

INSTRUCTION MANUAL

- PH40V
- PH45V

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1. SAFETY

Please make sure to read this manual for safety in operation before using this product. Take good care of this manual and keep it where you can always find it.

This manual contains cautions and warnings in order to prevent harm to the purchaser and other persons, lives, or the damage to the properties. Attain complete understanding before using this product.

№ WARNING

Conditions that may cause the deaths or serious injuries are given below.

- Do not use the power other than the one specified on the machine under any condition. Make sure to hold the plug when connecting/disconnecting from the power.
 - This may cause fire due to electric shock or overheating.
- Do not make an action such as damaging the power cord (placing a heavy object, pinching, excessive bending, pulling, remodeling, etc.)

This may cause fire due to electric shock or overheating.

Do not use extension cord or multiple connections.

This may cause fire due to electric shock or overheating.

Under no circumstances, the machine must not be disassembled or remodeled.

This may cause fire due to electric shock or overheating.

 Do not splash water on the machine, or operate it or remove the power plug with wet hands.

This may electric shock.

- Do not use when abnormal conditions such as abnormal sound, smoke or smell occur.
 This may cause fire due to electric shock or overheating.
- Immediately turn the machine off and remove the plug if a foreign object (metal pieces or water) gets into the machine.

This may cause fire due to electric shock or overheating.



CAUTION

This shows the conditions that may cause the injuries to persons or damage to the properties due to incorrect operation

 Keep hair, fingers, paperclips or necktie/necklace way from the paper feeding slot of the machine.

Unexpected injuries might be caused

- Make sure to turn off the power when releasing paper jam or when cleaning the roller.
 This is to prevent the machine from accidentally power up
- Immediately turn the machine off if the machine stops due to paper jam or blocked by a foreign object and making abnormal sound.

The foreign object if left unattended may cause more damage

Install the machine on a stable and strong table/base with enough room.

Prevents machine from falling and damage from itself or to others

 Avoid using the machine in the place exposed to direct sun or of high temperature and humidity

This may affect the machine lifespan

- Do not place things on the machine or shake the machine.
- Do not move the machine during operation.
- Disconnect the power cord if the machine is not to be used for long hours. Store the plug carefully to prevent the damage.

Damaged cord by pulling, or loose and dusty cord will cause electric shock and short circuit.

2. Introduction

Your new Folder is a table top automatic folding machine which will efficiently solve all your folding problems over many years if your handle if carefully and with care. Thanks to new advances in production technology. The machine offers you outstanding capacity at reasonable cost.

This manual provides a permanent record for ready reference, covering the function of the separate units and the preparatory work for the various folding applications. **Please read this instruction in detail.**

Installation of the machine should be carried out only by trained personnel authorized by the manufactures or his representatives. Additional instruction are provided for this purpose

Repairs and service should be carried out only by trained personnel authorized by the manufacturers or his representatives. The interval between inspections including safety-related function depends on the machine usage.

Employ only trained or qualified staff and set out clearly the individual responsibilities of the personnel for operations, set-up, maintenance and repair.

Avoid any operational mode that might be detrimental to safety.

Machine Model

Your machine offers a wide range of applications and configurations to suit your requirement of the folding job at hand. The machine model number serves as a useful indication of what the configuration of each machine is.

The components/accessories available are as follow:

- 4-Plate Folding Machine, PH40 & PH45
- Counter
- Batch-Counter
- Conveyor Belt
- Vertical Stacker with the PH40v & PH45v

The model number shows the machine configuration, for example:

<i>PH-40</i>	
DF-30	Feed width of 300mm
4	4-Plate Folding Machine
V	Vertical Stacker
С	Counter
DF-45	Feed width of 350mm
4	4-Plate Folding Machine
V	Vertical Stacker
В	Batch-Counter

Note:

- 1. For all 4-Plate Folding Machine Unit configurations, Counter is included.
- 2. If the model number includes V, Vertical Stacker will be the default collecting device.

