

Volvo's Application Of Odette / Transport Label

TRANSPORT LABEL Version 1 Revision 4 (2020-12-15)

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Paper, Size and Materials

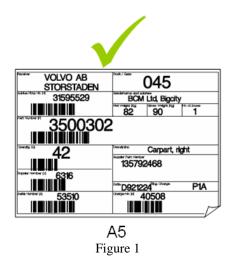
The format of the Odette Transport Label (OTL) is A5 (210x148 mm) (cf. figure 1.) This format may not be printed on larger paper size, e.g. A4 (cf. figure 2 and 3.)

The OTL paper must be white with black printing.

The label material has to have a weight of not less than 160-170 g/m² and that it is weather resistant. This is to assure the OTL information being readable in the complete supply chain. If adhesive label is used and attached on the Transport package, the label material has to have a weight of not less than 80 g/m² and that it is weather resistant.

Adhesive labels may be pressure-sensitive or dry-gummed as long as the adherence to the package surface is assured and that the OTL is easily removable from the Transport package after usage.

The label must be durable enough to ensure readability at its destination, i.e. being weather resistance.





045 STORSTADEN 31595529 BCM Ltd, Bigcity 82 500302 Carpart, right 135792468 no l P1A 53510 40508 A4 Figure 2

VOLVO AB

A4 Paper Figure 3

Printers and Software

To ensure readability of the bar codes, a very high print quality is demanded. Therefore Volvo recommends using either a **Thermo** or **Thermo Transfer** printer to reach acceptable quality.

If a **Laser** printer is used to print the OTL it is necessary to follow the manufacturer specification according to maintenance and paper material. This since a Laser printer is more sensitive to environment it is working in.

Matrix printers are NOT allowed in any supply chain to Volvo because of low quality aspects.

It is most important that the recommended maintenance of the printer is followed according to the given instruction by the printer manufacturer.

If the printer is located in a very dirty/dusty environment it is recommended that the maintenance of the printer is carried out more often than the recommendation says.

If the environment is of extreme character it is needed to take in consideration adding a "hood cover" to the printer.

It is recommended that within a purchase of a printer also include a support agreement with the printer supplier. If changes or a modification is needed of the OTL, this support is valuable not to interfere with any part of the supply chain.

To secure that a change of printer or software does not interfere with any aspects of the supply chain, Volvo requests that the supplier inform the affected goods receiving sites. There might be a need of a new verification of the OTL.

Data

Data Area Layout

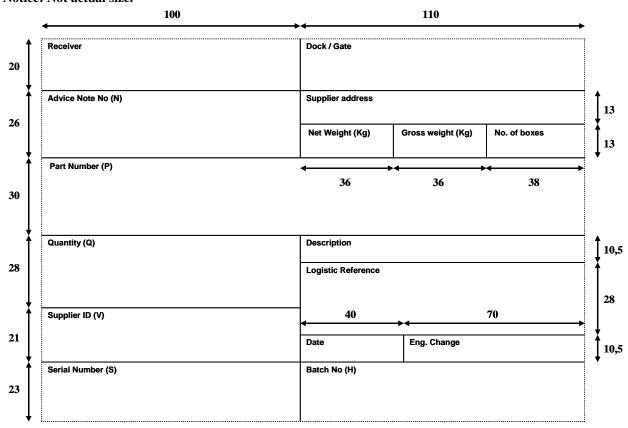
Data Area

The size of each data area is defined to fit the content, taken in consideration of font size, bar code heights and dimensions.

Outer border line (frame) should not be printed on the OTL. This to provide the best reading possibilities of the bar code (see Quiet zone in chapter Bar code symbologies). Each data area should be separated by thin lines.

The illustration below shows the layout of the OTL, figures in millimeter (mm).

Notice! Not actual size.



Characters

Any readable character set can be used, but the Odette recommendations are the following:

• Font: Helvetica bold e.g. **OTL / 1234567890**

• Character Set: ISO 3098-1

Titles and Identifier Codes

In the upper left corner of each data area, the Data Area titles shall be printed. This information is allowed to be printed in any language. Font size to be used is 1.5 mm.

Data Identifiers shall be printed as a part of the Data area title, at the end of the title and in brackets, e.g. Serial Number (S). Further information regarding Data Identifiers is to be found in the Data Area Table, column Data Identifiers.

