NCR Consumable Items for Self Service

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INTRODUCTION

Iconex is able to offer quality consumables which have been tested and qualified for use in NCR products. You are recommended to use such quality consumables supplied by NCR in your self service equipment to promote maximum up-time, and to minimise the possibility of media jams or printer component damage. It is important to note that the warranty on printer units can be affected by the use of poor quality media. While it will not void the warranty, problems directly attributable to such media will not be covered by the warranty and repairs may be subject to time and materials charges. In addition, after the warranty expires, service contracts frequently require an acceptable quality of media to reduce unnecessary service calls due to media jams and printer component damage.

Depending on the configuration, your ATM will be delivered complete with a limited supply of paper, ribbons, and printheads as required, and, where necessary, will have a paper cutting knife fitted. This manual provides a guide to the media that should be used to replace the initial supplies when they run out.

Storage Requirements

Where relevant, the recommended storage requirements for consumables are provided. They should be adhered to at all times to optimise the operation of your ATM.

Consumable Life Expectancy

Printer ribbons, knives and printheads all have life expectancy limits as recommended by the manufacturer. When each item is nearing, or has reached, the end of its life expectancy, your ATM will advise a replacement via the error reporting system.

Design Format Guide

Design formats are provided for different types of paper for use when considering layout, pre-print, numbers and position of printing etc.

Cleaning Supplies

Cleaning materials are also available from Iconex. Contact your local representative for details.

HOW TO ORDER CONSUMABLES

A critical element in creating an effective consumables program, is having the expertise to understand customer problems associated with media.

Order consumables supplies from Iconex:

www.iconex.com
US: 1-888-979-8627
CA: 1-800-268-2034
E-mail: customer.care@iconex.com

For customers in the Middle East and Africa, order from Interactive Printer Solutions:

www.ips-mea.com
Tel: +971 4 8128927
Fax: +971 4 8872425
Email: enquiries@ipsmea.com

RECEIPT PRINTER

Your terminal will be fitted with either a graphics receipt printer, which uses thermal line printing technology to print, or with a dot-matrix receipt printer which uses a ribbon.

Graphics Paper Roll

Receipt paper for graphic receipt printers must conform to the following specifications:

For EasyPoint ATM

- Width: **60.0 mm** (2.36 in.)
- Paper thickness: **0.061 mm** (0.0024 in.)
- Paper type: direct thermal paper
- Winding: Single ply
- Core outside diameter: **54.9 mm** (2.16 in.)
- Core inside diameter: **50.8 mm** (2.00 in.)
- Core attached: No
- Roll finishing: Quick release tape (no glue)

For CX110 ATM

- Width: **79.0 mm** (3.11 in.)
- Roll diameter: **74.0 mm** (2.91 in.)
- Paper type: direct thermal paper
- Winding: Single ply
- Core attached: No
- Roll finishing: Quick release tape (no glue)

For 2018 and 2019 ATMs

- Roll diameter: **101.6 mm** (4.0 in.)

For All Other Products

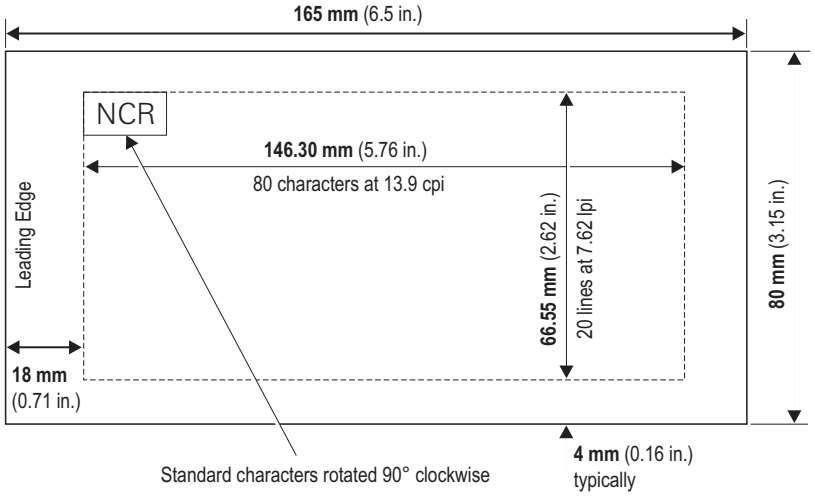
- Width: **80.0 mm** (3.2 in.)
- Roll diameter: **254 mm** (10 in.) except:
  - Micro printer: **127 mm** (5.0 in.)
  - Loop/Sterling (6681) mini receipt printer: **140 mm** (5.5 in.)
  - Compact printer **215.9 mm** (8.5 in.)
  - Dual roll printer: **228.6 mm** (9.0 in.) for both front and rear hoppers.
  - Doune printer: **139.7mm** (5.5 in.)
- Paper thickness: **0.061 mm** (0.0024 in.)

- Receipt length **111.8 mm - 190.5 mm** (4.4 in. - 7.5 in.)
- Paper type: direct thermal paper
- Winding: Single ply
- Direction of coating: Inside
- Core outside diameter: **25.4 mm** (1.00 in.)
- Core inside diameter: **17.8 mm** (0.70 in.)
- Core attached: No
- Roll finishing: Quick release tape (no glue)

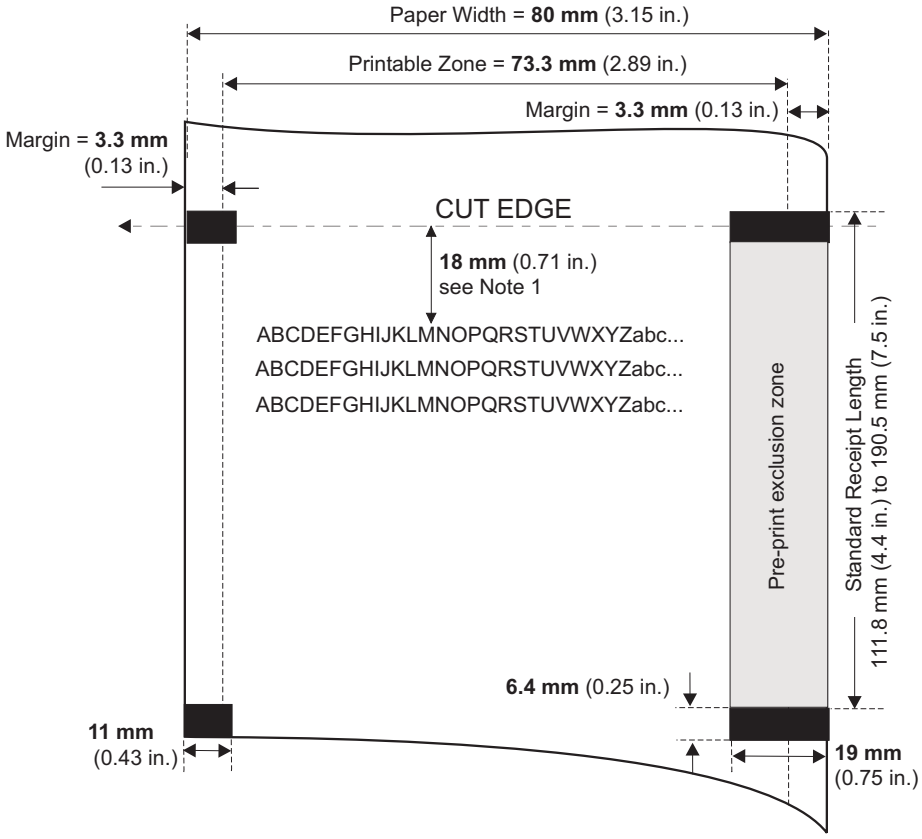
Storage Parameters:

- Long term storage: **32^{o}F - 86^{o}F** (0^{o}C - 30^{o}C) at 60% relative humidity maximum
- 35-day storage:
  - **96^{o}F - 122^{o}F** (35.5^{o}C - 50^{o}C) at 60% relative humidity maximum or
  - **32^{o}F - 96^{o}F** (0^{o}C - 35.5^{o}C) at 90% relative humidity maximum.

The following illustration shows a typical print format of an 80 column mini-statement on plain paper (black mark paper may also be used).



Design Format Guide



Note 1: 18 mm (0.71 in.) minimum top non-print margin

Consumable Life Expectancy

- The paper knife is self-sharpening and should not need to be replaced during the lifetime of the printer.
- The printhead should not need to be replaced during the lifetime of the printer.

Dot-Matrix Paper Roll

The paper roll used in the dot-matrix receipt printer must conform to the following specifications:

- Width **82.6 mm** (3.25 in.)
- Paper thickness **0.076mm - 0.086 mm** (0.0030 in. - 0.0034 in.)
- Receipt length **111.8 mm - 190.5 mm** (4.4 in. - 7.5 in.)
- Roll diameter **177.8 mm** (7 in.) or **254.0 mm** (10 in.)
- Preprinted with static data and black mark, or preprinted with black mark only
- Core measurements
  - Internal diameter **17.55 mm** (0.69 in.)
  - External diameter **25.40 mm** (1.0in.)

Customisation

The paper rolls from NCR Interactive Printer Solutions can be printed to customer requirements. Contact your local representative.

Consumable Life Expectancy

- Ribbon cassette (black) : 5 million characters
- Ribbon cassette (purple) : 6 million characters
- The paper knife has life expectancy of 300,000 cuts.
- The printhead has a life expectancy of 200,000 million characters.

JOURNAL PRINTER

Your terminal will be fitted with either a graphics journal printer, which uses thermal line printing technology to print, or with a dot-matrix journal printer which uses a ribbon.

Graphics Paper Roll

When you order graphics journal paper, it should conform to the following specifications:

- Roll width: **80 mm** (3.15 in.)
- Paper thickness: **0.061 mm (**0.0024 in.)
- Paper type: Direct thermal paper
- Winding: Single ply
- Direction of coating: Outside
- Core diameter outside: **22.0 mm** (0.9 in.) nominal
- Core diameter inside: **12.0 mm** (0.5 in.) nominal
- Core attached: No
- Storage parameters:
  - Long term storage: **32°F - 86°F** (0°C - 30°C) at 60% relative humidity maximum
  - 35-day storage:
    - **96°F - 122°F** (35.5°C - 50°C) at 60% relative humidity maximum or
    - **32°F - 96°F** (0°C - 35.5°C) at 90% relative humidity maximum.

Roll Sizes

- Roll diameter: **79.4 mm** (3.125 in.) nominal
- Roll capacity: **83.0 m** (273 ft.).

Consumable Life Expectancy

The printhead should not need to be replaced during the lifetime of the printer.

Dot-Matrix Paper Roll

When you order dot-matrix journal paper, it should conform to the following specifications:

- Roll width: **82.55 mm** (3.25 in.)
- Wood free pulp
- Paper type: White 3S paper
- Paper thickness: **0.081 mm** (0.0032 in.)
- Core outside diameter: **23.45 mm** (0.9 in.)

- Core inside diameter: **17.27 mm** (0.68 in.)
- Core attached: No.

Roll Sizes

- Roll diameter: **101.6 mm** (4 in.) maximum
- Roll capacity: **86 m** (282 ft.).

Consumable Life Expectancy

- Ribbon cassette (black): 5 million characters
- Ribbon cassette (purple): 6 million characters
- The printhead should not need to be replaced during the lifetime of the printer.

STATEMENT PRINTER

Printers are supplied either by a stack or roll of paper. There are two main types of thermal paper:

- Non top-coated media - This type of paper has thermal sensitive material applied to the paper and it is the thermal sensitive media which is exposed to the elements.
- Top-coated media - This type of paper has a thermal layer applied to the paper and then a further protective layer is applied to form a barrier between the thermal coating and the outside elements.

Paper used in paper stack statement printers must conform to the following specifications.

Paper Stack

USB Fanfold Statement Printer

- Width: **148 mm** to **216 mm** (5.8 in. - 8.5 in.)
- Form length:
  - Non-bunch: **101.6 mm** (4.0 in.) to **297 mm** (11.7 in.)
  - Bunch: **102 mm** (4.0 in.) or **106 mm** (4.2 in.)
- Paper type: Top-coated or non top-coated
- Basis weight: 70 - 120 g/m^2

Personas M Series Print and Select Printer

- Width: **140 mm - 216 mm** (5.5 in. - 8.5 in.)
- Form length: **102 mm - 318 mm** (4.0 in. - 12.5 in.)
- Sheet length: **152 mm - 305 mm** (6.0 in. - 12.0 in.)
- Paper type: Top-coated or non top-coated
- Basis weight: 70 - 120 g/m^2

All Other Printers

- Width: **140 mm - 216 mm** (5.5 in. - 8.5 in.)
- Form length:
  - **102 mm** (4 in.) for all other printers with a buncher
  - **102 mm - 305 mm** (4 in. - 12in.) for all non-bunch printers.
- Sheet length: **152 mm - 318 mm** (6.0 in. - 12.5 in.)
- Paper type: Top-coated or non top-coated
- Basis weight: 60 - 120 g/m^2

Stack Dimensions

The stack length can be made up of as many multiples of the form length that would fit in 305 mm (12 in.) or less. For example, 3 x **101.6 mm** (4.0 in.) forms but only 1 x **203 mm** (8.0 in.) form. Perforations are not compulsory but are desirable for stacking. If perforations are used there must be a minimum of 5 retainers per 25.4 mm (1.0 in.). Each end row of perforations should be tied out with one retainer of at least **1.6 mm** (0.06 in.).

When supplied in boxes, it is advised that dividers are placed to aid separation. For ATM products, the boxes containing 2400 sheets would require dividers at 800 and 1600 sheets. However, please refer to the individual product capacities for each of the specified products.

Ring binder holes should be punched when running the paper and not drilled after the stack is formed. Ring binder holes should not encroach greater than **15 mm** (0.59 in.) from the edge of the paper.

Paper Roll

Note: The stated paper roll length is dependent on the inside and outside diameter of the paper roll core and the thickness of the paper.

USB Statement Printer

- Paper weight: **54-70 gms/m^2**
- Paper types: one-sided or two-sided thermal
- Width range: **155.58 mm** (6.125 in.), **210 mm** (8.27 in.) or **215.9 mm (**8.50 in.)
- Form length: **76.0 - 317.5 mm** (3.0 - 12.5 in.) max
- Roll length: **831.7m** (2729 ft) max
- Roll diameter: **254 mm** (10 in.) max

BDT TPM 200-K printer
(Personas 72 Sidecar, Ci20, Personas 78 and the Convenience Banking terminal).

