(ITEM)

Procedure

Power off the machine. Measure for continuity between P4-1 on PCB “B” and P5-1 on PCB “C”. **Is there continuity?**

Y **N**

Replace wire harness.

Measure for continuity between P4-2 on PCB “B” and P5-2 on PCB ”C”. **Is there continuity?**

Y **N**

Replace wire harness.

Replace PCB “B”.

BM-160

Fault code BM-160, indicates that the PCB “C” is not connected.

Initial Actions

- Make sure that all connectors are properly connected to PCB “C”.
- Make sure that all the dipswitches on the PCB “C” are set correctly.(ITEM)

Procedure

Power off the machine. Measure for continuity between P4-1 on PCB “C” and P2-1 on PCB “A”. **Is there continuity?**

Y **N**

Replace wire harness.

Measure for continuity between P4-2 on PCB “C” and P2-2 on PCB ”A”. **Is there continuity?**

Y **N**

Replace wire harness.

Replace PCB “C”.

BM-201

Fault code BM-201, indicates that during a run, the Infeed paper path sensor (BM-Q1), was not blocked within timeout after the sheet exit signal from the printer was detected.

Initial Actions

- Make sure that the Infeed paper path sensor (BM-Q1) is installed correctly.
- Ensure that the Infeed paper path sensor (BM-Q1) is clean.

Procedure

Enter the Service mode and select Infeed paper path sensor (BM-Q1) in sensors. Block, then unblock, the BM-Q1 with a sheet of paper. **The Infeed paper path sensor indicates :1 when the sensor is blocked, and :0 when the sensor is not blocked?**

Y **N**

Go to BM-050 fault code.

1. Make sure that nothing interferes with the paper coming out from the printer and goiing in to the Booklet maker.
2. Make sure that the Booklet maker is correctly installed.

BM-202

Fault code BM-202, indicates that during a run, the Infeed paper path sensor (BM-Q1), was blocked exceeding timeout.

Initial Actions

- Make sure that the Infeed paper path sensor (BM-Q1) is installed correctly.
- Ensure that the Infeed paper path sensor (BM-Q1) is clean.

Procedure

Enter the Service mode and select Infeed paper path sensor (BM-Q1) in sensors. Block, then unblock, the BM-Q1 with a sheet of paper. **The Infeed paper path sensor indicates :1 when the sensor is blocked, and :0 when the sensor is not blocked?**

Y **N**

Go to BM-050 fault code.

1. Make sure that nothing interferes with the paper path.

BM-203

Fault code BM-203, indicates that during a run in hand feed mode, the Hand feed start sensor (BM-Q2), was blocked exceeding timeout.

Initial Actions

- Make sure that the Hand feed start sensor (BM-Q2) is installed correctly.
- Ensure that the Hand feed start sensor (BM-Q2) is clean.

Procedure

Enter the Service mode and select Hand feed start sensor (BM-Q2) in sensors. Block, then unblock, the BM-Q2 with a sheet of paper. **The Hand feed start sensor indicates: 1 when the sensor is blocked, and: 0 when the sensor is not blocked?**

Y **N**

Go to BM-051 fault code.

1. Make sure that nothing interferes with the paper path.

BM-204

Fault code BM-204, indicates that during a run, the Start edge stapling sensor (BM-Q7), was not blocked within timeout.

Initial Actions

- Make sure that the Start edge stapling sensor (BM-Q7) is installed correctly.
- Ensure that the Start edge stapling sensor (BM-Q7) is clean.

Procedure

Enter the Service mode and select Start edge stapling sensor (BM-Q7) in sensors. Block, then unblock, the BM-Q7 with a sheet of paper. **The Start edge stapling sensor indicates :1 when the sensor is blocked, and :0 when the sensor is not blocked?**

Y **N**

Go to BM-052 fault code.

1. Make sure that nothing interferes with the paper path.

BM-205

Fault code BM-205, indicates that during a run, the Start edge stapling sensor (BM-Q7), was blocked exceeding timeout.

Initial Actions

- Make sure that the Start edge stapling sensor (BM-Q7) is installed correctly.
- Ensure that the Start edge stapling sensor (BM-Q7) is clean.

Procedure

Enter the Service mode and select Start edge stapling sensor (BM-Q7) in sensors. Block, then unblock, the BM-Q7 with a sheet of paper. **The Start edge stapling sensor indicates :1 when the sensor is blocked, and :0 when the sensor is not blocked?**

Y **N**

Go to BM-052 fault code.

1. Make sure that nothing interferes with the paper path.

BM-206

Fault code BM-206, indicates that during a run, the Start saddle stapling sensor (BM-Q8), was not blocked within timeout.

Initial Actions

- Make sure that the Start saddle stapling sensor (BM-Q8) is installed correctly.
- Ensure that the Start saddle stapling sensor (BM-Q8) is clean.

Procedure

Enter the Service mode and select Start saddle stapling sensor (BM-Q8) in sensors. Block, then unblock, the BM-Q8 with a sheet of paper. **The Start saddle stapling sensor indicates :1 when the sensor is blocked, and :0 when the sensor is not blocked?**

Y **N**

Go to BM-053 fault code.

1. Make sure that nothing interferes with the paper path.

BM-207

Fault code BM-207, indicates that during a run, the Start saddle stapling sensor (BM-Q8), was blocked exceeding timeout.

Initial Actions

- Make sure that the Start saddle stapling sensor (BM-Q8) is installed correctly.
- Ensure that the Start saddle stapling sensor (BM-Q8) is clean.

Procedure

Enter the Service mode and select Start saddle stapling sensor (BM-Q8) in sensors. Block, then unblock, the BM-Q8 with a sheet of paper. **The Start saddle stapling sensor indicates :1 when the sensor is blocked, and :0 when the sensor is not blocked?**

Y **N**

Go to BM-053 fault code.

1. Make sure that nothing interferes with the paper path.

BM-208

Fault code BM-208, indicates that during a run, the Fold sensor (BM-Q12), was not blocked within timeout.

Initial Actions

- Make sure that the Fold sensor (BM-Q12) is installed correctly.
- Ensure that the Fold sensor (BM-Q12) is clean.

Procedure

Enter the Service mode and select Fold sensor (BM-Q12) in sensors. Block, then unblock, the BM-Q12 with a sheet of paper. **The Fold sensor indicates: 1 when the sensor is blocked, and: 0 when the sensor is not blocked?**

Y **N**

Go to BM-054 fault code.

1. Make sure that nothing interferes with the paper path.

BM-209

Fault code BM-209, indicates that during a run, the Fold sensor (BM-Q12), was blocked exceeding timeout.

Initial Actions

- Make sure that the Fold sensor (BM-Q12) is installed correctly.
- Ensure that the Fold sensor (BM-Q12) is clean.

Procedure

Enter the Service mode and select Fold sensor (BM-Q12) in sensors. Block, then unblock, the BM-Q12 with a sheet of paper. **The Fold sensor indicates: 1 when the sensor is blocked, and: 0 when the sensor is not blocked?**

Y **N**

Go to BM-054 fault code.

1. Make sure that nothing interferes with the paper path.

BM-210

Fault code BM-210, indicates that during a run, the Exit sensor (BM-Q14), was not blocked within timeout.

Initial Actions

- Make sure that the Exit sensor (BM-Q14) is installed correctly.
- Ensure that the Exit sensor (BM-Q14) is clean.

Procedure

Enter the Service mode and select Exit sensor (BM-Q14) in sensors. Block, then unblock, the BM-Q14 with a sheet of paper.
The Exit sensor indicates: 1 when the sensor is blocked, and: 0 when the sensor is not blocked?

Y **N**

Go to BM-055 fault code.

1. Make sure that nothing interferes with the paper path.

BM-211

Fault code BM-211, indicates that during a run, the Exit sensor (BM-Q14), was blocked exceeding timeout.

Initial Actions

- Make sure that the Exit sensor (BM-Q14) is installed correctly.
- Ensure that the Exit sensor (BM-Q14) is clean.

Procedure

Enter the Service mode and select Exit sensor (BM-Q14) in sensors. Block, then unblock, the BM-Q14 with a sheet of paper.
The Exit sensor indicates: 1 when the sensor is blocked, and: 0 when the sensor is not blocked?

Y **N**

Go to BM-055 fault code.

1. Make sure that nothing interferes with the paper path.

BM-401

Fault code BM-401, indicates that during a run, the staple miss sensors (BM-Q16 and BM-Q17) did not activate when stapling.

Initial Actions

- Check staples.
- Check stapler heads.
- Check that the stapler head connectors are connected properly.

Procedure

Enter Service mode and sensors. Check that the Right staple miss sensor (Q16) and the Left staple miss sensor (Q17) activates when cycling the Stapler motor (BM-M5) by hand.
Q16 and Q17 did activate?

Y **N**

Disconnect the connectors to the stapler heads. Disconnect plug B.P13 from PCB “B”. Check wire for Continuity / Short circuit from the right stapler head lead to the B.P13-24 and from the left stapler head to the left stapler head lead to the B.P13-21. **Is there Continuity and no Short circuit?**

Y **N**

Replace wire harness

Replace PCB “B”

Check staples and Stapler heads.

ST-001

Fault code ST-001, indicates that the Stacker motor (ST-M1) has a Short circuit.

Initial actions

- Check fuse F2 on transformer
- Make sure that the connectors are properly installed on the stacker motor.

Procedure

Disconnect the motor plug M1. Run the diagnostics again. **Fault code ST-002(Open circuit) is displayed?**

Y **N**

Disconnect plug B.P2 from PCB “B”. Check wires for Short circuit across leads, the red wire M1 to B.P2-9 (violet) and the black wire M1 to B.P2-2 (orange). I**s there a Short circuit?**

Y **N**

Replace PCB “B”.

Replace wire harness.

Replace motor ST-M1

ST-002

Fault code ST-002 indicates that the Stacker motor (ST-M1) has an Open circuit.

Initial actions

- Check fuse F2 on transformer
- Make sure that the connectors are properly installed on the stacker motor.

Procedure

Disconnect the motor plug M1. Enter the Service Mode and start Stacker motor (ST-M1) in motors. Measure between the red wire M1 and the black wire M1 (36V PWM and ground). **The voltage is approximately 36 VDC?**

Y **N**

Disconnect plug B.P2 from PCB “B”. Measure between J2-2 and J2-9 (36V and ground). **The voltage is approximately 36 VDC?**

Y **N**

Replace PCB “B”.

Replace wire harness.

Replace motor ST-M1

4.2 BLOWN FUSE CONDITIONS

⚠ WARNING

ONLY USE SLOW BLOW FUSES.

Fuse	Sec.	Rating	Symptom at power on
F1	6.1.3	10A	No response
F2	6.1.1	16A	Normal display function but no operations in the machine are possible
F3	6.1.1	2A	No response
F4	6.1.1	2A	Not in use
F5	6.1.1	3.15	Side jogger motor pulse time-out

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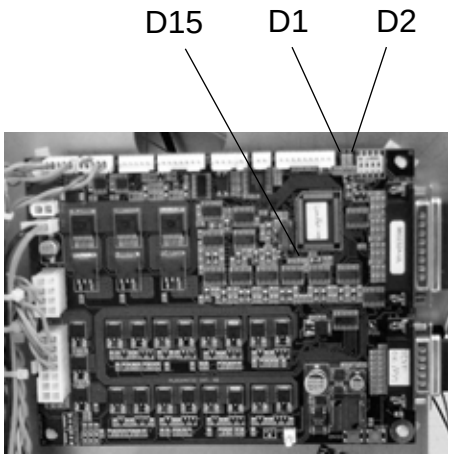
4.3 LEDS

Motor Drive PCB (MD6DC) in Booklet Maker & Trimmer

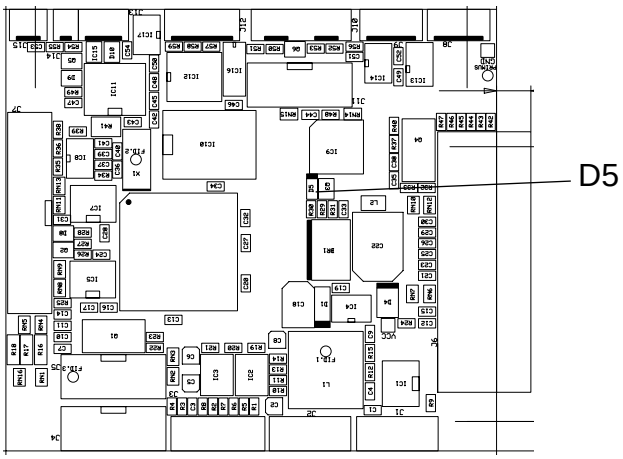


D1: Yellow LED flashes when power is on. The flashing indicates that a program is present and functioning. Should a download fail or the 5V is missing, LED would be OFF.

D2: Red LED flashes whenever information is sent or received on the Internal CAN. If power is switched on but no operations are performed, LED is OFF.

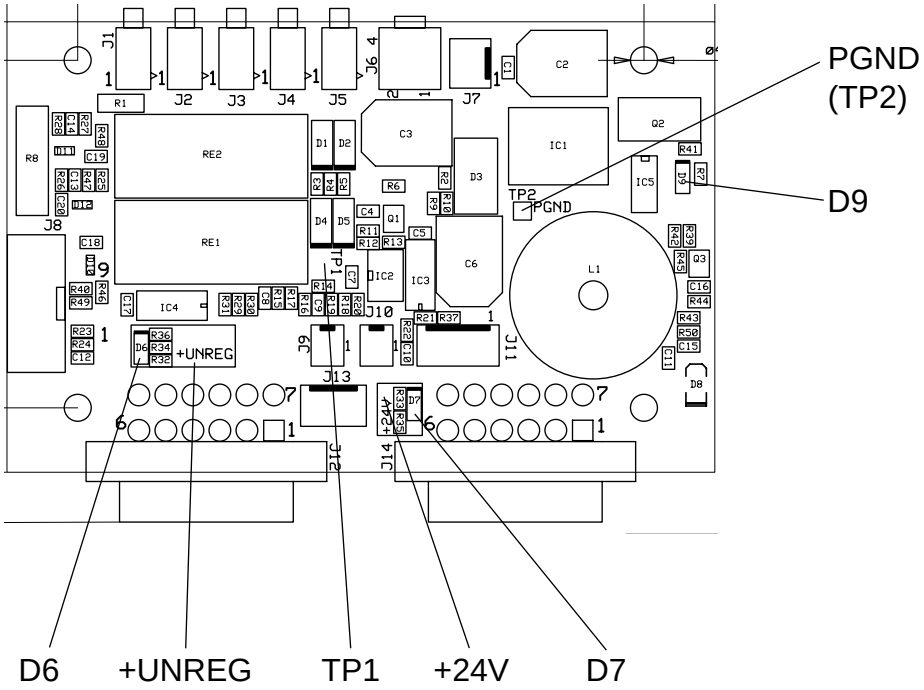
D15: Green LED permanently OFF. It has no direct function in this configuration.

CPU PCB in Booklet Maker



D5: Yellow LED flashes when power is on. The flashing indicates that a program is present and functioning. Should a download fail or the 5V is missing, Yellow LED would be OFF.

