Technology with Vision

Marking of subsystems and single components (“S-Numbering”)

Business Division GL

Guideline for external parties

Number of related AD	Process Assignment	Edition date	Designer of document	PLD of the related process	PDE of the related process
AD-01472_GL	I2P-20-20-70-10	2021-03-01	Rudolf Ehring/ B. Lewendel	Emil Slabon	Michael Hack

HF-7761EN_C (2014-07)

Marking of subsystems and single components - Guideline
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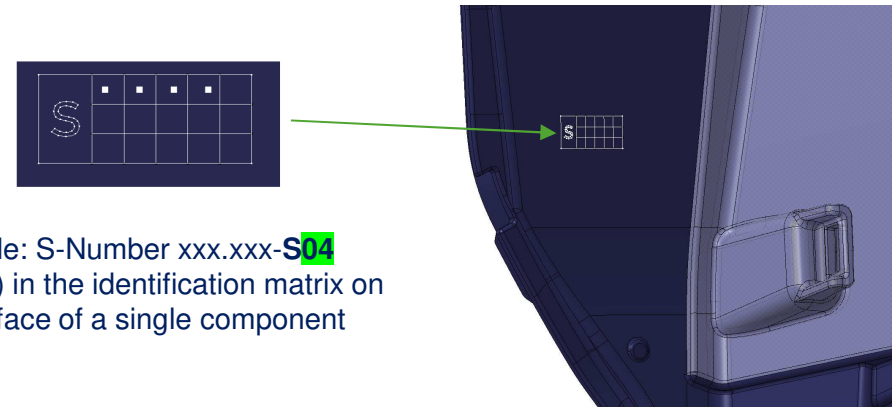
Introduction/Motivation

Why is a ***marking of subsystems and single components*** necessary?

- A qualified saleable HELLA **product** passes several **changes** on single component and subsystem level from FirstOffTool-Parts (start of C-Sample process HELLA) until PPA/PPAP.
- For HELLA internal system integration planning, testing and logistics, every change level needs to be easy **identifiable** without being familiar to component and project.
- For this, every single product- as well as relevant process change is clearly reflected in a unique **11 digit** part number (**Sample-number**), consisting of the initial 8 digit part number plus “Sxx”. Example: 218.507-01S01
- S-number to be **applied** on assembly groups and single components in accordance to drawing specification.



Example: S-Number xxx.xxx-**S04**
(4 dots) in the identification matrix on the surface of a single component

Marking of subsystems and single components - Guideline
General rules (1/2)

- Deviations, for example in case of sheet metal or very small parts, needs to be released by the Design Engineer and Manufacturing Engineer Tools&Components
- The marking area in the tool needs to be easy accessible in order to have a simple/quick marking procedure
- The marking of each component should be visible in end position in a subassembly.
- Letter “S” should be part of the marking, if possible.
- The marking should **not** be placed on rear side of decorative surfaces (e.g. high gloss or etched styling surface). In case of deviation, it needs to be released by tool expert.
- Location and matrix for S-numbers, as part of the geometrie are to be placed on the drawing and on 3D (RG). Specific DOT’s will not be shown on 2D(drawing) and 3D(RG).
- First DOT for xxx.xxx.xx-S01 to be placed with FirstOffTool-Parts.

Marking of subsystems and single components - Guideline
General rules (2/2)

- Single parts, which change level can get clearly identified via part number and revision level do not need an additional marking on the part itself. But for logistic reasons these parts do get a new S-Number in PDM/ERP with 1:1 relation to the rev. level. (see C-Sample process)

- PCBa do have an incremental series number and a 100 % correlation between Rev. and change level. Hence the S-number can clearly get identified without additional marking on the part itself.

- S-Numbers are communicated to external parties via each part order sheet, generated out of ERP automatically. Supplies and external parties have to follow this instruction.

- Each **delivery note and packaging** from external party have to state clearly the respective current S-Number – which is recorded on the purchasing order sheet, so that the HELLA income area of plant is able to check it easily.

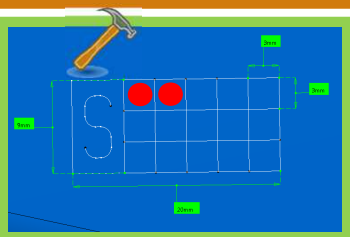
Marking of single components - Guideline

Application type + ranking

Method ranking

1.) Rectangle matrix with punch marks (Standard)

