

# VOLVO MOTOR GRADERS

## Appendix: Quick Receive Label EDI Guideline

Applications of ASC 12

Version: 0403-2

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## Appendix 2 Quick Receive Label

### 1. Introduction

This Volvo Motor Graders Quick Receive Bar Code Guide contains the specifications and requirements for Quick Receive bar code labels to be applied on shipments where EDI has been implemented and the Advance Ship Notice (ASN), ANSI X12 transaction set 856, has been sent.

The use of bar code labels is to facilitate the movement of goods and to more accurately and productively capture the important shipment information at time of receipt. These specifications have been developed to conform with the methodology of the AIAG Quick Receive Guideline.

It is the supplier's responsibility to provide bar coded labels that fully meet these specifications.

Throughout this document, the word "shall" indicates a requirement and the word "should" indicates a recommendation.

Example and sample label shown in this document is not necessarily to scale and is for illustrative purposes.

# VOLVO MOTOR GRADERS

## Appendix: Quick Receive Label EDI Guideline

Applications of ASC 12

Version: 0403-2

### 2. Definitions

<b>ANSI</b>	The American National Standards Institute. (See Appendix)
<b>Bar Code Symbol</b>	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 typically contains a leading quiet zone, start character, data character(s), stop character, and a trailing quiet zone.
<b>Building Block</b>	The basic modular structure of the bar code label. 1 inch (25 mm) high by the full width of the label. May be sub-divided into sub-blocks.
<b>Character</b>	In a bar code symbol, the smallest group of elements that represents one or more numbers, letters, punctuation marks or other information.
<b>Code 39</b>	For the purpose of this Guide, Code 39, also known as Code 3 of 9, shall mean the symbology as specified by ANSI AIM BCI.
<b>Data Identifier (DI)</b>	A specified character string that defines the specific data that immediately follows, as defined by ANSI MH10.8.2.
<b>Dots per inch (dpi)</b>	The number of points represented on any access within a space of one inch.
<b>Electronic Data Interchange (EDI)</b>	For the purpose of this document, EDI shall mean the computer communication of data between trading partners.
<b>Error correction</b>	Mathematical techniques used by decoders to reconstruct missing or damaged symbol characters.
<b>Highlighting Line</b>	A horizontal divider line placed above and/or below a 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.
<b>ID</b>	Abbreviation for Identification.

# VOLVO MOTOR GRADERS

## Appendix: Quick Receive Label EDI Guideline

Applications of ASC 12

Version: 0403-2

<b>Label</b>	See Label Concept.
<b>Lines per Block (LPB)</b>	Units of measure defining the height of text characters.
<b>Supplier / vendor</b>	The party that produces, provides or furnishes a product or service.
<b>Supplier / vendor ID</b>	The numeric code used to identify the supplier or vendor. This code is to be found on Volvo Purchase Orders, Scheduling Agreements and Delivery Schedules.
<b>Symbology</b>	A standard means of representing data in bar code form. Each symbology specification sets out its particular rules of composition or symbol architecture. (ISO definition). Volvo bar coded labels use Code 39 symbology.
<b>Tag</b>	A label (card) that is attached to a shipping container.
<b>Transport package</b>	A container intended for the transportation and handling of one or more parts, articles, smaller containers, or bulk material.
<b>Vendor</b>	See supplier / vendor
<b>X dimension</b>	The intended width of the narrow elements required by the application, or Symbology, or both.

### 3. Label Concept

<b>Purpose of a Bar Code Label</b>	The purpose of a bar code label is to facilitate the movement of goods and the exchange of data among all members within a channel of distribution. When a bar code label is used as Shipment Notification in conjunction with computerized databases and electronic data interchange (EDI), the amount of data needed on a label may be reduced significantly.
<b>Symbologies</b>	Code 39, with ANSI MH10.8.2 Data Identifiers (DIs), has been selected to implement the label format.
<b>Labeler</b>	For the purpose of this document, the term labeler shall refer to the organization responsible for having the label printed and applied.

# VOLVO MOTOR GRADERS

## Appendix: Quick Receive Label EDI Guideline

**Applications of ASC 12**

**Version: 0403-2**

<b>Label</b>	The general term label means the printed area on, or attached to, the container that includes the text or bar code information or both (e.g. pressure-sensitive tags), as covered in this Guide. Separate segments of the label may be applied at different stages to form the complete label.
<b>Segments</b>	Segments are logical groupings of information based on the data needs of the CARRIER, CUSTOMER and SUPPLIER.