Interlock PCB in Booklet Maker

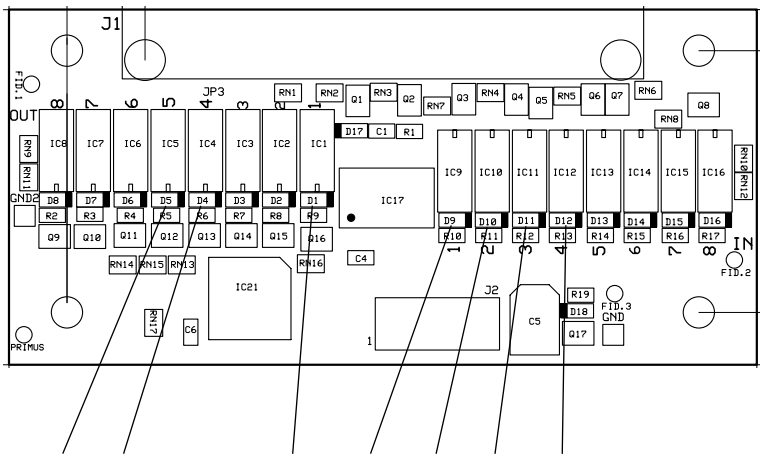


D6: Red LED is ON when unregulated 36V is present. If machine is interlocked (i.e. the top cover is open and 36V is cut off) or 36V is missing, LED is OFF.
The unregulated 36V can be measured between +UNREG Test Point and PGND Test Point.

D7: Red LED is ON when 24V is present. If machine is interlocked (i.e. the top cover is open) LED will still be ON.
It will also be ON if 36V is present but not 24V. In such a case the 24V stabilizing circuit on the Interlock PCB would be defective. To establish that actual 24V is present, measure between +24V Test Point and PGND Test Point.

D9: At power up, input power is checked to be within allowed range. If input voltage is too high or too low a fault is presented to the operator and machine will be inoperable. If the input voltage is within allowed range the interlock relay is activated. When interlock relay is activated the LED D9 is ON. If an interlock relay fault is detected, that is presented to the operator and machine will be inoperable. During normal operation the LED D9 is ON when covers are closed. If a cover is open LED D9 is OFF. Note that the fault codes are only visable in operator mode.

Copier Interface PCB in Booket Maker



D8 D7 D6 D5 D4 D3 D2 D1 D9 D10 D11 D12 D13 D14 D15 D16

D1 - D8 are signals from Booklet maker

D9 - D16 are signals from Printer

D4-D8, D12-D16: Not used.

D1: On-line. Booklet maker is switched on.

D2: Hard stop/Fault from Bookler maker. Printer stops immediately (such as when top cover opens).

D3: Soft stop/Full from Bookler maker. Printer stops after a while.

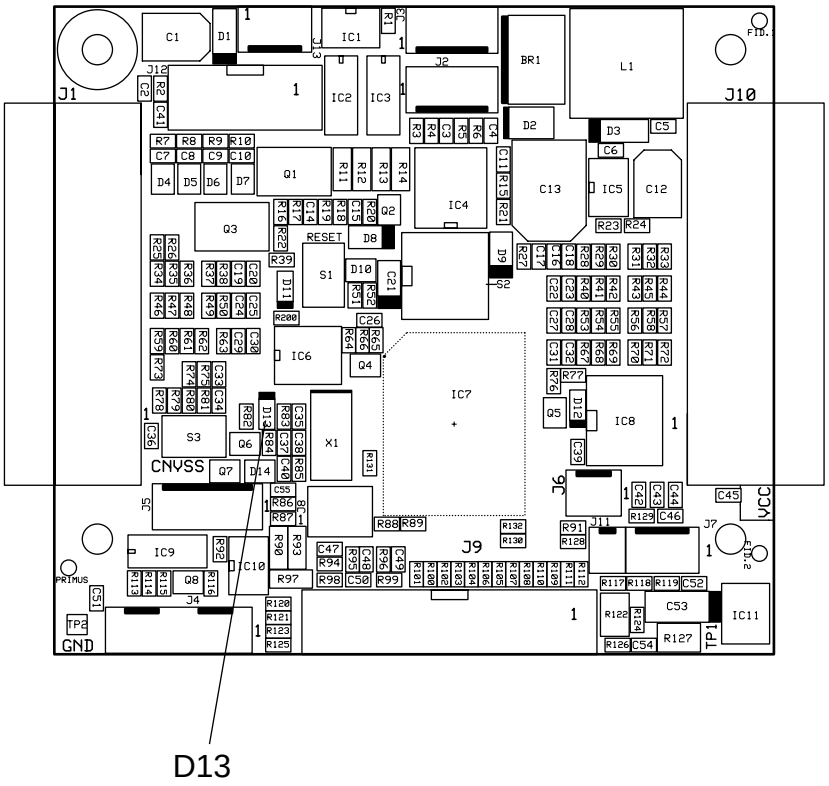
D9: Sheet exit signal from Printer. Sheets are exiting Printer.

D10: End of set signal from Printer. The sheet coming is the last in the set.

D11: Cycle up signal from Printer.

Note: The LED illuminates throughout the duration of the signal.

UI Controller PCB



D13: Yellow LED flashes when power is on. The flashing indicates that a program is present and functioning. Should a download fail or the 5V is missing, yellow LED would be OFF.

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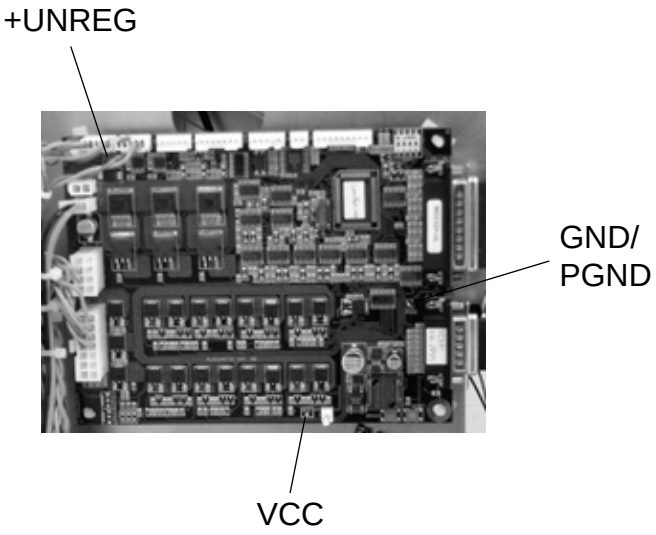
4.4 TEST POINTS

Motor Drive PCB (MD6DC) in Booklet Maker & Trimmer

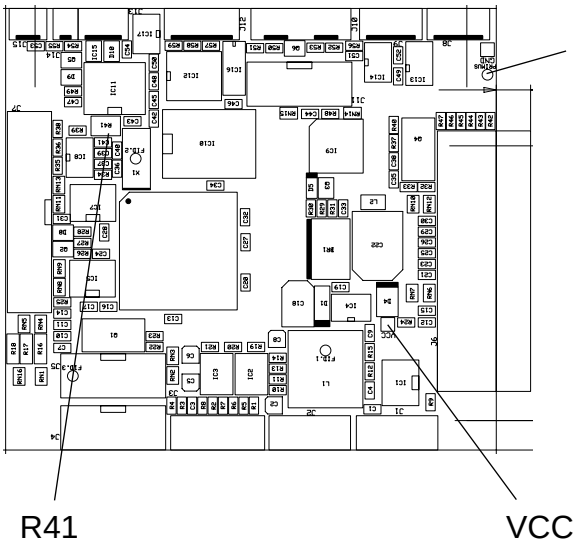


+**UNREG**: Outgoing unregulated 36V, after interlock relay. Measure between Test Point +UNREG and Test Point GND/PGND using a voltmeter. The voltage will be shown on the voltmeter unless:
- Voltage is outside allowed range 29-43V. Voltage will be 0V.
- Machine is interlocked (i.e. the top cover is open). Voltage will be 0V.

VCC: Stabilised and rectified 5V made from incoming 10V AC from transformer.
- Measure between Test Point VCC and Test Point GND/PGND using a voltmeter. The voltage will be shown on the voltmeter. Range 4.9-5.1V.

GND / PGND: Ground /Power Ground is the minus when measuring either unregulated 36V (+UNREG) or 5V (VCC).

CPU PCB in Booklet Maker

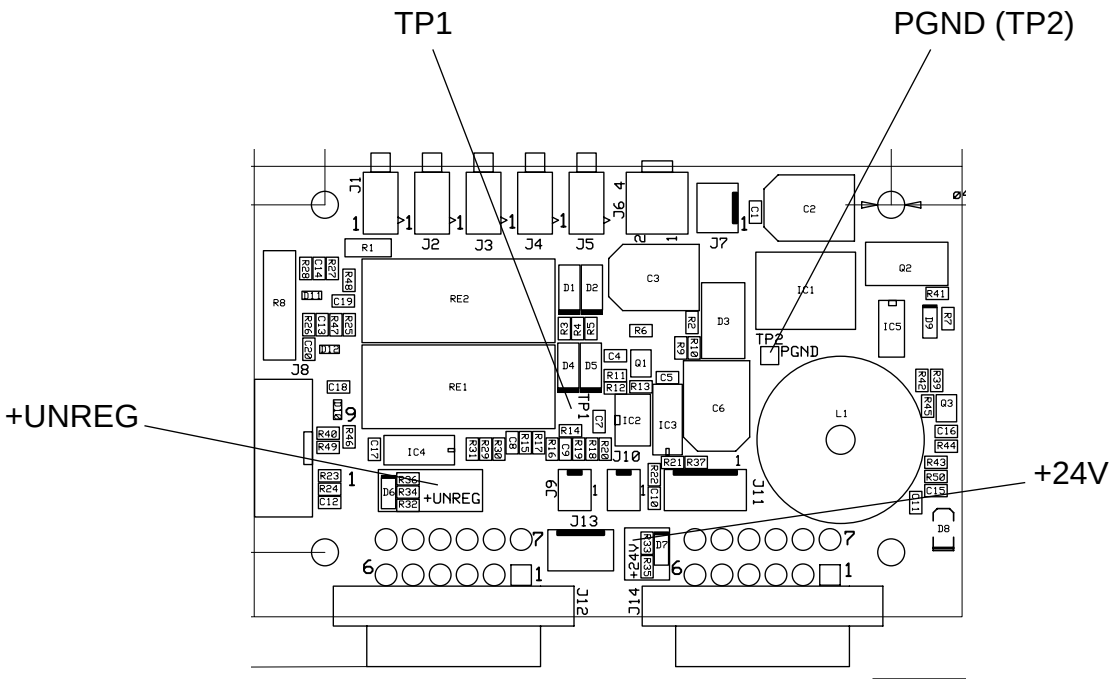


VCC: Stabilized and rectified 5V made from incoming 10V AC from transformer. Measure between Test Point VCC and Test Point GND/PGND using a voltmeter. The voltage will be shown on the voltmeter. Range 4.9-5.1V.

GND: Ground is the minus when measuring 5V (VCC).

R41: Trim Potentiometer for Contrast setting of the LCD.

Interlock PCB in Booklet Maker



TP1: Incoming unregulated 36V, before interlock relay. Measure between Test Point TP1 and Test Point PGND using a voltmeter. The voltage will be shown on the voltmeter regardless of the voltage being outside allowed range 29-43V.

+**UNREG**: Outgoing unregulated 36V, after interlock relay. Measure between Test Point +UNREG and Test Point PGND using a voltmeter. The voltage will be shown on the voltmeter unless:
- Voltage is outside allowed range 29-43V. Voltage will be 0V.
- Machine is interlocked (i.e. the top cover is open). Voltage will be 0V.

+**24V**: Stabilised 24V made from incoming unregulated 36V, before interlock relay. Measure between Test Point +24V and Test Point PGND using a voltmeter. The voltage will be shown on the voltmeter. Range 23-25V.

PGND (TP2): Power Ground is the minus when measuring either unregulated 36V (+UNREG) or 24V (+24V).

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5. SERVICE TABLES

⚠ CAUTION

Never turn off the main power when motors are cycling. To avoid damaging the circuitry, stop the motor/motors running under the Check Motors menu, and then switch the main power off.

5.1 SERVICE PROGRAM MODE

5.1.1 SERVICE PROGRAM MODE OPERATIONS

The Service Program (SP) mode is used to check electrical data, check electrical components and adjust values. One service program mode is provided and controlled from the UI (User Interface) on the booklet maker. Peripheral units are embedded in this service program. Where applicable, a sub menu appears after a function is selected listing the peripherals.

Entering and Exiting the SP mode

There are two ways to enter the service mode either from the operator mode (1) or directly from switched off machine (2).

1

1. Press the Admin button.
   NOTE: Insert interlock cheater if +UNREG (voltage for motors) is needed.
2. With the Arrow key, select Service access and press the OK button.
3. Key in password: **1974** (using the Arrow and Change button).
4. Press the OK button.
5. With the arrow key, select unit to be checked. Press OK.

Exit

6. Switch off the main power to exit the Service mode or press the ESC button to exit the Service mode and enter the operator mode.

2

1. Press and hold the lowest button on the Control Panel.
2. Switch on the main power switch.
3. Release the button on the Control Panel after app. 2 sec.
4. Key in password: **1974** (using the Arrow and Change button)
5. Press the OK button.

Exit

6. Switch off the main power to exit the Service mode or press the ESC button to exit the Service mode and enter the operator mode.

Service Tables

Checking Motors and Solenoids

1. Go to Motors or Solenoids. Press OK.
2. Go to the motor/solenoid to be checked. Press OK.
3. The supported actions for the actual motor appears in the button menu.
4. Press Stop to stop the motor (symbol appears if motor is running).

   Press ESC to exit that motor check, which leaves it running.

Checking Sensors

All sensors can individually be checked by blocking/unblocking sensors. While blocking/unblocking, view the display for response. Displayed is the state by :1 or :0. Which state corresponding to blocked/unblocked is depending on whether the sensor has inverted function or not.
For status definition, see Service Program Mode Tables 5.1.2.

Running Dead Cycling (free run)

Dead cycling is a modified machine cycle. All functions in the machine are run such as motors and solenoids. The program is basically made for factory testing, but can be of some use when trouble shooting.

1. Remove the two stapler heads.
2. Go to Dead Cycling. Press OK.
3. Press On to start the dead cycling.
4. Press Off to stop the dead cycling.

Changing NVM Values

1. Go to NVM values. Press OK.
2. Press Arrow to go to the Index to be changed.
3. Press Change.
4. Key in New value (using the Arrow and Change button).
5. Go to Store. Press OK.

⚠ IMPORTANT

Changing NVM values can jeopardize the way the machine operates considerably. Be sure that changing the NVM value is the correct solution before doing so. If changes are made which cause the unit to operate incorrectly, perform the NVM reset procedure (5.1.3).

Counters

Under Counters the total amount of sets stapeled and sets trimmed are displayed. When stapler heads or the trimmer knives have been replaced, the counter for the corresponding function should be reset to zero. That is done under NVM Values.

Jam History

For every jam code, there is a counter whick increases every time the jam of that kind occurs. To remedy errors listed, go to Fault Code Descriptions (4.1).

5.1.2 SERVICE PROGRAM MODE TABLES

Check Motors and function

Booklet Maker

Motor	Function
BM-M1	Infeed Motor transports the set/sheets to the stapling section.
BM-M2	Back Jogger Motor jogs the sheets together lengthwise.
BM-M3	Back Jogger Position Motor adjusts the jogging into correct position lengthwise.
BM-M4	Side Jogger Motor jogs the set/sheets together widthwise. It also adjusts joggers into correct position widthwise.
BM-M5	Stapler Motor drives staples into the set and drives the clinchers that clinches the staple flat leg.
BM-M6	Staple/Fold Position Motor adjusts both fold stop and stop gate to correct position lengthwise
BM-M7	Stapled Set Transport Motor transport the stapled set from the staple area.
BM-M8	Prefold Transport Motor transports the set down to the fold stop.
BM-M9	Fold Roller Motor folds and compresses the set and transport it out of the booklet maker.
BM-M10	Fold Knife Motor pushes the set through the fold rollers.
BM-M11	Fold Stop Gate Motor makes a slight jog to ensure set is straightened up before folding.
ST-M1	Stacker Motor separates the sets on the belt stacker.