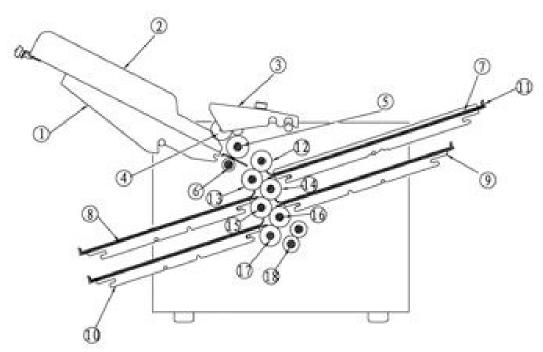
Machine Check List

Check completeness of the accompanying accessories:

Model Listing	DF-304V & DF-354V
Feed Table	1
Feed Table Guide Brackets	2
Folding Plates	4
Vertical Stacker	1
Hold-down Roller Set	1
Power Cord	1
Instruction manual	1

3. SPECIFICATION & COMPONENTS

Model	PH40V	PH45V	
Max. paper size (mm)	300(W)x 500(L) 350(W)x 540		
Min. paper size (mm)	80(W) x 100(L)		
Folding paper weight (gsm)	45 to 150		
Min. folding size (mm)	24		
Dimension (LxWxH in mm)	1100x525x510	1100x570x510	
Weight (kg)	68kg	71kg	



1 Feed table	2 Feed guide Bracket	3	Feeder
4 Infeed Roller	5 Feed Roller	6	Pressure Roller
7 Folding plate 1	8 Folding plate 2	9	Folding plate 3
10 Folding plate 4	11 Deflector Bar		Fold Roller 1
13 Fold Roller 2	14 Fold Roller 3	15	Fold Roller 4
16 Fold Roller 5	17 Fold Roller 6	18	Ejector Rollers

4. Installation Instructions

First, mount the machine on a sufficiently strong table or similar base.

A. Feed Table

Hook in the Feed table. First place it on the support shaft, slide it down at an angle until the lower slots engage with the pins on the side panels. The upper slots must engage with the support shaft. After which, install the two bracket guides.

B. Folding Plates

Hook the folding plates according to their designated slots into position like the feed table. You will note that the plate has a deflector bar on one side, while the other is formed as an open "pocket". Hook in the plates as dictated by the desired type of fold (refer to Folding Style Guide). To do so, place the plate on the two-front pins in the side panels of the machine, then slide it towards the folding rollers until you can clearly hear all four pins clicking into engagement. You may turn the handwheel to ensure that the folding plate is properly engaged and there is no hindrance.

C. Vertical Stacker

Due to tension from the paper materials, if the paper has been folded into very small dimension or has been folded several times, the paper will spring back out of the fold. If conveyor belt system was used, the paper might not be nicely fanned out. Thus, it is advisable for the user to fit the machine with a vertical stacker (especially for collecting paper less than 30mm or perform up to 3 folds).

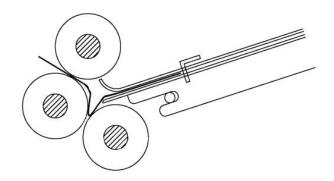
Insert the vertical stacker into the support shaft in the rear of folding machine using the groove provided.

5. FOLD PRINCIPAL AND STYLE GUIDE

Folding is carried out by folding plates. This section will provide a brief description on the folding process and the fold styles. These will enable you to carry out settings for any desired style without extensive trial runs.

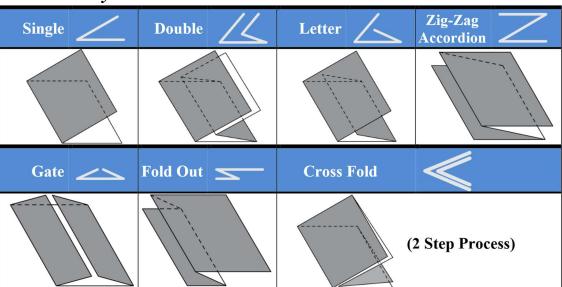
Fold Principal

The feeder takes the sheet between the first pair of fold rollers which drives it into the first folding plate until it comes up against the adjustable stop. But as the rear of the sheet is still advanced by the fold roller, a loop is formed. As the loop gets bigger, the paper is seized by the second pair of roller, creating a fold line and carried to second folding plate. The process is repeated.



