PARTS IDENTIFICATION LABEL – BARCODE STANDARDS
For Models 164 and 251

MERCEDES-BENZ U.S. INTERNATIONAL, INC.

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History of Changes

Date	Change
10 Oct. 2003	Code 128 specified (instead of Code 39) Related Symbology details changed be consistent with Code 128 Corrected Shipment ID Data Identifier to 2S for Master Label Clarified how part number is shown when color code is included
04 Nov. 2003	Updated location of the RAN type designator, p. 5 Updated guidance on Serial No., p. 10 Updated guidance on Unit of Measure, p. 10 Spacing rules corrected and clarified, p 11. Label or plain paper may be used for Master Label, p. 18
26 Nov 2003	Added requirement for Q-Level to be shown on the Label and hangtag, pp. 9,12,21,22
25 Aug 2004	Corrected field reference (N4 DE) to specify N406 on label, masterlabel, mixed label p.33
25 Oct 2004	Corrected title of field in Block 1, p. 16

MBUSI Parts Identification Label

This application standard provides guidelines for the printing and placement of the Parts Identification Labels. These labels are designed to improve supplier and customer productivity by allowing effective and efficient capture of data for production counts, warehouse input/output, cycle checking, shipper generation, forwarding, freight transfer control, receiving and other inventory controls.

IT IS THE RESPONSIBILITY OF THE SUPPLIER TO PROVIDE BAR CODED LABELS THAT MEET THESE SPECIFICATIONS. STRICT ADHERENCE TO THESE SPECIFICATIONS FOR THE PARTS IDENTIFICATION LABELS WILL REDUCE IMPLEMENTATION COSTS AND INCREASE BENEFITS FOR BOTH THE SUPPLIER AND MBUSI.

In this document, the word **"SHALL"** indicates a requirement and the word **"SHOULD"** indicates a recommendation.

Label dimensions **SHOULD** be in accordance with the dimensions shown between arrows in Exhibit 1. All other exhibits are for **illustrative purposes** only, and may not be to scale or bar code quality standards.

DEFINITIONS

AIM
The Automatic Identification Manufacturers Association. See http://www.aimglobal.org.

Alphanumeric
Character set that contains alphabetic characters (letters), numeric digits (numbers) and usually other characters such as punctuation marks.

ANSI
American National Standard Institute.

Autodiscrimination
The capability of a reader to automatically recognize and decode multiple bar code symbologies.

Bar Code Symbol
A array of rectangular bars and spaces which are arranged in a predetermined pattern following specific rules to represent elements of data that are referred to as characters - A linear bar code symbol typically contains a leading quiet zone, start character, data character(s), stop character, and a trailing quiet zone.

Carrier
In a transaction, the party that provides freight transportation services.

Character
In a bar code symbol, the smallest group of elements which represents one or more numbers, letters, punctuation marks, or other information.

Code 128
For the purposes of this guideline, Code 128 means the symbology as specified by AIM Uniform Symbology Specification ANSI/AIM BC4-1999, International Symbology Specification – Code 128. See AIM.

Common Item Pack
A pack that contains all like items, i.e., same part/item numbers.

Container
Receptacle or a flexible covering for shipment of goods such as a box, bag, package or pallet (See also modular pack and also unit load pack).

Container ID
Alphanumeric field used by the shipping company to identify the shipment.

Customer
In a transaction, the party that receives, buys, or consumes an item or service.

Customer Part Number
The part number as defined by the customer (MBUSI).

Data Identifier (DI)
A specified character string that defines the specific data that immediately follows as defined by ANS MH10.8.2, Data Identifier Guideline.

D-U-N-S®
Data Universal Number System, assigned by Dun & Bradstreet

EAN
International Article Numbering Association (formerly the European Article Numbering Association) - the international organization that administers the manufacturer and item numbering scheme most commonly used for retail bar coding internationally. (See also UCC)

Electronic Data Interchange (EDI)
For the purposes of this document, EDI shall mean the computer communication of data between trading partners.

Highlighting Line
Horizontal divider line(s) placed above and/or below building block or blocks -
Highlighting lines are easily distinguishable from the horizontal separator lines used to separate other building blocks. This visual difference may be the result of using a thicker line chosen by the labeler.

ID
Abbreviation for identification.

Item
Single part or material purchased, manufactured and/or distributed.

Label
A card, strip of paper, etc. marked and attached to an object to convey information.

Labeler
Term to identify the organization responsible for the labeling of a Unit Load/Transport Package (UL/TP).

Like Parts Pack

Pack which contains all like items, i.e., same part/item number.

Lines Per Block (LPB)
Unit of measure defining the height of text characters.

Manufacturer
Actual producer or fabricator of an item; not necessarily the supplier in a transaction.

Master Label
A label used to identify and summarize the contents of a multiple pack of common items (all the same part number).

Mixed Load Label
A label used to designate a multiple pack of mixed items (more than one part number).

Modular Pack
A unit, which provides protection and containment of items, handled by manual means. Examples of modular packs, which are normally disposable, include bags and cartons. Examples of modular packs, which are normally returnable, include molded or corrugated plastic totes and vacuum form trays.

Multiple Pack or Unit Load Pack
A pack containing smaller packages (modular packs) of items.

New Product Delivery Tags
Additional labels used to identify parts used by Pre-Production Shop (PPS), Engineering Design Liaison Group (EVS), or engineering change (PAF#) typically ordered by a "P" RAN. See the engineering change control section of the Logistics Directive for more information.

