Lucent Technologies
Bell Labs Innovations

Shipping and Receiving Bar Code Label Standard

801-001-105

Issue 4

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Lucent Technologies Shipping & Receiving Bar Code Label Standard

INTRODUCTION

Issue 4.0 of the Lucent Technologies standard supersedes Issue 3, dated November 2, 1992.

Changes to the document include:

- replacement of AT&T designations with Lucent Technologies designations
- update EIA-556-A Appendix B References information
- replacement of EIA-556 Appendix C with reference to Lucent 801-001-106
- include guidance about upcoming changes to label content and 2D implementation
- reflect new contact numbers for label evaluation and technical support

This document ***shall***[1] be used to specify bar code labeling requirements for shipping containers and packages for:

1) internal Lucent Technologies shipments,
2) shipments from suppliers, and
3) shipments to customers as specified below.

All suppliers (both internal and external) to Lucent Technologies locations ***shall*** meet the requirements of this standard. This standard is the technical basis for all Lucent Technologies shipping and receiving bar code label applications and shall be used in conjunction with the Lucent Technologies 801-001-107 Bar Code Shipping Label Program document.

Comments and questions on this standard may be addressed to the Global Bar Code Technologies Group, 101 Crawfords Corner Road, Holmdel, NJ 07733-1988 (Ray Cann, Room 4B305, 908-949-7739 or Allan Gilligan, Room 4B301, 908-949-7721) or directly to the Bar Code Hot Line (908-949-7000).

The Lucent Technologies standard consists of this Introduction, the following General and Application Requirements and the attached portions of the Electronics Industry Association (EIA) ANSI/EIA-556-A standard. The ANSI/EIA-556-A standard establishes minimum requirements for format, scannability and durability of labels that are intended for use in a shipping and receiving environment and includes the requirements necessary for use as an Lucent Technologies standard. Where options exist within the revised ANSI/EIA-556-A standard, or differences are necessary for Lucent Technologies's operations, they are specified below.

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[1]Note: Within the context of this standard and the attached revised ANSI/EIA-556-A standard, the word "***shall***" indicates the requirement is mandatory, the word "***should***" indicates the requirement is a strong recommendation and the word "***may***" indicates the requirement is optional.

GENERAL REQUIREMENTS

This document will undergo a major revision by the 3rd Qtr 1997 to incorporate new industry and international standards requirements. Labels meeting the current requirements of this standard will be acceptable for a transition period ending January 1, 1999.

Data Identifiers
Reference 3.2.2:
Although a partial listing of Data Identifiers is shown, the full listing is contained in the ANSI MH 10.8.2-1995 standard.

Supplier Package Identification
Reference 3.2.3.1:
The first segment (the supplier/manufacturer identification code) of the Supplier Package Identification data field ***should*** use the ANSI/EIA-556-A preferred method that specifies the use of a unique seven digit UCC assigned code. This code consists of the six digit company prefix code assigned by the Uniform Code Council, Inc. (UCC) preceded by a zero. The Global Bar Code Technologies Group has obtained the number **662742** from the Uniform Code Council for use by all Lucent Technologies locations. Thus to identify Lucent Technologies globally, the seven digit number **0662742** ***shall*** be used.

Bar Code Density
Reference 3.2.3.3.2 , Tables 2 and 3:
The nominal narrow element width of all bar codes ***shall*** be 0.010 inch. This is the preferred dimension as shown in ANSI/EIA-556-A.

Reference 4.3:
A wide to narrow (W/N) element width ratio of 3:1 ***should*** be used; however, in some circumstances a W/N element width ratio of 2.5:1 ***may*** also be used. When the higher density (W/N = 2.5:1) bar code symbols are printed, extra care ***shall*** be taken to ensure that the bar code symbols consistently maintain passing (see below) bar code print quality grades.

Bar Code Print Quality
Reference 4.7:
The minimum overall bar code symbol print quality grade ***shall*** be 1.5/05/660 as measured in accordance with *ANSI X3.182-1995 Bar Code Print Quality - Guideline.* Bar code symbol verification in the 660 nm +/-10 nm spectral band should be sufficient for most applications. However, when infra-red wands or hand held infra-red laser diode scanners are required to scan the bar coded data, bar code symbol verification should be done in the infra-red (880 nm to 940 nm) wavelength. Meeting the minimum bar code print quality requirements in the infra-red wavelength generally assures acceptable print quality levels in the visible light wavelength as well.

APPLICATION REQUIREMENTS

1) Bar Code Labels for Internal Lucent Technologies Shipments

Label Format - The ANSI/EIA-556-A figure 1 label format ***shall*** be used in connection with the 801-001-107 standard. The use of the figure 1 label format provides the application developer increased flexibility in meeting a wide and varying demand for the inclusion of additional information in optional data fields such as the *Special, Description* and *Shipping Information* fields. Where additional requirements must be accommodated, developers should contact the Global Bar Code Technology Group for assistance.

Supplier Package Identification - For the first segment of the *Supplier Package Identification* field, Lucent Technologies locations ***shall*** use the ANSI/EIA-556-A preferred method that specifies the use of a unique seven digit UCC code. This code consists of the six digit company prefix number **662742** assigned to Lucent Technologies by the Uniform Code Council, Inc. (UCC) preceded by a zero "**0**". The seven digit code **0662742** will identify Lucent Technologies globally. The second segment of the *Supplier Package Identification* field (the package identification code) ***should*** begin with the standard two character Lucent Technologies location code followed by as many as 8 to 14 characters depending on whether a four inch or five inch wide label is printed in accordance with ANSI/EIA-556-A figure 1. The second segment ***shall*** be unique within Lucent Technologies for one year.

2) Bar Code Labels for Shipments from Suppliers to Lucent Technologies Locations

Label Format - The ANSI/EIA-556-A figure 1 label format ***shall*** be used in connection with the 801-001-107 standard. The use of the figure 1 label format provides the application developer increased flexibility in meeting a wide and varying demand for the inclusion of additional information in optional data fields such as the "*Special, Description* and *Shipping Information* fields. Where additional requirements must be accommodated, developers should contact the Global Bar Code Technologies Group for assistance.

Suppliers ***may*** send production samples of labels to Lucent Technologies, Global Bar Code Technologies Group, Ray Cann, Room 4B305, 101 Crawfords Corner Road, Holmdel, NJ 07733-1988, for approval prior to implementation of ongoing bar code package labeling systems for packages destined for Lucent Technologies locations.

Supplier Package Identification - For the first segment of the *Supplier Package Identification* field, suppliers ***should*** identify themselves by a seven digit code consisting of their own six digit UCC assigned company prefix number preceded by a zero "0". The second segment of the *Supplier Package Identification* field (the package identification code) ***shall*** insure package uniqueness for one year. The second segment may contain as many as 10 to 16 characters depending on whether a four inch or five inch wide label is printed in accordance with ANSI/EIA-556-A figure 1.

APPLICATION REQUIREMENTS (continued)

3) Bar Code Labels for Shipments from Lucent Technologies to Customers

Label Format - The ANSI/EIA-556-A figure 1 label format, in accordance with the 801-001-107 standard, ***shall*** be offered as the Lucent Technologies' first choice to satisfy customer labeling requirements. Every effort ***should*** be made to meet customer needs while remaining within the framework of the ANSI/EIA-556-A standard. If new customer shipping label profiles need to be added to the 801-001-107 standard, the Global Bar Code Technologies Group ***shall be*** contacted for assistance in accommodating customer bar code labeling requirements.

Supplier Package Identification - For the first segment of the *Supplier Package Identification* field, Lucent Technologies locations ***shall*** encourage the use of the ANSI/EIA-556-A preferred method that specifies the use of a unique seven digit UCC assigned company prefix code. This code consists of the six digit company prefix number assigned by the Uniform Code Council, Inc. (UCC) preceded by a zero "**0**". The Global Bar Code Technologies Group has obtained the number **662742** from the Uniform Code Council for use by Lucent Technologies. Thus, to identify Lucent Technologies globally, the seven digit number **0662742** ***shall*** be used. The second segment of the *Supplier Package Identification* field (the package identification code) ***should*** begin with an Lucent Technologies assigned two or three character Lucent Technologies location code (location codes are assigned by the Engineering Information Management Standards group 908-957-2113) and as many as 8 to 14 characters (7 to 13 characters when a three character location code is used) depending on whether a four inch or five inch wide label is printed in accordance with ANSI/EIA-556-A figure 1. The second segment of the *Supplier Package Identification* field ***shall*** insure package uniqueness for one year.

Some customers in the telecommunications industry might require Lucent Technologies to use an alternate manufacturer identification scheme for the first segment of the *Supplier Package Identification* field in accordance with ANSI/EIA-556-A section 3.2.3.1 and TeleCommunications Industry Forum (TCIF) guidelines. This scheme utilizes company identification codes documented in the ANSI T1.220-1990 "Information Interchange - Coded Representation of the North American Telecommunications Industry Manufacturers, Suppliers and Related Service Companies." This code ***shall*** be followed by a separator "+" (plus) character. The second segment of the *Supplier Package Identification* field (the package identification code) immediately follows the "+" (plus) character and begins with the two character Lucent Technologies location code and as many as 10 to 16 characters depending on whether a four inch or five inch wide label is printed in accordance with ANSI/EIA-556-A figure 1. The second segment of the *Supplier Package Identification* field ***shall*** insure package uniqueness for one year.

Attached: Portions of ANSI/EIA-556-A Outer Shipping Container Bar Code Label Standard

ANSI / EIA STANDARD

ANSI / EIA-556-A
(Revision of EIA-556)

October, 1992

Electronic Industries Association - Outer Shipping Container Bar Code Label Standard

Approved by ANSI on September 22, 1992

This standard has been issued by the ELECTRONIC INDUSTRIES ASSOCIATION (EIA), an organization that is independent of Lucent Technologies. There is no connection between Lucent Technologies and EIA and EIA neither endorses or sponsors Lucent Technologies' issuance of this standard.

Contents

ELECTRONIC INDUSTRIES ASSOCIATION OUTER SHIPPING CONTAINER BAR CODE LABEL STANDARD

This revision supersedes the existing version EIA-556 and replaces IS-62, which is no longer valid.

1. SCOPE

Packages or shipping containers may have several labels, such as: destination label, transaction label, product package label. The intent of this standard is to facilitate automation within shipping, distribution, transportation and receiving operations using bar code technology. This label should be affixed to outer shipping containers, boxes, cartons, pallets, cases, barrels, etc.. This standard is primarily intended for use by trading partners in manufacturing, distribution, industrial and other non-retail commercial applications.

2. DEFINITIONS

See Appendix A.

3. FORMAT

Figures 1 and 2 illustrate standard bar code label formats that enable users to encode information which may be required by automated shipping/receiving systems. These labels also provide sufficient information for manual systems to operate more effectively. The label format shown in Figure 1 is capable of satisfying the needs of a destination and transaction label. Various existing applications are using the format shown in Figure 2.

The supplier or manufacturer shall choose either Figure 1 or Figure 2 label format, whichever is more appropriate for their labeling operation and satisfies the customer's data field requirements.

Exhibits A through I illustrate the use of the labels with different packaging strategies.

3.1. Overall Size

The recommended size for the bar code labels shown in Figures 1 and 2 is 4.0 inch by 6.5 inch (102 mm by 165 mm). A maximum size, 5.0 inch by 6.5 inch (127 mm by 165 mm) label, as shown in Figure 4, will accommodate the maximum data fields presently contained on the label format shown in Figures 2 and 5.

Those suppliers or manufacturers with insufficient area on packages or shipping containers should consider packaging which will accommodate the label size or the use of a tag as shown in exhibit G.

Data field length is dependent on the choice of characters per inch and bar code density (see Tables 2 and 3). These parameters shall be mutually agreed upon between the supplier or manufacturer and the customer. See exhibits A through H for examples.

3.2. Data Fields

Each data field shall be separated by thin border lines (see Figures 1 and 2) and shall contain its title as shown in the attached Exhibits. If the ***Special*** field is combined with the ***Description*** field using the Figure 1 label format, a border line is not required to separate the two fields. Outer border lines are not required.

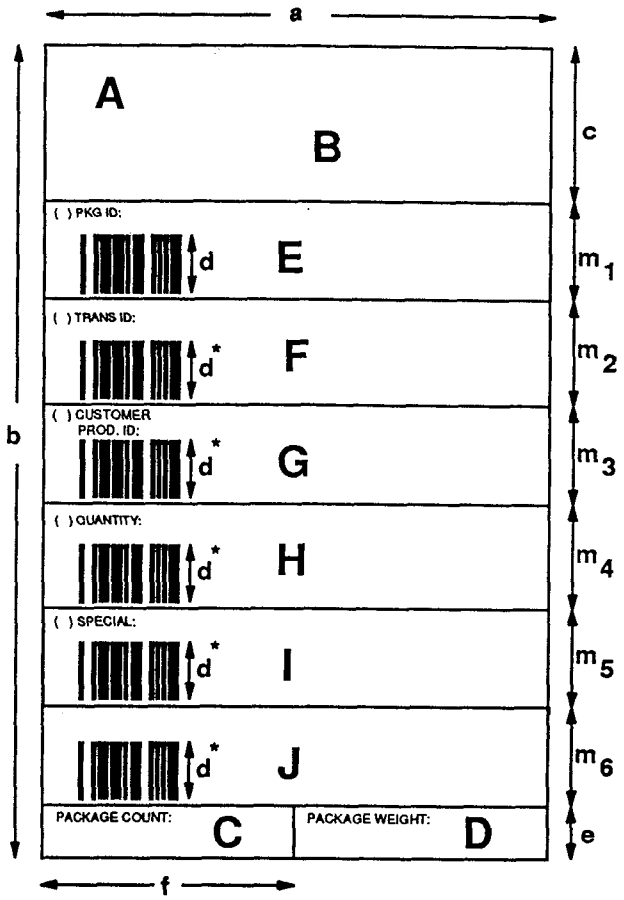
A sample of these label formats with the data fields filled to maximum is shown in Figures 3 and 5. Figure 4 is an example of an enlarged Figure 3 label with data fields filled to maximum.

Legend:

A = SHIP FROM
B = SHIP TO
C = PACKAGE COUNT
D = PACKAGE WEIGHT
E = SUPPLIER PACKAGE ID
F = TRANSACTION ID
G = CUSTOMER PRODUCT ID
H = QUANTITY
I = SPECIAL
J = DESCRIPTION

* when bar code symbol is required

Drawing Not to Scale



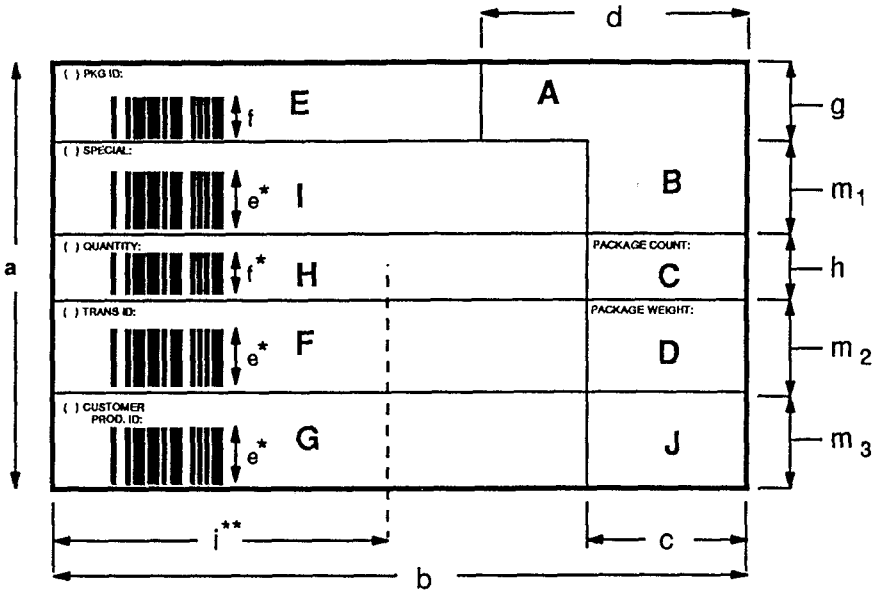
	PREFERRED	MINIMUM	MAXIMUM
a	4.0 (102 mm)	4.0 (102 mm)	5.0 (127 mm)
b	6.5 (165 mm)	4.0 (102 mm)	6.5 (165 mm)
c	1.3 (33 mm)	0	2.9 (74 mm)
d	0.5 (13 mm)	0.5 (13 mm)	0.7 (18 mm)
e	0.4 (10 mm)	0.4 (10 mm)	m_i
f	2.0 (51 mm)	0	a
$m_{i = 1\text{-}6}$	0.8 (20 mm)	0.8 (20 mm)	1.0 (2.54 mm)

Dimensions are in inches (mm)

Figure 1 Label Format

Legend:

A = SHIP FROM
B = SHIP TO
C = PACKAGE COUNT
D = PACKAGE WEIGHT
E = SUPPLIER PACKAGE ID
F = TRANSACTION ID
G = CUSTOMER PRODUCT ID
H = QUANTITY
I = SPECIAL
J = DESCRIPTION



Drawing Not to Scale

* when bar code symbol is required

** **label edge to leading edge of human readable interpretation** in Quantity field

	REQUIRED DIMENSIONS
a	4.0 (102 mm)
b	6.5 (165 mm)
c	1.5 (38 mm)
d	2.5 (64 mm)
e	0.5 (13 mm)
f	0.4 (10 mm)
g	0.7 (20 mm)
h	0.6 (16 mm)
i	3.1 (80 mm)
m_{1-3}	0.9 (23 mm)

Dimensions are in inches (mm)

Figure 2 Label Format

3.2.1. Titles

Titles are mandatory for all data fields except the ***Description***, ***Special*** and ***Shipping Information*** data fields and shall be printed in 0.06 inch (1.5 mm) minimum high characters. The data field titles are as follows:

DATA FIELD NAME	BAR CODE DATA FIELD	TITLE
Supplier Package Identification	Yes	PKG ID:
Transaction Identification	Yes	TRANS ID:
Customer Product Identification	Yes	CUSTOMER PROD ID:
Quantity	Yes	QUANTITY:
Description	Optional	(As Required)
Special *	Optional	(As Required) *
Package Count	NO	PACKAGE COUNT:
Package Weight	NO	PACKAGE WEIGHT:
Shipping Information	NO	(Not Required)

* As described in 3.2.4.3 this data field may be used as a continuation field for another data field. When so used, the appropriate "C" data identifier as described in 3.2.4.3 shall be used. Also, the appropriate data field title should be used.

DRAWING NOT TO SCALE

Figure 3 - Label format shown in Figure 1 - 4 inch Wide Label

NOTE: For illustration purposes, the bar code data fields have been filled with the maximum number of data characters assuming a three character data identifier is used with the highest density Code 39 alternative shown in Table 3. The use of other densities will result in fewer characters being able to be encoded in the bar code.

DRAWING NOT TO SCALE

Figure 4 - Label format shown in Figure 1 - 5 inch wide label

NOTE: For illustration purposes, the bar code data fields have been filled with the maximum number of data characters assuming a three character data identifier is used with the highest density Code 39 alternative shown in Table 3. The use of other densities will result in fewer characters being able to be encoded in the bar code.