Below are some of the common folds and setup guide that you will come across during your folding. With the 4-plate machine, there more combinations essentially based on these principal and setup.

Basic Fold Style



Fold Style Setting Guide

Type of fold	Fold Plate	Set To Paper Length	A4	A3
Single	1	1/2	148	210
	2	_*	-	-
	3	-	-	-
	4	-	-	-
Letter	1	2/3	198	280
	2	1/3	99	140
	3	-	-	-
	4	-	-	-
Double Parallel	1	1/2	148	210

	2	1/4	74	105
//	3	-	-	-
	4	-	-	-
Triple Parallel (8-Page)	1	1/2	148	210
///	2	1/4	74	105
	3	-	-	-
	4	1/8	37	52
Zig-Zag/Accordion**	1	1/3	99	140
	2	1/3	100	140
	3	-	-	-
	4	-	-	-
8-Page Accordi	1	1/4	74	105
According	2	1/4	75	105
on**	3	1/4	76	105
	4	-	-	-

^{*} The dash line – means to insert the fold plate with the paper deflector side into the machines.

6. FOLD SETUP ADJUSTMENT

Controls and Accessories

- Main Start/Stop Switch
- Speed control: Varies speed while machine is running or stopped.
- Counter (model C & B)
- Feed Switch (model B)
- Feed Table: adjustable to different paper format and right-angle feed of paper into machine.

^{**}For Accordion Fold, fold plate stops should be set so they increase by 1 mm from one plate to the next.

• Paper Thickness Adjusting Knob: Variable adjustment for thickness of papers between 45-150 gsm.

• Feeder:

With adjustable infeed pressure roller.

• Folding plates:

With micro-adjust for length and angle setting, fitted with scales.

• Vertical Stacker:

Adjust the stacker wheels according to the paper size.

• Hand wheel:

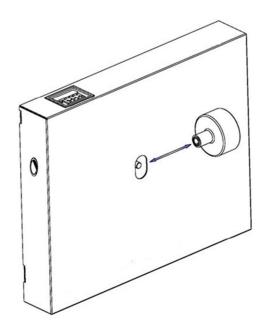
Turns machine when motor is switched off.

Hand Wheel

With the interest to protect the machine operator and also compliance with the safety regulation, the hand wheel is now detachable.

You may attach the hand wheel when you need to adjust for paper thickness or remove paper jam.

Please remove the hand wheel before switching on the machine.

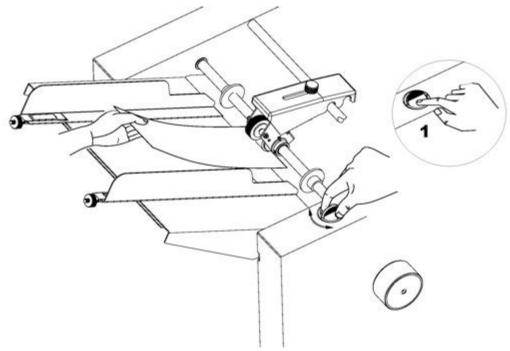


Adjust Paper Thickness

Paper thickness is to be adjusted so that the feeder only feeds one piece of paper at a time. By adjusting to the pressure roller, you can limit the passage gap to any paper thickness.

Set the gap between feed roller and pressure roller to paper thickness by turning the knob (1) at the machine side. To reduce the gap, turn knob (1) clockwise. Once you can feel the rollers lightly pulling the sheet, stop the adjustment. Do not set the gap too small as it will result in abnormal wear on the feeder wheels.

You can double check the thickness setting by trying to feed two pieces of paper together. If the feeder is able to separate the sheets, the thickness is set correctly.



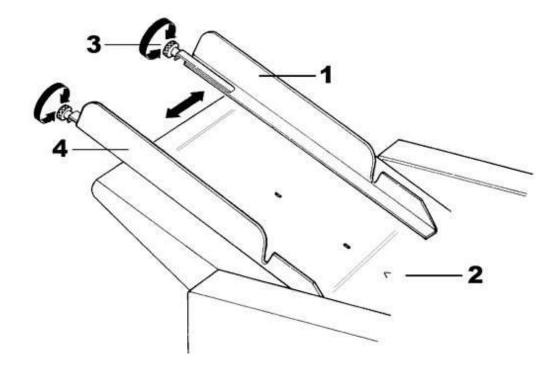
Adjust Feed Guide

First align the left feed bracket guide (1) so that the sheet is fed centered on the table as far as possible. A notch (2) in the table under the removable center panel marks table center, but you can also align the sheet using the feed or pressure roller as gauge.

