

Plockmatic BM 2000 Booklet Maker

Instruction Manual



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1 General

This document will describe known issues with the BM 2000 System and their solutions. It will be distributed to all tech support people that have BM 2000 systems. The information in this document will eventually migrate into the Service Manuals.

Please handle this as a confidential document. It is not to be distributed to third parties.

Please also contribute with corrections and new tips that you find in the field.

2 Installation

2.1 Power connection

It is important that the line power is stable and the system should not be exposed to undervoltage.

Do not connect all machines to one power strip. Avoid long extension cables. Connect the units separately. Avoid connecting all units to the same wall outlet. If possible, connect Feeder VF1008 to a separate circuit.

If available, connect the system to a three phase outlet with an adaptor cable as shown right.



Make sure you have the specified voltage in the power outlet. Measure the voltage when all units are running. If necessary, tap the machines for a lower voltage.

3 Machine Issues

3.1 BM 2000

BM-026 (Fold roller motor M9 pulse timeout)

Cause a): Optic sensor not sitting correctly in place.

Remedy: Make sure sensor is sitting correctly in place. Make sure the encoder disc is entering deep enough between the two sensor legs.

Long term solution: Sensor bracket has been redesigned.

Cause b): Weak signal from sensor.

Remedy: Replace sensor.

Possible cause c): Holes in encoder disc covered with thin film distort the signals.

Remedy: Replace or clean disc with knife/file.



BM-029 (Fold knife motor M10 cycle timeout)

Symptom: BM-029 occurs at power-on.

Cause: Microswitch SW5 broken (M10 home position switch).

Side jogger collision

Make sure the Side Guides and the Back Joggers move easily. The 8 mm shaft on which the Back Joggers sit should be lubricated by a thin oil.

Make sure the screw holding the belt in the Side Guide is not too long or tightly pulled, it could then touch the shaft.

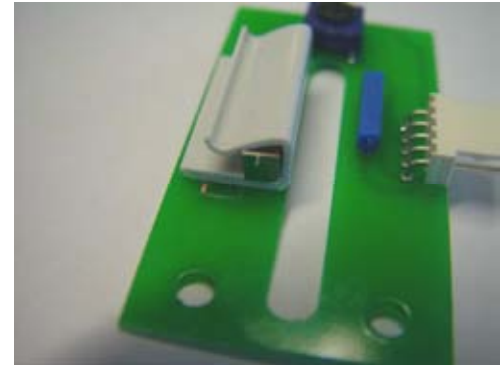
Make sure the Side Guide Extensions do not hit the Clinch Housing. If so the Side Guides have to be elevated by turning the allen screws underneath the Side Guides.

Message “Cover Open” won’t go away

First generation machines have Interlock Switch PCBs where the magnet sometimes is badly attached. New PCBs have a new magnet holder that won't fall off and also positions the magnet at the right spot.

A second cause could be that the dome cap on the switch has fallen off, due to excessive force from the interlock cheater.

Remedy: In both cases, replace PCB, P/N 771134



New magnet holder

Q2 Manual Feed Sensor Problems

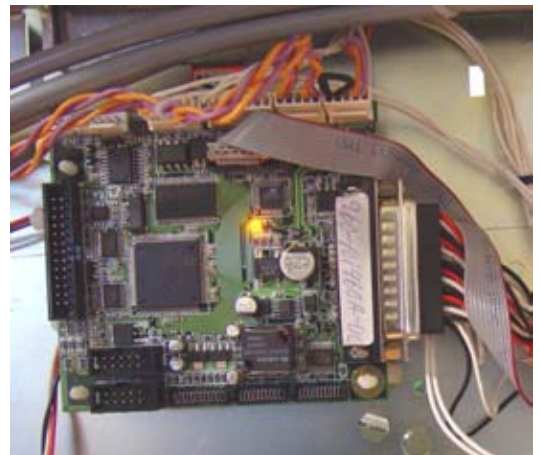
We have one reported case where sensor Q2 was activated by the sheet metal, i.e. the cut-out wasn't big enough for that particular sensor. The root cause was a bad sensor. It was, though, possible to use the faulty sensor by adjusting it slightly sideways. A normal sensor has a very large margin.

Symptom: This can lead to a number of different errors. Normally if there is a signal from the sensor the machine switches to manual feed mode. When a sheet enters from the Collator it will lead to a jam situation.