Part Identification Label
A label used to identify the contents of a shipping pack (modular or unit load).

Production Trial Identification Label
Additional label used to identify engineering and production trial material typically ordered by a "T" in the first character of the RAN.

Quantity
Indicates the number of parts, items or other units of measure in the container.

Q-Level
Quality Level. Assigned by the supplier, this number allows tracking of the quality impact to parts of activities that do not involve a change to the part, such as improvements to or cleaning of tooling.

Serial Number
A three-character number; if only one box per RAN, set to "000"; if multiple boxes per RAN, the Serial Number starts at "001" and counts up within the RAN.

Ship-From

On a transport label, the address of the location where the carrier will return the shipment if the container is undeliverable.

Ship-To
Address of the location where a carrier will deliver the freight.

Shipping Pack
A pack used for shipping items from one facility to another and can be any of the packs described in this document.

Standard Quantity Pack
A pack (modular or unit load) which contains the same quantity of like items.

Supplier
In a transaction, the party that produces, provides, or furnishes a product or service.

Supplier Code
The numeric or alphanumeric data used to identify the supplier.

Tag
Label (card) that is attached to a shipping container.

TPL
Trading Partner Label

Trading Partners
All members within the channels of distribution within an industry (carriers, customers, suppliers, and intermediaries)

Two Dimensional (2D) Symbols
Machine-readable symbols which must be examined both vertically and horizontally to read the entire message - - Two-dimensional symbols may be one of two types of machine - readable symbols: matrix symbols and stacked symbols. Two-dimensional symbols have error detection and may include error correction features.

UCC
Uniform Code Council, the standards association of the U.S. retail industry - The UCC sets that standard for U.P.C., the Uniform Product Code used for point of sale scanning in retail. UCC in the U.S. works with EAN internationally (see also EAN).

UCC/EAN
See UCC and EAN.

Unique Container Identification
Supplier identification and a container *serial number* that, together, uniquely identify the container to trading partners (sometimes referred to as *license plate).*

Unit Load Pack
A unit, which provides protection and containment of items and multiple packs typically, handled by mechanical means. Examples of unit load packs, which are normally disposable, include cartons on pallets and

pallet boxes. Examples of unit load packs which are normally returnable include bins (with steel or plastic construction), racks (plain or w/special dunnage) and pallets with plastic totes or vacuum form trays.

X Dimension
The intended width of the narrow elements required by the application, or symbology specification, or both.

ZGS
Drawing level, indicates changes to a part that should not affect interchangeability.

SIZE AND MATERIALS

Labels
The label size **SHALL** be 4.0 inches (102 mm) height by 6.0 (preferred) or 6.5 (acceptable) inches wide. To accommodate standard forms, a minimum height of 3.9375 inches (100 mm) is acceptable. Data requirements may necessitate a larger label width. A 4.0 inches (102 mm) high by 6.5 (165 mm) wide label **SHOULD** handle all known conditions (see Exhibit 2).

The label paper **SHALL** be white in color with black printing.

Adhesive types can be pressure sensitive or dry gummed as long as adherence to the package substrate is assured and application is wrinkle-free.

Hang Tags
The tag size **SHALL** be the same as described in Section 3.1 plus the material necessary to allow fastening. The tag **SHALL** be durable enough to assure readability at its destination (See Exhibit 2).

DATA AREA CHARACTERISTICS

The part number, quantity, RAN and label serial number **SHALL** be included on each label in the designated data areas and **SHALL** be displayed in both human readable characters and bar code symbols. The maximum length of the bar code symbol **SHOULD NOT** exceed 5.5 inches (140 mm).

Data Areas and Titles

There are eleven required data areas for each Label: Part Number, ZGS (Engineering Change Level), Quantity, Supplier Number, RAN, Staging Area, Lineside Location, Description, Storage Location, Dock, and Serial Number. Additionally, there is a "Special Data Area" available for uses not required by this document.

Data areas **SHALL** be separated by horizontal thin lines and **SHALL** contain their respective titles in the upper left hand corners, as shown in the exhibits. Vertical separation lines and outer borderlines are optional. In the absence of vertical separation lines, human readable data in adjoining fields **SHALL** be clearly separated. Titles **SHOULD** be printed in 0.1 inch (2.5 mm) high letters. The data area titles are: RAN, PART NO., SERIAL, QUANTITY, ZGS, DESCRIPTION, STORAGE LOCATION, DOCK, STAGING AREA, SUPPLIER, LINESIDE LOCATION. *Note*: the RAN, Serial, and Quantity are concatenated in the bar code, but show separately in the human readable part (see detailed explanation).

Human readable information is recommended to show any zeros (Ø) with a distinguishable mark (e.g. a diagonal slash) to differentiate them from alphabetic 0's (See Exhibit 3).

Usage of Data Identifiers

A data identifier **SHALL** be used as defined in the current ANSI FACT-1 Data Identifier Dictionary Standard. A data identifier immediately follows the start character of the bar code symbol and is used to identify the information to follow. The data identifier **SHALL** be in human readable characters under the title for the appropriate data area (See Exhibit 1). The data identifier **SHALL NOT** be included in the human readable interpretation of the bar code symbols (See Exhibits 2 and 3).

