Technical Specification

Thermal label/receipt material

For use with Xs Series range of thermal printers

Description

General

This section defines the specification for thermal labels used in the thermal printers and outlines the base material guidelines and other parameters to ensure efficient machine operation.

The quality of thermal paper and pre-printing inks used for labels are important to ensure that the maximum life from the printhead mechanism is obtained, together with a good quality printed image on the label. The use of incorrect inks and paper will invalidate any warranty on the printhead.

For details of label dimensions, formats, etc., see the separate format specification sheets.

The information contained in this label material specification represents the current position. This specification is subject to regular review, and the contents may be updated as improvements in materials occur.

Face paper, backing paper and ink specification

The following specification applies to both uncoated and coated thermal paper materials.

The use of materials that do not meet this specification will affect the warranty of the printer.

The combined effect of any pre-printing on the face paper and backing paper must not exceed the specified thickness and opacity limits.

Opacity measurements are made using EEL opacimeter to BS. ISO 2471-2008.

Specification details

Heat and pressure-sensitive thermal paper, for use with thermal printers.

This specification describes the base material.

Face material characteristics

- Basic weight: 70 to 80 g/m^2
- Thickness: 63 to 90 microns
- Opacity: 85% minimum
- Brightness: 65% minimum
- Surface smoothness: 250 ± 80 seconds – uncoated. 500 seconds min. – coated.

Backing material characteristics

- Weight: 66 ± 4 g/m^2
- Thickness: 53 to 65 microns
- Opacity: 43% + 2% - 43%

Face and backing material combined

- Opacity: 93% + 7% -8%

Label and environment stability

- The image is produced by applying 150°C during 1 second at a pressure of 2.0 kg/cm2.

Adhesive Type

- Permanent freezer, permanent non-freezer and removable to suit application.

Adhesive Release Factor

- 8 g to 15 g per 50 mm test strip with a separation of 300 mm/minute. Alternatively, 0.17N/25 mm (Tesa tape test).

Paper & pre-printing factors

A glass-coated cover protects the printhead elements in the printer. The elements can be damaged in use if incompatible paper and pre-printing inks are used.

The effects of mechanical abrasion and chemical corrosion may cause early failure of individual printing elements by damaging the glass cover.

The following considerations must be given to achieve the maximum printhead life for your Avery Berkel thermal printer.

Abrasion

Care must be taken in the manufacture and storage of printing rolls to keep dust or other particles from the paper surface.

Refer to storage instructions on the following page.

Always specify papers and inks that are free of Calcium (Ca) and Silicon (S).

Varnish

Avery Berkel does not accept liability if suppliers use ultraviolet varnish coatings.

Corrosion

Avery Berkel does not accept liability if label suppliers pre-print labels using inks containing any metallic substances.

We recommend you specify both papers and inks with levels of k+, Na+ and C1 not exceeding more than 800 ppm.

General

Papers selected from the recommended list are chemically compatible with Avery Berkel printers. The ink manufacturer must be consulted to check chemical compatibility of pre-printing inks.

Keep thermal printed areas free of ink.

Box identification
It is recommended that each box is marked with the suppliers's identification and the production date.

Packing/storing instructions

- Store rolls in ambient dry conditions.
- Keep away from heat, dust, damp and cold.
- Keep rolls in original carton until required for use.
- Rotate stocks so that the oldest is used first.

Label quality
To ensure that each batch of labels are of an acceptable standard, it is recommended that the supplier checks for thermal consistency, adhesive bleed, etc. by printing at least a complete label roll through the appropriate Avery Berkel thermal printer.

Recommended thermal paper manufacturers and label types

To obtain the best performance from your Avery Berkel printer, we recommend paper types from the following approved list.

1. **Uncoated papers - typically Jujo papers**

   Thermal economy - AP 62KM - A

   Thermal economy high speed- AP 62KS - H

2. **Coated papers - typically Ricoh papers**

   Top coat economy - Ricoh 130LSB

   Top coat economy high speed - Ricoh 140LSB

These papers offer resistance to plasticizers, oil and water. Good scratch resistance.

General notes for guidance on labels for Xs Series cassette printer

It is important that these notes are read prior to ordering labels.