Data Area Content

Data printed on the OTL must be consistent with the data collected from the Delivery Schedules (Global DELFOR) and in conjunction with the ASN message (Global DESADV).

The data information in readable text must be printed above and in conjunction with the bar code, e.g. Advice note number.

Conditional Data Areas (Occasionally or Dependent information) which are not required by any agreement between Volvo and the respective supplier, must be left blank. See Data Area Table in chapter 5.1.

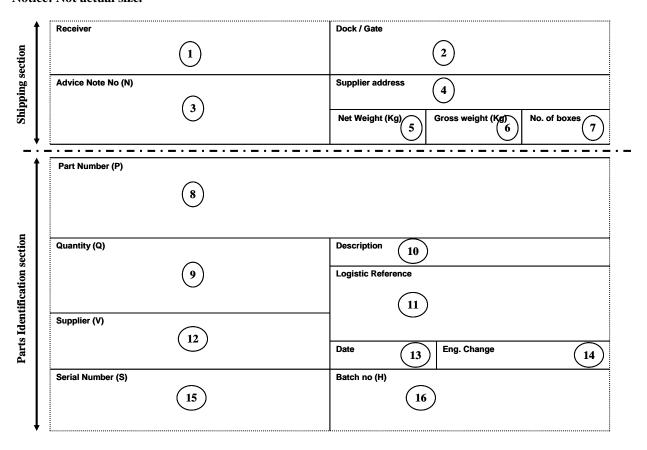
Non-significant (leading or initial) zeros and blanks/spaces in the data string should be suppressed/deleted, when the bar code and/or human readable characters are printed.

The OTL is divided into two sections:

- **Shipping section** Receiver, Dock/Gate, Advice Note number, Supplier address, Net weight, Gross weight and Number of boxes.
- **Parts Identification section** Part number, Quantity, Supplier, Serial Number, Description, Logistic Reference Area, Date, Engineering change and Batch number.

The Data Areas are numbered from 1 to 16 and should be read together with information given in pages for Data Area Sections.

Notice! Not actual size.



Data Area Table

		ΙΔRFΙ	INFORMATIO)N		
		LADEL	Field Length	714		
		User	Excl. Data	Bar code Size	Text Size	Data
	Data Area Content	Attributes		height (mm)	height (mm)	
	SHIPPING SECTION	Attilibutes	rueriuliers	neight (illin)	neight (mm)	identifiers
	Receiver					
1	Volvo's unloading location.	R	2 lines x an20		7	
	Dock/Gate		2 m 00 x a m 20			
2	Volvo's final delivery point.	R	1 line x an12		13	
	Advice Note Number					
3	Supplier's advice note number.	R	an8*	13	7	N
	Supplier Address					
4	Supplier's name and address, country of origin.	R	an29		5	
5	Net Weight					
3	Material weight within Transport unit.	D	n5		7	
6	Gross Weight					
_	Total Transport unit weight.	R	n5		7	
7	No. of Boxes					
ட்	Number of packages within one transport unit.	D	n5		7	
	PARTS IDENTIFICATION SECTION					
8	Part Number					
Ľ	Volvo's Part number	R	an24	13	13	P
9	Quantity	_				
	Package or Transport unit quantity	R	n10	13	13	Q
9	Unit Of Measurment				_	
\vdash	Value PCE is assumed	D	an3		7	
10	Description		00 00		7	
\vdash	Volvo's part description.	R	an22		/	
11	Logistic Reference	D				
Н	Supplier ID	ע				
12	Supplier ID Supplier number/ID	R	an10	13	5	V
	Date	- 1	an IV	10		v
13	Material production date (P) or despatch date (D)	D	an7		7	
	Engineering Change		uiii		,	
14	Buyer's engineering change number.	D	an14		7	
	Serial Number		u		ŕ	
15	Supplier Package or Transport unit identification number					
	See "Transport label structure" on pages 14-16.	D	n9*	13	5	s
	Master Label Number	_			-	-
	Supplier Transport unit identification number.					
	See "Transport label structure" on pages 14-16.	D	n9*	13	5	M or G
4.0	Batch Number					
16	The supplier's identification of documentation items.	D	n9	13	5	Н

^{*}Please notice that field lengths are more restricted on the OTL in comparison to the Volvo DESADV / 856 specifications. Please make sure length restrictions are met on the OTL and in related EDI messages.