To prevent reading wrong data into a system, and to differentiate among all bar code symbols, Code 128 symbols placed on the Parts Identification Label **SHALL** use data identifiers as defined in the ANSI FACT-1 Data Identifier Standard (See attached). Further, any Code 128 symbols placed elsewhere on a shipping package **SHOULD** contain the appropriate data identifier.

EDI

Electronic Data Interchange (EDI) Coordination

The electronic transmission of data is covered by the Automotive Industry Action Group conventions. When EDI is used in conjunction with the Shipping Parts Identification Label, the data areas **SHALL** be coordinated.

Description of the Label

The Label is used on each container. Appendix B explains where the data comes from in EDI. Exhibit 1 (page 21) shows measurements and illustrates filled-in fields.

RAN, Serial and Quantity (Block 1)

In the Label, the bar code in Block 1 **SHALL** consist of the following fields, concantenated together:

- The RAN data identifier (15K)
- The RAN
- The Serial data identifier (S)
- The Serial
- The Quantity data identifier (Q)
- The Quantity

These three fields are to be combined into a single bar code so that they can be read with a single scan. For example, if the RAN is C3F3003115, the Serial is 001, and the Quantity is 125, the barcode would contain "15KC3F3002115S001Q125" in a single barcode.

RAN

- The human readable RAN number characters **SHALL** be a minimum of 0.2 inch (5mm) high.

- The bar code symbol for the RAN number **SHALL** be directly below the human readable characters, **SHALL** be a minimum of 0.5 inch (13mm) high and **SHALL** contain the data identifier (15K).

- The maximum length anticipated for the RAN number is ten (10) characters plus the data identifier (15K).

- The RAN number **SHALL** be designated by MBUSI.

Serial Number

- Each shipping container or pack **SHALL** contain a unique serial number <u>within the RAN</u> (not necessarily in sequential order), <u>assigned by the supplier,</u> not MBUSI. (Note: In cases where a RAN is composed of only one container, the serial number **SHALL** be set to three zeros ("000")). The combination of RAN and Serial Number **SHALL** be unique to a container. In this way, each container, regardless of content or destination, can be differentiated from others.

- The Serial Number **SHALL** be appended to the RAN, prepended with the data identifier (S).

- The human readable serial number characters **SHALL** be a minimum of 0.2 inch (5 mm) high.

- The bar code symbol for the serial number **SHALL** be directly below the human readable characters, **SHALL** be a minimum of 0.5 inch (13 mm) high, and **SHALL** contain the appropriate data identifier: (S).

- The length of the serial number **SHALL** equal three (3) numeric characters**.** The serial number **SHOULD** start with 001 for the first box in a multi-box RAN and count up.

Quantity (barcode portion)

The barcode portion of the Quantity **SHALL** be appended to the Serial, prepended with the data identifier (Q). The Quantity is not shown directly above the barcode (see below).

Quantity (human readable) (Block 2)

- The human readable quantity characters **SHALL** be a minimum of 0.5 inch (13 mm) high, and **SHALL** be printed in Block 2 of the label.

- The unit of measure is assumed to be pieces unless otherwise agreed between customer and supplier. When the unit of measure is pieces, no notation of unit of measure is required. When the unit of measure is not

pieces, it **SHOULD** be noted in human readable form; in this case the unit of measure transmitted in the EDI830 Release **SHALL** be used. When used, the unit of measure **SHALL** be directly to the right of the human readable quantity and **SHALL** be a minimum of 0.2 (5 mm) high. The unit of measure **SHALL NOT** be bar coded. Acceptable Unit of Measure abbreviations are GL (gallons), LB (pounds), and KG (kilograms).

Part Number Area (Block 3)

- The human readable part number characters **SHALL** be bold and a minimum 0.5 inch (13 mm) high, appearing in Block 3 of the Label.

- The bar code symbol for the part number **SHALL** be directly below the human readable characters, **SHALL** be a minimum of 0.5 inch (13 mm) height, and **SHALL** contain the data identifier (P). Depending on the nominal dimension of the narrow bar code elements, part numbers of varying lengths can be printed on one line.

Spacing: The part number **SHALL** use the following spacing:

```
In Human-readable area                             in barcode
A000 111 22 33                                     A0001112233
N123456 123456                                     N123456123456
A000 111 22 33    5555    <-with color code->      A0001112233        5555
N123456 123456    5555    <-with color code->      N123456123456      5555
|...|....|....|....|....|                           |...|....|....|....|....|
12345678901234567890012345                         12345678901234567890012345
```

Shown above are four situations. The "A" type part number with no color code; the "N" type part number with no color code; the "A" type part number with color code, and the "N" type part number with color code. In each case, you print the human readable part with the spacing as shown above left, but the bar code contains the data shown above right. Note how the barcode data contains six spaces for "A" parts and four spaces for "N" parts, when color codes are used; there must be no other spaces in the bar code.

ZGS Area (Block 4)
- The ZGS is printed in human readable form only. The ZGS **SHALL** be printed in Block 4 of the Label, and **SHALL** be a minimum of 0.25 inch (7 mm) high.
- The ZGS **SHALL** indicate the actual engineering change level of the parts in the container.

Description Area (Block 5)
- Human readable only.

Storage Location (Block 6)
- Human readable only.
- The Storage Location is set by MBUSI, as sent in the Release.

Dock (Block 7)

- Human readable only.

- The Dock is set by MBUSI, as sent in the Release.

