

Hot Stamping Dies & Type

Technical Data Sheet

CMT COLUMBIA
MARKING
TOOLS



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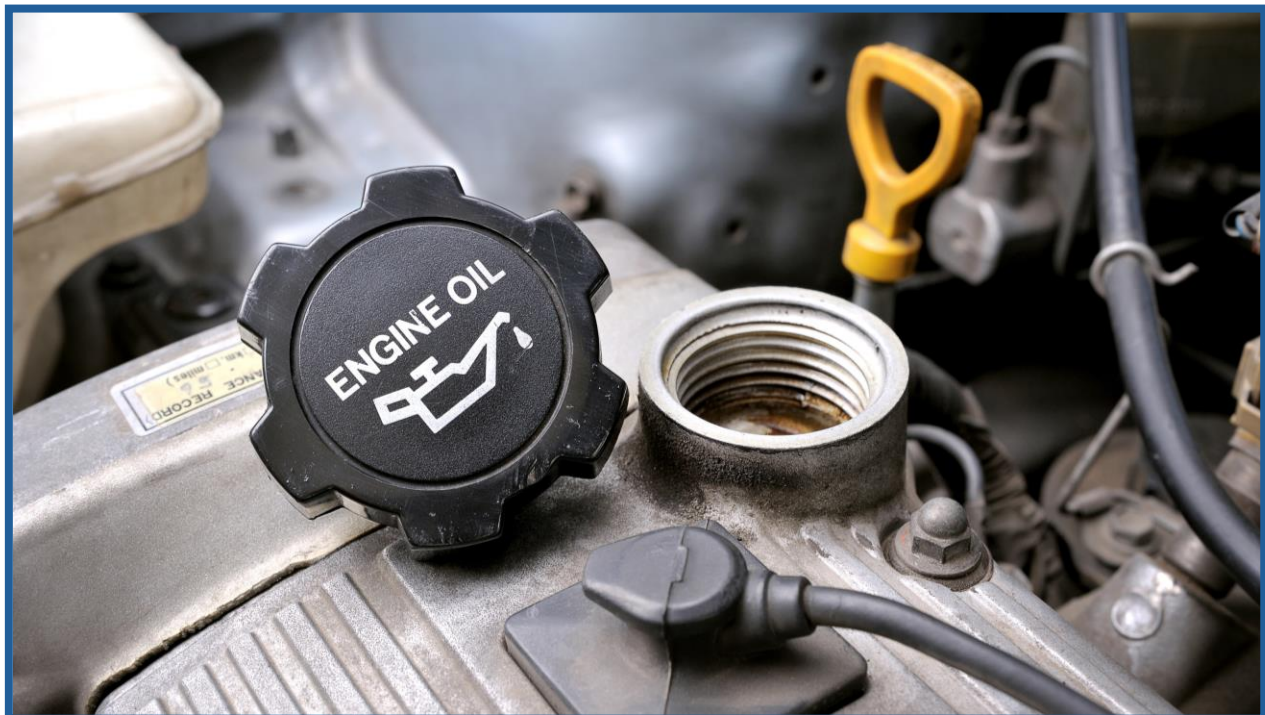
Other Resources

- [Overestimates of Character size](#)
- [Character Size Data](#)
- [Symbols](#)
- [Estimated Hammer Force](#)
- [Marking Pressure Chart](#)
- [Engraving Depth](#)
- [Character Size on Rounds](#)
- [Style of Fractions](#)

Hot Stamp Dies and Type

Hot stamping type requires a flat face character. This flat face character allows for more surface area of the die to be in contact with the part. This allows for faster transfer of heat and better and faster marking of plastic material.

In addition, the wider face of the characters will allow for greater foil transfer to provide a clear contrasting mark.



Hot Step Stamps – CMSH Standard



The CMSH – standard hot step type is used for the CMT 900 series hot stamping units and machines.

The CMSH hot step type is an industry standard, and with the metal plate retention method that assures a secure hold for type while allowing

slight motion during the marking process. The CMSH Step type are made in the USA with a double pass engraving for quality, clarity of mark, and longevity of the tool.