Drawing Not to Scale

Figure 5 - Label format shown in Figure 2

NOTE: For illustration purposes, the bar code data fields have been filled with the maximum number of data characters assuming a three character data identifier is used with the highest density Code 39 alternative shown in Table 3. The use of other densities will result in fewer characters being able to be encoded in the bar code.

3.2.2. Data Identifiers

The appropriate FACT data identifier(s) shall be used for all Code 39 bar code symbols. The data identifier shall be enclosed in parentheses preceding the title of each bar code data field. The data identifier character(s) shall immediately follow the start code character in each Code 39 bar code symbol. A partial list of common data identifiers is shown below:

2S - Advanced Shipment Notification
3S - Supplier Package ID (Lowest Level Shipping Container)
4S - Supplier Package ID (Single Order/Single Product)
5S - Supplier Package ID (Single Order/Mixed Load)
6S - Supplier Package ID (Multi Order/Single Product)
7S - Supplier Package ID (Multi Order/Mixed Load)
9S - Generic Package ID (mutually defined)
K - Transaction Identification
14K - Combined Customer Order Number plus Line Number
P - Customer Product Identification
1P - Supplier Product Identification
Q - Quantity
7Q - Quantity plus Unit of Measure
Z - Special
C - Continuation of the Customer Product Identification
4C - Continuation of the Transaction Identification

Note: These data identifiers are in accordance with the FACT Data Identifier standard (ANSI/FACT-1, 1989). The plus "+" character is used with specific data identifiers defined within the FACT document to separate different types of variable length data that are encoded within a single data field.

3.2.3. Mandatory Data Fields

The following data fields constitute a minimum requirement for bar coding applications:

Supplier Package Identification (see 3.2.3.1) *
Transaction Identification (see 3.2.3.2)
Customer Product Identification (see 3.2.3.3)
Quantity (not to be used when label is to be applied to a Mixed Load) (see 3.2.3.5)
Package Count (text only) (see 3.2.3.4) **

* The Supplier Package Identification data field is the only mandatory data field required for an EDI label.

** Package Count is mandatory ONLY for Single Order (3S) label and for Master Pack Single Order (4S) label.

3.2.3.1. Supplier Package Identification

The ***Supplier Package Identification*** data field is a mandatory bar code data field consisting of two segments. The first segment consists of a unique seven digit supplier or manufacturer identification code. This seven digit number consists of a leading "0" (for the United States of America and Canada) followed by a unique six digit number assigned by the Uniform Code Council, Inc. This seven digit structure is compatible with International Article Numbering Association (EAN) convention. The separator "+" (plus) character shall not be used to separate this segment from the second segment (package identification code).

As an acceptable alternative to the preferred method above, the supplier or manufacturer identification number may consist of a variable number of alphanumeric characters followed by a separator "+" (plus) character.

The second segment consists of a package identification code. The package identification code shall be unique (not necessarily in sequential order) and assigned by the supplier or manufacturer. The supplier or manufacturer may include a site code within this segment to ensure uniqueness of the package identification code. The supplier or manufacturer shall avoid repeating the exact package identification character sequence within a 365 day period. The human readable interpretation of the bar code data shall not contain the data field identifier, start or stop characters.

The data identifier (See Table 1., e.g., 3S, 4S, 5S, 6S, 7S) shall follow the start character and precede the supplier package identification within the bar code symbol but shall not appear in the human readable interpretation of the bar code data. The data identifier shall be enclosed in parentheses preceding the data field title.

3.2.3.1.1. Data Field Length

To determine the maximum number of characters that can be placed into the ***Supplier Package Identification*** data field, see Tables 2 and 3.

3.2.3.1.2. Size

The minimum height of the bar code symbol in the ***Supplier Package Identification*** data field shall be 0.5 inch (13 mm) when using the Figure 1 label format or 0.4 inch (10 mm) when using the Figure 2 label format. The minimum height of the human readable interpretation of the supplier package identification shall be 0.2 inch (5 mm).

In order to quickly locate the package identification data field on the label, the border lines used to separate this data field from other data fields should be bold when using the Figure 1 label format. The width of these border lines should be at least twice the width of the other border lines on the label.

TABLE 1
Use of Data Identifiers and Packaging Strategy

Application	Packaging Strategy	Data Identifiers	Exhibit
Single Order Single Product ID	Single Order	3S	A,B
MASTER PACK LABELS Single Product ID	Single Order	4S	C
Mixed Product IDs	Mixed Load	5S	D
Multiple Orders Single Product ID	Multi Order	6S	E
Mixed Product IDs	Mixed Load/ Multi Order	7S	F

3.2.3.2. Transaction Identification

The ***Transaction Identification*** data field is a mandatory bar code data field specified by the customer. Shipments with a single transaction identification will have the transaction identification encoded in the bar code symbol with the associated human readable interpretation also shown.

The data identifier (see 3.2.2) shall follow the start character and precede the transaction identification within the bar code symbol but shall not appear in human readable interpretation. The data identifier shall be enclosed in parentheses preceding the data field title. If the transaction identification exceeds the available data field length, it may be continued in the ***Special*** data field, using the data identifier "4C" immediately following the start character of the ***Special*** bar code symbol.

When multiple transaction identifications (i.e., orders) are grouped in one package or shipping container which is to be labeled, the message "MULTI ORDER" shall be printed in this field in place of the bar code and human readable interpretation. See exhibit E.

3.2.3.2.1. Data Field Length

To determine the maximum number of characters that can be placed into the ***Transaction Identification*** data field, see Tables 2 and 3. This data field may be continued in the Special data field. See 3.2.4.3.

3.2.3.2.2. Size

The minimum height of the bar code symbol in the ***Transaction Identification*** data field shall be 0.5 inch (13 mm). The minimum height of the human readable interpretation shall be 0.2 inch (5 mm). When the message "MULTI ORDER" is shown in this data field, the minimum character height shall be 0.5 inch (13 mm).

3.2.3.3. Customer Product Identification

The ***Customer Product Identification*** data field is a mandatory bar code data field on all orders for a single product. This product identification shall be designated by the customer. This product identification should be the same as the product identification used by the customer to order the product from the supplier or manufacturer. In the absence of customer product identification, the supplier or manufacturer's product identification may be used.

The data identifier (see 3.2.2) shall follow the start character and precede the product identification data within the bar code data field but shall not appear in the human readable interpretation of the bar code. The data identifier shall be enclosed in parentheses preceding the data field title.

When a label is used for mixed load packages or containers, the message "MIXED LOAD" shall be printed in place of the bar code symbol and its associated human readable interpretation as the customer product identification. See exhibit D.

3.2.3.3.1. Data Field Length

To determine the maximum number of characters that can be placed into the ***Customer Product Identification*** data field, see Tables 2 and 3.

This data field may be continued in the ***Special*** data field (see 3.2.4.3) using the data field identifier "C" as the first bar code data in the ***Special*** data field.

3.2.3.3.2. Size

The minimum height of the bar code symbol in the ***Customer Product Identification*** data field shall be 0.5 inch (13 mm). The minimum height of the human readable interpretation formation shall 0.2 inch (5 mm). When the message "MIXED LOAD" is shown in this data field the minimum message height shall be 0.5 inch (13 mm).

TABLE 2

BAR CODE DENSITY AND TOLERANCE GUIDELINES

Nominal Width of Narrow Elements - X Dimensions in inches (mm)	Element Width Ratio (N)	Density in Characters Per Inch (CPI)	Element Width Tolerances * in inches (mm)
(Preferred) 0.0100 (0.254)	2.5	6.90	+/- 0.0027 (0.0686)
	3.0	6.25	+/- 0.0035 (0.0889)
0.0135 (0.343)	2.5	5.10	+/- 0.0037 (0.0940)
	3.0	4.80	+/- 0.0047 (0.1194)
0.0170 (0.432)	2.5	4.10	+/- 0.0046 (0.1168)
	3.0	3.70	+/- 0.0059 (0.1499)

* For use when ANSI X3.182-1990 bar code print grading methodology is not used.

TABLE 3
BAR CODE DATA FIELD SIZES

Data Field	Data Field Length in inches (mm)	Maximum Bar Code Symbol Character Total					
		Preferred					
		X=0.0100		X=0.0135		X=0.0170	
		N=2.5:1	N=3.0:1	N=2.5:1	N=3.0:1	N=2.5:1	N=3:0:1
SUPPLIER PACKAGE IDENTIFICATION	4.0 (102)	24	22	18	16	14	13
	5.0 (127)	31	28	23	21	18	16
QUANTITY	3.25 (83)	14	14	14	13	11	10
	4.0 (102)	24	22	18	16	14	13
	5.0 (127)	31	28	23	21	18	16
TRANSACTION IDENTIFICATION	4.0 (102)	24	22	18	16	14	13
	5.0 (127)	31	28	23	21	18	16
CUSTOMER PRODUCT IDENTIFICATION	4.0 (102)	24	22	18	16	14	13
	5.0 (127)	31	28	23	21	18	16
SPECIAL	4.0 (102)	24	22	18	16	14	13
	5.0 (127)	31	28	23	21	18	16

TABLE 3 NOTES:

1. Quiet zones are assumed to be 0.25 inch (6.4 mm) each (see 4.6)
2. Intercharacter gap is equal to X Dimension (see 4.3)
3. Each character total includes the start and stop characters and data identifiers.
4. Quantity Data field length is limited on the Figure 2 label format by space available for human readable characters .

CAUTION: These tables illustrate a broad range of bar code densities to meet the needs of different printers. The maximum number of characters per data field that can be printed depends on the capabilities of the printer. The CPI may be greatly reduced with use of low density bar code symbols.

3.2.3.4. Package Count

The ***Package Count*** data field is a text only mandatory data field for single order (3S and 4S) labels. The characters in this data field shall clearly describe the numerical sequence of the package when more than one package is shipped for a specific order or when multiple packages are required for a specific product ID. When only one package is required, this should be indicated as 1 of 1. When multiple packages are required, the form X of Y should be used, where X is the number of the package and Y is the total number of packages.

3.2.3.4.1. Data Field Length

A maximum of 10 characters may be input to the ***Package Count*** data field.

3.2.3.4.2. Size

The minimum height of the human readable characters in the ***Package Count*** data field shall be 0.2 inch (5 mm).

3.2.3.5. Quantity

The ***Quantity*** data field is a mandatory bar code data field for single product order (3S and 4S) labels. It shall not be used for Mixed Load or Multi Order (5S, 6S and 7S) labels. The quantity indicated on the label should be the quantity in the package or container to which the label is affixed. When multiple packages or containers are indicated (e.g., 1 of 2 in the ***Package Count*** data field), the quantity shown on each label shall be the quantity contained in each package and not the total quantity in all packages in the shipment.

The quantity shall not be used for Mixed Load or Multi Order shipments.

The appropriate data identifier for quantity shall follow the start character and precede the quantity number within the bar code symbol but shall not appear in the human readable interpretation of the bar code data. The data identifier shall be enclosed in parentheses preceding the data field title. When using the Figure 2 label format, the human readable interpretation of the bar code data shall be located to the right of the bar code data and shall be a minimum of 0.25 inch (6.4 mm) from the last bar of the bar code symbol stop character.

3.2.3.5.1. Data Field Length

To determine the maximum number of characters that can be placed into the ***Quantity*** data field, see Tables 2 and 3.

3.2.3.5.2. Size

The minimum height of the bar code symbol in the ***Quantity*** data field shall be 0.5 inch (13 mm) when using the Figure 1 label format or 0.4 inch (10 mm) when using the Figure 2 label format. The minimum height of the human readable interpretation shall be 0.2 inch (5 mm).

3.2.3.5.3. Unit of Measure

Additional data may be included in the ***Quantity*** data field to indicate what unit of measure is being used in the quantity count. This additional data consists of the two-character unit of measure abbreviation in accordance with the American National Standard (ANSI) X12.3 Data Element Number 355 Unit of Measure Code.

The default, or understood, unit of measure for quantity is "each". The two-character abbreviation for "each" is EA. The printing of the "EA" default abbreviation in human readable text is optional. When other two-character abbreviations included in the ANSI X12.3 Data Element Number 355 Unit of Measure Code are used, they must be shown in human readable text located to the right of the human readable quantity value in the ***Quantity*** data field. The minimum height of the human readable characters in the ***Unit of Measure*** data field shall be 0.2 inch (5 mm).

If the two-character abbreviation of the unit of measure is included in the Quantity bar code symbol, then the data identifier shall be "7Q". The two-character abbreviation shall be located to the immediate right of the quantity value within the bar code symbol in the ***Quantity*** data field.

3.2.4. Optional Data Fields

The following optional data fields have been provided to increase the usefulness of the label and to provide a single standardized format which can satisfy a broad spectrum of users and applications which often require such information to be simultaneously conveyed on a single label. Agreements should be made between the customer and the supplier or manufacturer as to each data field's specific use. See exhibit A.

Shipping Information
Description
Special
Package Weight

3.2.4.1. Shipping Information

The ***Shipping Information*** data field is an untitled optional data field without bar codes, located in the upper right hand corner of the Figure 2 format label. This data field is located at the top of the Figure 1 label format and Figure 6 EDI label format (see 3.2 and 3.3 respectively). It shall contain, as a minimum, the supplier or manufacturer's name and address. Other information may be printed in this data field;

e.g., receiver's name, address, company logo, telephone number, all in human readable form only.

3.2.4.2. Description

The ***Description*** data field is an optional data field that may contain a bar code symbol with its required data or application identifier and field title (when using the Figure 1 format), human readable or graphical information. It is located in the lower portion of the Figure 1 format label or the lower right hand corner of the Figure 2 format label. It may be used to convey a variety of different types of information and graphics not specifically addressed within this standard. For example, a description of the item(s), the supplier's or manufacturer's identification or part number could be included in this optional data field. See exhibits. The use of UCC/EAN-128 bar code symbology is permitted in this field. When a UCC/EAN-128 bar code symbol is included in this field, the appropriate UCC/EAN Application Identifier and title shall be used.

3.2.4.3. Special

The ***Special*** data field is an optional data field that may contain a bar code symbol with its required data or application identifier and field title, human readable or graphical information. The ***Special*** data field may be used for any additional information not detailed in this specification, but needed by industry users, such as equipment entity identification code, advance ship notice, purchase order line number, shipping zone or product serial number. The ***Special*** data field shall be used as a continuation data field if data fields such as the ***Transaction Identification*** or ***Customer Product Identification*** are not of sufficient length to fully encode the required bar code data.

For example, for a bar code symbol with an X dimension of 0.017 inches and an element width ratio (N) of 3.0:1 (from Table 2), if the customer product identification data exceeds 13 characters, up to 13 additional characters may be input in the ***Special*** data field preceded by the "C" data identifier. Similarly, if the transaction identification data exceeds 13 characters, an additional 12 characters may be encoded in the bar code symbol in the ***Special*** data field preceded by the data identifier "4C". ***Note: Only one data field may be continued on any one label.***

When Code 39 bar code symbols are included in the ***Special*** data field, FACT approved data identifiers and titles shall be used for specifically identified data. In the absence of a specific data identifier, "Z" shall be used to denote a data field agreed upon by the customer and the supplier or manufacturer.

The use of UCC/EAN-128 bar code symbology is permitted in this field. (See Exhibit D for an example of use in a combined ***Special*** and ***Description*** field in the Figure 1 format. See Exhibit E for an example of use in a ***Special*** field in the Figure 2 format.) When a UCC/EAN-128 bar code symbol is included in this field, the appropriate UCC/EAN Application Identifier and title shall be used.

3.2.4.3.1. Data Field Length

To determine the maximum number of characters that can be placed into the ***Special*** data field, see Tables 2 and 3.

3.2.4.3.2. Size

The minimum height of the bar code symbol in the ***Special*** data field shall be 0.5 inch (13 mm). The minimum height of the human readable interpretation in the ***Special*** data field shall be 0.2 inch (5 mm).

3.2.4.4. Package Weight

The ***Package Weight*** data field is a non-bar coded optional data field. Subordinate data fields are provided within the ***Package Weight*** data field for English (Imperial) and metric weight designations. When weight is shown in this data field it shall be accompanied by the additional unit of measure identifier code. See exhibit A.

If known prior to the printing of the label, the total weight of the package should be included. Otherwise, the weight may be legibly handwritten or stamped in this area prior to shipment.

3.2.4.4.1. Unit of Measure

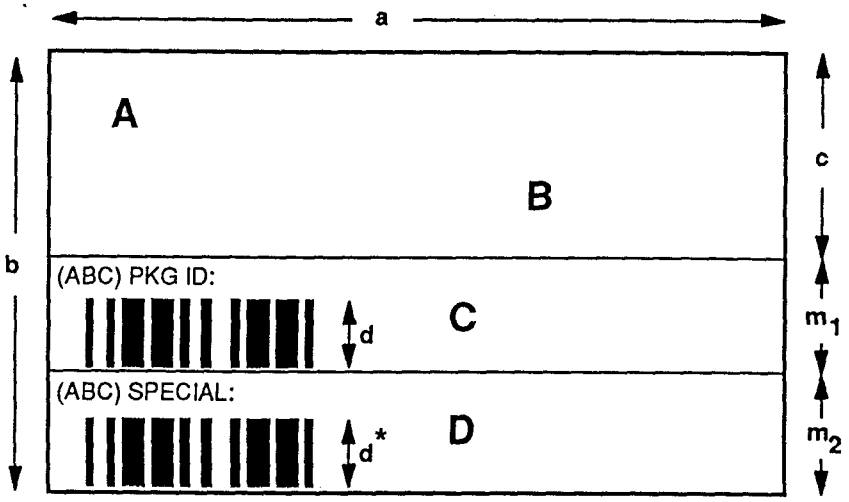
A subordinate data field within the ***Package Weight*** data field has been provided to identify the unit of measure. This two character data field is located to the right of the numerical weight designation in the ***Package Weight*** data field. The two character codes shall be in accordance with the ANSI X12.3 Data Element Number 355 Unit of Measure Code (e.g., ounces = OZ, pounds = LB, grams = GR, and kilograms = KG). The minimum height of the characters in the ***Unit of Measure*** subordinate data field shall be 0.2 inch (5 mm).

3.3. Electronic Data Interchange (EDI) Label

For applications where trading partners have agreed to implement Electronic Data Interchange (EDI) transactions, either of the label formats shown in Figures 1 and 2 or the EDI bar code label format shown in Figure 6 shall be used. The EDI label format is derived from the Figure 1 label format. The data fields included on the EDI label should follow the guidelines in 3.2 Data Fields. See also exhibit H.

The pertinent information regarding the shipment will be included in the EDI transaction and may be accessed by scanning the appropriate bar code information on the label. The EDI bar code label does not preclude the use of other shipping transaction labels in tandem with EDI. Rather, it offers a higher level of sophistication in automated shipping and receiving environments.

This label should be used in conjunction with appropriate EDI transactions.



Drawing Not to Scale

* when bar code symbol is required

A = **SHIP FROM**
B = **SHIP TO**
C = **PACKAGE ID** (Mandatory)
D = **SPECIAL** (may be used for advanced ship notice, or description, or tracking number etc.)