Staging Area (Block 8)

- The human readable staging area must be a maximum of 6 digits as defined in the MBUSI material release.

Supplier Number Area (Block 9)

- The human readable supplier number characters **SHALL** be a minimum of 0.2 inch (5 mm) high.

- The maximum length anticipated for the supplier number is eight (8) characters.

- The supplier number **SHALL** be designated by MBUSI.

Lineside Location Area (Block 10)

- The human readable lineside location must be a maximum of 10 digits as defined in the MBUSI material release.

Q-Level (Block 11)

- The Q-Level, assigned by the Supplier's Quality department, is displayed human –readable (only), and **SHOULD** be a maximum of 4 characters.

Supplier Name (Block 9)

- The supplier name, city, state and zip code **SHALL** be directly below the supplier number and **SHOULD** be 0.1 inch (2.5 mm) high.

Special Data Area (Block 5, optional)

- This area next to the Description may be used for any additional information by suppliers. Any bar code symbol in the special data area **SHALL** be located in such a manner as to minimize horizontal alignment with other bar code symbols. The intent is to decrease the possibility of a scanner encountering more than one symbol on the same horizontal scan. Anything placed in this area **SHALL NOT** obscure the description.

- This special data area may also be used to fulfill additional labeling requirements such as short shelf life items. These items having a shelf life of 30 days or less must be labeled accordingly with expiration date.

Description of the Master Label

The Master Label is used when there is a Common Pack Item (pallet or large container) of containers all containing the same part number.

Descriptions of fields in the Master Label are the same as the Label, except Block 1 consists of a single bar code that is the concatenation of the Pallet or Container Number and the Quantity. Like with the Label, these two fields are combined to allow the code to be read with a single scan.

Pallet or Container Number and Total Quantity (Block 1)

In the Master Label, the bar code in Block 1 **SHALL** consist of the following fields, concatenated together:

- The Container data identifier (4S)

- Container or Pallet Number

- The Quantity data identifier (Q)

- The Quantity

Shipment ID (Block 7)

- The human readable Shipment ID characters **SHALL** be bold and a minimum 0.5 inch (13 mm) high, appearing in Block 7 of the Label.

- The bar code symbol for the Shipment ID **SHALL** be directly below the human readable characters, **SHALL** be a minimum of 0.5 inch (13 mm) height, and **SHALL** contain the data identifier (2S).

- The Shipment ID is assigned by the Vendor and is transmitted to MBUSI in the ASN (EDI856).

All other fields are the same as the respective fields in the Label. See Exhibit 3.

Description of the Mixed Label

The Mixed Label is used when there is a pallet or large container containing containers of more than one part number.

Descriptions of fields in the MIXED Label are the same as the Label, except Block 1 consists of a single bar code that is the concatenation of the Supplier Number and the Pallet or Container Number. Like with the Label, these two fields are combined to allow the code to be read with a single scan.

Supplier-ID and Pallet or Container Number (Block 1)

In the Master Label, the bar code in Block 1 **SHALL** consist of the following fields, concancenated together:

- The Supplier data identifier (V)

- The Supplier Number

- A single space (blank) to separate the Container data identifier from the Supplier Number

- Container or Pallet data identifier (4S)

- The Container or Pallet number

Shipment ID (Block 4)

- The human readable Shipment ID characters **SHALL** be bold and a minimum 0.5 inch (13 mm) high, appearing in Block 3 of the Label.

- The bar code symbol for the Shipment ID **SHALL** be directly below the human readable characters, **SHALL** be a minimum of 0.5 inch (13 mm) height, and **SHALL** contain the data identifier (2S).

The Shipment ID is assigned by the Vendor and is transmitted to MBUSI in the ASN (EDI856).

BAR CODE SYMBOLOGY

Bar codes **SHALL** be Code 128 symbology and **SHALL** conform to ANSI/AIM BC4-1999 International Symbology Specification for Code 128. Additional specific requirements for the Parts Identification Label are as follows:

Code Configuration
Barcodes **SHALL** consist ONLY of upper case alphabetic characters and numbers.

Check Characters
Check Characters **SHALL NOT** be shown in the human readable interpretations.

Code Density and Dimensions
The bar heights **SHALL** be 0.5 inch (13 mm). For each bar code symbol, the narrow element width ("X dimension") **SHALL** be within the range of 0.013 to 0.017 inch (0.33-0.43 mm). For optimum scanning, the leading and trailing quiet zone **SHALL** be a least 0.25 inch (6.4 mm). Inter-character gap width **SHOULD** be the same as the width of the average narrow elements, plus or minus the element width tolerance. See ANSI/AIM BC4-1999 for definition of tolerance, element widths and quiet zones.

Reflectivity and Contrast
Reflectivity and contrast **SHALL** be measured at B900 nanometers. Symbols **SHALL** comply with all optical specifications of ANSI/AIM BC4-1999, and **SHALL** meet at least one of the following contrast requirements:

(1) Print Contrast Signal ≥ 75%
(2) Minimum Reflectance Difference ≥ 37.5%, or
(3) ANSI Print Quality Grade **SHALL NOT** fall below that stated in this document.

Printing Methods
The acceptable methods of printing Bar Code Labels are as follows (In order of preference).

(1) Thermal Transfer
(2) Laser
(3) Direct Thermal

* Dot Matrix Labels will <u>not</u> be accepted.

