

ISSUE 1 MAY 2010

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### **morgana** AutoFold Pro

#### INTRODUCTION AND SPECIFICATION

The **AutoFold Pro** is a self powered, stand alone folding machine with an innovative new vacuum controlled sheet alignment system which has been designed to take pre-creased stock from a wide range of both Morgana and 3rd party creasing machines.

The AutoFold Pro features the unique Flying Knife Folding System used successfully in the much acclaimed Digifold which allows folding of most stocks from 0.1mm, reducing the possibility of scratching, marking or cracking of the substrate as is often associated with conventional folding systems.

A maximum paper thickness cannot be specified, as this is governed by the hardness of the substrate and the type of fold required; but in most cases stocks up to 0.35mm should present no problems providing they are properly pre-creased.

It is **IMPORTANT** to note that to prevent cracking, when using dry ink or toner based print engines, the material <u>must</u> be fully acclimatised for at least 48 hours before putting an image onto the paper.

**IMPORTANT** the operating environment should be controlled to a temperature between 16° C and 27° C Maximum.

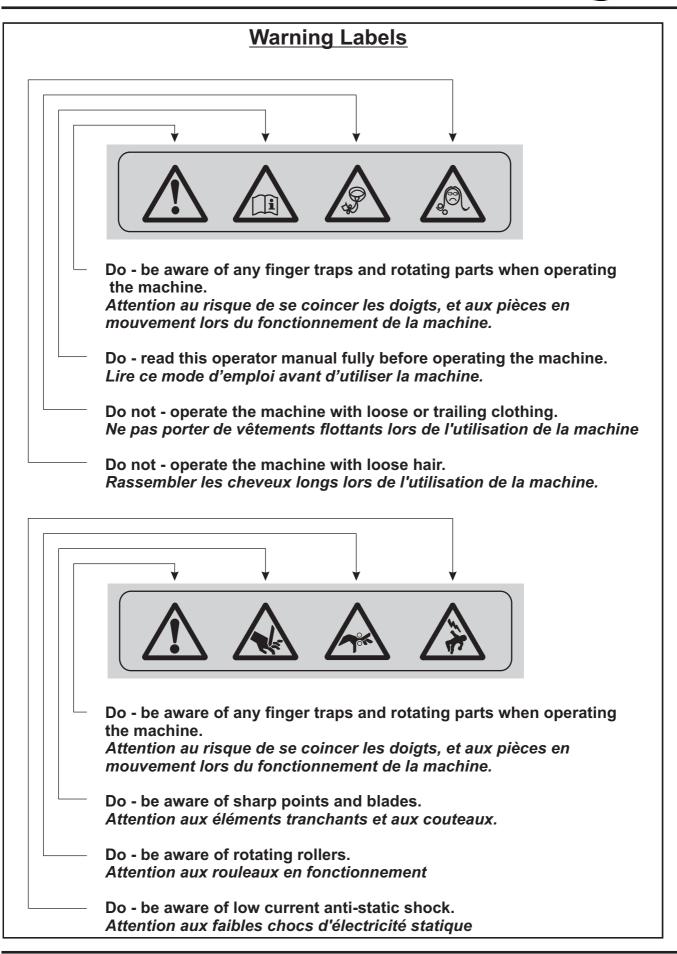
#### **Specification**

Feeding System	
Input Bed Height	Adjustable from 850mm to 1000mm
Max. Sheet Size	.600mm x 385mm (24" x 15")
Min. Sheet Size	
	on stiffness of paper and type of fold).
Max. Paper Thickness	
	type of fold, and substrate).
Min. Paper Thickness	
	type of fold, and substrate).
Max. No. Folds per Sheet	
Max. No. Stored Programmes	.Unlimited
Min. Repeat Fold Distance	.70mm (2.75") (depending on paper weight)
Min. Fold Distance from Leading Edge	.50mm (1.96") (depending on paper weight)
Min. Fold Distance from Tail Edge	
Min. Fold Length	
Speed per Hour (A4 in half)	6240 sheets (on speed 3. Pulsed)
Note: The production speed varies ac	
the fold type.	
Dimensions	I · 1700mm H· 1220mm W· 680mm
	L: (66.9") H: (48") W: (26.8")
Weight	
Power Requirement	1 pnase 220 / 240V
*As part of our continued product improvement	plan, specifications and information
published in this manual are subject to change	
All specifications are dependent on application	, type of stock, temperature, KH and print
engine used.	
Specifications quoted were measured on uncoa	ated and unprinted stock.
E & OE.	

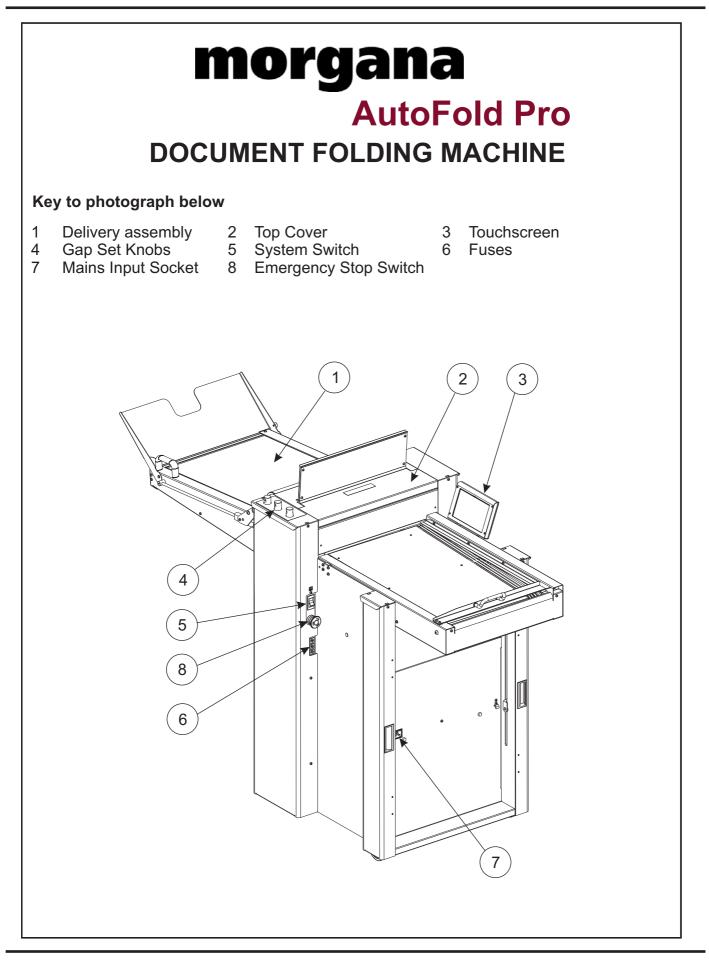
### **AutoFold Pro**

Safety Do's & Don'ts REGLES DE SECURITE : « A FAIRE » ET « A NE PAS FAIRE » Do - read this operator manual fully before operating the machine. Lire ce mode d'emploi avant d'utiliser la machine. Do - operate with the designated AC current only. Use an exclusive outlet, as overloading may cause fire or an electric shock. Respecter l'alimentation électrique indiquée. Brancher sur une prise séparée car une surcharge peut entraîner un incendie ou un choc électrique. Do - install the power cord out of the way to avoid a tripping hazard. Installer le cordon d'alimentation de manière à ne pas pouvoir trébucher par dessus. Do - make sure that the mains inlet connector is always easily accessible. Ménager un accès libre à la prise de courant. Do not - install the machine in an unstable place such that it tilts or shakes. Ne pas installer la machine sur une surface non plane, afin d'éviter qu'elle ne penche ou ne vibre. Do not - unplug the plug or unplug the power cord from the outlet with a wet hand, this can cause an electric shock. Ne pas installer la machine sur une surface non plane, afin d'éviter qu'elle ne penche ou ne vibre. Do not - unscrew and remove any covers from the machine, as it can cause an electric shock or iniurv. Ne démonter et enlever aucun carter de la machine, par crainte de décharge électrique ou de blessure. Do not - place receptacles containing liquids on any surface. Ne pas placer de récipient contenant un liquide sur la machine. Do not - adjust any part of the machine whilst rollers are running N'effectuer aucun réglage pendant que les rouleaux fonctionnent. Do not - operate the machine with loose or trailing clothing or loose hair. Ne pas porter de vêtements flottants et rassembler les cheveux longs lors de l'utilisation de la machine. Do not - under any circumstances adjust the paper gate when the machine is switched on. En aucune circonstance, régler le séparateur de papier lorsque la machine est branchée.

