

The PaperFolder Co.
PH-Knife-14 Cross Fold System

14" 4-Fold Plate Paper Folding Machine
+
Knife Folder

Operator Manual
(Revised 12-15-2021)



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Page 1

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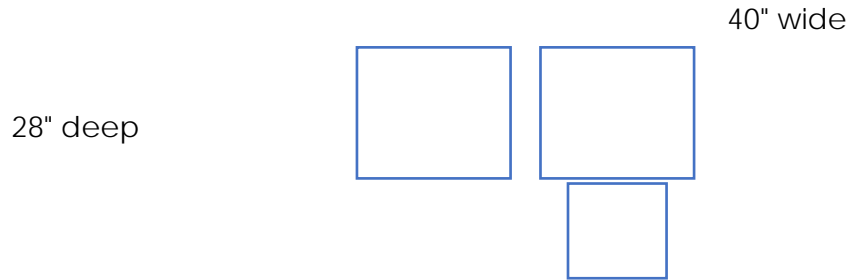
TABLE OF CONTENTS

1. Installation of PH-14.....	3
Unpacking.....	3
Output Tray and Wheels.....	4
Setting the Fold Plates for your Fold.....	6
Fold Chart.....	8
Installing the Fold Plates.....	9
Paper Creaser.....	10
Loading Paper.....	11
Power & LCD Control Panel.....	11
Setting Pause Intervals.....	12
2. Specifications.....	13
3. Maintenance and Cleaning.....	14
4. Troubleshooting.....	15
5. Installation of A3 Knife Folder.....	16
<i>(Cross Fold System Setup)</i>	
Communications Cable.....	17
Positioning Machine with the PH-14.....	17
The LCD Control Panel.....	18
Emergency Stop.....	18
6. Troubleshooting.....	19
7. Contact Us.....	19

INSTALLATION

The PH-Knife-14 Cross Fold System is designed to process legal size paper (8.5" x 14") or smaller into smaller cross folded pieces that will fit in small envelopes. It does this by performing up to 1 to 4 fan-folds on the length of the paper on the first machine, followed by a half-fold on the second machine.

It is very easy to set up and operate if you follow these instructions. You will need a sturdy table at least 4' x 2' able to support up to 200 lbs. We recommend the Iceberg Indestructible Too Table 24" x 48" item 65503 or better. You may want bigger. When set up, the system is in an L shape that measures 40" x 28".



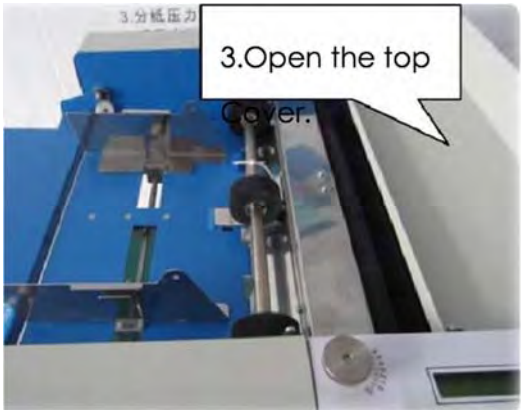
Start by unpacking and setting up the first machine, the PH-14. Make sure it is operating properly before combining it with the Knife folder.

UNPACKING THE PH-14

Unpack the machine. Put the machine on a big table. Open the paper Feed Tray. Push the front of the tray down to load paper.



Open the Cover. Cut any plastic ties.



Under the feed tray the output rollers are attached by a screw to the side. Unscrew by hand and remove.

Remove the ties on the 2 bottom fold plates.



