

Thermal Label/Receipt Material Specifications

for use with GM, M & MP 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 which 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 2471-1998.

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/m².

Thickness: 63 to 90 microns.

Opacity: 85% minimum.

Brightness: minimum 65%.

Surface Smoothness: 250 ± 80 seconds – uncoated.
500 seconds min. - coated.

Backing Material Characteristics

Weight: 67 ± 3 g/m².

Thickness: 55 to 65 microns.

Opacity: 43% + 2% - 43%.

Face and Backing Material Combined

Opacity: 93% + 7% - 8%.

Label 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.

Paper and Pre-printing Factors

A glass coating 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 print head 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 below.

Always specify papers and inks which 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 supplier's identification and the production date.

Packing/Storage 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 whole label roll through the appropriate Avery Berkel thermal printer.

Recommended Thermal Paper Manufacturers and Types for Labels

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

1. Uncoated Papers - Typically Jujo Papers

Thermal Economy -

AP 62KM - A.

Thermal Economy High Speed -

AP 62KS - H.

These papers offer no resistance to plasticizers, oil or water.
No scratch resistance.

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 the GM, M & MP Series Cassette Printer

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

Roll/Label Dimensional Information

1. Width of backing paper to be label width +2.3 mm/+2.5 mm. For example:
 - 38 mm label + 2.3/+2.5 = 40.5 mm
 - 49 mm label +2.3/+2.5 = 51.5 mm
 - 58 mm label +2.3/+2.5 = 60.5 mm
 - Continuous maximum width 60.5 mm
2. The label must be positioned centrally on the backing paper.
3. Maximum diameter of product roll: 120 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 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 permissible 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. Date legends on certain label formats may be printed by the machine, primarily designed for blank labels.
2. Figures 2 and 3 show the general formatting of labels. The wording of legends printed above which indicate fields in these examples are for guidance only.
3. Avery Berkel recommend fixed machine print positions and especially bar code areas 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. The 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 PLU's. 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'.
- d) If pre-printed legends are required for the weight or 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 this document have 'WEIGHT' marked in the field used to print either Weight or Items. See fig. 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, but 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.

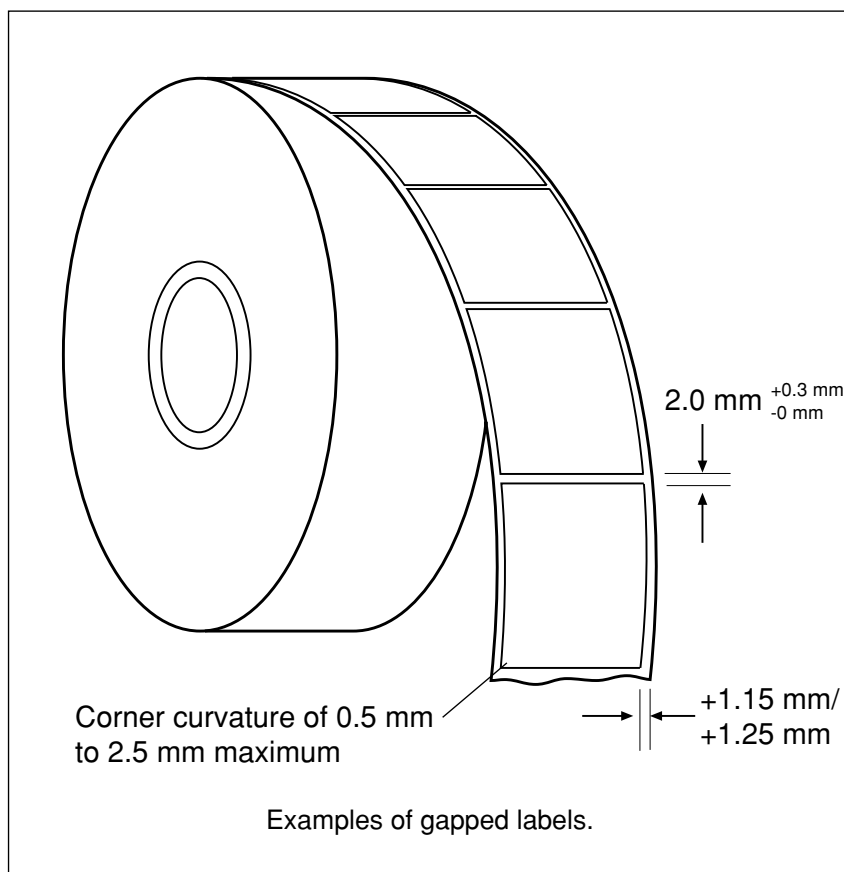


Figure 1a.