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### **AutoFold Pro**



## ADJUSTING THE TILT OF THE FEED BED 1. The Feed Bed can be tilted, so that it matches the height of the creasing unit that is being used with it. (i) Open the front and rear column covers. (ii) Loosen the knurled locking collars at the top of the front and rear gas springs. (iii) Adjust the tilt of the Feed Bed, (up or down) to match the height of the creasing unit, then re-tighten both of the knurled locking collars. Front Column Cover Rear Column Cover 0000 Knurled Locking Collar 3 0

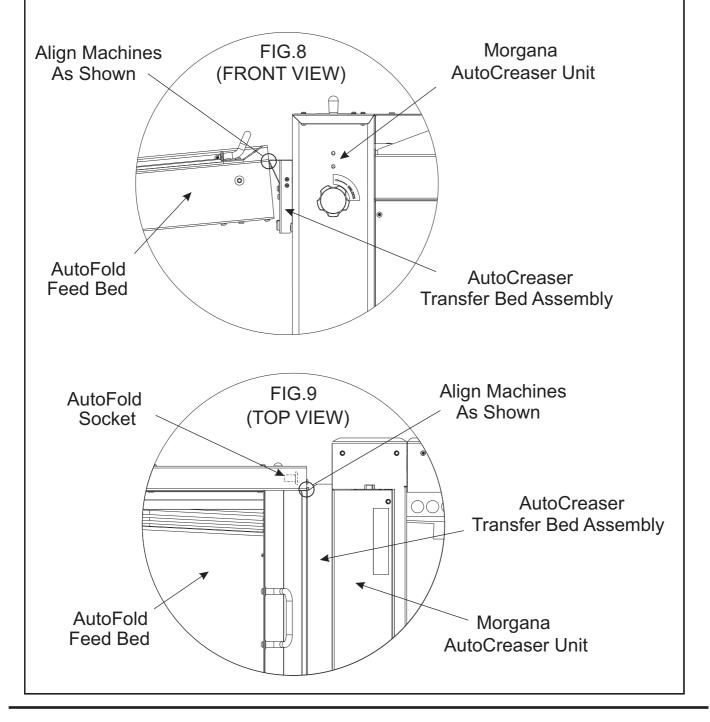
### FITTING THE TRANSFER BED ASSEMBLY TO THE AUTOCREASER AND ALIGNING THE MACHINES.

- 1. The AutoFold is supplied, as standard, with a Transfer Bed Assembly that fits onto the AutoCreaser 33 and AutoCreaser Pro 33 machines. A Transfer Bed Assembly that will fit the wider AutoCreaser 50 and AutoCreaser Pro 50 machines can be purchased as an optional extra (see accessories and options on page 37).
  - (i) Remove the stacker unit from the AutoCreaser and fit the Transfer Bed Assembly as shown in FIG.8
  - (ii) Tilt the feed bed of the AutoFold, as described above, to align with the Transfer Bed Assembly as shown in FIG.8

- (iii) Adjust the relative positions of the machines so that the Transfer Bed Assembly aligns with the Autofold Feed Bed as shown in FIG.9
- (iv) Plug the connector, on the flying lead of the Transfer Bed Assembly, into the AutoFold Socket as shown in FIG.9. This electrical connection between the AutoFold and the AutoCreaser is a safety feature. If the system switch on the Autofold is switched off or a jam occurs on the AutoFold the AutoCreaser will stop feeding.

#### NOTE.

When using the AutoFold with an AutoCreaser Pro 33 or an AutoCreaser Pro 50, it is recommended that the AutoCreaser is set to Pulse Feed and the speed is set to number 2. Depending on the type of crease and length of the paper, the speed setting may need to be changed to speed number 1 or number 3.



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#### **TOUCHSCREEN OPERATION**

1. Turn the Emergency Stop button clockwise to switch the power on. After the system start up procedure the touch screen will be displayed as shown below.



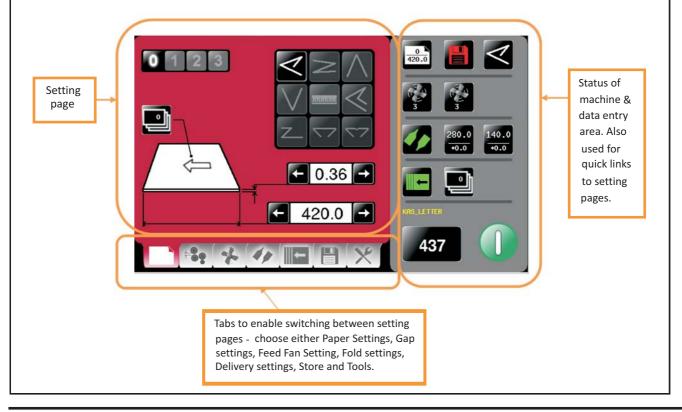
#### **IMPORTANT.**

If you have not been trained to operate this machine, we strongly advise that you select the red cross icon.

We recommend that you either seek training or ask a trained operator to run the machine for you.

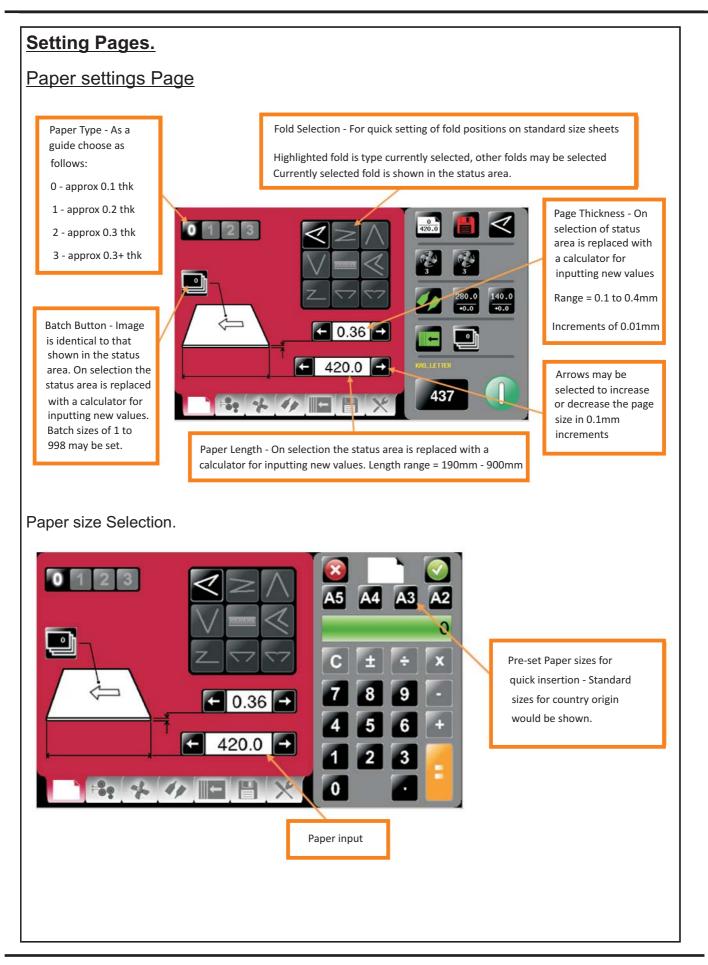
Select the green tick icon only if you have been trained to operate this machine. If you have not been trained to operate this machine and you select the green tick icon, Morgana Systems Ltd accept no responsibility for personal injury, damage to the machine or damage to materials being processed by the machine.