Roll/label dimensional information

1. Width of backing paper to be label width + 2.3 mm /+ 3 mm

   For example:

   38 mm label + 2.3 /+ 3 = 41 mm

   49 mm label + 2.3 /+ 3 = 52 mm

   Continuous maximum width 60.5 mm
2. The label must be positioned centrally on the backingpaper.
3. Maximum diameter of product roll: 100 mm
4. The internal diameter of the roll core to be: 38 mm + 1 mm - 0 mm
5. Width of roll core = backing paper width + 0 mm /- 6 mm, to be centrally positioned with respect to the label roll.
6. a) Labels are designed with radius corners with a minimum gap separation of 2 mm. (All dimensions assume radius corner designs with a corner curvature of 0.5 mm to 2.5 mm.) See figure 1a.

   b) Butt cut labels may be printed, however, the machine print position may vary, requiring a soft label format to be configured by an Avery Berkel Service Distributor to correct the position of printed data. The minimum corner sensor notch between butt cut labels is 2.0 mm + 0.3 mm /-0 mm with a 4 mm indentation +0.5 mm/0 mm.

   c) To allow for profiled labels, the maximum permissable separation is 35 mm. Refer to figure 1b.

   d) The maximum length of label is 160 mm. The minimum length of label is 40 mm.

Miscellaneous

1. Primarily designed for blank labels, date legends on certain formats may be printed by the machine.
2. Figures 2 and 3 show the general formatting of labels. The wording of legends printed above which indicate fields in the examples are for guidance only.
3. Avery Berkel recommends fixed machine print positions and that barcode areas especially remain free from pre-printed inks.
4. Security slits in labels should be avoided, and no slots should be positioned at the leading or trailing edges of the label.
5. Avery Berkel scales are capable of printing on continuous paper with no gaps required or allowed - provided they are set to 'continuous mode', thereby making economic use of paper where PLU text lengths vary significantly or label formats change between PLUs. This is primarily for use with blank paper. Restrictions due to local Weights and Measures regulations should be checked.
6. Labels to be printed are positioned to peel off label roll as shown in figures 1a, 1b, 4, 5 and 6.

Metrological requirements

1. a) For weighed items, the thermal printer is capable of printing legend symbols for price per unit and unit of weight and currency symbol (ie. £/kg, kg, £).

   b) If required, text legends can be pre-printed (eg. 'weight', 'unit price' and 'price to pay').

   c) For non-weighed items, the thermal printer is capable of printing the price per item per quantity (eg. '£/01' or 'items'), in addition to the currency symbol for 'price to pay'.

Metrological requirements

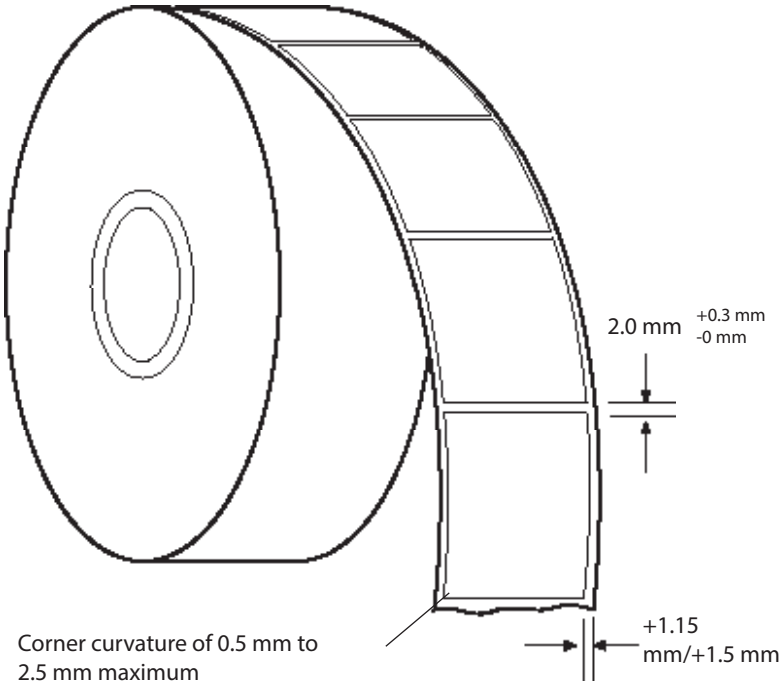
d) If pre-printed legends are required for the weight of items, unit price and computed price field, these must have a minimum height of 2 mm.

e) Label formats may be used for weighed or non-weighed products. The examples shown in the document have 'WEIGHT' marked in the field used to print either Weight or Items. See figure 2.

