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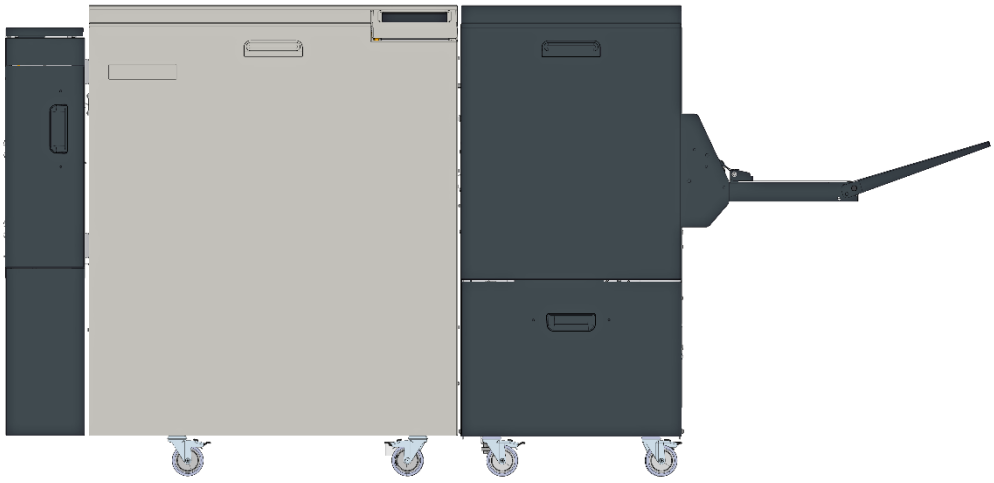
Revision C

Plockmatic Group

Customer Expectations Guide

PL450e/435e System - RISO



This CEG is intended as an aid in the discussions with customers prior to signing order and prior to planning the installation to set the correct expectations

PLOCKMATIC

Introduction

The Plockmatic PL450e or PL435e Booklet Maker System consists of:

- PL450e/435e Booklet Maker, also referred to as the Booklet Maker, BM or PL435e/450e
- Finishing Module (optional), also referred to as the Finishing Module or FM400e
- BST4000-1 Belt Stacker Module (optional), also referred to as the BST Module

Together they form a system that allows booklet making inline with sheets coming from the Printer.

The PL450e upgrade kit raises the capacity of the PL435e Booklet maker from 35 sheets to 50 sheets. The 50-sheet upgrade kit version requires an FM400e Finishing Module.

About this Guide

This Expectations Guide is developed for the RISO Analyst and the Coordinating Customer Sales resource as a tool in the discussions with customer to clearly explain any mechanical limitations and general specifications of the configuration and outline specific pre-installation tasks that needs to be completed prior to installation.