The touch screen is laid out into 3 main areas as shown below:



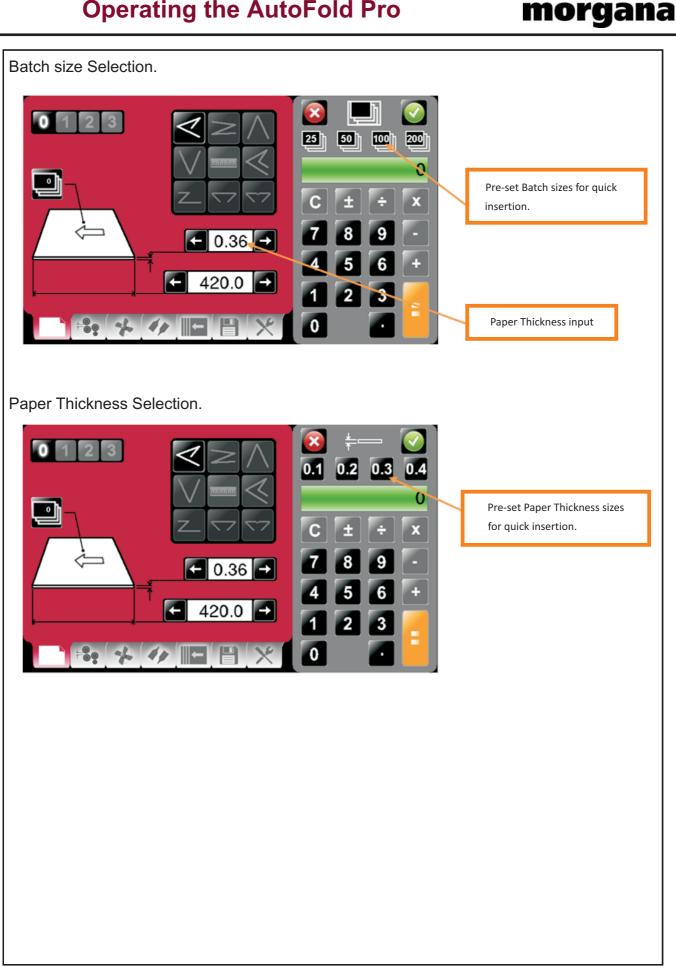
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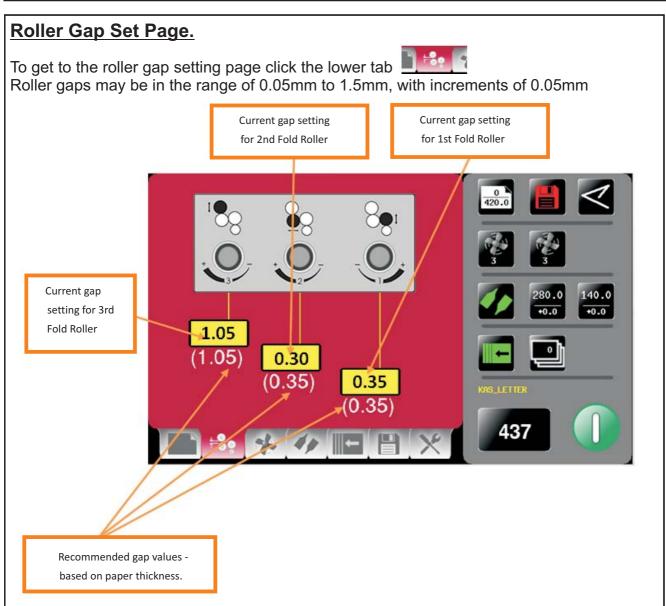
**FOLDING** 



**SYSTEM** 

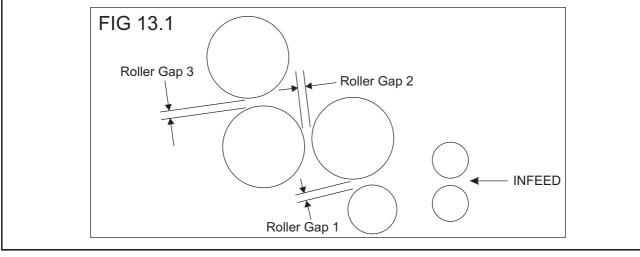
### **Operating the AutoFold Pro**





#### Setting the Roller Gaps (Gap 1, Gap 2 & Gap 3)

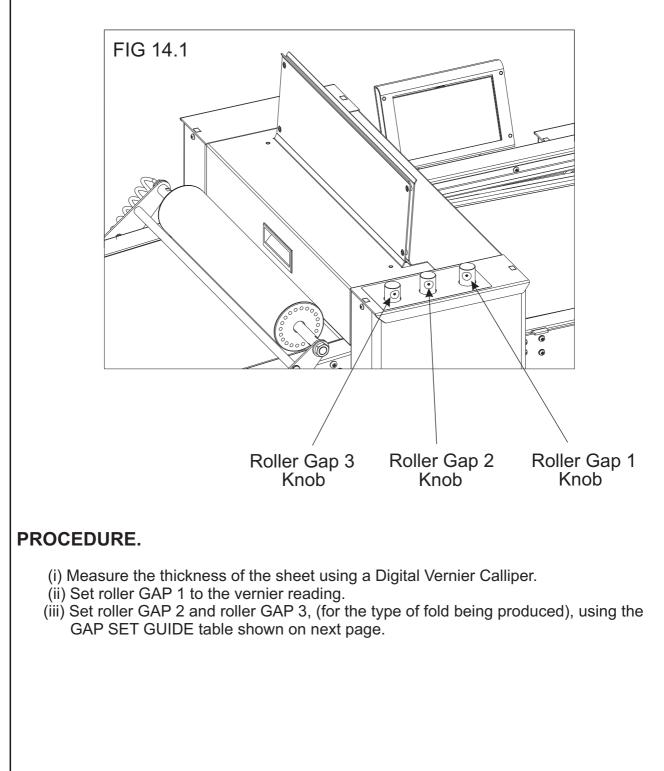
The roller gaps can be adjusted to suit the thickness of the material being folded; and the type of fold being produced. The roller gaps may also require adjustment if cracking of the print is noticeable. (see Fig 13.1 below).



The gap settings (Gap 1, Gap 2 & Gap 3) can be adjusted by rotating the Roller Gap Set Knobs (see FIG 14.1 below).

#### **IMPORTANT.**

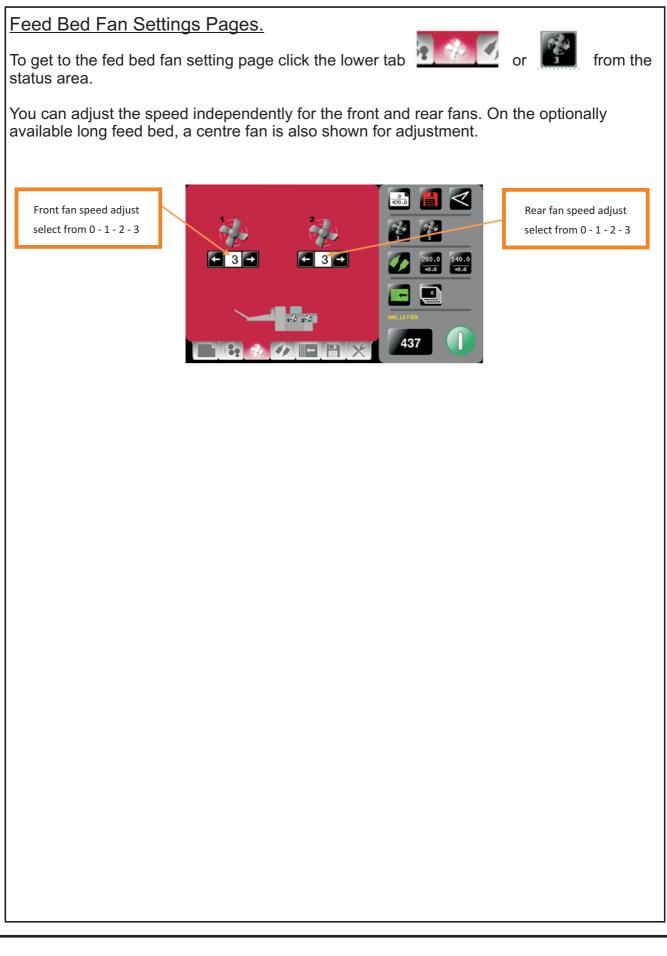
When setting roller gaps, you <u>must</u> first adjust the gap to a value greater than that required and then decrease the value to the required setting. (Do not set the gap, from a value lower than that required).



			GAP SET GUIDE			
			FOLD TYPE	GAP 3	GAP 2	GAP 1
Н	alf Fold on Knife 1 $-$		Half K1	2X	2X	Х
Н	alf Fold on Knife 2-		Half K2	2X	Х	Х
			Letter	3X	Х	Х
			Concertina	3X	Х	Х
			Gate	3X	Х	Х
			Closed Gate	3X	Х	Х
			Engineering	3X	Х	Х
			Double	4X	2X	Х
	and set GAP 3 to (		FOLD TYPE	S		
				-		>
					$\langle$	
	HALF	LETTER			CONCERTINA	
	GATE		CLOSED GATE		ENGINEERING	
	< $<$ $<$					

### **Operating the AutoFold Pro**

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#### Fold Settings Pages.