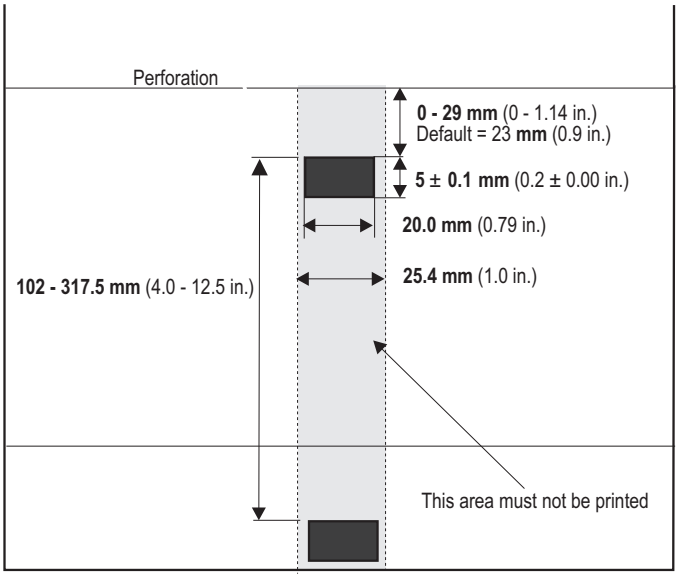
- Width range: **139.7 mm - 215.9 mm** (5.5 in. - 8.5 in.)
- Paper types:
  - Non top-coated media
  - Top-coated media
- Form length: **101.6 mm - 304.8 mm** (4.0 in. - 12.0 in.)
- Roll length: **305 m - 510 m** (1000 ft. - 1675 ft.)

Black Mark Format Guide

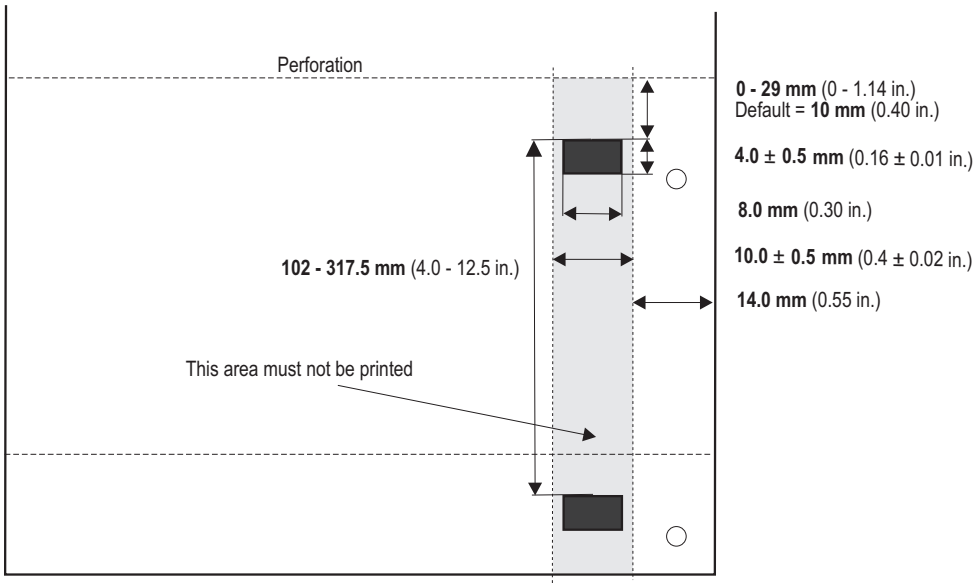
The printer can operate either with or without black marks. The black mark is printed on the rear of the paper. Pre-printing may be applied to the front or rear of the paper, except in the pre-print exclusion zone as shown.

USB Fanfold Statement Printer

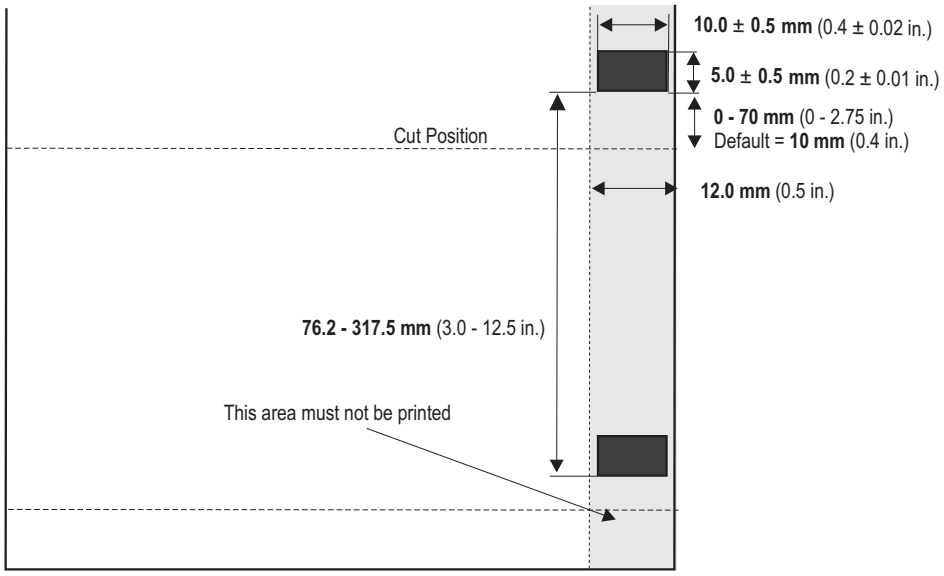
Black Mark at Centre



Black mark at side, with binding holes



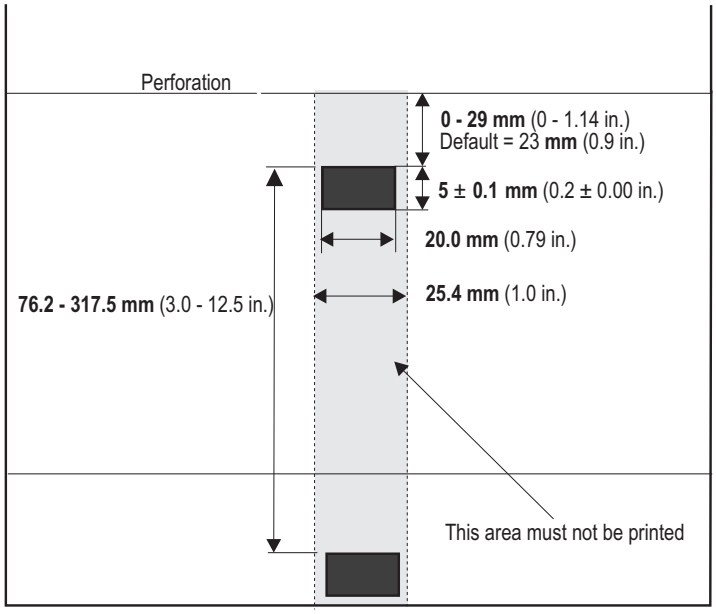
USB Statement (Paper Roll)



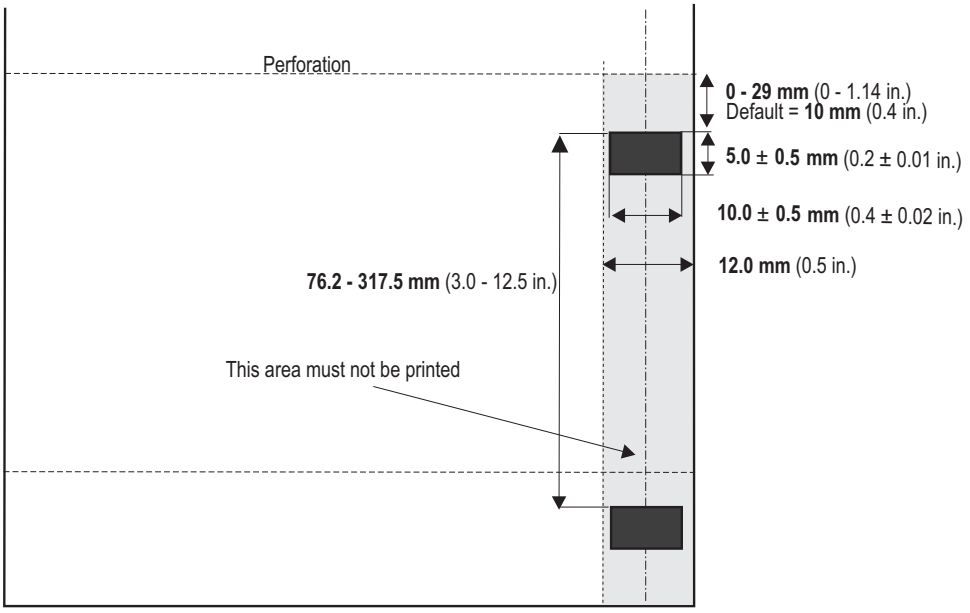
Branch Assist 18 - non-buncher printer

The black mark may be located at the centre of the paper for A4 (8.27 in.) and Letter (8.5 in.) paper only, or at the side for all paper sizes, with or without room for binding holes.

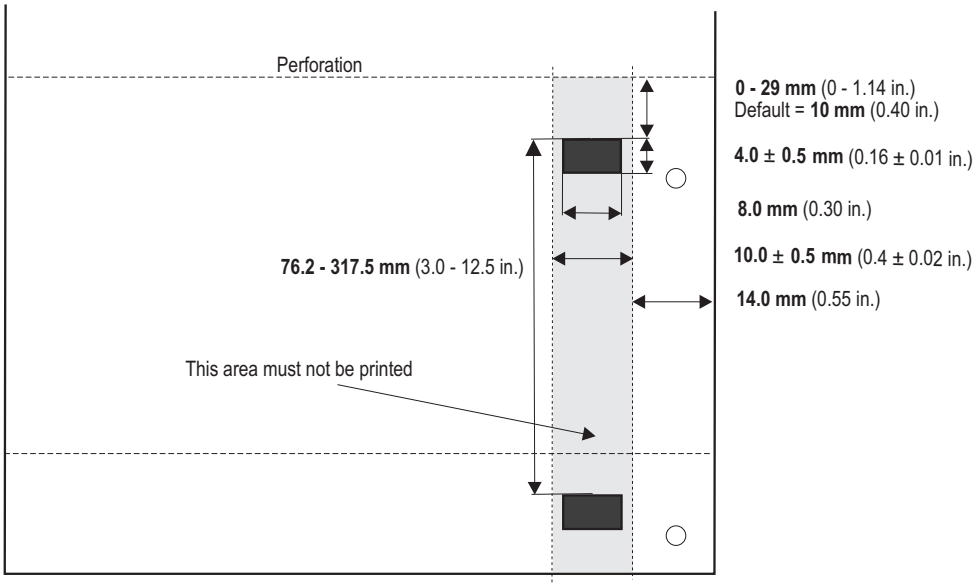
Black mark at centre



Black mark at side, without binding holes



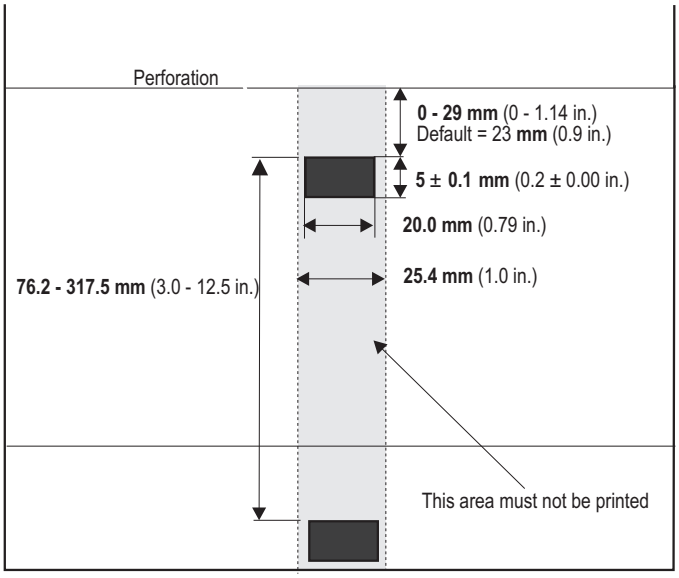
Black mark at side, with binding holes



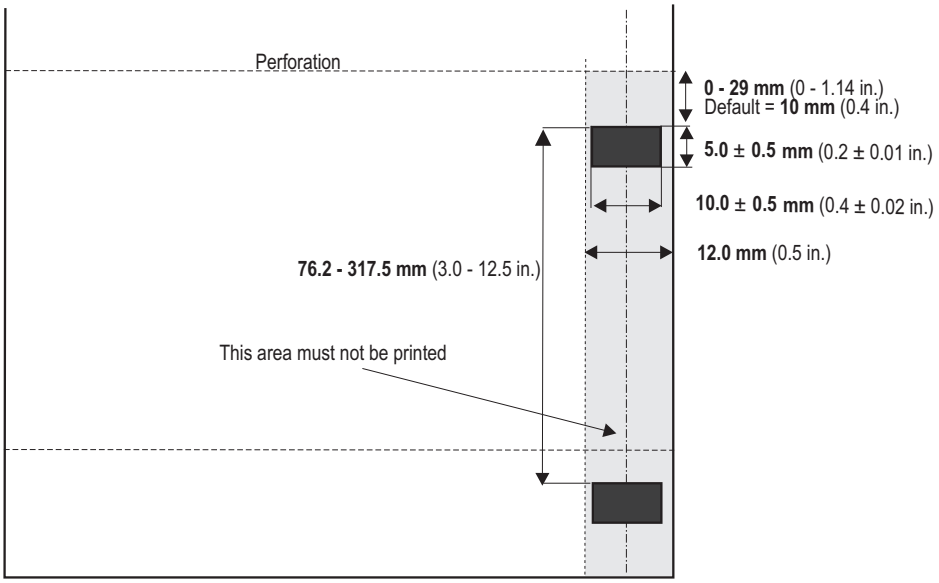
Branch Assist 18 - buncher printer

The black mark may be located at the centre of the paper for A4 (8.27 in.) and Letter (8.5 in.) paper only, or at the side for all paper sizes, with or without room for binding holes.