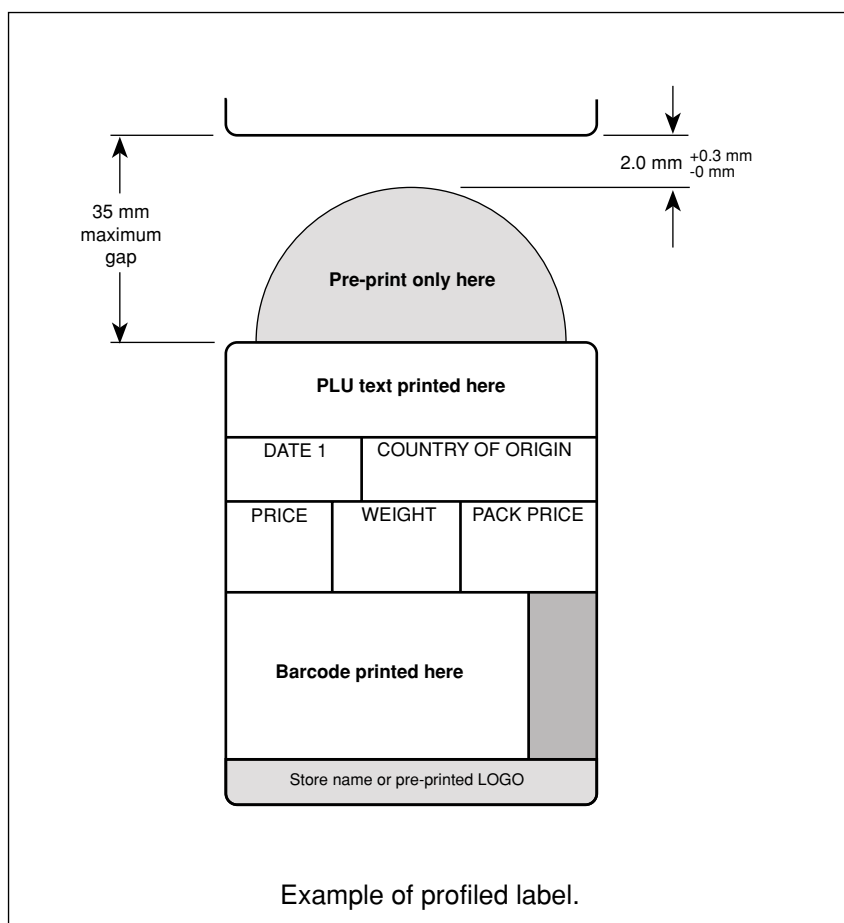


Figure 1b.