To shift the guide, firstly loosen the knurled nut (3), pull away the clip lightly. Shift and align the guide, then fasten the nut.

After finish setting the left guide, then adjust the right guide (4). Put the paper on the feed table; align the paper with the left guide, then move the right guide to the edge of the paper, leaving a gap around 0.5mm. Do not press the guide too tightly close to the paper. Fasten the nut to fix the right guide. Check again whether the paper is in the middle between the left and right guide and ensure the guide is not too tightly or loose placed against the paper.

Displace the hold-down disks in such a way that they serve as guides which is placed about 2-3 cm from the edge of the sheet.



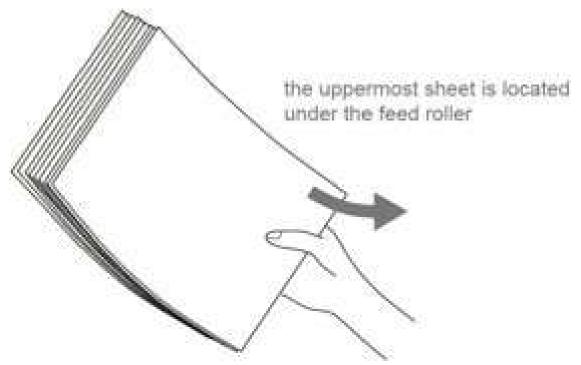
Paper Stack

It is important to fan the paper stack before placing it on the feed table:

Grip the left end of the paper with your left hand and bend it towards the right.

Press on the right side of the paper with your right hand, and then release your left hand. The paper stack will snap back and will be fanned out slightly. Repeat the process once or twice more until the stack if fanned out properly.

Place the fanned out stack on the feed table in such a way that the uppermost sheet is located under the feed roller.



Feeder Pressure

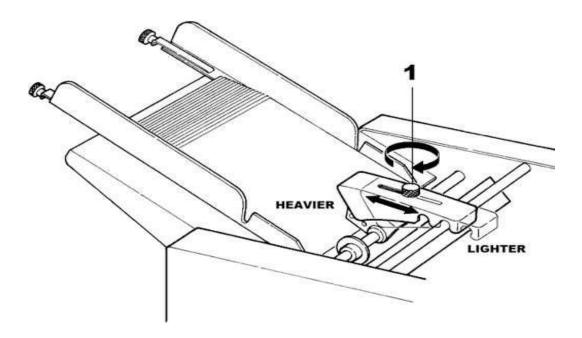
To adjust the feed pressure, first place the feeder unit at its rest position (Infeed roller raised). Set the pressure of roller on feeder with the knurled nut (1).

For paper weight from 60gsm to 90gsm, place the nut in the middle, neutral position.

For over 90gsm paper, loosen the nut and push it towards the paper stack, thus applying more pressure.

For the paper less than 60gsm, shift the nut at the opposite direction (towards the delivery direct).

If the paper pressure is adjusted not properly, the paper will be pressed too tightly and will leave crease on the paper.



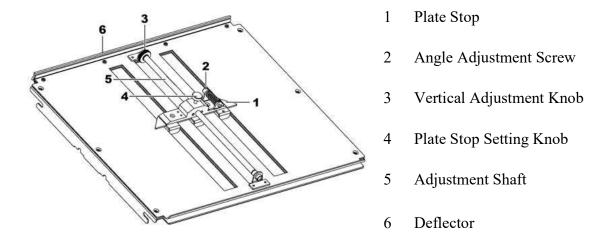
When the pressure is set, place the feeder to its work position.

To sum up, set paper feed in the following steps:

- Set gap between feed and pressure roller approximately to paper thickness.
- Align guides.
- Set infeed roller contact pressure with the knurled nut on the feeder.