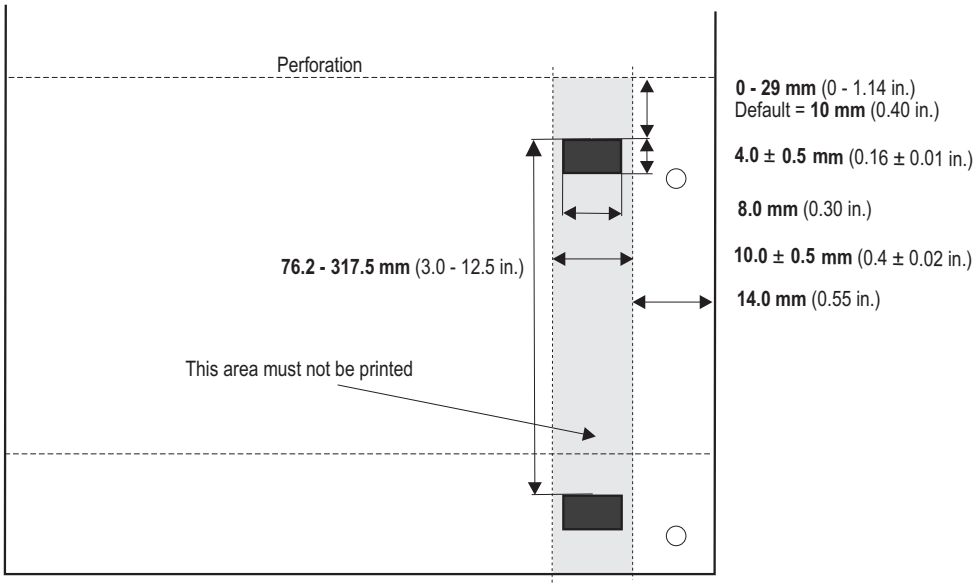
Black mark at centre



Black mark at side, without binding holes

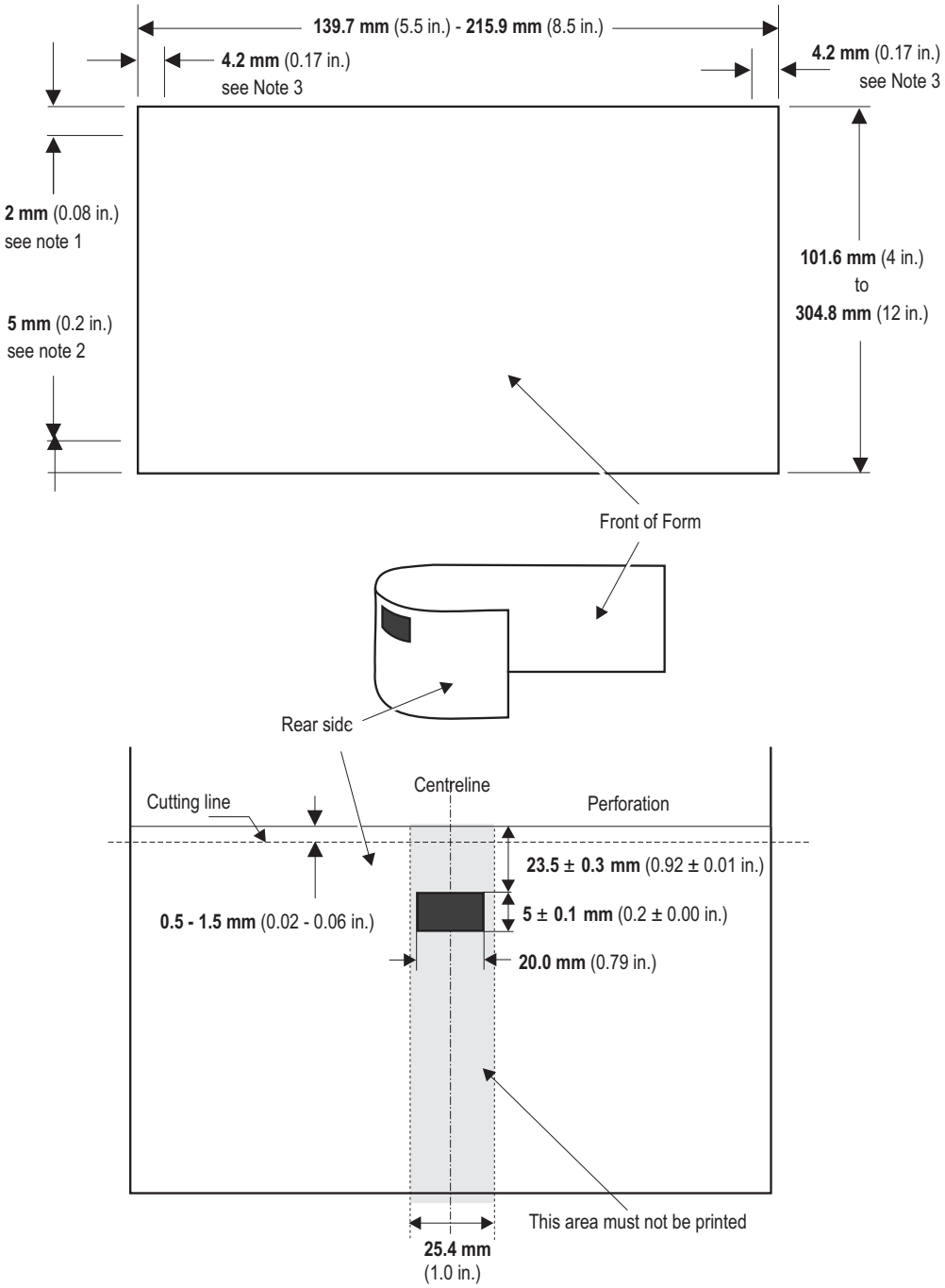


Black mark at side with binding holes



All other statement printers

A black mark is a requirement to ensure correct registration. The following illustration gives the dimension for the positioning of the black mark in relation to a perforation on a fanfold form.

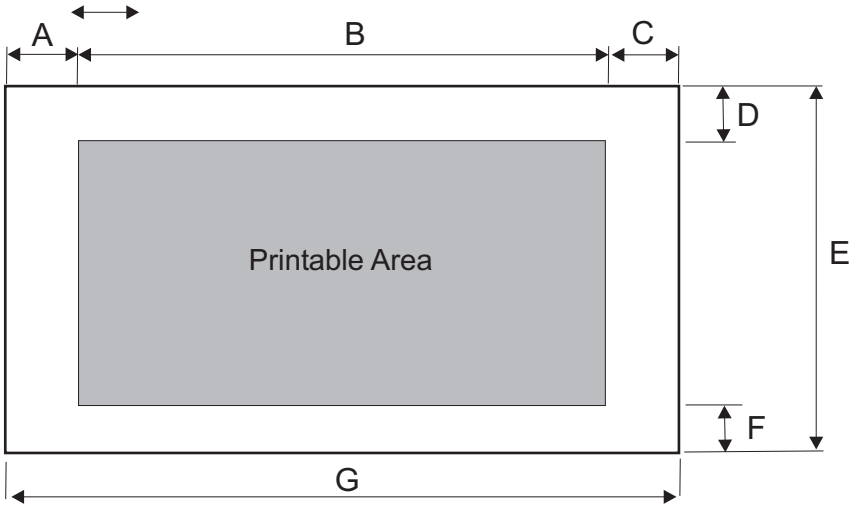


Note 1:Top non-print margin for the top of character on first available line.
Note 2: Bottom non-print margin for bottom of character on last available line.
Note 3: Left and right hand non print margin.

Printable Area

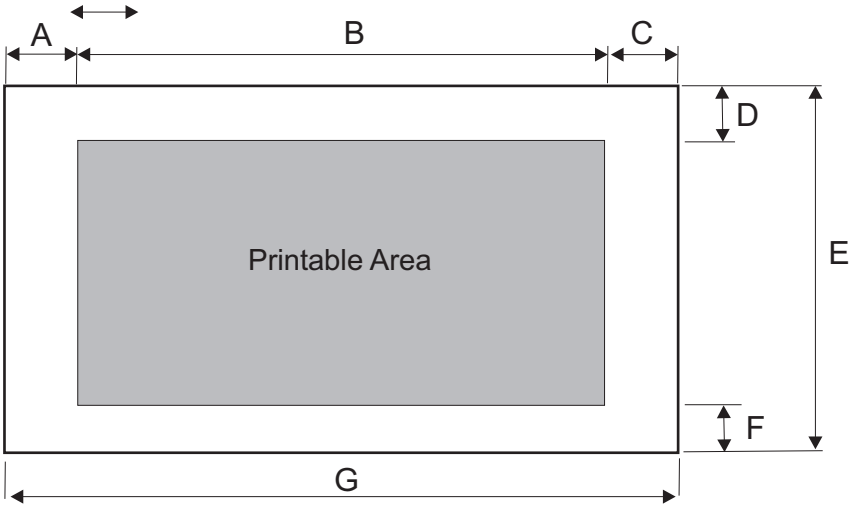
USB Fanfold Statement Printer

Note that the physical thermal head print width of **219.54 mm** $^{+}/_{-}$ **0.2mm** (8.64 in. $^{+}/_{-}$ 0.008 in.) is wider than the maximum specified media width. This allows the printable area to cover the media width. In order to manage any skew of the media, the printable area specified below must be adhered to.



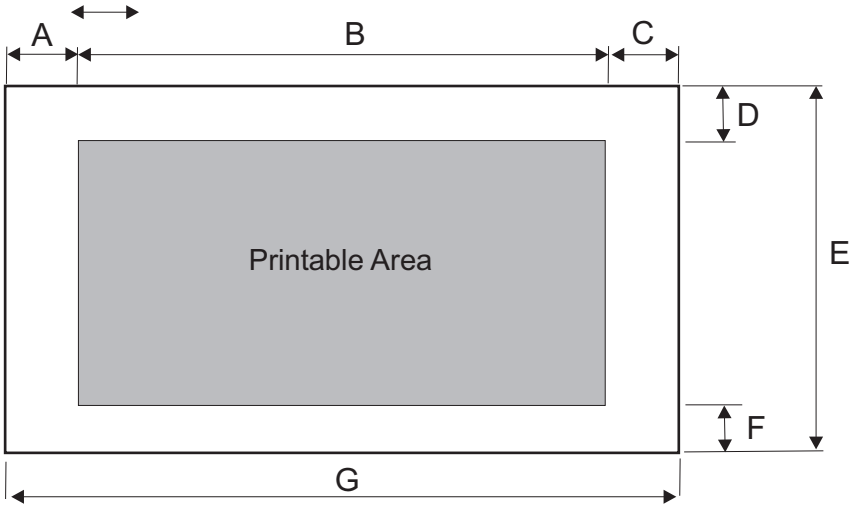
	Letter (8.27 in)	**A4** (8.5 in.)	**6.125 in**	**5.83 in.**
A	**5** $^{+}$**/- 1 mm** (0.20 $^{+}$**/-** 0.04 in.)	**3.4** $^{+}$**/- 2.5 mm** (0.13 $^{+}$/- 0.1 in.)	**5** $^{+}$**/- 1 mm** (0.20 $^{+}$**/-** 0.04 in.)	**3.4** $^{+}$**/- 2.5 mm** (0.13 $^{+}$/- 0.1 in.)
B	**205 mm** (8.07 in.)	**203.2 mm** (8.0 in.)	**145.6 mm** (5.7 in.)	**141.2 mm** (5.6in.)
C	**5** $^{+}$**/- 1 mm** (0.20 $^{+}$**/-** 0.04 in.)	**3.4** $^{+}$**/- 2.5 mm** (0.13 $^{+}$/- 0.1 in.)	**5** $^{+}$**/- 1 mm** (0.20 $^{+}$**/-** 0.04 in.)	**3.4** $^{+}$**/- 2.5 mm** (0.13 $^{+}$/- 0.1 in.)
D	**2.0 - 5.0 mm** (0.08 - 0.2 in.)			
E	**101.6 - 317.5 mm (4.0 - 12.5 in.)**			
F	**2.0 - 5.0 mm (0.08 - 0.2 in.)**			
G	**215.9 mm** (8.5 in.)	**210 mm** (8.27 in.)	**155.6 mm** (6.12 in.)	**148 mm** (5.8 in.)

Branch Assist 18 - non buncher printer



	Letter (8.27 in)	**A4** (8.5 in.)	**6 in**
A	**6.35 +/- 2.5 mm** (0.25 +/- 0.1 in.)	**3.4 +/- 2.5 mm** (0.13 +/- 0.1 in.)	**4.6 +/- 2.5 mm** (0.18 +/- 0.1 in.)
B	**203.2 mm** (8.0 in.)	**203.2 mm** (8.0 in.)	**143.2 mm** (5.64 in.)
C	**6.35 +/- 2.5 mm** (0.25 +/- 0.1 in.)	**3.4 +/- 2.5 mm** (0.13 +/- 0.1 in.)	**4.6 +/- 2.5 mm** (0.18 +/- 0.1 in.)
D	**2.0 - 5.0 mm** (0.08 - 0.20 in.)	**2.0 - 5.0 mm** (0.08 - 0.20 in.)	**2.0 - 5.0 mm** (0.08 - 0.20 in.)
E	**101.6 - 317.5 mm** (4.0 - 12.5 in.)	**101.6 - 317.5 mm** (4.0 - 12.5 in.)	**101.6 - 317.5 mm** (4.0 - 12.5 in.)
F	**2.0 +/- 1.0 mm** (0.08 +/- 0.04 in.)	**2.0 +/- 1.0 mm** (0.08 +/- 0.04 in.)	**2.0 +/- 1.0 mm** (0.08 +/- 0.04 in.)
G	**215.9 mm** (8.5 in.)	**210 mm** (8.27 in.)	**152.4 mm** (6.0 in.)

Branch Assist 18 - buncher printer



	Letter (8.27 in)	**A4** (8.5 in.)	**6 in**
A	**215.9 mm** (8.5 in.)	**210 mm** (8.27 in.)	**152 mm** (6.0 in.)
B	**203.2 mm** (8.0 in.)	**203.2 mm** (8.0 in.)	**143.2 mm** (5.64 in.)
C	**6.35 +/- 2.5 mm** (0.25 +/- 0.1 in.)	**3.4 +/- 2.5 mm** (0.13 +/- 0.1 in.)	**4.6 +/- 2.5 mm** (0.18 +/- 0.1 in.)
D	**6.35 +/- 2.5 mm** (0.25 +/- 0.1 in.)	**3.4 +/- 2.5 mm** (0.13 +/- 0.01 in.)	**4.6 +/- 2.5 mm** (0.18 +/- 0.1 in.)
E	**2.0 - 5.0 mm** (0.08 - 0.20 in.)	**2.0 - 5.0 mm** (0.08 - 0.20 in.)	**2.0 - 5.0 mm** (0.08 - 0.20 in.)
F	**2.0 +/- 1.0 mm** (0.08 +/- 0.04 in.)	**2.0 +/- 1.0 mm** (0.08 +/- 0.04 in.)	**2.0 +/- 1.0 mm** (0.08 +/- 0.04 in.)
G	**101.6 - 317.5 mm** (4.0 - 12.5 in.)	**101.6 - 317.5 mm** (4.0 - 12.5 in.)	**101.6 - 317.5 mm** (4.0 - 12.5 in.)

Consumable Life Expectancy

- Printhead: The printhead should not need to be replaced during the life of the printer
- Paper knife: The knife should not need to be replaced during the lifetime of the product.

STATEMENT/PASSBOOK PRINTERS

The SDC statement/passbook printer is a dot-matrix printer and uses a printer ribbon to update passbooks and to print out statements on fan-fold statement paper, supplied from a stack.

The USB statement/passbook printer uses a dot-matrix print engine and ribbon to update passbooks and a thermal print engine to print statements on two-sided thermal paper, supplied from a paper roll.

See 'Passbook Design Guidelines' later in this manual for passbook specifications.