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Product Overview

Performance Specifications

General Specifications

Feature		Specifications	Remarks
Speed (Online usage)		Maintain engine speed while collating duplex printed sheets (actual depends on engine speed).	Actual speed in number of booklets (per min / hour) depends on number of sheets per booklet.
Standard Paper Sizes	Booklet making*	A5, JIS B4, A4SEF, A4LEF, SRA4SEF, SRA4LEF, A3, SRA3, 210x610, 225x610, 210x620, 225x620, 320x620, 210x660, 225x660, 6x9", 8.5x11"SEF, 8.5x11"LEF, 9x12"S, 9x12"LEF, 11x17", 12x18", 8.5x24", 9x24", 8.5x25", 9x25", 8.5x26", 9x25"	SEF= Short Edge Feed LEF= Long Edge Feed Note: Maximum paper length when using inline is limited to 460mm / 18.125" - handfeeding is not recommended
	Edge Stapling	A4SEF, A4LEF, 8.5x11SEF, 8.5x11LEF	SEF= Short Edge Feed LEF= Long Edge Feed
	Corner Stapling	A4LEF, 8.5x11LEF	SEF= Short Edge Feed LEF= Long Edge Feed
Custom Paper Size Booklet making	Paper Size (Minimum)	Width 145 mm / 5.7" Length 210 mm / 8.27"	
	Paper Size (Maximum)	Width 320 mm / 12.6" Length 660.4 mm* / 26"*	* Note: Maximum paper length when using inline is limited to 460mm / 18.125"
Custom Paper Size Edge Stapling	Paper Size (Minimum)	Width 210 mm / 8.27" Length 210 mm / 8.27"	
	Paper Size (Maximum)	Width 297 mm / 11.6" Length 297 mm / 11.6"	
Custom Paper Size Corner Stapling	Paper Size (Minimum)	See standard paper sizes	
	Paper Size (Maximum)	See standard paper sizes	
Output size Booklets	Min. Size	145x99mm / 5.7x3.9"	With maximum face trim
	Max. Size	320x230mm / 12.6x9"(inline mode) 320x330mm / 12.6x13" (hand feed mode)	With no face trim Note: handfeeding is not recommended
Output Size Edge Stapling	Sizes	A4 or 8.5x11" Portrait orientation A4 or 8.5x11" Landscape orientation	Face trim not available in this mode
Output Size Corner Stapling	Sizes	A4 or 8.5x11" Portrait orientation	Face trim not available in this mode
Paper Weight Booklet making	Paper Weight (Minimum)	64gsm / 16 lb. Bond uncoated (60gsm*) 100gsm / 28 lb. Bond Coated	*60gsm/16lb Bond supported for some media. Testing and verification on specific customer paper required.
	Paper Weight (Maximum)	300gsm / 110 lb Cover (350gsm*)	*350 gsm supported on some media.
Paper Weight Edge Stapling	Paper Weight (Minimum)	80gsm /20 lb. Bond	Plain paper only
	Paper Weight (Maximum)	120gsm / 32 lb. Bond	Plain paper only
Paper Weight Corner Stapling	Paper Weight	80gsm / 20 lb. Bond	Plain paper only
Input / Output Sheets		1 – 50 Sheets (80 gsm / 20 lb. Bond, equivalent), for PL450e 1 – 35 Sheets (80 gsm / 20 lb. Bond, equivalent), for PL435e	Stapled and folded
Input / Output Sheets		1 – 2 Sheets	Non-stapled and folded.
Offline Use		Possible but not recommended	
Dimensions (L x D x H)		1640 x 800 x 1140mm / 64.5" x 31.5" x 44.9"	Incl. Output Stacker
Power Source		100-240 V; 50-60Hz; 4-2A; AC	+ - 10%
Power consumption		100W (Standby) – 400W (Max)	Includes FM400e module, during production
Noise emission		65 dB	Complete system
Gross Weight		230 kg / 507 lbs	

Specifications, Finishing Module

Feature	Specifications	Remarks
Standard Paper Sizes	Same as PL450e / PL435e	Custom sizes are available
Default trim length	Depends on set thickness	Adjustable in 0.1 mm steps
Minimum trimming	2 mm / 0.2“	Adjustable in 0.1mm / 0.1” steps. For booklets made of sheets equal to or longer than 654mm/25.75”, when face trimming, maximum finished booklet size is limited to 325mm/12.8”.
Maximum trimming	231mm / 9.09”	Adjustable in 0.1 mm steps.
Paper Weight (Minimum)	Same as BM	
Paper Weight (Maximum)	Same as BM	
Input / Output Sheets	35 or 50	
Off-line Use	Possible but not recommended	(Together with Booklet maker)
Power Source	From BM	
Gross Weight	168 kg / 370 lb.	Including packaging

Booklet Set Size Guide

The following tables are guidelines designed to give an indication on how many sheets a specific application can have for a given media weight. Exact number of sheets is depending on media type and image. Area coverage refers to the printed area on a sheet. For example, full area coverage indicates that the entire page is covered with ink. Note that for some "dense" or wavy media, sheet count may be reduced.

