1. FUNCTION

The folding machine is used to fold documents stand alone or in combination with a system 7. Sheets can be folded in various types. These are:

- single fold;
- letter fold;
- zig-zag fold;
- double parallel fold.

The machine is fitted as standard with a scoring wheel to assist in folding heavier paper. Perforating and slitting wheels may be fitted as options.
Before using this machine thoroughly read the operating instructions. In the European Union an operator manual printed in the national language(s), as well as an original operator manual are supplied with the machine. If it is not, contact your authorized distributor.

**WARNINGS**
- If the feed/fold unit and inserter unit have to be physically separated, the operator should taken into account the heavy weight of the unit during separation.
- Before connecting check whether the machine is suitable for the local mains voltage; refer to the type plate. The mains plug shall be connected only to a socket outlet provided with a protective earth contact.
- The socket outlet shall be installed near the equipment and shall be easily accessible.

**SAFETY PRECAUTIONS**
- This machine is only to be operated by fully trained personnel. The manufacturer accepts no responsibility for injuries caused by unauthorized operation.
- The opening of covers (except the top cover) must be carried out only by a skilled and authorized person who is aware of the hazard involved. The machine will not operate with the top cover opened.
- Keep long hair, fingers, jewellery, etc. away from turning parts of the machine.

**USED SYMBOLS**
In this manual the following symbols are used.

- **Warning**, this symbol indicates a wrong action which can cause a hazard to health or damage the machine.
- **Warning**, this symbol indicates a hazard to life because of high voltage.

**NOTE** Additional information
2. GENERAL

2.1 Operating controls

A : side guides  
B : speed regulator  
C : separation knob  
D : paper feed cover  
E : first fold plate  
F : adjustment knob for second fold plate  
G : fold selection knob  
H : power inlet  
J : power switch  
K : fine adjustment knob (first fold plate)  
L : paper stop (first fold plate)  
M : locking handle ejection rollers  
N : adjustment screw (side guides)  
O : extension plate  
P : hand knob for manual operation

2.2 The principle of folding

Figure 4 illustrates how to make a letter fold. The fold rollers turn in the direction of the arrows. The paper is fed by rollers A and B into the first fold plate (E, fig. 2) as far as the paper stop (N, fig. 3). As rollers A and B continue feeding the sheet of paper, it will buckle at E. Rollers B and C will then draw the sheet in the direction of arrow F into the second fold plate as far as the paper stop. As the rollers B and C continue feeding the sheet, it will now buckle at G. Gripped by rollers C and D, the paper will leave the machine in the direction of arrow H.
3. INSTALLATION

Using the machine stand alone
Place the machine on a table. Open the top cover A and install the first fold plate B. Then install the extension plate C. Connect the mains supply cable to the machine and connect the machine to the mains supply.

Using the PF in combination with a transport track (TR)
The PF can be used as a feeding station in combination with a transport track in cross fold applications. By means of a special side feed unit the cross folded documents are transported onto the transport track.

4. ADJUSTMENT

4.1 Side guides of the paper feed table
Take a sheet of paper and mark the centre line of the sheet. Loosen the adjustment screws A and slide both guides B as far as possible apart. Raise the paper feed cover C and place the sheet on the paper feed table with the centre line facing up.

Align the document with the diamond on the paper feed table or the centre of the separator roller D. Slide the right-hand side guide against the document and tighten the adjustment screw.

Place a stack of about 20 documents between the side guides. Position the other side guide loosely against the stack and tighten the adjustment screw. There must be no side play in the stack but the paper must lie flat and be free to slide forward.

4.2 Paper feeding and separation
Raise the paper feed cover A. Turn the paper separation knob B towards “wide” (counter clockwise) until one document can be easily slid between the paper feed roller C and the separator roller D.

Switch on the machine and set the speed by turning the speed regulator E. When setting the separation, do not use the highest speed. The speed can be increased when the settings are correct.

Holding a sheet of paper between the separation rollers and turn the paper separation knob B towards “narrow” (clockwise) until the document is just about to be pulled in.

