

**Webasto Roof & Components SE**

**Battery Systems**

**Krailingger 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 – Plain Text

A label contains plain text and a DMC code, as described in the following chapters.

### 2.1 Mandatory plain text content


No.	Mandatory content	Information
1.	Webasto part name	According to the Webasto drawing: English name
2.	Webasto part number	- According to the Webasto drawing: Up to 11 digits + CL1: e.g. 5610300A (CL1 = Change Level 1)
3.	Part serial number	- Unique number: Must never repeat - Number has to be incremented - Parts must be numbered according to the production sequence: Part No. 1 = Part Serial No. 1 Part No. 2 = Part Serial No. 2 etc. - Max. 20 digits long → Don't fill up with zeros if shorter than 20 digits - Check point 3.1 regarding creation and further requirements of the part serial number
4.	Date	- Format: YYYYMMDD

### 3 Label content - Data Matrix Code


#### 3.1 Data Matrix Code: Creation and requirements

No.	Topic	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 of production → For sequence adding additional data identifiers see point 3.6
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.	Size of DMC	- Minimum: 7x7mm and > 12 Mil per Module - Maximum: According to available space on part
6.	Quiet Zone	- Defined area around DMC without any disturbance - Width: Minimum one module (= square/■)

#### 3.2 Data Matrix Code: Serial part DMC content

No.	Topic	Requirement / Information																								
1.	DMC content structure	<p>1.1 Part number Up to 11 characters long Webasto Part Number incl. CL1 (letter behind digits)</p> <p>1.2 Part serial number Serial number consists of Webasto Part Number w/o CL1 + date of production + 5 digit daily counter which starts from 0 every day</p> <p>1.3 Date of Production Date when part was produced</p>																								
Serial part DMC content example:																										
Position No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Example	(	P	)	5	9	1	3	4	5	2	A		(	S	)	5	9	1	3	4	5	2	2	0		
Description	Webasto Part Number incl. CL1												Serial Number incl. Webasto Part Number w/o CL1 + production date + daily counter													
Position No.	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47			
Example	2	1	0	1	2	0	0	0	0	0	1		(	D	)	2	0	2	1	0	1	2	0			
Description	sto Part Number w/o CL1+production date+daily counter												Date of production													
2.			<p>Result of the raw content of above example: (P)5913452A (S)59134522021012000001 (D)20210120</p>																							

### 3.3 Data Matrix Code: Batch part DMC content

No.	Requirement	Requirement / Information										
1.	Data Identifier	In case of batch parts, the batch number needs to be contained in the DMC. Thereby (H) has to be used as identifier for the batch number instead of (S). All other descriptions made in 3.1 also apply for batch part DMCs.										
2.	DMC content structure	1.1 Part number Up to 11 characters long Webasto Part Number incl. CL1 (letter behind digits)										
		1.2 Batch number Batch number consists of Webasto Part Number w/o CL1 + date of production + 5 digit daily counter which starts from 0 every day										
		1.3 Additional batch information In order to meet further requirements for batch tracking and to control expiration dates and times of batches, two additional identifiers can be used in batch DMCs (U) – Expiration date (YYYYMMDD) (V) – Expiration time (hhmmss)										
		1.4 Date of production Date when part was produced										
Batch part DMC content example:												
Position No.	1 2 3 4 5 6 7 8 9 10 11 12	13 14 15 16 17 18 19 20 21 22 23 24										
Example	( P ) 5 5 1 7 9 6 1 A	( H ) 5 5 1 7 9 6 1 2 0										
Description	Webasto Part Number incl. CL1						Batch number incl. Web-					
Position No.	25 26 27 28 29 30 31 32 33 34 35 36	37 38 39 40 41 42 43 44 45 46 47 48										
Example	2 1 0 1 2 0 0 0 0 0 1	( U ) 2 0 2 2 0 1 2 0										
Description	sto Part Number w/o CL1+production date+daily counter						Expiration date					
Position No.	49 50 51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69										
Example	( V ) 0 3 0 1 5 5	( D ) 2 0 2 1 0 1 2 0										
Description	Expiration time						Date of production					
3.												
		Result of the raw content of above example: (P)5517961A (H)55179612021012000001 (U)202 20120 (V)030155 (D)20210120										

### 3.4 Data Matrix Code: Prohibitions

No.	Topic	Requirement / Information
1.	Special characters	- Other than the following are prohibited: 1. (P): Brackets around data identifiers 2. " ": Vertical bar
2.	Space character	- " " Prohibited as also considered as special character

### 3.5 Data Matrix Code: Optional DMC Information

No.	Optional content	Information
1.	Any additional information that is necessary to ease detection, sorting, etc. in case of failures	- Cavity - Tool - Production line - Production plant - Shift - Max. 20 digits long → Don't 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 greater the DMC.  
→ Please consider this regarding the available label area/the readability of the DMC.