Verification of problem:

1. Remove the front cover so that you can see the control PCB.
2. Watch the blinking yellow LED on the PCB shown in picture 1 and 2. The LED makes an extra blink whenever a sensor is activated or deactivated. Normally the LED should blink regularly once per second. If the LED flickers it indicates a sensor is generating too many impulses or there is a bad connection between sensor and PCB.

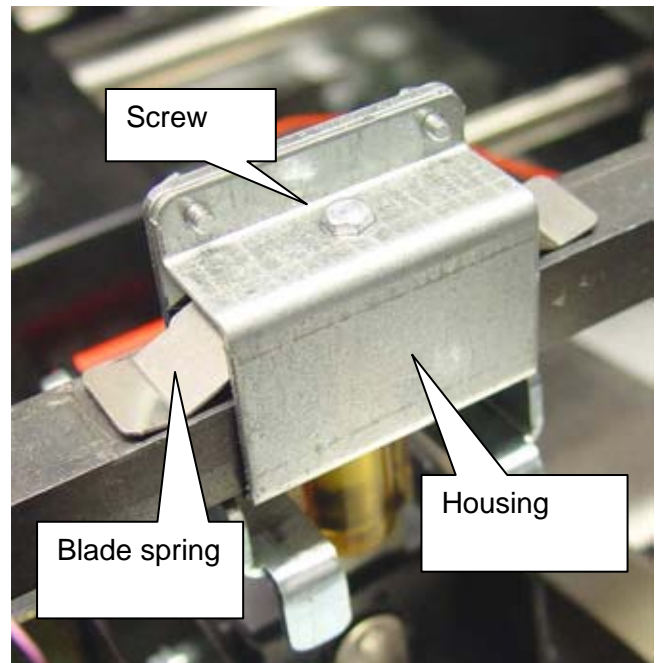


Stapler interruption

Symptom: Stapling interruptions.

Possible cause: Insufficient retraction of stapler plunger.

Remedy: Make sure blade spring mechanism is activated when stapler retracts. If necessary, place washers in between blade spring and housing on the screw shown right..



3.2 TR 2000

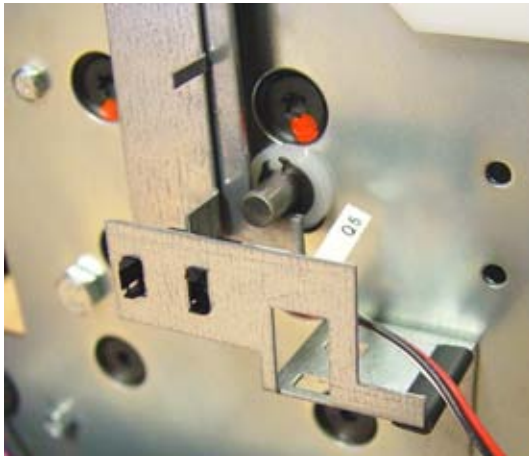
TR-002 (Knife motor M1 cycle timeout)

Symptom: TR-002 (Knife motor M1 cycle timeout) occurs immediately after the booklet is trimmed. The Air Blast is out of synch. The Trimmer cannot trim even a thin booklet.

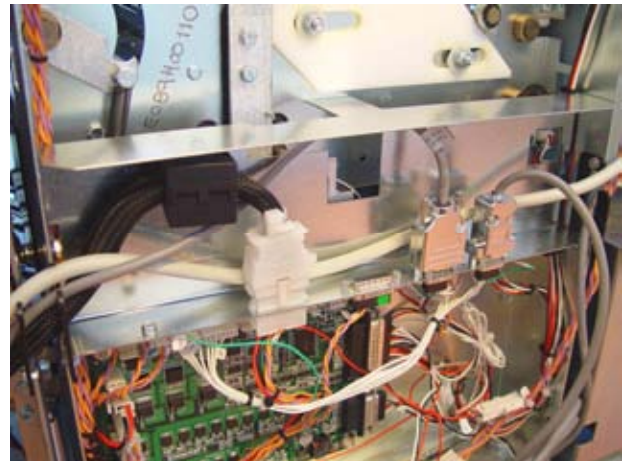
Cause: Knife Sensor Bracket was deformed by cable at installation so that the sensor missed the flags.

Remedy: Bend Bracket back in shape.

Long term solution: New Cable Duct will protect underlying parts.