Trimmer

Motor	Function
FTR-M1	Transport/Knife Motor transports the booklet in and out ≈0.70m/s of the Trimmer unit. It also functions as a second Trim Knife Motor when reversed. In Service mode, only transport direction can be run.
FTR-M2	Trim Knife Motor cycles knife to cut the booklet.
FTR-M3	Stop Gate Motor moves the stop gate up to stop the booklet to be trimmed and down when transporting it out.
FTR-M4	Length Adjustment Motor adjusts the position of the stop gate for different booklet sizes.
FTR-M5/ M6	Blower Motor blows the trimmed shingle (cut paper edge) down to the scrap bin.

Square Fold

Motor	Function
SQF-M1	Transport Belt motor transports the booklet in and out of the Square Fold.
SQF-M2	Stop Gate Motor moves the stop gate up and down to stop the booklet in correct position.
SQF-M3	Clamp Motor opens and closes the Set clamps, holding the booklet in place when the Roller motor are performing the book folding action.
SQF-M4	Roller Motor performs the book folding action.

Check Solenoids and function

Booklet Maker

Solenoid	Function
BM-SOL1	Edge Stapling Transport Solenoid transports the edge stapled set down.
BM-SOL2	Left Edge Stapling Solenoid activates the edge staple stop when edge stapling. When booklet making is the solenoid always activated.
BM-SOL3	Right Edge Stapling Solenoid activates the edge staple stop when edge stapling. When booklet making is the solenoid always activated.
BM-SOL4	Stop Gate Release Solenoid moves the staple stop down and the stapled set transport motor in up position.

Square Fold

Solenoid	Function
SQF-SOL1	Belt drive engagement solenoid.
SQF-SOL2	
SQF-SOL3	
SQF-SOL4	

Check Sensors/Switches and function

Booklet Maker

Sensor	Normal State	Function
BM-Q1	0 = Unblocked	Infeed Sensor
BM-Q2	0 = Unblocked	Manual Feeding Start Sensor
BM-Q3	0 = Not active	M1 Encoder
BM-Q4	0 = Unblocked	M2 Back Jogger Motor Home Position Sensor
BM-Q5	0 = Not active	M3 Encoder
BM-Q6	0 = Not active	M4 Encoder
BM-Q7	0 = Unblocked	Edge Stapling Start Cycle Sensor
BM-Q8	0 = Unblocked	Start Cycle Sensor
BM-Q9	0 = Not active	M6 Encoder
BM-Q10	0 = Not active	M8 Encoder
BM-Q11	0 = Not active	M9 Encoder
BM-Q12	0 = Unblocked	Fold sensor
BM-Q13	0 = Not active	M11 Encoder
BM-Q14	0 = Unblocked	Outfeed Sensor
BM-Q15	1 = Blocked	Open Cover Sensor
BM-Q16	0 = Unblocked	Staple Detection Right
BM-Q17	0 = Unblocked	Staple Detection Left

Switch	Normal State	Function
BM-SW1	0 = Unblocked	M3 Home Position Switch
BM-SW3	1 = Blocked	M5 Home Position Switch
BM-SW4	0 = Unblocked	M6 Home Position Switch
BM-SW5	1 = Blocked	M10 Home Position Switch
BM-SW6	1 = Blocked	Interlock Switch

Trimmer

Sensor	Normal State	Function
FTR-S2/S3	0 = Unactuated	Infeed Switch / Control Switch Infeed / Control Switch Out feed
FTR-Q5	1 = Blocked	Trim Knife Home Position Sensor
FTR-Q6	1 = Unblocked	Outfeed Sensor
FTR-Q7	0 = Blocked	Stop Gate Home Position Sensor
FTR-Q8	0 = Unblocked	Trim Bin Full Sensor
FTR-Q13	0 = Unblocked	Infeed sensor
FTR-S9/S10	1 = Unactuated	Interlock switches (S9 -switch, S10 -magnet)
FTR-S11	1 = Unactuated	Length Adjustment Home Position Switch

Square Fold

Sensor	Normal State	Function
SQF-Q1	0 = Unblocked	Stop Gate sensor
SQF-Q2	1 = Blocked*	Rear sensor
SQF-Q3	0 = Unblocked*	Front sensor
SQF-Q4	0 = Unblocked	Home position sensor
SQF-Q5	0 = Unblocked	Infeed sensor
SQF-Q6	0 = Unblocked	Clamp sensor
SQF-Q7	0 = Unblocked	Outfeed sensor
SQF-S1	1 = Blocked	External interlock device Interlock switch
SQF-S2	1 = Blocked	Top cover Interlock switch
SQF-S3	1 = Blocked	External interlock device Interlock switch
SQF-S4	1 = Blocked	Top cover Interlock switch

NOTE: *SQF-Q2 and SQF-Q3 are home position sensors for the Roller motor. If one is blocked, the other must be unblocked and vice versa.

Voltmeter

Voltage at	Range	
Unregulated in	29-43V	Unregulated 36V (before interlock relay) distributed from Interlock PCB in Booklet maker.
Unregulated	29-43V	Unregulated 36V (after interlock relay) distributed from Interlock PCB in Booklet maker.
24V	20-28V	Regulated 24V distributed from interlock PCB in Booklet Trimmer
Trimmer	29-43V	Unregulated 36V (after interlock relay) distributed from Interlock PCB in Booklet maker. Voltage supplies: TR-M1 Transport/Knife Motor TR-M2 Knife Motor TR-M3 Stop Gate Motor TR-M4 Length Adjust. Motor TR Set counter Ground only to: TR-M5 Blower motor TR-M6 Blower motor
Square Fold	29-43V	Unregulated 36V (after interlock relay) distributed from Interlock PCB in Booklet maker. Voltage supplies: SQF-M1 Transport belt motor SQF-M2 Stop Gate motor SQF-M3 Clamp motor SQF-M4 Roller motor ST-M1 Belt stacker motor SQF Set counter

NVM Values

Index		Default	Function
0	M1 speed 1	1560 mm/s	Calibrated speed on infeed motor when power on if infeed profile is set to 1.
1	M1 speed 2	1250 mm/s	Calibrated speed on infeed motor when power on if infeed profile is set to 2.
2	M1 speed 3	1000 mm/s	Calibrated speed on infeed motor when power on if infeed profile is set to 3.
3	M1 speed 4	730 mm/s	Calibrated speed on infeed motor when power on if infeed profile is set to 4.
4	M1 speed 5	1200V/100	Voltage supplied to infeed motor when running in manual mode.
5	M3 home pos.	1000 mm/10	The paper length which the back jogger positioning corresponds to when SW1 is de-activated.
6	M4 home pos.	3400 mm/10	The paper width which the side joggers positioning correspond to when in most out position.
7	M4	150 mm/10	The position of the side joggers related to paper width.
8	M4	10 mm/10	Position of side joggers when over jogging related to paper width.
9	M6 home pos.	2360 mm/10	The paper length which the staple/fold stops positioning correspond to when SW4 is de-activated.
10	M7 voltage	1800 V/100	Voltage supplied to stapled set transport motor.
11	M8 speed 1	500 mm/s	Speed at prefold transport motor when transporting a set.
12	M8 speed 2	400 mm/s	Speed at prefold transport motor when aligning a set.
13	M9 speed	400 mm/s	Speed at fold roller motor.
14	Fold delay 1	2800 ms	Max delay for a set at the fold stop.
15	Fold delay 2	200 ms	Delay after fold stop gate motor deactivates and start of fold knife motor

NVM Values

Index		Default	Function
16	M11	200	Length of running fold stop gate motor.
17	Side jogger interval	1 sheet/ jog	The value reflect number of sheets between every jog.
18	Infeed profile	1	The value reflect different profiles that can be choosen. Every profile will affect speed of infeed motor and back jogger timing
19	Dead cycle profile	1	Dead cycle lets the machine cycle to run continously without using papers.
20	Calibration sheet length	2100	Paper size in use for calibration length
21	Calibration sheet width	2970	Paper size in use for calibration width
22	Total counter	0	Measuring number of stapled sets
23	Total sheet counter	0	Measuring number of sheets fed
24	Clearable set counter	0	Erasable set counter
25	Clearable sheet counter	0	Erasable sheet counter
26-36	Jam history	0	Shows total nuber of different jams occured.
37	M11 home pos.	625	Position of the fold stop in its uppermost position.

5.1.3 NVM RESET

If minor logic problems arise the NVM reset procedure can be initiated. All data in the EEPROM will be cleared except total counter.

1. Got ot service menu.
2. Go to NVM values
3. Press reset all button.
4. Press Yes.

Followed by this procedure it is advised to perform the Paper Size Reset in order to also reset the paper size parameters that have a great importance in the operation of the machine (5.4).

Followed by this procedure it is advised to set Index 1, FTR 2000. Trim Zero, in order to make sure that this specific Trimmer is set up correctly for this specific Booklet maker (1.4.5).

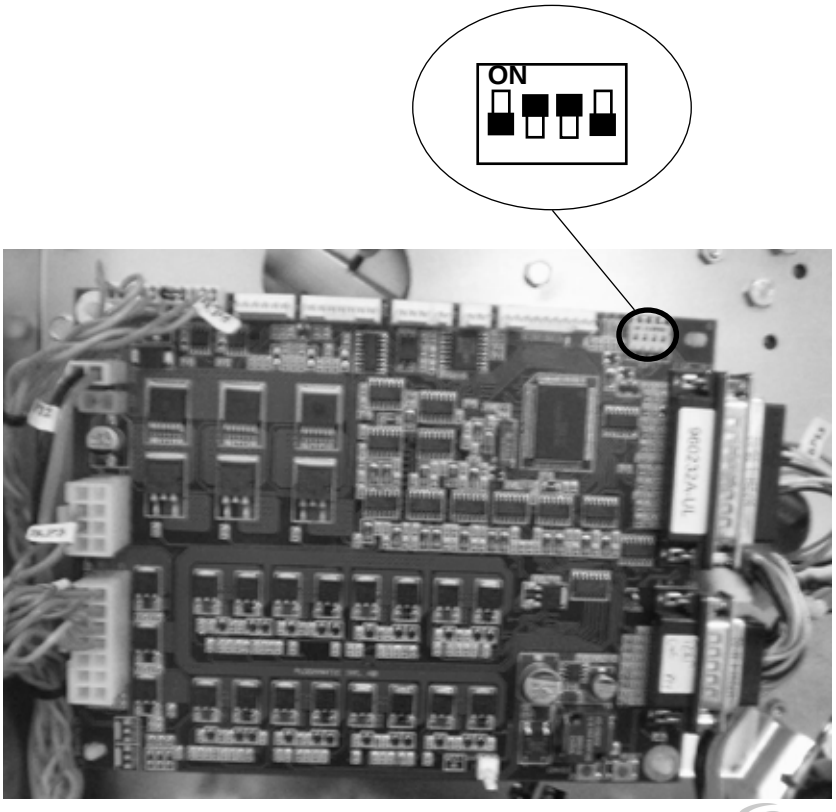
5.2 SOFTWARE DOWNLOAD

5.2.1 Downloading to upper PCB MD6DC B in Booklet maker.

⚠ CAUTION

ESD Hazard! ESD (Electrostatic Discharge) can cause software crashes, data and/or communications problems. Failure to use proper ESD procedures will cause damage to electronic components (example: PCBs). ESD problems can be minimized by maintaining all machine ground connections, ensuring the proper handling of circuit boards and sensors. Use ESD protection when working near PCBs. Failure to use ESD protection is likely to result in a PCB failure (3.1).

1. Switch Off the Main Power Switch.
2. Remove Front Cover (3.3.1).
3. Run the BM 2000 MD6DC v1.00.exe file and follow the instruction in the program, or according to the latest bulletin.

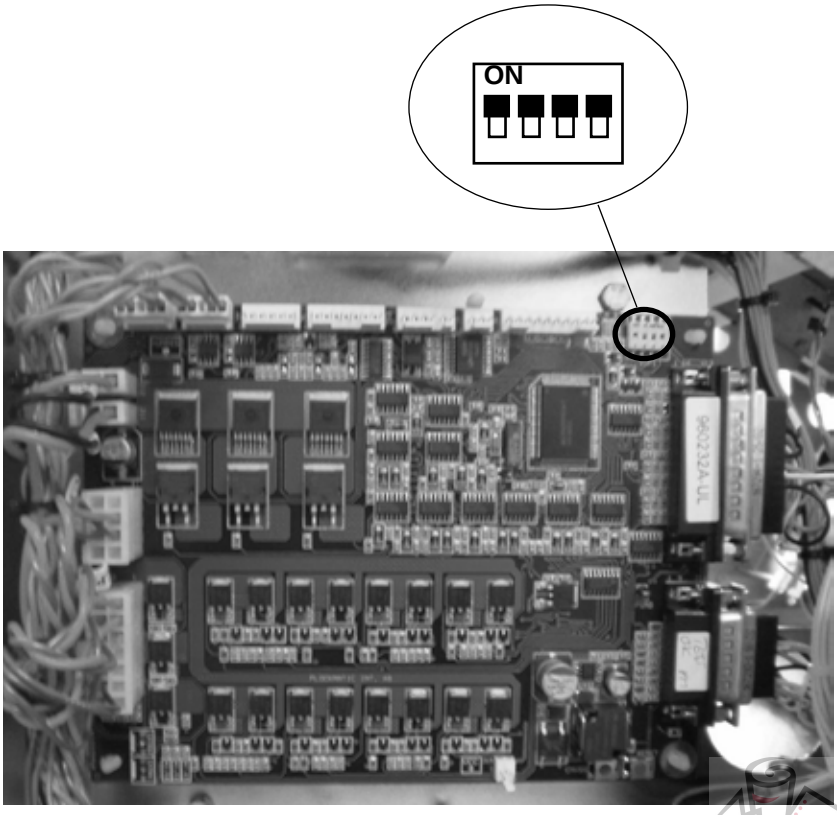


5.2.2 Downloading to lower PCB MD6DC C in the Booklet maker.

⚠ CAUTION

ESD Hazard! ESD (Electrostatic Discharge) can cause software crashes, data and/or communications problems. Failure to use proper ESD procedures will cause damage to electronic components (example: PCBs). ESD problems can be minimized by maintaining all machine ground connections, ensuring the proper handling of circuit boards and sensors. Use ESD protection when working near PCBs. Failure to use ESD protection is likely to result in a PCB failure (☛ 3.1).

1. Switch Off the Main Power Switch.
2. Remove Front Cover (☛ 3.3.1).
3. Run the BM 2000 MD6DC v1.00.exe file and follow the instruction in the program, or according to the latest bulletin.

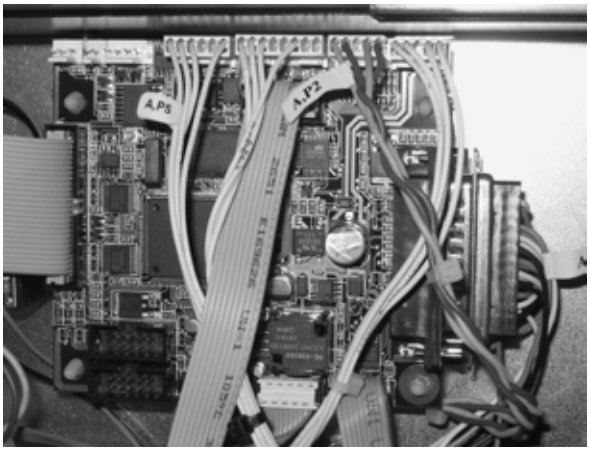


5.2.3 Downloading to PCB CPU in Booklet maker.

⚠ CAUTION

ESD Hazard! ESD (Electrostatic Discharge) can cause software crashes, data and/or communications problems. Failure to use proper ESD procedures will cause damage to electronic components (example: PCBs). ESD problems can be minimized by maintaining all machine ground connections, ensuring the proper handling of circuit boards and sensors. Use ESD protection when working near PCBs. Failure to use ESD protection is likely to result in a PCB failure (3.1).