- 3x5 matrix
- Size: 9mm x 20mm

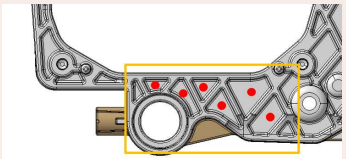


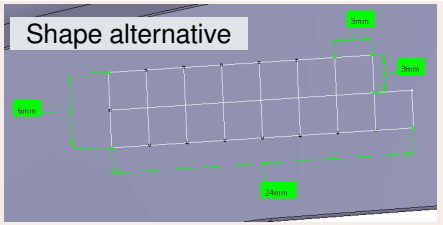
Marking sequence

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15

2.) Flexible matrix with punch marks

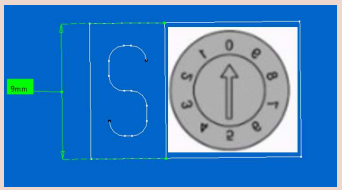
- Defined per drawing





3.) Rotatable insert (like data stamp)

- Numbers: 0-9
- Diameter: 4-6 mm (8 mm only for data stamp)
- Remark: '1-12' not allowed due to risk of confusion with date stamp



4.) a) Laser marking (Non preferred method)

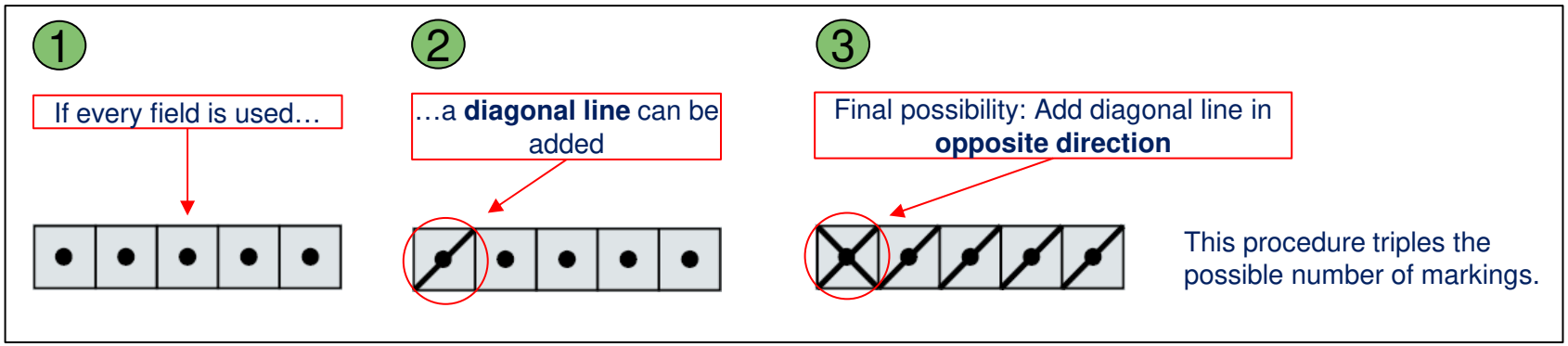
- After injection/production process
- Remark: High equipment investment

b) Adhesive label (Non preferred method)

- After injection/production process
- Remark: Attached by manual process and risk of detaching, outgassing

Marking of single components - Guideline
Application type + ranking

If the number of fields in the matrix or the rotatable insert positions are **not** sufficient, it's allowed to find an individual alternative solution (first choice is proposal below).

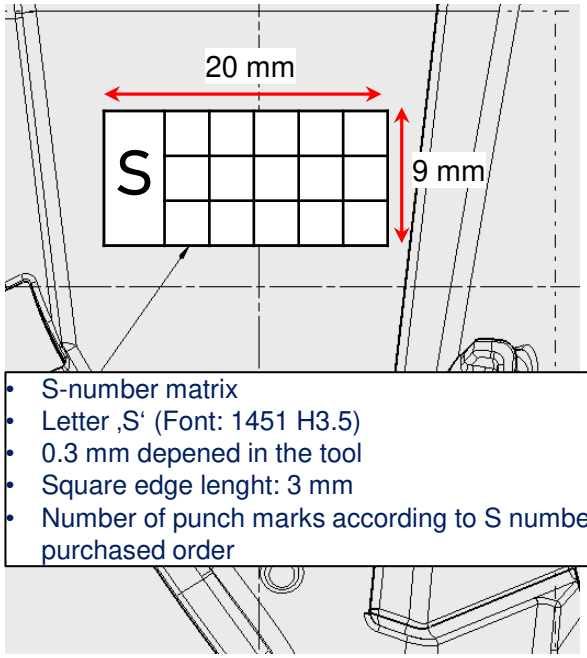


Marking of single components - Guideline

Example for S-number location/geometry on drawing/RG

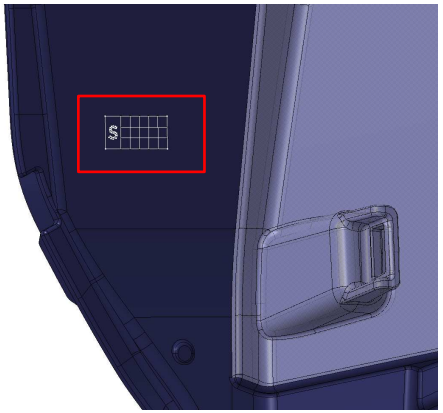
Drawing/RG - Rectangle matrix for punch marks (Standard)