Knife Sensor Bracket



New Cable Duct

Squeaking Knife

Symptom: Squeaking sound at every trim cycle:

Cause: Steel against steel surfaces are always prone to induce vibration. Of obvious causes it is not possible to lubricate the surfaces.

Short term remedy: Lubricate upper knife with candle stick.

Long term solution: Tests are presently running with low-friction knives. These knives are PVD-treated (Physical Vapor Deposition), which makes the surface harder with a lower friction.

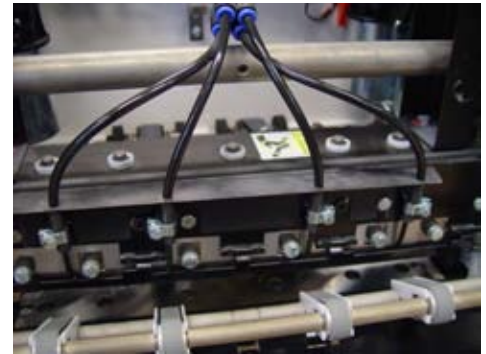
Trim Waste Problems

Symptom: Trim strips exit together with the finished booklets.

Cause: Insufficient effect from built-in blower fans.

Remedy: There are two different solutions;

a) Install Compressor Air Blast Kit, part no. 890031, which needs compressed air

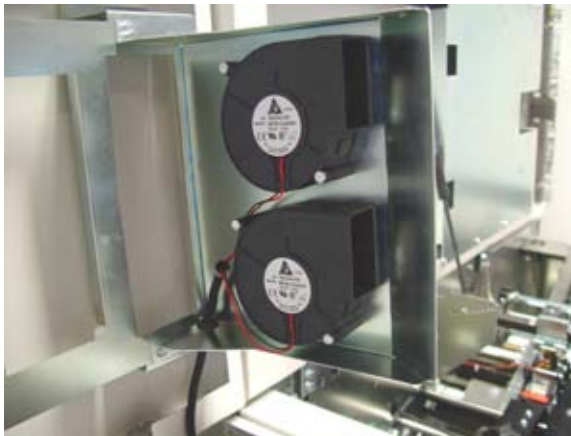


Air Blast Kit

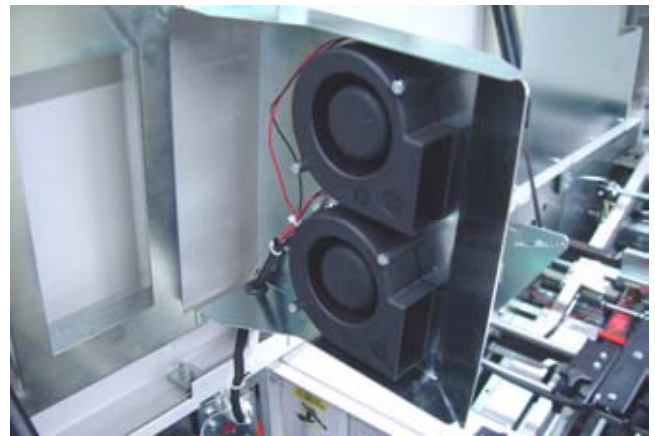
b) Turn over the blower fans as described below. This will soon come in production.

Turning over trim blower fans

Trim waste problems can be reduced significantly if the blower fans are installed as shown right below. The new method will go in production soon.



Standard mount



New mount

Existing machines can be rebuilt with reasonable efforts:

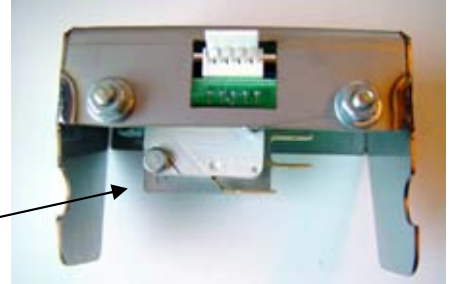
- Remove the Blower Bracket
- Remove the blower fans from the bracket
- Newer brackets already have threaded holes for turned-over fans, if not, drill and tap these
- The connecting cable for one of the blower fans has to be extended, this can be done by crimping or soldering
- Install everything again

Message “Unreg Voltage Low”

This error message is most likely caused by the interlock switch in FTR 2000. There is a microswitch installed underneath the ordinary Interlock PCB. The root cause can be one of the following:

Cause a): Microswitch mounted too low or its bracket has been bent by excessive force from interlock cheater

Remedy: Readjust (raise) microswitch.