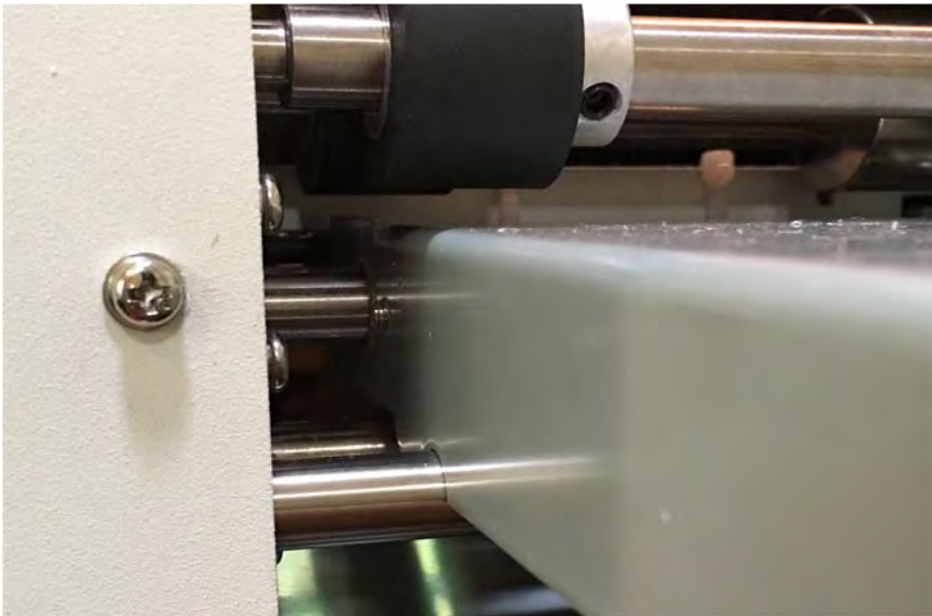
INSTALL OUTPUT TRAY

The PH14 can be ordered with either a Knife folder to perform a cross fold, or a Stacker which neatly stacks very small, folded pieces

FOLLOW THE GUIDES BELOW FOR YOUR SETUP

IF YOU ARE INSTALLING THE PH14 TO OPERATE BY ITSELF

Slide the output tray into machine just below the rubber rollers. The 2 slots on the end fit on a bar. Lower it with the slots fitting on the bottom on the outer bar. Make sure the gears are aligned on the right side.



Install the output wheels by placing the side of the T-shaped mount with the spring in the hole closest to the rollers on the left side of the machine. Note that it has to go under the cross bar. Press it in so that you have clearance to put the right side in the hole on the right side. Attach the output wheels as shown along with the output tray extension.



IF YOU ARE INSTALLING THE PH-14 WITH A STACKER OR KNIFE FOLDER

You will not be using either the output tray or the wheels on the PH14. However, you need to test the machine to make sure it works properly before installing the Knife folder or the Stacker. **INSTALL THE OUTPUT TRAY ONLY** (no wheels) AS SHOWN ABOVE TO TEST A FEW SAMPLES. When you have it folding properly, remove the tray when you attach either the Knife folder or the Stacker.



The output tray will be installed on the Knife folder (see below), but it is not used with the Stacker.

WHERE TO SET THE FOLD

The length of each fold is set on its fold plate. You are setting the depth of the paper that will go into the fold plate for that fold. For example, on letter size (8.5" x 11") paper:

For a half-fold, set the plate at 5.5".

A Z fold is 1/3 of 11" or 3.67" so set the plates at 3.67" on plates 1 and 2.

A 4 panel fan-fold is 1/4 of 11 or 2.75" so set the plates at 2.75" on plates 1, 2 and 3.

A 5-panel fan-fold is 1/5 of 11 or 2.2" so set the plates at 2.25" on plates 1 through 4.

For other size paper, you would divide the length of the paper by the number of panels you want and set each fold plate accordingly.

IF A FOLD PLATE IS NOT NEEDED, IT MUST BE CLOSED. To do this, you reverse the fold plate as shown below.

Open end



Closed end



All fold plates not in use must be closed. Those fold plates are taken out and put back in (Reversed) so the closed end is towards the center of the machine. The paper does not enter them. A Z-fold or trifold is performed in plates 1 and 2, with 3 and 4 closed, and so on.