	PREFERRED	MINIMUM	MAXIMUM
a	4.0 (102)	4.0 (102)	5.0 (127)
b	3.0 (76)	0.8 (20)	6.5 (165)
c	1.4 (36)	0	2.0 (51)
d	0.5 (13)	0.5 (13)	0.7 (18)
m_1	0.8 (20)	0.8 (20)	1.0 (25)
m_2	0.8 (20)	0	1.0 (25)

Dimensions in inches (mm)

Figure 6 - Sample EDI Bar Code Label Format

DRAWING NOT TO SCALE

Figure 7 - Typical EDI Label - 4 inch Wide Label

NOTE: For illustration purposes, the bar code data fields have been filled with the maximum number of data characters assuming a three character data identifier is used with the highest density Code 39 alternative shown in Table 3. The use of other densities will result in fewer characters being able to be encoded in the bar code.

4. BAR CODE REQUIREMENTS

4.1. General

All bar code data fields shall use the Code 39 bar code except where noted. The data character set shall contain 43 characters: 0 to 9, A to Z, -, ., /, +, %, $, and space. The following requirements shall also be met after environmental testing as specified in Environmental Considerations.

4.2. Bar Code Symbology

The Code 39 symbology shall be in accordance with (AIM) USS-39 Symbol Specification. The optional use of the UCC/EAN-128 symbology in the ***Description*** and ***Special*** data fields shall be in accordance with UCC/EAN standards.

4.3. Bar Code Density

The density of the bar code symbol shall be nominally within the range of 3.70[1] to 6.90 characters per inch as depicted in Tables 2 and 3. For any one label, the X dimension shall be uniform and the element width ratio (N) shall be in the range of 2.5:1 and 3.0:1 for bar code symbols on that label. The intent of this specification is to allow the use of as many print technologies as possible.

The intercharacter gap shall be within the range of 1X to 2X.

4.4. Bar Code Symbol Dimensions

See Tables 2 and 3.

4.5. Check Character

Check Characters shall not be used.

4.6. Quiet Zone

The minimum clear area immediately preceding and following the bar code shall be 0.17 inch (4.3 mm). For optimum wand scanning the quiet zone should be at least 0.25 inch (6.4 mm).

4.7. Print Quality

General requirements and methodologies for bar code print quality measurements should be in accordance with the ANSI X3.182-1990 Bar Code Print Quality - Guideline. Reflectance and print quality measurements should also be met when the label is in its final configuration on the outer shipping container. For overall print quality when using dot matrix, thermal or thermal transfer printers, it is recommended that bar code symbols be printed in the picket fence orientation, as shown in Figure 8.

4.7.1. Reflectance Requirements

Reflectance requirements shall be met in the 670 nm +/- 10% (visible light) spectral band. It is recommended that reflectance requirements be measured using the ANSI X3.182-1990 methodology. If the use of the recommended methodology is not possible, then traditional reflectance measurement methods must be used.

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[1] As an acceptable alternative for an interim period, in order to accommodate existing systems, this density may be used.

When traditional reflectance measurement methods are used the minimum reflectance of the quiet zones should be 60 percent, the minimum reflectance of the spaces between the bars should be 51 percent and the maximum reflectance of bars should be 10 percent.

4.7.2. Print Quality Level

A minimum print quality grade level of 1.5/05/670 is recommended for applications that are designed to scan only the preferred 0.010 inch (0.25 mm) X dimension bar code symbols. The use of the 0.005 inch (0.13 mm) measurement aperture for 0.010 inch (0.25 mm) X dimension bar code symbols is recommended in the ANSI X3.182-1990 Bar Code Print Quality - Guideline.

A minimum print quality grade level of 1.5/10/670 is recommended for applications that are designed to scan bar code symbols with X dimensions of either 0.010 inch (0.25 mm), or 0.0135 inch (0.34 mm), or 0.017 inch (0.43 mm).

These print quality requirements can best be met when the bar code is produced in the picket fence format as shown in Figure 8.

4.7.3. Verification

4.7.3.1. Data Message

Verification of the data encoded in the bar code may be done using a bar code reader capable of displaying as many as 29 characters of scanned data. Care should be exercised when choosing bar code readers for inspection purposes to minimize the probability of a substitution error being made during verification. Other human readable data included on the label but not encoded in a bar code should be inspected visually for legibility.

4.7.3.2. Bar Code

Verification that the bar code elements meet the dimensional requirements of this standard is included in the ANSI X3.182-1990 bar code print quality grading methodology. If traditional reflectance measurement methods are used, dimensional conformance of the bar code elements may be done by bar code readers or automated measuring equipment capable of determining whether a bar or space has been printed within the specified tolerance limits with a repeatable accuracy of at least +/- 0.001 inch (0.03 mm).

5. ENVIRONMENTAL CONSIDERATIONS

These labels are intended primarily for indoor use. Exposure to direct sunlight, rain and high humidity may seriously affect the scannability of the label.

5.1. Storage Conditions

Labels affixed to packages which are to be stored for prolonged periods and which are intended to be subsequently scanned, should be stored in areas which do not consistently maintain temperatures above 120 degrees F (49 degrees C) without being protected.

5.2. Longevity

Labels should continue to be scannable on the package and meet the print quality requirements of this standard for a minimum period of 6 months in a protected environment.

5.3. Use and Protection

The label base material shall be capable of resisting tearing during the adhesion testing specified in 5.3.2 of this standard. The bar code symbols on the label shall withstand damage from 50 passes with a contact type scanner over a path no wider than 0.03 inch (0.76 mm) across the bar code symbol. When contact scanning, contact should be maintained between scanner and label at all times; but firm pressure, which could damage the label, should be avoided.

Label protection against moisture, weathering, abrasion, etc., may be required in harsh environments and is encouraged wherever practicable. Laminates, sprays, window envelopes, and clear plastic pouches are examples of possible protection methods.

In choosing any protection method, however, care must be taken to assure that labels meet reflectivity, dimensional, contrast, adhesive, and verification requirements of 4. BAR CODE REQUIREMENTS and 5. ENVIRONMENTAL CONSIDERATIONS when the label or tag is in its final configuration affixed to the package.

5.3.1. Adhesive Characteristics

The label adhesive shall be applied in a uniform layer and be free from bubbles and foreign matter. When a release liner is used, the label adhesive shall also enable the label to be easily removed from the release liner to the back of a page, where pages are stacked, or to the underside of the release liner for roll form labels.

The initial adhesion strength shall be a minimum of 25 ounces per inch of width (0.27 newton/mm).

5.3.2. Pressure Sensitive Adhesive Measurement Methodology and Requirements

The initial adhesion strength shall be measured by removing at least three labels from the release liner, applying them to a stainless steel test panel in accordance with ASTM D 1000, taking care to leave approximately 0.125 inch (3.17 mm) of release liner on one edge of each label for clamping purposes.

In 2 hours +/- 10 minutes, measure the adhesion strength using a crosshead tensile tester making a 90-degree peel at a rate of 2.0 inches (51 mm) per minute using a wire or cord length of approximately 30 inches (76 cm) between the upper crosshead clamp of the tensile tester and the clamp which grips the label under test. Calculate the average value of adhesion.

In addition, a second set of labels shall be affixed to another ASTM D 1000 stainless steel test panel in the same manner as described in the preceding paragraph. This panel shall be placed in a controlled environmental chamber set to maintain a temperature of 120 degrees F (49 degrees C) and a relative humidity of 95 percent.

After a period of 96 hours the labels shall be removed from the chamber and examined for any evidence of delamination, smearing, lifting or discoloring that would affect either the readability or scannability of the labels. Conformance to bar code print quality requirements specified in 4. BAR CODE REQUIREMENTS shall also be verified.

The panel should be allowed to cool to room temperature (nominally 72 degrees F or 22 degree C). In 1 to 3 hours measure the adhesion strength as specified in the preceding paragraphs. The average value of the adhesion strength shall be greater than 40 ounces per inch of width (0.44 newton/mm).

5.4. Recyclability

When possible, the label material should be compatible with the substrate material to which it is attached for recyclability.

6. LABEL LOCATION

6.1. General

Wherever possible, the label should be affixed to the smaller end of the package or shipping container, which might be facing the aisle if the package is stored on shelving or racks, to permit easy identification during temporary storage (as shown in exhibit I).

6.2. Obsolete Labels

Obsolete labels should be removed or covered. When covering obsolete labels, the print quality of the new label applied over the obsolete label shall meet the requirements of this standard.

6.3. Placement Guidelines

If a label cannot be affixed because of package or container type, shape or other constraints, the label shall then be affixed to an attached tag as shown in exhibit G. Exhibit H illustrates several label locations. Labels shall not be placed in a position that would inhibit scanning. The label may complement lower level product package labeling in accordance with Appendix C. Labeling implementation guidelines are included for reference in Appendix D.

Figure 8 Label Printing Orientation

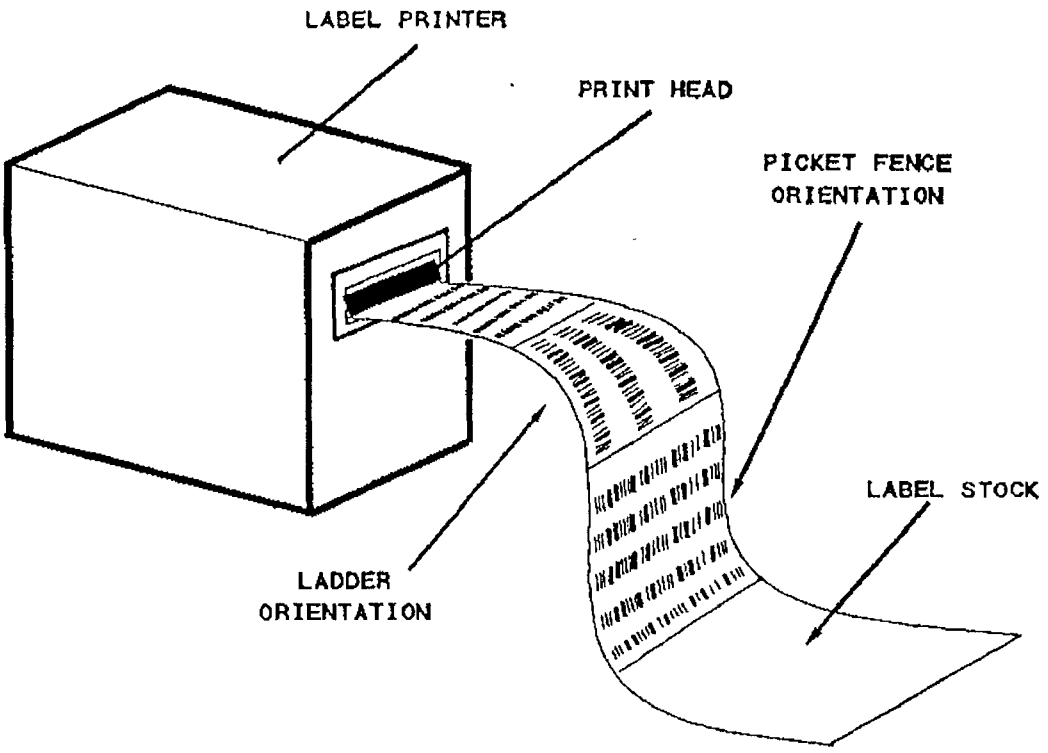


EXHIBIT A
Label Sample
Single Product ID/Single Package
- Figure 1 Label Format -

FR: ABCDEFGHIJKLMNOP ABCDEFGHIJKLMNOPQRS ABCDEFGHIJKLMNOPQRS ABCDEFGHIJKLMNOPQRS ABCDEFGHIJKLMNOPQRS ABCDEFGHIJKLMNOPQRS ABCDEFGHIJKLMNOPQRS ABCDEFGHIJKLMNOPQRS	TO: ABCDEFGHIJKLMNOPQRSTUVWX ABCDEFGHIJKLMNOPQRSTUVWXYZA ABCDEFGHIJKLMNOPQRSTUVWXYZA ABCDEFGHIJKLMNOPQRSTUVWXYZA ABCDEFGHIJKLMNOPQRSTUVWXYZA ABCDEFGHIJKLMNOPQRSTUVWXYZA ABCDEFGHIJKLMNOPQRSTUVWXYZA
(3S) PKG ID:	01234561234567890
(K) TRANS ID:	12345678901234567
(P) CUSTOMER PROD. ID:	12345678901234567
(7Q) QUANTITY:	9999999 EA
(Z) SPECIAL:	12345678901234567
ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLMNOPQRST ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLMNOPQRST ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLMNOPQRST ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLMNOPQRST ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLMNOPQRST	
PACKAGE COUNT: 1 OF 1	PACKAGE WEIGHT: 220 LB 100 KG

DRAWING NOT TO SCALE

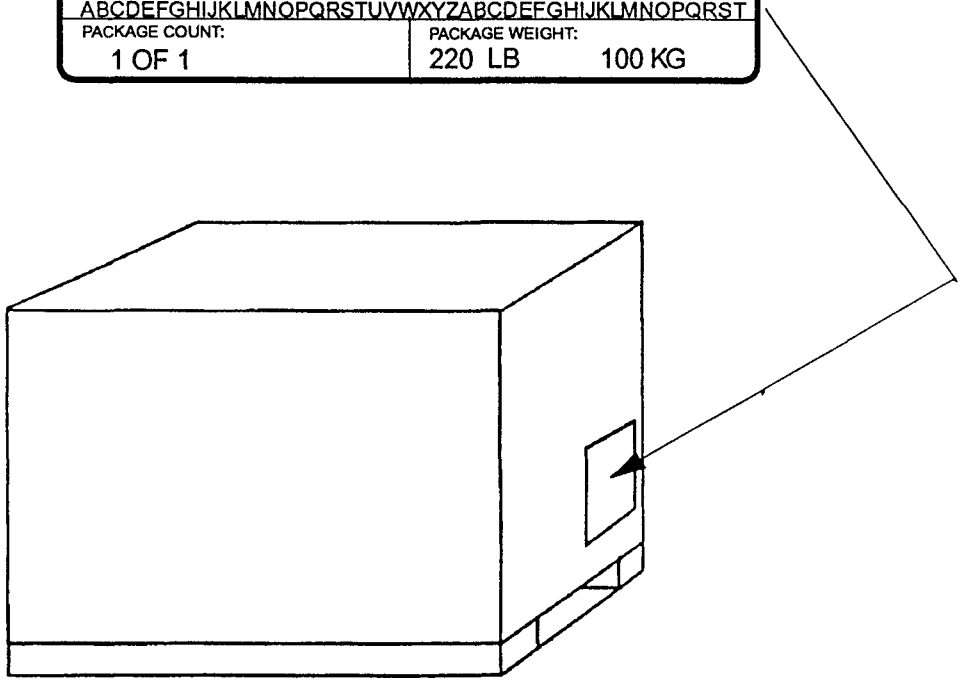
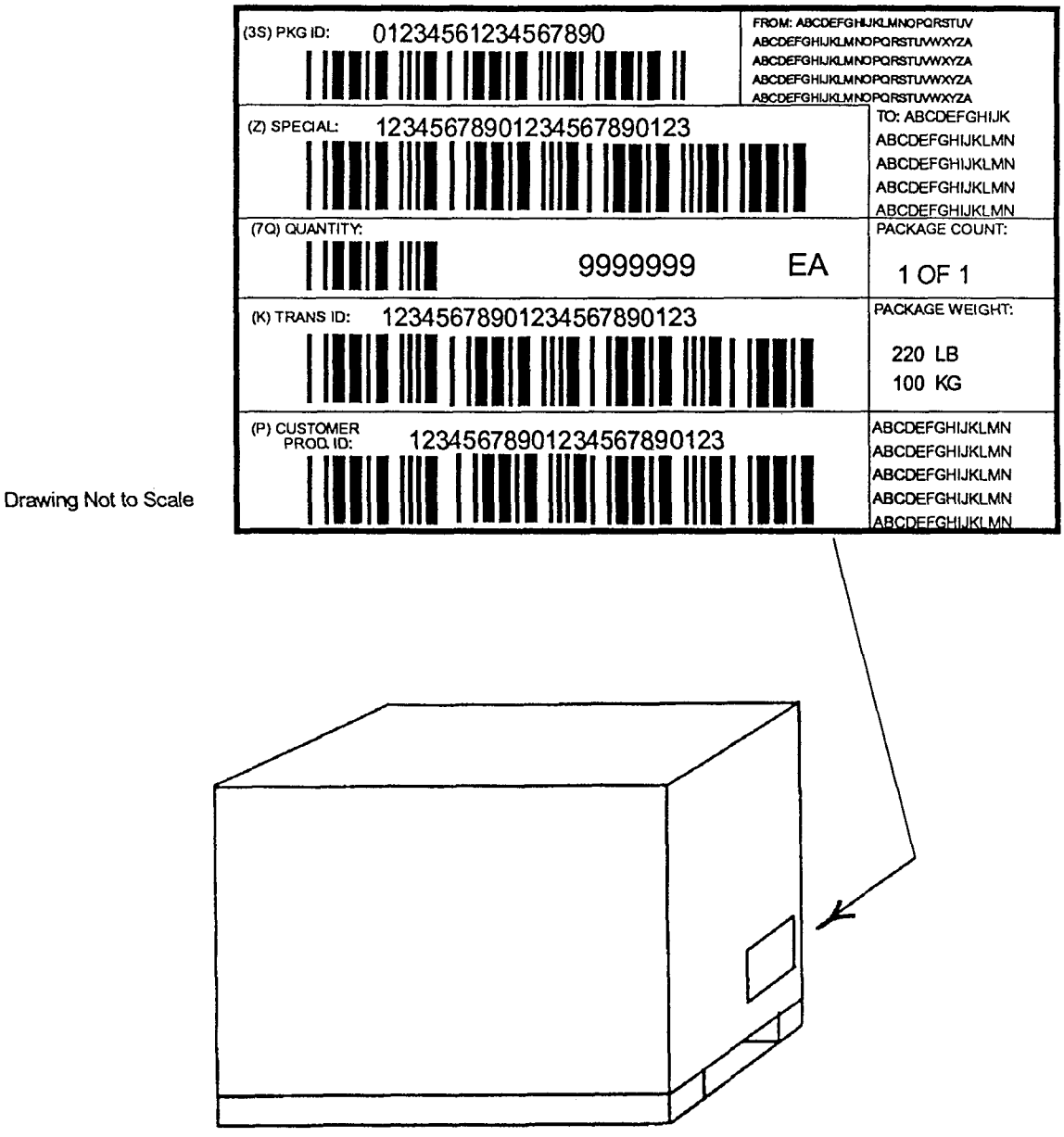


EXHIBIT A (continued)
Label Sample
Single Product ID/Single Package
- Figure 2 Label Format -



Drawing Not to Scale

EXHIBIT B
Label Sample
Single Product ID/Two or More Packages
- Figure 1 Label Format -