1. Switch Off the Main Power Switch on the BM 2000.
2. Remove the Front Cover on the BM 2000 (3.3.1).
3. Run the BM 2000 CPU v1.00.exe file and follow the instruction in the pro gram, or according to the latest bulletin.
4. Perform a NVM RESET (5.1.3).
5. Either perform a Paper Size Reset (5.4) or use the values previously noted in step 5.

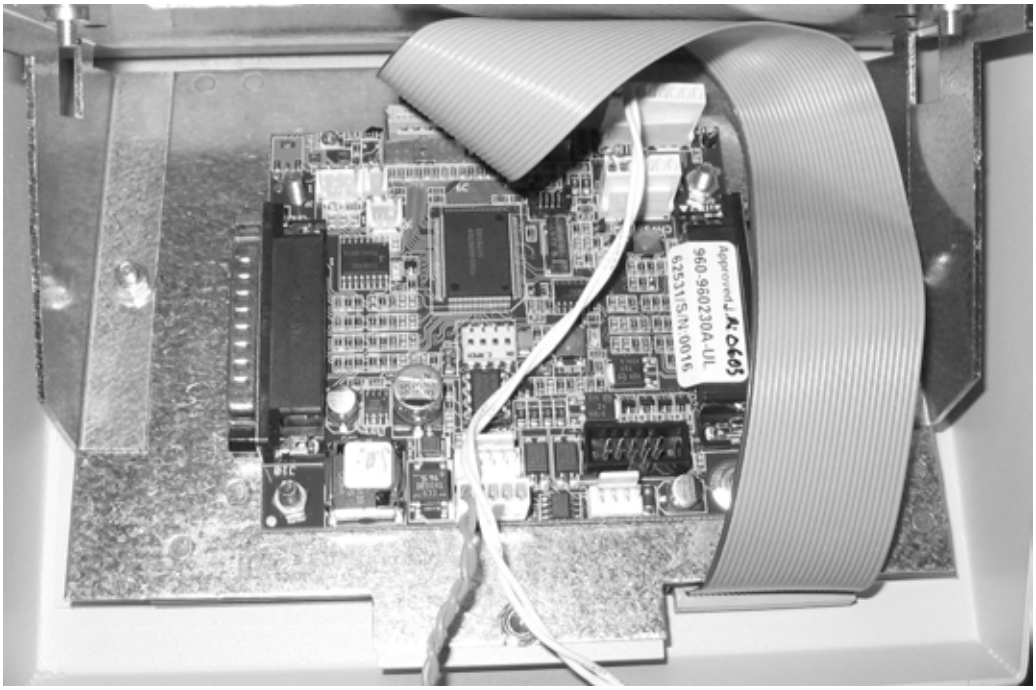


5.2.4 Downloading to PCB UI in the Booklet maker.

⚠ CAUTION

ESD Hazard! ESD (Electrostatic Discharge) can cause software crashes, data and/or communications problems. Failure to use proper ESD procedures will cause damage to electronic components (example: PCBs). ESD problems can be minimized by maintaining all machine ground connections, ensuring the proper handling of circuit boards and sensors. Use ESD protection when working near PCBs. Failure to use ESD protection is likely to result in a PCB failure (☛ 3.1).

1. Switch Off the Main Power Switch.
2. Remove Display assy (☛ 3.3.3).
3. Run the BM 2000 UI PCB v1.00.exe file and follow the instruction in the program, or according to the latest bulletin.

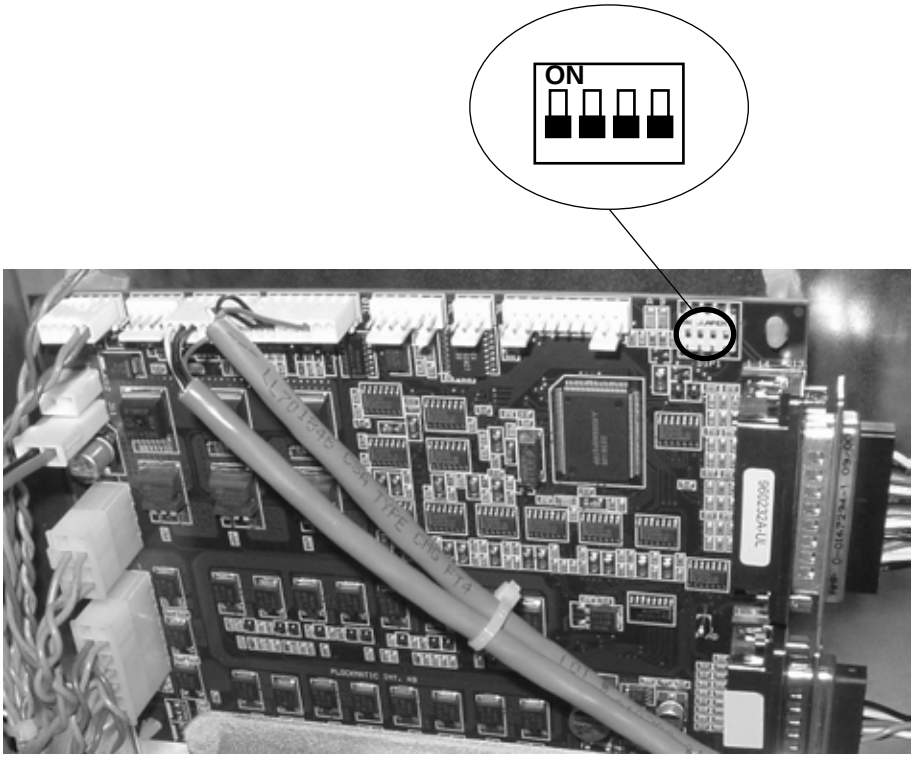


5.2.5 Downloading to PCB MD6DC in Trimmer.

⚠ CAUTION

ESD Hazard! ESD (Electrostatic Discharge) can cause software crashes, data and/or communications problems. Failure to use proper ESD procedures will cause damage to electronic components (example: PCBs). ESD problems can be minimized by maintaining all machine ground connections, ensuring the proper handling of circuit boards and sensors. Use ESD protection when working near PCBs. Failure to use ESD protection is likely to result in a PCB failure (3.1).

1. Switch Off the Main Power Switch.
2. Remove Front Cover (FTR 2000 Service Manual 1.1.1).
3. Run the FTR 2000 MD6DC v1.00.exe file and follow the instruction in the program, or according to the latest bulletin.



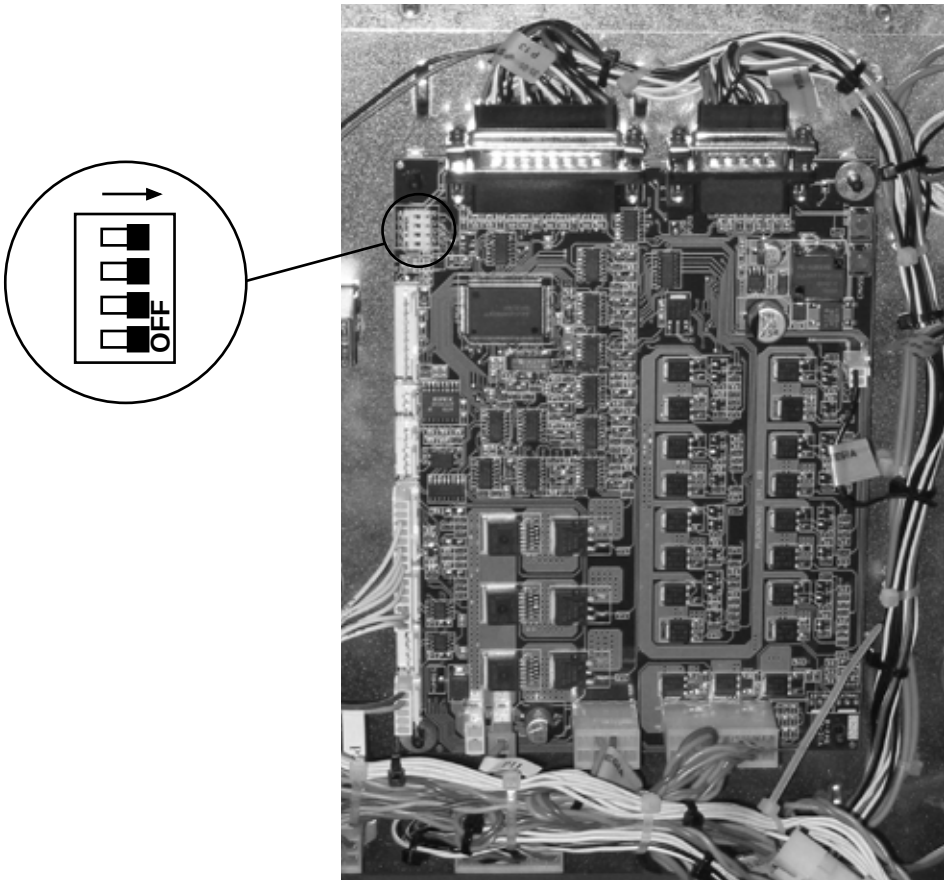
Service Tables

5.2.6 Downloading to PCB MD6DC in Square Fold.

⚠ CAUTION

ESD Hazard! ESD (Electrostatic Discharge) can cause software crashes, data and/or communications problems. Failure to use proper ESD procedures will cause damage to electronic components (example: PCBs). ESD problems can be minimized by maintaining all machine ground connections, ensuring the proper handling of circuit boards and sensors. Use ESD protection when working near PCBs. Failure to use ESD protection is likely to result in a PCB failure (3.1).

1. Switch Off the Main Power Switch.
2. Remove Front cover (3.3.1).
3. Run the SQF 2000 MD6DC v1.00.exe file and follow the instruction in the program, or according to the latest bulletin.



5.3 SELF-DIAGNOSTIC MODE

5.3.1 RUN TIME DIAGNOSTICS

Throughout the operation of the machine all functions and components are monitored. Should an error occur, a fault code is displayed. Many faults can simply be corrected by the operator. In that case a picture shows the location of the fault with a text message, such as ”Clear Misfeed(s)”. If the fault can not be corrected by the operator, the text message ”Malfunction” is displayed. All messages regardless of nature are always accompanied by a fault code. The operator manual lists the fault codes that the operator can solve. This manual lists all fault codes. To correct the fault, go to Fault Code Descriptions (4.1) .

5.3.2 DETAILED SELF-DIAGNOSTIC MODE

The main self-diagnostic mode, Diagnostics, is available from the service program mode. Diagnostics checks the voltages, the sensors, solenoids and the motors. If a fault is found it will be displayed as a fault code. To remedy the fault, go to Fault Code Description (4.1).

⚠ IMPORTANT

Reflecting paper path sensors can be faulty although not detected by the diagnostics. If they have a failure state equal to constantly unblocked, it will not be detected as it is the correct home position state. Should this failure occur it will be detected by the run time diagnostics.

Executing Diagnostics

Follow this procedure to execute the diagnostics.

1. Enter the service program mode (5.1.1).
2. Remove the two stapler heads (3.4.12).
3. Go to Diagnostics. Press OK.
4. Press Start.
5. If a fault code is displayed, go to Fault Code Descriptions. (4.1). Locate the fault code and follow the procedure .
6. When the fault has been remedied, go through this procedure again until no faults are found
7. **IMPORTANT:**
   ALWAYS POWER OFF THE SYSTEM WHEN EXITING THE DIAGNOSTIC MODE.

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5.4 PAPER SIZE RESET

If any mechanical adjustments have been carried out that effects the positioning of side guides, staple stop, fold stop or back jogger, this procedure must be performed.
If the EEPROM or the CPU PCB has been replaced, this procedure must be performed.

During the procedure, the side jogger motor and staple/fold positioning motor moves between given positions to calculate this specific motors characteristics in conjunction with this specific machines mechanics. The paper size reset procedure results in variables used when calculating the different positions for different paper sizes.

Should the procedure fail or not be carried out after an NVM reset or CPU PCB exchange:
The side guides will stop in the wrong position, resulting in booklets not properly jogged or sets jamming between the side guides.
The staple and fold stop will stop in the wrong position, resulting in booklets not folded in the centre, booklets not properly jogged or sets jamming between the side guides.

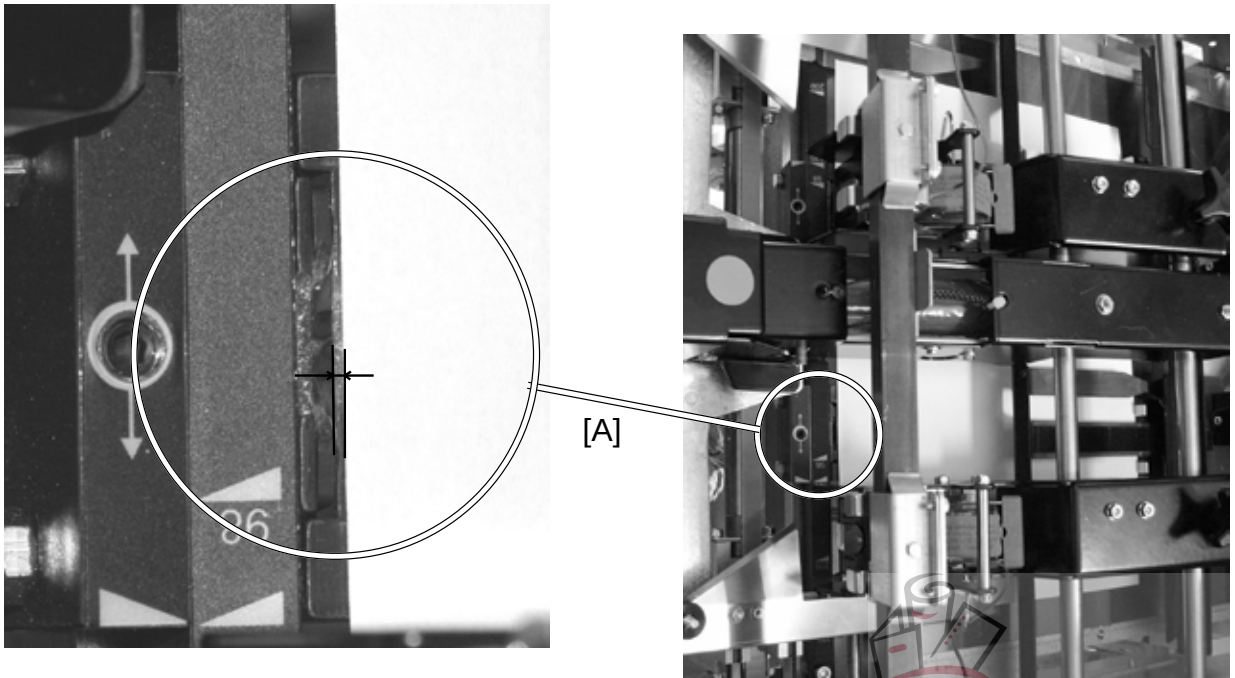
Executing Paper Size Reset

The side guides and stop gate must be parallel and square before this procedure is carried out (SQF 2000 Service Manual 3.8.1, 3.8.2).

Calibration of Motor M6

1. Go to service mode, choose NVM
2. Go to NVM 20 and put in value for paper size width (i e 2970 for A4 paper).
3. Go to NVM 21 and put in value for paper size length (i e 2100 for A4 paper).
4. Go to “Motors” in service menu and choose “M6 calibration”.
5. Press ON.
   Both motor M4 and M6 initialize. Infeed motor starts.
6. Put in a top quality sheet. Feed the sheet in portrait (long edge first)
   Infeed motor stops.
7. Measure distance between paper edge and square hole for clincher. [A]
8. Press OFF. Remove sheet.
9. Go to service mode. Choose NVM 9.
10. To increase gap between clincher hole and edge of sheet, decrease value.
    I e if decreasing gap by one mm change value by 10. Value reflects 1/10 of a millimeter.
11. To decrease gap between clincher hole and edge of sheet, increase value.
    I e if increasing gap by one mm change value by 10. Value reflects 1/10 of a millimeter.