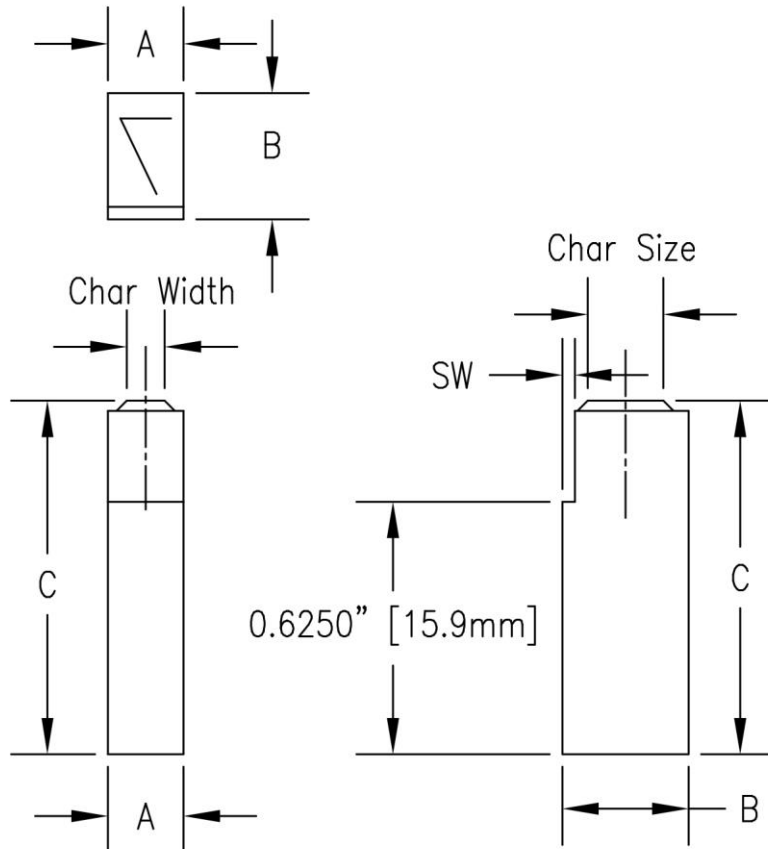
Technical Specifications:

- Double pass engraved (NOT EDM)
- W-1 Tool Steel
- 45 Degree engraving angle
- Flat face character
- Gothic standard (San Serif) font
- Deburred
- Acc Coating for long life



Metal plate for stamp retention.

CMSH Standard - Drawing



SW=.031" [.79mm]

Except CMS03N & CMS06N SW=.024" [.61mm]