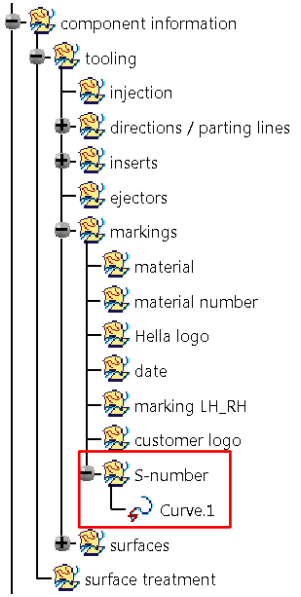
Drawing

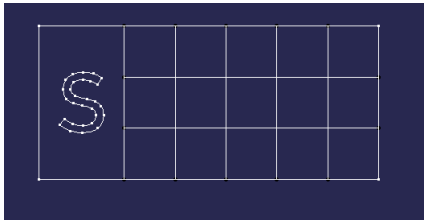


- S-number matrix
- Letter ‚S' (Font: 1451 H3.5)
- 0.3 mm depened in the tool
- Square edge lenght: 3 mm
- Number of punch marks according to S number from purchased order

RG (3D)





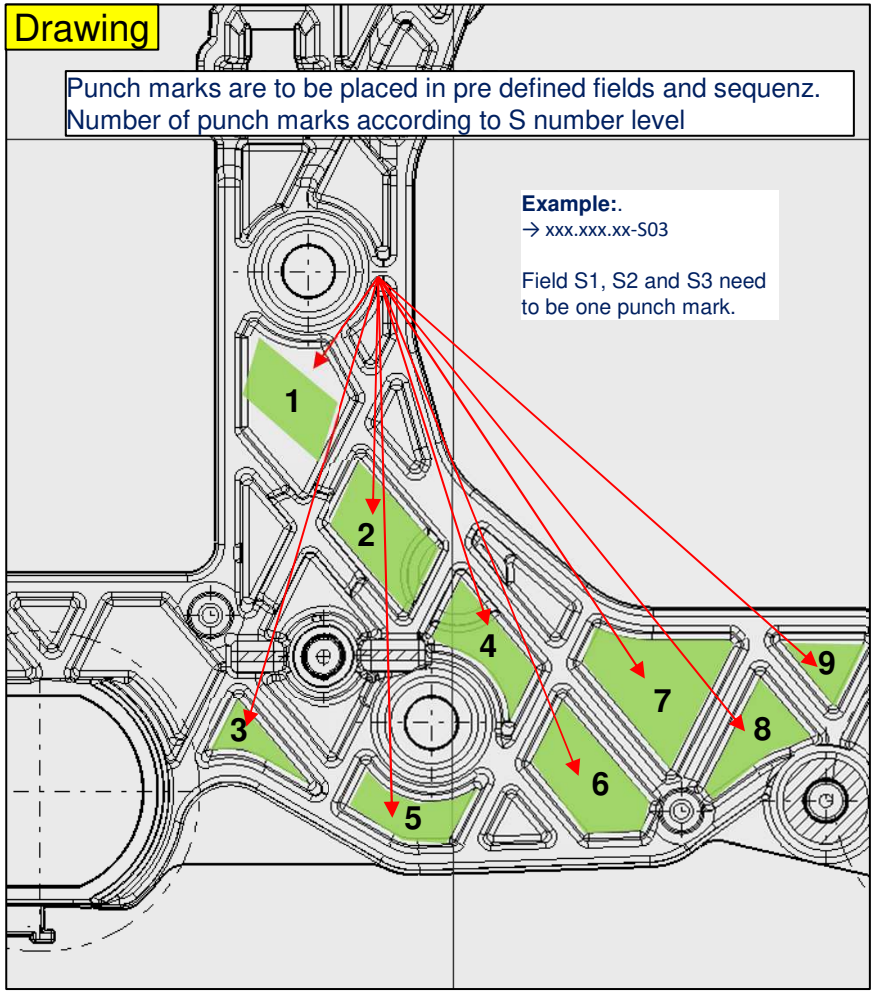


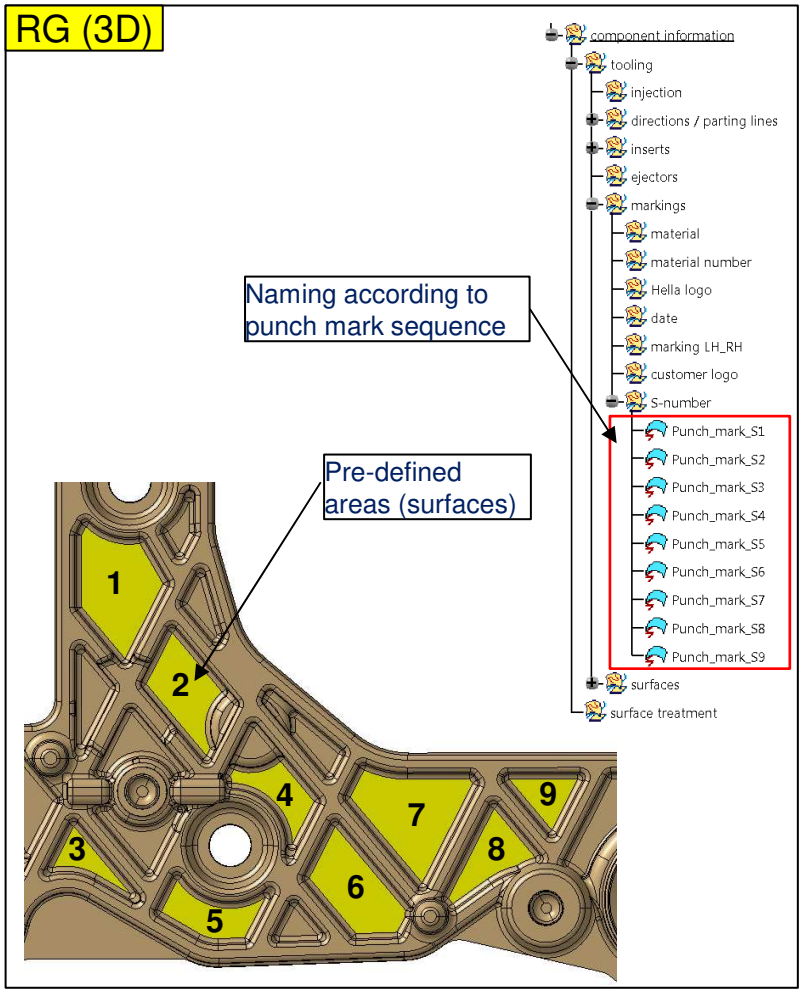
Catalog:
3D Elements -- PowerCopies/3D Elements/ 3D Parts inscriptions/ Inscriptions/S-Number Marking