2. a)For non-weighed operation, non-weighed pre-printed labels are to be used.

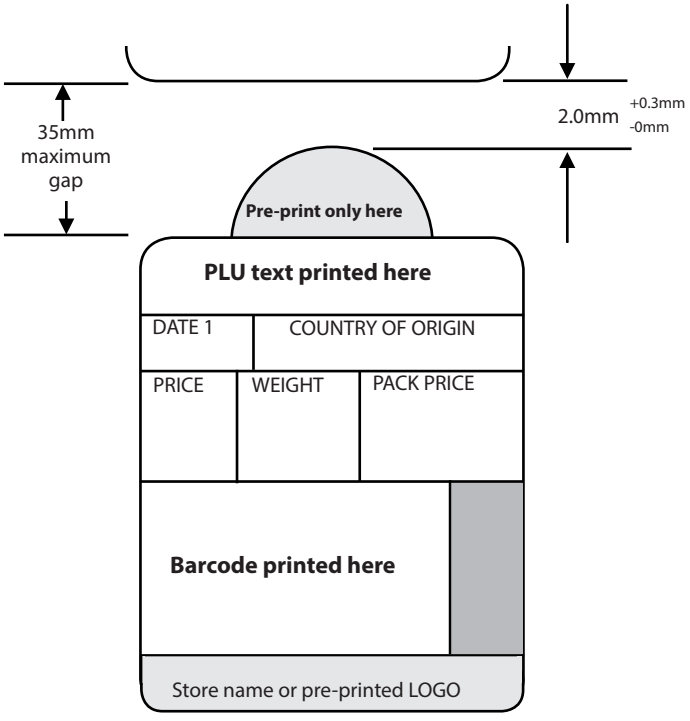
   b) For weighed and non-weighed operations, do not have pre-printed 'weight' or 'items' on labels; use machine-printed symbols.

3. Dependent upon label format, printing may be in one of three directions as shown in figures 4, 5 and 6.



Example of gapped labels

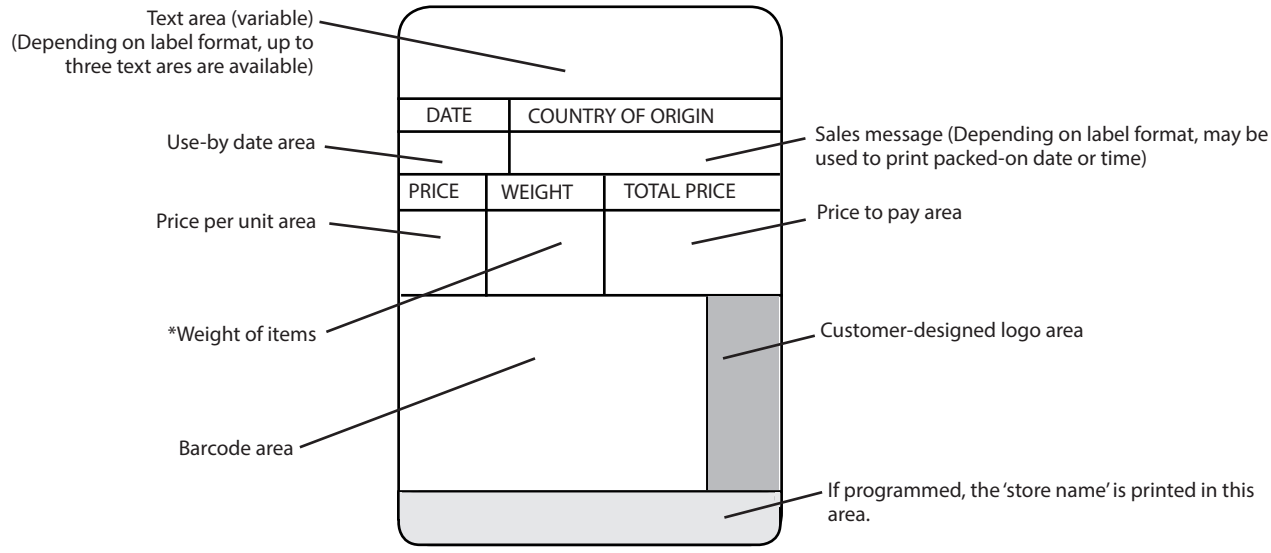
Figure 1a.