SDC Statement/Passbook Printer

The paper that is used in the SDC statement/passbook printer must conform to the following specifications:

- Paper weight: **68 - 72 gms/m^2**
- Width range: **139.7 mm - 215.9 mm** (5.5 in. - 8.5 in.)
- Sheet length: **152.4 mm** - **304.8 mm** (6.0 in. - 12.0 in.)
- Form length: **101.6 mm** - **304.8 mm** (4.0 in. - 12.0 in.)

Stack Dimensions

The stack length can be made up of as many multiples of the form length that would fit in 305 mm (12 in.) length or less. For example, 3 x 101.6 mm (4.0 in.) forms but only 1 x 203 mm (8.0 in.) form. Perforations are not compulsory but are desirable for stacking.

When supplied in boxes, it is advised that dividers are placed to aid separation. For ATM products, boxes containing 2400 sheets would require dividers at 800 and 1600 sheets. However, please refer to the individual product capacities for each of the specified products.

Other Features

Ring binder holes should be punched when running the paper and not after the stack is formed.

USB Statement/Passbook Printer

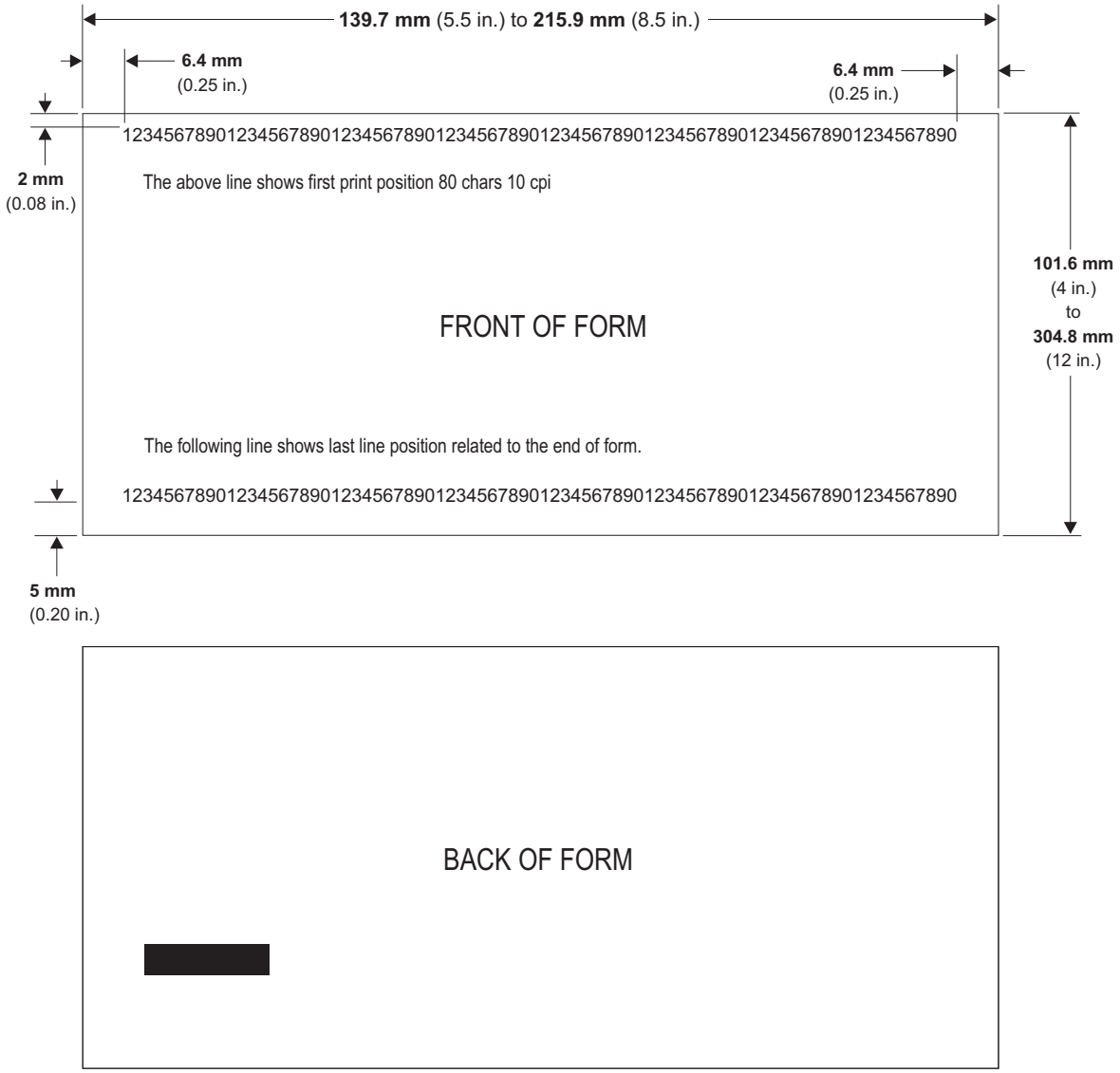
The paper that is used in the USB statement/passbook printer must conform to the following specifications:

- Paper weight: **54-70 gms/m^2**
- Width range: **155.58 mm** (6.125 in.), **210 mm** (8.27 in.) or **215.9 mm (**8.50 in.)
- Form length: **101.5 - 317.5 mm** (4.0 - 12.5 in.)

- Roll length: **220 m** (722 ft) max
- Roll diameter: **140 mm** (5.5 in.) max

Design Format Guide

SDC Statement/Passbook Printer



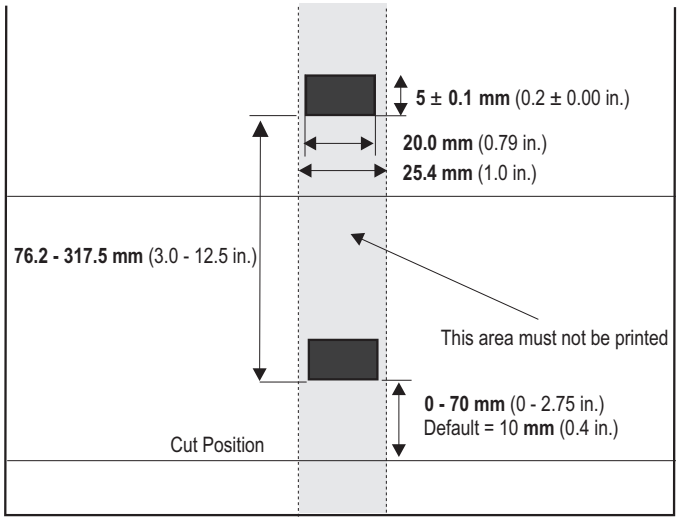
When designing the document format, it is necessary to ensure that all intended print data will fit onto a single form within the limits of the margins shown. This can readily be achieved through the software flexibility offered.

It is the responsibility of the format designer to ensure that pre-print and machine print do not collide and that they have the correct relationship to each other. When using black marks, a pre-print exclusion zone must be observed.

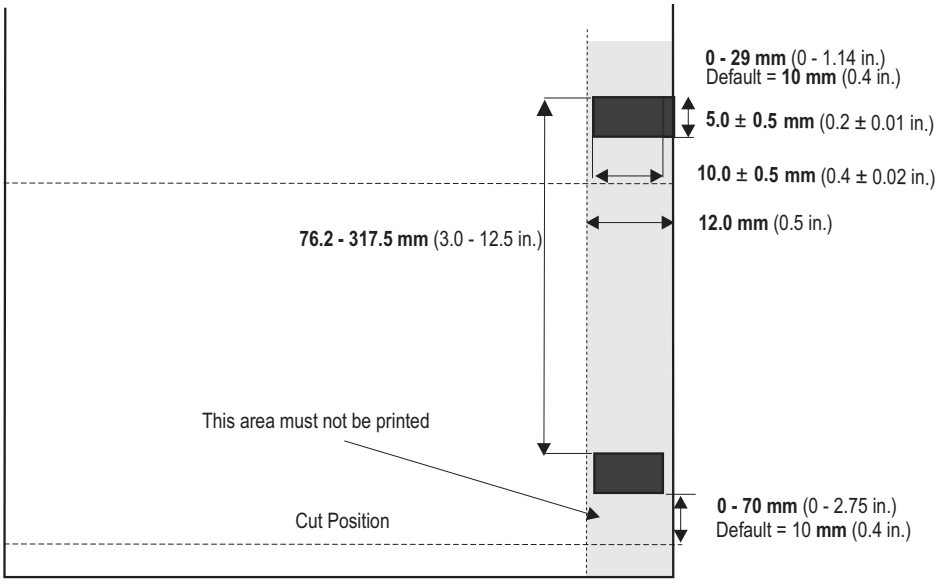
USB Statement/Passbook Printer

Pre-printing may be applied to the front or rear of the paper, except in the pre-print exclusion zone as shown.

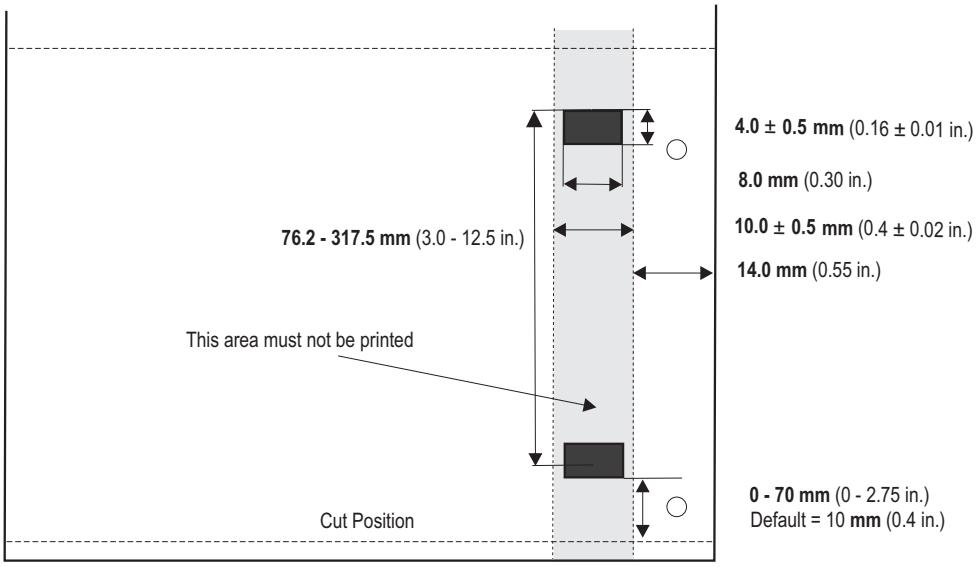
Black mark at centre



Black mark at side, without binding holes



Black mark at side, with binding holes



Consumable Life Expectancy

- Printhead: Life expectancy of 200 million characters. The printhead should not need to be replaced during the lifetime of the printer
- SDC printer ribbon cassette: Life expectancy of 5 million characters
- USB printer ribbon cassette: Life expectancy of 4 million characters without LLF or 3 million with LLF.
- Paper knife: Life expectancy of 300 000 cuts and should not need to be replaced during the lifetime of the product.

PAGE TURN PASSBOOK PRINTERS

The page turn passbook printers remove the need for the customer to manually select the next page of the passbook. It provides both forward and backward turning of the passbook, and the Enhanced and USB Page Turn Passbook printers support both horizontally and vertically entered passbooks. The printer is a dot-matrix printer, using a printer ribbon to update passbooks.

See the next section, 'Passbook Design Guidelines' for passbook specifications.

Consumable Life Expectancy

- Page turn passbook printer ribbon cassette: 3 million printed characters.
- Enhanced page turn passbook printer ribbon cassette: 4 million printed characters.
- Printhead: the printhead should not need to be replaced during the lifetime of the printer.

PASSBOOK DESIGN GUIDELINES

NCR Self Service products support four passbook printers: the statement/passbook printer, the USB statement/passbook printer, the page turn passbook printer and the enhanced page turn passbook printer.

Testing Passbooks

It is recommended that all passbooks should be thoroughly tested on-site to assess their suitability for the particular unit.

Deviation From Specifications

Some of the parameters may not be defined or may differ from those indicated in this publication, for example the materials used in the construction of the cover. This would not necessarily mean the passbook is unsuitable and the on-site test would prove the suitability or otherwise.

Parameters

For maximum reliability of passbooks the following conditions must be adhered to when designing passbooks:

- Passbooks must be free of metallic parts such as staples or clips
- Covers and internal pages of passbooks must be 'complete', that is no windows or cut-outs. Books should not have pages of a smaller size than the cover
- No stamps or seals should be adhered to the passbook.

Dimensions and Specifications

- Corner radius: **2 mm** to **14 mm** (0.08 in. to 0.55 in.)
- Cover thickness: **0.2 mm** to **0.5 mm** (0.008 in. to 0.020 in.)
- Cover finish (smoothness): **2 μm** to **10 μm**
  (78.74 μin. to 393.7 μin.)
- Passbook thickness maximum:
- USB page turn passbook:
  - horizontally stitched: **1.7 mm** (0.067 in.)
  - vertically stitched: **1.2 mm** (0.047 in.)
- All other passbook printers:
  - **1.7 mm** (0.067 in.) See Note 1.
- Thickness difference maximum:
  - USB page turn passbook:
    - horizontally stitched: **1.15 mm** (0.045 in.)

    - vertically stitched: **0.8 mm** (0.031 in.)
- All other passbook printers:
    - **1.7 mm** (0.067 in.) **1.2 mm** (0.047 in.)
- Paper weight:
    - USB page turn passbook: 91g/m^2 to 99g/m^2
    - All other passbook printers: 90g/m^2 to 120g/m^2
- Paper thickness: **0.122 mm** to **0.162 mm** (0.005 in. to 0.006 in.)
- Paper transparency: 15% maximum. See Note 2
- Binding stitch pitch: **5 mm** (0.197 in.) maximum. See Note 3
- Lobe of binding part: **1 mm** (0.040 in.) maximum. See Note 4
- Parallelism and right angles of book sides: **0.3 mm** (0.012 in.) maximum. See Note 5
- Life of passbook: 2000 double folds minimum. See Note 6.

Note 1: Passbook thickness is measured over one cover and all the pages folded, that is the total thickness of the book minus the thickness of one cover.

Note 2: Transparency is measured using the formula described in the publication *Determination of Transparency* (DIN 53147) under paragraph 3 “Concept”.

