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1.0 Objective & Scope

- 1.1 This document provides the standards for printing and applying bar code labels (a card, strip of paper, etc., marked and attached to an object to indicate its name, contents, ownership, destination, etc.) to packages shipped to Hyster-Yale Materials Handling, Inc. (HYMH).
- 1.2 This document applies to:
 - Americas Berea, Greenville, Ramos Arizpe, Sulligent.
 - Europe Craigavon, Masate, Nijmegen Manufacturing
 - Other locations as they need.

2.0 General

- 2.1 This document assists with HYMH's product cycle time reduction goals.
- 2.2 The label is designed to meet the intent of the AIAG (Automotive Industry Action Group) Standard for shipping container labels. Strict adherence to these specifications for Bar Coded Labels is needed to ensure maximum benefit for both customers and suppliers. Most of this Standard has been adapted from the AIAG B-10 Trading Partner Label Implementation Guidelines Identifier Guidelines as established by the AIAG.

3.0 Description

3.1 Size and Materials

- 3.1.1 The package Label shall be sized to fit the package appropriate to the product, however, it shall contain as a minimum, the information described in Section 6.2. The label paper shall be white in colour with black printing and application will be wrinkle free. The use of a 4.0 inch (102 mm) x 6.0 inch (152 mm) label is recommended (See examples in Appendix A).
- 3.1.2 The maximum length of any bar code symbol should not exceed 4.5 inches (114 mm).
- 3.1.3 The bar code symbol of the data element shall be directly below the human readable characters and shall be a minimum 0.4-inch (10 mm) high and a maximum of 1 inch (25 mm) high.
- The maximum permitted size for a label is A4 / Letter (8 ½ by 11), using portrait orientation and allowing adequate space for "quiet zones". See section 6.4.4.

3.2 Data Area Characteristics

- 3.2.1 The Shipping Label (A label used to identify the contents of a shipping package) shall contain the following bar coded pieces of information as a minimum:
 - 3.2.1.1 Transport Document / Bill of Lading (only required for Masate)
 - 3.2.1.2 The HYMH purchase order (P.O.) number + PO line number,
 - 3.2.1.3 Quantity,
 - 3.2.1.4 Packing List Number

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- 3.2.1.5 HYMH Part Number
- 3.2.1.6 If a supplier wishes to add additional information, this must first be approved by the HYMH Material planner and/or Commodity manager.
- 3.2.2 All bar coded data items shall be displayed in both human readable characters and bar code 39 or 128 symbology
 - 3.2.2.1 CODE 39 an alphanumeric bar code (sometimes called Code 3 from 9 or 3 of 9) designed to encode 26 uppercase letters, 10 digits, and 7 special characters. Each data character is made up of 5 black bars and 4 white spaces for a total of 9 elements. Each bar or space is either "wide" or "narrow" and 3 out of the 9 elements are always wide. That is what gave the code its other names Code 3 from 9 or 3 of 9.
 - 3.2.2.2 CODE 128 is similar to code 39 but has the advantage that it has a higher density and is therefore more compact. It can also encode more characters than code 39
 - 3.2.2.3 Note, the mixed ASCII option should be used and not the full ASCII option. Complete and official specifications can be obtained by subscription at: http://www.aimglobal.org/technologies/barcode/
- 3.2.3 Data Identifier codes are required. A data identifier code in the first position, following the start code of the bar code symbol, "*", is used to identify the information to follow. This character(s) and the Start / Stop codes MUST NOT be shown in the human readable line. The data identifier should be shown within parentheses in the human readable title for the appropriate data area.
- 3.2.4 The human readable characters shall be bold and a minimum of 0.125 inch (3 mm) high, shall be in Upper case and use a Sans Serif format that clearly differentiate between 0 and O.

3.3 Data Area, Titles and Borders

Each data area shall contain its data field identifier and title in the upper left hand corner, as shown in the examples. Outer borderlines are required.

3.3.1 Transport Document Number (Bill of Lading, etc.)

The data identifier for Transport Document number must be 2K.

- 3.3.1.1 The maximum length anticipated for the transport document/ bill of lading number is sixteen alpha/numeric characters.
- 3.3.1.2 The data character set shall contain 36 characters: 0 to 9, A to Z.

The 2K prefix requires the bar code to be formatted as 2KTRANSPORTDOCUMENT.

An example is 2K12345ABCDE where:

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2K	Is the required data identifier	
12345ABCDE	Is the required transport document/ bill of lading identifier (max. 16 alpha / numeric characters)	

3.3.2 Purchase Order Number

The data identifier to be used for purchase order number must be 14K

- 3.3.2.1 The purchase order number shall be designated by HYMH. The maximum length anticipated for the purchase order number is fifteen characters.
- 3.3.2.2 The data character set shall contain 39 characters: 0 to 9, A to Z, -, +, and space.
- 3.3.2.3 The full HYMH purchase order line MUST be used with leading zeros never truncated. For example, line number 00001 should never be truncated to 1.