Marking of single components - Guideline

Example for S-number location/geometry on drawing/RG

Drawing/RG - Flexible matrix for punch marks



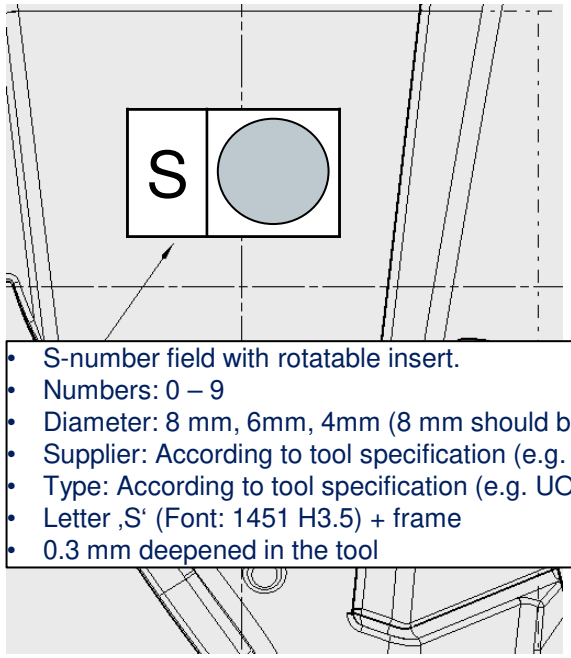


Marking of single components - Guideline

Example for S-number location/geometry on drawing/RG

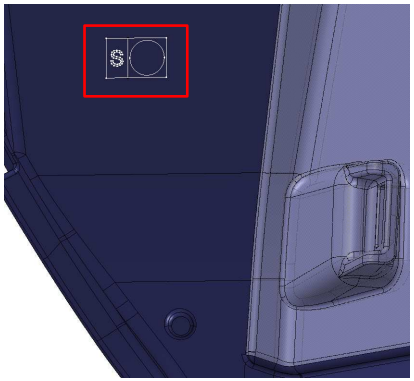
Drawing/RG - Rotatable insert (like data stamp)