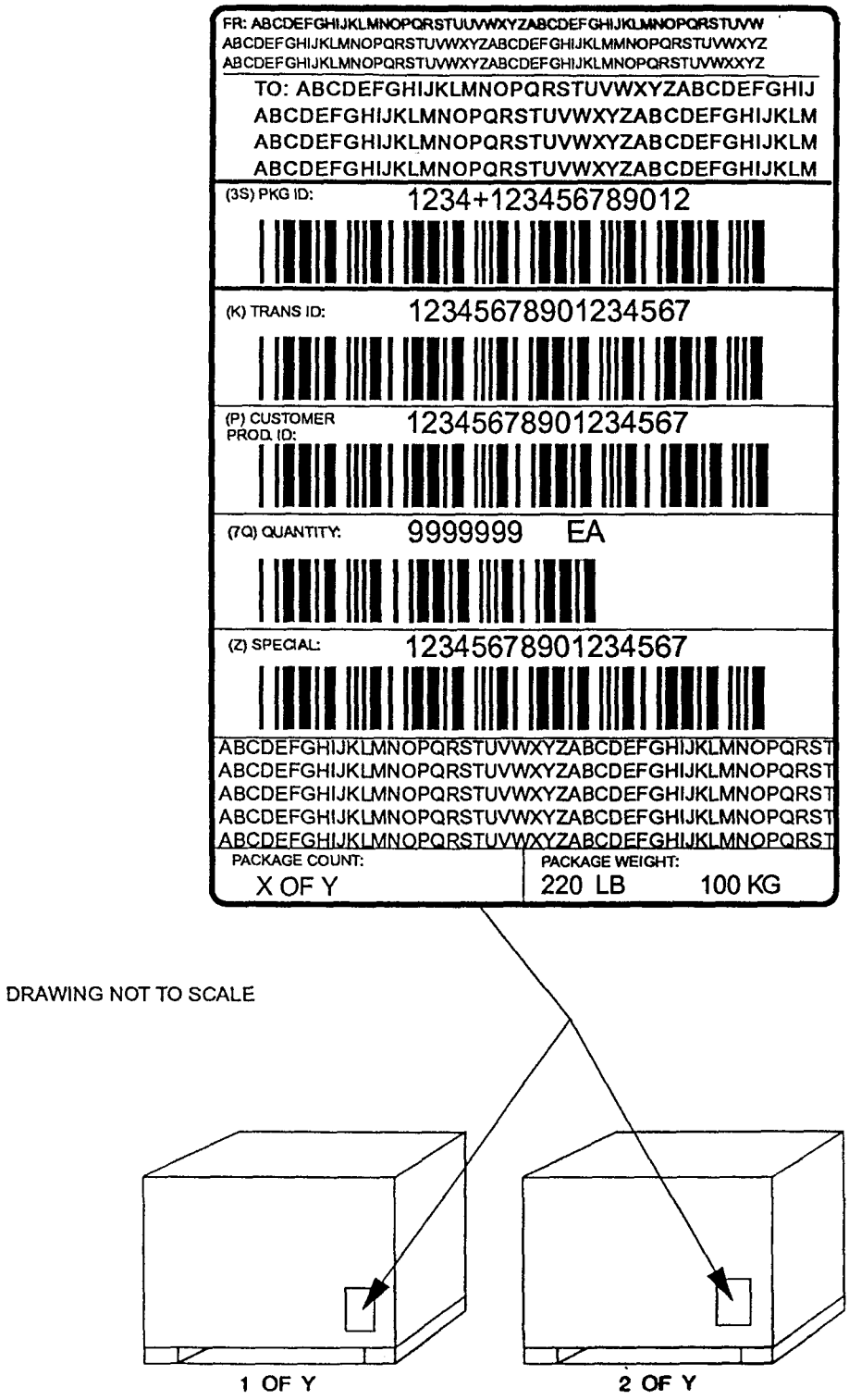


EXHIBIT B (continued)
Label Sample
Single Product ID/Two or More Packages
- Figure 2 Label Format -

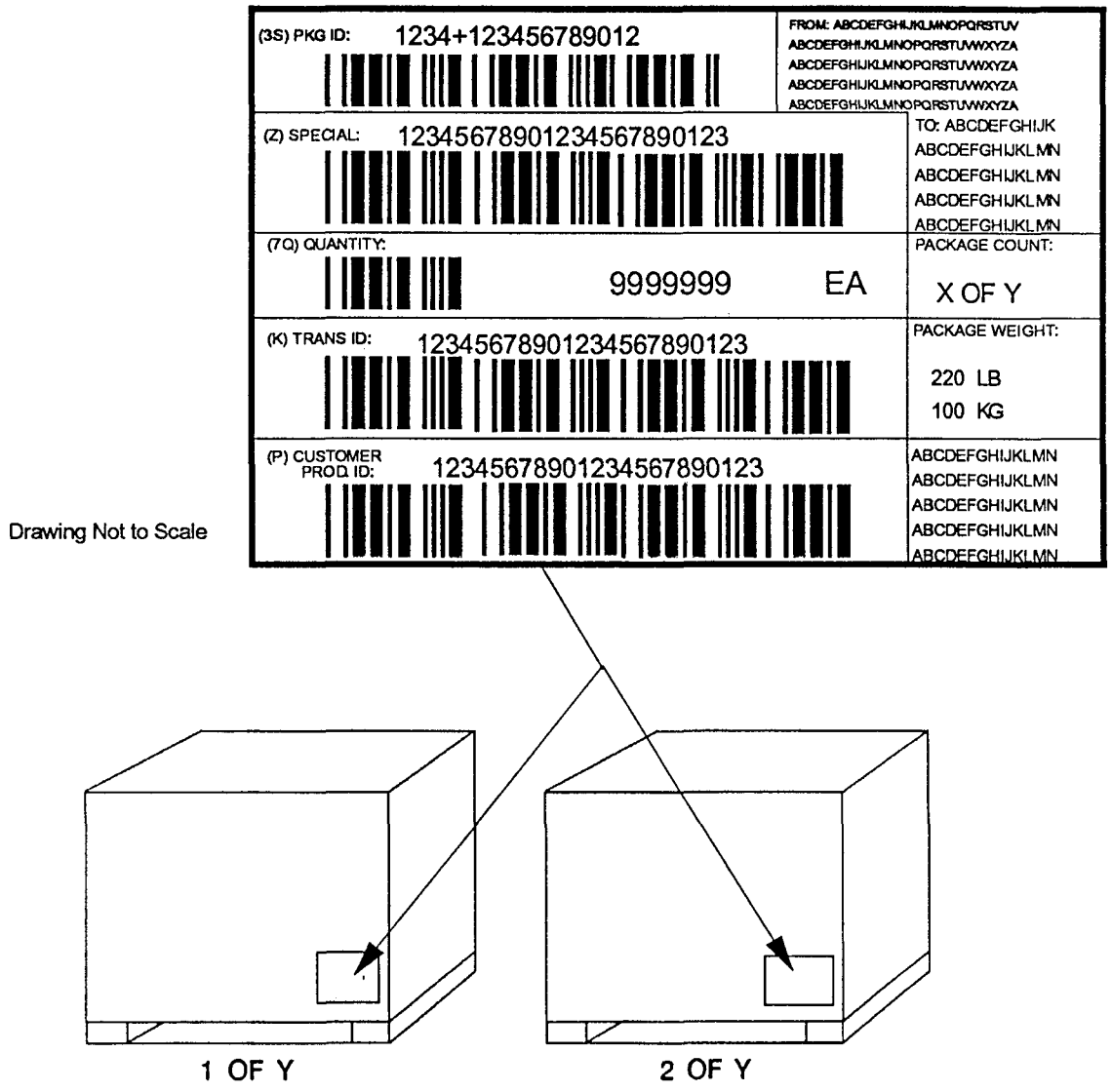


EXHIBIT C
Label Sample
- Master Pack -
Single Order/Single Product ID
- Figure 1 Label Format -

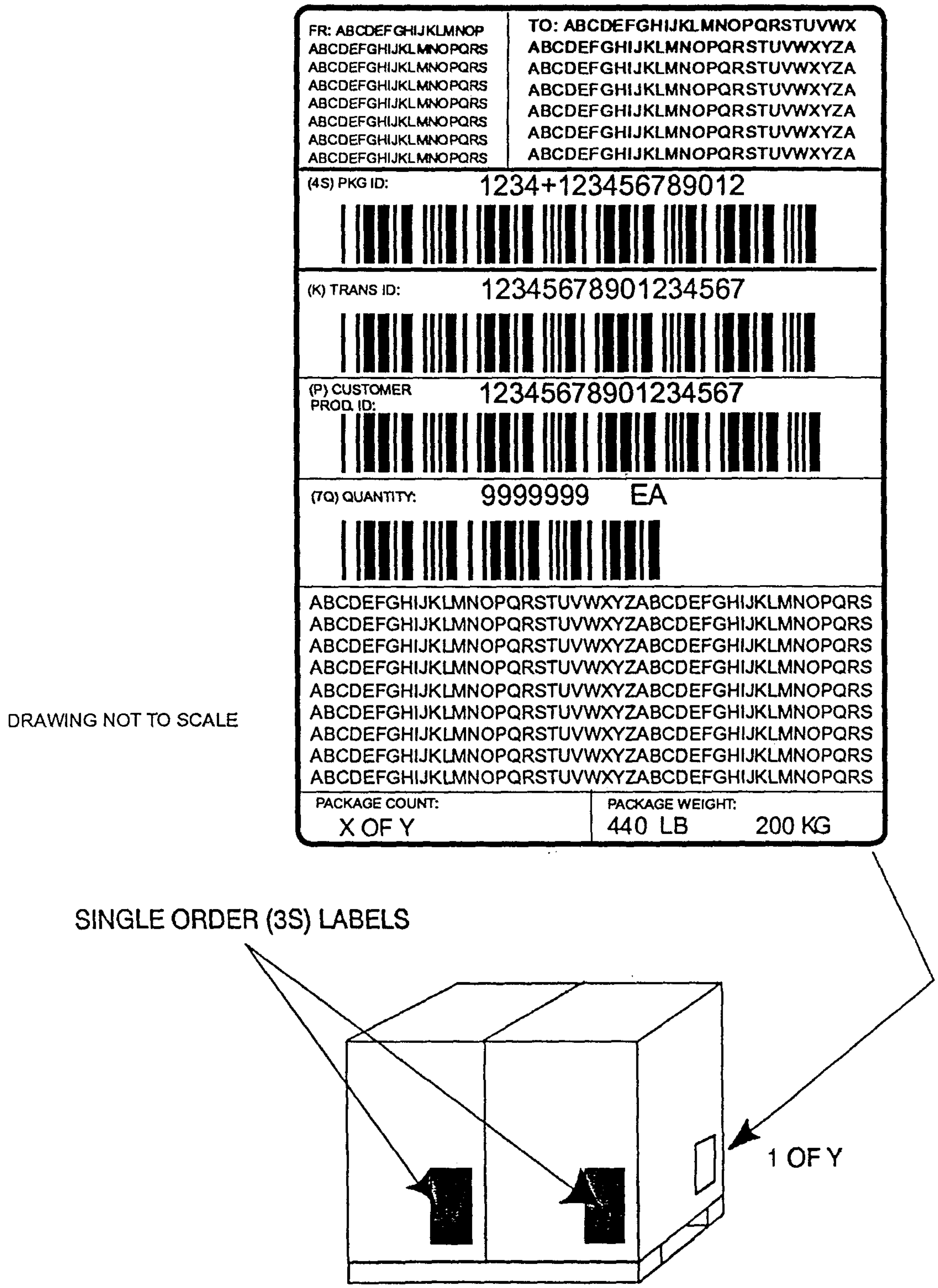


EXHIBIT C (continued)
Label Sample
- Master Pack -
Single Order/Single Product ID
- Figure 2 Label Format -

Drawing Not to Scale

(4S) PKG ID: 01234561234567890

FROM: ABCDEFGHIJKLMNOPQRSTUV
ABCDEFGHIJKLMNOPQRSTUVWXYZA
ABCDEFGHIJKLMNOPQRSTUVWXYZA
ABCDEFGHIJKLMNOPQRSTUVWXYZA
ABCDEFGHIJKLMNOPQRSTUVWXYZA

ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLMNOPQRS
ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLMNOPQRS
ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLMNOPQRS
ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLMNOPQRS

TO: ABCDEFGHIJK
ABCDEFGHIJKLMN
ABCDEFGHIJKLMN
ABCDEFGHIJKLMN
ABCDEFGHIJKLMN

(7Q) QUANTITY: 9999999 EA

PACKAGE COUNT:
X OF Y

(K) TRANS ID: 1234567890123456789012 3

PACKAGE WEIGHT:
440 LB
200 KG

(P) CUSTOMER PROD ID: 1234567890123456789012 3

ABCDEFGHIJKLMN
ABCDEFGHIJKLMN
ABCDEFGHIJKLMN
ABCDEFGHIJKLMN
ABCDEFGHIJKLMN

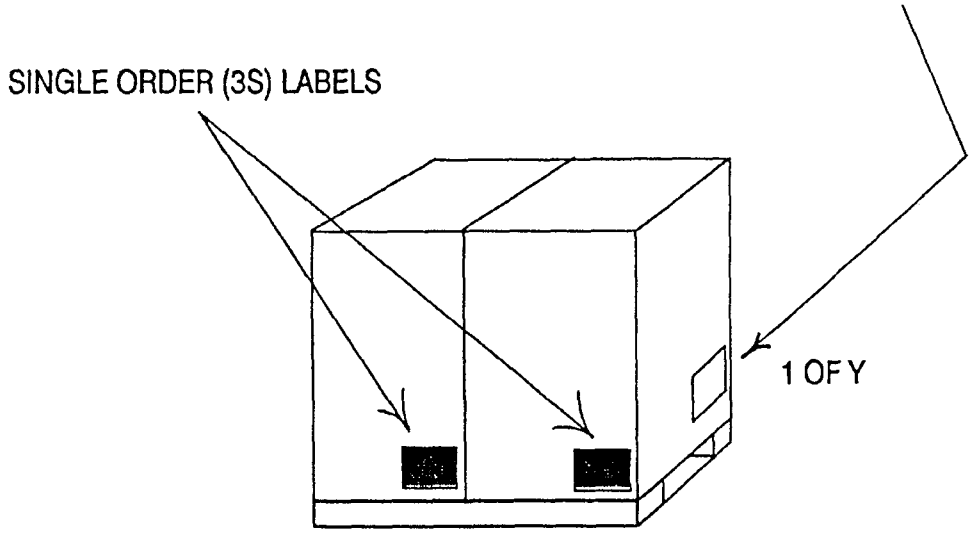
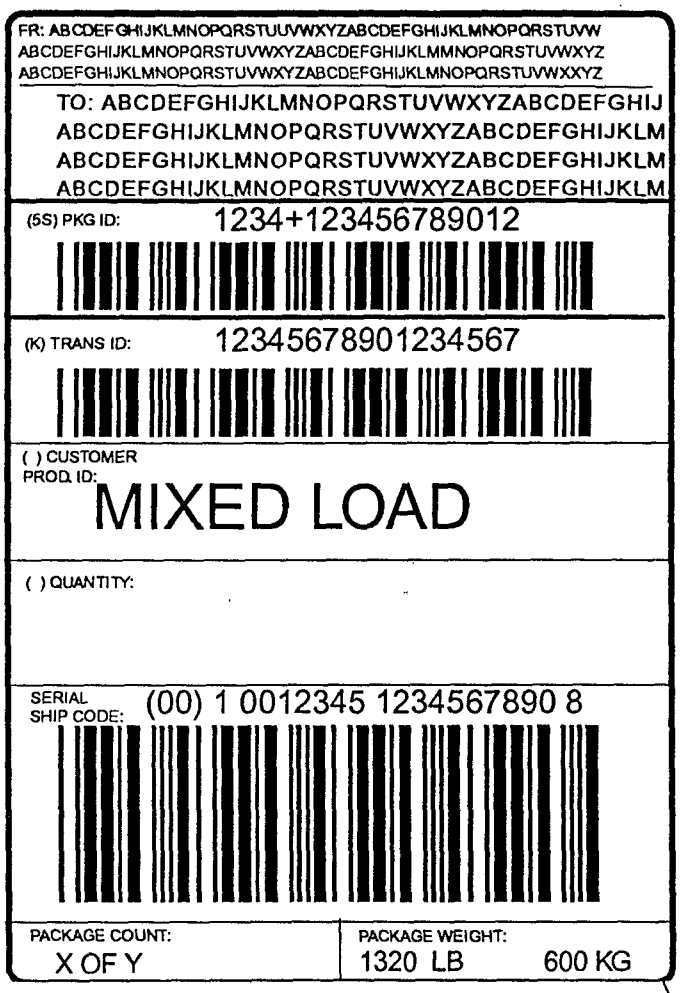


EXHIBIT D
Label Sample
- Master Pack -
Single Order/Multiple Product IDs
- Figure 1 Label Format -



DRAWING NOT TO SCALE

SINGLE ORDER (3S) LABELS

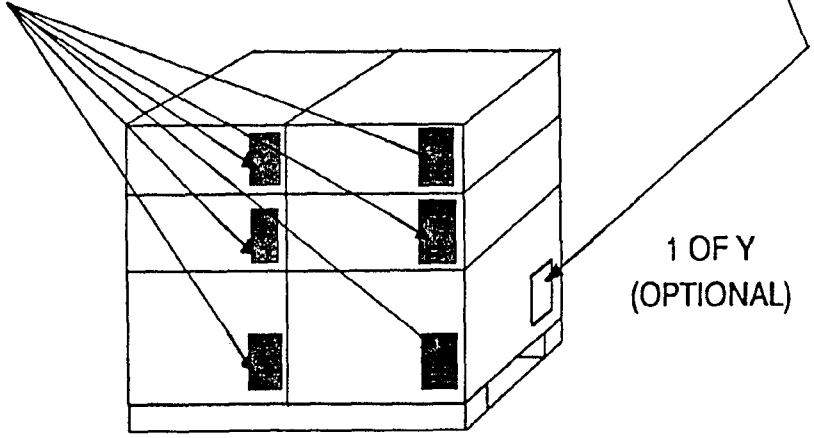


EXHIBIT D (continued)
Label Sample
- Master Pack -
Single Order/Multiple Product IDs
- Figure 2 Label Format -