Setting the Folding Table

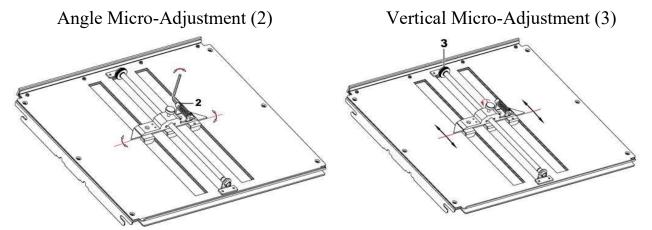
According to the folding type, adjust the folding plate.



You can firstly fold one paper by hand, then refer to the folded size, shift plate stop (1) or refer to the Fold Style Guide.

First loosen the Plate Stop Setting Knob (4), then shift the stop plate to the designated place and fasten the screw. When the folding plate is not needed, take it out and fit it reversely with the deflector (6) end into the machine. When the setting is completed, please test folding several papers first.

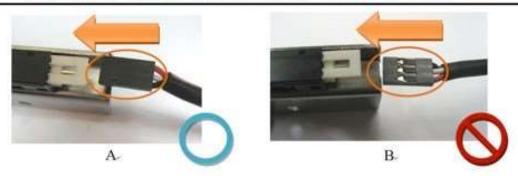
You can fine-tune the stops for length and angle with the knurled screws.



Connect the Counter (for model number C & B only)

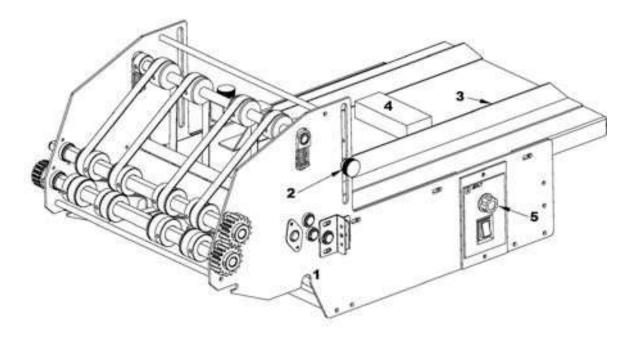
The counter will work only when combined with the sensor. Before using the counter, please connect the sensor in advanced.

Attention: Be careful of the direction of connecting the counter, the sensor will be broken with the wrong side of connection.



Please note that there are three metallic contacts in one side of the power cord of the sensor. The sensor *MUST BE* connected with the flat side with *NO Metallic Contact Side* on top (*picture A*). Do not connect the sensor with this side on top (picture B),

Vertical Stacker



Installation of the vertical stacker

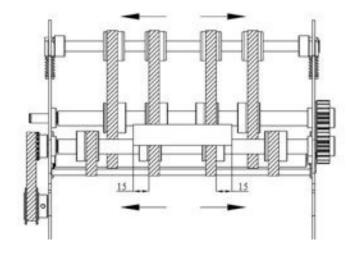
Insert the vertical stacker into the support shaft in the rear of folding machine using the groove (1) provided.

Adjustment of the Vertical Stacker Belts

Adjust the belts according to the width of the folded paper. The belt should have at least 10 to 15mm gap to the edge of the paper.

Minimum Fold Size Adjustment

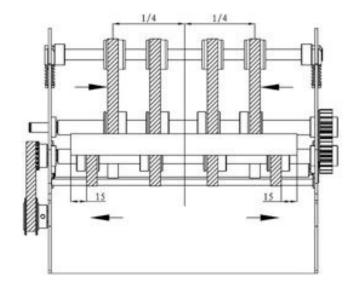
Position the minimum size folded paper at the center of the stacker. Adjust the belt to the size of the paper, leaving around 10~15mm space to the edge of the paper.



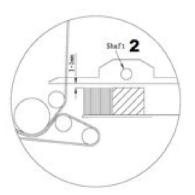
Maximum Fold Size Adjustment

Position the maximum size folded paper at the center of the stacker. Adjust the upper outer belt to space 1/4 of the paper length from the centre.

The lower outer belt should be positioned as such that it leaves around 10~15mm to the edge of the paper.