A = Width

B = Height

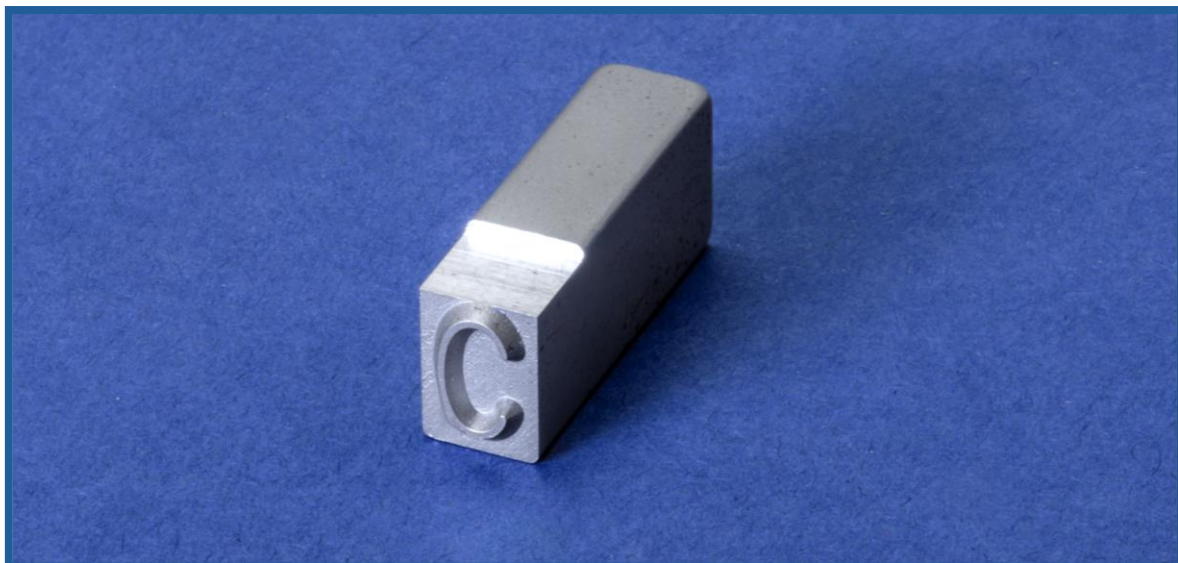
C = Length

Char Size –
Measured from
the top of the
character.

Char Width –
Style 2A, width is
50% of the
character size.

Tolerance -
+.000"/-.001" on
all dimensions.

SW – Step width
.031" for all
except CMS06N,
CMS03N the SW
= .024"



Standard Dimensions

Char. Size	Catalog Number	"A"	"B"	"C"	Engraving Depth
1/32" .8mm	CMSH03N	1/16" 1.6mm	1/8" 3.2mm	7/8" 22.2mm	.012" .3mm
1/32" .8mm	CMSH03	1/16" 1.6mm	1/4" 6.3mm		.012" .3mm
1/16" 1.6mm	CMSH06N	1/16" 1.6mm	1/8" 3.2mm		.018" .5mm
1/16" 1.6mm	CMSH06	1/16" 1.6mm	1/4" 6.3mm		.018" .5mm
3/32" 2.4mm	CMSH09N	3/32" 2.4mm	3/16" 4.8mm		.020" .5mm
3/32" 2.4mm	CMSH09	3/32" 2.4mm	1/4" 6.3mm		.020" .5mm
1/8" 3.2mm	CMSH13	1/8" 3.2mm	1/4" 6.3mm		.023" .6mm
5/32" 4mm	CMSH16N	5/32" 4mm	1/4" 6.3mm		.025" .6mm
5/32" 4mm	CMSH16	3/16" 4.8mm	5/16" 7.9mm		.025" .6mm
3/16" 4.8mm	CMSH19	3/16" 4.8mm	5/16" 7.9mm		.025" .6mm
1/4" 6.3mm	CMSH25	1/4" 6.3mm	3/8" 9.5mm		.030" .8mm
5/16" 7.9mm	CMSH31	5/16" 7.9mm	7/16" 11.1mm	1 25.4mm	.032" .8mm
3/8" 9.8mm	CMSH38	3/8" 9.8mm	1/2" 12.7mm		.035" .9mm
1/2" 12.7mm	CMSH50	1/2" 12.7mm	5/8" 15.9mm	1 1/8" 28.6mm	.050" 1.3mm

How to Order Standard Stamps

Build catalog number as shown.

- 1) Start with the basic model/stamp style.
- 2) Add the 2-digit character size notation.
- 3) Finish with the reading, alpha-numeric characters, punctuation codes, or Symbol numbers. Some symbols may require a double sized insert.

To order individual **LETTERS** and **FIGURES** add suffix of actual letter or figure to part number

CMSH	09	-A
Style	Char Size	Letter or Figure

To order **BLANK SPACERS** add suffix of "-00" to part number

CMSH	13	-00
Style	Char Size	Blank Spacer

To order **PUNCTUATION** add suffix from [table](#).

CMSH	25	-RR
Style	Char Size	Asterisk Suffix

2 Digit Character Size

- 1/32" – 03
- 1/16" – 06
- 3/32" – 09
- 1/8 – 13
- 5/32" – 16
- 3/16" – 19
- 1/4" – 25
- 5/16" – 31
- 3/8" – 38
- 1/2" - 50



How to Order Multi-character or Logo Dies

To order **LOGO DIES** (multiple character stamps) in Flat stamp style add prefix "L" and suffix of **ACTUAL LEGEND** to catalog number.