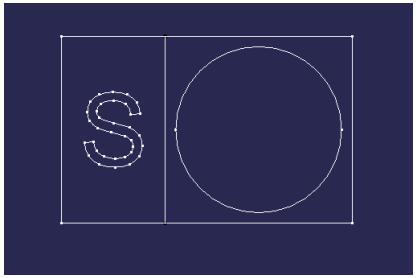
Drawing

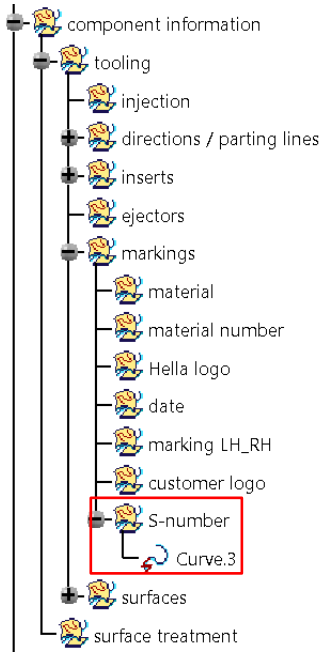


- S-number field with rotatable insert.
- Numbers: 0 – 9
- Diameter: 8 mm, 6mm, 4mm (8 mm should be prefered)
- Supplier: According to tool specification (e.g. DME)
- Type: According to tool specification (e.g. UOR)
- Letter ‚S' (Font: 1451 H3.5) + frame
- 0.3 mm deepened in the tool

RG (3D)







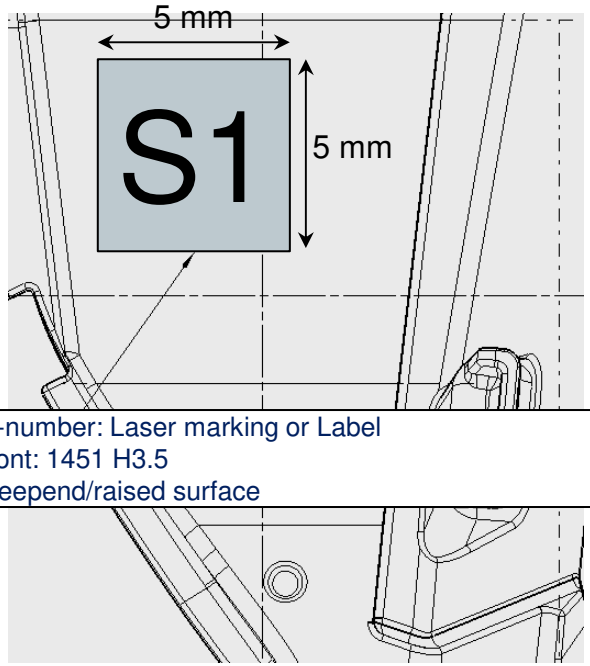
Catalog:
3D Elements -- PowerCopies/3D Elements/ 3D Parts inscriptions/ Inscriptions/S-Number Marking

Marking of single components - Guideline

Example for S-number location/geometry on drawing/RG

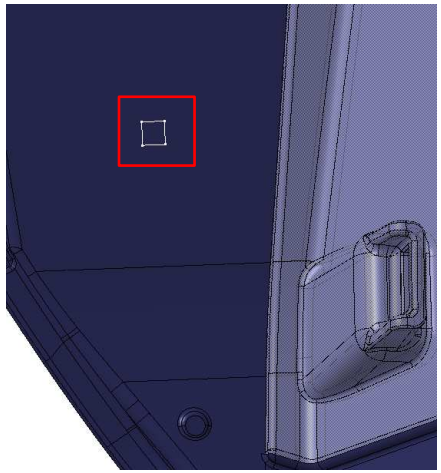
Drawing/RG - Laser marking / Label **(not preferred solution)**

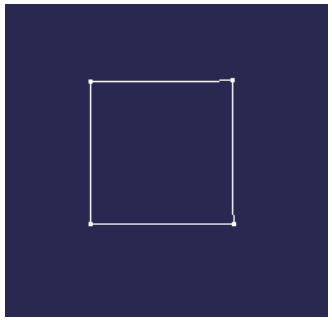
Drawing

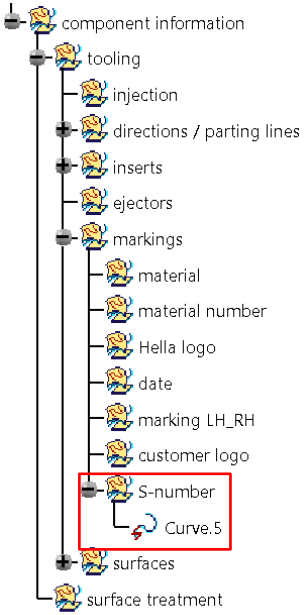


- S-number: Laser marking or Label
- Font: 1451 H3.5
- Deepend/raised surface

RG (3D)