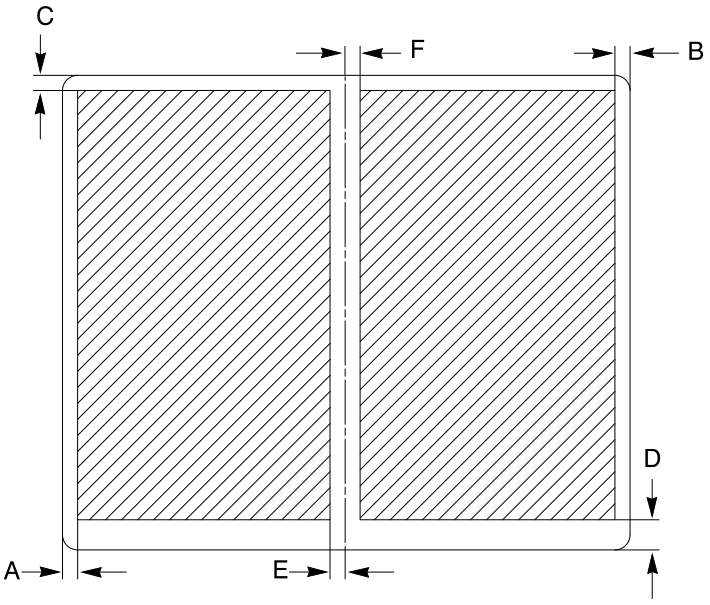
Note 3: Stitching must be performed in a manner to discourage tampering/removal and/or insertion of pages and must be immediately recognisable if tampered with. The thread should hold the pages together for the life of the passbook.

Note 4: The lobe of the book spine binding part, with the book opened at the centre and pressed on a flat surface, should not exceed the book thickness by more than 1 mm (0.040 in.), see following illustrations.

Note 5: Parallelism and right angles of book edges and pages should remain within the 0.3 mm (0.012 in.) tolerance shown in the following illustrations.

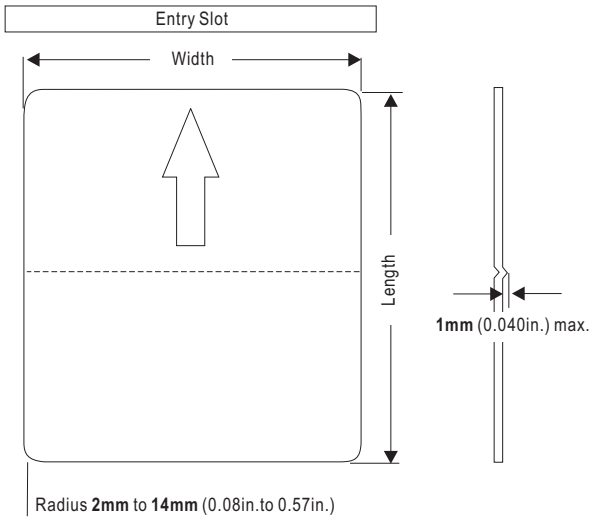
Note 6: Double folds means opening the passbook from the closed position through 180^o and closing it again.

The following illustration shows the tolerances for parallelism and right angles of book edges and pages, and applies to both horizontally and vertically stitched passbooks.



Dimensions: Horizontally Stitched Passbook

The dimensions for horizontally stitched passbooks which can be used in each of the passbook printers are shown in the following table. Once a passbook size is determined, the dimensions of all books produced must be within the stated tolerance.



	Width	Length	Corner Radius
Statement / Passbook Printer	**105 - 211 mm ± 0.5 mm** (4.13 - 8.31 in. ± 0.02 in.)	**165 - 185 mm ± 0.5 mm** (6.49 to 7.28 in. ± 0.02 in.)	**2** - **14 mm** (0.08 to 0.57 in.)
USB Statement / Passbook Printer	105 - 165 mm ± 0.3 mm (4.13 - 6.49 in. ± 0.01 in.)	**165 - 185 mm ± 0.5 mm** (6.49 to 7.28 in. ± 0.02 in.)	**2** - **14 mm** (0.08 to 0.57 in.)
Page Turn Passbook Printer	**128** - **150 mm ± 0.5 mm** (5.04 to 5.91 in. ±0.01 in.)	**140** - **195 mm ± 0.5 mm** (5.51 to 7.68 in. ± 0.02 in.)	**2** - **14 mm** (0.08 to 0.57 in.)
Enhanced Page Turn Passbook Printer (See notes 1-5)	**105** - **211 mm ± 0.5 mm** (4.13 - 8.31 in. ± 0.02 in.)	**140** - **195 mm ± 0.5 mm** (5.51 - 7.68 in. ± 0.02 in.)	**2** - **14 mm** (0.08 - 0.57 in.)
USB Page Turn Passbook Printer (See notes 1-5)	**105** - **201 mm ± 0.5 mm** (4.13 - 7.91 in. ± 0.02 in.)	**140** - **195 mm ± 0.5 mm** (5.51 - 7.68 in. ± 0.02 in.)	**2** - **14 mm** (0.08 - 0.57 in.)

Note 1: Passbooks of width **112 mm - 117mm** (4.41 in. - 4.61 in.) and width **142 mm - 147 mm** (5.59 in. - 5.78 in.) are not supported on the enhanced and USB page turn passbook printers.

Note 2: Passbooks to be page turned on the enhanced or USB page turn passbook printers must be within the range width **120 mm - 165mm** (4.72 in. - 6.49 in.) x height **150 mm - 187mm** (6.90 in. - 7.36 in.). Passbooks outside this range require adjustment to the page turning unit. Refer to the configuration guide for the printer for details.

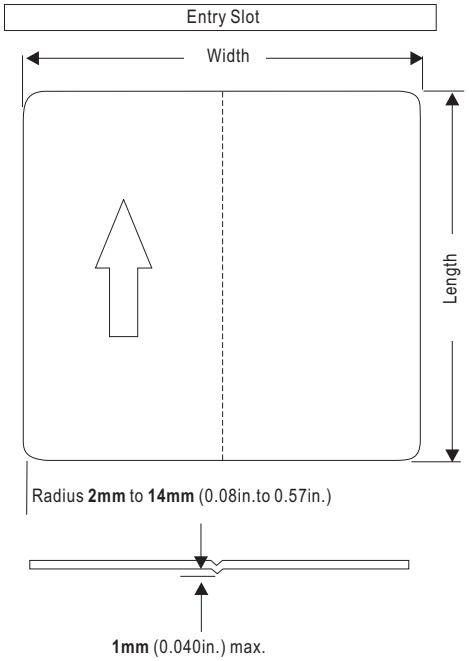
Note 3: For last line detect and bar code read to be applied, passbooks must be within the range width **120 mm - 211 mm** (4.75 in. - 8.30 in.) for enhanced and **120 mm - 201 mm** (4.75 in. - 7.91 in.) for USB page turn passbook printers.

Note 4: The default passbook for the enhanced and USB page turn passbook printers is the CECA Spanish passbook **136 mm** (5.35 in.) x **174 mm** (6.85 in.).

Note 5: The maximum number of sheets for the enhanced and USB page turn passbook printers is a cover and 5 inner sheets, giving 10 printable pages.

Dimensions: Vertically Stitched Passbook

The dimensions for vertically stitched passbooks used in each of the passbook printers indicated below are shown in the following table. Vertically stitched passbooks are not supported by the page turn passbook printer. Once a passbook size is determined, the dimensions of all books produced must be within the stated tolerance.



	Width	Length	Corner Radius
Statement / Passbook Printer	**105 - 211 mm ± 0.5 mm** (4.13 - 8.31 in. ± 0.020 in.)	**125 - 185mm ± 0.5 mm** (4.92 - 7.28 in. ± 0.02 in.)	**2 - 14 mm** (0.08 - 0.57 in.)
USB Statement / Passbook Printer	**105 - 165 mm ± 0.3 mm** (4.13 - 6.49 in. ± 0.01 in.)	**125 - 185mm ± 0.5 mm** (4.92 - 7.28 in. ± 0.02 in.)	**2 - 14 mm** (0.08 - 0.57 in.)
Enhanced Page Turn Passbook Printer (See notes 1-3)	**140 - 211 mm ± 0.5 mm** (5.51 - 8.31 in. ± 0.020 in.)	**125 - 185mm ± 0.5 mm** (4.92 - 7.28 in. ± 0.02 in.)	**2 - 14 mm** (0.08 - 0.57 in.)
USB Page Turn Passbook Printer (See notes 1-3)	**140 - 211 mm ± 0.5 mm** (5.51 - 8.31 in. ± 0.020 in.)	**125 - 185mm ± 0.5 mm** (4.92 - 7.28 in. ± 0.02 in.)	**2 - 14 mm** (0.08 - 0.57 in.)

Note 1: Passbooks of width **142 mm - 147 mm** (5.59 in. - 5.78 in.) are not supported on the enhanced or USB page turn passbook printers.

Note 2: For last line detect and bar code read to be applied, passbooks must be within the range width **140 mm - 211 mm** (5.51 in. - 8.31 in.) (excluding range stated in note 1 above) x height **140 mm - 185 mm** (5.51 to 7.28 in.).

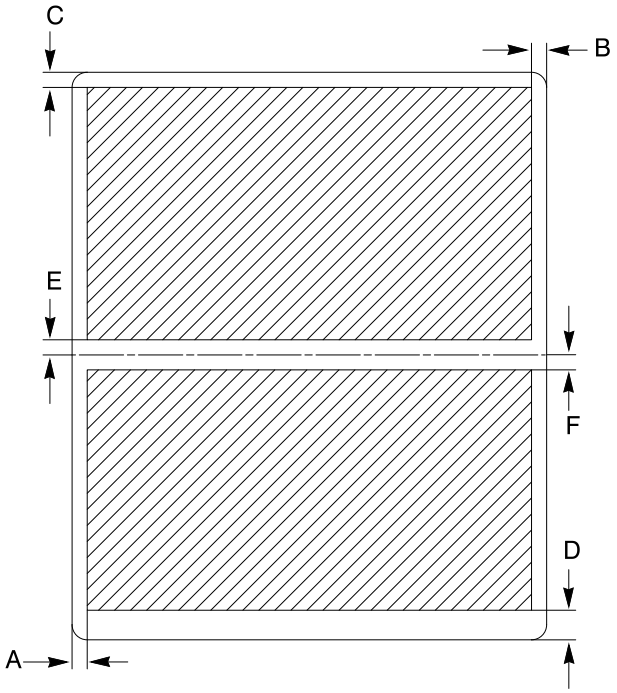
Note 3: The maximum number of sheets for the enhanced and USB page turn passbook printers is a cover and 3 inner sheets, giving 6 printable pages.

Printable Area: Horizontally Stitched Passbook

The following illustration shows the printable area within a horizontally stitched passbook. The dimensions of the margins vary between books used in each type of printer and are given in the following table:

Margin	Statement / Passbook	USB Statement / Passbook	Page Turn Passbook	Enhanced Page Turn Passbook	USB Page Turn Passbook
Left (A)	**4.0 mm** (0.16 in.)	**4.0 mm** (0.16 in.)	**2.54 mm** (0.1 in.)	**4.0 mm** (0.16 in.)	**4.0 mm** (0.16 in.)
Right (B)	**4.0 mm** (0.16 in.)	**4.0 mm** (0.16 in.)	**2.54 mm** (0.1 in.)	**4.0 mm** (0.16 in.)	**4.0 mm** (0.16 in.)
Top (C)	**5.0 mm** (0.20 in.)	**5.0 mm** (0.20 in.)	**20.1 mm** (0.79 in.)	**5.0 mm** (0.20 in.)	**5.0 mm** (0.20 in.)
Bottom (D)	**10.0 mm** (0.40 in.)	**4.0 mm** (0.16 in.)	**20.1 mm** (0.79 in.)	**10.0 mm** (0.40 in.)	**10.0 mm** (0.40 in.)
Fold (E)	**4.0 mm** (0.16 in.)	**5.0 mm** (0.20 in.)	**5.08 mm** (0.2 in.)	**4.0 mm** (0.16 in.)	**5.08 mm** (0.20 in.)
Fold (F)	**4.0 mm** (0.16 in.)	**5.0 mm** (0.20 in.)	**5.08 mm** (0.2 in.)	**4.0 mm** (0.16 in.)	**5.08 mm** (0.20 in.)

Note: All margins have a tolerance of ± 0.3 mm (± 0.01 in.).

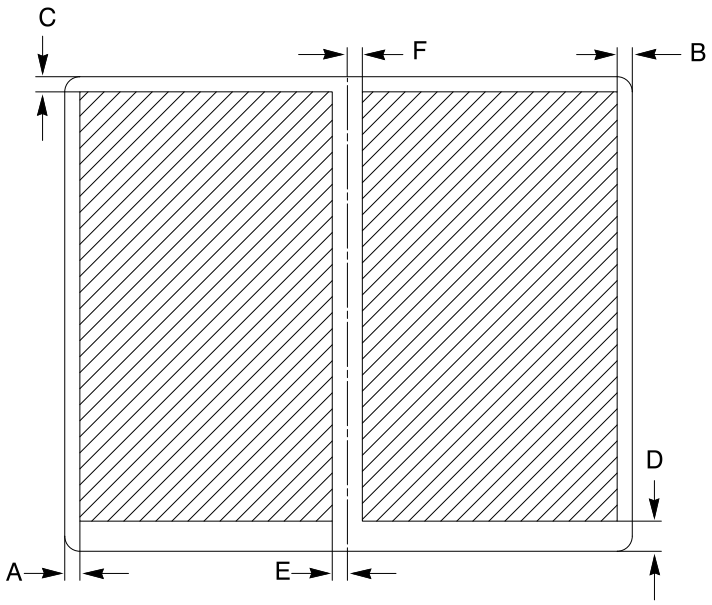


Printable Area: Vertically Stitched Passbook

The following illustration shows the printable area within a vertically stitched passbook (not an option on the page turn passbook). The dimensions of the margins are as follows:

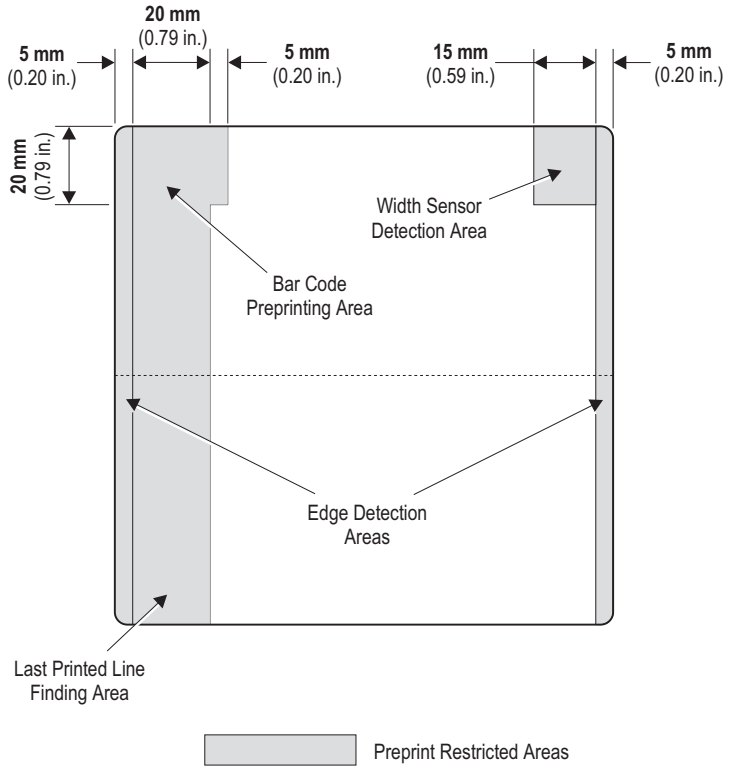
Margin	Statement/Passbook	USB Statement / Passbook	Enhanced Page Turn Passbook	USB Page Turn Passbook
Left (A)	**4.0 mm** (0.16 in.)	**4.0 mm** (0.16 in.)	**4.0 mm** (0.16 in.)	**4.0 mm** (0.16 in.)
Right (B)	**4.0 mm** (0.16 in.)	**4.0 mm** (0.16 in.)	**4.0 mm** (0.16 in.)	**4.0 mm** (0.16 in.)
Top (C)	**5.0 mm** (0.19 in.)	**5.0 mm** (0.19 in.)	**5.0 mm** (0.19 in.)	**5.0 mm** (0.19 in.)
Bottom (D)	**10.0 mm** (0.39 in.)	**4.0 mm** (0.16 in.)	**10.0 mm** (0.39 in.)	**10.0 mm** (0.39 in.)
Fold (E)	**7.0 mm** (0.27 in.)	**7.0 mm** (0.27 in.)	**7.0 mm** (0.27 in.)	**6.35 mm** (0.25 in.)
Fold (F)	**7.0 mm** (0.27 in.)	**7.0 mm** (0.27 in.)	**7.0 mm** (0.27 in.)	**6.35 mm** (0.25 in.)