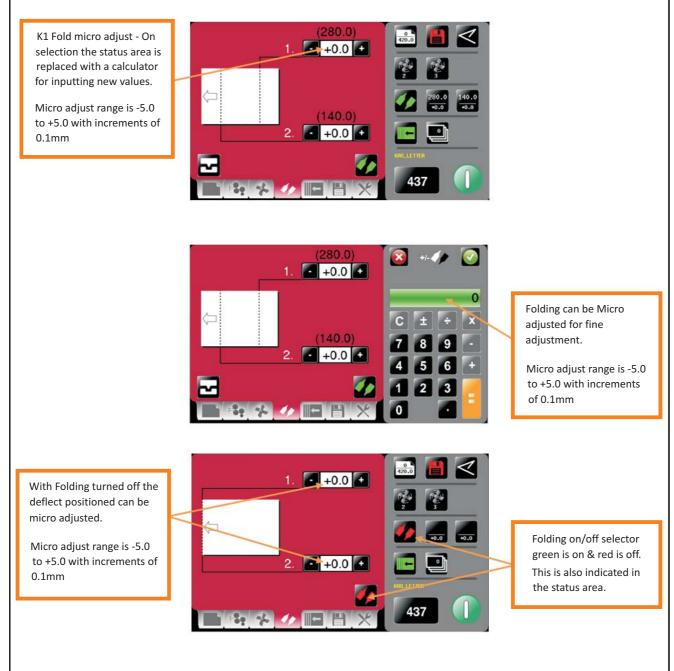
To get to the Fold setting page click the lower tab status area.



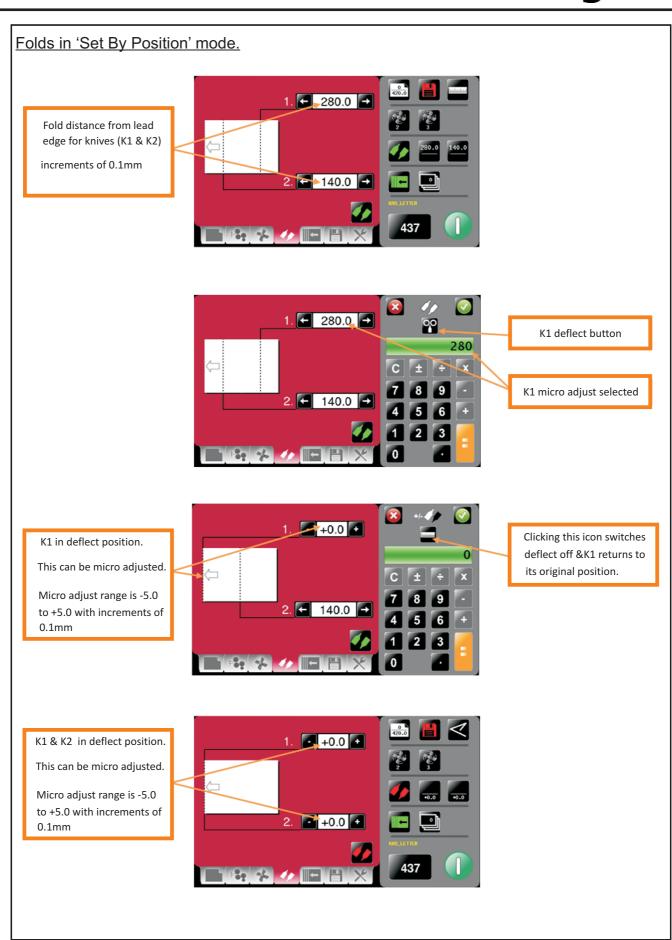
If you have selected a predefined standard Fold Type from the paper settings page the crease positions will be set for you. These positions can be fine tuned by ± 0.1mm

increments by pressing the arrow buttons 🔄 🗗 for each crease.

Folds in 'Set By Fold' mode.



### **Operating the AutoFold Pro**



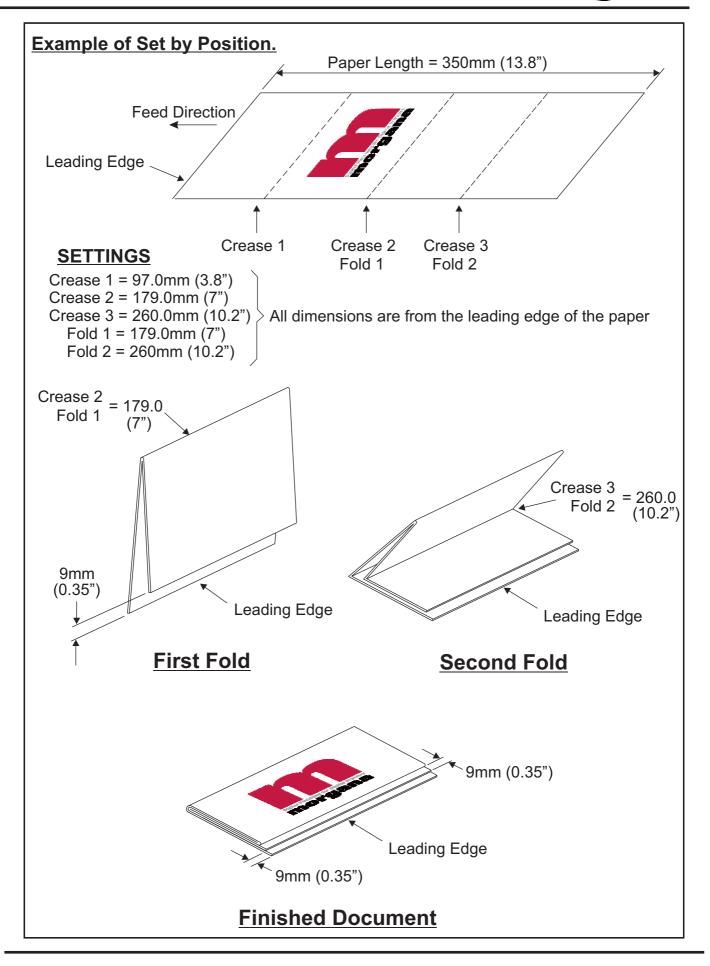
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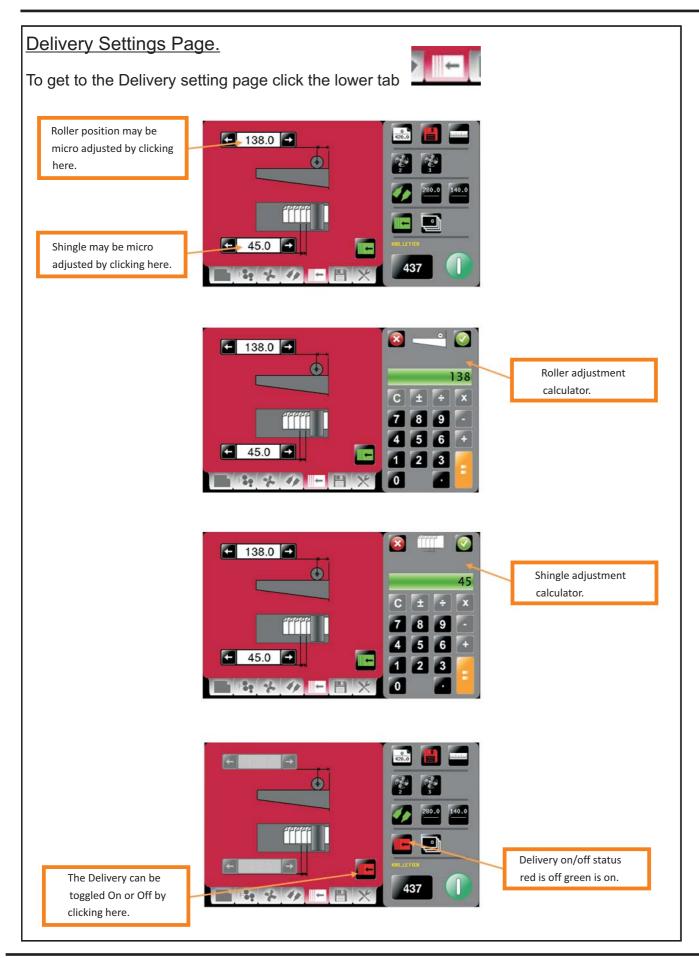
# **SET BY POSITION IMPORTANT NOTES.** 1. If the fold is too near, or on the center line of the crease; the fold will try to fold diagonally across the crease profile and pull the fold out of square to the paper. The best fold squareness is achieved when the fold is not on the center line of the crease, it should be to one side of the crease center line as shown below. Thus for a crease setting of 100 for example, the fold should be set to a figure slightly smaller or greater than 100. ideal fold line ideal fold line center line of crease 2. When using **Set By Position**, all dimensions are from the leading edge of the paper as shown in the example on page 20.