NOTE: Calibration of Motors M3 and M4 must be carried out after calibration of Motor M6.



Calibration of M3 and M4 motors

NOTE: Calibration of Motor M6 must be carried out **before** calibration of Motors M3 and M4.

1. Go to service mode, choose motors.
2. Go to “Motors” in service menu and choose “M3 M4 calibration”.
3. Press ON.
   Motors M3, M4 and M6 initialize. Infeed motor starts.
4. Put in a top quality sheet. Feed the sheet in portrait (long edge first).
   Infeed motor stops. Back jogger goes up. Side joggers move in.
5. Measure distance between back jogger and sheet. Back jogger should slightly touch the sheet.
6. Measure distance between sheet and side joggers. There should be no play and no over jog.
   It is better to over jog than play.
7. Press OFF. Remove sheet.
   Both back jogger and side joggers go out.
8. Go to service mode. Choose NVM 5.
9. To increase gap between back jogger and edge of sheet, decrease value.
   I e if increasing gap by one mm change value by 10. Value reflects 1/10 of a millimeter.
10. To decrease gap between back jogger and edge of sheet, increase value.
    I e if decreasing gap by one mm change value by 10. Value reflects 1/10 of a millimeter.
11. Choose NVM 6.
12. To increase gap between side joggers and edge of sheet, decrease value.
    I e if increasing gap by one mm change value by 10. Value reflects 1/10 of a millimeter.
13. To decrease gap between back jogger and edge of sheet, increase value.
    I e if decreasing gap by one mm change value by 10. Value reflects 1/10 of a millimeter.

Calibration of M11 motor

1. Enter service and choose M11 calibration in the motors section.
2. Press Cycle1. The fold stop initializes to fold position 0mm.
3. Check the angle between the fold stop and the fold paper path. It should be 90°.
4. Press the button up to decrease the angle. Press the button down to increase the angle. The fold stop moves approximately 0.2mm/step.
5. Check the angle and continue the adjustment until the angle is 90°.

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5.5 SQF SERVICE

In the Square Fold Service menu, you are able to set up the Square Fold to Adjustment mode. Use the Adjustment mode when adjusting the Square folding quality. When the Adjustment mode is set to ON, the Home position of the Stop gate is changed. So you will be able to adjust the Stop gate during run.

Adjustment mode

Set the Adjustment mode to ON when performing **Stop gate adjustment A** (☛ SQF 2000 Service Manual 3.5.2).

NOTE: When you are done with the adjustment, remember to set the Adjustment mode to OFF.

1. Enter the Service Program mode.
2. Go to SQF 2000 Service. Press the OK button.
3. Scroll to Adjust mode: Press the CHG button, so it says ON in the UI.
4. Press the OK button.

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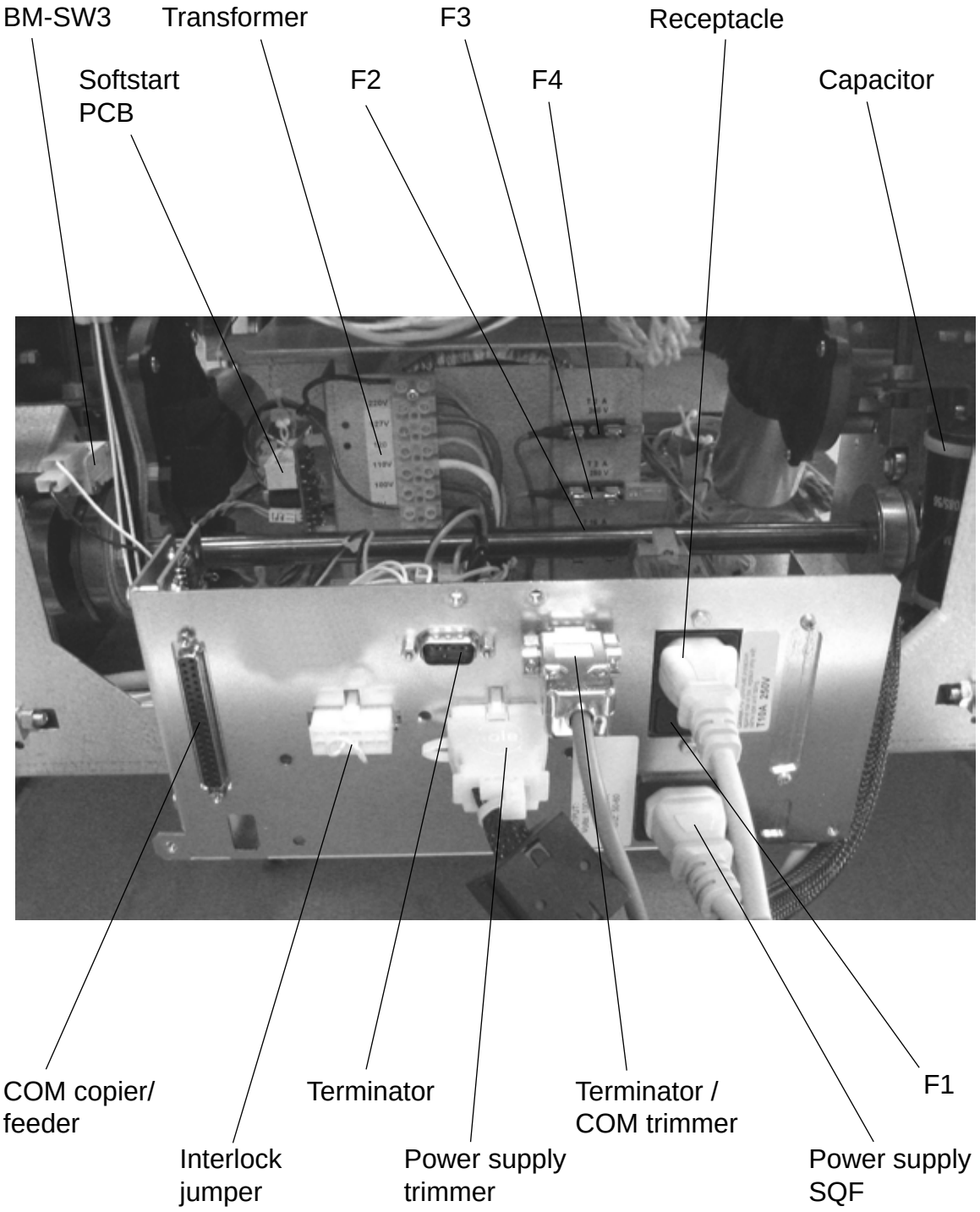
6. DETAILED SECTION DESCRIPTIONS

