

Webasto Roof & Components SE

Battery Systems

Krailinger Strasse 5

82131 Stockdorf

Specification for component labeling
(supplied parts)



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1 Preamble

This specification describes how component labeling for parts supplied to Webasto Battery Systems has to be carried out.



2 Label content

2.1 Mandatory label content: Plain text and Data Matrix Code (DMC)

No.	Mandatory Content	Information
1.	Webasto part number	- According to the Webasto drawing: 7 digits + CL1: e.g. 5610300A (CL1 = Change Level 1 = Letter at the end)
2.	Part serial number	- Unique number: Must never repeat - Number has to be incremented - Parts must be numbered acc. to the production sequence: 1 st produced part = Part Serial No. 1 2 nd produced part = Part Serial No. 2 etc. - Max. 20 digits long → Do not fill up with zeros if shorter than 20 digits - For creation and further requirements of the part serial number refer to point 3.1, numbers 2. to 5.
3.	Production date	- Format: YYYYMMDD

2.2 Mandatory label content: Additional information for plain text

No.	Mandatory Content	Information
1.	Webasto part name	- According to the Webasto drawing: English name

2.3 Optional label content: Additional information for DMC


No.	Optional Content	Information
1.	Any additional information that is necessary to ease detection, sorting, etc. in case of defects or if it is needed by the supplier itself	- Cavity - Tool - Production line - Production plant - Shift - Max. 20 digits long → Do not fill up with zeros if shorter than 20 digits
2.	Production time	- Time (Format: HHMMSS)

ATTENTION:

- The longer the raw information of the DMC the larger the DMC.
→ Please consider this regarding the available label area/the readability of the DMC.

3 Data Matrix Code

3.1 Data Matrix Code: Creation and requirements

No.	Content Category	Requirement / Information
1.	DMC standard	- ECC200: 2D matrix symbology according to ISO/IEC 16022
2.	Mandatory sequence of mandatory data identifiers/information	- (P)Part number (S)PartSerialNumber (D)Date → For sequence adding additional data identifiers refer to point 3.3, number 3.
3.	Data Identifiers	- (P), (S), (D), etc.: Must be filled in including brackets
4.	Field separators	- “ ”: Vertical bar, must be filled in to separate information - Creation of vertical bar: 1. Windows: [Alt Gr] + [;<] ([;<] = key to the left of Y resp. Z) 2. MAC: [Option] + [7]
5.	Serial number: Three possible versions	5.1 Infinite incremented serial number (1 till ∞ / e.g. 25): (P)5610300A (S)25 (D)20200702 → For the 25th part ever produced
		5.2 Serial number (38) combined with date (20200702): (P)5610300A (S)2020070238 (D)20200702 → For the 38th part produced on that date
		5.3 ATTENTION - Special case: The only exception is when the serial number will/can not reflect the production sequence. E.g. if production processes prevent labeling of parts (e.g. electroplating) and parts are mixed within one of the production processes. Serial number (42) combined with batch (132020): (P)5610300A (S)13202042 (D)20200702 → For one part (42nd part produced) out of batch 132020
6.		- Result of the raw content of Version #1 (refer to point 3.1, number 5.1) → Infinite incremented serial number: (P)5610300A (S)25 (D)20200702
7.	Size of DMC	- Minimum: 7x7mm - Maximum: According to available space on part
8.	Quiet Zone	- Defined area around DMC without any disturbance - Width: Minimum one module (= square/■)

3.2 Data Matrix Code: Restrictions

No.	Content Category	Requirement / Information
1.	Special characters	- Only the following special characters are allowed: 1. (P): Brackets around data identifiers 2. “ ”: Vertical bar
2.	Space character	- “ ”: Prohibited. Space is considered as special character
3.	Letters	- Letters, other than CL1 in the material number, are prohibited