PL450e

Paper weight				Paper Size				Paper Size Longer than 457mm/ 18"		Paper Size up to 250mm/9.8" in process direction		A4 or 8,5x11"	
				A3 or 11x17"		A4 or 8.5x11"						Finish type	
				Area Coverage				Area Coverage					
Bond	Cover	Index	Gsm	Low	Full	Low	Full	Low	Full	Low	Full	Corner	Edge
20	28	42	80	50	32	50	32	50	32	45	28	50	50
24	33	50	90	45	32	44	32	45	32	39	28	N/A	28
31	45	66	120	25	24	26	25	25	24	23	22	N/A	22
36	50	75	140	20	17	22	20	19	17	19	18	N/A	N/A
53	74	110	200	15	14	15	15	15	14	13	13	N/A	N/A
58	80	120	220	13	12	14	12	13	12	12	10	N/A	N/A
76	105	158	280	12	10	10	10	12	10	9	9	N/A	N/A
82	114	170	300	9	9	9	9	9	9	8	8	N/A	N/A

PL435e

Paper weight				Paper Size				Paper Size Longer than 457mm/ 18"		Paper Size up to 250mm/9.8" in process direction		A4 or 8,5x11"	
				A3 or 11x17"		A4 or 8,5x11"						Finish type	
				Area Coverage				Area Coverage					
Bond	Cover	Index	Gsm	Low	Full	Low	Full	Low	Full	Low	Full	Corner	Edge
20	28	42	80	35	32	35	32	35	32	35	28	35	35
24	33	50	90	35	32	35	32	35	32	35	28	N/A	28
31	45	66	120	25	24	26	25	25	24	23	22	N/A	22
36	50	75	140	20	17	22	20	19	17	19	18	N/A	N/A
53	74	110	200	15	14	15	15	15	14	13	13	N/A	N/A
58	80	120	220	13	12	14	12	13	12	12	10	N/A	N/A
76	105	158	280	11	10	10	10	12	10	9	9	N/A	N/A
82	114	170	300	9	9	9	9	9	9	8	8	N/A	N/A

Set sizes in grey cells are outside of the recommended range of gsm for these paper sizes.

When producing booklets whose final width is 125mm or less, it is recommended to use sheets longer than 250mm in process direction and to trim the finished booklet down to the desired width. Should it be not possible to use sheets longer than 250mm in process direction, it is recommended to follow these guidelines:

- Minimum media weight: 110gsm, Maximum media weight: 180gsm
- Minimum number of sheets in set: 4, Maximum number of sheets in set: 30

Running a job outside of these guidelines may lead to an increased jam rate, uneven squareback or inaccurate face trimming on the finished booklets.

Install Planning

Device Configurations

Minimum supported system configuration is BM module.

All other options can be added to this basic configuration, however:

- BST4000-1 and/or 50-sheet upgrade kit version require an FM400e Finishing Module to be installed