Note: All margins have a tolerance of ± 0.3 mm (± 0.01 in.).



Pre-print Restricted Area

The following illustration shows the pre-print restricted area for the enhanced page turn passbook printer only.



The following restrictions apply to the pre-print area:

In the area for edge detection, avoid all printing 2mm or wider with relatively non-reflective colours such as dark brown, dark blue, dark grey, or black ink.

The area for bar code and last line detection should contain only the page detect bar code, and ruled lines or background patterns conforming to the following specifications:

Item	Specification
Pre-prints	PCS 0.1 or below (dropout colour)
Penetration of entries from rear of sheet	PCS 0.14 or below
Stain in the sensing area	PCS 0.14 or below

Note: The PCS (print contrast scale) values are measured with the Macbeth PCM-II, spectrum band B900, and conforming to JIS X 9004-1983 (Printing Specifications for Optical Character Recognition).

The width sensor detection area should contain no bar code printing and preferably no pre-printing. However if any printing is required, it should conform to the above specifications.

Magnetic Stripes

A passbook may have either a horizontal magnetic stripe or no magnetic stripe.

The material used to produce magnetic stripes must conform to ISO/DIS8484.

Because the smoothness requirements for magnetic stripes are better than the smoothness requirements of the passbook cover, care and consideration must be given to the method of attaching the stripe to the passbook. Experience suggests that fixing a stripe with adhesive gives a better result than hot stamping. However, different vendors may achieve acceptable results in different ways.

For the enhanced page turn passbook printer, the surface onto which the magnetic stripe is glued must be of woven cloth and coated with resin suitable for thermal offsetting as well as gluing. For thermal offsetting the surface roughness should be 10μ max, and 20μ for gluing (preferably 15μ max for increased adhesive strength of the magnetic stripe).

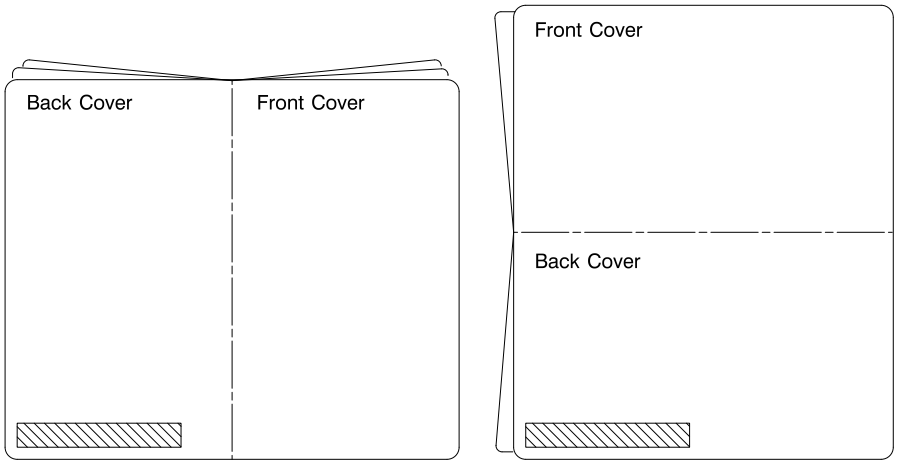
Note: The magnetic stripe must not acquire the smoothness parameters of the cover after attachment.

Location of Horizontal Magnetic Stripes

A horizontal magnetic stripe is one that runs parallel to the printed lines in the passbook, and to the printer entry slot when the passbook is inserted. Horizontal magnetic stripes can be one of three defined standards:

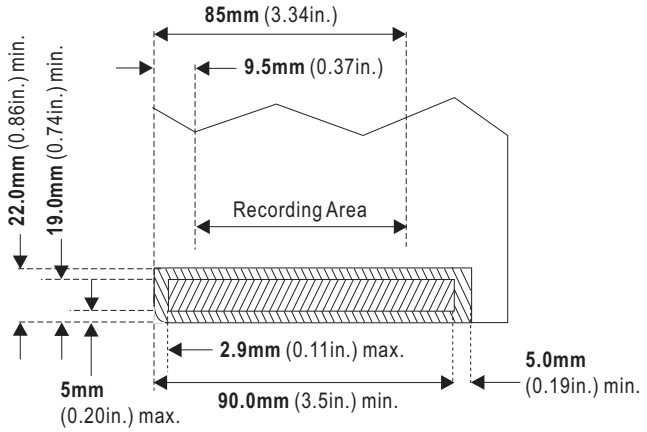
- ISO Track 3
- IBM Track 2
- DIN Track 3

The following illustration shows the approximate acceptable locations for horizontal magnetic stripes on both vertically and horizontally stitched passbooks.

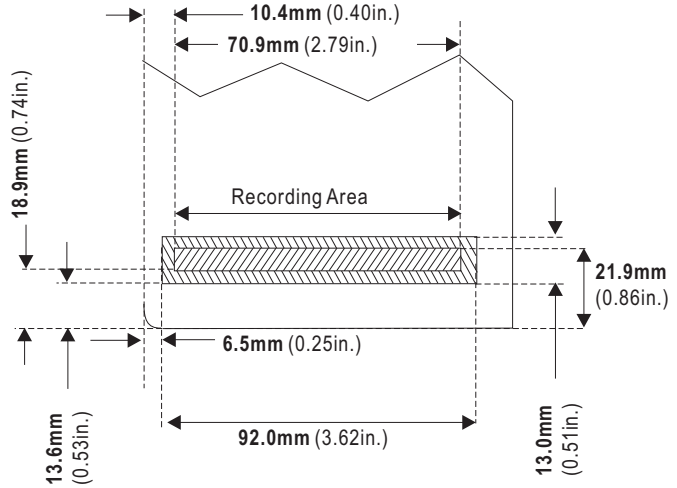


The exact location and smoothness requirements of the magnetic stripes are shown in the following illustrations.

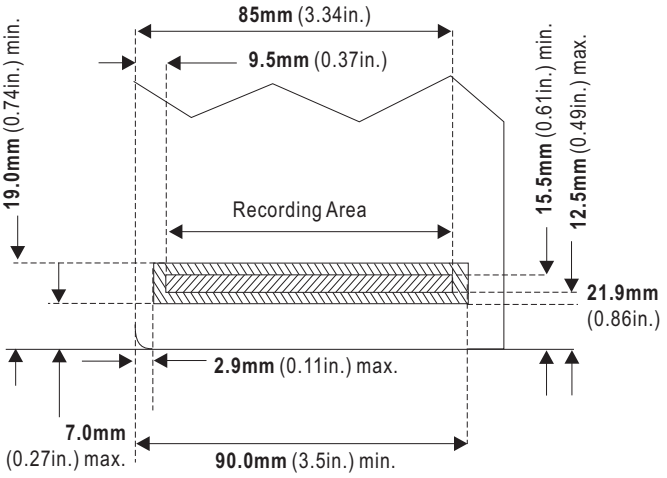
ISO Track 3



IBM Track 2

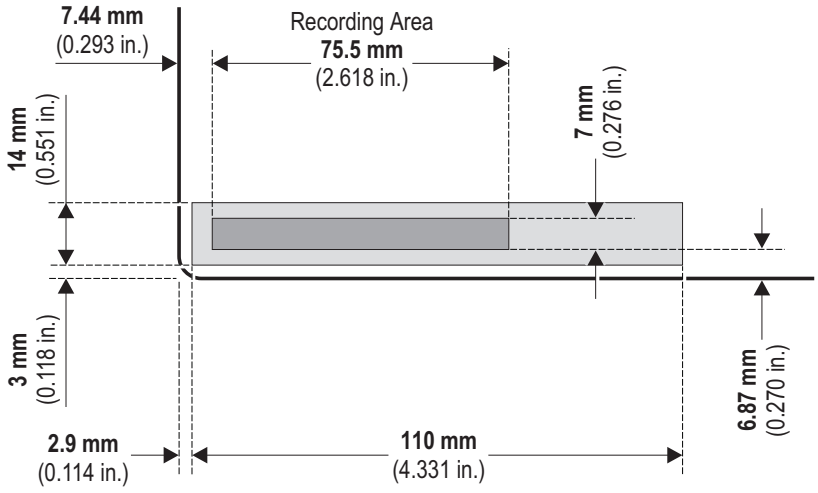


DIN Track 3



max. smoothness : 4 Micrometers
max. smoothness : 1.3 Micrometers
cover smoothness : 2-10 Micrometers

Note: Enhanced page turn passbook printers set at recording density 210 BPI will use ISO track 3 magnetic stripes. However printers changed to either 75 or 105 BPI will use a different magnetic stripe format, as shown below.



Page Detect Marking

A passbook may have no page detect marking system. Alternatively, it may have one of the following types of bar code system at the top left-hand corner of each page:

- Fujitsu (or double horizontal) bar code
- Single horizontal bar code
- IBM bar code (not for USB page turn printer)
- 2-out-of-5 vertical bar code.

Fujitsu Bar Code System

The Fujitsu bar code system uses a four bar binary code system with the most significant bit being the top bar. This system allows up to nine pages to be numbered.

The left-hand half of the bars acts as a 4-bit clocking signal and the right-hand half of the bars indicates the page number. The system operates in reverse in that the code indicates the number of pages left in the passbook, including the page being read. For example if the code reads 3, this indicates that three pages are left including the one being read, this would be page seven of a nine page passbook or page five of a seven page passbook.

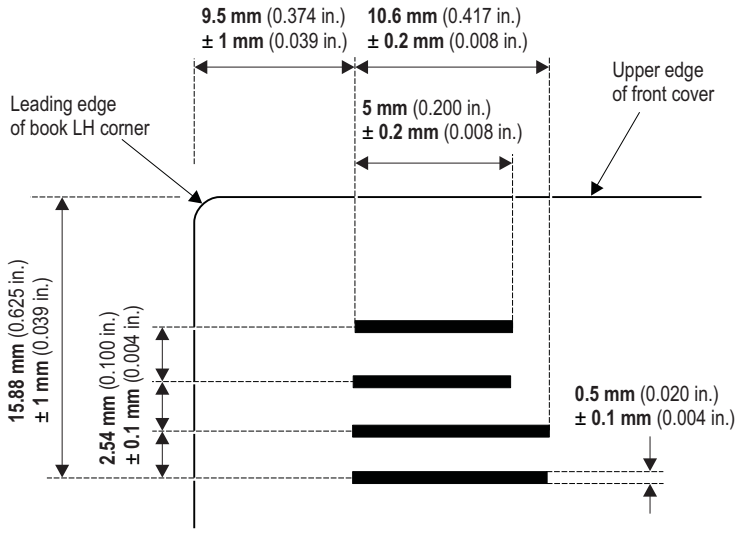
The following are the specifications for the bar codes:

- Marking must be matt black
- Marking must be opaque to infrared at wavelengths between 680 nm and 1150 nm
- Marking must reflect less than 20% infrared
- Background must reflect more than 60% infrared

- Distance between bars: **2.54 mm ± 0.1 mm** (0.1 in. ± 0.004 in.) minimum
- Bar thickness: **0.5 mm** + **0.1 mm -0.0 mm**
  (0.020 in. +0.004 in. -0.0 in.)
- Bar length:
  - Half bar: **5 mm ± 0.2 mm** (0.197 in. ± 0.008 in.)
  - Full bar: **10.6 mm ± 0.2 mm** (0.417 in. ± 0.008 in.).

Note: Infrared reflection values are measured using a Macbeth PCM11 Print Contrast Meter.

The following illustrations show the dimensions and location for the Fujitsu bar codes.



Page	1	2	3	4	5	6	7	8	9
Pattern									

Note: There must be at least 12.7 mm (0.5 in.) between the bar code and the first print line for correct sensing of the bar code.

Single Horizontal Bar Code System

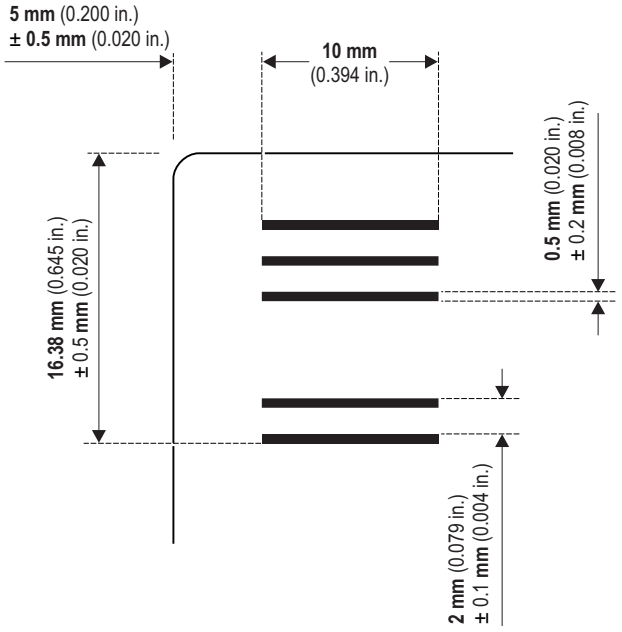
The single horizontal bar code system uses a seven bar binary code system, allowing up to nine pages to be numbered.