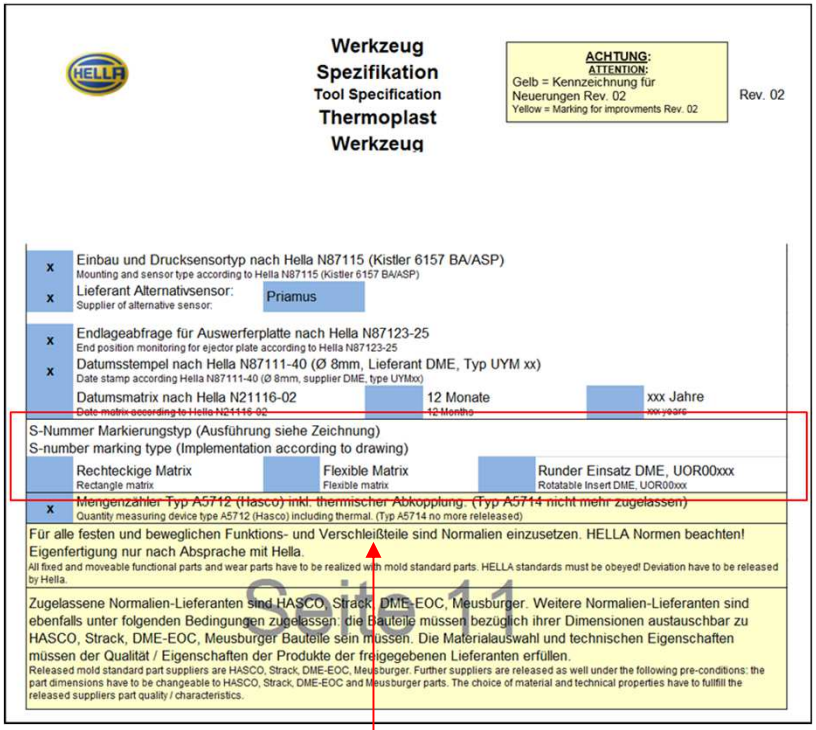


Marking of single components - Guideline

Further regulations for external parties, e.g. dimensional reports are included in

tool specification for tool manufacturers:

- **OS.05.0501.S.002 Thermoplast (former HF-1065-GL)**
- **OS.05.0510.S.002 Thermoset (former HF-1066-GL)**



Werkzeug
Spezifikation
Tool Specification
Thermoplast
Werkzeug

ACHTUNG:
ATTENTION:
Gelb = Kennzeichnung für Neuerungen Rev. 02
Yellow = Marking for improvments Rev. 02

Rev. 02

x Einbau und Drucksensortyp nach Hella N87115 (Kistler 6157 BA/ASP)
Mounting and sensor type according to Hella N87115 (Kistler 6157 BA/ASP)

x Lieferant Alternativsensor: Priamus
Supplier of alternative sensor:

x Endlageabfrage für Auswerferplatte nach Hella N87123-25
End position monitoring for ejector plate according to Hella N87123-25

x Datumsstempel nach Hella N87111-40 (Ø 8mm, Lieferant DME, Typ UYM xx)
Date stamp according Hella N87111-40 (Ø 8mm, supplier DME, type UYMxx)

Datumsmatrix nach Hella N21116-02 | 12 Monate / 12 Months | xxx Jahre / xxx years

S-Nummer Markierungstyp (Ausführung siehe Zeichnung)
S-number marking type (Implementation according to drawing)

Rechteckige Matrix / Rectangle matrix | Flexible Matrix / Flexible matrix | Runder Einsatz DME, UOR00xxx / Rotatable Insert DME, UOR00xxx

x ~~Mengenzähler Typ A5712 (Hasco) inkl. thermischer Abkopplung. (Typ A5714 nicht mehr zugelassen)~~
Quantity measuring device type A5712 (Hasco) including thermal. (Typ A5714 no more releleased)

Für alle festen und beweglichen Funktions- und Verschleißteile sind Normalien einzusetzen. HELLA Normen beachten! Eigenfertigung nur nach Absprache mit Hella.
All fixed and moveable functional parts and wear parts have to be realized with mold standard parts. HELLA standards must be obeyed! Deviation have to be released by Hella.