L	CMSH	13	-FoMoCo
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Logo Die Style Char Size Stamp reads "FoMoCo". Width is A*6

L	CMSH	13	-COMPANY
----------	-------------	-----------	-----------------

Logo Die Style Char Size Stamp reads "COMPANY". Width is A*7

Dimensions for multi-character dies

MA = Number of characters in the legend x individual character width

B = Same as individual character height

C= Same as individual character length

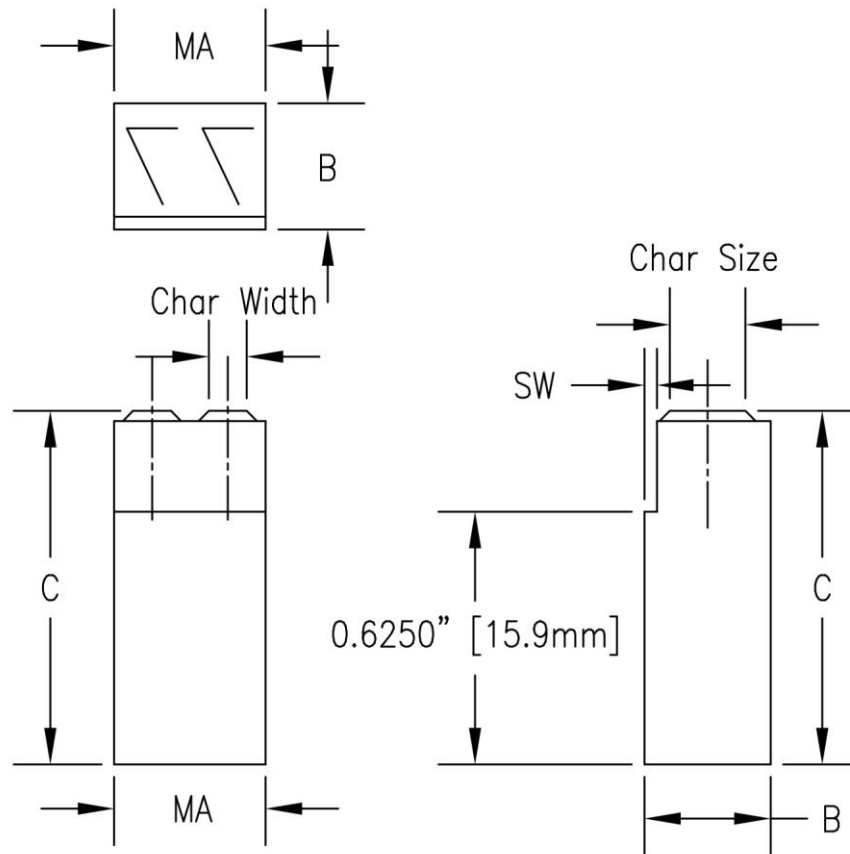
Benefits of multi-character dies

1. Characters are exactly lined up.
2. Ability to reduce spacing or marking length.
3. Same wear, all characters mark same depth.
4. Easily add custom logos or characters



For Custom logo dies, please email artwork or logo, stamp style, and size required to quotes@columbiamt.com.

Multi-character Dimensions



SW=.031" [.79mm]

Except CMS03N & CMS06N SW=.024" [.61mm]

MA = Width is determined by the number of character and spaces. Multiple the standard width of A by the total number of character and spaces.

B = Height

C = Length

Char Size – Measured from the top of the character.

Char Width – Style 2A, width is 50% of the character size.

Tolerance - +.000"/-.001" on all dimensions.



Consideration for overall length of multi-character stamps:

- Spaces may be reduced to less than 1 standard space wide.
- Narrow characters may be reduced less than 1 standard space wide.
- A double wide stamp blank is required for some of the symbols. Symbols where the width is about the same as the height. One example is Symbol 110.

Custom Die to fill pocket – 900 Series

Specify alpha-numeric characters required when ordering. Spaces count as characters, and marking legends with less character than the blank will be centered unless otherwise specified.