Adjustment of the Vertical Stacker Guides Ensure that a gap of 1 to 2mm is kept between the two paper guides located after the belt system. This can be done by adjusting the screw of shaft (2).



The right and left paper guides (3) are adjusted according to the width of the paper.

Put the stop board (4) after the folded paper.

Start the vertical stacker:

After above steps, switch on the power switch and adjust the speed (5) of the vertical stacker. As a general rule, the speed of the stacker should be faster than the speed of the machine.

The Folder is now ready to run. But before you switch on, please note the following important points:

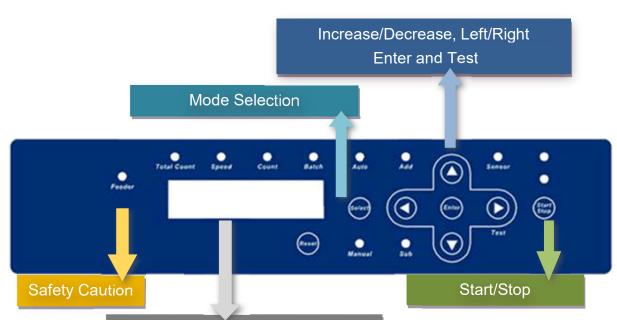
A change of speed while the machine is running may change the fold style applied. This may happen as you start the machine, since it needs a little time to run up to speed.

For this reason, it is advisable to place your left hand on the stack before switching on the power. Release the paper only when the machine has run up to the selected speed (you will hear the steady hum).

The same applies when you switch the machine off with sheets of paper remain on the feed table. Again, hold them down to stop the feed, when the motor is running at steady speed, release the grip.

In the way, the whole run from first to last sheet will be evenly folded.

7. OPERATION AND FOLDS





Quantity Setting and Counter Screen

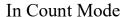
Select Button – Select "Count" Mode
In Count

- 1. Choice between Auto/Manual for Counter Mode
- 2. Choice between increment or decrement count
- 3. Set batch count quantity



Enter Button

Once setting is completed under Count Mode, press enter to store memory





- Press to increase the display number
- Select Auto Mode for counter
- Select incremental counting for counter

In Speed Mode (when machine stops)

 Press to increase the speed of machine In Count Mode



- Press to decrease the display number
- Select Manual Mode for counter
- Select decremental counting for counter

In Speed Mode (when machine stops)

Press to decrease the speed of machine

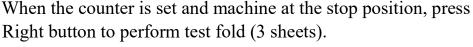


In Count Mode

- Press to move left for digit position
- Digit flashes indicating the current position
 In Count Mode



 Press to move right for digit position • Digit flashes indicating the current position





In Count Mode

displays the counter number to set with flashing digit indicating the position **In**

Speed Mode

displays the speed of the machine to be set When Machine is running displays the current sheet count **When Machine stops** displays the total sheet folded

When the preset counter quantity has not complete and feed table runs out of paper, displays **E2** (with Buzzer alarm) When sensor detects no infeed of paper, displays **E1** (with Buzzer alarm)

Feeder

When Feeder safety lights lid up, indicates feed table has no paper, displays E2 in counter screen with buzzer alarm



Start/Stop Button

Press once to start(green light), press again to stop (red light)

When the machine stops, Speed light lid up able to adjust the speed of the machine



- 1. When machine stops and displays the total paper count, long press for 3 secs to reset to zero
 - 2. Press once to deactivate the buzzer alarm

Operation Example

Counter Set with number of sheets to fold Auto mode and decrement counting for Counter Setting 1. Press solvet to enter Count Mode.

Auto and Manual LED will blink. Press to select Auto mode.

Add and Sub LED will blink. Press to select Sub for decrement count style

Use the direction buttons to set the number of sheets to fold.