3.3 Data Matrix Code: Mandatory and optional data identifier

No.	Requirement	Requirement / Information
1.	Mandatory Data Identifier	- (P) Part number - (S) Serial number - (D) Date
2.	Optional Data Identifier	- (X) Additional information (refer to point 2.3, number 1) - (T) Time of production (refer to point 2.3, number 2)
3.	Mandatory sequence of mandatory and optional data identifiers/information	- Optional data identifiers must follow the date, e.g. (P)PartNumber (S)PartSerialNumber (D)Date (X)Tool1 (P)PartNumber (S)PartSerialNumber (D)Date (T)HHMMSS (P)PartNumber (S)PartSerialNumber (D)Date (X)Tool1 (T)HHMMSS

4 Labeling options and related requirements

4.1 Label/Tag

No.	Content Category	Requirement / Information
1.	Print quality of DMC	- Overall Quality Grade minimum C/2,0 acc. to ISO/IEC 15415: 1. Symbol Contrast (Symbol color to background): $\geq 40\%$ 2. Print Growth (Relation of black to white moduls): -0,85...0,85 3. Axial-Non-Uniformity (Compression/elongation of axes): $\leq 0,10$ 4. Unused Error Correction (Sum of uncorrected failures): $\geq 0,37$
2.	Print method:	- Chose one that: 1. withstands temperatures according to the drawing. 2. withstands moist 3. is resistant to mechanical wear 4. ensures readability over a lifetime of 15 years
3.	Position on the part	- Within the indicated label area (refer to drawing)
4.	Position of information on the label/tag	- Can be decided by the supplier , if not otherwise specified
5.	Font size of plain text	- Minimum: 2mm - Maximum: According to available space on the label
6.	Size of label/tag	- Minimum: Plain text and DMC must fit onto label/tag - Maximum: Label/tag must not exceed the indicated label area on the part
7.	Material properties	- Chose a label/tag that ..(1. to 4.).. over a lifetime of 15 years. 1. ...withstands temperatures given by the drawing... 2. ...withstands moist... 3. ...does not shrink during storage application and... 4. ...keeps its adhesive properties...
8.	Surface	- Must be nonreflecting
9.	Application	- Label must be adhesive

4.2 Laser marking

No.	Content Category	Requirement / Information
1.	Laser marking quality of DMC	- Overall Quality Grade minimum C/2,0 acc. to ISO/IEC TR 29158 (AIM DPM-1-2006): 1. Cell Contrast: Symbol color to background: $\geq 20\%$ 2. Print Growth (Relation of black to white moduls): -0,85...0,85 3. Axial-Non-Uniformity (Compression/elongation of axes): $\leq 0,10$ 4. Unused Error Correction (Sum of uncorrected failures): $\geq 0,37$
2.	Position on the part	- Within the indicated label area (refer to drawing)
3.	Position of plain text and DMC in the given area	- Can be decided by the supplier , if not otherwise specified
4.	Font size of plain text	- Minimum: 2mm - Maximum: According to available space on the part
5.	Size of laser marking (plain text and DMC)	- Maximum: Plain text and DMC must not exceed the indicated label area

5 List of abbreviations and terms

Abbreviation / Terms	Description
acc.	- according
CL1	- Change Level 1 (letter within the drawing number = 3 rd last digit)
DMC	- Data Matrix Code (= 2 dimensional code)
ECC	- Error Correction Code
No.	- Number
resp.	- respectively

6 Change history

Date	Version	Chapter	Comments / Reason for change	Responsible
15.07.2020	1.0	All	First Creation	H.Biedermann
17.07.2020	1.1	- 2.1: 2. - 2.1: 3. - 2.3: 1. - 3.1: 5. - 3.2 - 3.2: 1. - 4.1: 3.+6. 4.2: 2.+5. - 4.1: 4. 4.2: 3 - 4.2: 4. - 4.2: 5. - 5. - Overall	- Was: Part no. 1 / Part no. 2 etc. - Was: Date - Was: failures - Was: Possible version if - Was: Prohibitions (headline) - Was: Other than the following are prohibited - Was: designated labeling area - Was: Freely selectable - Was: label - Minimum size of laser marking was deleted - Additional abbreviation for >>respectively<< - Correction of typos Change to more accurate wording	H.Biedermann

Creation date: 15.07.2020	Version: 1.0	Revision date: 17.07.2020	Revision: 1.1	Page 6 of 6
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