Custom Die	Holder	Character Size	Number of characters
LCMSH06C10	911HA-62	1/16" [1.6mm]	10
LCMSH13C5	911HA-62	1/8" [3.2mm]	5
LCMSH19C3	911HB-56	3/16" [4.8mm]	3
LCMSH25C2	911HC-50	1/4" [6.3mm]	2
LCMSH06C12	912HA-75	1/16" [1.6mm]	12
LCMSH09C8	912HA-75	3/32" [2.3mm]	8
LCMSH13C6	912HA-75	1/8" [3.2mm]	6
LCMSH19C4	912HB-75	3/16" [4.8mm]	4
LCMSH25C3	912HC-75	1/4" [6.3mm]	3
LCMSH06C32	914HA-200	1/16" [1.6mm]	32
LCMSH18C16	914HA-200	1/8" [3.2mm]	16
LCMSH19C10	914HB-200	3/16" [4.8mm]	10
LCMSH25C8	914HC-200	1/4" [6.3mm]	8

A solid die will allow easy changeover of part numbers. A die that fills up the pocket may also be engraved with a logo or a combination of symbols and characters.

Example #1 – Logo Die for Model 912. The face of this example die is larger than the pocket. But the design provides a wide clear face for the company logo.

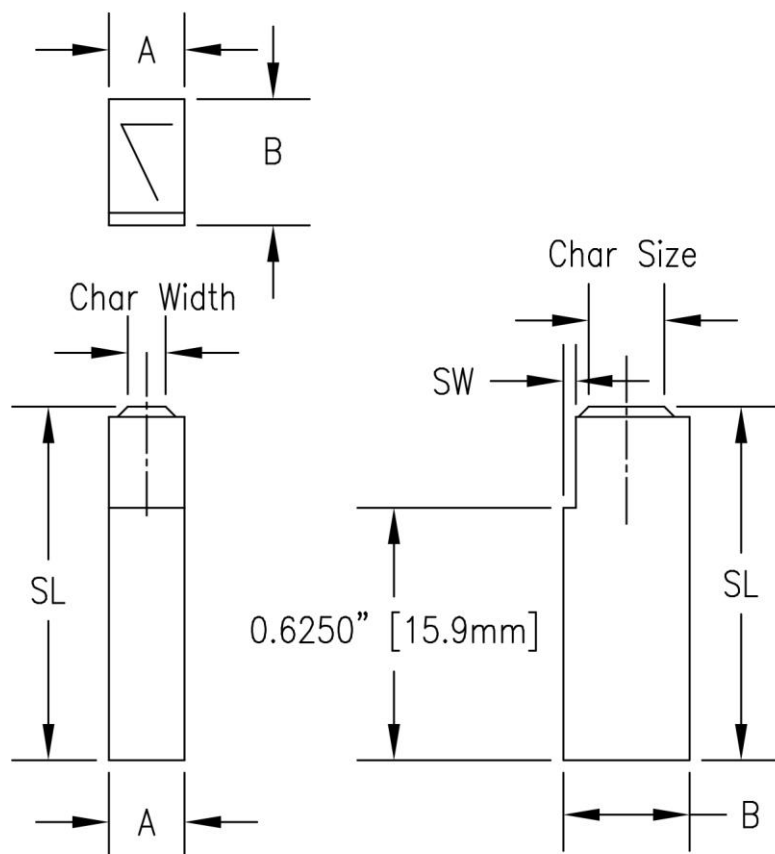


Example #2 – Logo Die results for solid part number. All the characters are engraved on one piece. Easy tooling changeover and no operator errors with configuration of the marking legend.



Special Length Stamps

These stamps are used when marking in a recess or needing additional reach to mark the part.



A = Width

B = Height

SL = Special Length. Special lengths available for up to 2.5"

Char Size – Measured from the top of the character.

Char Width – Style 2A, width is 50% of the character size.

Tolerance - $+.000\"/>/-0.001$ on all dimensions.