### Data to be included in each label segment:

Vendor Code Shipment Identification Number
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# VOLVO MOTOR GRADERS

## Appendix: Quick Receive Label EDI Guideline

**Applications of ASC 12**

**Version: 0403-2**

---

### Label Format

This Guide defines the rules for formatting the information, both text and bar code, that appears on the Quick Receive label. This section includes the formatting rules for:

- Building blocks.
- Text in building blocks
- Bar code in building blocks
- General label characteristics

#### a) **Building Blocks**

The Building Block is the basic unit of the label format. A modular structure is used to simplify label formatting. An individual building block may contain text, a single bar code with a human readable interpretation (known as a bar code block) or may be blank.

Building blocks should be stacked vertically.

Building blocks should be separated from each other by a horizontal line.

**Building Block height** shall be 0.750 inch +/- 0.2 inch (25 mm +/- 5mm) as determined by the printing capability of the labeler.

The **width** of a building block is the width of the label.

**Horizontal lines** shall separate each building block.

#### b) **Text Building Blocks**

A text building block shall not contain a bar code symbol.

The height of text characters shall be specified using a unit of measure called **Lines Per Block**, rather than inches, millimeters or points.

The exact character heights corresponding to the eight text sizes shall be chosen by the labeler based on the capabilities of their printing process. Eight sizes may be specified for text, ranging from one to eight Lines Per Block.

Labelers shall choose a single text height for each of the eight sizes so that clear distinctions shall be evident between text sizes. For example, 8 LPB shall be smaller than 7 LPB, etc.

# VOLVO MOTOR GRADERS

## Appendix: Quick Receive Label EDI Guideline

**Applications of ASC 12**

**Version: 0403-2**

---

The characters shall be clearly legible, regardless of height. For maximum legibility, the ratio of the height to width of a character should not exceed 2:1. The ratio of the height to width is measured on an “M” character.

A sans serif font such as **Arial**, **Helv**, or **Helvetica** is recommended.

A text block should be used for the Quick Receive title text.

### **Text Data Limits**

The maximum number of text characters per line shall be limited to those shown in the column “Maximum Characters Per Line”. Calculation of Maximum Characters Per Line is based on a block/label width of 6 inches. Actual text dimensions will depend on the data, the font used and the capability of the label provider’s printer and software.

<b>Lines Per Block</b>	<b>Maximum Characters Per Line</b>	<b>Approximate Point Height</b>	<b>Approximate Height In Inches</b>	<b>Approximate Height In Millimeters</b>
<b>1 LPB</b>	8	64	0.90	22.0
<b>2 LPB</b>	18	32	0.40	11.0
<b>3 LPB</b>	28	20	0.25	7.0
<b>4 LPB</b>	34	16	0.20	5.0
<b>5 LPB</b>	42	12	0.15	4.0
<b>6 LPB</b>	48	10	0.12	3.0
<b>7 LPB</b>	59	8	0.10	2.0
<b>8 LPB</b>	68	6	0.08	1.5

### **Titles for Text Building Blocks**

The title used in a text building block shall be printed in the upper left corner of the building block.

The title in the text building block should be printed in UPPER CASE characters at a height of 7 LPB, two lines maximum, left justified.