The following are the specifications for the bar codes:

- Marking must be matt black
- Marking must be opaque to infrared at wavelengths between 680 nm and 1150 nm
- Marking must reflect less than 20% infrared

- Background must reflect more than 60% infrared
- Distance between bars: **2.00 mm ± 0.1 mm** (0.07 in. ± 0.004 in.) minimum
- Bar thickness: **0.5 mm** + **0.2 mm - 0.0 mm** (0.020 in. + 0.007in. - 0.0 in.)
- Bar length: **10 mm ± 0.2 mm** (0.394 in. ± 0.008 in.).

Note: Infrared reflection values are measured using a Macbeth PCM11 Print Contrast Meter.



Page	1	2	3	4	5	6	7	8	9
Pattern									

Note: There must be at least **12.7 mm** (0.5 in.) between the bar code and the first print line for correct sensing of the bar code.

IBM Bar Code System

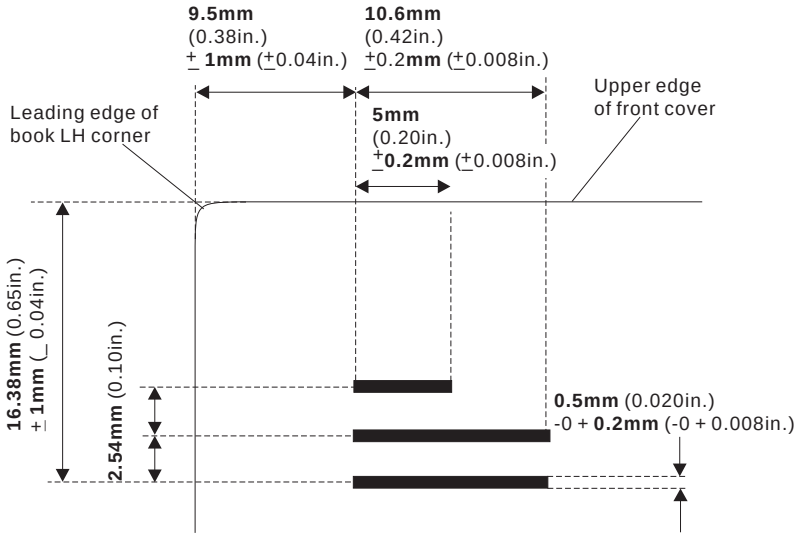
The IBM bar code system uses a three bar binary code system with the most significant bit being the top bar. The IBM bar code allows up to seven pages to be numbered.

The left-hand half of the bars acts as a 3-bit clocking signal and the right-hand half of the bars indicates the page number. The system operates in reverse in that the code indicates the number of pages left in the passbook, including the page being read. For example if the code reads 3, this indicates that three pages are left including the one being read, this would be page five of a seven page passbook.

The following are the specifications for the bar codes:

- Marking must be matt black
- Marking must be opaque to infrared at wavelengths between 680 nm and 1150 nm
- Marking must reflect less than 20% infrared
- Background must reflect more than 60% infrared
- Distance between bars: **2.54 mm ± 0.1 mm**
  (0.1 in. ± 0.004 in.) minimum
- Bar thickness: **0.5 mm + 0.2 mm - 0.0 mm**
  (0.020 in. + 0.008in -0.000 in.)
- Bar length:
  - Half bar: **5 mm ± 0.2 mm** (0.197 in. ± 0.008 in.)
  - Full bar: **10.6 mm ± 0.2 mm** (0.417 in. ± 0.008 in.).

Note: Infrared reflection values are measured using a Macbeth PCM11 Print Contrast Meter.



Page numbers

Page	Mark	Page	Mark
7		2	
6		1	
5			

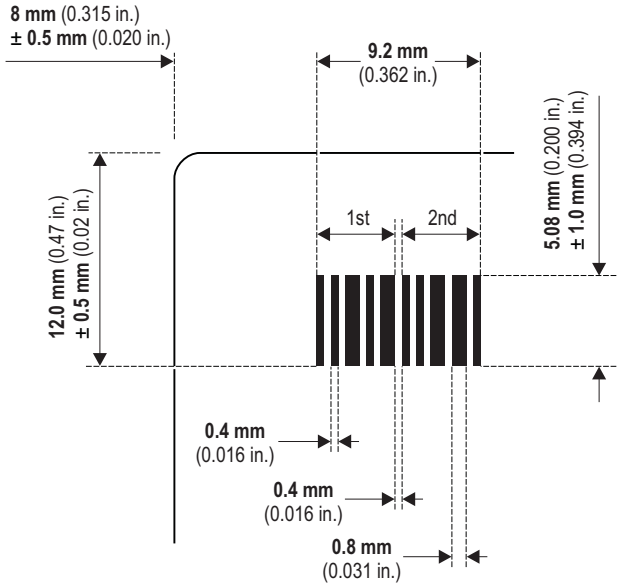
2-out-of-5 Vertical Bar Code System

The 2-out-of-5 vertical bar code system uses 2 blocks of bars, each with 5 bars. The system allows up to nine pages to be numbered.

The following are the specifications for the bar codes:

- Marking must be matt black
- Marking must be opaque to infrared at wavelengths between 680 nm and 1150 nm
- Marking must reflect less than 20% infrared
- Background must reflect more than 60% infrared
- Distance between bars: **2.54 mm ± 0.1 mm** (0.1 in. ± 0.004 in.) minimum
- Bar thickness:
  - Thick bar: **0.8 mm** (0.031 in.)
  - Thin bar: **0.4 mm** (0.015 in.)
- Bar height: **5.08 mm +0.1 mm - 0.0 mm**
  (0.02 in. + 0.0039 in. -0.0in.)

Note: Infrared reflection values are measured using a Macbeth PCM11 Print Contrast Meter.



Code	V1	V2	V3	V4	V5	V6	V7	V8	V9	V0
Pattern										

Page	(0)	1	2	3	4	5	6	7	8	9	(10)
Bar coding	-	V2V9	V2V8	V2V7	V2V6	V2V5	V2V4	V2V3	V2V2	V2V1	-

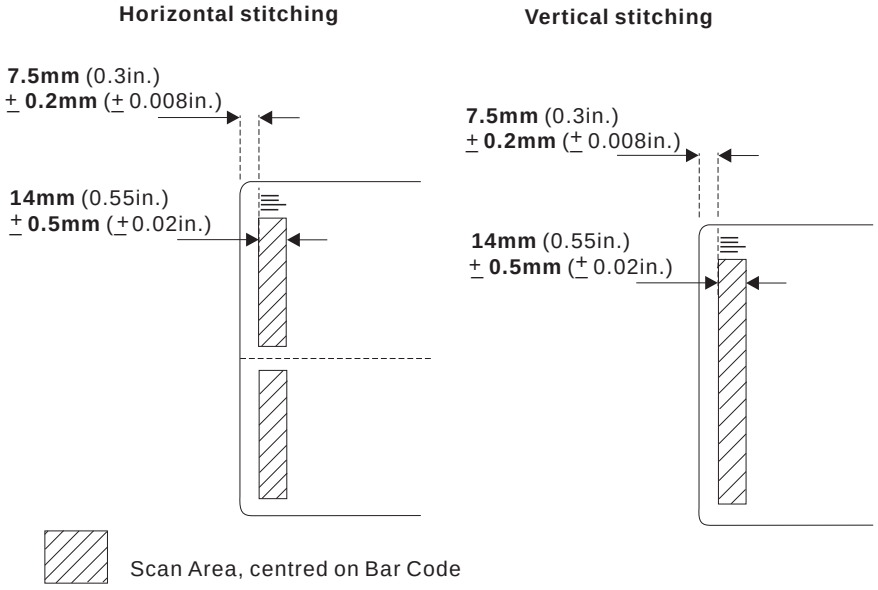
Optical Last Line Detect

To detect the last printed line in a passbook, the printer scans a section of the print area for any printed characters. It detects normal print and needs no special bar characters.

Statement/Passbook and Page Turn Passbook Printers

The following illustration shows the scan area for optical last line detect on the statement/passbook and the page turn passbook printers. The scan area is normally, but not necessarily, the date field.

The print to be detected must have a PCS value of 0.4 or greater, and pre-printed information in the scan area must reflect greater than 60% infrared at wavelengths between 680 nm and 1150 nm.

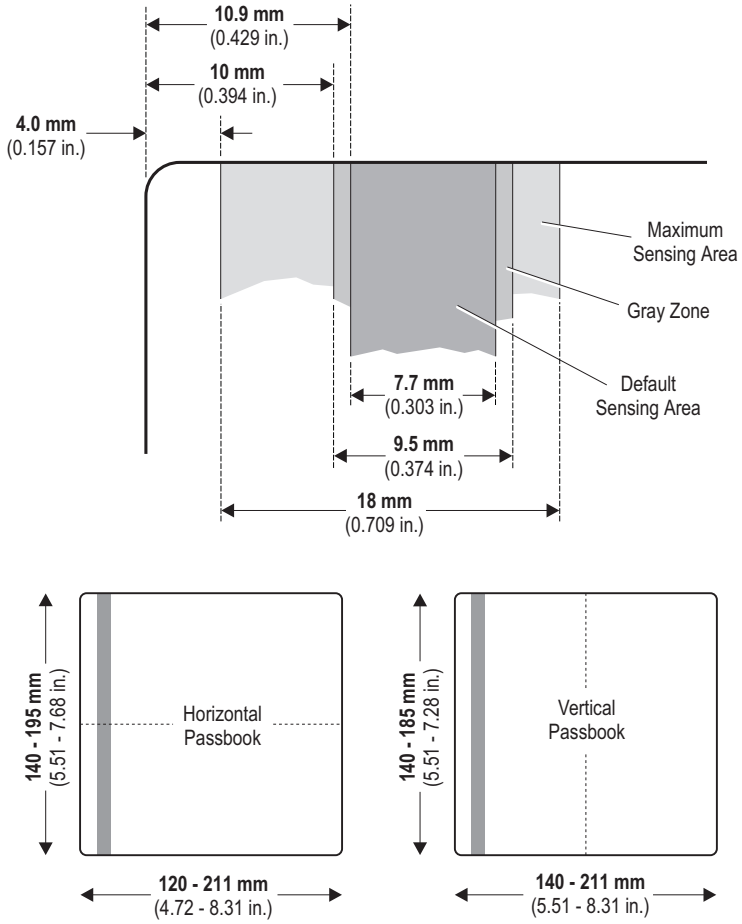


Enhanced Page Turn Passbook Printer

The following illustration shows the scan area for optical last line detect on the enhanced page turn passbook printers. The scan area is the date field. A single character is detected, however 2 or more valid characters must be present in the print line to be detected, up to a maximum of 6 characters, at least 4 of which must be numerals. Continuous printed hyphens, full-stops, or commas are not valid characters.

The print to be detected must have a PCS value of 0.35 or greater, and pre-printed information in the scan area must reflect greater than 60% infrared at wavelengths between 680 nm and 1150 nm.

Note: There must be at least 12.7 mm (0.5 in.) between the bar code and the first print line for correct sensing of the bar code.

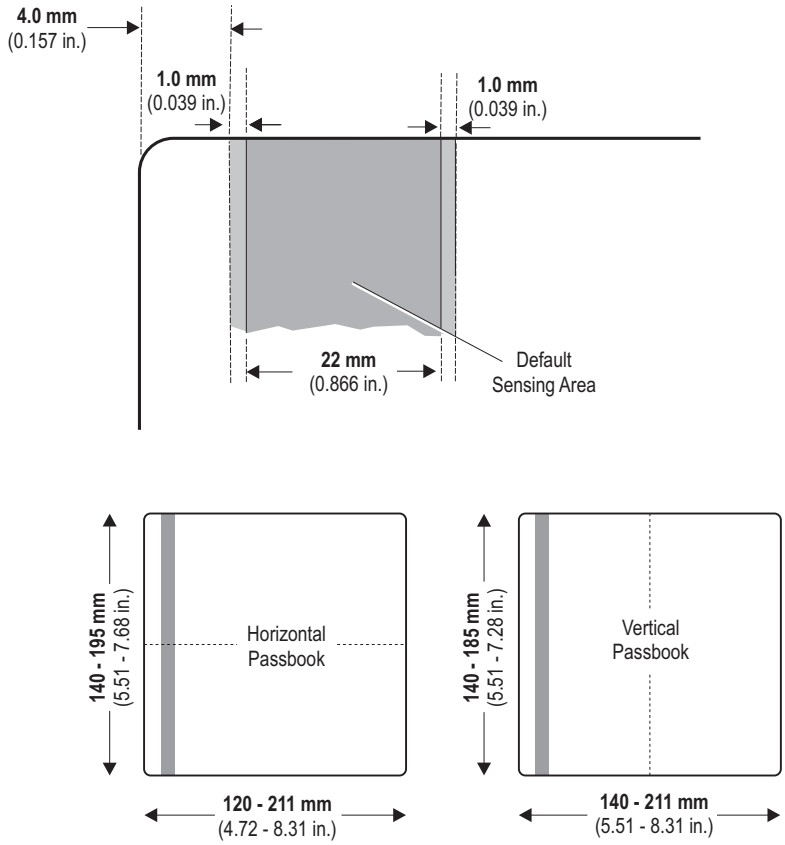


Note: The grey zone exists due to tolerances in the dimensions of the sensing area. Non-dropout coloured pre-printing must be avoided in the entire sensing area, including the grey zone.

USB Page Turn Passbook Printer

The following illustration shows the scan area for optical last line detect on the USB page turn passbook printers. A single character is detected, however 2 or more valid

characters must be present in the print line to be detected. Continuous printed hyphens, full-stops, or commas are not valid characters.



The print to be detected must have a PCS value of 0.35 or greater and there must be at least **5.08 mm** (0.2 in.) between the bar code and the first print line for correct sensing of the bar code.

Note: The grey zone exists due to tolerances in the dimensions of the sensing area. Non-dropout coloured pre-printing must be avoided in the entire sensing area, including within the grey zone.

TICKET PRINTER

The ticket printer provides 2-colour ticket printing of perforated fan folded tickets in a stack.