User Attributes:	Field Length:	Data Identifiers
R = Required	an = alpha numeric value	N = Advice Note Number
D = Dependent	a = alpha value	P = Part Number
N = Not Used	n = numeric value	Q = Quantity
	10 = 1-10 positions	V = Supplier ID
	10 = exact 10 positions	S = Simplified Handling Unit
		M = Homogenous Handling Unit
		G = Mixed Handling Unit
		H = Batch Number

Data Area Sections

Shipping section

1. Receiver

Alphanumerical human readable text

Designated by Volvo

The destination name of Volvo's unloading location.

2. Dock/Gate

Alphanumerical human readable text

Designated by Volvo

This information must be flexible as it might be changed from one shipment to another due to changes in production.

The information must be taken from the latest delivery schedule Global DELFOR.

3. Advice note number (N)

Bar Code and Alphanumerical human readable text

Designated by Supplier

Within Volvo the Advice Note Number is used and matched to the information given in the Advanced Shipping Note (Global DESADV). As

The number may not be repeated within 12 months.

4. Supplier address

Alphanumerical human readable text

Designated by Supplier

Name and shipping address of the supplier and country of origin.

5. Net weight

Numeric Value

Designated by Supplier

Weight of goods in (kg) excluding transport packaging.

Unit of measurement must be printed in the title of the field in brackets.

6. Gross weight

Numeric Value

Designated by Supplier

Weight of goods in (kg) including transport packaging.

7. Number of boxes

Numeric Value

Designated by Supplier

Number of boxes on the transport unit.

Is mainly used on Small box shipments.

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Parts Identification Section

8. Part number (P)

Bar Code and Numeric human readable text

Designated by Volvo

Part number is designated by Volvo for the product in the package.

9. Quantity (Q)

Bar Code and Numeric human readable text

Designated by Supplier

Quantity in the package shall be according to Volvo packing instruction and its unit load or a multiple of it.

Default the unit of measurement is pieces (PCE) and is not needed to be given. However, if it is kg, pairs, meters etc., the type code must be given in human readable form. When used, the unit of measurement must be printed directly to the right of the human readable quantity.

10. Description

Alphabetical human readable text

Designated by Volvo

Description of articles or products is according to what is given on the drawing.

11. Logistics reference

Supplier owned

Designated by Supplier

Information is given to improve the logistics between the supplier and Volvo.

This area is normally reserved for the Supplier's part number.

However, if agreed by the supplier, the area may be used to print alternative data as specified by Volvo.

If a supplier likes to add an internal bar code in the Logistic Reference area it is necessary to adapt to the FACT DI-Standard. This to prevent miss-reading when automatic scanning is used.

12. Supplier ID (V)

Bar Codes and Alphanumerical human readable text

Designated by Volvo

The supplier code of the Manufacturing site. In a multi-tier scheduled shipment, it might be necessary to distinguish between the Seller (SE) and the Ship From (SF). When different IDs have been allocated and confirmed by Volvo Group for current Seller and Ship from, the Ship From ID to be used as Supplier ID on label. If no specific Ship From ID is designated by Volvo, then Seller ID to be utilized as Supplier ID on label.

13. Date

Alphanumerical human readable text

Designated by Supplier

Date of despatch (stated at first hand) or date of production.

The date must be printed in the format YYMMDD (Y = year, M = month, D = day) preceded by the character "D" (Despatch date) or" P" (Production date).

14. Engineering change

Alphanumerical human readable text

Designated by Volvo

To specify engineering changes.

Information may be coded (e.g. P-04) or in clearer (e.g. "pre serial" etc).

15. Serial Master label number (S, M or G)

Bar Code and Numeric human readable text

Designated by Supplier

The serial number must be a unique number (not necessarily in sequential order) assigned by the supplier.

The number may not be repeated within 12 months.

Identifiers S, M or G are assigned according to label usage.