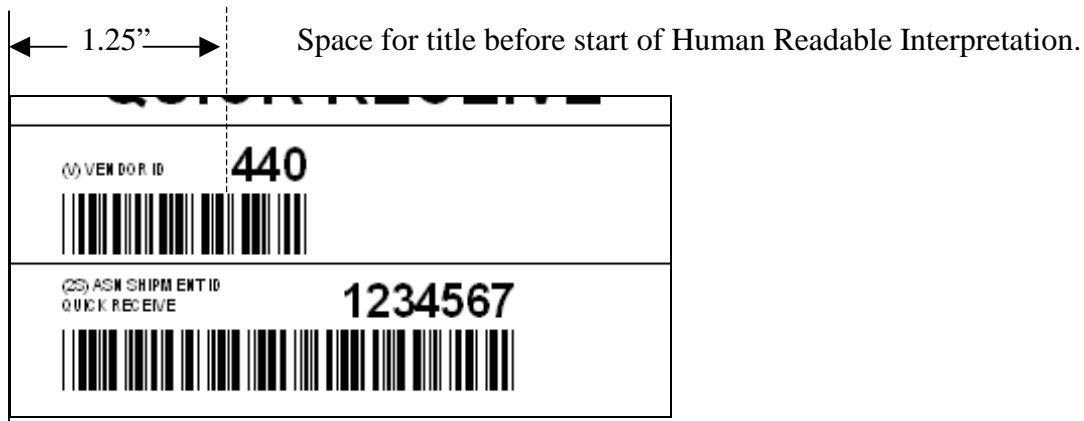
# VOLVO MOTOR GRADERS

## Appendix: Quick Receive Label EDI Guideline

Applications of ASC 12

Version: 0403-2

---



### c) Bar Code Building Block Format

#### Bar Code Building Block Contents

Code 39 with Data Identifiers (DI's) shall be the linear symbology used in a bar code building block. Code 39 is described in the ANSI/AIM BCI *Uniform Symbology Specification – Code 39*. DI's are listed in ANSI MH10.8.2 *Data Application Identifier Standard*.

A building block shall not contain more than one bar code symbol.

All Code 39 bar code symbols shall contain a Data Identifier (DI). DI's are not considered part of the data they precede.

All Data Identifiers shall conform to the ANSI MH10.8.2 Data Application Identifier Standard.

The count of the total number of characters includes both data and DI characters.

# VOLVO MOTOR GRADERS

## Appendix: Quick Receive Label EDI Guideline

**Applications of ASC 12**

**Version: 0403-2**

---

### **Bar Code Block Title Line(s)**

A title should be printed in the upper left corner of the bar code block.

The title should be printed in upper case characters at a height of 7 LPB, two lines maximum, left justified. The bar code block's title should conform to the Short Titles listed below.

<b>Short Title</b>	<b>Description</b>
<b>(V) VENDOR ID</b>	The vendor code as assigned by Volvo. This number can be found on the Purchase Order or Scheduling Agreement.
<b>(2S) ASN SHIPMENT ID QUICK RECEIVE</b>	Shipment Identification Number (SID). This alphanumeric must be no greater than 19 characters including the Data Identifier code.

### **Bar Code Symbol Placement**

The bar code symbol shall be placed in the lower portion of the bar code building block

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The bar code symbol shall be left justified, allowing for Quiet Zones, as specified on page 12.

# VOLVO MOTOR GRADERS

## Appendix: Quick Receive Label EDI Guideline

**Applications of ASC 12**

**Version: 0403-2**

---

### Bar Code Symbol Height

The minimum height of the Code 39 bar code shall be 0.3125 in (8mm).

### Symbology

Code 39 bar code symbology shall be as defined by ANSI AIM BCI.

Code 39 full ASCII option shall not be used.

Code 39 bar codes shall be printed in black on a white background.

Non-significant zeros and non-significant space characters shall not be encoded in a bar code.

The Code 39 symbology check character option shall not be used.

The four characters %,/,,\$,+ of the Code 39 symbology shall not be used.

### Narrow Element X Dimension

The wide and narrow bars and spaces are termed *elements*. The range of the width of the narrow element (X dimension) shall be from 0.010 inch (0.25 mm) to 0.017 inch (0.43 mm) as determined by the printing capability of the supplier/printer of the label. **The recommended range of the X dimension is between 0.013 inch (0.33 mm) and 0.017 (0.43 mm).**

The narrow element X dimension should be consistent for all linear bar code symbols contained on the label.

The ratio of the width of the wide bars and spaces to the width of the narrow bars and spaces should be 3:1. The measured ratio of the wide elements to the narrow elements shall be between 2.8:1 and 3.2:1.

### Quiet Zones

The bar code symbol shall have leading and trailing Quiet Zones with minimum widths of 0.25 inch (6 mm) each.

### Human Readable Interpretation

The data encoded in the Code 39 bar code shall be represented in human readable characters above the bar code symbol.

# VOLVO MOTOR GRADERS

## Appendix: Quick Receive Label EDI Guideline

**Applications of ASC 12**

**Version: 0403-2**

---

Data Identifiers (DI's) and symbology start and stop characters shall not be printed in the Human Readable Interpretation. ANSI MH10.8.2 Data Identifiers and ANSI AIM BCI symbology start and stop characters are not considered part of the data.

The Data Identifier (DI) is to be shown in parentheses near the title.

The Human Readable Interpretation shall be upper case characters.

The Human Readable Interpretation shall be printed right justified, minimum 1.25 inch (31 mm) from the left edge of the building block.

The Human Readable Interpretation of the data encoded in the bar code symbol shall be printed at either 2 or 3 LPB. The chosen LPB should not interfere with the height of the bar code.

### **d) Label Characteristics**

Labels shall be White with Black print.