**Example Label
Format Fields
(0° Formats Shown)**

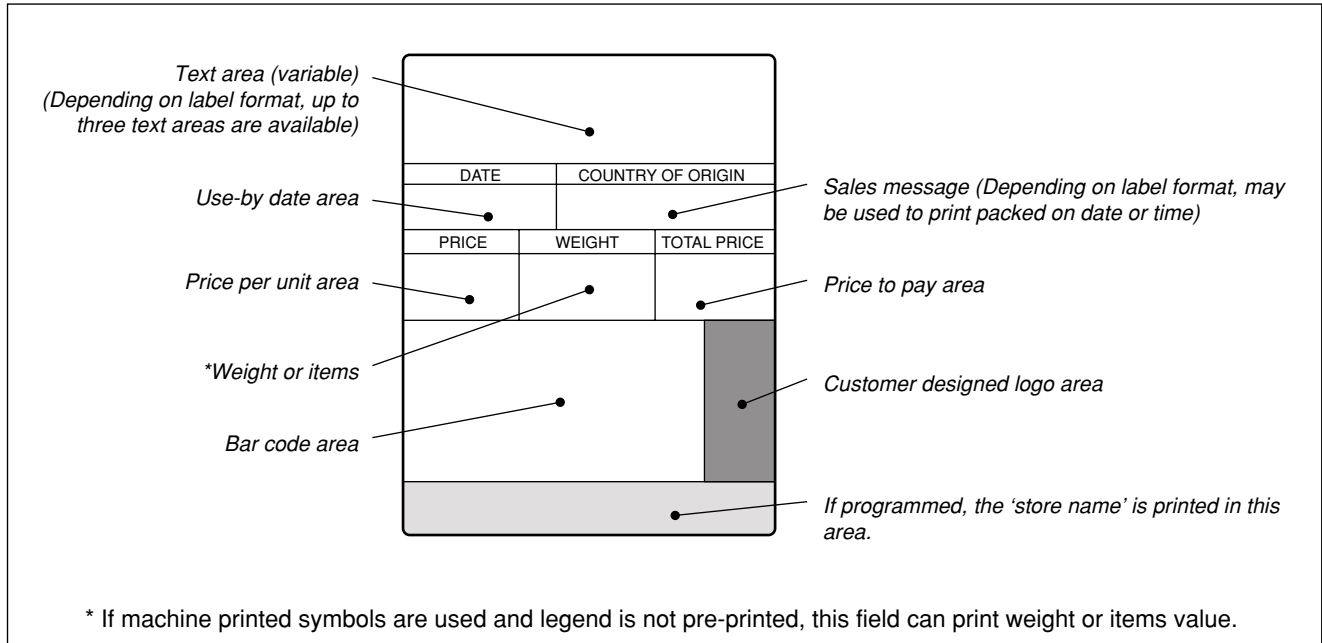


Figure 2.