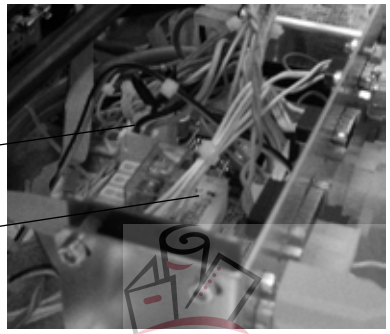
6.1 ELECTRICAL COMPONENT LIST

Page

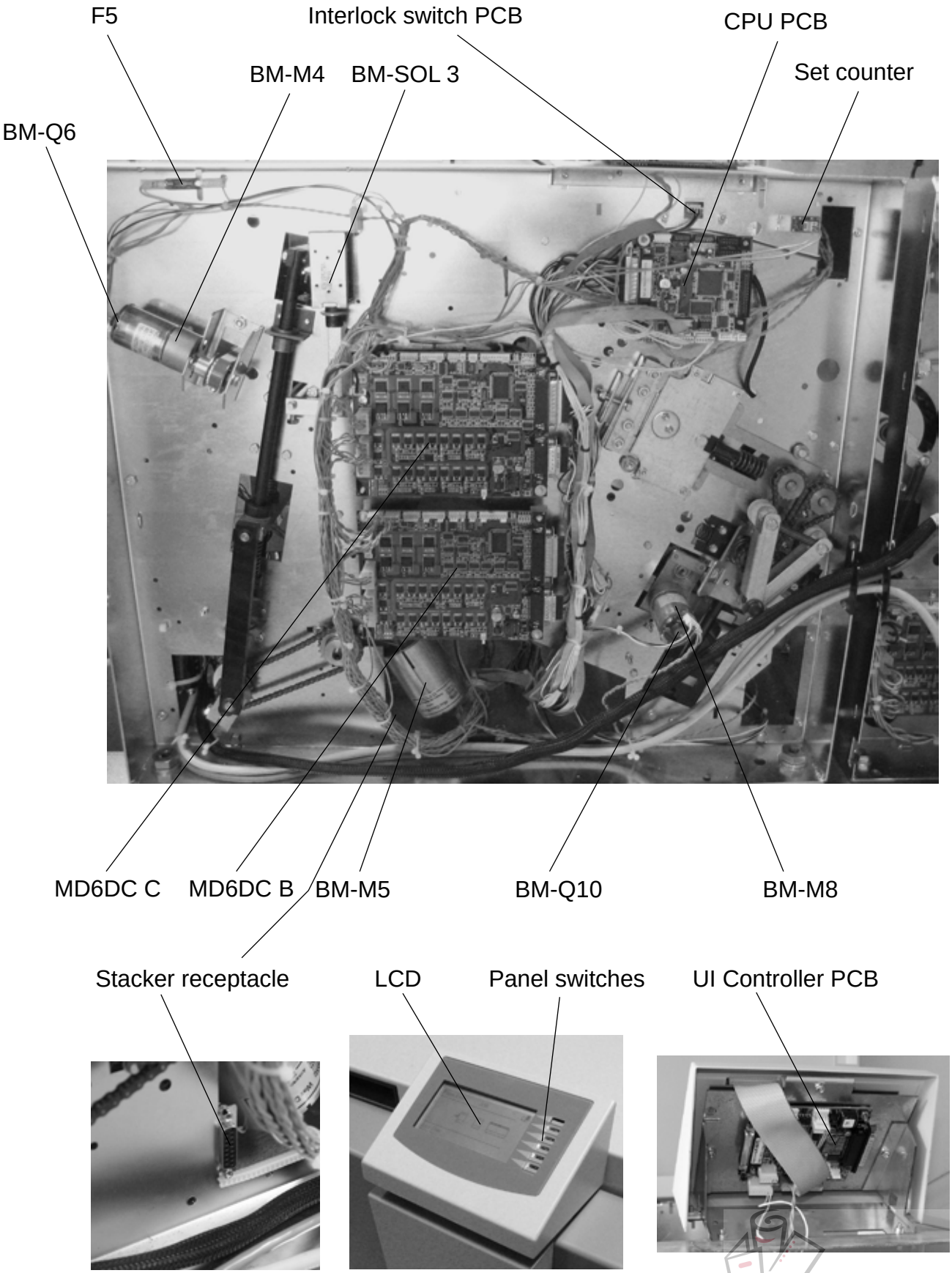
Page

6.1.1 CONNECTOR VIEW

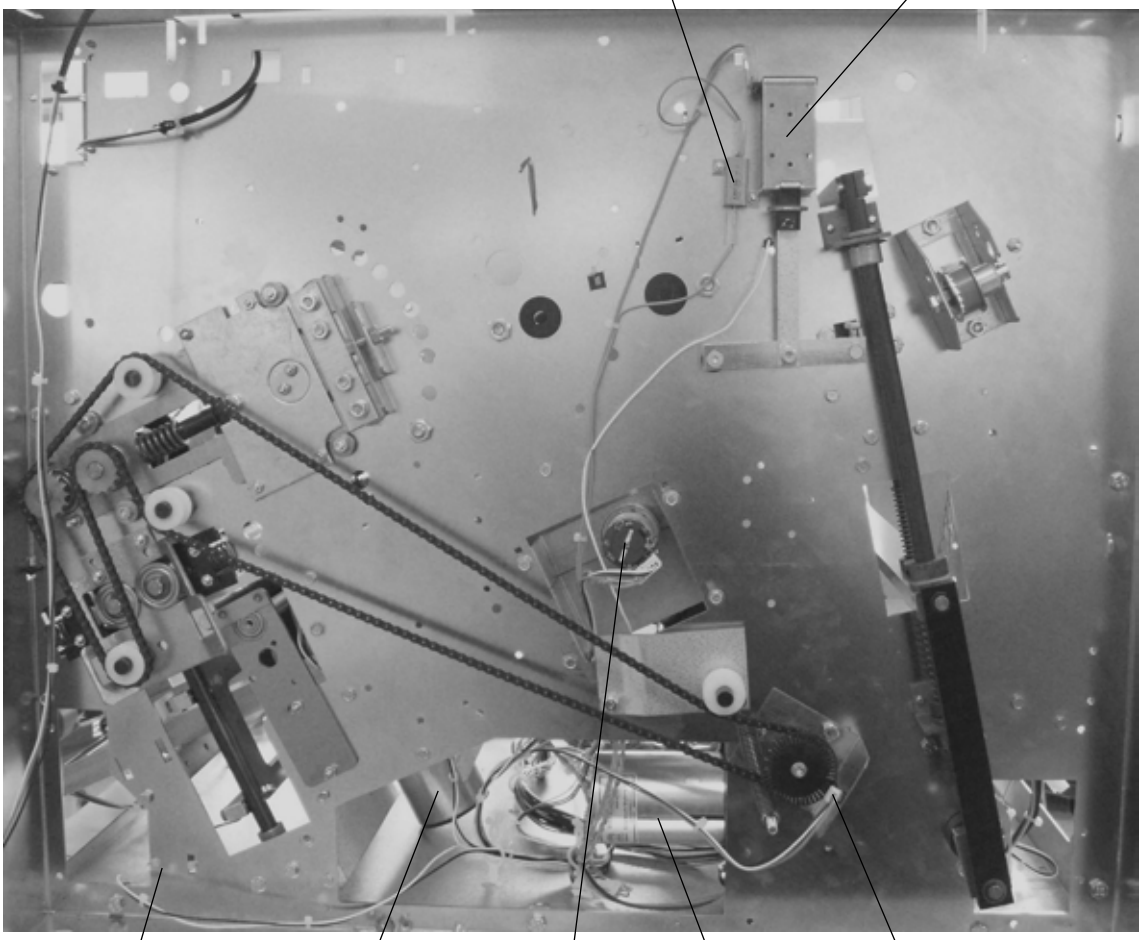


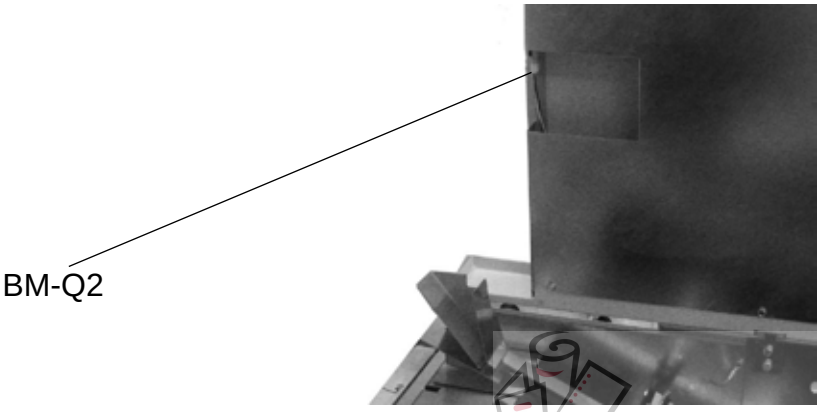


6.1.2 RIGHT VIEW

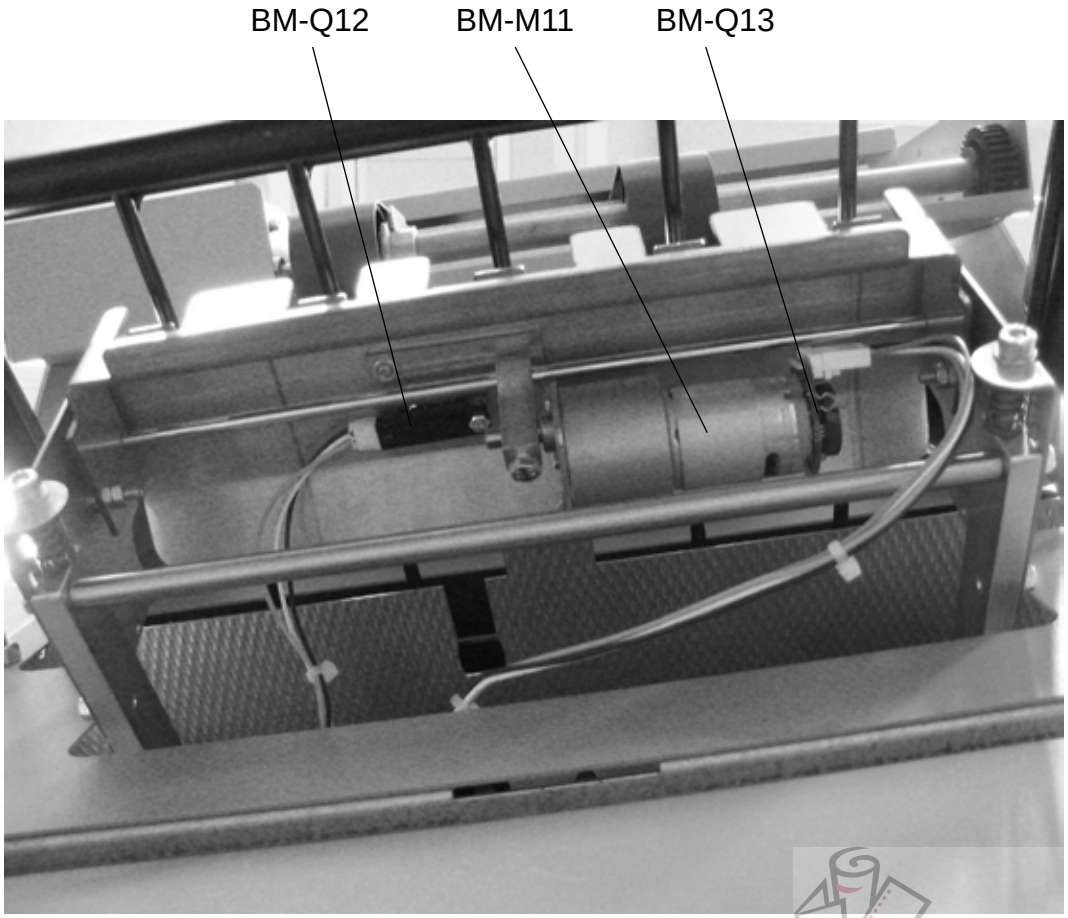


6.1.3 LEFT VIEW

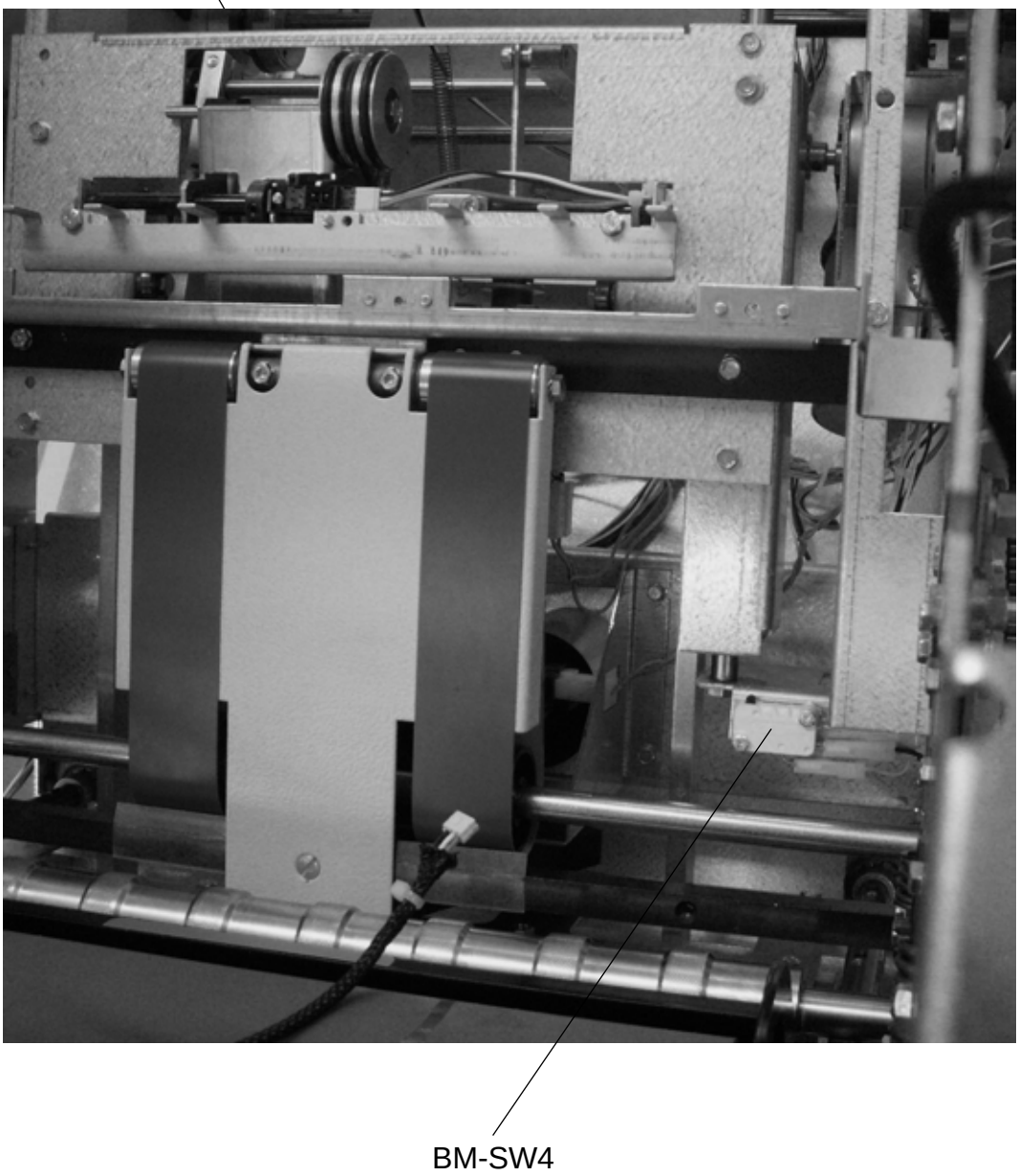




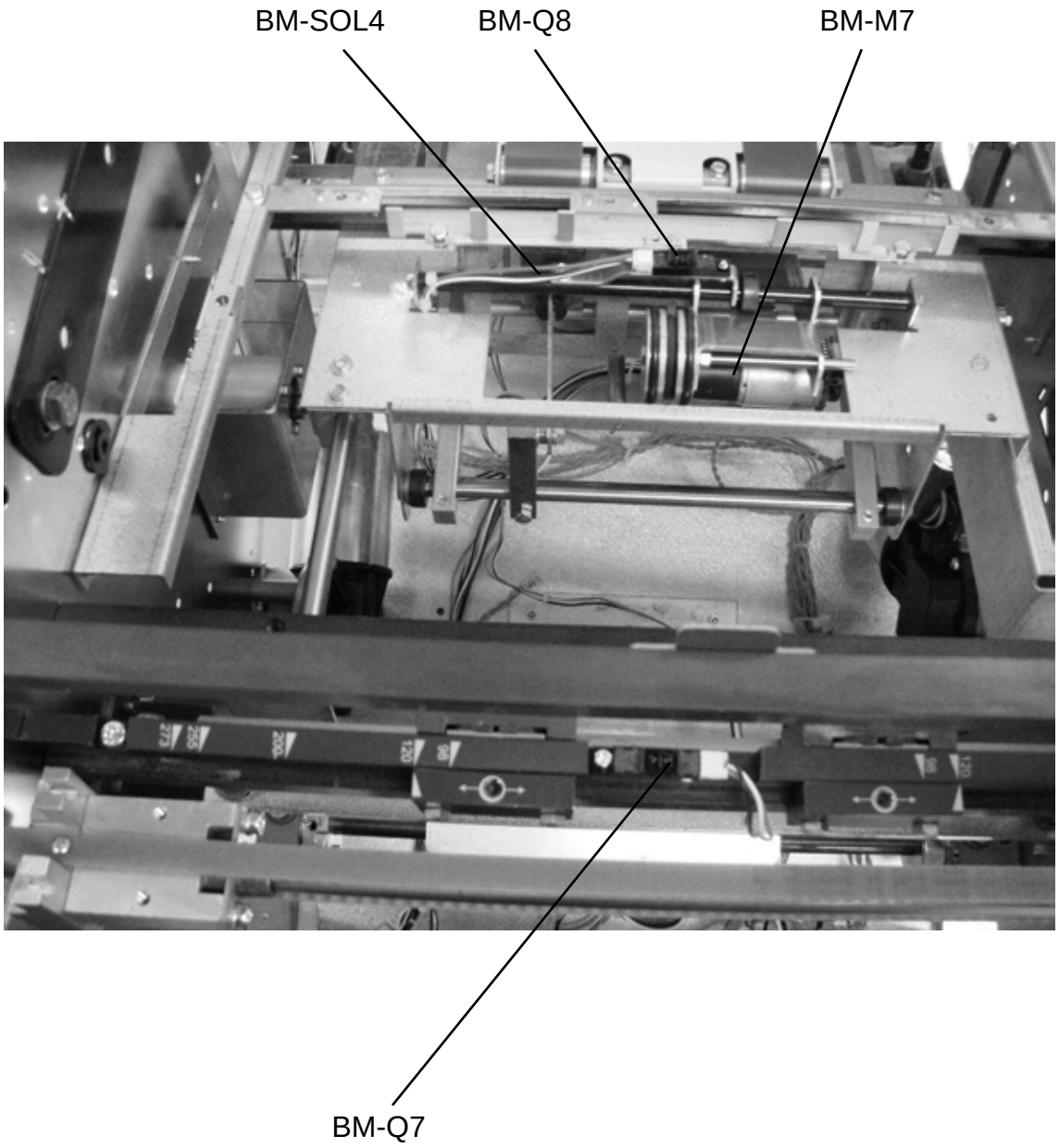
6.1.4 OUTFEED VIEW, INNER AND LOWER



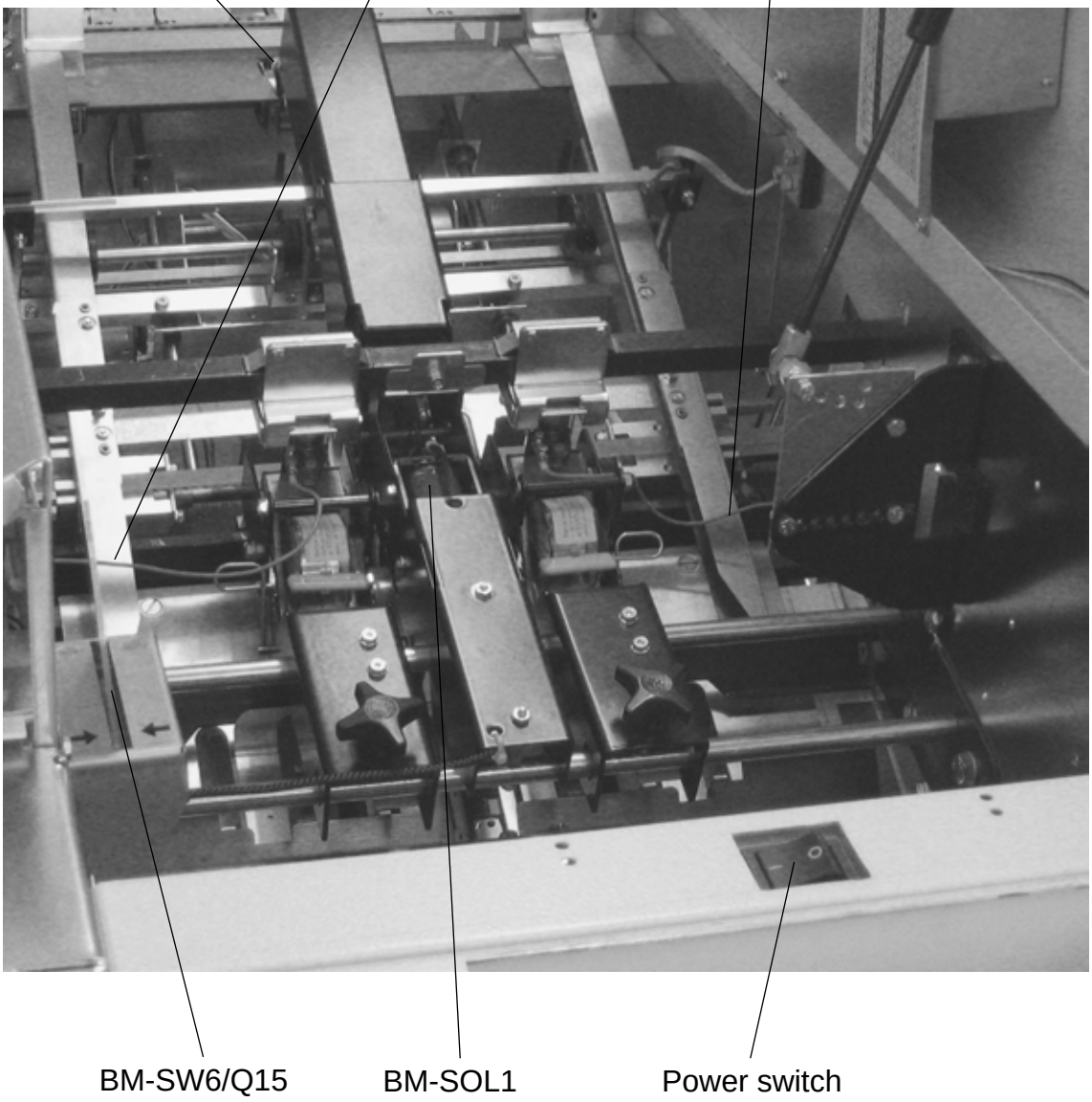
6.1.5 PREFOLD TRANSPORT VIEW



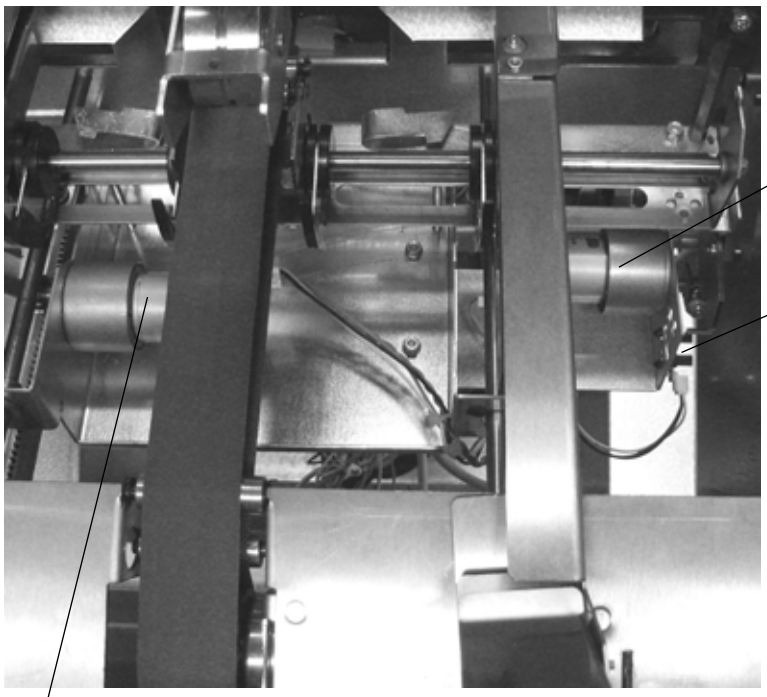
6.1.6 CLINCHER AREA VIEW

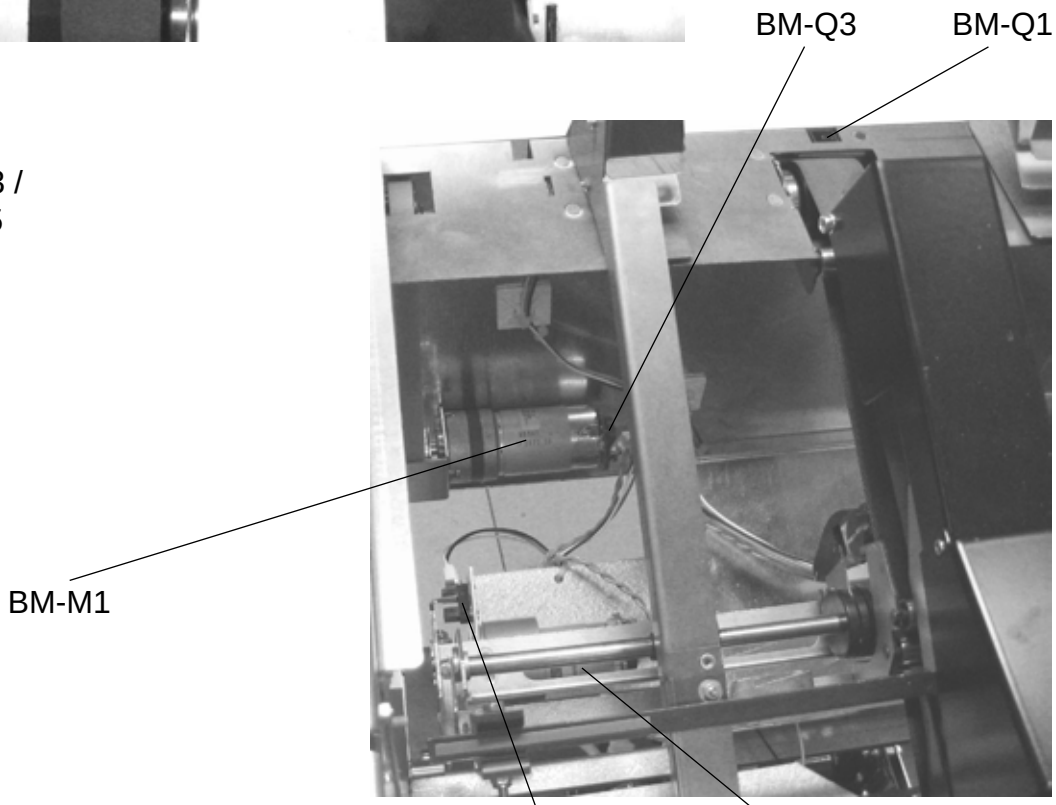


6.1.7 INNER VIEW

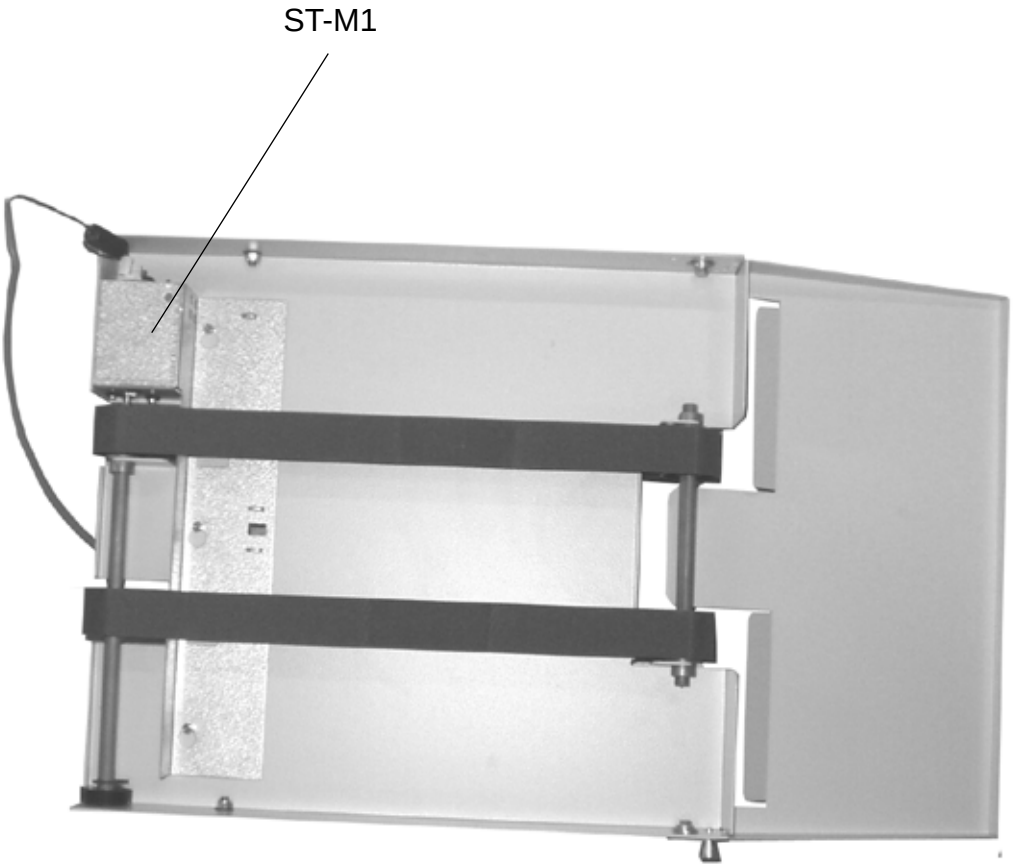


6.1.8 INFEED MODULE VIEW





6.1.9 STACKER MODULE VIEW



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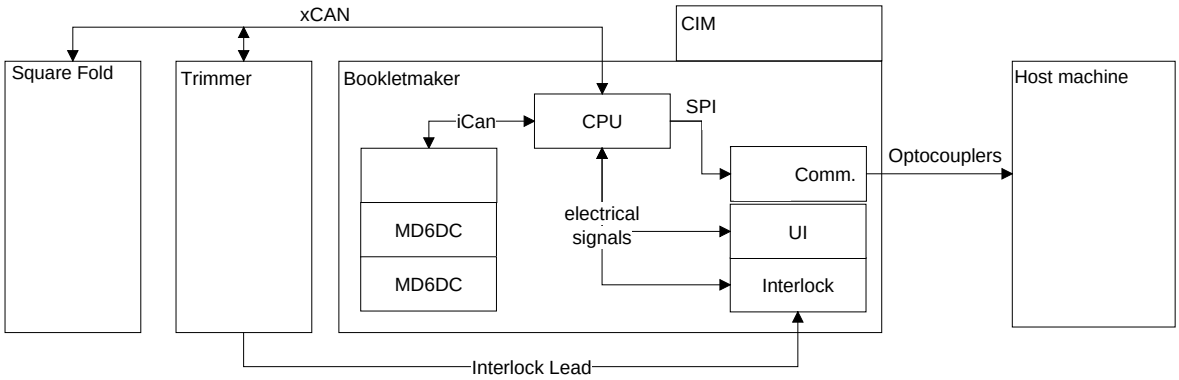
6.2 BOARD STRUCTURE

6.2.1 BLOCK DIAGRAM

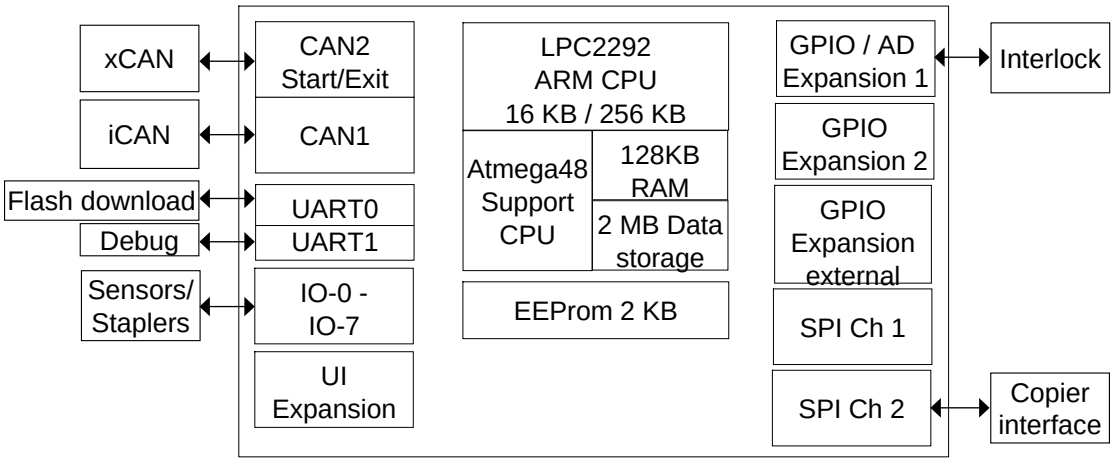


The electronics in the Booklet maker is distributed and divided in three different PCBs, one CPU board (CPU PCB) and two motor drive boards (two PCB MD6DC) . Each PCB has their own processor, they are communicating via internal CAN (iCAN). The system also has support PCBs, such as one interlock PCB and one host communication PCB.