The width of the label shall be determined by the labeler. The following is the suggested label size:

The Quick Receive Label should be 2 inches (50 mm) high by 3.5 inches (89 mm) wide.

### **4. Label Data Content**

Quick Receive Label shall be used to identify each shipment using the same Shipment Identification number used in the ANSI X12 transaction set 856 Ship Notice/Manifest, Beginning Segment Ship Notice Data Element 396.

### **Example of a Quick Receive Label**

# VOLVO MOTOR GRADERS

## Appendix: Quick Receive Label EDI Guideline

Applications of ASC 12

Version: 0403-2



### **5. Quality Assurance**

It is important that the bar code be decodable throughout the system. For this reason, quality needs to be considered from initial printing through to the end user.

The AIAG B-8 document provides quality assurance guidance for shipping labels and other bar code applications.

Quality testing should not be limited to label production inspection, but should be followed through to the end use.

The ANSI X3.182 Guideline for Bar Code Print Quality shall be used to determine bar code symbol print quality.

When bar code print quality tests are performed, an appropriate verifier with a measurement aperture of 0.010 inch and illumination wavelength of 630-680 nanometers shall be used.

The minimum symbol grade shall be C (1.5).

Labels should be sufficiently durable to remain in place and be decodable throughout the system of use.

### **6. Obsolete Labels**

Obsolete labels shall be rendered unusable by either being removed, defaced, or covered.

If covering obsolete labels with new labels, care should be taken so that bar code print quality of the new labels is not adversely affected.

# **VOLVO MOTOR GRADERS**

## **Appendix: Quick Receive Label EDI Guideline**

**Applications of ASC 12**

**Version: 0403-2**

---

If the label is to be attached to a material which is to be recycled (e.g. shrinkwrap), the label material should be compatible with or removable from the substrate material to which it is attached.

# VOLVO MOTOR GRADERS

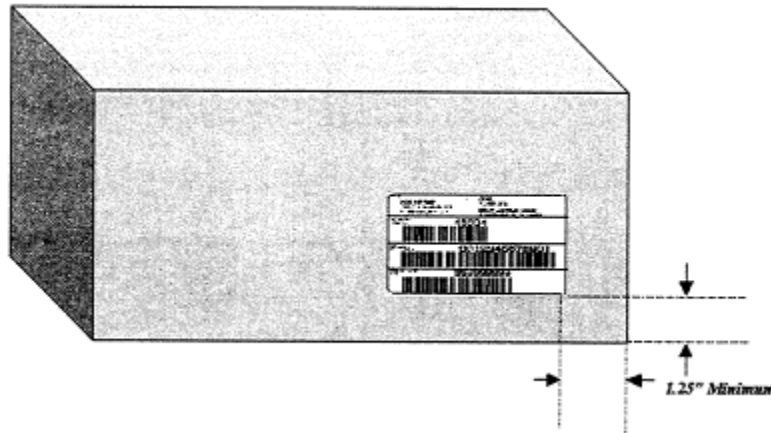
## Appendix: Quick Receive Label EDI Guideline

Applications of ASC 12

Version: 0403-2

### Label Placement and Orientation

Labels should be placed no closer than 1.25 inches (32 mm) from any container edge.



Labels or tags should be applied in an easily accessible location.

The label should not be placed over a seam.

Sealing tape, shrink wrap, or bands shall not be placed over the label.

The following considerations should be addressed when determining the most appropriate location for the label or tag:

- Survivability of the label.
- Label application.
- Container type.
- Packaging level, if multiple labels or bar code symbols are visible.
- Accessibility of location.
- The Quick Receive label shall be placed on the upper half of the unit load. The bottom edge of the label on master and mixed loads should not be higher than 60 inches (152 cm) from the bottom.