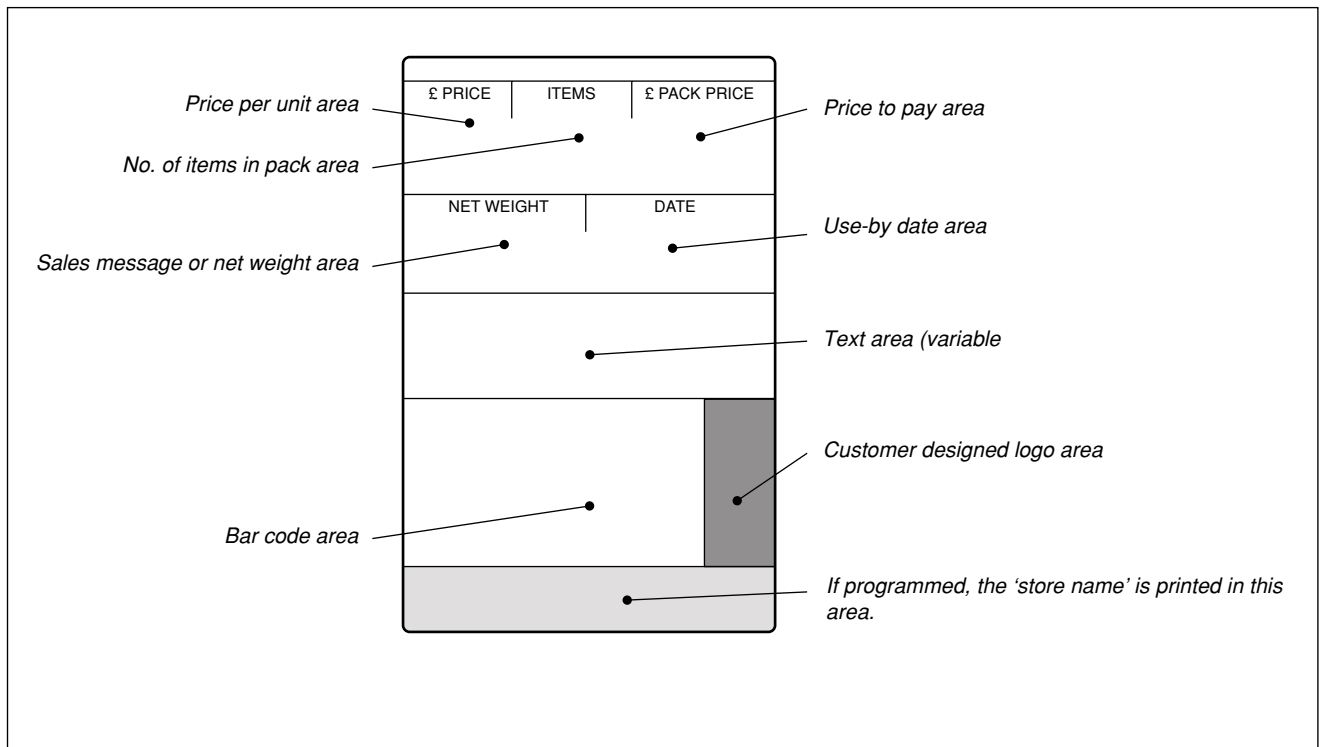


Figure 3.