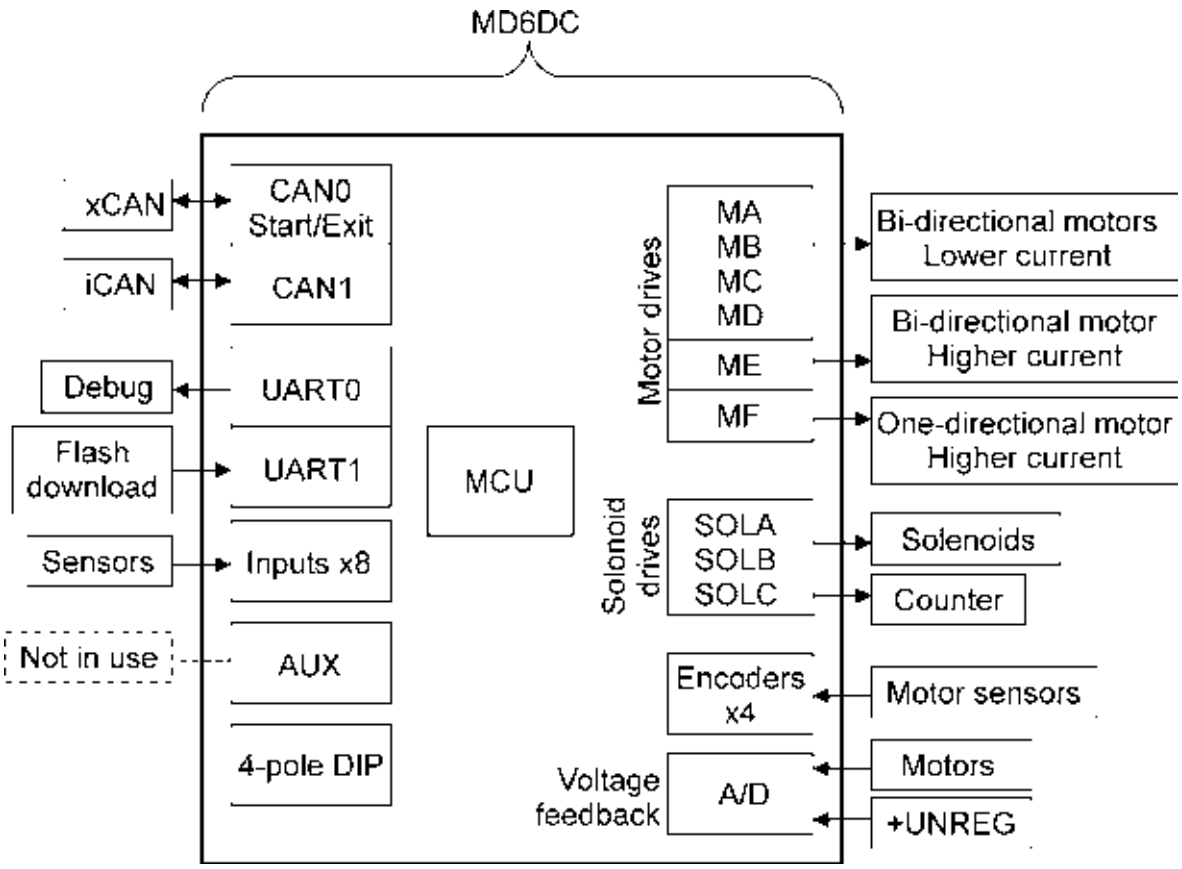
The CPU board is equipped with a 32 bit ARM processor which has two CAN channels, iCAN and xCAN. iCAN to communicate with the motor drive boards and xCAN to communicate with other external units, such as the Trimmer.

The power supply to the Trimmer is taken from the Booklet Maker. The Booklet Maker also controls the interlock system. An interlock lead connects the interlock PCB, the Trimmer and the Square Fold. The interlock lead goes through a cover switch on the Booklet Maker and Trimmer and Square Fold.

6.2.2 CONTROLLER CPU

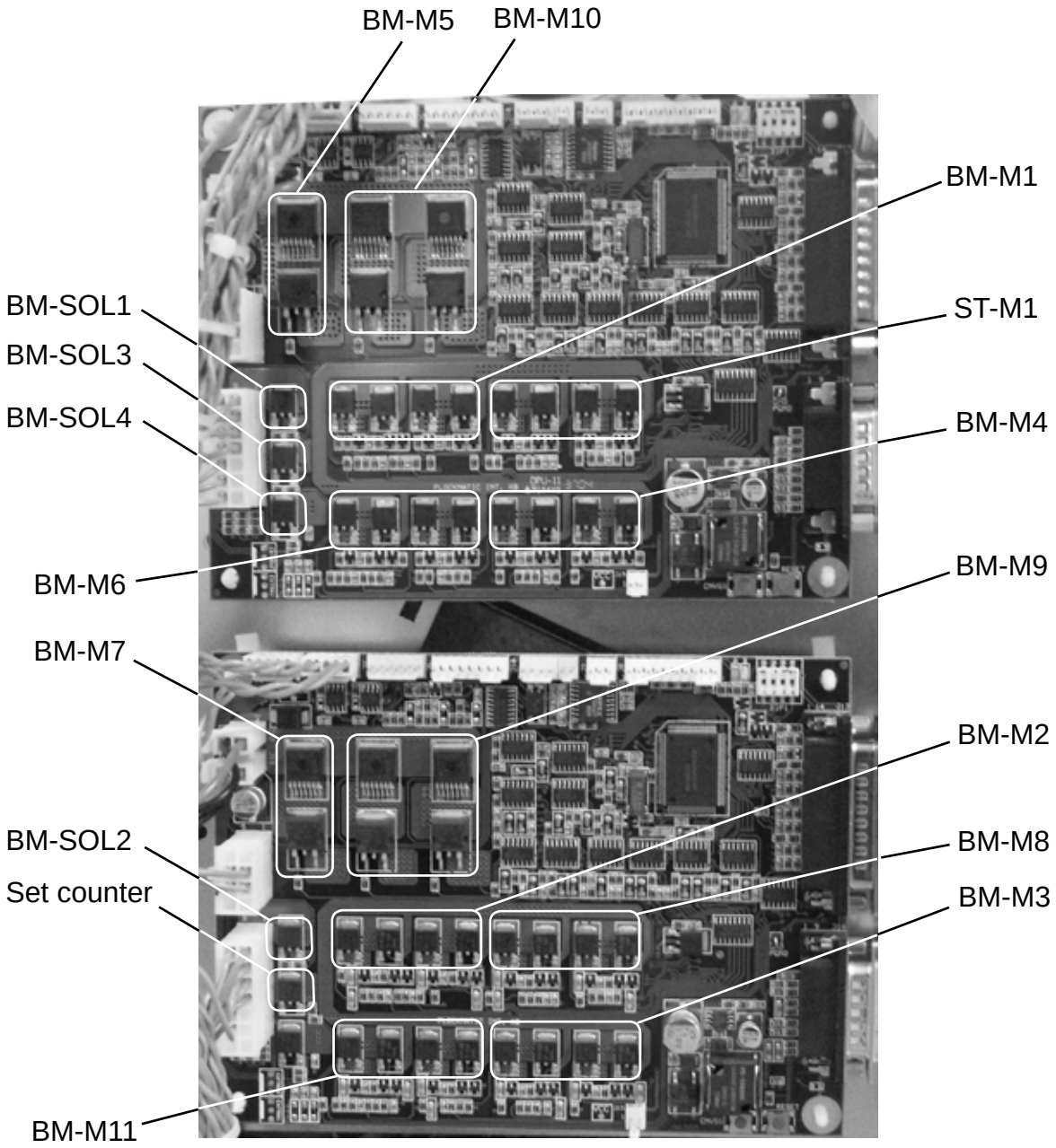


6.2.3 CONTROLLER MD6DC



The MD6DC PCB is present in Booklet maker (x2), Trimmer (x1) and Square Fold (x1).
The xCAN portion on MD6DC is not used in the Booklet maker as the external communication is handled by the xCAN portion on the CPU PCB.
In the Trimmer and the Book Folder the xCAN portion on MD6DC is used for external communication.