The **14K** prefix requires the bar code to be formatted as **14KPO+LineItem**.

An example is 14K0123456789+00001 where:

14K	Is the required data identifier (Bar Code prefix)
РО	Is the Purchase Order number, 0123456789 is the required 10 digit numeric Purchase Order number
+Item	+00001 is the required plus sign followed by numeric Purchase Order item number (max. 99999)

3.3.3 Shipment Quantity

The data identifier to be used for shipment quantity is **Q**.

- 3.3.3.1 The maximum length anticipated for the shipment quantity is 13 numeric characters.
- 3.3.3.2 Thousand separators must not be used
- 3.3.3.3 The data character set shall contain 11 characters: 0 to 9, and Q.

The **Q** prefix requires the bar code to be formatted as **Q Quantity**.

An example is Q123456 where:

Q	Is the required data identifier
123456	is the required numeric quantity shipped (max. number 999999999999)

3.3.4 Packing List Number

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The data identifier for packing list number must be **11K**.

- 3.3.4.1 The maximum length anticipated for the packing list number is ten alpha/numeric characters.
- 3.3.4.2 The data character set shall contain 43 characters: 0 to 9, A to Z, -, ., /, +, %, \$, and space.

The 11K prefix requires the bar code to be formatted as 11KPACKINGSLIP.

An example is 11K12345ABCDE where:

11K	Is the required data identifier	
12345ABCDE	Is the required packing slip identifier (max. 10 alpha / numeric characters	

3.3.5 Part Number

The data identifier for part number is **P**.

- 3.3.5.1 The part number shall be designated by HYMH.
- 3.3.5.2 The maximum length anticipated for the part number is fifteen characters.
- 3.3.5.3 The data character shall contain 36 characters: 0 to 9, A to Z.
- 3.3.5.4 The full HYMH part number MUST be used with leading zeros never truncated. For example, part number 0012345 should never be truncated to 12345.

The **P** prefix requires the bar code to be formatted as **PPARTNUMBER**.

An example is P0123456789ABCDE where:

P	Is the required data identifier	
0123456789ABCDE	Is the required HYMH part number (max. 15 alpha / numeric characters	

3.4 Bar Code Symbology

Bar code shall be of the 3-of-9 (Code 39) or 128 type and shall conform to standard Code 39 or 128 symbology. All bar code data fields shall use either Code 39 or 128, which has been adopted as the preferred bar code symbologies by HYMH. See Appendix A for the Preferred Label Format and Appendix B for Invalid Formats.

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The data character set shall contain 43 characters: 0 to 9, A to Z, -, ., /, +, %, \$, and space – see specific bar code prefixes for limitations.

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3.4.1 Code Density and Dimensions

3.4.1.1 The width of the narrow elements ("X" dimension) shall be within the range of .010 inch (0.25mm) to 0.017 inch (0.43mm). The ratio of the nominal width of the wide to narrow elements shall be 2.8:1, with an allowable range of 2.8:1 to 3.2:1.

3.4.2 Check Digits

3.4.2.1 Check digits shall not be used in the bar codes.

3.4.3 Reflectivity and Contrast

The printed bar code symbols shall meet the contrast and reflectivity requirements specified in the ISO / IEC 15416 Barcode Print Quality Test specification.

3.4.4 Quiet Zone

The minimum clear area immediately preceding and following the bar code shall be 0.25 inch (6.3mm).

3.4.5 Human Readable Dimensions

All bar codes must have human readable format directly above, and this must have a minimum height of .125 inch (3 mm).

3.4.6 Label Verification

6.4.1.1 Appendix C is intended to be used as a "Test Script" whenever a Supplier or HYMH needs to verify a label is meeting all requirements.

3.5 Shipping Label Location

3.5.1 Bar code labels are required to be affixed to the shipping container.

3.6 Shipping Units

- 3.6.1 Bar code labels should be used to identify the total contents of a part number / purchase order combination package.
- 3.6.2 When a part number / purchase order combination is too large for a single package, each package should contain its own label with the quantity representing the package rather than purchase order or total shipment quantity.
- 3.6.3 A label must NOT cover multiple purchase orders or part number / purchase order combinations.
- 3.6.4 If multiple part number / purchase order combinations are shipped in the one package, the bar codes must be uniquely identifiable with the corresponding

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- goods, for example by placing the goods and associated bar codes in separate plastic bags.
- 3.6.5 The label should be attached to the physical package for the goods or contained within the package.
- 3.6.6 The label should be composed of such a material that it survives the transportation and receiving processes. This includes, but is not limited to, reasonable resistance to exposure to oil, sunlight and water.