Zugelassene Normalien-Lieferanten sind HASCO, Strack, DME-EOC, Meusburger. Weitere Normalien-Lieferanten sind ebenfalls unter folgenden Bedingungen zugelassen: die Bauteile müssen bezüglich ihrer Dimensionen austauschbar zu HASCO, Strack, DME-EOC, Meusburger Bauteile sein müssen. Die Materialauswahl und technischen Eigenschaften müssen der Qualität / Eigenschaften der Produkte der freigegebenen Lieferanten erfüllen.
Released mold standard part suppliers are HASCO, Strack, DME-EOC, Meusburger. Further suppliers are released as well under the following pre-conditions: the part dimensions have to be changeable to HASCO, Strack, DME-EOC and Meusburger parts. The choice of material and technical properties have to fullfill the released suppliers part quality / characteristics.

Seite 11

Different marking types are selectable
(Remark: in case of thermosetting plastics rotatable inserts are **not** feasible)

requirement specification books for purchased parts, e.g. chapters

Marking of single components - Guideline
Procedure during c-sample process

Rules for increasing S-number by HELLA

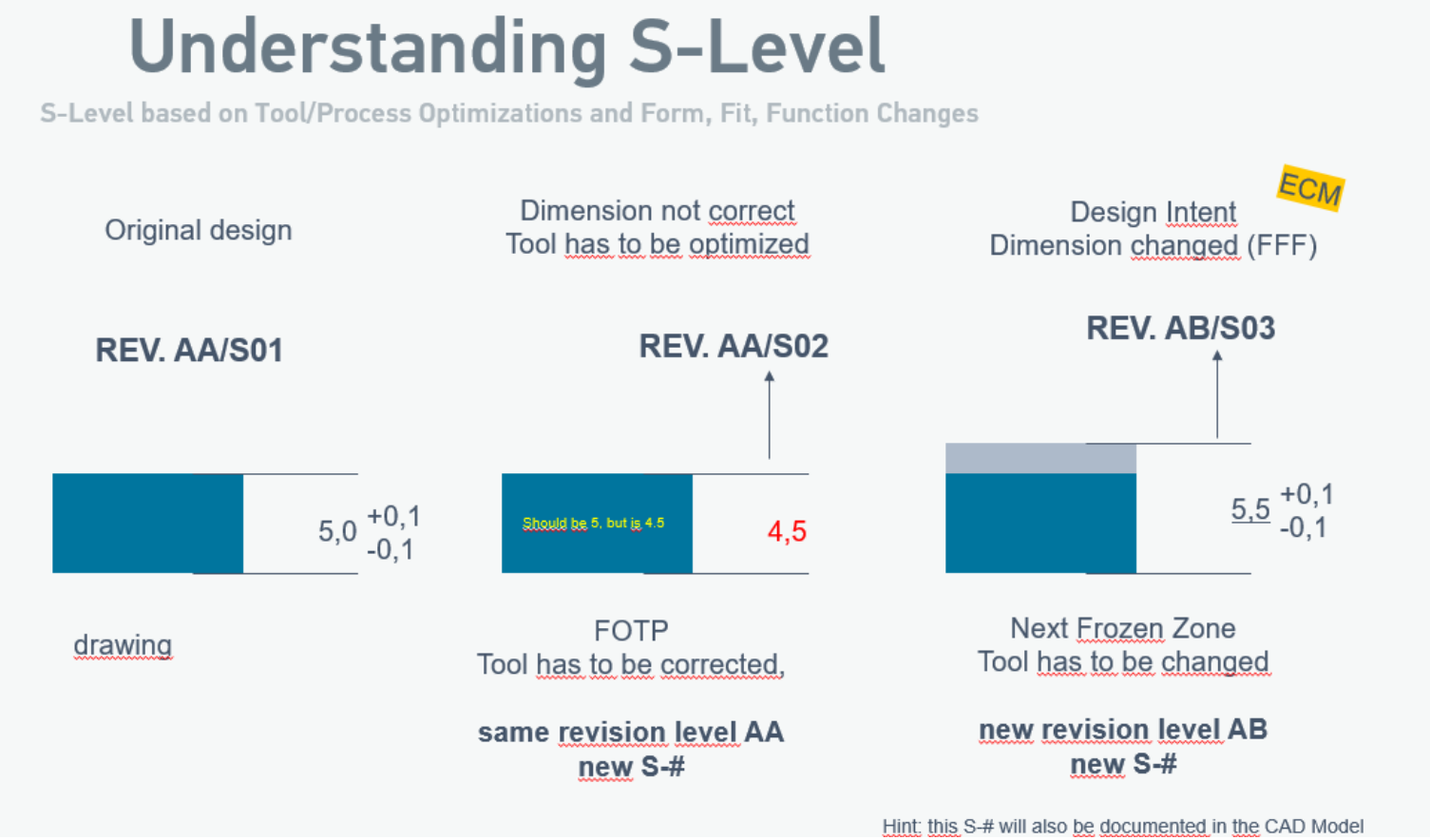
Following aspects leads to a new S-number during C-sample phase:

- Engineering change, initiated by HELLA or customer which leads automatically to a Revision level increase
- Necessary tool modification due to dimension still out of specification
- Revision level is increased
- Try-out with fundamental new parameters[1]
- After tool transfer from tool shop to production

1: The project team (LDE and ME-TC/SQA TtM) decides if a S-number increase is reasonable.
A S-number increase is not intended for a parameter change during a parameter optimization loop.