### **Operating the AutoFold Pro**

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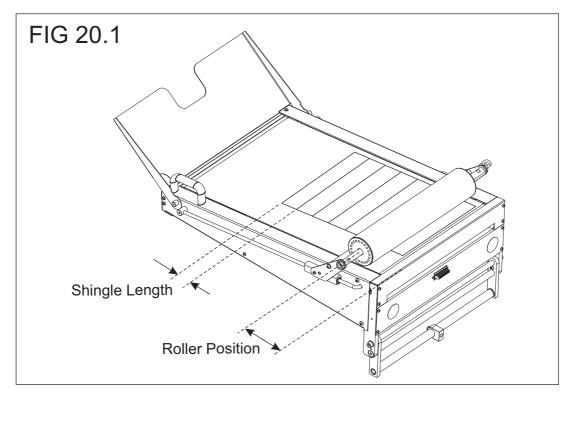
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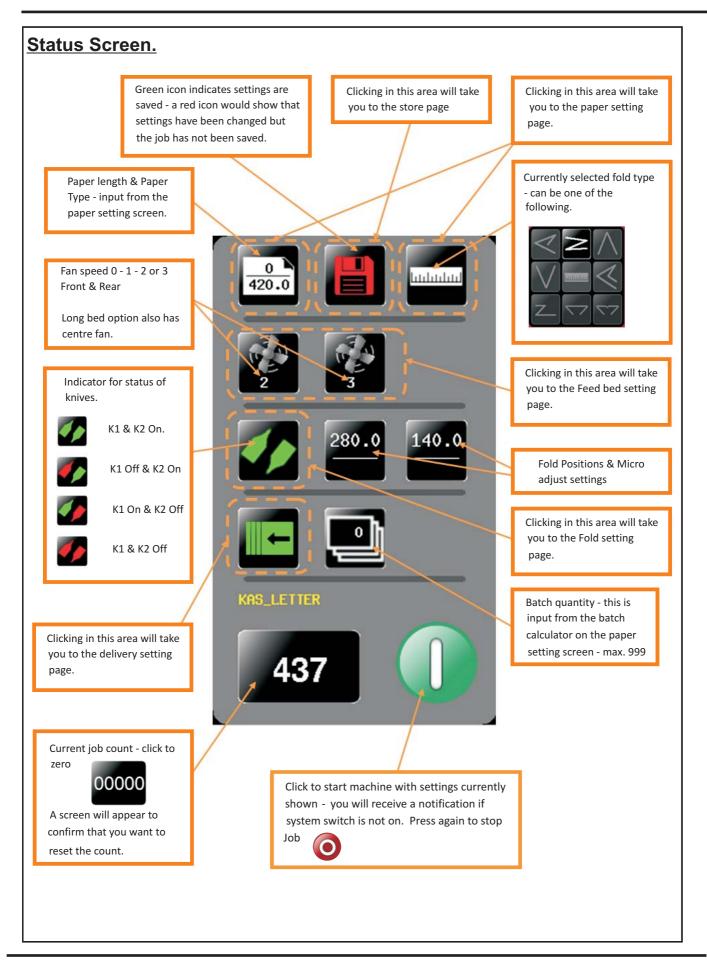


#### Setting the Delivery Conveyor System.

#### WARNINGS:-

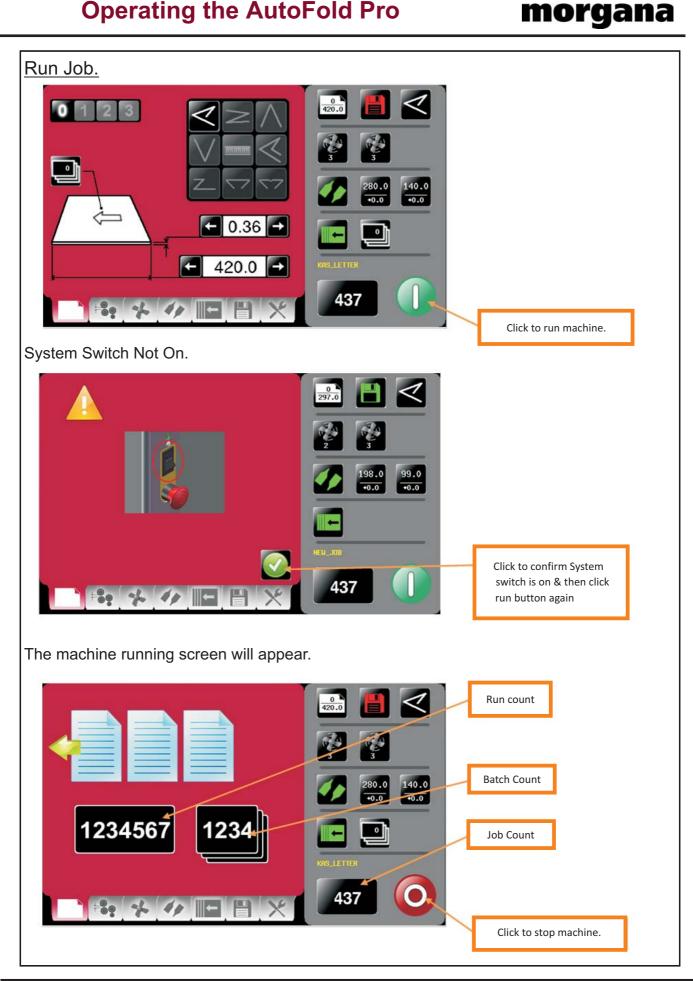
- 1. The Machine will <u>not</u> start if the delivery unit is not in its up position.
- 2. If the delivery is turned off the roller will feed to the far end of the belt conveyor and park there until turned on again.
- If the delivery is turned on when using the 'Set by Fold' mode of operation; the Roller Position and Shingle Length are automatically set, relative to the paper length and type of fold selected.
- 4. When using the 'Set by Position' mode of operation; the Roller Position and Shingle Length must be adjusted manually to suit the job. (See FIG 20.1 below).
- 5. When the optimum settings for the roller position and shingle length are achieved they can be stored with the job.





**SYSTEM** 

### **Operating the AutoFold Pro**



#### Setting the machine to operate in manual sheet feed mode

In order to feed heavy stock, very small or very large sheets, embossed or even irregular shaped sheets, it may be necessary to feed the sheets manually.

The machine can be programmed and set up in exactly the same way as explained when operating the machine automatically.

The machine can now be started by activating the System switch to 'on'.

Select the icon on the touch screen and begin to feed the sheets individually onto the feed bed.

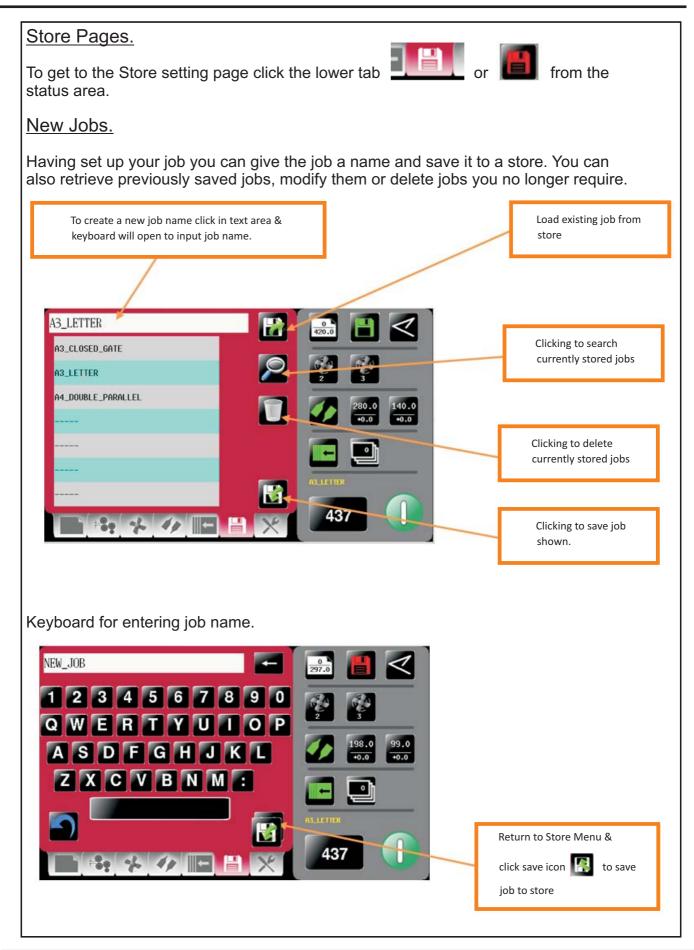
To stop feeding the sheets, select the o icon on the touch screen and switch the System Switch off.