16. Batch number (H)

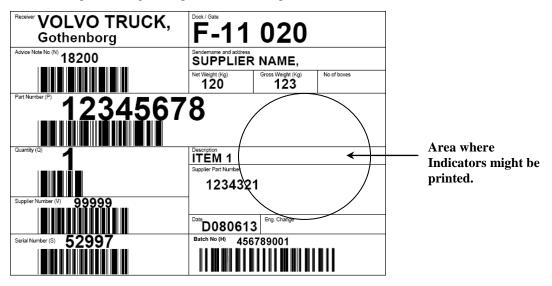
Bar Code and Characters

Designated by Supplier

Is a Reference number to designate grouping of products of VSP-parts (Vital Safety Parts) within the same production batch.

Indicators

Marks may be printed as graphic symbols or applied as stickers in the Data area of Part number as long as it does not impair reading of the printed bar code (quite zone and bar code).

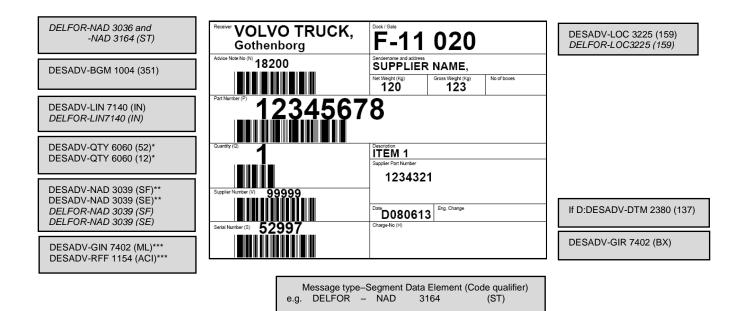


Version/Source Indicator

This line indicates the exact version and source of the OTL. To appear on one line, right just below the Batch number area, in the same font as the rest of the OTL, 18 characters in human readable text, 2,5 mm character size, exactly as follows:

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Data Area Content Cross Reference Table (EDI Global messages vs. OTL)



^{*} Depending on Transport Package structure.

^{**} Depending on if the Manufacturing site and Shipping site have been allocated with different Supplier IDs. See "12. Supplier ID (V)" section on page 9 for more information. If DESADV D96 is used, please reference to DESADV- NAD 3039 (CZ).

^{***} Depending on Transport Package structure.

If DESADV D96 is used, please reference to DESADV- GIR 7402 (ML); DESADV- RFF 1154 (AAT).

Bar Code

Bar Code Symbologies

Bar codes must be of the 3-of-9 (code 39) type with the following requirements:

Code Configuration

The format for each bar code-element is: Start character, Identifier (Data Identifier), Data characters and Stop character.

All bar coded areas are printed left justified.

Inter-character gap

The space between two characters in code 39 (the inter-character gap) should be as close to the average narrow element width as is practical.

Quiet zones

Begin and end margins (quiet zones) must be at least <u>6.4 mm</u> so that no line or similar makes the decoding of the bar code impossible.



Bar code heights

The height of the bar code must be 13 mm.

This to give the best possible scanning possibilities as the area allows.

Narrow element/Ratio

Narrow element is the size of the smallest bar element in the bar code. The Narrow element can also be named as X-dimension.

- Narrow element is allowed to be set between 0,33 0,43 mm.
- Volvo recommends the modulation to be set to <u>0.33 mm.</u> (Some printers having minimum 200 dpi the recommendation is 0,375 mm.)

The Ratio is the proportion between narrow and wide element in the bar code.

Volvo recommends using the following table to set the Ratio.
 This to use the most of the data area and make the bar code less vulnerable.

Narrow element/X-dimension	Maximum Ratio
0,33	3,0
0,36	2,8
0,40	2,4
0.43	2.2

Bar Code Quality

Quality

Volvo is leaning on the ISO/IEC 15416 –standard, Bar Code Quality Test Specification Linear Symbols.

- Minimum Overall Symbol Grade is set to B
- Nominal measuring Aperture is set to be 6 mil
- Wave length of light is set to **660** nm

In all this gives:

B/6/660

The result of the Overall Symbol Grade is defined with the letters from A to F (E is excluded), where A is an excellent result and F is a not approved result of the quality verification.