Cause b): First generation top cover without magnetic locks could vibrate and cause switch to operate

Remedy: Install magnetic lock on top cover (needs drilling).



3.3 SQF 2000

Thin booklets won't transport well through the SQF

Cause: Static sheets gets stuck inside machine.

Remedy: Antistatic brushes, P/N 56677 mounted in inlet.

Long term solution: Antistatic brushes are already standard.



SQF-013 (Roller Motor Pulse Timeout)

Symptom: Roller motor stops intermittently for no apparent reason.

Possible cause a): Holes in encoder disc covered with thin film distort the signals.

Remedy: Replace or clean disc with knife/file.



Possible cause b): Weak signal from sensor.

Remedy: Replace sensor.

3.4 Belt Stacker

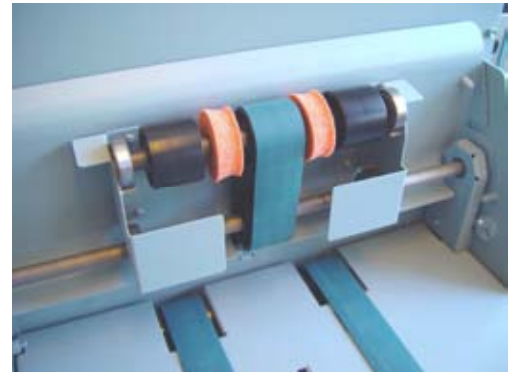
Thin/small/glossy booklets won't transport well onto the belt stacker


Symptom: Booklets get stuck in exit.

Cause: Insufficient drive from the upper drive rollers

Remedy: Install foam wheels P/N 18341 on shaft according to picture right.

Long term solution: Already standard.



	Title Best Practice BM 2000 Systems				Doc no. RD07-001	
					Date (ISO 8601) 2007-07-05	
Process owner R&D Dept + Tech Support	Author BOL	Sign. Quality	Section	Revision 1	Page 11(13)	

4 Software

The most recent BM 2000 software version is 1.30. Older versions are not recommended.

The most recent VF 1008 software is 1.02

4.1 Loading Software

Some people have reported problems when loading software. If you follow the steps below there should be no problems.

There are also unconfirmed reports about issues with some PCs in combination with the loading equipment. Please report if you find a specific PC/hardware that won't work properly.

SW Loading Instruction BM 2000

IMPORTANT: Perform each step in sequence as per below procedure.

1. Remove front and rear covers.
2. Note the different NVM values on the NVM value card located inside the rear cover on the BM 2000.
3. Download software to all units according to instructions in the .exe files.
4. Remember to turn off power after download.
5. Check software versions in the service Menu in the BM2000 UI.
 - UI: 1.30
 - BM 2000 CPU 1.30
 - BM 2000 MD6DC (B) 1.12
 - BM 2000 MD6DC (C) 1.12
 - FTR 2000 1.30 (If applicable)
 - SQF 2000 1.30 (If applicable)
6. Perform an NVM reset according to service manual 5.1.3. in all units where software was loaded.
 - Go to service menu
 - Go to NVM values
 - Press reset all button
 - Press Yes
7. Insert the NVM values according to the values that were noted in step 2. NVM values are changed in the service program mode in the "changing NVM values"
8. Perform a paper size reset according to Service manual section 5.4

4.2 Known Bugs

VF 1008 V1.02: Format Selection/Internal Stacker

When running material into the internal stacker VF 1008 adopts the size settings from BM 2000, no matter what size you specify on the VF 1008 user interface. This will be fixed in the next SW version.

Work-around: Set desired paper size on Booklet Maker UI.



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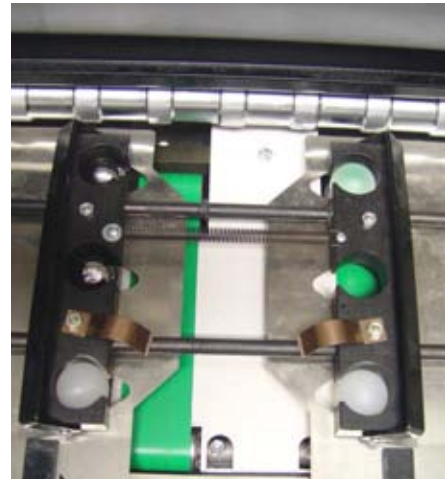
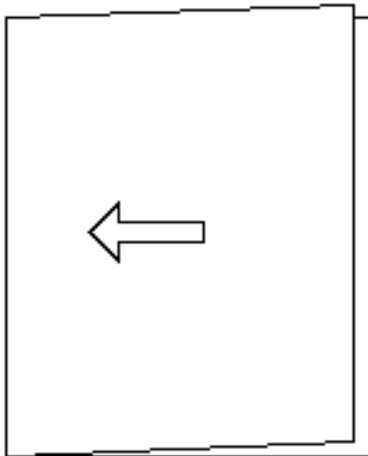
5 Booklet Quality