LABEL LOCATION AND PROTECTION

Label Location

Illustrations of the most common shipping packs and recommended label locations are shown in Exhibits 5A, 5B, and 5C. In most cases two labels are specified. The bottom edge of the label **SHOULD** be parallel to the base of the package/container. Strapping and taping **SHALL NOT** obstruct the label. If the specified label cannot be affixed to the package/container because of container size or design, special arrangements will be required.

Label Protection

Label protection against moisture, weathering, abrasion, etc., may be required in harsh environments and is encouraged wherever practical. Laminates, sprays, window envelopes, and clear plastic pouches are examples of possible protection methods. In choosing any protection method, care **SHALL** be taken to assure the protected labels meet reflectivity and contrast requirements and can be scanned with contact and non-contact devices.

MISCELLANEOUS LABELS

Multiple, Common Item Packs - Master Label

When MBUSI requires that the total content of a multiple pack of common items be identified, a Master Label **SHALL** be used (See Exhibit 3). The total common item pack **SHOULD** be identified with a label (taped or adhesive) to be located top center of pack (See Exhibit 6D). The label must be visible in unload direction. The supplier may print the Master Label on the same label stock as the regular label (4" by 6"), or on 8-1/2" by 11" paper. Laser printing is acceptable for the Master Label as long as it meets or exceeds the standards for readability set for the label.

Mixed Item Loads - Mixed Load Label

When MBUSI requires that mixed item loads be identified, a Mixed Load Label **SHALL** be used and **SHOULD** be in a location specified by MBUSI (See Exhibit 4). To the extent possible, the label **SHOULD** be placed in such a manner that when the pack is broken apart, the label is discarded (e.g. hang Mixed Load Label from banding or attach to stretch wrap). At the top of this label, the heading "MIXED LOAD" **SHOULD** be printed in bold 1.0" (25.4mm) high letters. See sections 4.5 and 4.7 detail the supplier and serial number fields as seen in exhibit 5.

Production Trial Identification Label

When MBUSI orders sample/trial parts, typically by a "T" RAN, a Production Trial Identification Label **SHALL** be used (See Exhibit 6). This label is to be used in addition to the Part Identification Label. It is acceptable to have the information on this label completed manually. To the extent possible, one label **SHOULD** be affixed on the same side as the Parts Identification Label. The label **SHOULD** be visible from the receiving side of the pallet. If the specified label cannot be affixed to the package/container because of container size or design, special arrangements will be required.

New Product Delivery Tag ("Rainbow Tags")

When MBUSI orders sample parts or parts for the Pre Production Shop (PPS), or the Engineering Design Liaison Group (EVS), typically with a "P" RAN or "S" RAN, a New Product Delivery Tag **SHALL** be used (See Exhibit 7). The New Product Delivery Tag **SHALL** also be used when an engineering change or new PAF# is shipped for the first time (see section one of the Logistics Directive for more information). This label is to be used in addition to the Part Identification Label. It is acceptable to have the information on this label completed manually. To the extent possible, one label **SHOULD** be affixed on the outside of the container

opposite the Parts Identification Label. The label **SHOULD** be visible from the receiving side of the pallet. If the specified label cannot be affixed to the package or container because of container size or design, special arrangements will be required.

QUALITY ASSURANCE REQUIREMENTS

An important aspect of any bar code system is that of quality. When labels cannot be decoded fast and accurately, the advantages of bar coding are lost.

Suppliers have a responsibility to provide bar coded labels that meet customer and industry standards. Bar code labeling is an important part of the manufacturing process. Consequently, customers have a responsibility to alert suppliers of any persistent label non-conformance.

Auditing is an excellent technique to control quality. Performing audits of the print quality and the physical placement of labels will help assure success at MBUSI.

Equipment is available to verify that bar code symbols meet AIM requirements. Verification equipment may determine print quality as follows:

1. Analysis based upon AIAG B-1 traditional print measurement specifications and tolerances or,
2. Analysis utilizing AIAG B-1, section 4.4, alternate (preferred) print quality grade determination (as adopted from American National Standards Institute parameters).

The Print Quality Guideline in AIAG B-1, section 4.4, specifies the supplier **SHALL** be responsible for providing a minimum shipping label symbol grade of 1.5 at the customer location and a 2.5 (or higher) **SHOULD** be maintained at the time of printing. It is recommended that verification audits be used in conjunction with statistical process control to assure shipping label quality. Label print quality is considered as part of MBUSI Supplier Quality Ratings.

ACQUIRING LABELS & PRINTING EQUIPMENT

All labels are to be constructed of a coated thermal transfer paper (Duratran II *) or direct thermal paper material (Duratherm Lightning IR). Both materials are suitable for scanning in the 633nm light range (visible) and 940nm range (infrared). Adhesive shall be recyclable and water-soluble. It is recommended that labels produced via thermal transfer be produced with a smear resistant ribbon.