Example of profiled label

Figure 1b.

Example label format fields (0° formats shown)



*If machine-printed symbols are used and legend is not pre-printed, this field can print weight or items value.

Figure 2.

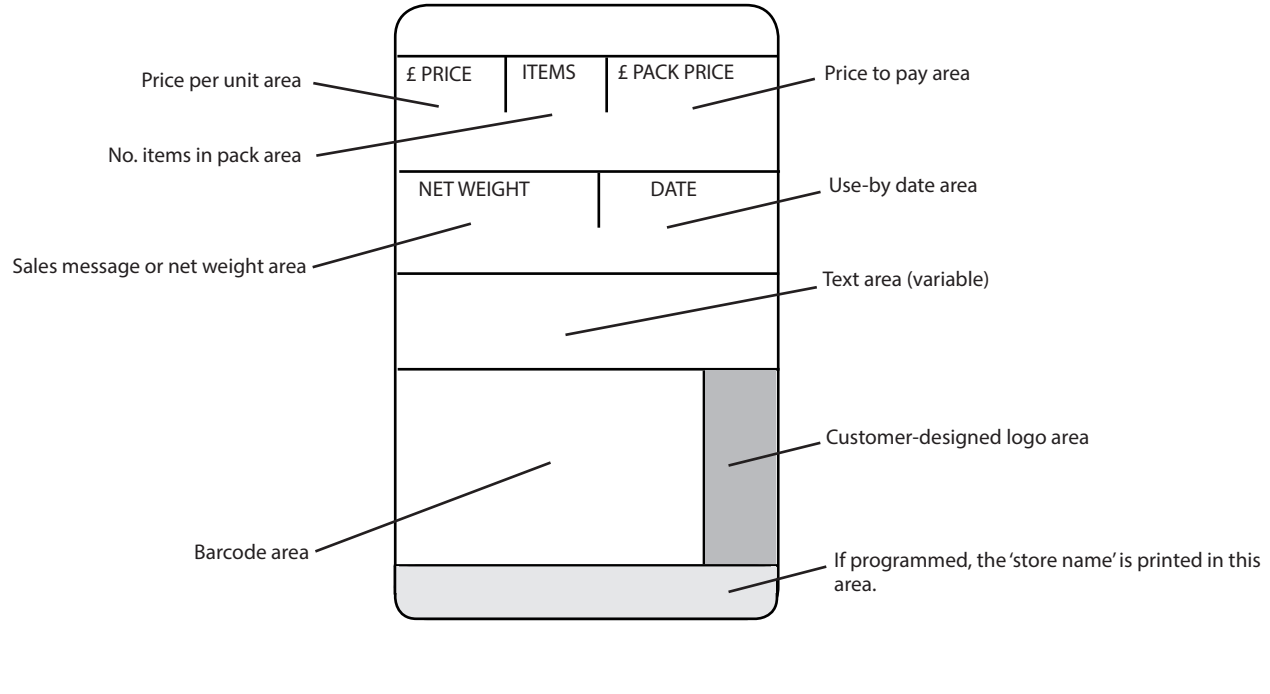


Figure 3.

NOTE 1: The areas marked above (machine printable) to be kept clear from pre-printing at all times.

NOTE 2: The examples above show pre-printed legends for price, weight and total price fields. If using machine printed symbols for both weighed and non-weighed PLU, the weight/item legends should not be pre-printed.