The following 7 parameters are measured:

Parameter	Grade scale	Explanation	Volvo
Reference code	A or F	Wrong set up of bar code	A
Symbol contrast	A, B, C, D or F	The difference between the highest and the lowest	≥B
		reflectance in the whole symbol, including light	
		margins	
Edge contrast	A of F	The worst reflectance difference between a bar and a	A
		space in a symbol	
Modulation	A, B, C, D or F	The ratio between edge contrast and symbol contrast	≥B
R.min/R.max	A or F	The reflectance of the black bar must be lower than	A
		half of the maximum reflectance in the symbol	
Defects	A, B, C, D or F	Dirty label or white lines/dots in bar code	≥B
Decodability	A, B, C, D or F	How much of the tolerance has been used	≥B

Volvo expect ALL parameters to be measured as an Overall Symbol Grade as minimum B.

Summarize of Bar code specification:

Type of bar code	Code 39
Modulation (X-dim./narrow element)	0,33 – 0,43 (recommended 0,33)
Ratio	1:2,2 – 1:3,0 (recommended 3,0)
Print contrast signal	>= 75%
Quiet Zone	> 6,4 mm
Colouring of code	Black
Bar code height	13 mm
Bar code orientation in thermo printing	90 degrees to thermomodul
Overall Symbol Grade	Minimum B

Transport label structure

The Odette organisation has identified two levels of using an OTL.

Package and Handling Unit (Two key expressions concerning the packaging)

Package Unit (S-Label)

A unit in which the article itself is loaded. Always placed on a Non Simplified Handling Unit

• Handling Unit

(Handling unit Labels)

O Simplified Handling Unit Handling unit which is a package unit at the same time. (S-Label)

o Non Simplified Handling Unit

Handling unit containing more than one package units.

Non Simplified Handling Unit can be of two kinds:

- Homogenous Handling Unit (M-Label)
 Contains the same article number in all the package units.
- Mixed Handling Unit (G-Label)
 Contains more than one article number.

Parts Identification label (S)

The Parts Identification label contains the product information. For Renault Trucks SAS receivers, information in the shipping fields must be given.

The bar coded Serial Number on the label must be prefixed by "S". Is only to be used on Smallbox packaging.



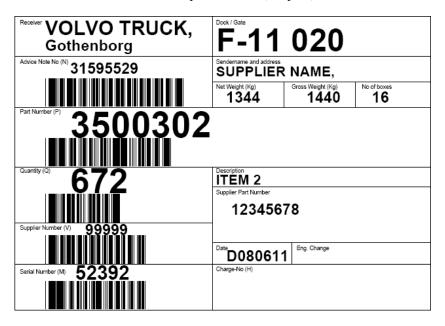
Master Label Standard (S)

Transport label to be used on all transport units containing the same part number or separate packages with the same part number when each package is not labelled with a "Parts Identification" label. Is to be used on simplified handling unit (standard pallets, like K1, L1, K2 etc.)



Master Label Common Item (M)

Master labels must be used where a number of common item packages are loaded within the same transport unit. Each package is previously labelled with a "Parts Identification" label. The quantity on the "Master" Label must be the sum of the quantities within all the packages. The transport unit must be labelled with the full Transport Label. The bar coded Serial Number on the label must be prefixed by "M". Individual packages may have a prefix of "S". Must be used on all Smallbox shipments. The Master label is affixed to a special holder (see p.23).



Master Label Mixed Item (G)

Mixed Item Loads labels must be used where a number of packages with different part numbers are loaded within the same transport unit. Each package must be labelled with a "Parts Identification" label. The transport unit must be labelled with the full Transport label on which the Part Number and Quantity fields are left blank. The Serial Number on the label must be prefixed by a "G". Individual packages may have a prefix of "S". Must be used on all Smallbox shipments. The Master label is affixed to a special holder.

Receiver VOLVO TRUCK, Gothenborg	F-11	020		
Advice Note No (N) 18199	Sendemame and address SUPPLIER NAME,			
Part Number (P)	Net Weight (Kg) 488	Gross Weight (Kg) 506	No of boxes 5	
Quantity (Q)	Description Supplier Part Number			
Supplier Number (V) 99999 Serial Number (3) 52996	Date D0806 Charge-No (H)	13 Eng. Change		

Usage of Package and Transport labels

Master Label Standard (S)

Are used for one of the following set ups:

Pallet incl. frames



Pallet with closed carton box



Racks





<u>In conclusion</u>: when a single Transport Handling unit has been given a unit load by Volvo (see Packaging Instruction).