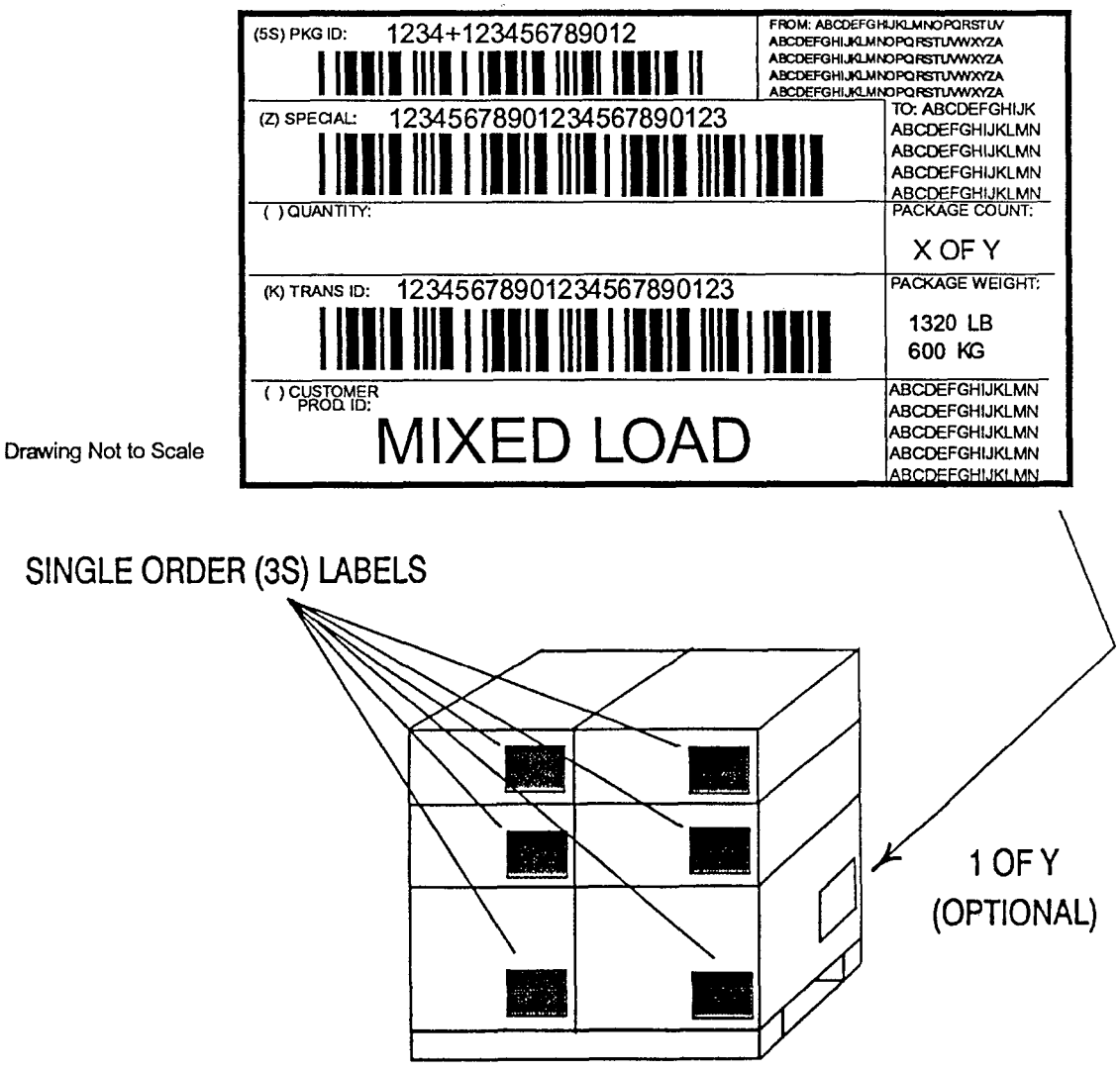


EXHIBIT E
Label Sample
- Master Pack -
Multiple Orders/Single Product IDs
- Figure 1 Label Format -

DRAWING NOT TO SCALE

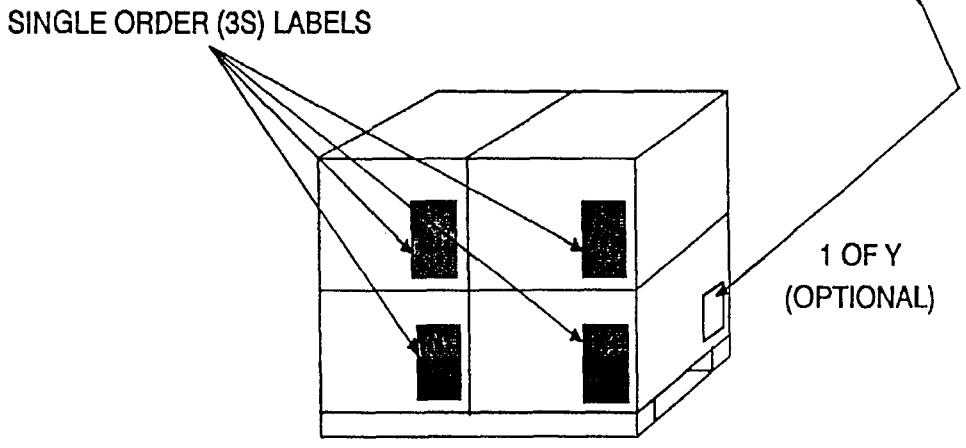


EXHIBIT E (continued)
Label Sample
- Master Pack -
Multiple Orders/Single Product IDs
- Figure 2 Label Format -

Drawing Not to Scale

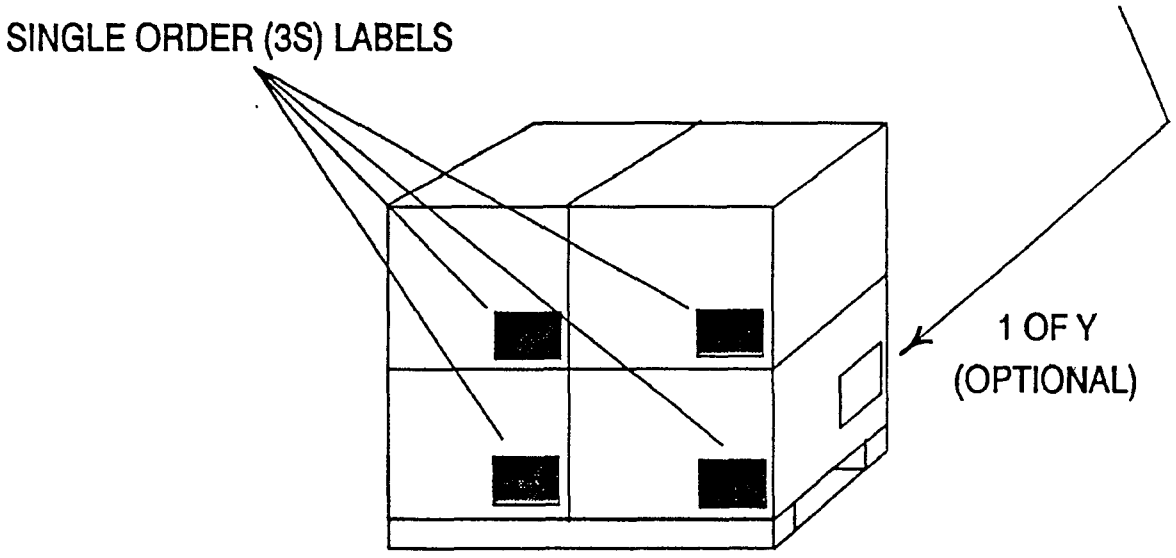


EXHIBIT F
Label Sample - Master Pack
Multiple Orders / Multiple Product IDs
- Figure 1 Label Format -

FR: ABCDEFGHIJKLMNOPQRSTUUVWXYZABCDEFGHIJKLMNOPQRSTUVW
ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLMMNOPQRSTUVWXYZ
ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLMNOPQRSTUVWXXYZ

TO: ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJ
ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLM
ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLM
ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLM

(7S) PKG ID: 1234+123456789012

( ) TRANS ID:

MULTI ORDER

( ) CUSTOMER PROD. ID:

MIXED LOAD

( ) QUANTITY:

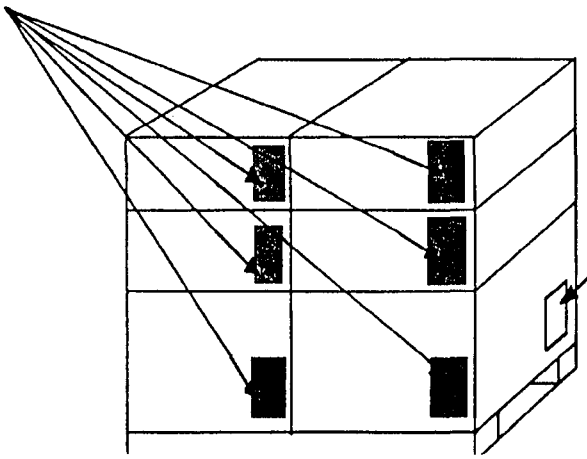
(Z) SPECIAL: 12345678901234567

ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLMNOPQRS
ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLMNOPQRS
ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLMNOPQRS
ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLMNOPQRS
ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLMNOPQRS

PACKAGE COUNT:	PACKAGE WEIGHT:
X OF Y	2640 LB 800 KG

DRAWING NOT TO SCALE

SINGLE ORDER (3S) LABELS
OR
MIXED LOAD (5S) LABELS
OR
MULTI ORDER (6S) LABELS



1 OF Y
(OPTIONAL)

EXHIBIT F (continued)
Label Sample
- Master Pack -
Multiple Orders / Multiple Product IDs
- Figure 2 Label Format -

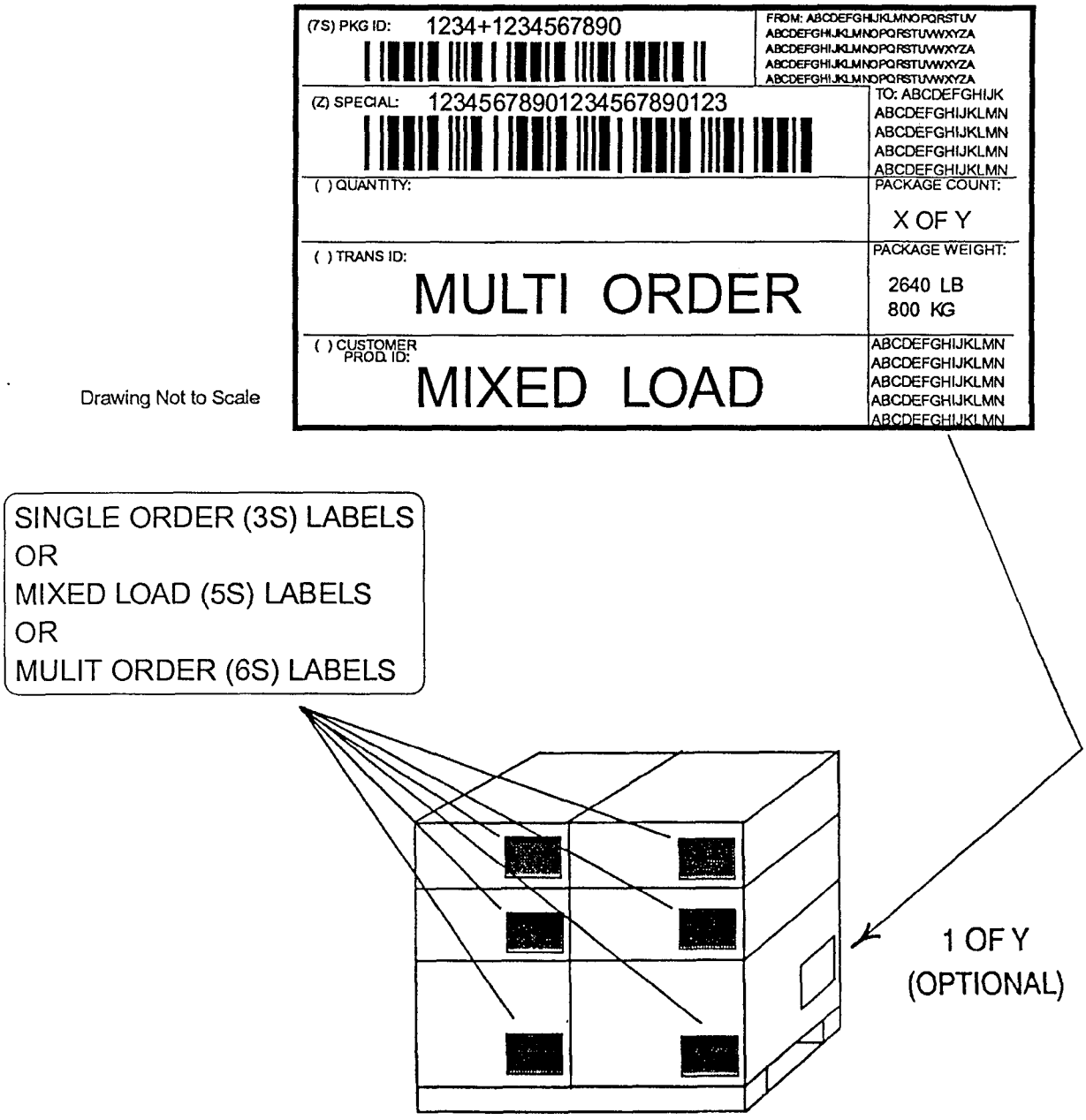
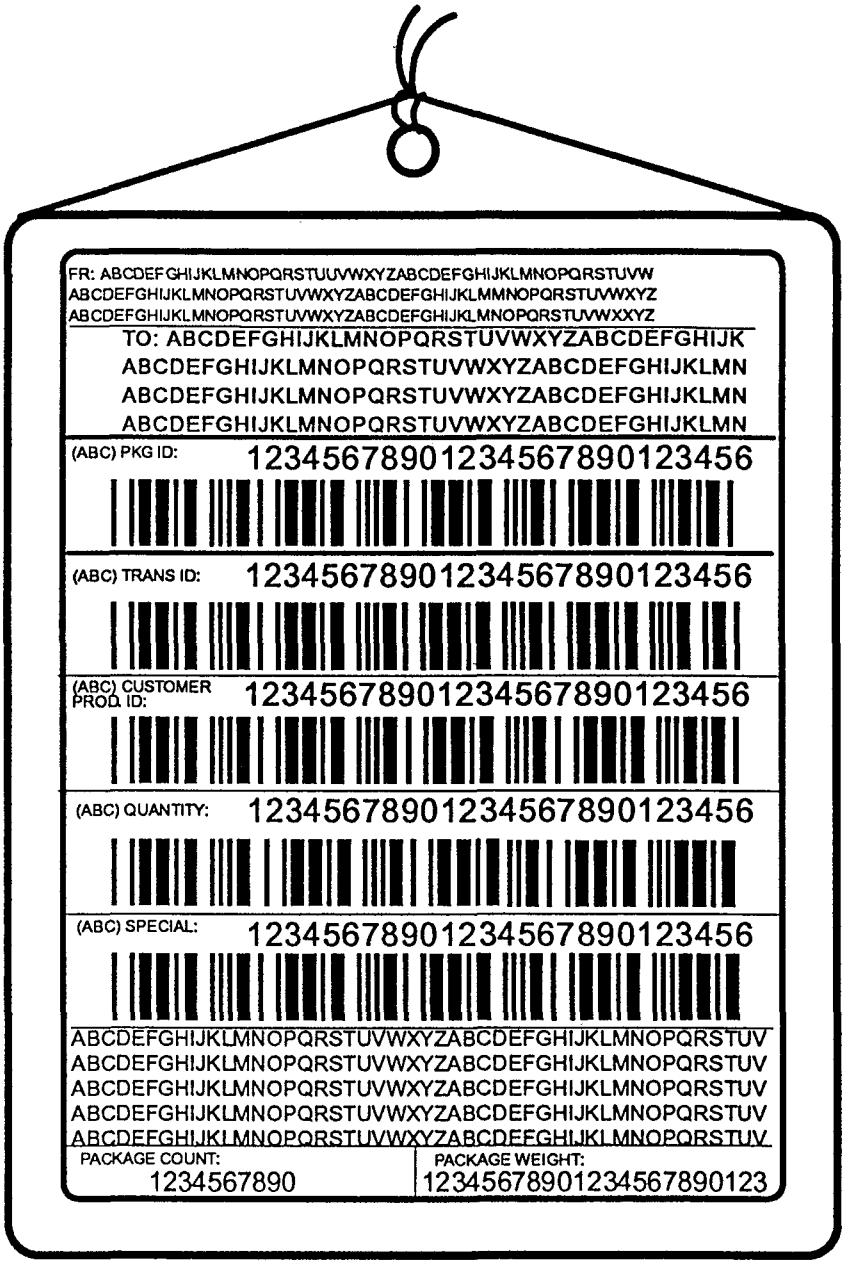
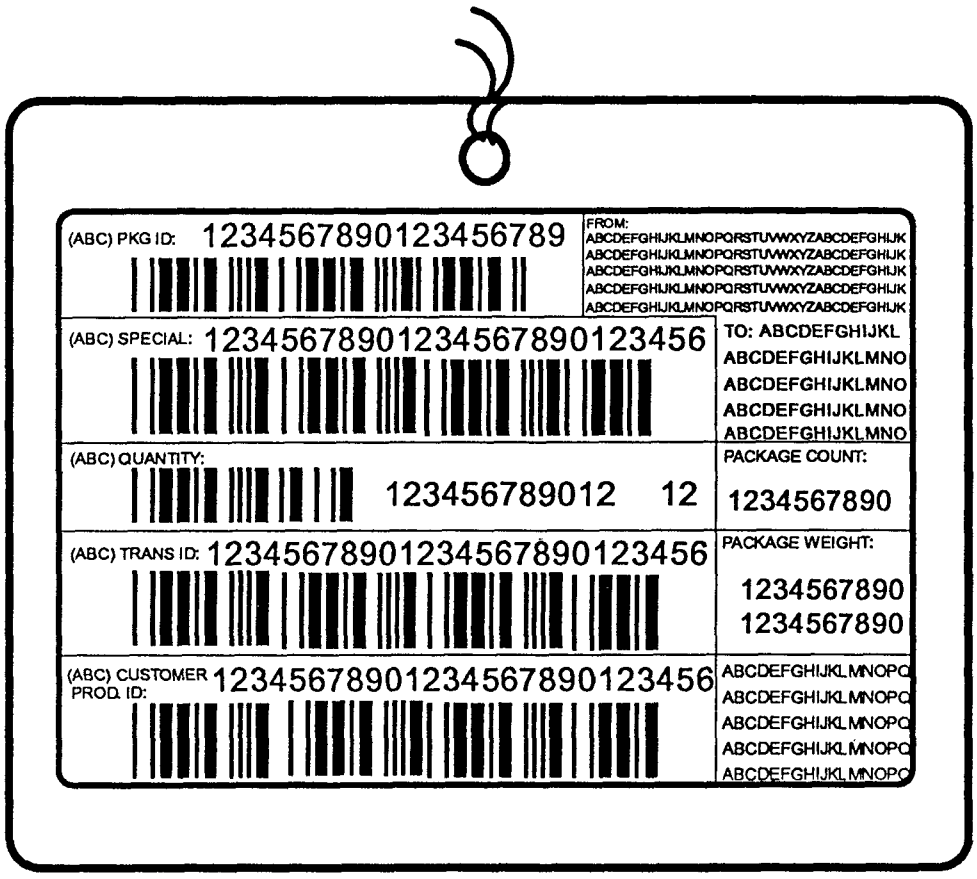


EXHIBIT G
Tag Format
- Figure 1 Label Format -



DRAWING NOT TO SCALE

EXHIBIT G (continued)
Tag Format
- Figure 2 Label Format -

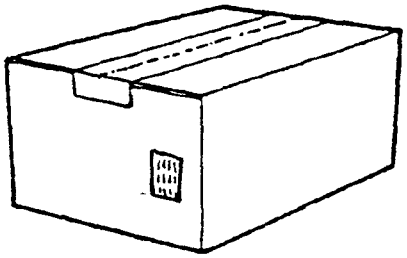


Drawing Not to Scale

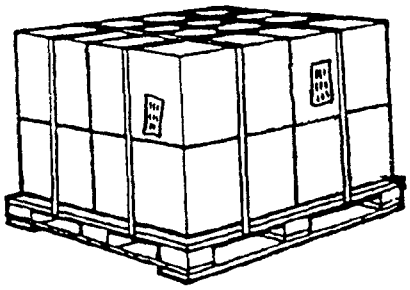
EXHIBIT H
EDI Label Sample

DRAWING NOT TO SCALE

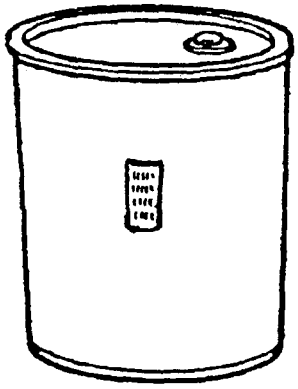
EXHIBIT I
Label Locations on Various Shipping Packs