### 3.6 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 (see point 2.3, number 1) - (T) Time of production (see 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

### 3.7 Example of a label

<b>(1)</b>	Upper Cover <b>(2)</b>
	(P)5913452A <b>(3)</b>
	(S)59134522021012000001 <b>(4)</b>
	(D)20210120 <b>(5)</b>

1. DMC
2. Webasto part name
3. Webasto part number
4. Part serial number
5. Date

## 4 Labeling options and related requirements

### 4.1 Label/Tag

No.	Topic	Requirement / Information
1.	Print quality of DMC	<ul style="list-style-type: none"> <li>- Overall Quality Grade min. C/2,0 acc. to ISO/IEC 15415:               <ol style="list-style-type: none"> <li>1. Symbol Contrast (Symbol color to background): <math>\geq 40\%</math></li> <li>2. Print Growth (Relation of black to white moduls): -0,85- 0,85</li> <li>3. Axial-Non-Uniformity (Compression/elongation of axes): <math>\leq 0,10</math></li> <li>4. Unused Error Correction (Sum of uncorrected failures): <math>\geq 0,37</math></li> </ol> </li> </ul>
2.	Print method:	<ul style="list-style-type: none"> <li>- Choose one that:               <ol style="list-style-type: none"> <li>1. withstands temperatures according to the drawing</li> <li>2. withstands moist</li> <li>3. is resistant to mechanical wear</li> <li>4. ensures readability over a lifetime of 15 years</li> </ol> </li> </ul>
3.	Position on the part	<ul style="list-style-type: none"> <li>- Within the designated labeling area given by the drawing</li> </ul>
4.	Position of information on the label/tag	<ul style="list-style-type: none"> <li>- Freely selectable</li> </ul>
5.	Font size of plain text	<ul style="list-style-type: none"> <li>- Minimum: 2mm</li> <li>- Maximum: According to available space on label</li> </ul>
6.	Size of label/tag	<ul style="list-style-type: none"> <li>- Minimum: Plain text and DMC must fit onto label/tag</li> <li>- Maximum: Label/tag must not exceed the designated labeling area given by the drawing</li> </ul>
7.	Material properties	<ul style="list-style-type: none"> <li>- Choose a label/tag that ... over a lifetime of 15 years.               <ol style="list-style-type: none"> <li>1. withstands temperatures given by the drawing</li> <li>2. withstands moist</li> <li>3. does not shrink during storage application and</li> <li>4. keeps its adhesive properties</li> </ol> </li> </ul>
8.	Surface	<ul style="list-style-type: none"> <li>- Must be nonreflecting</li> </ul>
9.	Application	<ul style="list-style-type: none"> <li>- Label must be adhesive</li> </ul>

### 4.2 Laser marking

No.	Topic	Requirement / Information
1.	Laser marking quality of DMC	<ul style="list-style-type: none"> <li>- Overall Quality Grade min. C/2,0 acc. to ISO/IEC TR 29158 (AIM DPM-1-2006):               <ol style="list-style-type: none"> <li>1. Cell Contrast: Symbol color to background <math>\geq 20\%</math></li> <li>2. Print Growth (Relation of black to white moduls): -0,85- 0,85</li> <li>3. Axial-Non-Uniformity (Compression/elongation of axes): <math>\leq 0,10</math></li> <li>4. Unused Error Correction (Sum of uncorrected failures): <math>\geq 0,37</math></li> </ol> </li> </ul>
2.	Position on the part	<ul style="list-style-type: none"> <li>- Within the designated labelling area given by the drawing</li> </ul>

3.	Position of plain text and DMC in the given area	- Freely selectable
4.	Font size of plain text	- Minimum: 2mm - Maximum: According to available space on label
5.	Size of laser marking (plain text and DMC)	- Minimum: Plain text and DMC must fit into designated labeling area - Maximum: Plain text and DMC must not exceed the designated labeling area given by the drawing

## 5 List of abbreviations and terms

Abbreviation / Terms	Description
DMC	- Data Matrix Code (2 dimensional code)
CL1	- Change Level 1 (letter within the drawing number = 3 <sup>rd</sup> last digit)
No.	- Number
Acc./acc.	- according

## 6 Change history

Date	Version	Chapter	Comments / Reason of change	Responsible
10.08.2020	1.0	All	First Creation	H.Biedermann
23.02.2023	1.1	All	Minor adjustment of layout and numbering of chapters, addition of an example picture of a label in chapter 3.7	M. Budweiser