#### NOTE.

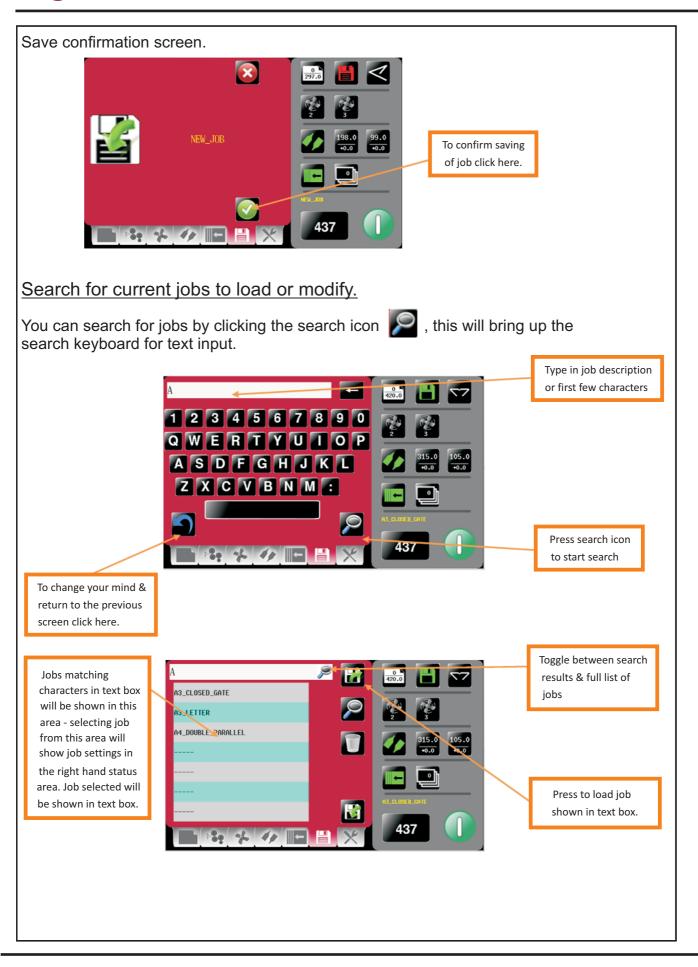
If the delay between feeding sheets is excessive, the system will time out.

### **Operating the AutoFold Pro**

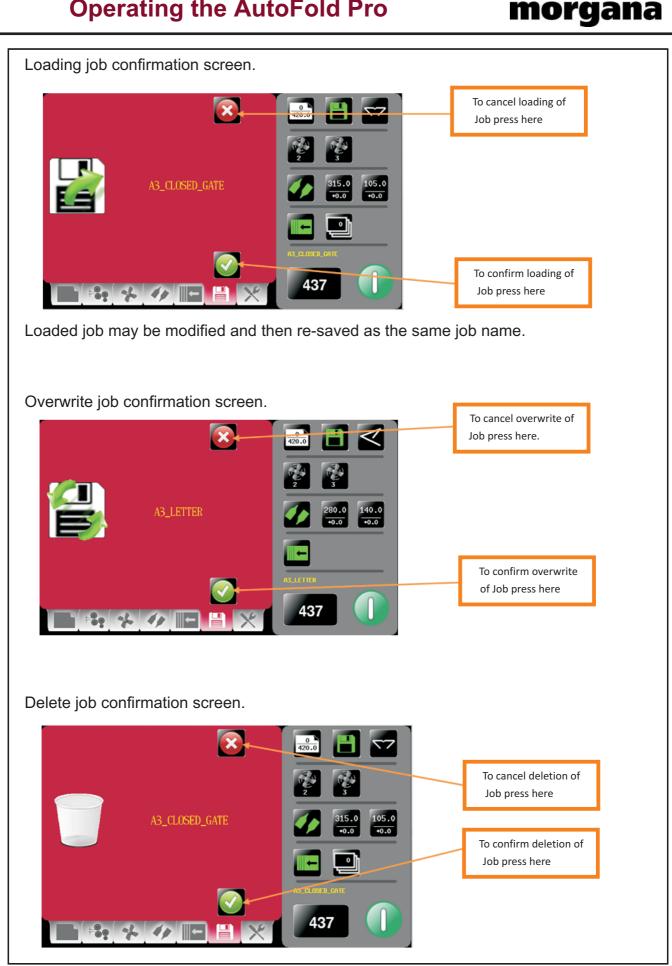
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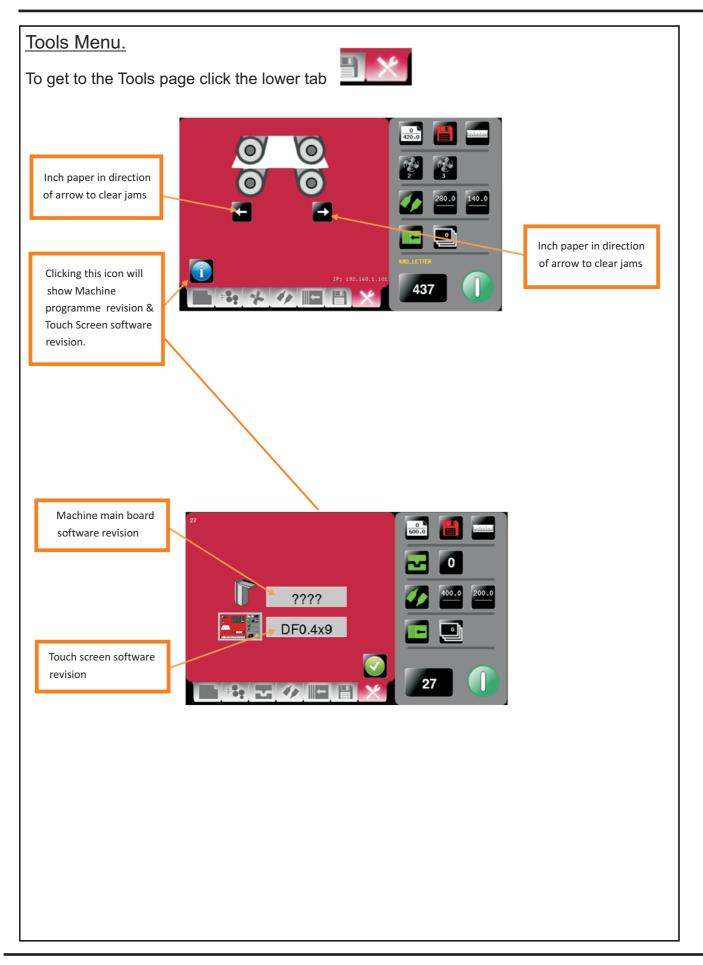