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

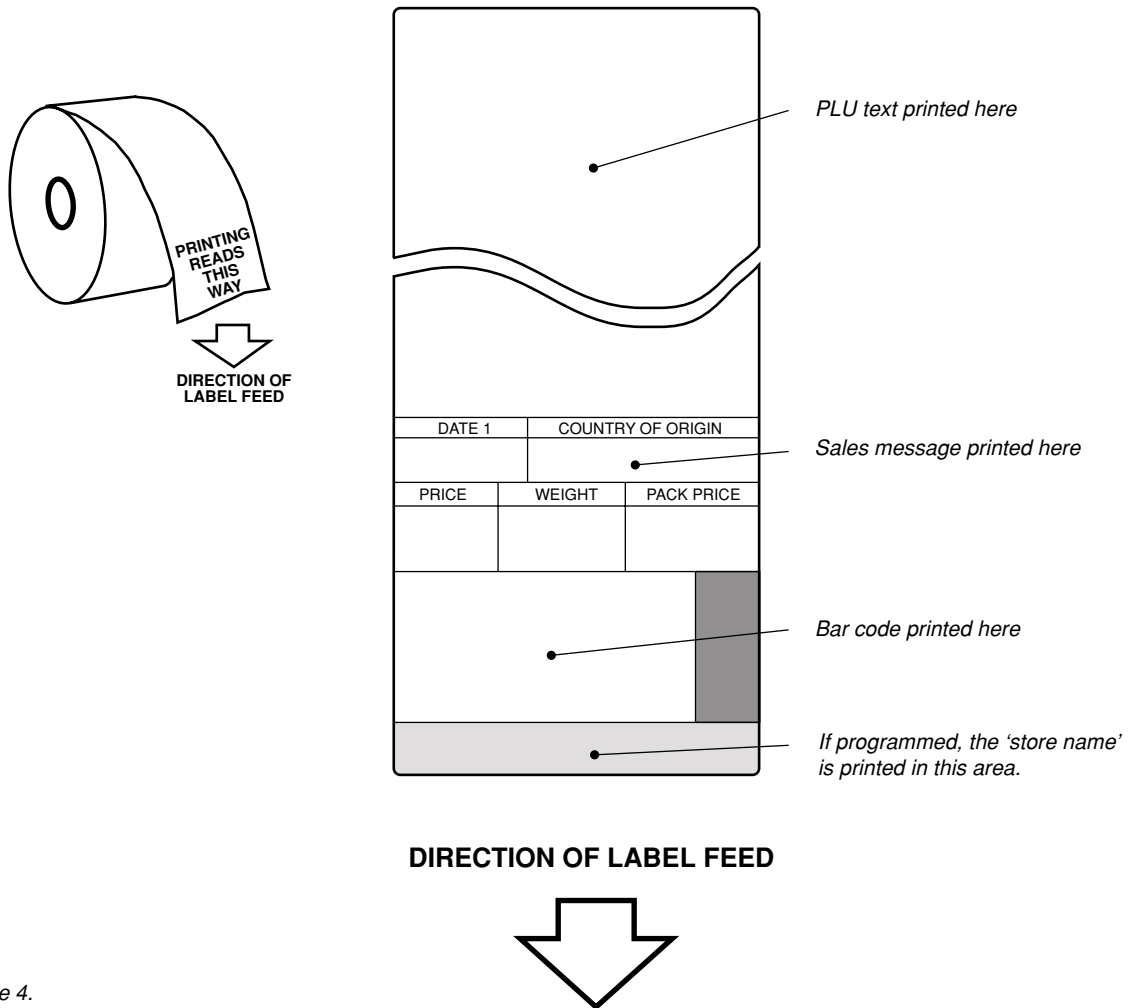


Figure 4.


£/100g	kg	£
1.00	1.022	10.22

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THERE ARE A SELECTION OF
FONT SIZES TO CHOOSE FROM
WHICH CAN BE CHOSEN FROM
AT ANY TIME

ALLOWING COMPLETE VERSALITY OF TEXT
PRESENTATION FOR INGREDIENT,