Exhibit 1

4" by 6.5" Label with Sample Data

Exhibit 2

4" X 6.5" Hang Tag Label With Sample Data

Exhibit 3
Master Label for Common Item Packs

MASTER LABEL

PALLET OR CONTAINER NO. (4S) **100247**		TOTAL QUANTITY (Q) **120**

PART NO.
(P) **A164 241 09 34   9051**

STORAGE LOCATION **PLT2**	DOCK **A35**	STAGING AREA **STB4**

SUPPLIER **1551337**	SHIPMENT ID (2S) **1220**

XYZ COMPANY, INC.   ROMULUS, MI 48174

Exhibit 4

Mixed Load Label

MIXED LABEL

SUPPLIER (V)	PALLET OR CONTAINER NO. (48)
1551337 BLOCK 1	100247

STORAGE LOCATION BLOCK 2 **PLT2**

DOCK **A35** BLOCK 3

SHIPMENT ID (28) **1220** BLOCK 4

XYZ COMPANY, INC. ROMULUS, MI 48174

Exhibit 5A

Label Locations on Various Shipping Packs

BASKET, WIRE MESH CONTAINER

Indetical labels **SHOULD** be located on two adjacent sides.
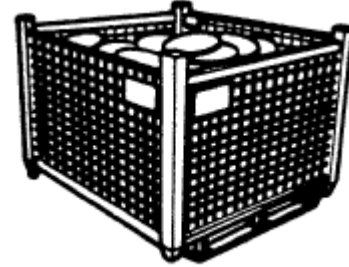
METAL BIN OR TUB

Tag one visible piece near top, or use two label holders on adjacent sides.

PALLET BOX

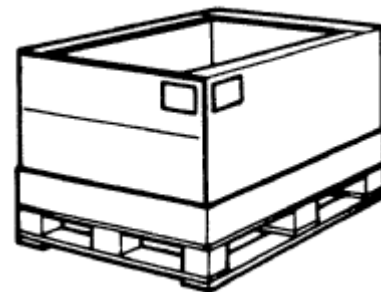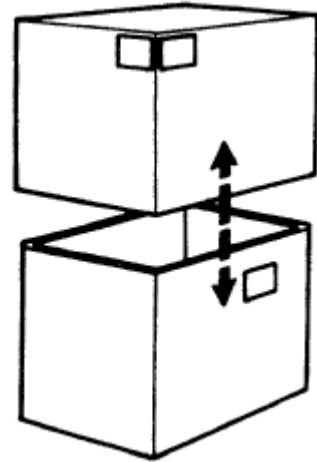Identical labels **SHOULD** be located on two adjacent sides.

Exhibit 5B

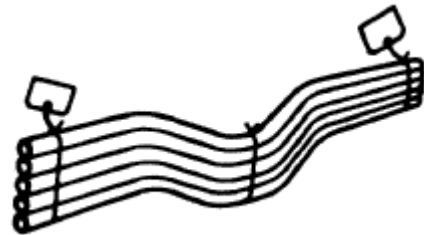### Label Locations on Various Shipping Packs

TELESCOPIC OR SET-UP CONTAINERS

Identical labels **SHOULD** be located on two adjacent sides of the outer box.
Some applications may also require identification of the inner box.

BUNDLE
Identical tags **SHOULD** be located at each end.

BAG
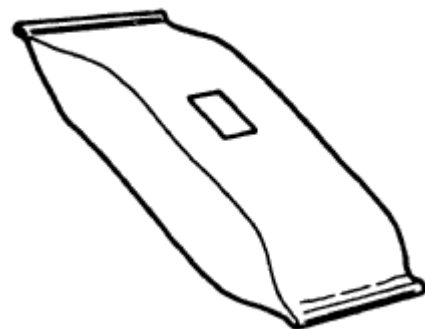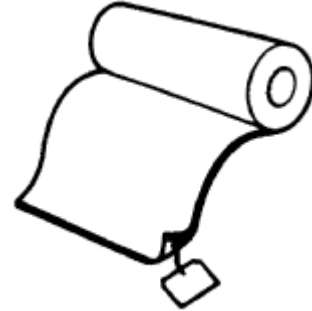Place one label at the center of the face.

Exhibit 5C

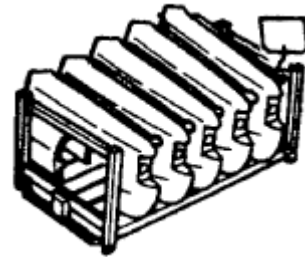## Label Locations on Various Shipping Packs

ROLL

Hang one tag 2.0 in. (51mm) from end of material

RACK

Two label holders on opposite sides.

TOTE OR CARTON

Identical labels **SHOULD** be located on two adjacent sides.
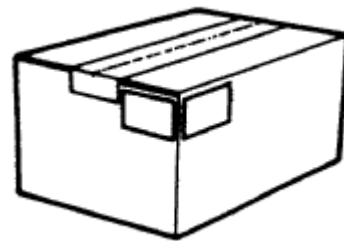
Exhibit 5D

Label Locations on Various Shipping Packs

TOTES OR CARTONS ON PALLETS

Each tote or carton should be individually labeled as described above.
One Master Label may be used as described in Section 7.1, or one
Mixed Load Label as described in 7.2.
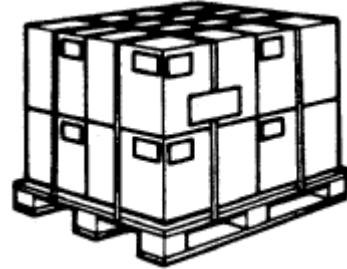
DRUMS, BARRELS OR CYLINDRICAL CONTAINERS

Identical labels **SHOULD** be located on the top and near the center of the side.