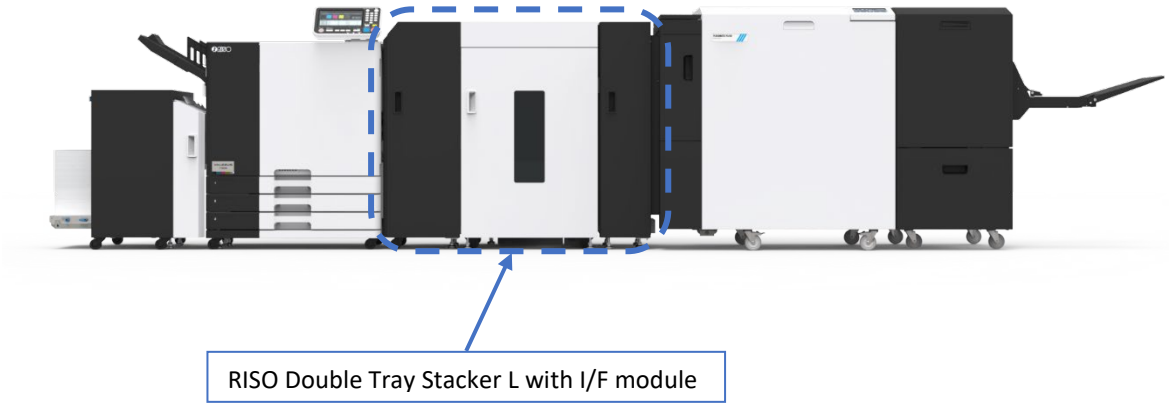
System Dependencies and Prerequisites

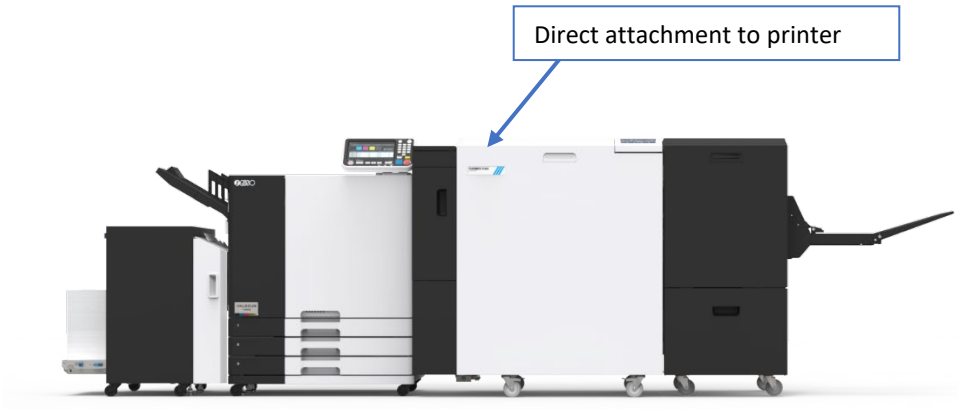
The PL450e/PL435e is available for the following RISO printing system:

- Valezus T1200

Upstream RISO Interface

The PL450e/PL435e does not require any dedicated upstream RISO interface / module. However, it is possible to include in the printer configuration the Double Tray Stacker L equipped with the I/F (interface) unit.