After starting the machine it may occur that more than one document at a time is pulled in. If this happens, rotate the separation knob B slightly clockwise until only one document at a time is pulled in. Adjustments can be made with the machine running.
4.3 Feed pressure adjustment

The feed pressure can be adjusted for different document qualities/weights by rotating the pressure adjustment axle A (fig. 8). This axle is held in position by a tension pin which clicks into a disc B.

When setting the feed pressure, always start with a light pressure and increase the pressure if necessary.

To adjust the pressure first open the top cover. Release the disc from the tension pin by sliding the axle away against the spring pressure. Then turn the axle in the opposite direction for heavier paper. Release the axle and check that the tension pin re-engages in the disc.

4.4 Adjusting the machine for different folds

Single fold
Take a sheet and make the required fold by hand. Measure distance A (fig. 9) between the leading edge of the paper and the first fold. Set the fold selection knob A (fig. 10) to one fold. Loosen fixing knob D and the two outer knobs C. Slide the paper stop B to distance A on the ruler F. Tighten the fixing knob D only.

Important: do not touch the red knob E at this stage.

Set the speed regulator G at the required speed. Switch on the machine and pass one sheet through, to check the fold setting. If skewed folding occurs, refer to the section “Fine adjustments” on page 7. Make small corrections if necessary. When the settings are correct, tighten the two outer knobs C.

Double parallel fold

Two folds
Make the required fold by hand. Set the first fold as described. Make the required second fold by hand. Measure distance B (fig. 9) between the first and second fold. Set the fold selection knob A (fig. 10) to two folds.

To set the second fold plate, loosen fixing knob N. Slide the indicator to distance B on the scale O. Tighten the fixing knob.

Set the speed regulator G at the required speed. Switch on the machine and pass a document through to check the fold setting(s).

Distance A (fig. 9) is the fold length setting on the first fold plate L. Distance B is the fold length setting on the second fold plate J.

To fold with address outside: place the documents with the address face down.

Single fold : address trailing
Letter fold : address leading
Zig-zag fold : address leading or face up trailing
Double parallel fold : address leading

Fig. 8
Fig. 9
Fig. 10
4.5 Adjusting the ejection rollers

For correct usage the upper ejection rollers A (fig. 11) must be positioned on top of the lower ejection rollers B at about 10 mm (0.4 inch) inside the edges of the used documents. (see fig. 12).

To adjust the position of the ejection rollers, first remove the first fold plate C and open the cover D. Pull the locking handle of the ejection roller (M, fig. 3 on page 3) up and secure it by pushing it forward. The upper ejection rollers will be lifted and stay in position.

When needed the ejection rollers can be rotated by pulling the hand knob E out and turning it. Rotate the rollers until the set screws in the rollers are visible.

Loosen the set screws in the upper and lower rollers. Shift the rollers into the desired position and re-tighten the set screws. Pull the locking handle of the ejection roller (G, fig. 2 on page 3) up and backwards. Lower the handle so that the ejection rollers will be replaced.

4.6 Scoring

The machine is fitted as standard with two scoring wheels. Scoring can be used to assist in cross folding heavier paper qualities.

Perforating and slitting wheels may be fitted as options (see “Options”, page 8).

Fold a document at the place where the score is required. Open the document and feed it manually into the machine to show where the scoring wheels must be positioned. Position the wheels and rollers as shown in fig. 12 with the scoring wheel running on the ejection roller.

To adjust the position of the scoring wheels, follow the same procedure for adjusting the position of the ejection rollers.

When scoring is not wanted, the scoring wheels must not be positioned opposite to the ejection rollers.

4.7 Scoring without folding

For scoring without folding a no-fold deflector must be fitted. Therefore set the fold selection knob A to one fold. Open the top cover and lift out the first fold plate. Then fit the no-fold deflector B. (see also fig. 19). When placing the no-fold deflector, make sure that the support hooks fit properly around the two hook pins C. (see also fig. 19).
5. AUTOMATIC FOLDING

Raise the paper feed cover F. Take a stack of documents and place it between the side guides. Fan the stack forwards so that the upper sheets slide under the paper feed cover. Lower the paper feed cover, switch on the machine and fold some documents.

Raise the paper feed cover again and check for correct result. To increase the rate of folding, move the documents closer to the feed rollers or increase the machine speed by turning the speed regulator E.

When folding light and soft paper (with less body) it is advisable to run the machine more slowly. To stop folding, just raise the paper feed cover.