Skewed folding

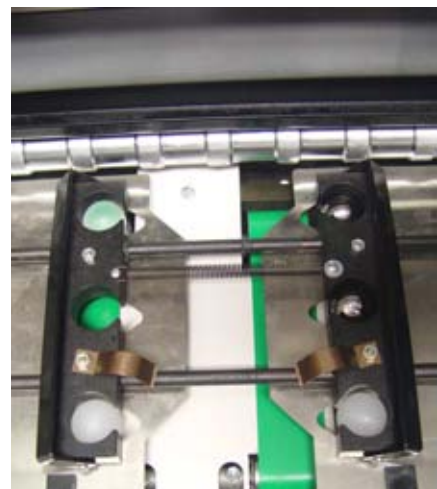
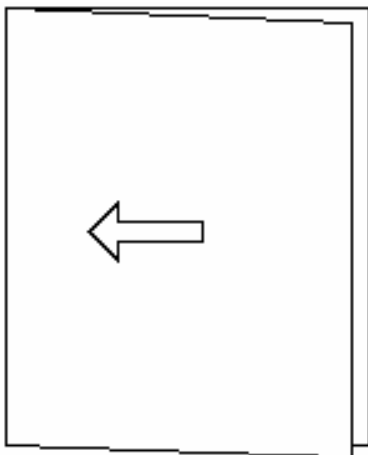
Symptom: Booklets or sheets are not folded straight. Machine is well adjusted and folds white sheets perfectly.

Cause: Digitally printed sheets have different friction on printed compared to unprinted surfaces. The skewing occurs when the sheets are forced in between the fold rollers.

Remedy: Place steel balls asymmetrically to compensate for the skewing. Follow the diagram below:



Place steel balls on the left side

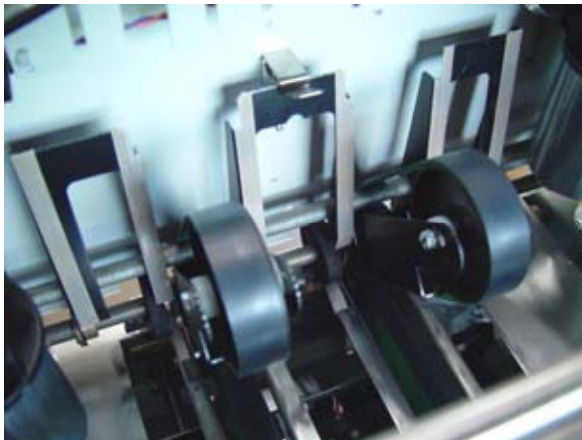


Place steel balls on the right side

Scratch marks on booklets

Digital paper, especially “silk” type paper is very sensitive for scratch- or pressure marks. Paper printed on some brands of printers is very sensitive. Here are some hints for how to find scratch sources and how to remove them.

1. Run the booklet maker alone. Disconnect SQF and FTR from Booklet Maker.
Note: There is a risk that the booklet gets scratched by the deflector plate at the exit of the booklet maker. This will only happen when the trimmer is disconnected.
2. Run a booklet through the booklet maker.
3. Make a note on the booklet which side is up.
4. Open the booklet. Check for marks on the outside sheet. Marks that go along the whole page are generated before folding. Marks that are only seen on the front page or the back page have normally happened after the folding.
5. Identify what edge causes the scratch. Measure the distance between marks or from the middle and try to find the parts in the machine that corresponds to them. Polish edges or cover with Teflon tape (Plockmatic P/N 60155).
6. Connect FTR to the booklet maker. Keep SQF disconnected.
7. Repeat procedure 2 – 5 until all marks are gone.
8. Connect SQF and repeat procedure 2 – 5.



Trimmer with strips of Teflon tape



Teflon tape at trimmer inlet