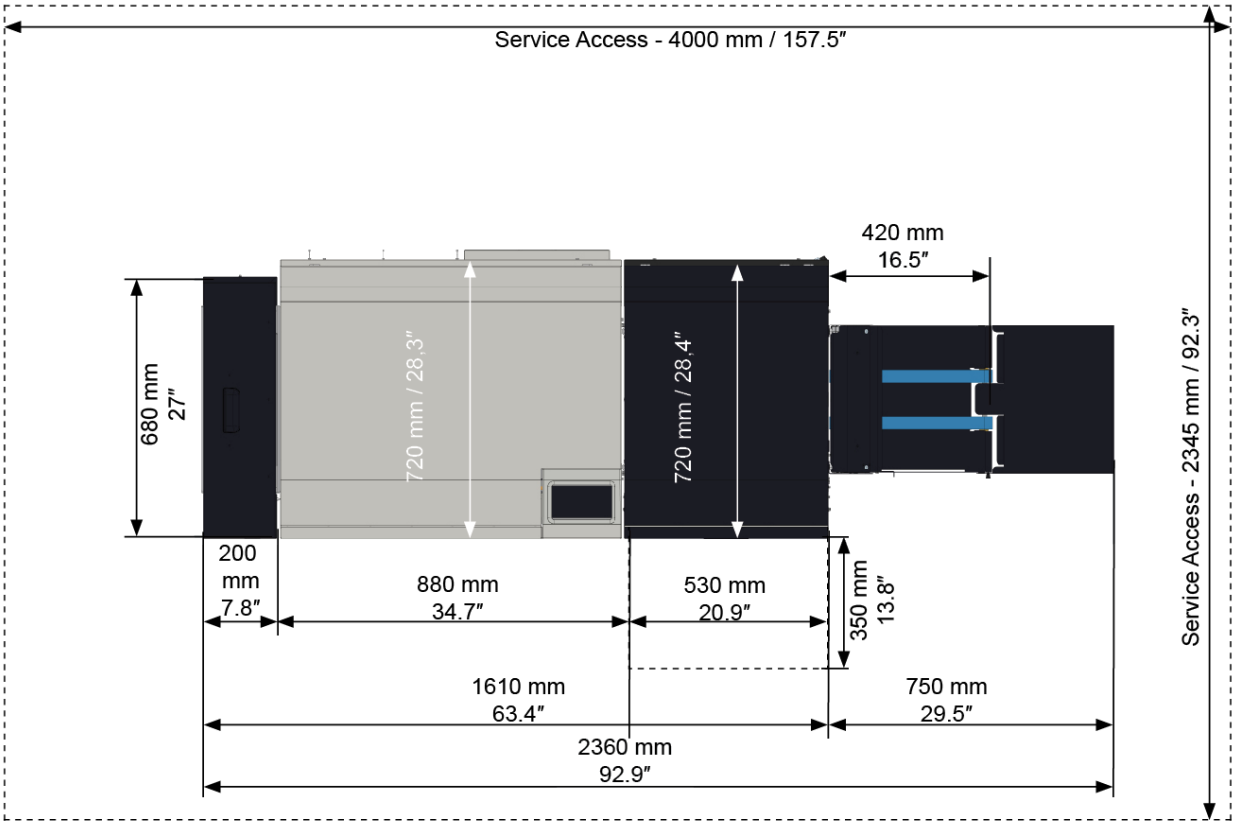




Dimensions and weights

Footprint

Note: the optional high-capacity Belt Stacker BST4000-1 connects to the Finishing Module and can be placed either in-line or angled to the Booklet Making system. The BST4000-1 measures 1730x440mm / 68x17".



Plockmatic PL450e/435e Production Booklet Maker floor plan

Weight and Size

All main modules are shipped in palletized cardboard boxes. Pallet jack or forklift is needed to move pallets around premises.

		PL435e Main module	FM400e	PL450e upgrade kit
Item Name		Booklet maker	Finishing Module	50 sheet upgrade kit
Country of Origin		Latvia	Latvia	Latvia
Plockmatic Part no.		13205110	13305100	13700022
Weight	Net	165 kg / 363 lb.	119 kg / 262 lb.	0,5 kg / 1.1 lb.
	Gross	230 kg / 507 lb.	168 kg / 370 lb.	0,6 kg / 1.32 lb.
Packing Method		Cardboard on pallet	Cardboard on pallet	Carton
Packing Dimension	L	1200mm / 47.3″	1200mm / 47.2″	180mm / 7.1″
	W	1000mm / 39.4″	800mm / 31.5″	120mm / 4.8″
	H	1592mm / 62.7″	1305mm / 51.2″	55mm / 2.2″
Number of units/CTN		1	1	1
Max Stack Height	Storage	3	3	N/A
	Transport	2	2	N/A
Printer compatibility		Valezus T1200	Valezus T1200	N/A

		BST4000-1	Carepack PL435e	Carepack FM400e	Staple Cartridge*
Item Name		High-capacity belt stacker	Carepack PL435e	Carepack FM400e	Plockmatic production staple cartridge
Country of Origin		Latvia	Latvia	Latvia	Sweden
Plockmatic Part no		4707000	13200013	13300006	760034
Weight	Net	70 kg / 155 lb.	3.6kg / 7.9lb	3.4kg / 7.49lb	1,2 kg / 2.65lb.
	Gross	85 kg / 187 lb.	3.3kg / 7.3lb	3kg / 6.6lb	1,3 kg / 2.87 lb.
Packing Method		Carton with beams underneath (for lifting with forklift)	Carton	Carton	Carton
Packing Dimension	L	1500mm / 59″	440mm / 17.3″	440mm / 17.3″	225mm / 8.86″
	W	550mm / 21.7″	330mm / 13″	330mm / 13″	90mm / 3.55″
	H	540mm / 21.3″	130mm / 5.1″	130mm / 5.1″	90mm / 3.55″
Number of units/CTN		1	1	1	1*