- 2. Press store setting
- 3. Press to determine machine speed
- 4. Press test fold. 3 sheets will be folded.
- 5. When the test fold result is okay, press to start the machine

With the above setting, when the machine is running:

The display panel



will:

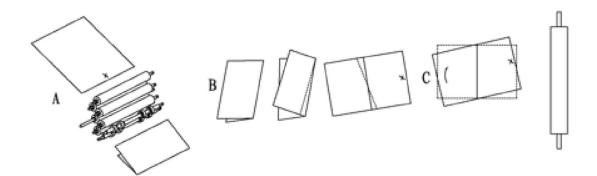
- 1. Indicates the paper count
 - Under ADD method (increment style) the displays starts from 0 to the preset value
 - Under SUB method (decrement style) the displays starts from the preset value and counts down to 0
- 2. Under Auto mode, once it reaches the preset value, the batch light will blink with a buzzer sound, stops feeding for 3 sec and continue another cycle
- 3. Under Manual mode, when the preset value is reached, the machine runs for 3 sec and then stops. Press to resume folding.

When the counter value is set to 000000, no counting will be made. Press to operate the machine. However, this mode is not recommended



8. FOLD CORRECTIONS

Eliminating a diagonal fold



Mark the first sheet you run through the machine with a cross on the top side, so that you know in which direction it has been fed. If it leaves the machine with the fold diagonally shifted from the straight line, first fold it by hand to an even more acute diagonal offset from the straight, then place it again on the feed table in the correct running direction. Since the fold always runs parallel to the spindles, you must now turn the sheet (and adjust the guides correspondingly) until the next trial fold runs exactly parallel to the spindles. The next sheet will already show an improvement. Possibly, you may have to make another trial fold, continuing with the sheet alignment until the diagonal shift is completely corrected.

Setting to pointed tips or out-of-square paper

Where the sheet end has pointed tips (diagonal cuts) or out-of-square, use the angle micro-adjust to adjust to the correct angle.

Correcting minor fold variations

Once you have accurately set the plate stops to the desired style of fold by the scales, it should not normally be necessary to equalize minor fold variation, provided the running speed is not changed drastically after setting up.

Placing and replenishing the paper stack

When feed table, automatic-paper feed, plates and delivery have been set to the required fold, place the first paper stack on the table - between 100 and 300 sheets, depending on paper grade, evenly fanned out. Align the stack at the sides. To avoid the last sheets of a stack being drawn together under rollers and spindles, it is advisable to stick a single sheet with adhesive

tape to the table. Place the fanned stack on top, holding it in position with your left hand and guiding it with the right. Cautiously slide the stack up to the feed roller working range so that the fanning will not collapse again. As the top sheet must be seized first, slide it closest to the feeder.

Replenishing the stack

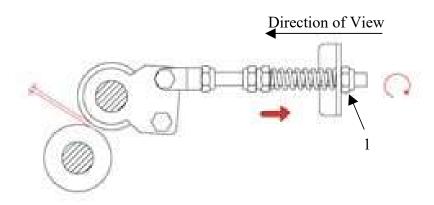
You can top up the stack while the machine is running in two ways:

- a) When only a few sheets are left, slide the new stack under the last sheet and the machine can run on without a break.
- b) Alternatively, you can let the last sheet be drawn in and then place a newly prepared stack on the table. This briefly breaks the machine run, but the negligible time loss will not reduce average output

Adjusting Roller Pressure

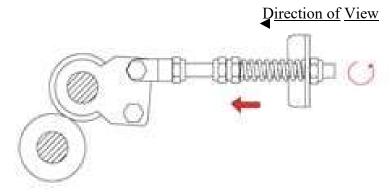
Depending on the weight of the paper, sometimes it is necessary to adjust the roller pressure according to ensure a smooth and accurate fold.

The roller pressure can be adjusted by turning on the nut (1) clockwise or anti-clockwise to achieve the desire pressure. The direction/point of rotation reference is always the view from the nut looking towards the roller.



Turn the adjustment nut (1) Clockwise:

This action will pull the rod and create a gap between the rollers. This step is to *release pressure* on the fold rollers.



Turn the adjustment nut (1) **Anti-Clockwise**:

This action will push the rod and close the gap between the rollers. This step is to *increase pressure* on the fold rollers

9. OPTIONAL ACCESSORIES

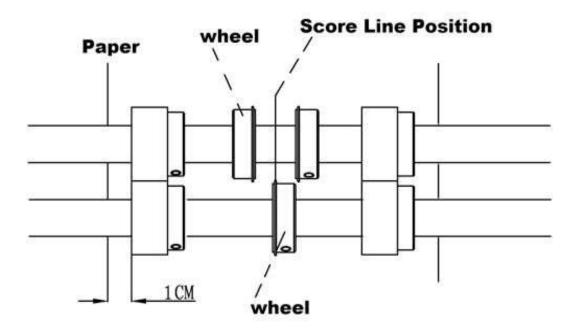
A. Scoring!or!Perforating!Wheel!