Master Label Common Item (M) and Master Label Mixed Item (G)

Are used for one of the following set ups:



In conclusion:

Master Label Common Item (M): when a multiple of packages containing the same part number with a unit load given by Volvo (see Packaging Instruction), and fixed to a pallet and lid.

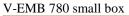
Master Label Mixed Item (G): when a multiple of packages containing different part numbers, where each part number has been given a unit load by Volvo (see Packaging Instruction), and fixed to a pallet and lid.

Remark: Every small carton box packaging, like **V-EMB 100**, which are usually aimed to be handled into standard frame pallets (like K1, L1, K2 etc.) <u>do not need **OTL** identifications.</u>

However, a <u>basic</u> identification remains needed on each carton box: the part number with its barcode, the quantity and the date of production (or date of shipment) should be easily readable.

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Parts Identification label (S)
Are used for i.e. one of the following set ups:





V-EMB 840 small box



Other plastic or card board box



Simplified Handling Unit (S)

Odette reference for simplified handling unit (S):

Handling unit which is a package unit at the same time.

Volvo refers the unit load to one handling unit.

In the example below, the product is packed in packages of 42 pieces on an L-pallet with four frames and a lid.

With the current syntax rules and in accordance with Volvo's specification, the notification is as follows:

Master Label Standard (S) VOLVO TRUCK, F-11 020 Gothenborg 31595529 SUPPLIER NAME, et Weight (Kg) 84 90 VOLVO TRUCK, F-11 020 Gothenborg 31595529 SUPPLIER NAME, S123 84 **S124** ITEM 2 12345678 D080611 Eng. Change

One Master Label Standard (S) shall be fixed on each Transport Handling unit.

Homogenous Handling Unit (M)

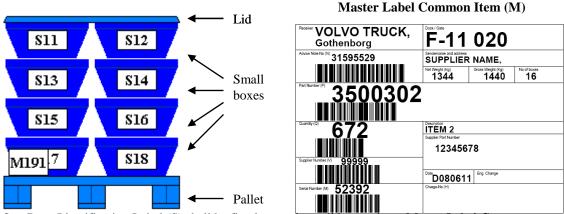
Odette reference for homogenous handling unit (M):

Small boxes containing the same article number fixed on a pallet.

Volvo refers the unit load to one small box or similar.

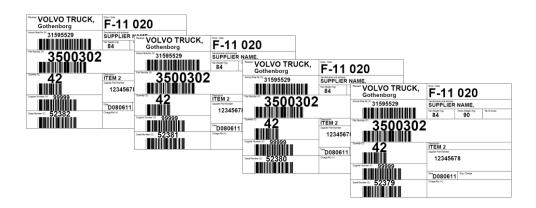
In the example below, the product is packed in 16 small boxes of 42 pieces in each on an L-pallet and a lid, in all 672 pieces.

With the current syntax rules and in accordance with Volvo's specification, the notification is as follows:



One Parts Identification Label (S) shall be fixed on each small box and one Master Label Common Item (M) should be fixed on a cardboard Label Holder, V-EMB 153, on the pallet.

Parts Identification label (S) - 4 OTL out of 16



Notice: For Renault Trucks SAS receivers, information in the shipping section must always be given on the Parts Identification Labels (S).

A **Homogenous** Handling unit using small box as transport package shall always have full layers.

If any small box is shipped empty, this one should **NOT** be marked with an OTL. E.g. transport package V-EMB 780 has the possibility of maximum 4 layers (4/8/12/16 small boxes depending on the call off quantity) and transport package V-EMB 800/840 has the possibility of maximum 4 layers, (2/4/6/8 small boxes depending on the call off quantity).

Mixed Handling Unit (G)

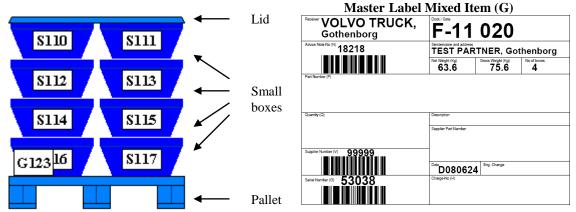
Odette reference for mixed handling unit (G):

Small boxes containing different article numbers fixed on a pallet.