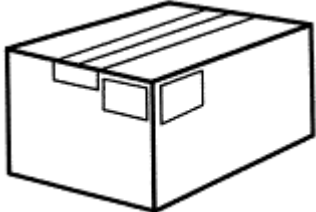
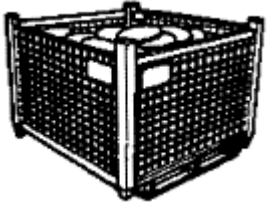
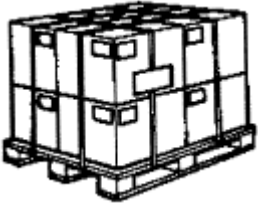
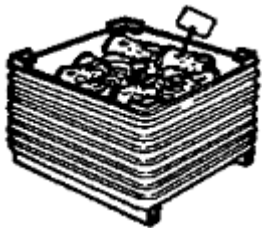
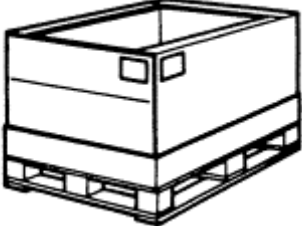
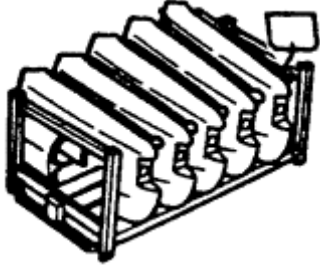
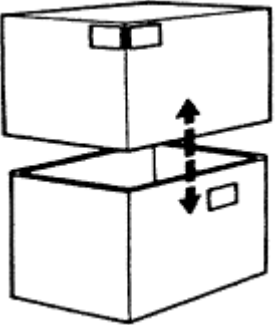
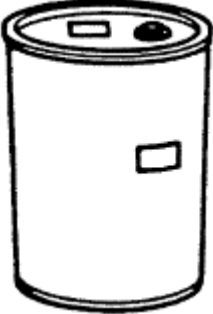
# VOLVO MOTOR GRADERS

## Appendix: Quick Receive Label EDI Guideline

Applications of ASC 12

Version: 0403-2

### Recommended Label Placement Examples:

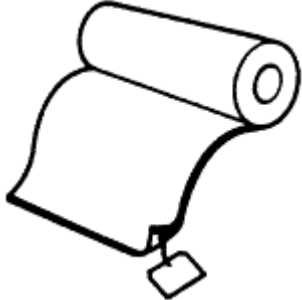
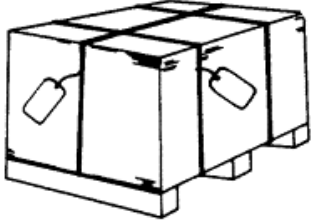

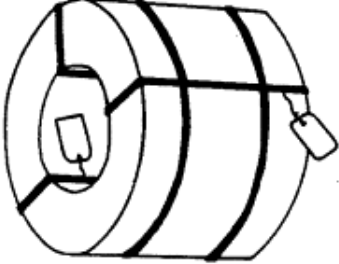
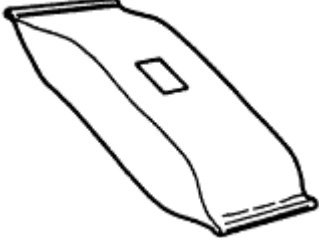
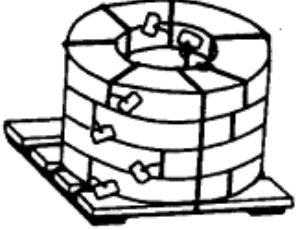

Box or Carton		Basket, Wire Mesh Container	
Cartons on Pallet		Open Metal Bin or Tub	
Pallet Box		Rack	
Telescope or Set-Up Container		Drum, Barrel, or Cylindrical Containers	

# VOLVO MOTOR GRADERS

## Appendix: Quick Receive Label EDI Guideline

Applications of ASC 12

Version: 0403-2

Roll		Sheets, Cut Lengths, Blanks	
Bale		Single Coil	
Bag		Slit Coils	
Tubing and Bars			

# VOLVO MOTOR GRADERS

## Appendix: Quick Receive Label EDI Guideline

**Applications of ASC 12**

**Version: 0403-2**

---

### 7. Supplier Label Sample Approval Requirement

Do not bar code label Volvo shipments until sample labels have been qualified.

Sample labels are to be submitted to our Quality Assurance Department for approval.

Sample labels shall be made using the same software and hardware that will be used to produce the production labels for Volvo. Re-submission is required if changes are made to your bar code labeling hardware and/or software.

After your sample labels have been approved, all shipments to Volvo are to be bar coded.

# VOLVO MOTOR GRADERS

## Appendix: Quick Receive Label EDI Guideline

Applications of ASC 12

Version: 0403-2

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### Appendix A

Contact these organizations for information referenced in this document:

#### **AIAG Documents**

Automotive Industry Action Group  
26200 Lahser Road, Suite 200  
Southfield, MI 48034  
Customer Service: (248) 358-3003  
Fax: (248) 358-9760  
Internet: <http://www.aiag.org>

#### **ANSI and ISO Documents:**

American National Standards Institute  
Attn: Customer Service  
11 West 42<sup>nd</sup> Street  
New York, NY 10036  
Phone: (212) 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>