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APPENDIX A - Preferred Label Format

(Not to scale)

(2K) Transport Document / Bill of Lading ABCDEF1234567890 *2KABCDEF1234567890* (11K) Packing List Number ÀBCDE12345 *11KABCDE12345* (P) Part Number ABCDE1234567890 *PABCDE1234567890* Part Description FORKLIFT TRUCK PARTS (14K) Purchase Order and Line 999999999+99999 *14K999999999+99999* (Q) Quantity Unit of Measure 1000 *Q1000*

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Appendix B – Examples of Invalid Formats

Human readable text is below bar code: it should be above Human readable text contains the data identifiers and start / stop characters

(2K) Transport Document / Bill of Lading				
2KABCDEF1234567890				
2KABCDEF1234567890 (11K) Packing List Number	Human Readable Text is below bar code			
11KABCDE12345				
11KABCDE12345 (P) Part Number				
PABCDE1234567890				
PABCDE1234567890 Human	Readable text contains Data IDs and S	Start/ Stop characters		
Part Description FORKLIFT TRUCK PARTS (14K) Purchase Order and Line				
14K9999999999+99999				
14K9999999999+99999				
(Q) Quantity Unit of Measure				
Q1000	FT			
Q1000				

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APPENDIX B – Examples of Invalid Label Formats

Bar code does not contain data identifiers or Start / Stop characters

ABCDER1234567890 Start character and data identifier is not in bar code *2KABCDEF1234567890 *Correct bar code			
*11KABCDE12345 *11KABCDE12345			
(P) Part Number ABCDE1234567890 *PABCDE1234567890* Part Description			
FORKLIFT TRUCK PARTS (14K) Purchase Order and Line 999999999999999999999999999999999999	99*		
(Q) Quantity 1000 *Q1000*	Unit of Measure		

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APPENDIX C – Supplier Conformance Checklist

Supplier Sample Label Conformance Checklist

Supplier :					Date: Completed By:
General Label Requirements		Compliant Concession			Comments
General Laber Requirements	Yes		No	Granted	Comments
Is label preferred size?					
4.0 inch (102 mm) x 6.0 inch (152) mm				_	
Is label within size limits?					
Maximum permitted size is A4 / Letter, using portrait orientation and allowing					
adequate space for quiet zones					
Can Barcode be scanned?	-H		₩		
Barcodes NOT longer than 115mm?	╌┼		<u> </u>	-	
Barcode Height between 10 & 25mm?	Щ.		Щ		
Quiet Zones between 6.33 & 25mm Present?	느님		<u> </u>		
Are all fields present?	ш		Ш		
Transport Document / Bill of Lading number, Packing list, Part Number, PO, Qty Fields in correct order?					
Transport Document/ Bill of Lading Number, Packing list, Part Number, PO, Qty			ш		
Black Barcode on White Label?	т 🗀		т		
Title Present for Data Fields?					
Borders Present on Label?	- H		H -		
Human Readable Text Above Barcodes					
	-		 		
Data Identifiers NOT in Human Readable			Щ		
Start / Stop Char in Barcodes	-		<u> </u>	<u> </u>	
Start / Stop Char NOT in Human Readable	Ш		Ш		
Transport Document/ Bill of Lading Number Barcode Requirements	Yes	mpli	ant No	Concession Granted	Comments
Format Correct (Number Characters / Layout etc)					
Maximum length is sixteen alpha/numeric characters.					
The data set contains characters: 0 to 9, A to Z.					
Data Identifiers Present in Barcodes (2K)	Ш				
Packing List Barcode Requirements	Co Yes	mpli	ant No	Concession Granted	Comments
Format Correct (Number Characters / Layout etc)		+		Granteu	
Maximum length is ten alpha/numeric characters.			ш		
The data set contains characters: 0 to 9, A to Z, -, ., /, +, %, \$, and space.					
Data Identifiers Present in Barcodes (11K)			П		
,	Co	mplia	ant	Concession	
Part Number Barcode Requirements	Yes	_	No	Granted	Comments
Format Correct (Number Characters / Layout etc)	П		П	П	
The part number shall be the HYG part number.			_		
Maximum length is fifteen characters.					
The data character contains only characters: 0 to 9, A to Z.					
Leading zeros are not truncated.					
Data Identifiers Present in Barcodes (P)	Ш		Ш	Ш	
P.O. and Line Number Barcode Requirements	Co Yes	mpli	ant No	Concession Granted	
Format Correct (Number Characters / Layout etc)		T			
The purchase order number shall be the HYG PO number.	-			_	
Maximum length of the PO number plus "+" and Line Number is sixteen characters.					
The data character set contains only characters: 0 to 9.					
The full HYG PO line MUST be used with leading zeros never truncated					
The format must be 2100383450+00001	<u></u>				
Data Identifiers Present in Barcodes (14K)					
Quantity Barcode Requirements	Co Yes	mpli	ant No	Concession Granted	Comments
Format Correct (Number Characters / Layout etc)	1 62	+		Granteu	
Maximum length for the quantity is six numeric characters.			Ш		
The data character set shall contain only: 0 to 9, and Q.					
Data Identifiers Present in Barcodes (Q)		1			
(-)			_		

Final Sign Off Date	
Signed Off By	