Example of 0° label format

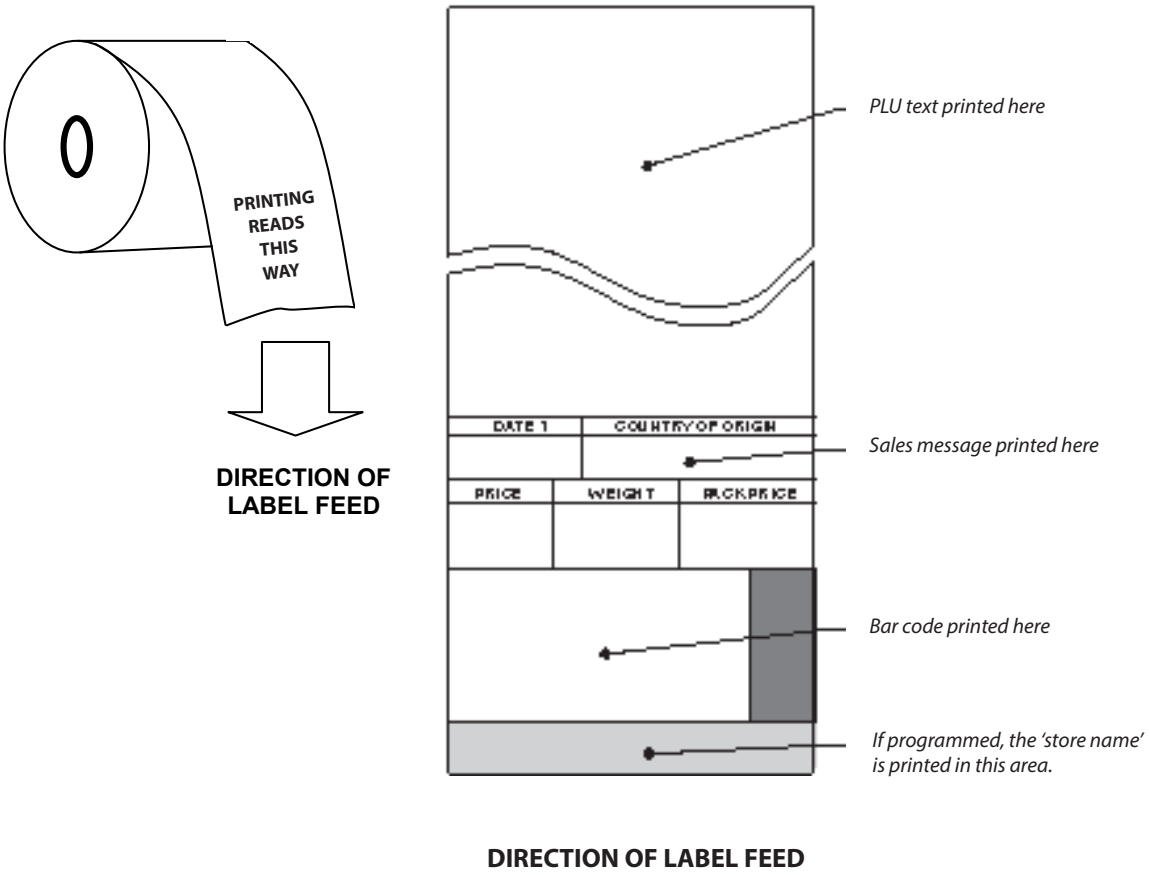
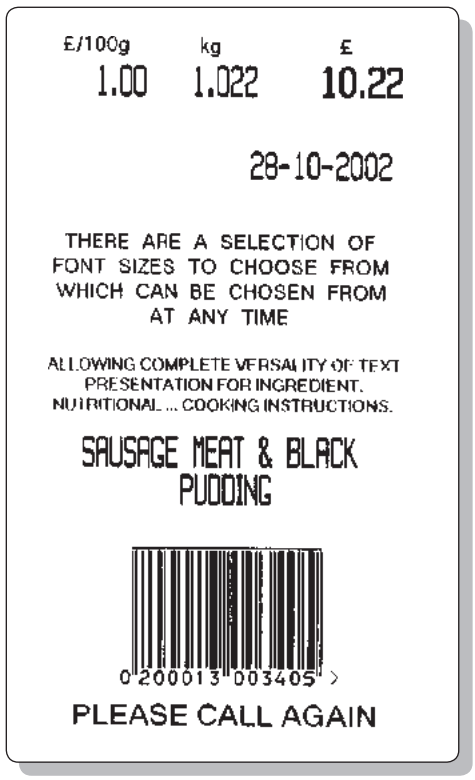


Figure 4.