***** *3 Cartridges per unit*

Electrical Requirements

North America

100V - 120V, 60Hz, 4A +6% -10%,

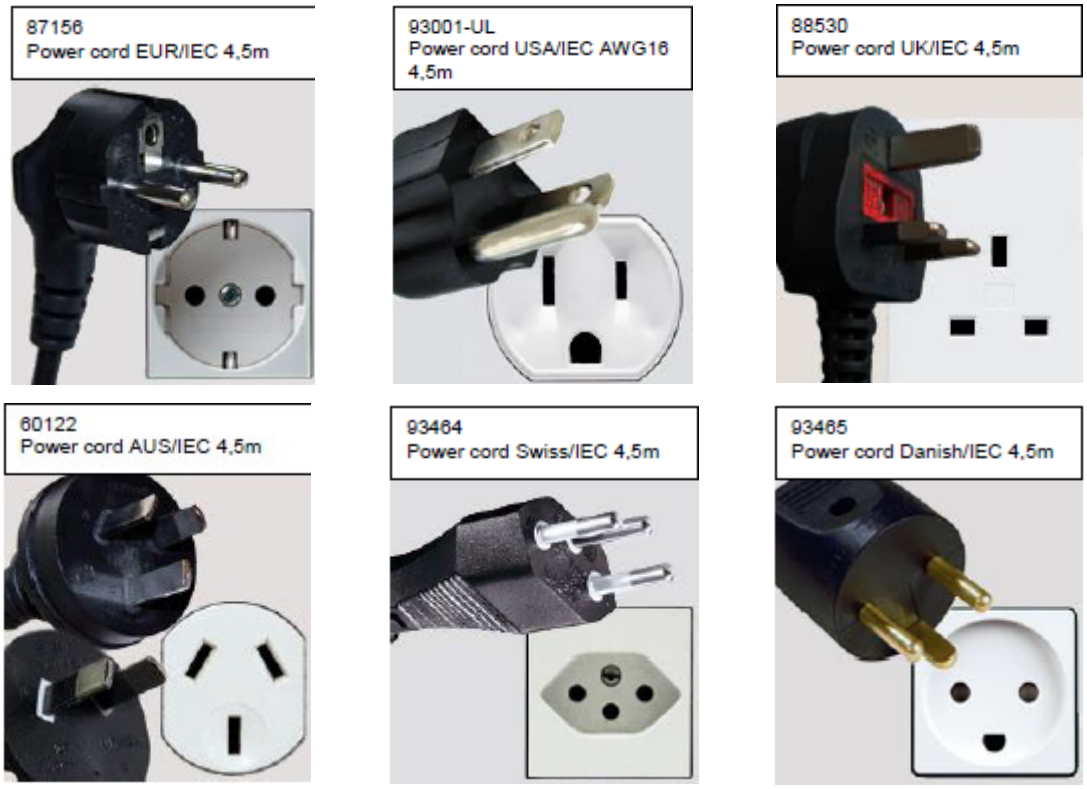
Power consumption: 250 - 300W, idle or 400W, peak

Europe

220V - 240V, 50Hz, 2A +6% -10%,

Power consumption: 250 - 300W, idle or 400W, peak

Plockmatic provides the following cable kit for each module that requires a power cord



Six different types of power cord, one per geographic region, and an extension cord are included in the power cord kit. The combined length of the power cord and the extension cord is 4.28m / 168.5”.

Leads supplied:

1. Power cord USA NEMA 5-15/IEC AWG-14 (80mm / 3.14” long)
2. Power cord EUR/IEC 1 mm_2 (80mm / 3.14” long)
3. Power cord DNK/IEC mm_2 (80mm / 3.14” long)
4. Power cord AUS/IEC mm_2 (80mm / 3.14” long)
5. Power cord Swiss/IEC mm_2 (80mm / 3.14” long)
6. Power cord UK/IEC mm_2 (80mm / 3.14” long)
7. Extension cord IEC13/C14 (4.2m / 165.3” long)

Environmental Requirements

System is tested in the following environmental zones:

Air humidity: 30% - 80% RH

Temperature: 15 – 28 degrees Celsius or 59 – 82 degrees Fahrenheit

For optimum performance of the system, environment should be kept within 40% - 50% RH and room temperature should be within 18 – 26 degrees Celsius or 64 – 78 degrees Fahrenheit.