HOW TO SET EACH FOLD

To set the size for the fold you want to perform, consult the chart. It will require that you measure the paper you are folding and calculate where the stop(s) should be placed. Each fold plate has 2 knobs (this closeup just shows one). You loosen them and put them at the proper position for the fold. Start with an approximate position for your fold. This one is set at 2.75" to perform a 4-panel fan-fold on letter paper. Run a sample. Then adjust the fold as needed. It may take a few times to get the fold precisely as you want. **ONCE YOU GET IT THERE, PUT A MARK ON THE FOLD PLATE AND NAME THE FOLD ON EACH SIDE.** It will make it easier next time. **IF YOU ARE PERFORMING A CROSS FOLD, YOU CAN ONLY USE A HALF FOLD, Z FOLD, 4 PANEL FOLD OR 5 PANEL FOLD.** SEE THE CHART.

SKEW

IF THE FOLD STOPS ARE NOT PRECISELY EVEN, THEY WILL SKEW. If the sides of the paper are not even (SKEW), you must raise or lower one side or the other. If it is just one panel, adjust the fold plate for that fold. In a fan-fold, the top fold on the paper is done by the first fold plate, the second fold on the second plate and so on.

If the bottom of the fold sticks out to the bottom left, move the left side a bit higher. If the right side sticks out to the bottom left, move the right side a bit higher. Then run a sample and compare it.

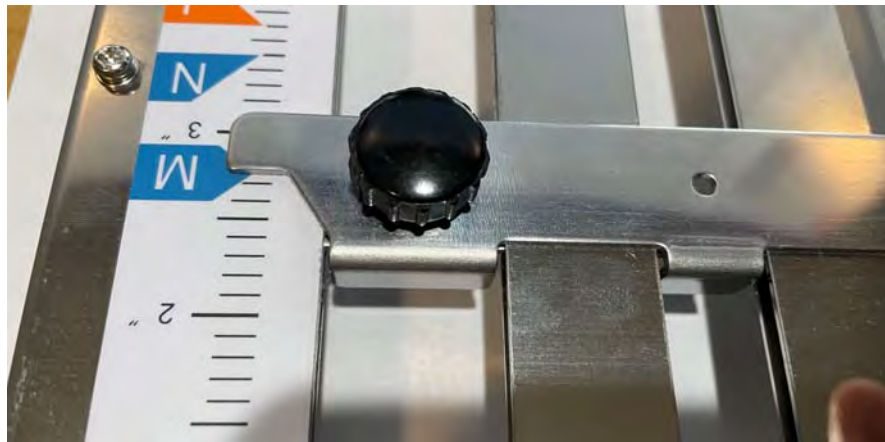
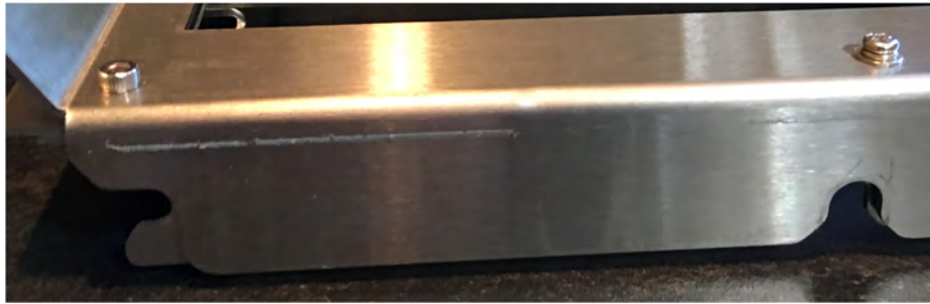
Fold Type	Image	Plate 1	Plate 2	Plate 3	Plate 4	Cross Fold?
Single (half)		1/2 e.g., 5.5" on letter size (8.5" x 11")	Closed	Closed	Closed	Yes
Letter		2/3	1/3	Closed	Closed	No
Z		1/3	1/3	Closed	Closed	Yes
Double		1/2	1/4	Closed	Closed	No
Engineering		1/4	1/4	Closed	Closed	No
Gate		3/4	1/2	Closed	Closed	No
4-panel accordion		1/4	1/4	1/4	Closed	Yes
5-panel accordion		1/5	1/5	1/5	1/5	Yes
Roller		3/4	1/4	Closed	1/4	No
Triple Double		1/2	1/4	1/8	Closed	No
Single + letter		1/2	1/6	1/6	Closed	No
Single + Z		1/2	1/6	Closed	1/6	No