Example of 90° label format

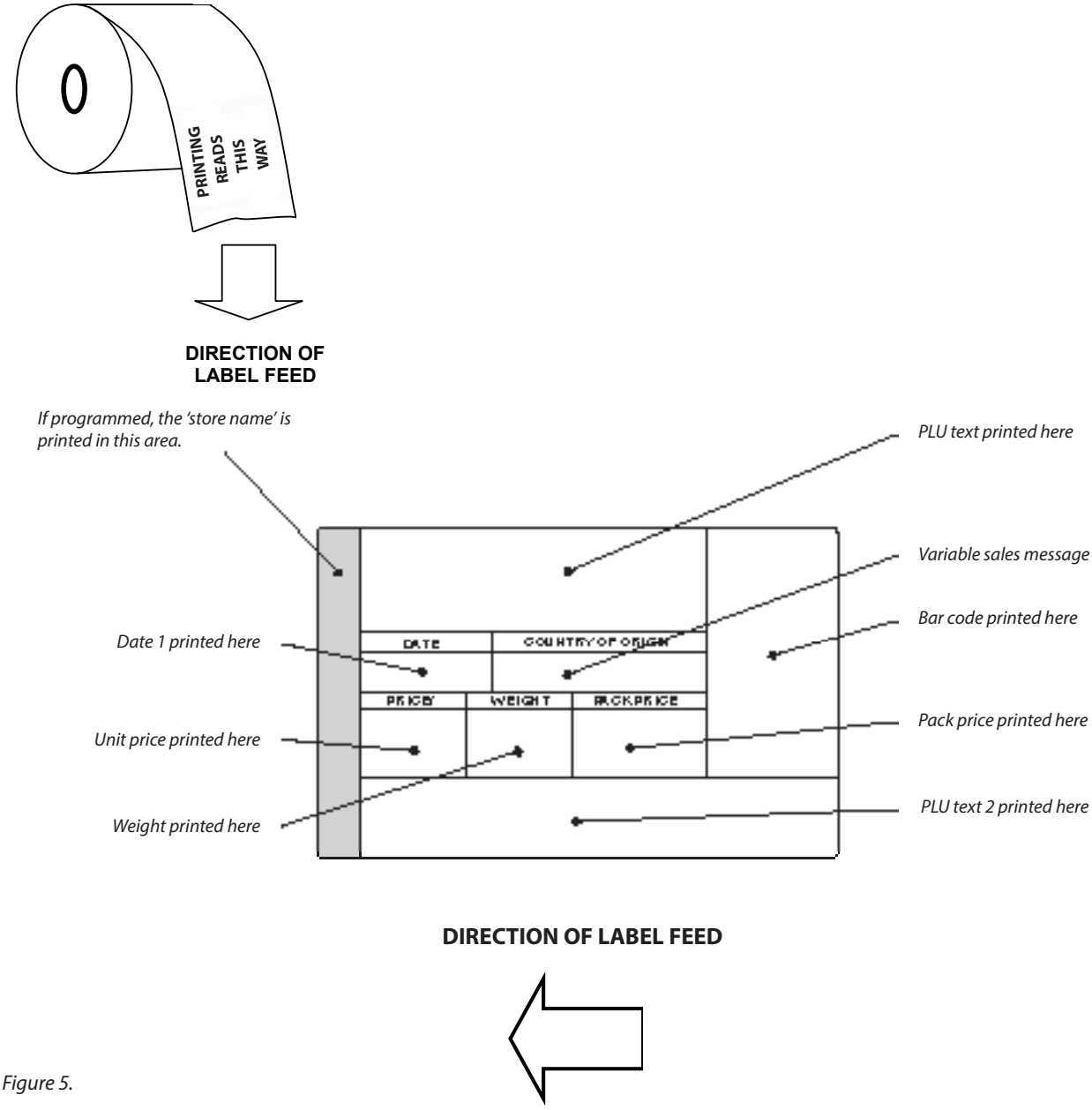
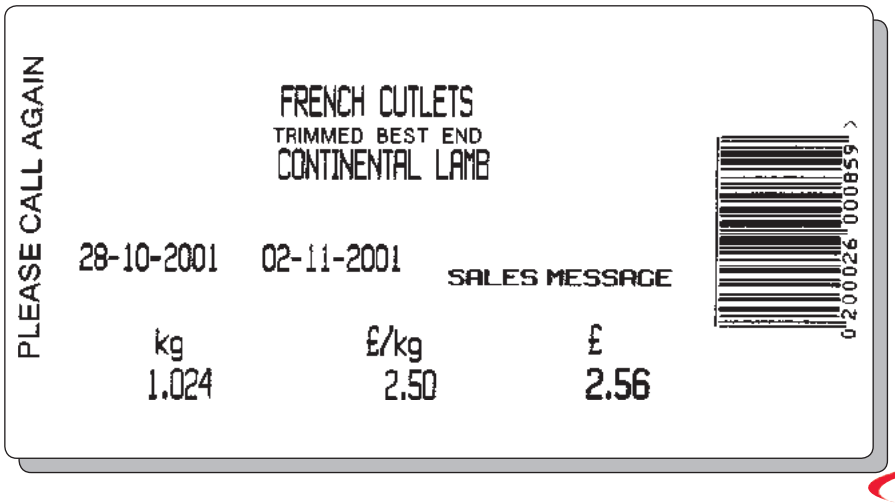