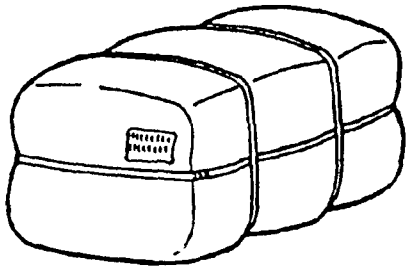
BOX OR CARTON



PALLET

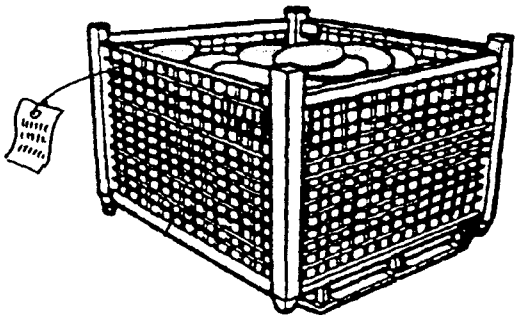


DRUMS, BARRELS, OR CYLINDRICAL CONTAINERS

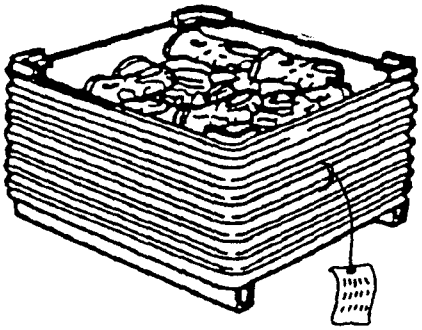


BALES

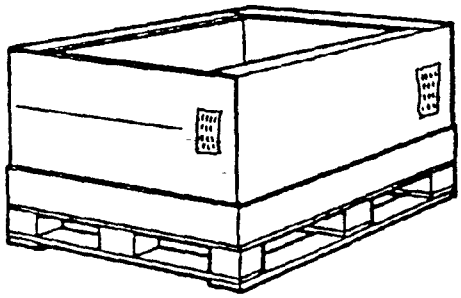
EXHIBIT I (Continued)
Label Locations on Various Shipping Packs



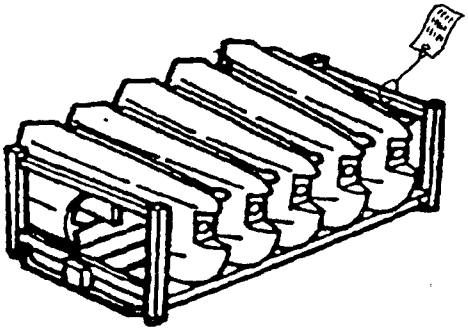
BASKET, WIRE MESH CONTAINER



METAL BIN OR TUB

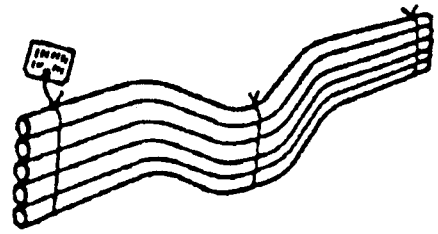


PALLET BOX

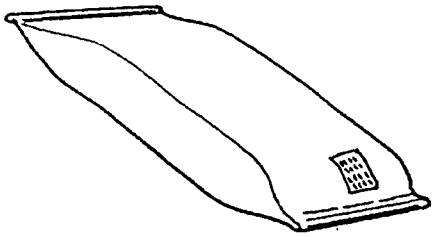


RACK

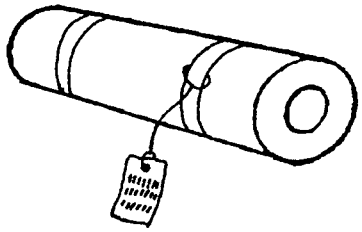
EXHIBIT I (Continued)
Label Locations on Various Shipping Packs



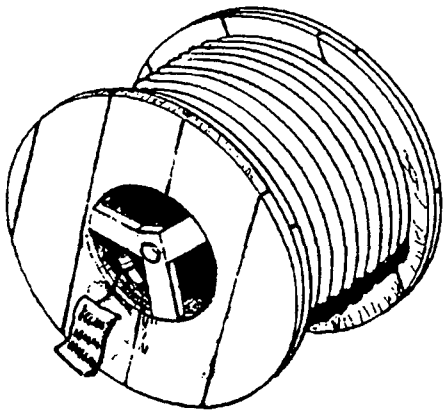
BUNDLE



BAG



ROLL



CABLE REEL

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APPENDIX A

DEFINITIONS

AIAG - Automotive Industry Action Group

AIM - AIM USA, 634 Alpha Drive, Pittsburgh, PA, 15238-2802, Phone (412) 963-8588.

Alphanumeric - The character set that contains letters, numbers, and usually other characters such as punctuation marks.

ANSI - The American National Standards Institute; a non governmental organization responsible for the coordination of voluntary national standards. 11 West 42nd Street, New York, NY 10036, Phone (212) 642-4900.

Aperture - The physical opening in an optical system that establishes the field of view

Application Identifier - The numeric codes assigned by UCC/EAN to identify contents of UCC/EAN-128 bar code symbols. Application identifiers are two digits in length for commonly used data with one or two additional digits for data content variables.

ASC - Accredited Standards Committee

ASTM - American Society for Test and Materials

Bar - The darker element of a bar code symbol.

Bar Code - An array of parallel rectangular bars and spaces that together represent data elements or characters in a particular bar code symbology.

Bar Code Character - A single group of bars and spaces that represent an individual letter, number, punctuation mark or other symbol.

Bar Code Density - The number of data characters that can be represented in a linear unit of measure. Bar code density is often expressed in characters per inch (CPI). CPI is a function of the "X" dimension, element width ratio, and intercharacter gap.

Bar Code Reader or Scanner - A device used for machine reading of a bar code. Readers may employ hand held wands, fixed optical beams, moving laser beams, or hand-held moving laser beams. See **scanner**.

Bar Code Symbol - An array of rectangular bars and spaces that are arranged in a predetermined pattern following specific rules to represent elements of data

that are referred to as characters. A bar code symbol contains a leading quiet zone, start pattern data character(s) including a check character (if any), stop pattern, and a trailing quiet zone.

Bar Height - The bar dimension perpendicular to the bar width. Also called bar length.

Bar Length - See "**Bar Height**".

Bar Width - The perpendicular distance across a bar measured from a point on one edge to a point on the opposite edge. Each point will be defined as having a reflectance that is 50 percent of the difference between the background and bar reflectances.

Binary - The number system that uses only ones and zeros.

Character - A letter, digit, or other special form that is used as a part of the organization, control, or representation of data. A character is often in the form of a spatial arrangement of adjacent or connected strokes.

Characters Per Inch (CPI) - The number of bar code characters that are displayed in each inch of bar code.

Character Set - Those characters that are available for encoding within the bar code symbol.

Check Character - A character included within a message whose value is used for the purpose of performing a mathematical check to ensure the accuracy of that message. For the purpose of this standard a check character is not used.

Code 39 - The 3 of 9 bar code is a variable length, discrete, self-checking, bidirectional, alphanumeric bar code. Its character set contains 43 meaningful characters: 0-9, A-Z, -, ., $, /, %, *, and space. Each character is composed of nine elements: five bars and four spaces. Three of the nine elements are wide (binary value 1), and six elements are narrow (binary value 0). The character (*) is used for both start and stop character.

Customer Product ID - A combination of alphanumeric characters used by a customer or buyer to identify a product.

Data Field - The specific portion or area of a label designated to contain human readable, bar code or graphic information.

Data Identifier - A specified character string used with Code 39 that defines the specific intended use of the data that immediately follows. The identifier shall be an alphabetic character preceded by up to three numeric characters. The data field identifiers shall be those published by FACT. The appropriate data field identifier shall precede the title of each bar code data field.

Density - See **"Bar Code Density"**.

Depth of Field - The difference between the minimum and maximum horizontal distance from the aperture of the bar code reader throughout which the bar code can be read.

Destination Label - A label to identify the receiver of a package or shipping container.

Discrete Bar Code Symbol - A bar code symbol in which the intercharacter space is not part of the bar code symbology and is allowed to vary dimensionally within tolerance limits.

Electronic Data Interchange (EDI) - The exchange of routine business transactions in a computer-processable format, covering such traditional applications as inquiries, planning, purchasing, acknowledgments, pricing, order status, scheduling, test results, shipping and receiving, invoices, payments, and financial reporting.

Electronic Industries Association (EIA) - 2001 Pennsylvania Avenue N.W., Washington D.C., 20006, Phone (202) 457-4900.

Element - In a bar code symbol, a single bar or space.

Element Width Ratio - The ratio of the average width of the wide elements to the average width of the narrow elements within a bar code symbol.

FACT - Federation of Automated Coding Technologies, 634 Alpha Drive, Pittsburgh, PA, 15238-2802, Phone (412) 963-8588..

Human Readable Interpretation (HRI) - The interpretation of the encoded bar code data presented in a human readable font.

Intercharacter Gap - The space between the last element of one character and the first element of the adjacent character of a discrete bar code symbol.

Mandatory Data Field - A data field that must always contain data.

Master Pack - See "Unit Load"

Message (Bar Code Symbol) - The string of characters encoded in a bar code symbol.

Message Code - A user-specific meaning ascribed to a bar code message, including any message format restrictions or check digits.

Message Length - The number of characters contained in a single encoded message.

Misread - A condition which occurs when the data output of a reader does not agree with the data encoded in the bar code symbol.

Mixed Load Label - A label or tag used to designate a pack or shipping container containing unlike items.

Multi Order Label - A label or tag used to designate a container consisting of identical products that are shipped to fulfill multiple customer orders.

Multi Order/Mixed Load Label - A label or tag used to designate a container consisting of unlike products that are shipped to fulfill multiple customer orders.

Nominal Width - The ideal width excluding any tolerance. For a printed bar code symbol, the average width for each element size.

Non-Read - The absence of data at the reader's output after an attempted scan due to no code, defective code, reader failure or operator error.

Opacity - The property of a material to obstruct the transmission of light and prevent show through from other marking that may interfere with bar code scanning performance.

Optional Data Field - A data field that may or may not contain data based on the needs of the customer and the supplier or manufacturer.

Package or Shipping Container - The final container that is sufficiently strong to be used in commerce for packing or storing and transporting products.

Print Quality - The measure of compliance of a bar code symbol to the requirements of dimensional tolerance, edge roughness, spots, voids, reflectance, quiet zone and encodation.

Product Label - The identification label affixed to an individual product.

Product Package - The first tied, wrapped, or bagged container applied to a single product or multiple thereof or group of identical products.

Product Package Label - The label on each individual product package that identifies the product and that may identify the manufacturer or the supplier or manufacturer.

Quiet Zone - A clear space, which precedes the start character of a bar code symbol and follows the stop character. Sometimes called the "Clear Area".

Reflectance - The ratio of the amount of light of a specified wavelength, or series of wavelengths, reflected from a test surface to the amount of light reflected from a barium sulfate or magnesium oxide standard.

Scanner - An optical and electronic device that scans bar code symbols and outputs the bar code information in the form of electrical signals suitable for input to a computer system.

Self-Checking Bar Code - A bar code that uses a checking algorithm that can be applied against each character to guard against undetected errors.

Single Order Label - A transaction label or tag used to designate a package or container of identical products resulting from a single order.

Single Pass Bar Code Scanner - A scanner which relies completely on a single scan to capture data from a bar code symbol.

Space - The lighter element of a bar code usually formed by the background between bars.

Spots - Unwanted dark areas in the spaces, quiet zones and intercharacter gaps of a bar code symbol that may be caused by such conditions as the presence of extraneous ink, printing errors or dirt.

Spot Size - The diameter of the focused image of the emitter in scanners that use apertured optical systems.

Start and Stop Characters - Distinct characters or patterns used at the beginning and end of each bar code symbol that provide initial timing references and direction-of-read information to the decoding logic.

Substitution Error - The replacement of a bar code marked character(s), by an erroneous character(s) usually traceable to poor quality printing, decoding logic error, human input error, or any combination of these.

Substrate - The material (e.g., paper, plastic, metal) upon which a bar code symbol is "printed" or reproduced.

Supplier or manufacturer Product Identification Number - A combination of alphanumeric characters used by a supplier or manufacturer to identify a product.

Supplier or manufacturer ID Code - A code that uniquely identifies a supplier or manufacturer.

TCIF - Telecommunications Industry Forum c/o Exchange Carriers Standards Association, 1200 G Street, N.W., Suite 500, Washington, D.C., 20005, Telephone (202) 434-8844.

Trading Partners - A buyer and seller of goods or services who establishes a mutual agreement to conduct a transaction.

Transaction Label - The label on each shipping container used to convey information about the contents and order.

Transaction Identification Number - A combination of alphanumeric characters assigned by the customer to the transaction, typically the customer's purchase order number.

Transport Package - A package intended for the transportation of one or more articles, or smaller packages, or of bulk material.

Uniform Code Council (UCC) - An organization that assigns product and supplier or manufacturer identification numbers. 8163 Old Yankee Road, Suite J, Dayton, Ohio 45458, Telephone (513) 435-3870

Unit Load - A number of filled transport packages or other items that are held together by one or more means such as a pallet, slip sheet, strapping, interlocking, glue, shrink wrap, stretch wrap, or net wrap to make them suitable for transportation, stacking and storage as a unit. (The term is also used to describe a single large item suitably packaged for transportation, stacking, and storage.) Sometimes referred to as Master Pack.

USS 39 - Universal Symbology Specification Code 39.

Verification - The process of ensuring that bar code print quality conforms to user specifications or to published industry standards; i.e., ANSI X3.82-1990 and EIA-556-A.

Vision Systems - An optical technology that, through the use of a device similar to a video camera, can interpret a bar code at a fixed distance.

X Dimension - The intended width of the narrow element. The narrow bar and the narrow space are equal in Code 39.

APPENDIX B

REFERENCES

1. American National Standard X12.3 Data Element Number 355 Unit of Measure Code available from the American National Standards Institute (ANSI) 11 West 42nd Street, New York, NY, 10036, phone (212) 642-4900.

2. American National Standard X3.182-1990 Bar Code Print Quality Guidelines available from the American National Standards Institute (ANSI) 11 West 42nd Street, New York, NY, 10036, phone (212) 642-4900.

3. American National Standard ANSI/MH10.8.2 Data Application Identifier Standard and ANSI/X3.182 Bar Code Print Quality Guidelines are available from ANSI, 11 West 42nd Street, New York, New York 10036, phone (212) 642-4900.

4. ASTM D-1000 Testing Procedures, available from ASTM, 1916 Race Street, Philadelphia, PA 19103, phone (215) 299-5585.

5. Telecommunications Industry Forum (TCIF) Implementation Guide to Package Labeling BC/89-002 available from the TCIF/ECSA, 1200 G Street, N.W., Suite 500, Washington, D.C. 20005, phone (202) 434-8844

6. Telecommunications Industry Forum (TCIF) Product Package Label Specification BC/89-003 available from TCIF/ECSA, 1200 G Street, N.W., Suite 500, Washington, D.C. 20005, phone (202) 434-8844

7. Universal Product Code: Industrial and Commercial Guidelines available from the Uniform Code Council (UCC), 8163 Old Yankee Road, Suite J, Dayton, OH 45458, phone (513) 435-3870.

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APPENDIX C

PRODUCT PACKAGE LABEL

GUIDELINE

(Replaces the former Supplement to EIA-556-A)

For Lucent Technologies use 801-001-106 Product Package Guidelines

These Guidelines generally follow the requirements of the Telecommunications Industry Forum (TCIF) Product Package Label Specification BC/95/003.

"This appendix is not a formal part of the attached EIA standard."

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APPENDIX D

IMPLEMENTATION GUIDE

TO

PACKAGE LABELING

(Supplement to EIA-556-A)

This guideline has been issued by the ELECTRONIC INDUSTRIES ASSOCIATION (EIA), an organization that is independent of Lucent Technologies. There is no connection between Lucent Technologies and EIA and EIA neither endorses or sponsors Lucent Technologies' issuance of this guideline.

"This appendix is not a formal part of the attached EIA standard but is included for purposes of information only."

TABLE OF CONTENTS

INTRODUCTION

In an effort to provide information on the contents of shipped material, labeling is critical. The following is a guideline for decision making when label application is initiated. This document covers both product package and shipping & receiving transaction bar code labels.

(**NOTE:** In this document, package or shipping containers will be denoted by either transport package or unit load containers.)

The format of this guideline is via use of various scenarios that would be commonly used for labeling in material logistics.

In the general case, a shipment will consist of at least **3S** labeling as the lowest level of transaction labeling. Shipments may also include additional master pack labeling **4S - 7S** to denote a specific type of shipment. Trading partners should strive to use the lowest level of labeling to accomplish the shipping/receiving transaction process.

A product package label may be applied to a unit pack in order to provide for internal warehouse functionality, but is not required as a part of the shipping/receiving transaction process.

SUMMARY OF CASES

The following table summarizes the various packing scenarios commonly used for labeling implementation in a cost effective materials logistic program. It assumes a hierarchy of labeling, with **3S** as the lowest level of transaction labeling and **4S** through **7S** as an overpack or "master label". For example, a "**5S**" labeled transport package cannot be placed in a larger container, as a "unit load", and have the unit load also labeled "**5S**".

A product package label (**P2**) used for inventory control rather than transaction processing is included for label closure.

Note: The case "titles" refer to packing scenarios and not to the specific label(s) to use.

SUMMARY OF CASES	P2	3S	4S	5S	6S	7S
SINGLE ORDER / SINGLE PRODUCT (Single Transport Package)	P	T				
SINGLE ORDER / SINGLE PRODUCT (Multi-Transport Packages)						
-with UNIT LOAD INTEGRITY	P	T	U			
-without UNIT LOAD INTEGRITY	P	T				
-MULTI-PALLETIZATION	P	T	U			
SINGLE ORDER / MULTI-PRODUCT (Single Transport Container)	P	P		T		
SINGLE ORDER / MULTI-PRODUCT (Multi-Transport Packages)						
-with UNIT LOAD INTEGRITY (Same Product per Transport Package)	P	T		U		
-without UNIT LOAD INTEGRITY (Same Product per Transport Package)	P	T				
-without UNIT LOAD INTEGRITY (Different Product per Transport Package)	P	P		T		
MULTI-ORDER / SINGLE PRODUCT						
-with UNIT LOAD INTEGRITY	P	T			U	
-without UNIT LOAD INTEGRITY	P	T				
MULTI-ORDER / MULTI PRODUCT						
-SINGLE ORDER / MULTI-PRODUCT						
-with UNIT LOAD INTEGRITY	P	P		T		U
-without UNIT LOAD INTEGRITY	P	P		T		
- SINGLE ORDER / SINGLE PRODUCT						
-with UNIT LOAD INTEGRITY	P	T				U
-without UNIT LOAD INTEGRITY	P	T				
- SPECIAL CASE with 4S						
- with UNIT LOAD INTEGRITY	P	T	U			U_g
- without UNIT LOAD INTEGRITY	P	T	U			
COMBINATION OF THE ABOVE						
-with LOAD INTEGRITY						
-TRANSPORT PACKAGE (1)	P	P		T		
-TRANSPORT PACKAGE (2-4)	P	T				
-UNIT LOAD						U
- without LOAD INTEGRITY						
- TRANSPORT PACKAGE (1)	P	P		T		
-TRANSPORT PACKAGE (2-4)	P	T				

Legend P= each UNIT PACK, T = each TRANSPORT PACKAGE, U = each UNIT LOAD,
U_g= each UNIT LOAD UNITIZATION

SUMMARY OF CASES	P2	3S	4S	5S	6S	7S
SINGLE ORDER / MULTI-PRODUCT	P	P		T		
(Single Transport Container)						
SINGLE ORDER / MULTI-PRODUCT (Multi-Transport Packages)						
-with UNIT LOAD INTEGRITY (Same Product per Transport Package)	P	T		U		
-without UNIT LOAD INTEGRITY (Same Product per Transport Package)	P	T				
-without UNIT LOAD INTEGRITY (Different Product per Transport Package)	P	P		T		

Figure 1 - Partial listing of Summary of Cases from table on previous page.