OUTPUT WHEELS

Adjust the output wheels for the type of fold. In for shorter; out for longer. Start longer and shorten if needed. You do not want the paper to back up into the machine.

INSTALLING THE FOLD PLATES

If you are installing the fold plates for the first time, please see the section above on setting the fold.



Two of the fold plates, 2 and 4, may come installed in the machine. Install any remaining fold plates in this order: 4, 2, 3, 1. The trays have numbers on them. They fit on the 2 posts with the corresponding numbers, e.g., Plate 4 goes on the 2 posts marked 4.



The slot on the end attaches to the inner post; the slot on the bottom fits over the outer post. IF THE FOLD PLATES ARE NOT IN THE CORRECT ORDER THEY WILL NOT WORK PROPERLY. They should not move installed correctly.

If a fold does not work as it should, check that the fold plates are properly installed and on the right posts. THIS IS USUALLY THE PROBLEM IF THE FOLD IS NOT WORKING CORRECTLY OR THE PAPER JAMS. IF THAT HAPPENS, TAKE THEM OUT AND REINSTALL THEM.

PAPER CREASERS

There is a paper creaser on the back of the PH14 which can be used when you want to perform a cross fold. A crease makes the fold tighter.

To set the machine to make a crease, move the 2 lower side wheels under the creaser wheel, but not under the creaser. it will place a crease in the middle of the paper to make a cross fold in half. Use an Allen wrench to loosen the set screws so they can be moved, then retighten.

To stop creasing, move the wheels away from the creaser using an Allen wrench to loosen the set screws. Put them directly under the wheels above as shown in the first image.

In this picture, the creaser is not set to crease the paper.

NO CREASE



SET TO CREASE



LOADING PAPER

- Fan a stack of paper of around 100 sheets.
- Load them in the paper tray.
- Press the front of the tray down to load the paper.
- Move the side guides to be snug with each side of the stack. It should be centered on the tray. THIS IS VERY IMPORTANT. IF YOU ARE USING THE KNIFE FOLDER, IT WILL NOT PERFORM PROPERLY IF THE PAPER IS NOT CENTERED.

POWER

Power to the machine can be 110v, 60 hz or 220v, 50 hz. Plug it into a wall circuit with at least 10A available. DO NOT USE AN EXTENSION CORD.

Plug the electrical cord in and switch on. O is Off. — is On.

LCD CONTROL PANEL



SETTING PAUSE INTERVALS

The PH14 can be set to pause for a set period after one or more folds. There are several situations where this is handy, such as:

1. THE COUNTER STOPS BEFORE COMPLETING THE STACK

Remedy: Increase the time between each sheet.

- a. Press the C button.
- b. Press and hold the Count button until xxxmS appears. Now you can set the pause time. Press the button repeatedly until the counter reads 125mS.
- c. Press the C button
- d. Press the Count button so that 1 shows. It will pause for that time after every sheet
- e. Press the C button
- f. Press the Start button. Stop when you have the number of sheets you want.

2. SET A PAUSE AFTER A CERTAIN NUMBER OF FOLDS

You want to fold a certain number, and then stop so you can remove that number as a set.

Remedy: Increase the time between each set.

- a. Press the C button.
- b. Press and hold the count button until a xxxmS appears. Press the button repeatedly until the counter reads 5S (5 Seconds).
- c. Press the C button
- d. Press the counter button so that the number in the set you want shows (e.g., 100).
- e. Press the C button
- f. Press the Start button.
- g. The machine will stop after it folds the number you set. Remove them. It will start again after the period you set expires.
- h. Stop when you have the number of sets you want.