Marking of single components - Guideline
Procedure during C-sample process

Rules for increasing S-number - > Example



ECM = Engineering Change Management by HELLA

Marking of single components - Guideline

Order format for supplier communication

Ordering of new c-samples (single part or assembly group):

Parts with new S-number are directly ordered out of ERP System:

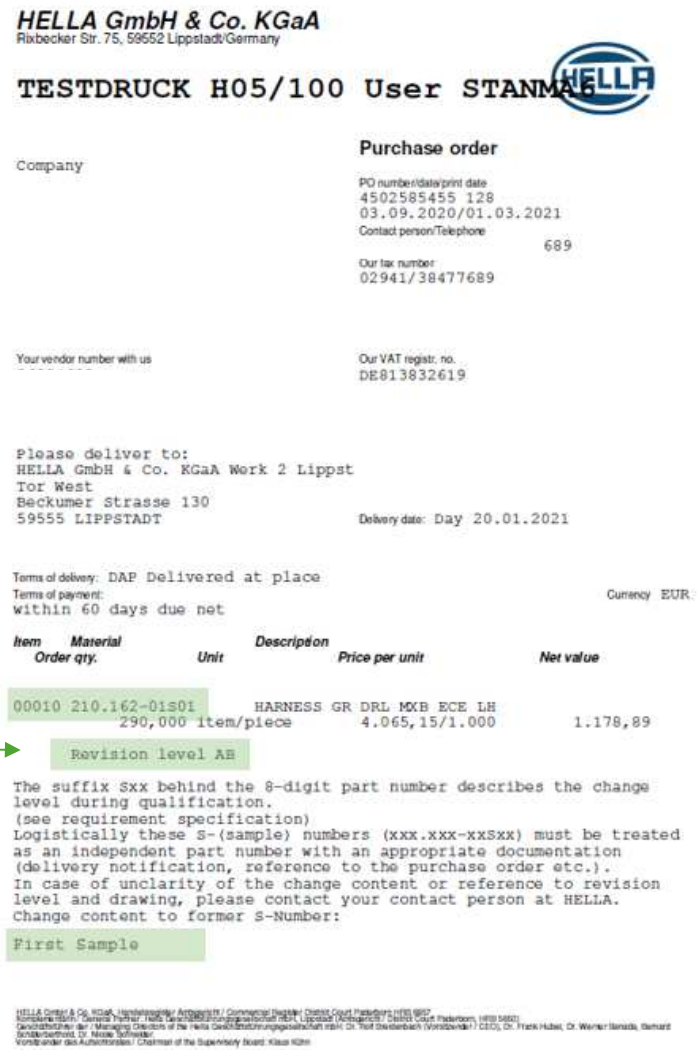
Change content with reference to revision level and corresponding drawing is automatically recorded in addition.

Hint: S-Numbers are no longer part of MDS on the drawing !!

Required S-Number for next production and delivery

Revision level and reference to the drawing

S-level description, text out of QTS - > PDM



HELLA GmbH & Co. KGaA
Rixbecker Str. 75, 59552 Lippstadt/Germany

TESTDRUCK H05/100 User STANMA6

Company

Purchase order

PO number/date/print date
4502585455 128
03.09.2020/01.03.2021
Contact person/Telephone
689
Our tax number
02941/38477689

Your vendor number with us

Our VAT registr. no.
DE813832619

Please deliver to:
HELLA GmbH & Co. KGaA Werk 2 Lippst
Tor West
Beckumer Strasse 130
59555 LIPPSTADT

Delivery date: Day 20.01.2021

Terms of delivery: DAP Delivered at place
Terms of payment:
within 60 days due net

Currency EUR

Item	Material	Description	Order qty.	Unit	Price per unit	Net value
00010	210.162-01S01	HARNESS GR DRL MXB ECE LH	290,000	item/piece	4.065,15/1.000	1.178,89

Revision level AB

The suffix Sxx behind the 8-digit part number describes the change level during qualification.
(see requirement specification)
Logistically these S-(sample) numbers (xxx.xxx-xxSxx) must be treated as an independent part number with an appropriate documentation (delivery notification, reference to the purchase order etc.).
In case of unclarity of the change content or reference to revision level and drawing, please contact your contact person at HELLA.
Change content to former S-Number:

First Sample