6.2.3 CONTROLLER MD6DC, CONTINUES



6.3 BOOKLET MAKING PROCESS

6.3.1 PRINCIPLE OF OPERATION

Compiling
Printer activates the Cycle Up signal. The infeed motor (M1) starts. The printer sends the Sheet Exit signal. The infeed module gets ready to receive a sheet. The sheet enters the infeed module. Infeed sensor (Q1) activates. The edge stapling start cycle sensor (Q7) activates. Infeed sensor (Q1) deactivates. The start cycle sensor (Q8) activates. The sheet stops at the staple stop gate. The printer sends the Sheet Exit signal. The infeed module gets ready to receive next sheet. The sheet enters the infeed module. Infeed sensor (Q1) activates. Infeed sensor (Q1) is deactivated. The sheet stops at the staple stop gate. This cycle is repeated until the Sheet Exit signal comes together with the Endorsed signal. The printer deactivates the Cycle Up signal. The infeed motor (M1) stops.

Jogging
When infeed sensor (Q1) is activated and the infeed motor (M1) has run a certain distance depending on the paper format the back jogger motor (M2) moves the back jogger up to jog the trail edge of the sheets. At the same time the side jogger motor (M4) moves the side joggers against the paper plus a few millimetres to over jog the sheets by about one mm. The side joggers then move outwards to the paper width plus about 15 millimetres. The position is set by the actual paper width and found by encoder (Q6) on the side jogger motor (M4).

Jogging set and stapling (End Of Set signal came together with the Sheet Exit signal)
When infeed sensor (Q1) is activated and the infeed motor (M1) has run a certain distance, depending on the paper format the back jogger motor (M2) moves the back jogger up to jog the trail edge of the set. When the back jogger motor (M2) cycle is ready the side jogger motor (M4) moves the side joggers against the paper plus a few millimetres to over jog the set by about one mm. The side joggers then moves outwards to the paper width plus about 1 millimeter. The position is set by the actual paper width and found by encoder (Q6) on the side jogger motor. The stapler motor (M5) cycles, putting staples through the centre of the set. At the same time the back jogger motor moves the back jogger down to its home position. When the staples contact the clinchers a closed circuit is established (Q16/Q17) by current running from stapler head through staple contacting the clincher. The closed circuit created, indicates that staples are present. If out of staples the paper will insulate the stapler head from the clincher, which will result in an open circuit. The open circuit at this time will indicate, out of staples. The stapler motor (M5) will complete its cycle and stop in upper position as the stapler motor (M5) home position switch (SW3) activates.

Pre fold transport

When staples are detected (Q16/Q17) the stop gate/set transport solenoid (SOL4) moves the transport rollers upwards, gripping the set between the transport roller below and the idler roller on top of set. The paper stop is pulled down by the same solenoid and latched below the paper path. The side joggers (M4) moves outwards to the paper width plus about 15 millimetres to its infeed position. The stapled set transport motor (M7) and the pre-fold transport motor (M8) moves the set down to the fold stop. The fold stop gate motor (M11) moves the fold stop down about 2 millimetres to its transport position. The edge stapling start cycle sensor (Q7) is deactivated. The start cycle sensor (Q8) is deactivated. The stop gate/set transport solenoid (SOL4) releases and the stapled set transport motor (M7) stops. The fold sensor (Q12) is activated. The pre-fold transport motor (M8) slows down to run at a lower speed when folding. The pre-fold transport motor (M8) stops when the out feed sensor (Q14) is activated by the folded set.

Folding

When the fold sensor (Q12) is activated the fold roller motor (M9) starts. After about 3 seconds or if the last sheet of the next set is entering the infeed module the fold stop gate motor (M11) moves the fold stop up about 2 millimetres to its stapling position to align the set. The fold knife motor (M10) cycles. The fold knife pushes the centre of the set up through the first pair of fold rollers. The fold knife motor (M10) will complete its cycle and stop in the lower position when the fold knife motor home position switch (SW5) is activated. A booklet is now formed. The booklet passes through the second pair of fold rollers and activates the out feed sensor (Q14). When the trail edge of the booklet exits the booklet maker the out feed sensor (Q14) becomes clear. The fold roller motor (M9) stops.

Belt stacker

If the belt stacker is installed directly to the booklet maker (no trimmer installed) the stacker motor (ST-M1) starts when the out feed sensor (Q14) is activated and stops when the out feed sensor (Q14) becomes clear to separate the booklets on the stacker belt.

6.3.2 SIZE ADJUSTMENT

Initialization cycle

Main power is switched on.
The following procedures for each motor are performed in parallell:
Back jogger positioning motor (M3) starts to move its smallest paper size.
Back jogger positioning motor (M3) stops when the back jogger home position switch (SW1) is activated.
Back jogger positioning motor encoder (Q5) starts to count pulses and back jogger positioning motor (M3) starts moving upwards.
Back jogger positioning motor (M3) moves until the back jogger motor encoder (Q5) has counted the preset amount of pulses set by the paper size. Back jogger positioning are now in correct position to the paper size selected.

Side jogger motor (M4) starts to move to its largest paper size.
Side jogger motor (M4) stops when the side guides reaches the chassis. This is detected by the side jogger motor encoder (Q6).
Side jogger motor encoder (Q6) starts to count pulses and side jogger motor (M4) starts to move in reverse direction.
Side jogger motor (M4) runs until side jogger motor encoder (Q6) has counted the preset amount of pulses set by the over jog position for the actual paper size. This is to make sure there is no mechanical obstacle.
Side jogger motor encoder (Q6) starts to count pulses and side jogger motor (M4) starts moving outwards.
Side jogger motor (M4) runs until side jogger motor encoder (Q6) has counted a preset amount of pulses set by the jog distance.
Side guides are now in correct position corresponding to the paper size selected.

Staple/fold positioning motor (M6) starts moving to its largest paper size.
Staple/fold positioning motor (M6) stops when staple/fold home position switch (SW4) is activated.
Staple/fold positioning motor encoder (Q9) starts to count pulses and staple/fold positioning motor (M6) starts moving upwards.
Staple/fold positioning motor runs until staple/fold positioning motor encoder (Q9) has counted the preset amount of pulses set by the paper size. Staple/fold positioning are now in correct position to the paper size selected.

Fold stop gate motor (M11) starts to move to its upper position.
Fold stop gate motor (M11) stops when the fold stop reaches the staple/fold positioning. This is detected by the fold stop gate motor encoder (Q13).
Fold stop gate motor encoder (Q13) starts to count pulses and fold stop gate motor starts to move downwards.
Fold stop gate motor (M11) runs until fold stop gate motor encoder (Q13) has counted the preset amount of pulses set by the staple on fold setting. Fold stop are now in correct position corresponding to staple on fold setting selected.

Changing paper size

New paper size is selected on the UI.
The following procedures for each motor are performed in parallell:
Back jogger positioning motor (M3) starts to move its smallest paper size.
Back jogger positioning motor (M3) stops when the back jogger home position switch (SW1) is activated.
Back jogger positioning motor encoder (Q5) starts to count pulses and back jogger positioning motor (M3) starts moving upwards.
Back jogger positioning motor (M3) moves until the back jogger motor encoder (Q5) has counted the preset amount of pulses set by the paper size. Back jogger positioning are now in correct position to the paper size selected.

Side jogger motor encoder (Q6) starts to count pulses and side jogger motor (M4) starts to move to new size over jog position.
When the new size over jog position is reached the side jogger motor encoder (Q6) starts to count pulses and the side jogger motor (M4) starts to move to its in feed position.
Side jogger motor (M4) runs until side jogger motor encoder (Q6) has counted a preset amount of pulses set by the jog distance.
Side guides are now in correct position corresponding to the paper size selected.

Staple/fold positioning motor (M6) starts moving to its largest paper size.
Staple/fold positioning motor (M6) stops when staple/fold home position switch (SW4) is activated.

Staple/fold positioning motor encoder (Q9) starts to count pulses and staple/fold positioning motor (M6) starts moving upwards.
Staple/fold positioning motor (M6) runs until staple/fold positioning motor encoder (Q9) has counted the preset amount of pulses set by the paper size. Staple/fold positioning are now in correct position to the paper size selected.

Changing staple fold position

New staple fold position is selected on the UI.
The following procedures for each motor are performed in parallell:
Back jogger positioning motor (M3) starts to move its smallest paper size.
Back jogger positioning motor (M3) stops when the back jogger positioning home position switch (SW1) is activated.
Back jogger positioning motor encoder (Q5) starts to count pulses and back jogger positioning motor (M3) starts moving upwards.
Back jogger positioning motor (M3) moves until the back jogger motor encoder (Q5) has counted the preset amount of pulses set by the paper size and staple fold position. Back jogger positioning are now in correct position to the paper size and staple fold position selected.

Staple/fold positioning motor (M6) starts moving to its largest paper size.
Staple/fold positioning motor (M6) stops when staple/fold home position switch (SW4) is activated.
Staple/fold positioning motor encoder (Q9) starts to count pulses and staple/fold positioning motor (M6) starts moving upwards.
Staple/fold positioning motor (M6) runs until staple/fold positioning motor encoder (Q9) has counted the preset amount of pulses set by the paper size and staple fold position. Staple/fold positioning are now in correct position to the paper size and staple fold position selected.

Changing staple on fold position

New staple on fold position is selected on the UI.
Fold stop gate motor encoder (Q13) starts to count pulses and fold stop gate motor (M11) starts to move to the selected staple on fold position.
Fold stop gate motor (M11) moves until fold stop gate motor encoder (Q13) has counted the preset amount of pulses set by the difference in staple on fold position. Fold stop are now in correct position corresponding to the staple on fold setting selected.

f a paper jam occurs

If jam occurs some actions is performed to ease the removal of jammed papers.
If back jogger motor (M2) was not in its lower home position when the jam occurred the back jogger motor (M2) starts.
The back jogger motor (M2) runs until reaches its home position sensor (Q4).

The side jogger motor (M4) starts to move to its largest paper size.
Side jogger motor (M4) stops when the side guides reaches the chassis. This is detected by the side jogger motor encoder (Q6).

SPECIFICATIONS

MAJOR SPECIFICATIONS

Booklet Maker BM 2000

	Specifications	Remarks
Speed (Online usage)	Maintain engine speed (actual depends if engine is 90, 110 or 135 ppm version).	Actual speed in number of booklets (per min / hour) depends on number of sheets per booklet.
Maximum Speed	3000 booklets / hour (A4 / 8.5x11") 2500 booklets / Hour (A3 / 11x17")	
Standard Paper Sizes	A4, A3, B4, 8.5x11", 8.5x14", 11x17	Custom sizes are available
Paper Size (Minimum)	Width 120mm / 8.1" Length 210mm / 10.8"	
Paper Size (Maximum)	Width 320mm / 12.6" Length 470mm / 18"	
Paper Weight (Minimum)	60gsm/16 lb. Bond	
Paper Weight (Maximum)	300gsm/172 lb. Index/ 115 lb. Cover	Engine Duplex: 216 gsm
Input / Output Sheets	1 – 25 Sheets (80 gsm / 20 lb. Bond, equivalent)	Stapled
Input / Output Sheets	1 – 2 Sheets	Non Stapled Folding
Off-line Use	Possible	Stitch/ Fold
Weight	161 kg / 354 lb	
Dimensions (L x H x D)	1520 x 1135 x 680 mm / 60 x 45 x 27"	Incl. Base and Stacker
Power Source	100/110/115/127/220/230 50-60Hz	+ - 10%
Power consumption	800 W or less	Continuous Operations for the complete system

QUALITY SPECIFICATIONS

	Specifications	Remarks
Target shut down*	1 / 600 booklets or less	1 / 4800 Copies
Fold Skew	0.7 mm (A4), 1.0 mm (A3)	
Fold Variation	0.5 mm	
Fold Quality	Less than 17 mm (A3, 80gsm, 4 sheets	Maximum height per set (also depends on paper quality
Stapled Set Registration	0.7 mm Maximum	
Staple Line Position variation	Less than 0.5 mm	

*Shut down: Finisher stops by paper jam, staple jam.

Trimmer FTR 2000 (option)

	Specifications	Remarks
Speed	Maintain engine speed	
Minimum trimming	4 mm / (0.16 in)*	
Maximum trimming	16 mm / (0.63”)	
Paper Weight (Minimum)	Same as BLM 6200 / BLM 6700	
Paper Weight (Maximum)	Same as BLM 6200 / BLM 6700	
Input / Output Sheets	Same as BLM 6200 / BLM 6700	
Input / Output Sheets	Same as BLM 6200 / BLM 6700	
Off-line Use	Possible	(Together with Booklet maker)
Weight	83 kg / 183 lb	
Dimensions (L x H x D)	360 x 1085 x 620 mm / 14.2 x 35.4 x 24.4”	
Power Source	From BLM 6200 / BLM 6700	

* Maximum width of the finished, trimmed booklet is 220 mm (8”5/8). Which means when trimming SRA3 (450mm) Booklets minimum trimming is 5 mm, when trimming 18” Booklets minimum trimming is 9 mm.

SquareFold SQF 2000 (option)

	Specifications	Remarks
Speed	Maintain engine speed	
Standard Paper Sizes	Same as BLM 6200 / BLM 6700	Custom sizes are available
Paper Weight (Minimum)	Same as BLM 6200 / BLM 6700	
Paper Weight (Maximum)	Same as BLM 6200 / BLM 6700	
Input / Output Sheets	Same as BLM 6200 / BLM 6700	
Input / Output Sheets	Same as BLM 6200 / BLM 6700	
Off-line Use	Possible	(Together with Booklet maker & Trimmer)
Weight	60 kg / 132 lb	
Dimensions (L x H x D)	360 x 1085 x 620 mm / 14.2 x 35.4 x 24.4”	
Power Source	From BLM 6200 / BLM 6700	

WIRING

Booklet Maker

See pocket at rear of manual for wiring diagrams.

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