SETTING THE FOLDING SPEED

The folding speed is set at M3 from the factory. This is the recommended speed for the machine. If you are using it with a knife folder or stacker, it must be used. You can change it by holding down the Stop and C buttons simultaneously, getting to Motor Speed, and push the upper left button to increase or the lower left button to decrease the speed. We recommend that you do not change this.

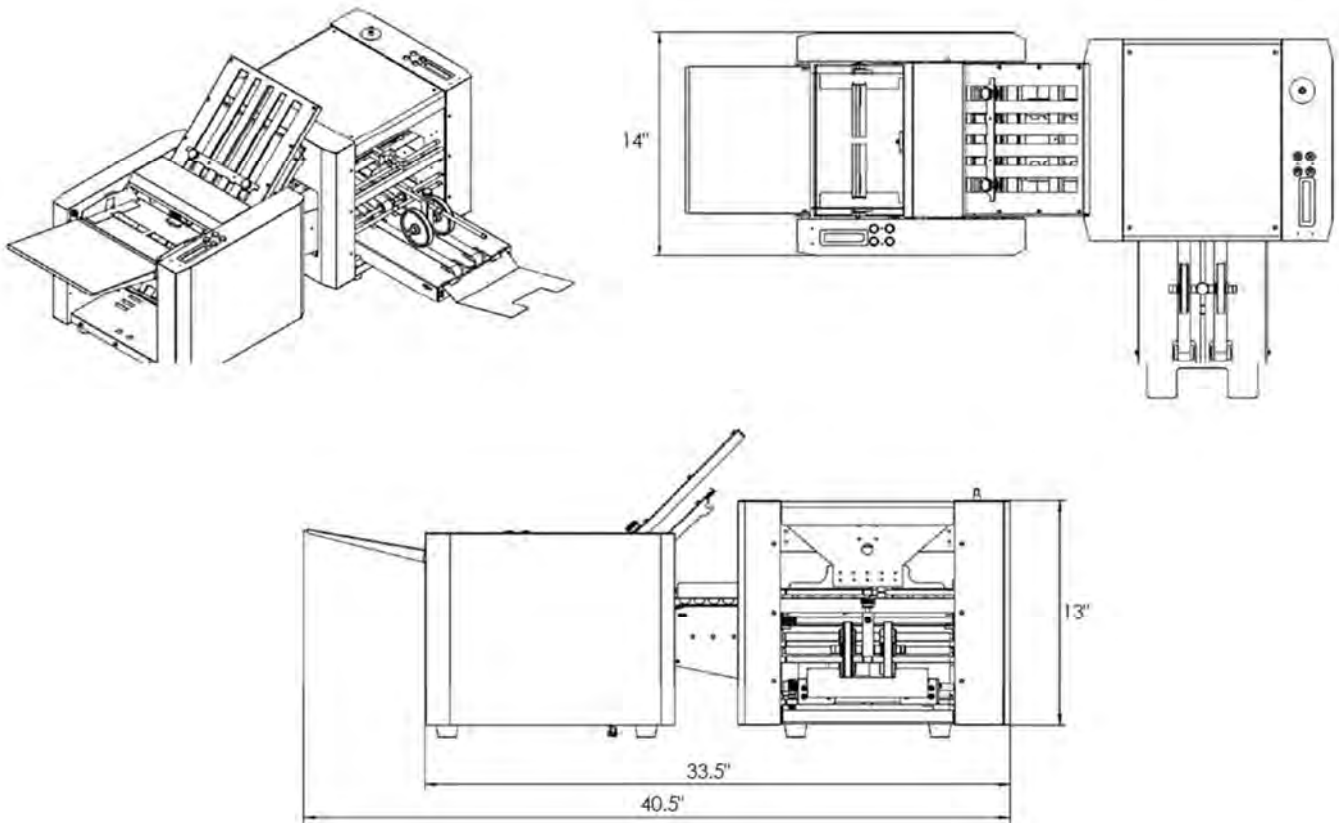
SUCTION T

One of the readings on the control panel is Suction T. It should read 360ms. This is not a user adjustable setting. Please make sure it reads 360ms.