HOW TO USE THE SUMMARY OF CASES TABLE

For example: If a supplier or manufacturer wishes to ship multiple products, each with its separate unit pack container, which are to be placed in a transport container for shipment under a single order, then follow the procedure noted below:

1. Select the case(s) consistent with the SINGLE ORDER / MULTI-PRODUCT scenario shown in Figure 1 above.

2. Looking in the columns for this case, we would then find:

   a. A product package label (**P2**), if used, would be placed on each unit pack container, so it would face up when the transport package container is opened.

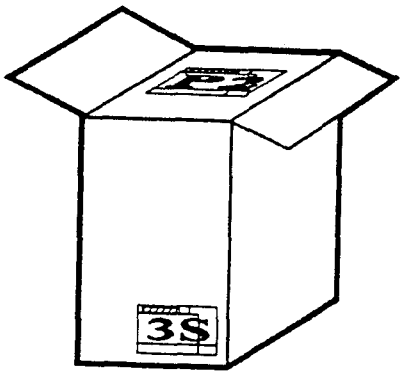
   b. **3S** labels would go on each unit pack container. They would be placed face up to scan at receival. If both the **P2** and **3S** labels were required, priority would always be given to the **3S** label if space did not permit both labels. In those cases, the **P2** label would go on the opposite end.

   c. A **5S** label would be placed on the transport package (now used as a unit load) housing the unit pack containers.

Note: Other scenarios could be developed than those noted in the table. The issue of packing, the material cost and the cost of affixing labels must be considered. Those scenarios noted have been agreed to by some trading partners as the most prevalent possibilities and have been tested under actual receival conditions.

CASE 1

SINGLE ORDER/SINGLE PRODUCT (SINGLE TRANSPORT PACKAGE)

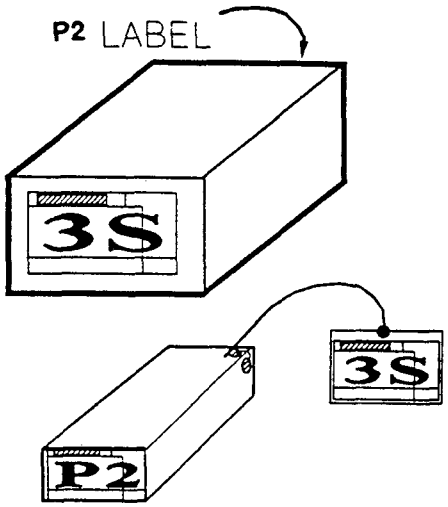


A unit pack container of 1000 of the same type devices is to be shipped. The packaging meets transport guidelines when the following conditions are met.

1. When the unit pack has a **P2** label, it should have a product package **P2** label on the end for inventory control.

2. A **3S** label should be placed on this package, as this unit container will be used for shipping the devices.

   a) The **3S** label should be affixed in the lower right hand corner of the smallest face dimension. (This could also include the **P2** label.) If the **3S** label placement interferes with the **P2** label, place the **P2** label on the opposite side of the **3S** with the **3S** label facing up for receival transaction.



NOTE: ***QTY = 1000 Pieces. Package Count should indicate box 1 of 1.***

   b) If the label cannot accommodate any **3S** label fixation as noted in a), you have the option of placement of said container in a larger one, sized to allow **3S** placement, or application of a label tag as noted in EIA-556-A.

CASE 2

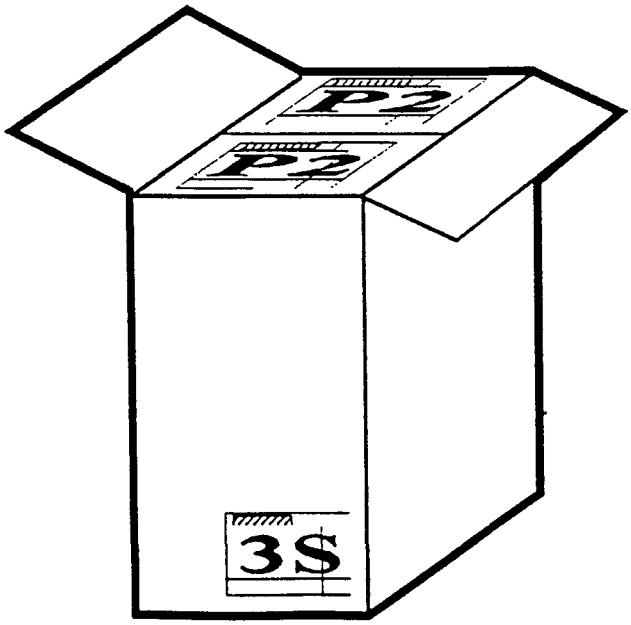
SINGLE ORDER/SINGLE PRODUCT (SINGLE TRANSPORT PACKAGE)

Two unit pack containers, each with 1000 of the same type of devices are to be shipped by placing each unit pack in a transport package.

1. When the unit pack has a product package (**P2**) label, place the unit pack in the transport package so the **P2** label can be scanned when the transport package is opened.

2. A **3S** label should be placed in the lower right hand corner of the smallest face dimension of the transport package.

***Note:** Quantity = 2000 pieces. Package Count on transport package should indicate box 1 of 1.*



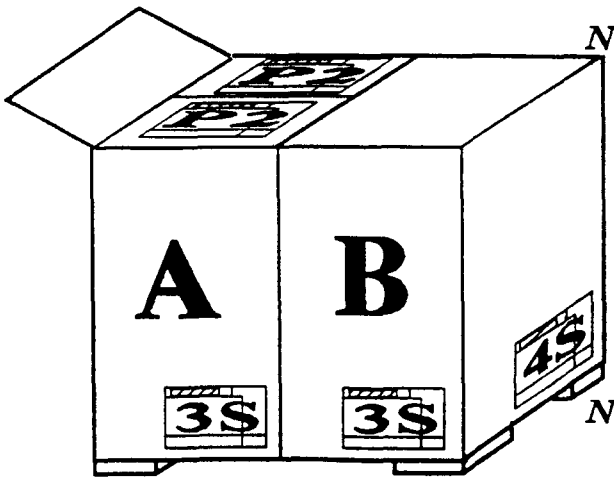
CASE 3

SINGLE ORDER / SINGLE PRODUCT (MULTI-TRANSPORT PACKAGES)

A) With unit load integrity maintained, four unit pack containers, each with 1000 of the same type of devices, are placed two per in a larger transport package to ship. The transport packages are tied together via palletization, wrapping, banding or via placement in a (added) unit load container housing two (now) intermediate transport packages.

1. When the unit pack has a **P2** label, it should have a product package (**P2**) label on the end of each unit pack. Place the unit pack in the transport package face up so the **P2** label can be scanned when the transport package is opened.

2. A **3S** label should be placed in the lower right hand corner of the smallest face dimension of each transport package, with A and B representing the transport package.



Note: ***Quantity = 2000 for each transport package (both A and B individually). The Package Count should be indicated as box X of Y on each 3S label where Y is the total number of transport packages to be unitized. In this case, Y = 2.***

3. A 4S label should be placed on the unit load.

Note: ***The 4S label quantity is the sum of the 3S label quantity values. The Package Count on the transport package should be indicated as box 1 of 1.***

CASE 3 (continued)

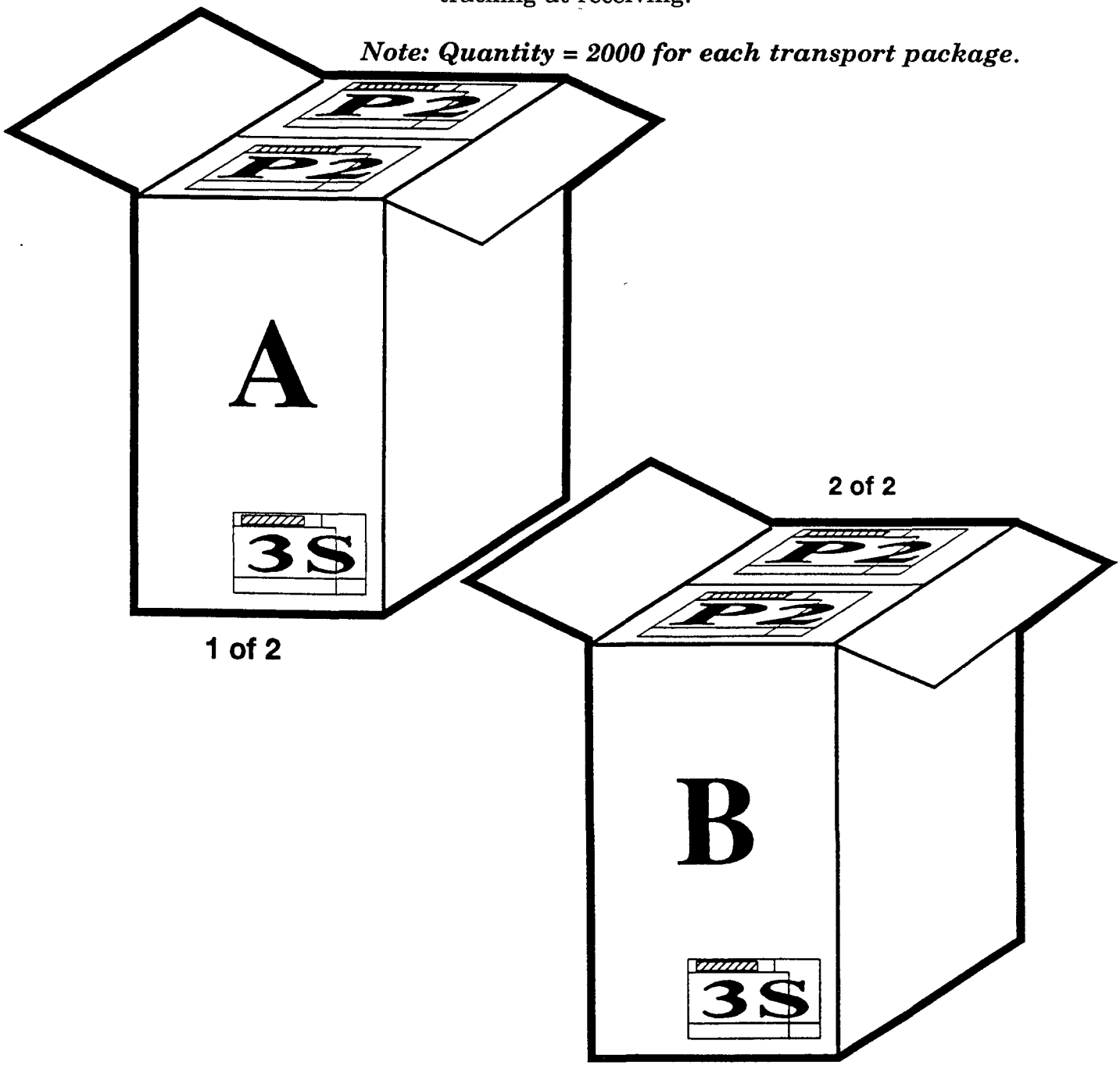
SINGLE ORDER / SINGLE PRODUCT (continued)
(MULTI-TRANSPORT PACKAGES)

B) Without unit load integrity maintained (i.e., Box A and B are left separate for shipping).

1. Same as above, except no 4S label is applied.

2. Box X of Y is still included on the **3S** labels for tracking at receiving.

Note: Quantity = 2000 for each transport package.



CASE 3 (continued)

SINGLE ORDER / SINGLE PRODUCT (continued)
(MULTI-TRANSPORT PACKAGES)

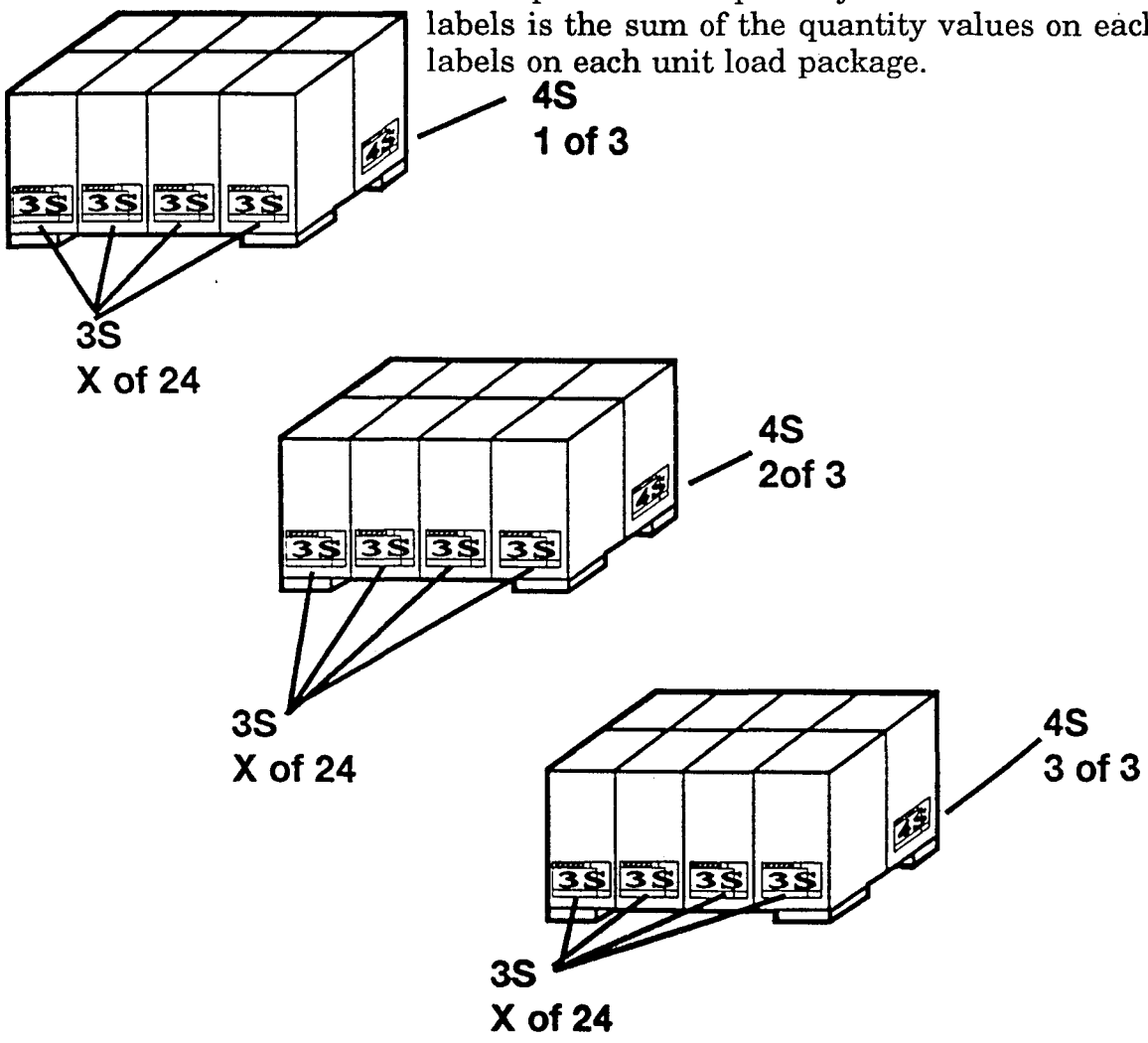
SPECIAL CASE

C) SINGLE ORDER/SINGLE PRODUCT
(MULTI-PALLETIZATION)

Twenty-four transport packages are placed on three pallets (8 transport packages per pallet) and each pallet is banded or wrapped for integrity of pallet packing.

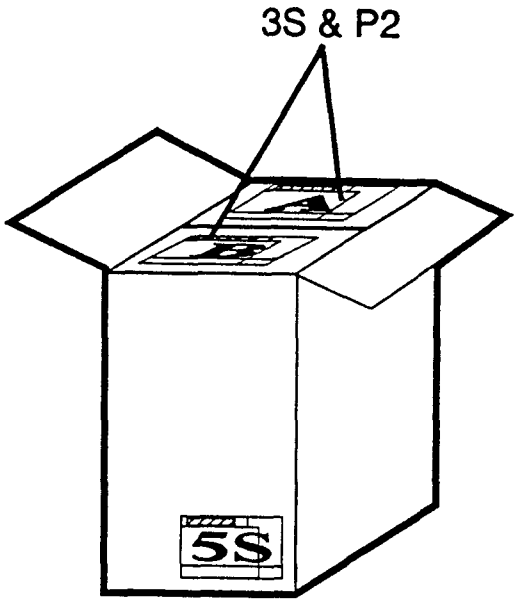
1. A **3S** label with box X of 24 indicated in the Package Count would be placed on each of the 24 transport packages.

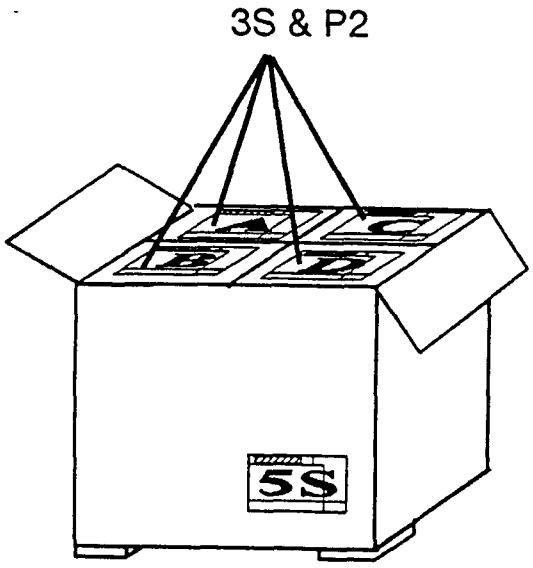
2. On each of the three unit load packages, place a **4S** label with box X of 3 to denote three unit load packages are in the shipment. The quantity value for each of the three **4S** labels is the sum of the quantity values on each of the **3S** labels on each unit load package.



CASE 4

SINGLE ORDER/MULTI-PRODUCT (SINGLE TRANSPORT PACKAGE)





Two unit pack containers as in **CASE 2**, each unit pack contains a different part. The two separately packaged devices are placed in a transport pack to maintain order integrity.