First, mark the scoring position on a test paper then adjust the ejector roller to the paper edge. Roll out the paper to the ejector shafts by turning the handwheel. Adjust the scoring wheel to the required position. After which, adjust the upper wheels towards the scoring wheel. This will create the score line when the paper is run through. Please test the depth of the score.

In general, for thin paper, set the distance between the scoring wheel is closer. For thicker paper, set the distance further apart.

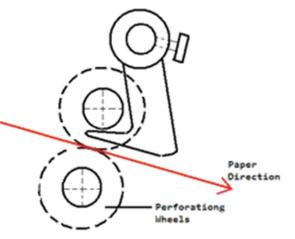
This set-up and principle also applies to perforation wheel.

When the scoring/perforating wheels are not in use, loosen the roller and move it 1cm away from the cam.



Perforating Stripper

Perforating stripper eliminates the tendency of paper sticking on the perforating wheel, which might cause a jam during the output. Install perforating stripper on the hold-down roller shaft.



10. FAULTS, CAUSE AND REMEDY

Fault	Cause	Remedy
Intermittent(and(irregular(feed(1.(Feed(bracket(set(too(narrow(2.(Gap(between(feed(and(pressure(roller(too(narrow(3.(Infeed(roller(pressure(insufficient(or(roller(worn(out(4.(Feeder(Shaft(drive(belt(worn(1.(Loosen(the(bracket(by(a(little(2.(Increase(gap(with(setting(knob(((3.(Increase(feed(on(the(feeder(or(replace(infeed(roller(4.(Replace(belt(
Very(lightDweight(paper(grade(becomes(creased(1.(Infeed(roller(pressure(too(strong(2.(Gap(between(feed(and(pressure(roller(too(narrow(3.(Speed(too(high(4.(Paper(runs(at(an(angle(5.(Pressure(of(first(pair(of((fold(rollers(too(strong(our(uneven(1.(Reduce(feed(pressure(with(knurled(nut(2.(Increase(gap(with(setting(knob)(3.(Reduce(speed(4.(Correct(with(feed(brackets(5.(Have(pressure(and(parallel(fold(roller(alignment(set(by(our(service(engineer(((fold(roller(arrangement(is(suitable(for(all(paper(grades(in(general(use,(but(for(some(very(thin(papers,(fold(roller(pressure(can(be(altered()
drawn(in(together((Gap(between(feed(and(pressure(roller(too(wide(2.(Paper(jam,(the(blocking(prevention(has(switched(off(the(folder(1.(Narrow(gap(with(setting(knob((2.(Clear(paper(jam.(To(restart(the(machine,(it(has(to(be(switched(offand(then(switched(on(again.(
Folded(sheets(slide(one(inside(the(other(Gap(between(ejector(roller(and(holdDdown(rollers(too(wide(or(too(short(Correct(the(holdDdown(wheel(distance(
Sheets(jam(between(ejector(roller(and(holdDdown(rollers(1.(Gap(between(ejector(spindles(and(holdDdown(rollers(too(short(2.(Ejector(rollers(not(evenly(spaced(over(sheet(width(3.(Ejector(rollers(worn(1.(Correct(the(holdDdown(wheel(distance))) (2.(Reposition(the(rollers,(together(with(the(scoring(wheels,(so(that(they(will(guide(the(paper(evenly(3.(Replace(rollers(
Sheets(not(evenly(fanned(on(delivery(1.(Paper(feed(irregular((2.(Ejector(rollers(worn(or(not(evenly(set(3.(Delivery(belt(is(slack((4.(Drive(belt(of(delivery(belt(worn(1.(Correct(setting(((see(section(on("paper(feed"()(2.(Replace(or(reposition(rollers((3.(Tension(belt(or(replace(it,(if(necessary(4.(Fit(new(drive(belt(