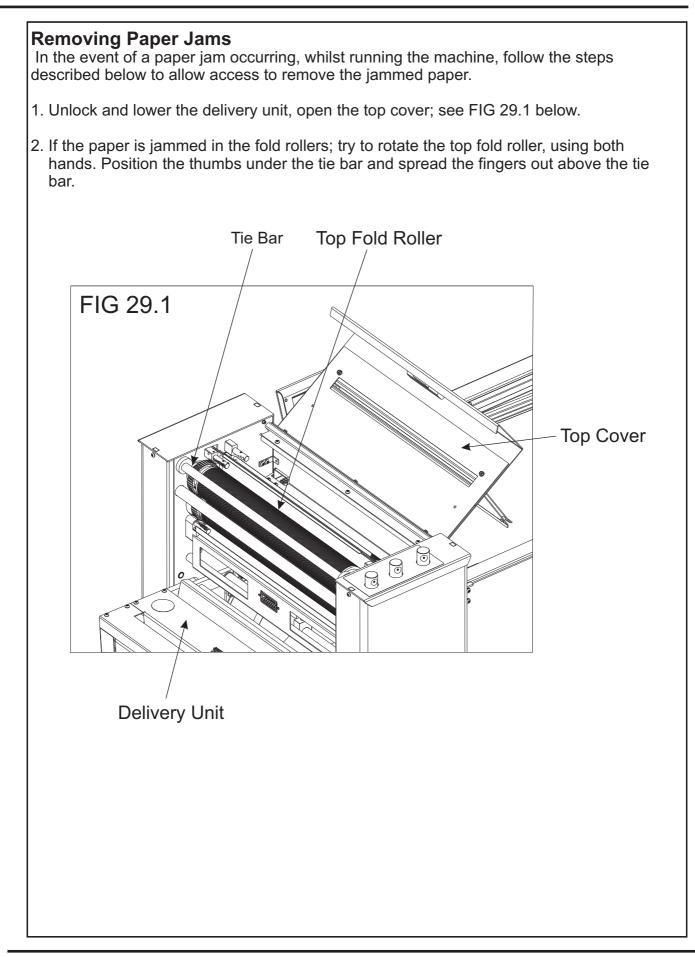
### **DigiFold Pro** Operating the AutoFold Pro



**SYSTEM** 







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#### Paper fold out of square

Note:- the best fold squareness is achieved when the fold is not on the center of the crease, but to one side or the other.

- Check that the fold is to one side of the crease center line.
- Check that the roller gaps are not too tight and squashing the crease.
- Check that the roller gaps are not too large and allowing the paper to slide (especially so on glossy paper).

#### Paper jamming

 Check that the first crease / fold position is not too close to the leading edge of the paper. A minimum distance of 50mm (1.96") is recommended.

#### Machine will not start

- Check the power supply to the machine.
- Check that the emergency stop button has been released.
- Check that the top cover is down.
- Check that the delivery unit is in the up position, and located correctly, (the machine will not start if the delivery unit is not in its up position).

#### Paper not feeding

• For heavy stocks, very small or very large sheets, embossed or even irregular stock, it may be necessary to feed the sheets manually - see page 25.

#### Cracking of the Printed Material along the Crease.

Cracking of the material along the crease may be caused by the following:-

• When using dry ink or toner based print engines, the material <u>must</u> be fully acclimatised for at least 48 hours before putting an image onto the paper.

#### **Error Screens**

#### • Sheet did not arrive.

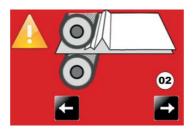
If the machine stops and error message 01 is displayed on the touch screen, this indicates that the paper did not arrive at the end of the suck process; so the machine timed out. Press the green tick button and then press the start button.



#### • Paper Crunch

If the machine stops and error message 02 is displayed on the touch screen, this indicates that a paper jam has been detected.

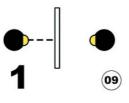
Press the system switch down and then select the right or left arrows, to inch the paper forwards or backwards. See page 30 that describes how to remove paper jams. Press the green tick button and then press the start button.



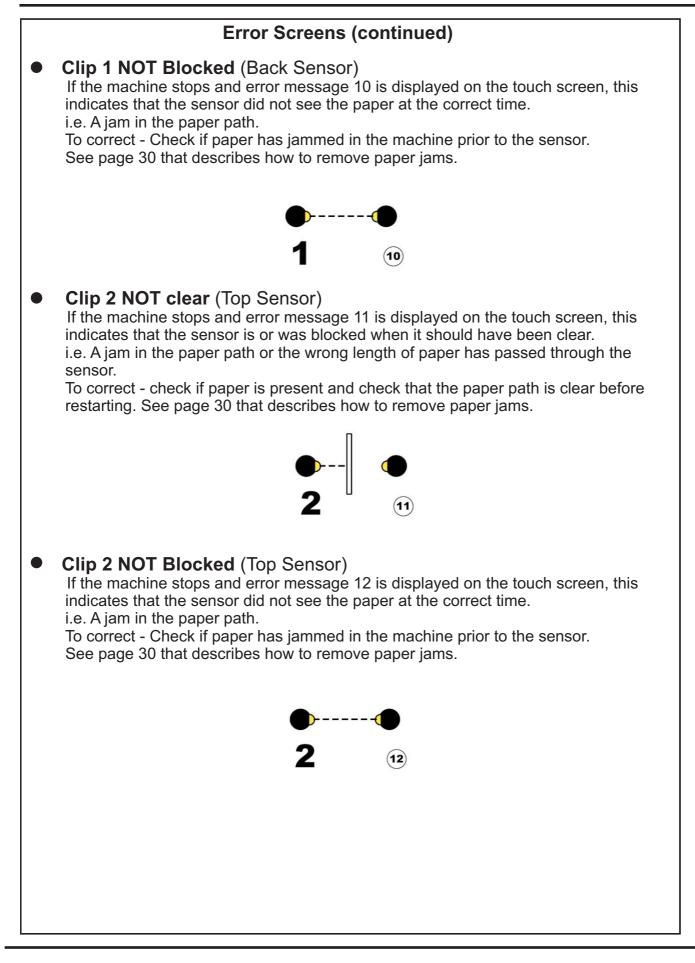
#### • Clip 1 NOT clear (Back Sensor)

If the machine stops and error message 09 is displayed on the touch screen, this indicates that the sensor is or was blocked when it should have been clear. i.e. A jam in the paper path or the wrong length of paper has passed through the sensor.

To correct - check if paper is present and check that the paper path is clear before restarting. See page 30 that describes how to remove paper jams.







#### **Error Screens (Continued)**

#### • Overlap

If the machine stops and error message 13 is displayed on the touch screen, this indicates that the 'Lead Edge Sensor' has seen a sheet subsequent to the first one as being longer. Again this could actually be a longer sheet, OR it could be a sensor problem (if it is a recurring problem). Check that the paper gate has been set correctly.



#### Sheets too close

If the machine stops and error message 45 is displayed on the touch screen, this indicates that the sheets are too close together. The rate of feed of the sheets needs to be slowed down. If the sheets are being fed from an AutoCreaser Pro 33 or an AutoCreaser Pro 50 adjust the speed on the Tools Menu screen to a slower speed.

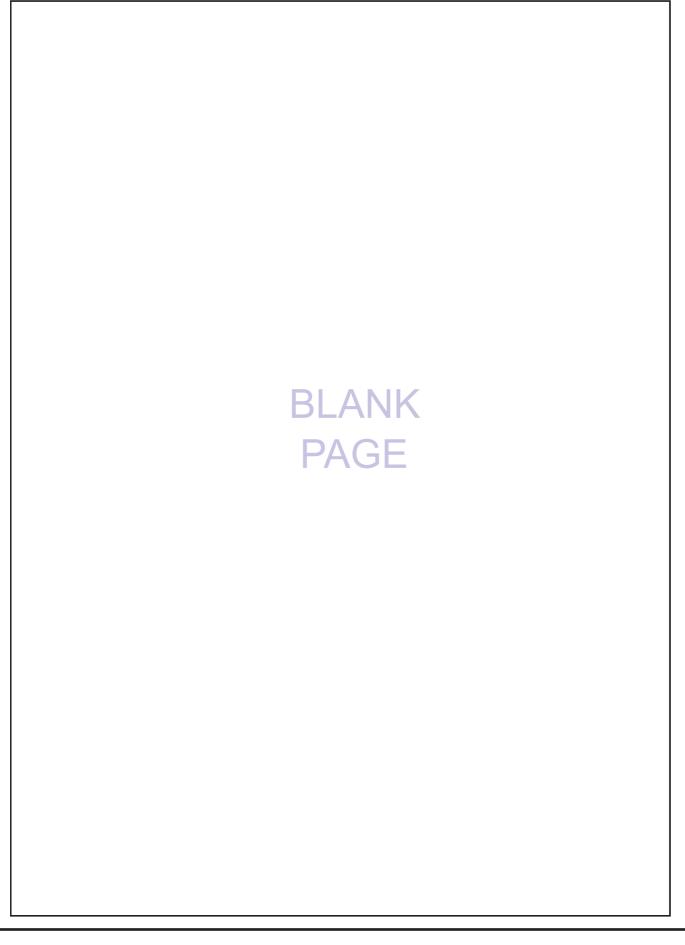


#### **Recommended weekly operator maintenance**

- Clean all sensors.
- Clean in feed rollers and output drive hubs using the cleaning kit supplied (cleaning kit part number 90-018).
- Remove and clean the blade assembly.