NUTRITIONAL ... COOKING INSTRUCTIONS.

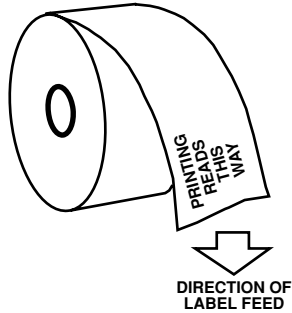
**SAUSAGE MEAT & BLACK
PUDDING**



0 200013 003405 >

PLEASE CALL AGAIN

Example of 90° Label Format



If programmed, the 'store name' is printed in this area.

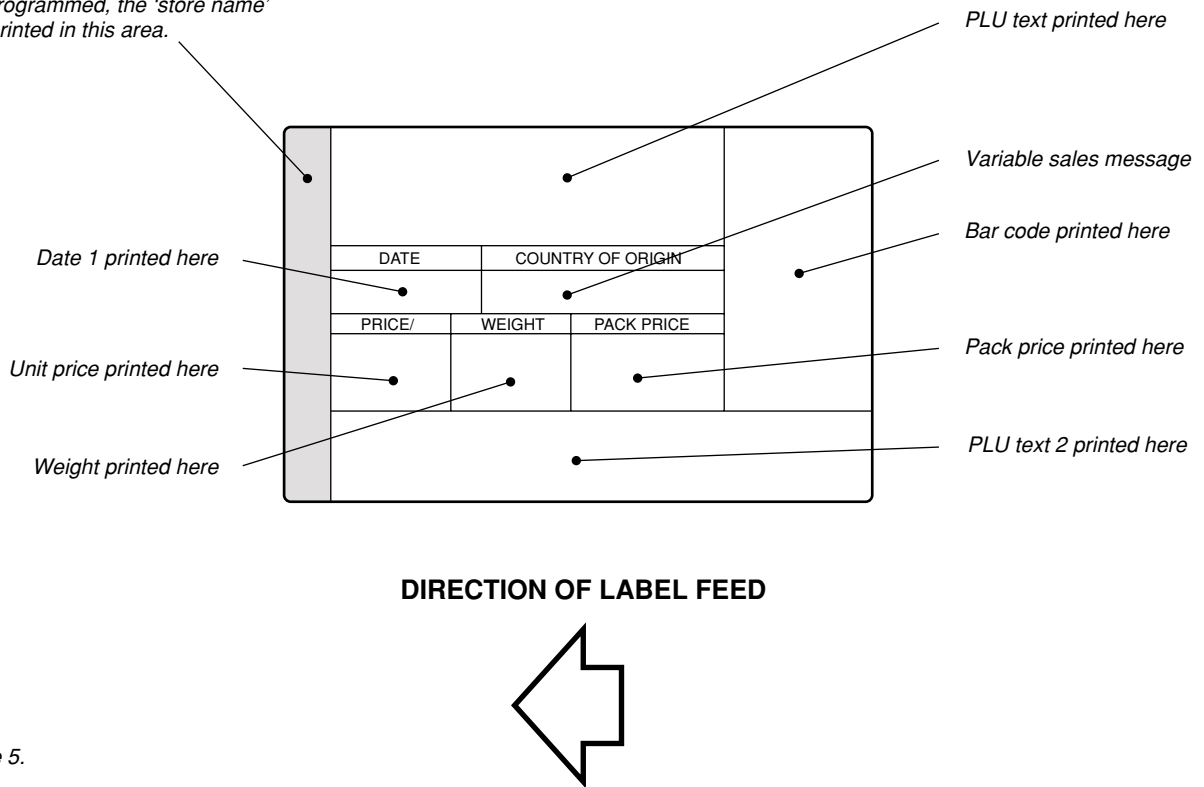
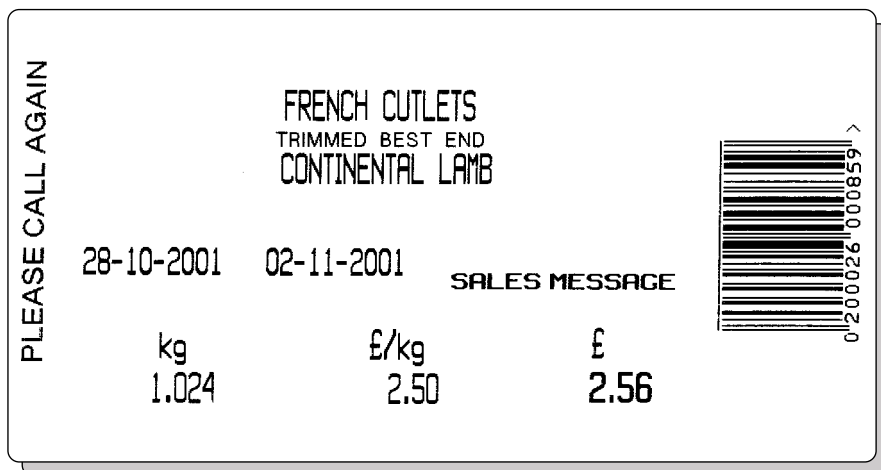