Low humidity (below 40% RH) and lower temperatures increase the risk of static issues. Also storing media under humid conditions before processing may result in higher jam rate.

Estimated Installation Time

A configuration that includes an BM and FM takes one engineer up to 1 day to install, adjust and test before operator training can begin.

Operating Supplies

Staple Cartridge: 5000 Staples / Cartridge. Each cartridge box contains 3 cartridges in each box.
(Required 2 staple cartridges per machine)

Interchangeability

This staple cartridge is unique for Plockmatic Booklet Making systems and is not interchangeable with any other finishers. Using different staple cartridge or a copy of the original will result in reduced penetration performance.

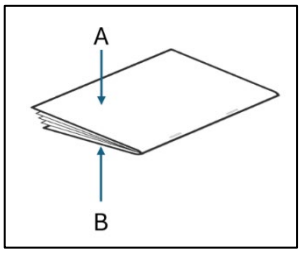
Limitations

The following list of mechanical limitations have been observed during the validation process of the PL450e/435e system.

- The PL450e/435e system is suited for customers whose booklet making needs will not exceed an average of 30,000 booklets per month;
- If sheets entering the PL450e/435e system are not uniform or if they are skewed, the booklet quality will vary accordingly;
- Non-stapled books should not be trimmed or square folded;
- A large amount of face trimming (>100mm) may produce excessive trim waste larger than trim waste bin. This may result in difficulty emptying trim waste and frequent production stops due to trim waste bin full;
- If booklets are made of paper lighter than 80GSM, the cover paper should be 80GSM or more to get an acceptable output result when square folding;
- Jams might be experienced when feeding sets made of several sheets of 300 gsm or heavier with a shorter paper length than A3, depending on thickness and density;
- Covers may show marking along the spine of the booklet from the clamps in the Finishing Module. The more pages in the booklet, the more evident the marking;
- The booklet spine can, depending on paper quality and thickness, have different sizes of tuft at its top and bottom;
- Staple position may vary on the spine when being square formed, especially on thicker booklets. Moving staple position so staple is centered on the spine will reduce this phenomenon.
- Staple may be radius shaped (bent) when square folding. Moving staple position so staple is centered on the spine will reduce this phenomenon.
- For some sensitive, white coated stock, such as “Silk type” two sided coated paper, occasional fold roller marks may be observed on the “top side” of the book.
- For jobs with multiple sheets of 200 gsm or heavier, the square folding function is recommended to be switched on for an acceptable output and to avoid feed problem at output.
- Marks from the fold knife may appear on sensitive media on the inner sheet. These marks are more common on thicker books with high toner coverage on the center sheet. Toner smearing from the fold knife can be removed/reduced by running a number of unprinted booklets of uncoated paper.
- The maximum recommended number of sheets that can be bypassed without stapling is 2 sheets of 80 gsm. If there is very low friction between the sheets, running non-stapled sets may be difficult.
- Curled sheets coming out of the Upstream Device will result in increased JAM rate or paper damage. Flat Curl amount above 10 mm is outside specification. Place sheet on flat surface with the curl going up. Measure distance from surface to tip of curled sheet. If distance is equal or greater than 10 mm curl amount is out of spec.
- On some coated media, staples may not completely penetrate the set resulting in a faulty staple. If problem persists, consider changing media. Staple may not be able to penetrate the number of sheets indicated by the “Set Size Guide”. Some uncoated extra “dense” paper may show the same limitation. The following list shows examples of media where this has been observed:
    - Futura Laser Gloss 80c
    - Hammermil Laser Print
    - OPUS Gloss
    - Mondi Color Copy 200 gsm
    - Sterling Premium Digital Gloss 80T
- When trimming small amount (less than 5 mm or 0.2”) in the FM module on books made from more than 2 sheets, the cut may not be clean, leaving trim waste hanging from the book.
- For some media, the legs of the staples may not be properly clinched causing the legs of the staple to be spaced away from the inner sheet. This phenomenon occurs on extra thick books over 40 sheets made from “soft” paper (recycled and some non-coated media mostly). This phenomenon has been observed on: Mondi Color Copy 120 gsm