Figure 5.



Example of 180° label format

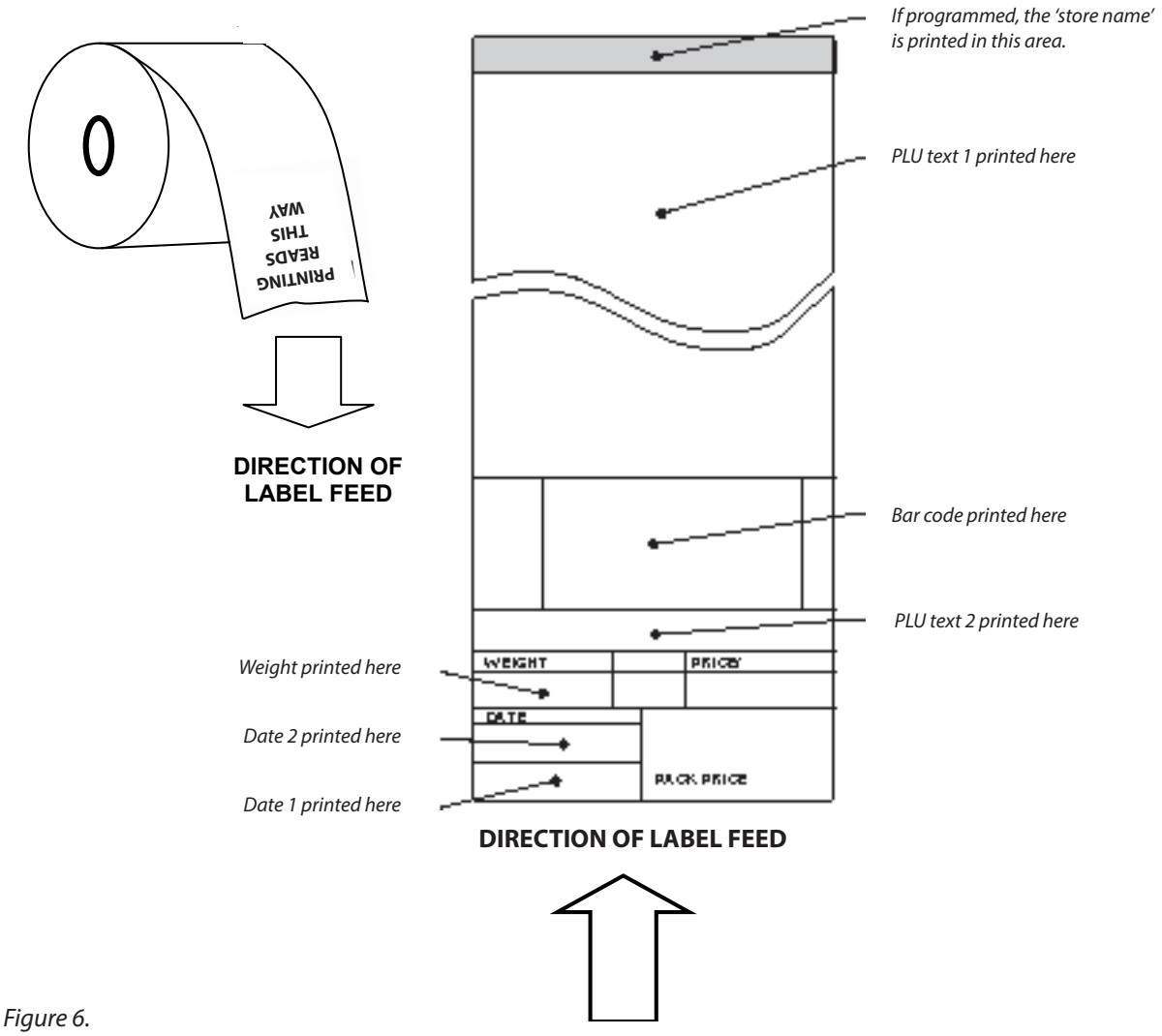


Figure 6.