SPECIFICATIONS

Fold Speed:	Max 7000 sheets/h
Paper Size:	Minimum size: 4" W x 5.5" L Maximum: 8.5" W x 14" L
Paper Weight:	50—200 gsm Bond: 16 to 50# Text: 40 to 135# For cross folds: 18 – 20# Bond required
Paper Surface:	No glossy or slippery paper
Paper Stack Capacity:	300 sheets 18# bond
Dimensions:	240 x 550 x 464 mm (49" x 21.7" x 18.3")
Machine Weight:	48 Kg (106 lbs.)

PH-KNIFE-14 CFS DIAGRAM



MAINTENANCE

Folding machines need to be cleaned on a regular basis. Ink and toner are transferred to the rollers. Dust and paper bits accumulate. All paper is dusted with powder that keeps the sheets separate. All this can build up on feed wheels and rollers in folding machines. Once it does, the wheels and rollers cannot grip the paper.

To clean the machine,

1. Make sure that all paper bits are out of the paper path. A can of compressed air is handy for this purpose.
2. Wipe the wheels and rollers with a cloth that has been moistened with rubber roller cleaner (available at office supply stores) or rubbing alcohol. Get rubber roller cleaner. Turn the rollers by hand to get all of the surface.
3. Remove and inspect the feed trays to make sure there is nothing in the path of the paper, and that they are installed correctly.
4. If paper is not feeding well, check the plastic separator under the middle feed wheel. Both the separator and the feed wheel wear over time and may have to be replaced.

TROUBLESHOOTING CONTROL PANEL

MESSAGE	Cause	Solution
NO PAPER		Stack paper of feed tray
PAPER ERR	A jam has occurred or other error	Press C. Clean sensor if needed
OVERLOAD	Motor is overloaded	Turn off, then on.

TROUBLESHOOTING IN OPERATION

Symptom	Cause	Solution
Paper is not folded at proper folding position	The paper folding plate is not installed properly.	Install the paper folding plate properly.
	static electricity has occurred in the paper.	Spray a commercially-available air duster on the rubber roll
Paper is double-fed frequently	The paper separator is dirty	Clean it with alcohol
	The sheets of paper are sticking to each other	Fan the paper well
Paper jams frequently	The rubber roll is dirty	Clean it with alcohol
	Paper shreds are stuck inside the paper conveyance passage	Check inside the machine and remove any paper shreds
	The stacker roller position is not correct	Adjust the position of the stacker rollers
	The paper is curled	Straighten the paper curl
	Static electricity has occurred in the paper	Spray a commercially-available air duster on the rubber roller
Paper slips in the vertical direction	After a paper type was changed, a folding position has not been	Check that the rough adjustment knob position is correct
Paper slips in the Horizontal direction	The paper is stacked unevenly	Stack the paper neatly on the paper feed table
	There is space between the paper and side guide	Set the side guides so that they push against the paper lightly
	The rubber roll is deformed	Call your dealer

PAPERFOLDER KNIFE 14 CROSS FOLD SYSTEM



THE PAPERFOLDER KNIFE 14 CROSS FOLD SYSTEM is an automated cross fold system that can cross-fold paper into very small sizes in one pass. It can perform up to 4 folds on a piece of paper, down to a size 1/5 of the length and 1/2 of the width of the paper being folded.

The system is composed of the PH-14 four-plate (pharmaceutical) folding machine attached to a KNIFE A4 folding machine. The PH-14 first folds paper into 2 to 5 panels along the length. It then exits into the knife folder, which performs the single half fold, and exits onto a tray with a conveyor. Very small, folded pieces cannot stack well on the conveyor, so they are normally output to a container and then manually stacked.