If the machine speed is changed it may be necessary to re-adjust the fold positions.

6. FINE ADJUSTMENTS

6.1 Fold position

For fine adjustment of the paper stops, use the following procedure.

Loosen the two outer knobs A. Do not touch the red knob D and knob B. Be sure that knob B is tightened. Then turn knob C, the paper stop will shift up or down. Re-tighten the two outer knobs A. Check the settings and re-adjust if necessary.

6.2 Paper not cut square

The paper stop on the fold plate is normally set at right angles to the fold rollers. If documents are not cut square, skewed folding may occur. In this case both paper stops can be adjusted in the following way.

Feed in a document manually by pulling out and rotating hand knob C (fig. 15), until the document just touches the paper stop. Loosen the two outer knobs A (fig. 14). Do not loosen knob B. Turn the red knob D until the paper stop is parallel to the edge of the document. Retighten the two outer knobs A. Check the fold settings and re-adjust if necessary.
7. OPTIONS

The machine is fitted as standard with a scoring wheel. Perforating and slitting wheels may be fitted as options. Also a conveyor table is available as an option. This conveyor table is used to stack the folded documents.

⚠️ Perforating and slitting wheels are sharp. Take care when carrying out adjustments.

7.1 Perforating

For slit-perforation, position the wheels and rollers as shown in fig. 16 with the flat side of the slitting blade against the metal disc.

To adjust the position of the perforating wheels, follow the same procedure for adjusting the position of the ejection rollers on page 6.

⚠️ Be careful when lowering the upper shaft after positioning of the wheels and rollers for perforating. The perforating wheel must not be positioned opposite to the metal wheels on the lower shaft. Always check if the perforating wheels is not touching the metal wheels.

For correct settings, mark the place where the document is to be perforated. Then feed the document manually into the machine to show where the perforation wheel must be positioned. Re-adjust the position of the wheels if necessary.

7.2 Slitting

For slitting, position the wheels and rollers as shown in figure 17 with the flat side of the blade against the metal disc.

To adjust the position of the slitting wheel, follow the same procedure for adjusting the position of the ejection rollers on page 6.

⚠️ Be careful when lowering the upper shaft after positioning of the wheels and rollers for perforating. The perforating wheel must not be positioned opposite to the metal wheels on the lower shaft. Always check if the perforating wheel is not touching the metal wheels.

For correct settings, mark the place where the document is to be slit. Then feed the document manually into the machine to show where the slitting wheel must be placed. Re-adjust the position of the wheels if necessary.

Fine adjustments

Make fine adjustments when scoring, perforating or slitting by adjusting the position of the side guides.
7.3 Perforating and slitting without folding
For perforating and slitting without folding a no-fold deflector must be fitted. Therefore set the fold selection knob A to one fold. Open the top cover and pull the first fold plate out of the machine. Fit the no-fold deflector B (fig. 18 and 19). When placing the no-fold deflector, make sure that the support hooks fit properly around the two hook pins C (see also fig. 19).

7.4 Perforating only
When the machine is used for perforating only, two paper guide curves must be fitted. Therefore the paper guide rod D must be removed. Loosen the set screw E and shift the left hand end out. Pull the paper guide rod out of the machine. Slide the two paper guide curves F on to the guide rod, replace the guide rod and fasten set screw E. Slide the two paper guide curves as near as possible to the perforating wheel. This is to prevent the paper from curling up. Fasten the finger screws on both paper guide curves.