Paper Specifications

The paper used in the ticket printer must conform to the following specifications:

- Ticket weight: **102 gms/m^2** (27#) Average
- Ticket thickness: **0.114 mm - 0.127 mm** (0.0045 in. - 0.0050 in.)
- Ticket length: **156 mm** (6.14 in.) +/- **1 mm** (0.04 in.)
  (between perforations)
- Ticket width: **65 mm** (2.56 in.) +/- **1 mm** (0.04 in.)
- Brightness: 89% Ave. (84% Min.) Test method TAPPI T-525
- Printing Colours: Mono7chrome; red and black; blue and black or green and black
- Quantities: Fan-folded stacks of 200, 300, 400 and 600 tickets

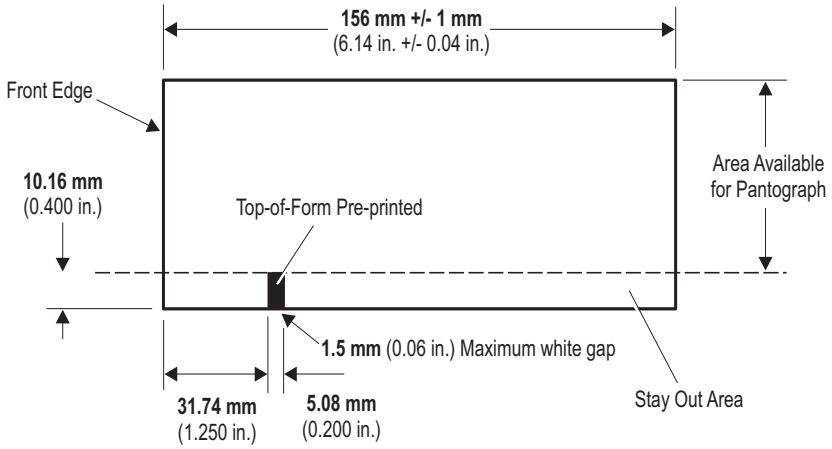
Bar Code Specifications

- Standard Barcode: Interleaved. 2 of 5
- Minimum Width: **0.5 mm** - **0.6 mm** (0.020 in. - 0.024 in.)
- W:N Ratio: 3:1 recommended,
  with 12:4 wide bar width (dots): narrow bar width (dots)
- # of Characters: 6 minimum/18 maximum
- Symbol Contrast Value: 70% minimum

Applicable Standards: ANSI X3.182 gsa-p0038.001.01

Black Bar Dot Position and Presentation Scheme

Location of Black Dot/Top of Form indicator on back of ticket.



All graphics preprinted on the ticket must be in thermal paper compatible ink.

The back of the ticket is used for the Black Dot/Top of Form indicator. For the printer to sense when a ticket has been indexed to the printing position, a Black Dot/Top of Form sensor is needed. It must be printed in black, thermal paper compatible, infrared readable ink. The 10.16 mm area in line with the Black Dot/Top of Form indicator and the ticket edge (keep-out zone) must remain clear, as the Ticket Out Sensor will read that area while the ticket is printed and presented. The remaining area on the back of the ticket may be used for rules and disclaimer.

DEPOSITORIES

Programmable Printing Depository

The PPD uses a single Ink Jet Print Head Cartridge and can be configured with or without an Envelope Dispenser. The PPD can be upgraded to use the Enhanced Capacity Print Head Cartridge, used in the EDDO.

Envelope Dispenser

Envelopes are available for use in the Envelope Dispenser. See Envelope Specifications section for details.

Document Processing Module

The DPM uses two or three Ink Jet Print Head Cartridges. The DPM may also be configured with a Magnetic Ink Encoder which uses an Encoder Ribbon.

Business Depository

Tamper Evident Bags can be used in the NCR 5285 and 5897 Business Depositories. These easy-to-use, disposable bags measuring 22.9 cm x 30.5 cm (9 in. x 12 in.) save time spent retrieving night drop bags. Twin heat seals and pre-printed side seals eliminate the possibility of removing the contents and resealing the bag. The bag is constructed of a 3-layer polyethylene film and attempted tampering causes the words ‘tamper evident’ to appear across the adhesive seal.

For additional security the bags are consecutively numbered and a removable receipt stub lists the bag number and deposit date/amount.

The clear bag allows easy verification of its contents, however the contents of the white bag cannot be verified until it is opened. The bags are available in 100-bag cartons.

Envelope Depository with Dispenser Option

The EDDO uses an Ink Jet Print Head Cartridge, and can be configured with or without an Envelope Dispenser.

USB Envelope Depository and Dispenser

Similar in design to the EDDO, the USB version of the Envelope Depository can configured alone or with an Envelope Dispenser.

Consumable Life Expectancy

Ink Jet Printhead Cartridges:

- PPD cartridge should be replaced every 1 to 2 months, depending on usage, or when the State of Health message “Nearly End Of Life, Replace Soon” or “End Of Life Reached, Replace Now” is displayed.
- The EDDO, upgraded PPD or USB depository cartridge should be replaced every 6 months, depending on usage, or when the State of Health message “Nearly End Of Life, Replace Soon” or “End Of Life Reached, Replace Now” is displayed.
- The DPM printhead cartridges should be replaced every 2 to 3 months, depending on usage, or when the State of Health message “Nearly End Of Life, Replace Soon” or “End Of Life Reached, Replace Now” is displayed.

Encoder Ribbon:

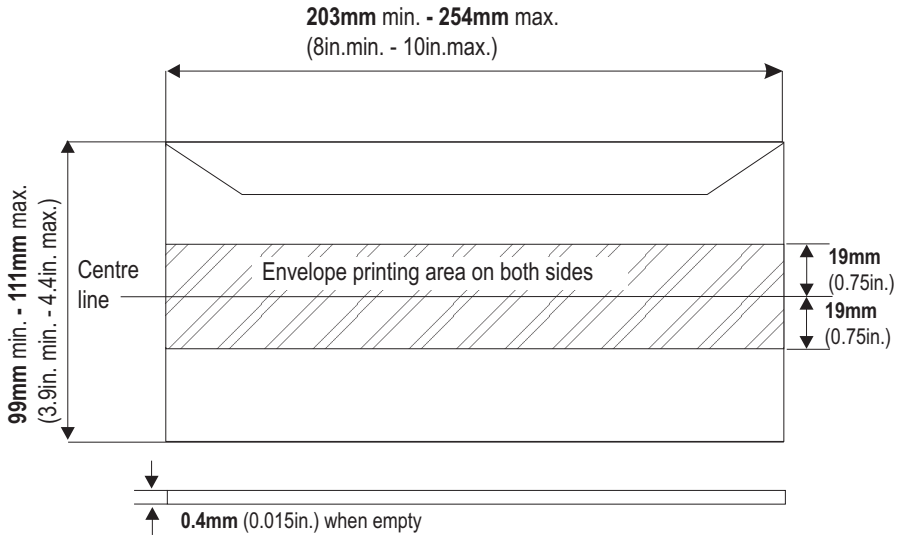
- The DPM encoder ribbon should print approximately 6700 documents. It should be replaced when the State of Health message “Nearly End Of Life, Replace Soon” or “End Of Life Reached, Replace Now”, is displayed.

ENVELOPE SPECIFICATIONS

The following defines the characteristics of envelopes which can be successfully accepted and printed on by the ATM depository.

Dimensions

The following illustration shows the maximum and minimum dimensions for envelopes which are accepted and dispensed by the ATM depository/dispenser:



Material

The paper which is used to produce the envelopes must conform to the following specifications:

- Paper weight - **77** to **100 gms/m^2**
- Burst strength - **1.34** to **3.8 kg/cm^2**
- Percentage of filler material - <= 20%
- Sizing COBB - **28 gms/^{2}**
- Smoothness Bendsten - **450 mls/min**
- pH value - 5 to 7.

Construction

The following are the recommended construction details for envelopes:

- Flap on the longest side
- Self-seal flap with adhesive along complete length of flap

- No apertures or holes are permissible within a central band **54 mm** (2.1 in.) wide along the complete length of the envelope.

Note: Moisture dependent seals are not recommended for ATM use.

Colour

The preferred background colour of the media within the print area is white. However, alternatives are acceptable, provided characters can be recognised when produced by black or purple inks.

There are no restrictions on the colour used for pre-printing on the envelopes outside the depository printing area. However, when pre-printing is within the printing area, consideration should be given to ensure that characters printed by the depository can be recognised on top of any pre-printing.

CHECK PROCESSORS

Check Processors are also known as Cheque Processing Modules (CPM) or Cheque Acceptors. This category includes the following modules: CPM 1, 2, 3 and 4; Scalable Cheque Processing Module and Scalable Deposit Module.

CPM Type 1

The Type 1 Check Processor uses a customised front stamp, with a black ink roller and an ink jet print head cartridge.

Consumable Life Expectancy

Ink Jet Printhead Cartridge:

The printhead cartridge used in the check processor should be replaced whenever the terminal's error reporting system indicates that it is running low or has run out. This will be approximately every 6 months for the cartridge used in the Personas 78, and every 3 months for the cartridge used in other terminals, depending on usage. The average life span of a cartridge is 600,000 normal characters or 250,000 bold face characters.

Black Ink Roller:

The ink roller used in the check processor should be replaced whenever the terminal's error reporting system indicates that it is running low or has run out. This will be approximately every 3 months, depending on usage. The average life span of a roller is 20,000 documents.

CPM Types 2, 3 and 4

The Type 2, Type 3 and Type 4 Check Processors (type 4 is also known as the iTRAN 1000) use either a Single-line Endorser Unit or a Multi-line Endorser Unit, each having its own ribbon cassette.

Consumable Life Expectancy

The ribbon cassette should be replaced whenever the terminal's error reporting system indicates that it is nearing or has reached the end of its life.

The average life expectancy of the purple cassette is approximately 3 million characters and NCR recommends that this should be replaced at least once every year, depending on usage.

The average life expectancy of the black cassette is approximately 1.5 million characters and NCR recommends that this should be replaced at least once every 6 months, depending on usage.

Scalable Check Processor

The Scalable Check Processor (SCPM) uses a Single-line Endorser Unit.

Consumable Life Expectancy

The ribbon cassette should be replaced whenever the ATM's error reporting system indicates that it is nearing or has reached the end of its life. The average life expectancy of the cassette is approximately 4 million characters and NCR recommends that this should be replaced at least once every year, depending on usage.

Scalable Deposit Module

The Scalable Deposit Modules (SDM1 and SDM2) use single line endorsers. The SDM1 uses the same endorser ribbon cassette as the SCPM, the SDM2 uses a different one.

CURRENCY DISPENSER COUPONS

This section provides the paper specification for coupons to be used in the currency dispenser. This specification should also be used when describing the requirements for other media to be used in the currency dispenser, such as traveller's cheques or vouchers.

Media Requirements

Dimensions for S1 Dispenser

- Width
  - minimum **65 mm** (2.56 in.)
  - maximum **95 mm** (3.74 in.)
- Length
  - minimum **120 mm** (4.72 in.)
  - maximum **168 mm** (6.61 in.) for use in standard cassette
  - maximum **173 mm** (6.81 in.) for use in polycarbonate wide body cassette
  - maximum **178 mm** (7.01 in.) for use in metal wide body cassette.

Dimensions for S2 Dispenser

- Width
  - minimum **62 mm** (2.44 in.)
  - maximum **85 mm** (3.35 in.)
- Length
  - minimum **120 mm** (4.72 in.)
  - maximum **177 mm** (6.97 in.)

Other Requirements

- Thickness (including any inking)
  - minimum **0.06 mm** (0.002 in.)
  - maximum **0.26 mm** (0.01 in.)
- Thickness of intaglio inking
  - maximum **0.075 mm** (0.003 in.)
- Tolerance on bill thickness $\pm$ 10%.
- Paper Specification
- Grammage
  - minimum **65 g/m2** (including inking)
  - maximum **95 g/m2** (including inking)

- Thickness (allowing for inking)
  - minimum **0.06 mm** (0.002 in.)
  - maximum **0.185 mm** (0.007 in.)
- Bendsten roughness
  - minimum **200 ml**/min
  - maximum **1200 ml**/min
- Taber stiffness
  - minimum **1.2 g cm** (machined direction)
  - minimum **0.8 g cm** (cross direction)
  - maximum **4.0 g cm** (machined direction)
  - maximum **2.4 g cm** (cross direction)
- Bendsten porosity
  - maximum **150 ml**/min
- Single tear
  - minimum **230 mN** (machined direction)
  - minimum **270 mN** (cross direction)
- Contrast ratio opacity (including inking)
  - minimum **79%**
  - maximum **93%.**

Note: The process of manufacturing paper aligns the majority of fibres in the direction the paper passes through the rollers. This is known as the 'machined direction'. The direction perpendicular to this is known as the 'cross direction'.

REVISION RECORD

Date	Revision	Page	Description of Change
February 1997	A01	All	New publication.
August 1997	A02	2-2	Contact numbers updated.
		2-4	Design format for receipt paper updated.
April 1998	A03	2-3	Addition of dot-matrix receipt printer printer specification.
January 2001	A04	v	Additional comments in Purpose & Audience.
		1-1	Additional comments in Important Note to User.
		2-1	Systemedia Group contact numbers updated.
		2-3	Updated receipt printer section with information for Ci20, 5303, 5305, 5878 and 7401-K580.
		2-10	Updated statement printer section with information for Ci20, Personas 72, Convenience Banking terminals and NCR 4725 Multi-function terminal.
		2-20	Added section for Cheque Processing Module.
January 2002	A05	2-10 & 2-13	Added reference to Personas 78 Self Service terminal.
October 2002	A06	2-15 & Chap 3	Added specifications for Enhanced Page Turn Passbook printer.
September 2003	B	Chap 2	Updated contact details, corrected part number for PTP printer ribbon cassette, revised depositories section adding Business Deposit and Envelopes, added Cheque and Cash Acceptor Modules.
		Chap 4	Amended envelope width dimensions.
August 2004	C	2-2	Contact details updated.
		2-5 & 6	Graphics receipt printer paper roll: diameter amended.
		2-20 & 21	Depositories inkjet printheads: life expectancy for PPD amended and addtion of EDDO details.
		2-22	CPM1 printhead cartridge details amended for Personas 78.
May 2006	D	2-20 & 21	Amended depositories overivew and updated part number for PPD inkjet cartridge.
August 2006	E	2-11 to 14	Addition of Personas M Series Print and Select terminals printer consumables.
December 2007	F	Chap 2	Addition of USB Receipt and Journal printers and USB Envelope Depository supplies.
January 2008	G	2-23	Addition of SCPM ribbon cassette.
April 2009	H	Chap 2	Addition of receipt pre-print exclusion zone and black mark dimensions and statement print exclusion zone.
November 2009	J	Chap 2	Added specifications for Ticket Printer.

Date	Revision	Page	Description of Change
April 2010	K	Chap 2	Added black mark and printable area information for Branch Assist 18.
September 2010	L	Chap 2	Change from Systemedia to NCR Consumables and update to contact details. Addition of SDM ribbon cassette. Updates to USB receipt and USB statement printers paper stock numbers.
		Chap 3	Addition of USB page turn passbook printer.
March 2011	M	Chap 2	Addition of BA18 buncher printer.
		Chap 3	New ticket printer chapter.
November 2011	N	All	Re-format to use new document template. Restructure into one file book. Removed all stock numbers, replaced with reference to NCR Direct for ordering.
June 2013	P	8-17	Addition of USB Fanfold Statement printer.
December 2013	Q	3	Dual Roll Printer Paper Roll Dia added.
June 2017	R	3	CX110 and Loop Receipt Printer Paper Roll specification added. Change to Iconex in How to Order section.
October 2017	S	3	Added 2018, 2019 and Doune Printer requirements.
March 2019	T	2	Added IPS contact details for ordering in MEA region.