Figure 5.



Example 180° Label Format

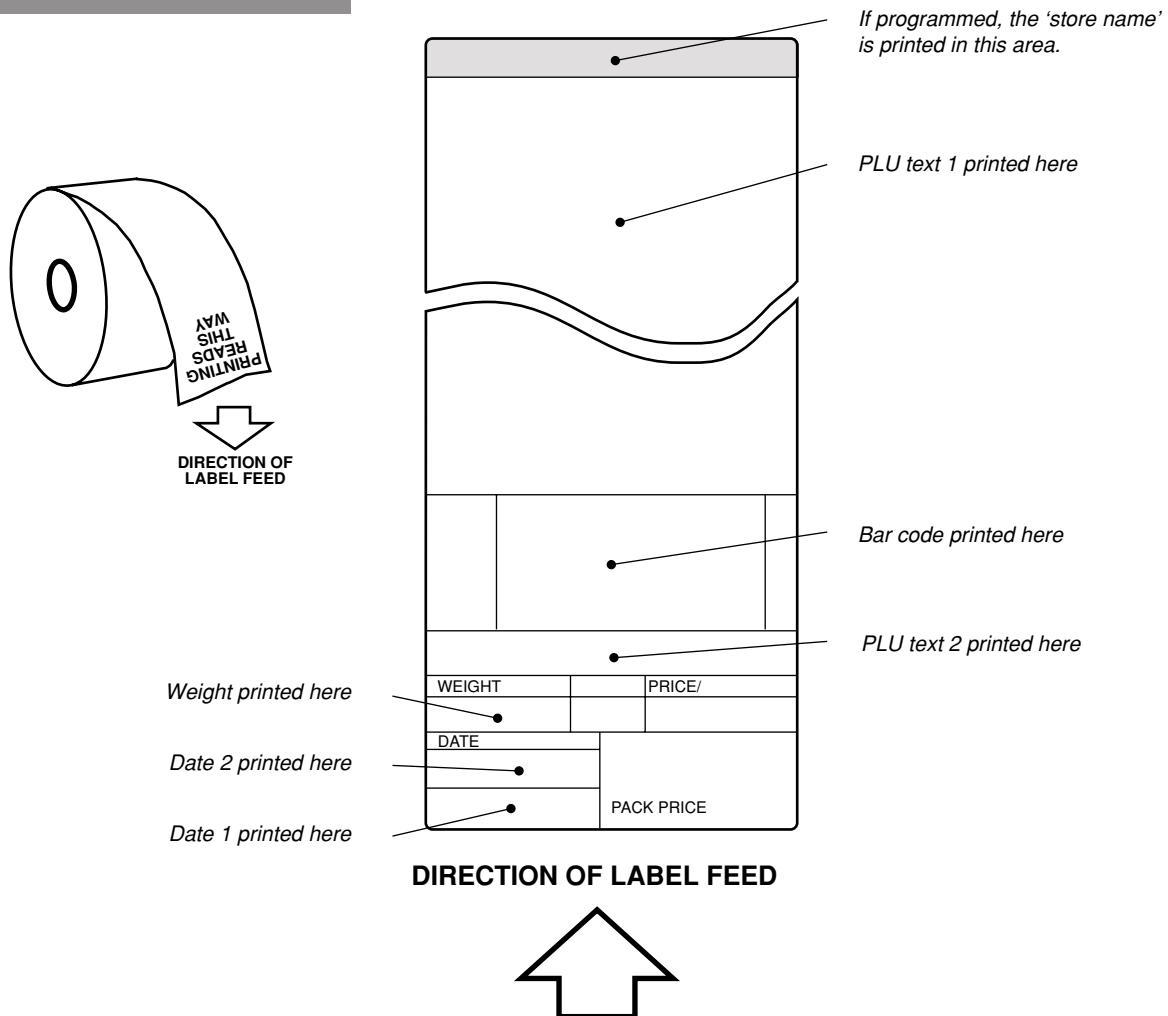
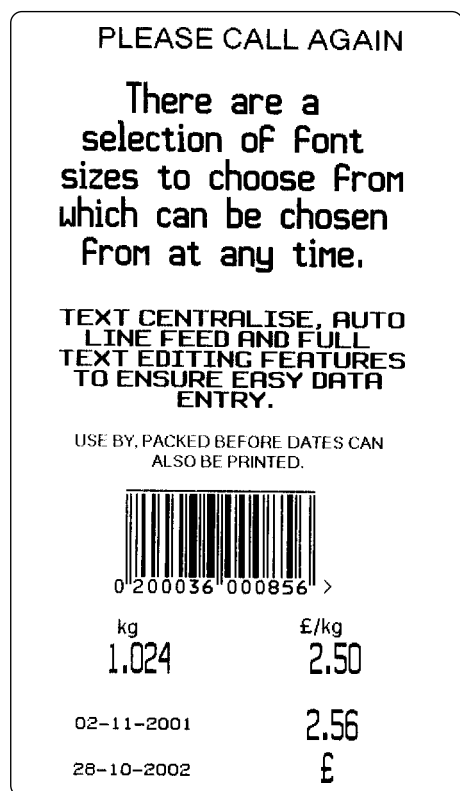


Figure 6.