BALES

Identical labels **SHOULD** be located at the upper corner of an end and the
adjacent side.
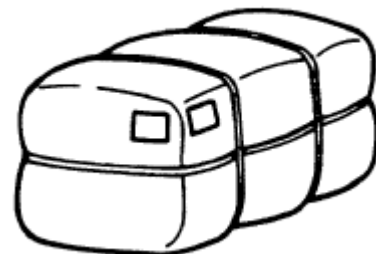
Exhibit 6

Ship to:

Production Trial Material
Gate 1

Mercedes-Benz US International Inc.

One Mercedes Drive
Vance, AL 354

ECE, R4, V8 or V6 **TRIAL MATERIAL**

PART IDENTIFICATION LABEL

	Supplier Number: *P00000*

Date: 1-1-2009	Supplier Name: *ABC Supplier*
MBUSI Part Number A164 999 99 99	Quantity: *00 pieces*
Part Description Trial Part	RAN No. *M00000T*

PAF Level Number *PAF* 000 NO.1	Dwg. Level *ZGS* 007	

Comments: ***It is critical that all fields on this label are completely filled out including the trial material model indicator. This is a sample label only! You must contact your Inventory Control representative for hard copy of this label.***

Exhibit 7

NEW PRODUCT DELIVERY TAG

PART #: _____

PAF #: _____

ZGS #: _____

OLD PART # (WHEN APPLICABLE): _____

OLD PAF #: _____

OLD ZGS #: _____

SUPPLIER: _____

SUPPLIER CONTACT _____ PHONE #: _____

DATE: _____ RAN #: _____

SPECIAL INSTRUCTIONS: *This is a sample label only! You must contact your Production Control representative for hard copy.*
_____

APPENDIX A - Typical FACT Data Identifiers and Short Titles

An U.S. national standard for Data Identifiers (DI), ANSI FACT-1, was published by the American National Standards Institute (ANSI) in December 1991. It has since been revised as ANSI MH10.8.2. AIAG endorses the use of these Data Identifiers. ANSI MH10.8.2 has over a hundred data identifiers defined for many purposes in many industries. The ANSI standard can be purchased by calling the American National Standards Institute (ANSI) at (212) 642-4900 and requesting ANSI MH10.8.2.

The following table includes some of the Dis in ANSI MH10.8.2 of interest to AIAG members. The *Short Title* text **SHOULD** be used in the bar code building blocks.

In many cases the *Short Title* text has been split onto two lines to assure the best fit in the title area of the building block.

DI	Short Title	Description
B	Container Type (B)	Container Type (Internally assigned or mutually defined)
1B	Returnable Container # (1B)	Returnable Container ID number
2B	Gas Cylinder # (2B)	Gas Cylinder ID number
C	Part # Cont. (C)	Continuation of customer's Part Number
D	Date YYMMDD (D)	Date, in the format YYMMDD
1D	Date DDMMYY (1D)	Date, in the format DDMMYY
2D	Date MMDDYY (2D)	Date, in the format MMDDYY
1H	Employee ID (1H)	Employee ID as assigned by the employer
2H	SSN (2H)	US Social Security Number
3H	Non-Employee ID (3H)	ID number for non-employee (e.g. a contract worker or supplier)
I	VIN	VIN - Vehicle Identification number
K	P.O. # (K)	Purchase Order Number, customer assigned
15K	Pull Signal # (15K)	Pull Signal – Kanban, DON or RAN number assigned by the customer
L	Storage Location (L)	Storage Location
1L	Location (1L)	Location (generic)
4L	Country of Origin (4L)	Country of Origin - two-character code from the ISO 3166 standard country code

DI	Short Title	Description
20L-24L		Additional location numbers - The exact meaning of each DI is assigned internally. (This set of DI's could be used for hierarchy of locations, for example: Building (20L); Bay (21L) Shelf (23L); Bin (24L)
51L	From: Postal Code (51L)	In country *Ship-From:* postal code (e.g. Zip Code), used when shipping within a single postal authority. Format is no leading or trailing blanks, all alphabetic characters capitalized, no dashes.
52L	To: Postal Code (52L)	In country *Ship-To:* postal code (e.g. Zip Code), used when shipping within a single postal authority. Format is no leading or trailing blanks, all alphabetic characters capitalized, no dashes.
54L	From: Postal Code + (54L)	International *Ship-From:* postal code (e.g. Zip Code) plus ISO 3166 country code, used when shipping across postal authority borders. Format is: postal code followed by two-character code from the ISO 3166 standard country code list of the assigning postal authority. No leading or tailing blanks, all alphabetic characters, capitalized, no dashes.
55L	To: Postal Code + (55L)	International *Ship-From:* postal code (e.g. Zip Code) plus ISO 3166 country code, used when shipping across postal authority borders. Format is: postal code followed by two-character code from the ISO 3166 standard country code list of the assigning postal authority. No leading or trailing blanks, all alphabetic characters, capitalized, no dashes.
P	Part # Cust (P)	Part number, assigned by the customer
1P	Part # Splr (1P)	Part number, assigned by the supplier / manufacturer
2P	EC # (2P)	Code assigned to asses the revision level of the part (e.g. Engineering change level, revision or addition)
Q	Quantity (Q)	Quantity (integer numeric) (Unit of measure assumed to be "each" unless otherwise agreed between supplier and customer)
1Q	Length (1Q) or Theoretical Weight (1Q)	Actual Length or Theoretical Weight (historically used in the shipment of primary metals)
2Q	Actual Weight (2Q)	Actual Weight
7Q	Qty + U/M (7Q)	Quantity and unit of measure in the format: Quantity followed by the two-character Unit of Measure code as defined in Data Element number 355 of the ANSI X12.3 Data Element Dictionary standard.
S	Serial # (S)	Serial Number assigned by supplier to an entity for its lifetime.
2S	Shipment ID (2S)	Shipment ID number. If you are using EDI, this corresponds to the DIS (Element 396 of ANSI X12.3, as used in the 856 Shipment Notification transaction)