- Marks around the staple position on the outside of the booklet cover may be caused by dirt deposits underneath or on the staple. Changing media may improve. Changing staple cartridge will improve.
- Grey marks around the staple area in the center of the booklet may be caused by metal dust from the staple. This phenomenon is worse on matte coated media. Changing media will improve. Cleaning the clincher area will improve. Trying to get the staple more centred inside the book may also improve.
- Grey marks around the staple area on the spine can sometimes be observed when using the SquareBack module. This may be caused by dirt deposits underneath or on the staple that are picked up by the SquareBack roller during the SquareBack process. This phenomenon occurs more for some coated media and for higher SquareBack Pressure Settings. Selecting a lower SquareBack pressure setting may improve. Switching off the SquareBack may improve. Changing staple cartridge may improve.
- An overly strong SquareBack setting and a slightly misaligned center sheet will cause wrinkles along the inner sheet spine. Selecting a lower SquareBack setting will reduce this phenomenon.
- For booklets without Face Trim, the trailing edge of the booklet may be damaged by the drive belts on the stacker. Plockmatic recommends using Face Trim or thicker sheets to minimize damage.
- Books made from 1-3 sheets of thin media longer than 420 mm may show fold quality variation. If this occurs, change media to improve quality.
- On thin books (2-4 sheets) that do not have the staple position centred in the fold line paper tear or paper damage may occur around the staple legs as the book passes through the fold rollers. This is more common when thin media (below 90gsm plain and 110gsm coated) is used. If this issue occurs, moving the staple position so it aligns with fold line might help.
- Books made folded over the long edge (menu style books) without SQF may unfold and as a result they will stack poorly on stacker. For menu style books the SQF function is recommended.
- For thick booklets with a thin cover, the cover can be “pulled back” during the registration process in the Face Trimmer. This can result in the cover sheet not being trimmed. Recommendation is to use a heavier cover whenever possible.
- Simplex printed sheets sent in-line from the printer are neither supported when using the Corner and Edge functions nor when producing booklets. This operation mode is generally less tested and may include limitations in the integration.
- If experiencing jams while running Corner and Edge stapled jobs, changing media used and storing media in a climate-controlled environment may help reduce the jam rate. Wavy and curled media will lead to a higher jam rate.
- Simplex printed sheets sent in-line from the printer are not supported. This operation mode is generally less tested and may include limitations in the integration.
- Running jobs, whose cover page has high ink coverage, may cause:

1. The fold rollers to pick up and transfer ink on other areas of the cover or to the cover of the following job(s). Using the fold rollers cleaning function regularly helps minimize this phenomenon.
2. The alignment rollers in the Finishing Module to pick up and transfer ink on other areas of the cover or to the cover of the following job(s). Keeping the alignment rollers clean will help reduce this phenomenon. When possible, it is also recommended to have the high coverage print area of the cover facing upward [A] and the low coverage print area of the cover facing downward [B] relative to how the booklet is delivered on the stacker.



NOTE: If adding toner pre-printed cover sheets to the job, it is possible to use high coverage covers.

- Running jobs whose sheets have high ink coverage may cause the fold rollers to transfer ink between the pages. Using thinner paper may help reducing ink transfer.
- It is always recommended to run inkjet optimized paper.
- If ink coverage leaves the sheets too "wet", the maximum amount of sheets in a set may need to be reduced.

- Handfeeding on most media is not supported as the special inkjet feed rollers may leave marks if the set is not handfed very precisely. The phenomenon is worse on glossy and coated media types but is also present on plain media.