Thermal Tally Roll (Receipt) Paper Specification

for use with GM, M & MP series range of thermal printers

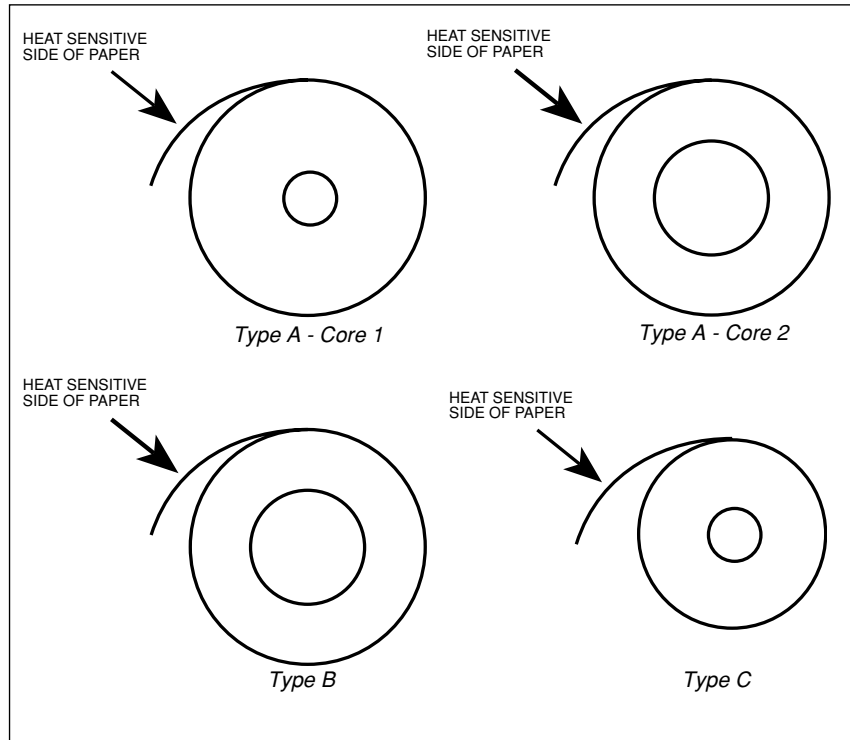
Description

General

The information contained in this specification is for thermal tally roll paper used in the Avery Berkel GM, M & MP 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 GM, M & MP series. These are dependent upon the printing mechanism and are tally roll types A and B.



Recommended Thermal Paper Manufacturers and Types for Receipts

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

Khoeler paper - KT 55F18.

Jujo paper - AF50KSE.

Substance - 55/60g.

Roll Type A for Cassette-Based Printer

Core 1
Thermal tally receipt roll.

Inside Core Diameter
13 mm +1 mm

Core Width
60 mm +0 mm
-0.5 mm.

Overall Roll Diameter
120 mm maximum.

Paper Width
60 mm maximum.

Paper Length
180 metres approximately.

Roll Type A for Cassette-Based Printer

Core 2
Continuous self-adhesive paper.

Inside Core Diameter
38 mm -0 mm

Core Width
60 mm +0 mm
-6 mm.

Overall Roll Diameter
120 mm (maximum).

Paper Width
60 mm maximum.

Paper Length
70 metres approximately.

**Roll Type B
for Cassette-Based
Printer**

Paper Width
60 mm maximum.

Paper Length
170 metres approximately.

Thermal Tally Receipt Roll

Inside Core Diameter
38 mm -0 mm.

Core Width
60 mm +0 mm
-0.5 mm.

Overall Roll Diameter
120 mm maximum.

**Roll Type C
for Clamshell Printer**

Thermal Tally Receipt Roll

Inside Core Diameter
13 mm +1 mm
-0.5 mm.

Core Width
60 mm +0 mm
-0.5 mm.

Overall Roll Diameter
70 mm maximum.

Paper Width
60 mm maximum.

Paper Length
65 metres approximately.

	Roll A, Core 1	Roll A, Core 2	Roll B	Roll C
GM 100	●	●	●	X
GM 200	●	●	●	X
GM 300	●	●	●	X
GM 400	●	●	●	X
M 100	●	●	●	X
M 110	X	X	X	●
M 200	●	●	●	X
M 210	X	X	X	●
M 202	●	●	●	●
M 212	X	X	X	●
M 300	●	●	●	X
M 400	●	●	●	X
M 410	X	X	X	●
M 420	●	●	●	●
M 500	●	●	●	X
M 600	●	●	●	X
M 601	●	●	●	X
M 602	●	●	●	X
M 603	●	●	●	X
M 650	●	●	●	X
M 651	●	●	●	X
MP 100	●	●	●	X
MP 101	●	●	●	X
MP 200	●	●	●	X
MP 300	●	●	●	X
MP 600	●	●	●	X

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