#### **Technician Maintenance**

It is recommended that your Machine is fully serviced at least once every six months by a factory trained Service Engineer.



180-95-01

ITEM	PART NUMBER	QTY	DESCRIPTION
1	184-011	1	OPERATORS MANUAL - AutoFold Pro
2	90-018	1	ROLLER CLEANING KIT
	050.040	4	
3	650-040	1	POWER CORD C19 UK 16A 2.5m
4	601-167	1	DIGITAL THICKNESS GAUGE
5	613-229	1	WRITE-ON SERIAL NO. LABEL
6	65-104	1	SPECIFICATION LABEL MSL/CE
7	620-007	1	HEXAGON BALL DRIVER 2mm
	020 001		
8	620-020	1	HEXAGON BALL DRIVER 2.5mm
9	620-026	1	BONDUS L WRENCH 4mm
4.0			
10	620-027	1	BONDUS L WRENCH 5mm
11	624-018	1	DISPATCH BOX
	024 010		
12			
13			
14			

ITEM	PART NUMBER	DESCRIPTION
1	182-001-01	FEED BED FRAME - LONG
2	184-11-02	TRANSFER BED ASSY - AUTOCREASER 50

ACCESSORIES	OPTIONS
May be obtained from	May also be obtained and
your dealer and fitted to your	fitted by your dealer. You should
machine using the instructions	not attempt to fit options as
supplied, or by reading your	specialist tools and knowledge are
operators manual.	required.

PART NO.	DESCRIPTION
125-25-01	Small Stepper Driver - High Power
174-06-01	Small Stepper Driver - Low Power
174-01-03	Controller PCB Assembly + Chip
184-04-01	Fan Control PCB Assembly
174-19-01	RS232 Adaptor PCB Assy.
75-472-01	Mini ITX Motherboard (Configured)
126-059-02	Link - Paper Guide
145-093-02	Knife Driver Pin - M8
76-261	Lead - Delivery Input Connector
76-277	Lead - Sensor
76-281	Lead - Fan Assy.
76-283	Lead - Fan Assy.
76-300	Lead - Drive Motor
76-301 76-304	Lead - Fold Knives Motor Lead - Fold Sensor
76-304 76-305	Lead - Gap Set 1 Pot
76-306	Lead - Gap Set 1 Pot
76-307	Lead - Gap Set 3 Pot
173-57-01	Lead - Blade Position Sensor
173-46-01	Lead - Gap Set 3 Pot
173-47-01	Lead - Gap Set 2 Pot
173-48-01	Lead - Gap Set 1 Pot
655-015	Power Supply - 24V
655-016	Power Supply - 48V
76-310	PSU Assembly - ATX12V - 300W
175-31-04	Input Roller Assembly - Upper
185-10-01	Input Roller Assembly - Lower
185-14-01	Fold Roller Assembly - Fixed
185-15-01	Fold Roller Assembly - 1st
185-16-01	Fold Roller Assembly - 2nd
185-17-01	Fold Roller Assembly - 3rd
175-10-04	Edge Sensor Assembly
75-06-01	Touch Screen Assembly - 7"
175-11-04	Sensor Bar Assembly
175-11-05	Sensor Bar Assembly
	-

PART NO.	DESCRIPTION
175-125-01	Connecting Link Assembly - Drive
175-125-02	Connecting Link Assembly - Knife Hubs
182-014-02	Belt - Paper Transport - Medium
182-014-03	Belt Paper Transport - Short
184-03-01	Jam Detector - Emitter
184-03-02	Jam Detector - Receiver
186-02-01	Clip Sensor Assy Lower
604-103	Gas Spring - Delivery
604-108	Gas Spring
607-005	Belt - Vacuum Roller
607-045	Multi Beam Coupler
607-182	Timing Belt 180XL 062
607-185	Timing Belt 160XL 062
613-023	Fuse - 3.15A - 20 x 5mm - Fast Blow Ceramic
681-011	Fuse - 315mA - 20 x 5mm Anti-surge - Ceramic
681-019	Fuse - 6.3A - 20 x 5mm - Anti-surge Ceramic
613-351	Micro Switch - Guard
613-365	Emergency Stop Switch - Double Pole
626-008	Anti-Static Bar
626-009	Anti-Static Bar - Female
652-011	Switch - Low Current Coil - Black
75-258	Anti - Static Transformer
76-262	Stepper Motor - Roller Drive
76-258	Stepper Motor - Belt Drive
76-259	Stepper Motor - Roller Position
124-01-27	Lead - Delivery Roller Pot

#### NOTE.....

The items listed above represent parts which are subject to wear, loss, or accidental damage, and is included for your guidance only. Replacement of parts fitted to your machine require specialist knowledge and should therefore be entrusted to your dealer.

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### Serial Number:-

Date:-					
Total Count:-					
Stretch					
Lead Edge Trim					
Del. Roller Trim					
Knife 1 Trim					
Knife 2 Trim					
K1 Deflect Trim					
K2 Deflect Trim					
Date:-					
Total Count:-					
Stretch					
Lead Edge Trim					
Del. Roller Trim					
Knife 1 Trim					
Knife 2 Trim					
K1 Deflect Trim					
K2 Deflect Trim					
		1			
Date:-					
Total Count:-					
Stretch					
Lead Edge Trim					
Del. Roller Trim					
Knife 1 Trim					
Knife 2 Trim					
K1 Deflect Trim					
K2 Deflect Trim					
	1		I	I	
Date:-					

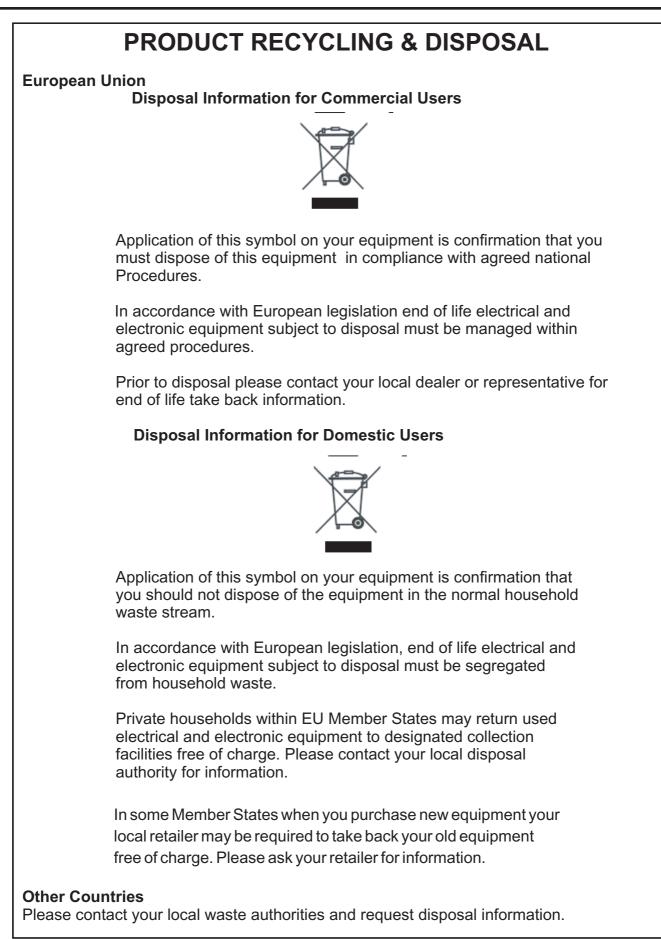
Date:-			
Total Count:-			
Stretch			
Lead Edge Trim			
Del. Roller Trim			
Knife 1 Trim			
Knife 2 Trim			
K1 Deflect Trim			
K2 Deflect Trim			

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### **AutoFold Pro**

#### **FUSE POSITIONS & RATINGS** (POSITION ET CLASSIFICATION DES FUSIBLES)

PSU (12V) (FUSIBLE PSU (12V) F3.15AH 250 (613-023) PSUs (24V & 48V) (FUSIBLE PSUs (24 V & 48 V) T6.3AH 250 (681-019) ANTI-STATIC UNIT (FUSIBLE ANTI-STATIQUE) T315mAH 250 (681-011)



### **AutoFold Pro**