All details on the PH-14 machine are in the first section of this manual.

This will cover the knife folder.

THE PAPERFOLDER KNIFE A3 KNIFE FOLDER

The knife folder is only used with a PH-14 to perform a cross fold. In this system, paper exits the PH-14 directly into the roller-fed knife folder and then exits from its side unto a conveyor.

INSTALLING THE A4 KNIFE FOLDER

After you have set up the PH-14 and run samples to make sure it is operating correctly, place it on a sturdy table at least 48" x 24" and capable of holding at least 200 lbs.

Place the PH-14 on the left side as shown above. Then place the Knife folder on the right as shown. Do not push together yet.

COMMUNICATIONS CABLE

Attach the included comm (ethernet) cable under the feed tray on the PH-14 and on the back of the knife folder. The cable allows both machines to operate when the PH-14 is operating. Run the cable under the machines.



POSITION THE KNIFE FOLDER

Next, push the knife folder against the PH-14. The slot shown fits on a cross bar on the PH-14. Make sure both sides are firmly pushed in.



CONTROL PANEL

The control panel does not have to be used in normal operation after you set the speed. The upper button on the left advances the speed in the range 1-9, and the lower button decreases it. WE RECOMMEND THAT YOU USE V7. If you want to experiment, be careful of going too slow. The paper coming from the PH-14 can back up and jam.

The Red button starts and stops the machine, but the knife folder is controlled by the PH-14. YOU DO NOT HAVE TO SET ANYTHING ON THE KNIFE FOLDER EXCEPT THE SPEED. Make sure you check it each time you run them to make sure they are set fast enough. V7 is our recommendation.



EMERGENCY STOP

The big red button on the back right is solely there for an emergency stop. Push it and it will stop the knife folder. It will not start again until you reset it which means rotating it until it pops back up.



SET UP THE FOLD ON THE KNIFE FOLDER

The knife folder is set to fold an 8.5" wide sheet of paper in half. You will need to center your paper in the feed tray. No further setup is required to operate the system.

OUTPUT SETUP

You will have to set up an output process that works for your jobs.

FOR LARGER FOLDED PAPER

For paper folded into 2 or 3 panels, set up the output tray, with wheels and extension. Follow the procedure shown on page 4 and 5 by installing the output tray, T mount with roller wheels and the tray extension. Start with the wheels toward the end of the output tray and move them up until you get the paper folding into a neat stack. It is then taken off the tray a stack at a time by the operator.

FOR SMALLER FOLDED PAPER

For paper folded lengthwise in more than thirds, you will have to configure the output conveyor to dump into a container and then manually stack them. We have found that it takes about 2 minutes to automatically fold and manually stack 100 pieces, about 1 minute to fold and 1 minute to stack. So, you should be able to process at the rate of around 2500 or more per hour allowing for 10 minutes per hour to load the machine. This timing was for letter size paper, 4 panel fan fold, followed by a half cross fold.

You may be able to devise other output methods for your particular situation.

TROUBLESHOOTING

If the problem is with the PH-14, see troubleshooting above for it. If you are having trouble with the second machine, follow these steps.

1. Check that the comm cables are attached properly
2. Check that the knife folder is properly placed with the notches on the bar of the PH-14.
3. Check that the speed of the Knife folder is set at V7.
4. Check that the red button is in the raised position. The down position is emergency stop.
5. Turn both folders off and then back on.
6. If your cross fold is not coming out straight, it may not be centered in the feed tray. It is hitting one side of the guides in the knife folder.
7. If you have a jam in the knife folder, you can press the red button in the control panel to run just the knife folder to clear it. Press it again to stop.

If this does not solve the problem, call us at 800.520.6008. It will be helpful if you have a phone that can send us video.

CONTACT US

If you are having trouble, call or email. We are here to help.

We welcome your comments and look forward to serving you.

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