7.5 The conveyor table
The conveyor table is used to stack the folded documents. The conveyor table is available as an additional device to the PF.
<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible cause</th>
<th>Suggested solution</th>
<th>Refer to</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Speed is set too high (when folding thin paper).</td>
<td>Decrease the machine speed by turning the speed regulator.</td>
<td>Feed pressure adjustment, page 5.</td>
</tr>
<tr>
<td></td>
<td>Too much feed pressure on feed cover.</td>
<td>Re-adjust the feed pressure.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Paper is not cut square.</td>
<td>Use cut square paper or readjust the paper stop.</td>
<td>Fine adjustments, paper not cut square, page 7.</td>
</tr>
<tr>
<td>Perforating, scoring or slitting not straight.</td>
<td>Ejection rollers do not grip paper equally. Upper ejection shaft has not been lowered.</td>
<td>Readjust the position of the ejection rollers. Lower the upper ejection shaft.</td>
<td>Adjusting the ejection rollers, page 6.</td>
</tr>
</tbody>
</table>
8.2 Removing blocked documents
To remove blocked documents, open the cover A and lift out the first fold plate B. Then pull out and rotate the hand knob B until the blocked documents can be removed. If necessary also the second fold plate can be removed. Therefore place the machine on its rear side (see fig. 22). Remove the two finger knobs A (fig. 22). Pull the fold plate out of the machine and remove blocked documents. To replace the fold plate, hold up the paper stop fingers B (fig. 22) and place the fold plate back. Fasten the two finger knobs A (fig. 22).

When blocked documents have to be removed, it is possible that the documents are torn and pieces of paper stick in the machine. These pieces have to be removed.

8.3 Curled paper
When handling curled paper, be sure that the spring pressure of both guide springs C (fig. 20) on the paper is minimal. The spring pressure can be adjusted by releasing the finger screws C (fig. 20), then hold the spring and fasten the finger screw.

When removing blocked documents, it is possible that the guide springs slide over the metal roller B, as shown in figure 21. If this is the case, re-position the guide springs.

9. MAINTENANCE
9.1 Servicing
Disconnect the mains supply before performing any maintenance.

The user must not attempt to service the appliance beyond that described in this operator manual. All other servicing must be referred to qualified service personnel only. For service please contact your authorized distributor.

9.2 General cleaning
The machine must be kept in proper condition by regularly removing dust, paper remains, etc.

9.3 Cleaning the rubber rolls
Clean the rubber rollers regular with a slightly wetted cloth.
**SPECIFICATIONS**

This operator manual refers to machine as from serial number 98 BX-5001

**Machine specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>PF-45A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>paper-folding device for medium office use.</td>
</tr>
<tr>
<td>Overall dimensions</td>
<td></td>
</tr>
<tr>
<td>height</td>
<td>390 mm (15.4 inch)</td>
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<tr>
<td>width</td>
<td>440 mm (17.3 inch)</td>
</tr>
<tr>
<td>length</td>
<td>460 mm (18.1 inch)</td>
</tr>
<tr>
<td>Weight</td>
<td>22 kg</td>
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<tr>
<td>Noise level</td>
<td>±72dB(A)</td>
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<tr>
<td>Theoretical max. speed</td>
<td>8900 sheets (A4) per hour, depending on configuration.</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>10 - 40 °C (50 - 112 °F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>10 - 90 %</td>
</tr>
<tr>
<td>Power requirements / consumption</td>
<td>100-120 V AC/50/60 Hz/1.8 Amps 220-240 V AC/ 50 Hz/0.8-1.0 Amps</td>
</tr>
<tr>
<td>Approvals</td>
<td>conforms to IEC 950 and derivatives. UL listed ITE, File E153801 BS EN60950, file KM11322</td>
</tr>
<tr>
<td>Number of folds</td>
<td>1-2 parallel</td>
</tr>
<tr>
<td>Paper specifications</td>
<td></td>
</tr>
<tr>
<td>Paper sizes</td>
<td></td>
</tr>
<tr>
<td>width</td>
<td>minimum 100 mm (3.9 inch) maximum 229 mm (9.0 inch)</td>
</tr>
<tr>
<td>length</td>
<td>minimum 80 mm (3.2 inch) maximum 480 mm (18.9 inch)</td>
</tr>
<tr>
<td>Quality</td>
<td>50 gr/m2 (13 lb Bond) 150 gr/m2 (36 lb Bond)</td>
</tr>
</tbody>
</table>

**Remarks**

- The specification of the paper handling equipment is often wider than that of the envelopes and documents handled. The condition of material handled will limit the specified environmental conditions.
- We recommend that materials to be handled are stored at a temperature of 20 °C (68 °F) with a relative humidity factor of 50%. If difference in temperature occurs between store room and mailing area, the material has to be stored near the machine at least 24 hours before use.
- Self-copying paper may cause rubber parts to wear quicker. The rubber used in this machine has the best resistance to Wiggins Teape material.