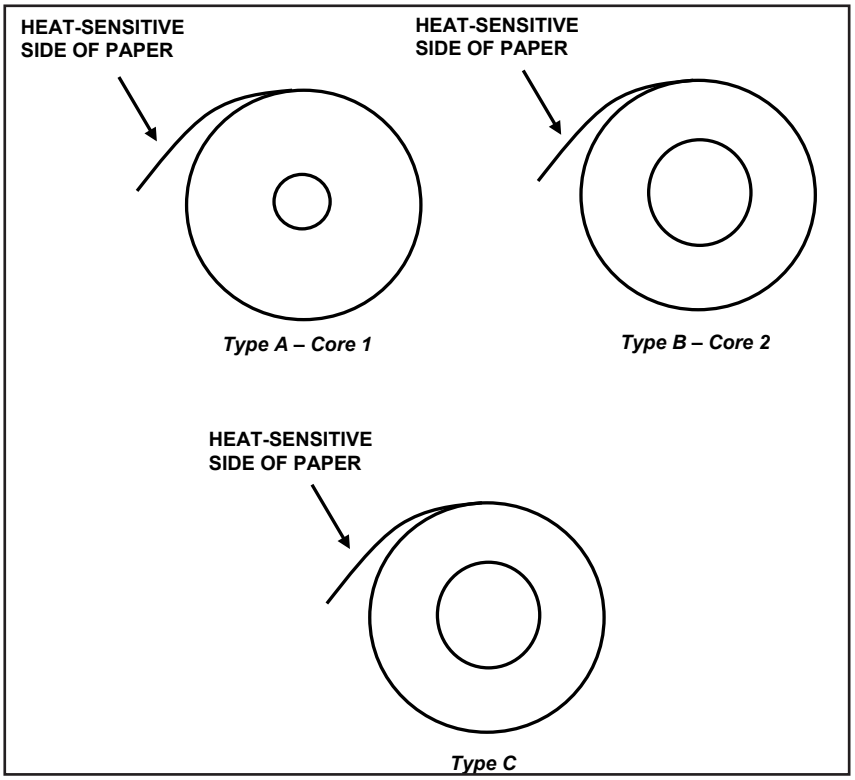
Thermal tally roll (receipt) paper specification
for use with Xs Series range of thermal printers

Description

General
The information contained in this specification is for thermal tally roll paper used in the Avery Berkel Xs Series range of thermal printers and outlines the material details and other parameters to ensure efficient operation.

The quality of thermal paper used for tally rolls is of significant importance in ensuring that the maximum life from the printhead mechanism is obtained, together with a good quality printed receipt or report.

Four types of tally rolls are used by the Avery Berkel Xs. These are dependent upon the printing mechanism and are tally roll types A and B.



Recommended thermal paper manufacturers and receipt types

Tally roll/receipt papers - typically standard fax grade quality.

Khoeler paper - KT 55F18

Jujo paper - AF50KSE

Substance - 55/60g

Roll Type A

Thermal tally receipt roll (small core).

Inside Core Diameter
13 mm +1 mm

Core Width
60 mm +0 mm
-0.5 mm.

Overall Roll Diameter
100 mm maximum.

Paper Width
60 mm maximum.

Paper Length
130 metres approximately.

Roll Type B

Continuous self-adhesive paper.

Inside Core Diameter
38 mm -0 mm

Core Width
60 mm +0 mm
-6 mm.

Overall Roll Diameter
100 mm (maximum).

Paper Width
60 mm maximum.

Paper Length
55 metres approximately.

Roll Type C

Thermal tally receipt roll (large core).

Inside Core Diameter
38 mm -0 mm.

Core Width
60 mm +0 mm
-0.5 mm.

Overall Roll Diameter
100 mm maximum.

Paper Width
60 mm maximum.

Paper Length
120 metres approximately.

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