Volvo refers the unit load to one small box.

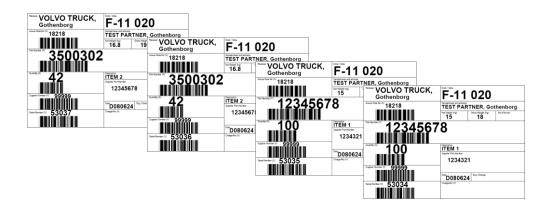
In the example below, different items are packed in 16 small boxes with different quantities in each, placed on an L-pallet.

With the current syntax rules and in accordance with Volvo's specification, the notification is as follows:



One Parts Id Label (S) shall be fixed on each small box and one Master Label Common Item (G) should be fixed on a cardboard label holder, V-EMB 153, on the pallet.

Parts Identification label (S) - 4 OTL out of 16



Notice: For Renault Trucks SAS receivers, information in the shipping section must be given on the Parts Identification Labels (S).

A **Mixed** Handling unit using small box as transport package shall always have full layers. If any small box is shipped empty, this one should **NOT** be marked with an OTL.

E.g. transport package V-EMB 780 has the possibility of maximum 4 layers (4/8/12/16 small boxes) depending on the call off quantity) and transport package V-EMB 800/840 has the possibility of maximum 4 layers, (2/4/6/8 small boxes) depending on the call off quantity).

Position and Affixing of the Label

General

OTLs are always fixed in a horizontal way using staples to wooden frames or glued on surface to small boxes, card board boxes and label holders.

Straps or bundling of the Transport Handling unit shall always work on the long side of the pallet.

Other labels or markings on the Transport Handling unit shall be removed before the despatch to Volvo. This as it may interfere in the automatic scanning process as well as it may affect the automatic storage process, e.g. Supplier Internal labels.

If plastic cover is used on the pallet, the OTL shall be fixed on the inside of this.

When Self-adhesive labels are used, following applies:

- Shall be stuck on specified area on the small boxes. (Do **NOT** staple).
- Shall be stapled on wooden frames. Do NOT remove the back paper.
- Shall be <u>put in label holder</u> on steel rack/specific packaging. Do **NOT** remove the back paper.

1. Simplified Handling unit

a. Pallet, frames and lid

The OTL should always be fixed with staples (One staple in each corner and one in the middle) in the left hand short end corner.

If self-adhesive label material is used, do **NOT** remove the back paper.

Exceptions:

- On K-pallets (820x615mm) the OTL shall be placed in the middle at the bottom frame.
- On H- (1805x820mm), F- (1630x1220mm) and E- (2400x820mm) pallets the OTL shall be placed at the left hand long side corner.





b. Pallet and closed card board box

The OTL should always be placed in the left hand short end corner. Self-adhesive label material shall be used.



c. Racks

Place the OTL in the Rack Label holder at the predefined area, with no other fixing arrangement. If self-adhesive label material is used, do **NOT** remove the back paper.





2. **Homogenous- and Mixed Handling units** (Pallet, Small boxes and lid or Pallet, card board boxes, with or without lid)

The Master Label should be fixed on a Label holder. This Label holder (Label Holder is ordered via *Volvo Logistics Corporation* as V-EMB 153) should be placed under the Small box/Card board box at the bottom short end left hand corner.

- 1. The Standard label should be fixed on the **short** end of small box V-EMB 750/780.
- 2. The Standard label should be fixed on the long end of small box V-EMB 800/840.

In both set ups named above the Standard labels has to be pointing outwards from the short end of the Transport Handling unit, in the meaning all labels should be visual.

Self-adhesive label material shall be used.

V-EMB 750/780 boxes



V-EMB 800/840 boxes



V-EMB 153



V-EMB 840 small box



Standards

Naming	Standard
Odette Transport Label	Version 1 Revision 4
Bar Code Quality Test Specification Linear	ISO/IEC 15416:1
Symbols	
Bar Code Verifiers Conformance Specification,	ISO/IEC 15426:1
Linear	
Bar Code verifies Conformance Specification,	ISO/IEC 15426:2
Two-Dimensional verifiers	
Symbology Specification code 39	ISO/IEC 16388
Data Identifier	FACT Data Identifier Standard

Self reminder