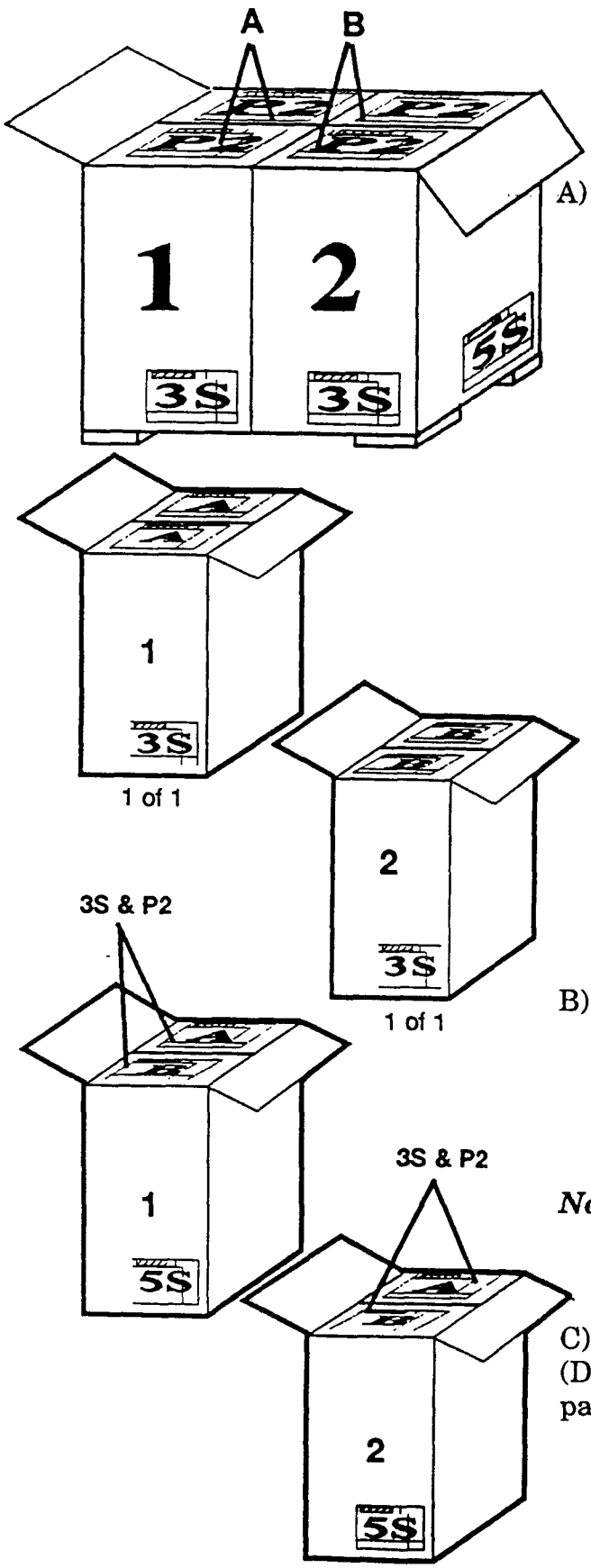
1. When the unit pack has a **P2** label, it should have a product package (**P2**) label on the end of each pack. Place the unit pack in the transport package so the **P2** label can be scanned when the transport package is opened. If this would interfere with the placement of the **3S** label, required for receival transaction, place the **P2** on the opposite end of the unit pack.

2. A **3S** label is placed on each unit pack container to maintain product identification integrity (all the same type product in the package). The label should face up, when the package is opened. If this is not possible due to the size or shape of the package, see **CASE 1**, paragraph B.

3. A **5S** label is placed on the unit load with "mixed load" marked in the product identification field, without quantity noted.

Note: The use of the Package Count field is optional in this case. However, if it is used, X of Y refers to the number of unit load containers in the shipment and is not tied to a specific order or product.

4. If more than two unit pack containers are placed in a larger transport pack container for shipping, the label application procedures would remain the same. Please note that the transport package becomes a unit load package when **3S** labels are applied to the unit pack containers. This makes the transport package a master pack that requires a **5S** label.



CASE 5

SINGLE ORDER / MULTI PRODUCT (MULTI-TRANSPORT PACKAGES)

A) **With unit load integrity maintained** (same type product in each transport package).

In this case, transport package 1 has a different product type (part A) than that contained in transport package 2 (part B).

1. When the unit pack container has a **P2** label, it should have a product package (**P2**) label on the end of each pack. Place the unit pack in the transport package so the **P2** label can be scanned when the transport package is opened.

2. A **3S** label is placed on each transport package (1 and 2) with the total quantity in each and 1 of 1 shown in the Package Count field on each label.

3. A **5S** label is placed on the unit load with "mixed load" marked in the product identification field, without quantity noted. See note CASE 4, paragraph 3.

B) **Without unit load integrity maintained** (same type product in each transport package)

This now becomes a single order / single product scenario and the **5S** label is no longer required.

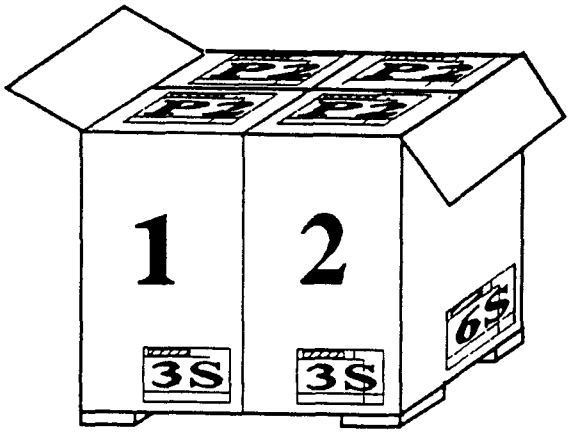
Note: Package Count should indicate 1 of 1 on each 3S label. As each line item or order changes, X of Y count starts over.

C) **Without unit load integrity maintained** (Different product types are placed in each transport package, without further transport package unitizing.) See also CASE 4.

CASE 6

MULTI-ORDER / SINGLE PRODUCT

Both transport packages 1 and 2 contain the same product type but each transport package is for a different order.

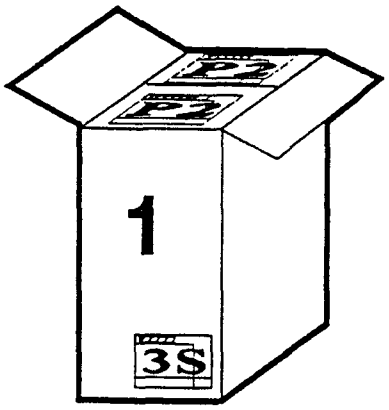


A) **With unit load integrity maintained**

1. When the unit pack has a **P2** label, it should be placed on the end of each unit package so the **P2** label can be scanned when the transport package is opened.

2. A **3S** label is placed on each transport package to separate each order. Individual quantities are indicated for each transport package and the Package Count is indicated as 1 of 1 on each transport package.

3. A **6S** label is placed on the unit load, noting "multi-order" in the transaction identification field and without the quantity noted. See also the note in CASE 4, paragraph 3.

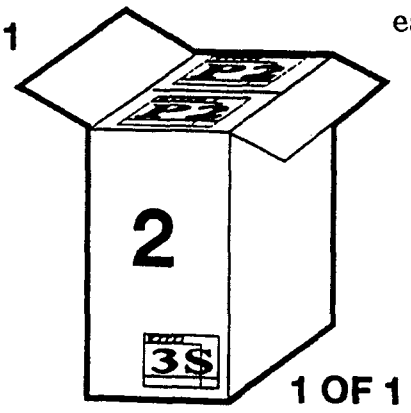


1 OF 1

B) **Without unit load integrity maintained**

See CASE 2. No **6S** label is required since this becomes the single order / single product scenario.

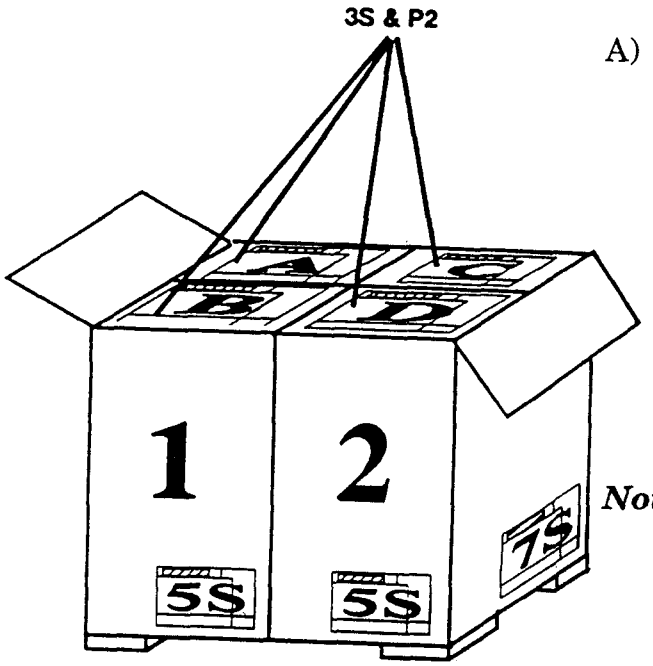
Note: Package Count is indicated as 1 of 1 on each **3S** label, since separate orders are contained in each transport package.



1 OF 1

CASE 7

MULTI-ORDER / MULTI-PRODUCT



A) Parts A and B are on one order and parts C and D are on a different order. Each order is packed in separate transport packages 1 and 2.

1. **With unit load integrity maintained**

   a) see CASE 4, single order / multi-product scenario, to label transport packages 1 and 2.

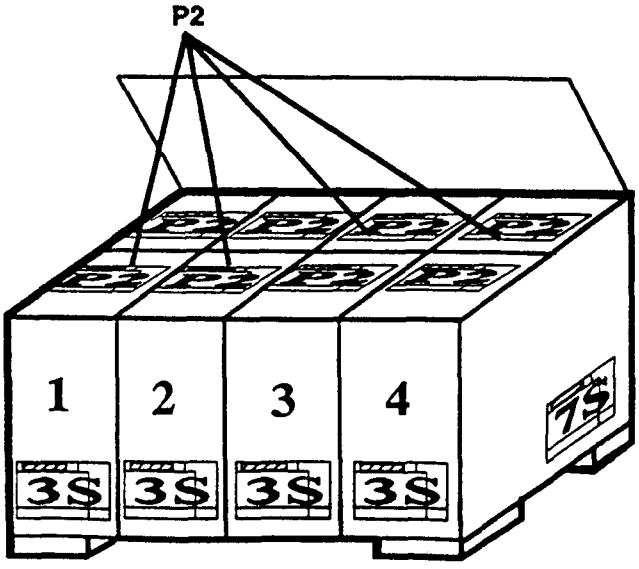
   b) A **7S** label is placed on the unit load, without quantity noted.

Note: Use of the package count field is optional. If so used, X of Y refers to the number of unit load containers in the shipment and is not tied to a specific order or product.

2. **Without unit load integrity maintained**

   See CASE 4. No **7S** label required since there are two independent single order / multi-product transport packages.

B) Transport packages 1 and 2 contain the same type part but are for different orders. Likewise, transport packages 3 and 4 contain the same type part (different from parts in transport packages 1 and 2) but are for different orders (different from orders in transport packages 1 and 2). Order integrity is maintained for ease of receival.



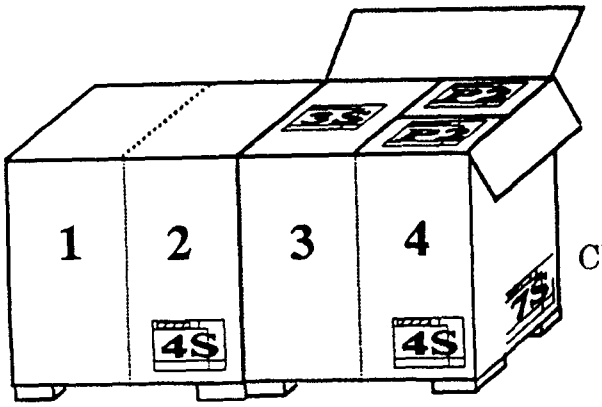
1. **With unit load integrity maintained**

   a) When the unit pack has a **P2** label, it should be placed on the end of each unit package so the **P2** label can be scanned when the transport package is opened.

   b) This is a multiple single order / single product scenario. Place **3S** labels on each transport package, with quantity of each noted and X of 2 on pack grouping 1 and 2: 3 and 4, respectively. Remember: each time order or items changes X of Y starts over.

CASE 7 (continued)

MULTI-ORDER / MULTI-PRODUCT (continued)

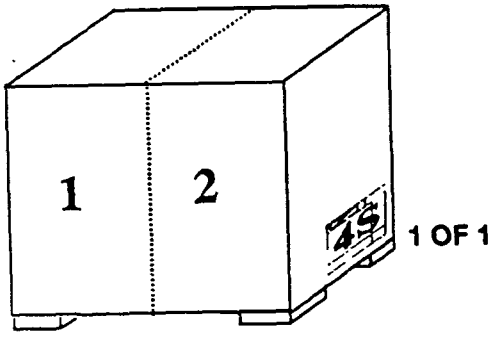


c) A **7S** label is placed on the unit load.

2. **Without unit load integrity maintained**
See CASE 2. No **7S** label is required, since there are four separate single product / single order scenarios.

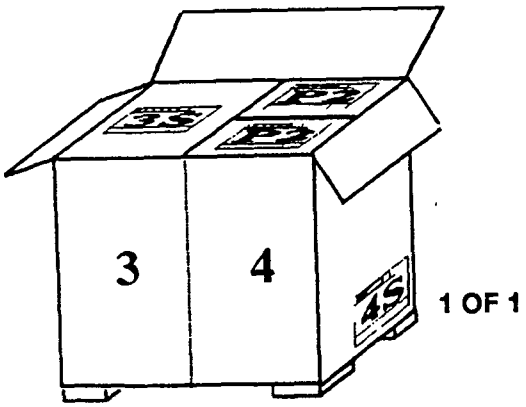
C) This is a special case of B, using **4S** labels.

Transport packages 1 and 2 contain the same type part for an order. Likewise, transport packages 3 and 4 contain the same type part (different from the part type in transport packages 1 and 2 for a different order (different from the order for transport packages 1 and 2). Transport packages 1 and 2 and similarly, 3 and 4 are packaged in their own unit load containers so that orders are not mixed. This combination of two unit load containers is then unitized for shipment.



1. **With unit load integrity maintained**

a) When the unit pack has a **P2** label, it should be placed on the end of each unit package so the **P2** label can be scanned when the transport package is opened.



b) Place a **3S** label, 1 of 2, on each transport package so the **3S** label can be scanned when the unit load is opened. If this is not possible due to package dimension, see CASE 1, paragraph 2b.

c) A **4S** label with a Package Count 1 of 1 is placed in the lower right hand corner of each unit load.

d) A **7S** label is placed on the combined unit load unitization.

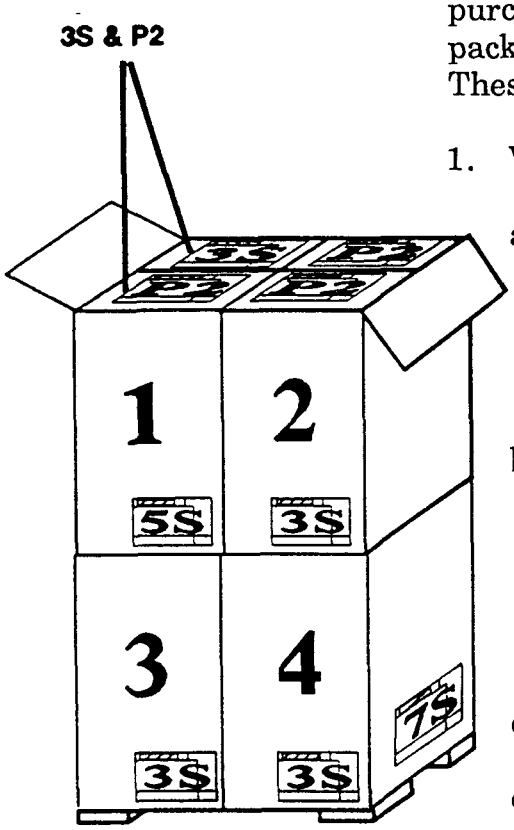
Note: See also CASE 7 paragraph A1.b.

2. Without unit load integrity maintained in this scenario, the two separate unit loads look similar to CASE 3 and the **7S** would no longer be applicable.

CASE 7 MULTI-ORDER / MULTI-PRODUCT (continued)

D) Combination of the above

Transport package 1 contains two different parts associated with a purchase order. Transport package 2 contains one type part (different from those contained in transport package 1) associated with a different purchase order than the one associated with transport package 1. Transport packages 3 and 4 contain the same part type (different from those in transport packages 1 and 2) but are associated with separate purchase orders (different from those associated with transport packages 1 and 2). Each order is to be packaged separately. These transport packages are unitized for shipment.



1. **With unit load integrity maintained**

a) When the unit pack has a **P2** label, it should be placed on the end of each unit package so the **P2** label can be scanned when the transport package is opened. If this would interfere with the placement of the **3S** label, place the **P2** label on the opposite end of the unit pack.

b) A **3S** label with a Package Count 1 of 1 is placed on each unit pack container in transport package 1 to maintain product identification integrity. The **3S** label should face up when the package is opened. If this is not possible, due to package dimension limitations, see CASE 1, paragraph 2b.

c) Place a **5S** label on transport package 1.

d) Place **3S** labels, with a Package Count 1 of 1, on transport packages 2, 3 and 4 with their respective quantities noted on the label. No **6S** label is required for the unit load containing transport packages 3 and 4. since there is a higher level of master pack label.

e) A **7S** label is placed on the unit load.

Note: See CASE 7 paragraph A1.b.

2. **Without unit load integrity maintained**

a) Place **3S** labels on the unit packs in transport package 1 and place a **5S** label on transport package 1.

b) Place **3S** labels, with Package Count 1 of 1, on unit load containers 2, 3 and 4. No **6S** or **7S** label is required.

DEFINITIONS

For the purposes of this document, the following naming convention is used:

Unit Pack is the first tie, wrap or container to a single item or quantity thereof that constitutes a complete identifiable pack. A unit pack may be an item packaged singularly, multiple quantities of the same item packaged together or a group of the parts packaged together (i.e., one kit). The **P2** (product package) label is applied to this package.

Intermediate Container houses one or more unit packs for the purpose of product / order segregation in a shipping container.

Transport Package is intended for the transportation of one or more articles of smaller packages, or bulk material.

Unit Load contains a number of filled transport packages or other items that are held together by pallet, slip sheet, strapping, interlocking, clue, shrink wrap, stretch wrap or net wrap to make them suitable for transportation, stacking and storage as a unit. (The term is also used to describe a single large item suitably packaged for transportation, stacking and storage.) Unit load is sometimes referred to as a master pack.

Product Package Label

P2 Package identification assigned to a unit pack container (i.e., The **P2** label is product specific).

Transport Pack Label

3S Unique package identification assigned by supplier (lowest level of packaging which has a package id code; should contain like items. Every shipment should have at least a **3S** label).

Definitions (continued)

4S Package identification assigned by supplier to master packaging containing the same items on one customer order

5S Package identification assigned by supplier to master packaging containing unlike items on one customer order

6S Package identification assigned by supplier to master packaging containing the same items over multiple customer orders

7S Package identification assigned by supplier to master packaging containing unlike items over multiple customer orders