DI	Short Title	Description
3S	Pkg ID-Unit (3S)	Unique Package Identification assigned by Supplier to the lowest level of packaging, which has a package ID code. (Container Serial Number assigned by the supplier to a single pack) (Container Label serial number)
4S	Pkg ID Master (4S)	Package Identification assigned by Supplier to master packaging containing like items on a single customer order. (Container Seal Number assigned by supplier to a master pack) (Master Label serial number)
5S	Pkg ID-Mixed (5S)	Package Identification assigned by Supplier to master packaging containing unlike items on a single customer order. (Container Seal Number assigned by supplier to a Mixed pack) (Mixed Load label serial number)
9S	Pkg ID Mutual (9S)	Generic Package Identification label, significance mutually agreed by customer and supplier
10S	Machine ID (10S)	Machine, work cell, or tool ID code
11S	Fixed Asset ID (11S)	Fixed Asset ID code
15S	Pkg ID Splr (15S)	Serial Number assigned by Supplier Entity that can only be used in conjunction with "13V"
17S	Pkg ID UCC (17S)	Supplier Identification (6 digits) as assigned by the Uniform Code Council followed by unique package serial number assigned by the supplier.
19S	Pkg ID DUNS (19S)	Combined Dun & Bradstreet company identification of the supplier followed by a unique package identification assigned by the supplier, in the format nn…nn+nn…n where a plus symbol (+) is used as a delimiter between the DUNS Number and unique package identification.
T	Lot # CUST (T)	Traceability number assigned to a unique batch or group of items (lot, heat, batch) by the customers
1T	Lot # Splr (1T) or Heat # Splr (1T)	Traceability number assigned to a unique batch or group of items (lot, heat, batch) by the supplier/manufacturer
V	Splr ID Cust Assign (V)	Supplier code assigned by the customer
12V	Mfrg ID DUNS (12V)	DUNS (r) number of the manufacturer
13V	Splr ID DUNS (13V)	DUNS (r) number of the supplier, if other that the manufacturer
14V	Cust ID DUNS (14V)	DUNS (r) number of the Customer
W	Work Order # (W)	Work Order number assigned by the supplier
Z		Mutually defined between customer and supplier (title to reflect mutually agreed meaning)

APPENDIX B – DATA SOURCES

All the data shown on all labels, tags, Master Labels, and Mixed Labels comes from EDI data. Most of the fields are sent to the supplier by MBUSI (in the Release, i.e., the EDI 830), and a few are determined by the vendor and sent to MBUSI (in the ASN, i.e., the EDI856). The following table lists, for each block, which EDI transmission, and segment within it, contains the data. Refer also to EDI Supplier Implementation Guide.

Label

Label Block	EDI Source	Segment	Content
1	830	FST08	RAN, concatenated with…
	856	LIN06	Serial Number, concatenated with…
	856	SN102	Quantity actually shipped
2	856	SN102	Quantity actually shipped
3	856	LIN03	Part Number
4	856	LIN07	ZGS actually shipped
5	830	PID05	Description
6	830	N406 (DE)	Storage Location in Delivery Segment
7	830	REF02 (DK)	Dock
8	830	MAN02	Staging Area (bin)
9	830	N104 (SE)	Supplier Number in the "Ship from" Segment
10	830	MAN03	Lineside Location
11	N/A	N/A	Q-Level (set by Supplier Quality)

Master Label

Block	EDI Source	Segment	Content
1	856	REF02 (RS)	Pallet Number
2	N/A	Computed	Total Quantity of Parts in all containers on pallet
3	856	LIN03	Part Number
4	830	N406 (DE)	Storage Location
5	830	REF02 (DK)	Dock
6	830	MAN02	Staging Area
7	830	N104 (SE)	Supplier Number
8	856	BSN02	Shipment ID

Mixed Label

Label Block	EDI Source	Segment	Content
1	830	N104 (SE)	Supplier, concatenated with…
	856	REF02 (RS)	Pallet Number
2	830	N406 (DE)	Storage Location
3	830	REF02 (DK)	Dock
4	856	BSN02	Shipment ID

APPENDIX C – NORMATIVE REFERENCES

AIAG Documents

Automotive Industry Action Group

26200 Lahser Road, Suite 200

Southfield, MI 48034

Customer Service: (248) 358-3003

Internet: http://www.aiag.org

ANSI and ISO Documents

American National Standards Institute

Attn: Customer Service

11 West 2nd Street

New York, NY 10036

Phone (313) 642-4980

Internet: http://www.ansi.org

AIM Documents

AIM Inc.

634 Alpha Drive

Pittsburgh, PA 15238

Phone (412) 963-8009

Internet: http://www.aimglobal.org

DUNS Documents

Dun & Bradstreet

One Diamond Hill Road

Murray Hill, NJ 07974

Phone (908) 665-5000

Internet: http://www.dnb.com

END OF DOCUMENT