SW=.031" [.79mm]

Except CMS03N & CMS06N SW=.024" [.61mm]

To order individual **SPECIAL LENGTH** letters and figures add SL### notation to part number as shown.

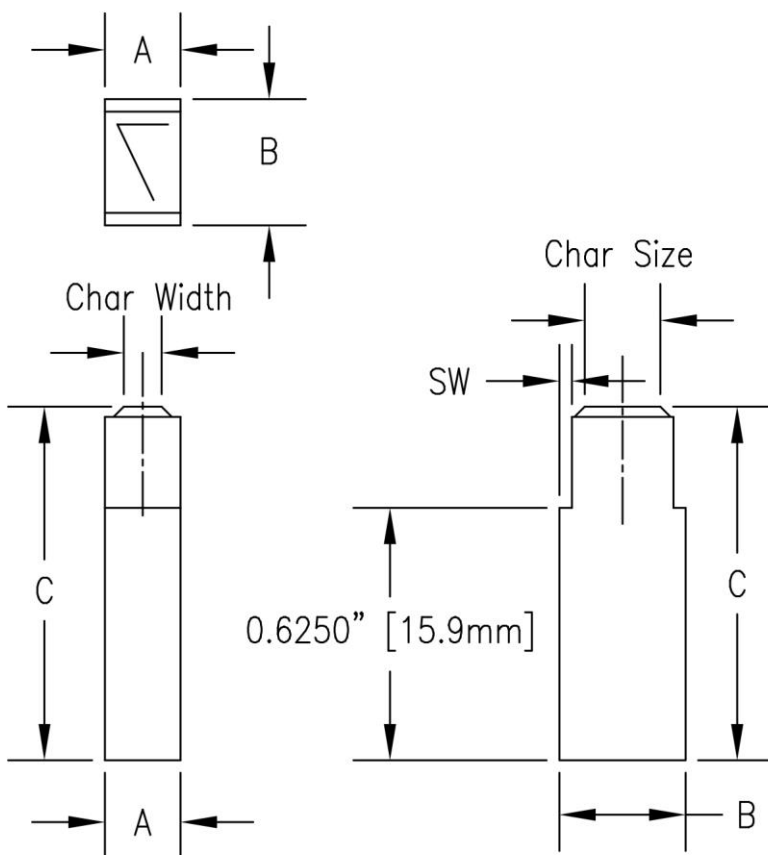
CMSH	13	SL100	-A
Style	Char Size	SL###, replace ### with the length required.	Letter or Figure

Special Length Dimensions

Char. Size	Catalog Number	"A"	"B"	"C"	Engraving Depth
1/32" .8mm	CMSH03N	1/16" 1.6mm	1/8" 3.2mm	1/2" To 2.50" 12.7mm To 63.5mm	.012" .3mm
1/32" .8mm	CMSH03	1/16" 1.6mm	1/4" 6.3mm		.012" .3mm
1/16" 1.6mm	CMSH06N	1/16" 1.6mm	1/8" 3.2mm		.018" .5mm
1/16" 1.6mm	CMSH06	1/16" 1.6mm	1/4" 6.3mm		.018" .5mm
3/32" 2.4mm	CMSH09N	3/32" 2.4mm	3/16" 4.8mm		.020" .5mm
3/32" 2.4mm	CMSH09	3/32" 2.4mm	1/4" 6.3mm		.020" .5mm
1/8" 3.2mm	CMSH13	1/8" 3.2mm	1/4" 6.3mm		.023" .6mm
5/32" 4mm	CMSH16N	5/32" 4mm	1/4" 6.3mm		.025" .6mm
5/32" 4mm	CMSH16	3/16" 4.8mm	5/16" 7.9mm		.025" .6mm
3/16" 4.8mm	CMSH19	3/16" 4.8mm	5/16" 7.9mm		.025" .6mm
1/4" 6.3mm	CMSH25	1/4" 6.3mm	3/8" 9.5mm		.030" .8mm
5/16" 7.9mm	CMSH31	5/16" 7.9mm	7/16" 11.1mm		.032" .8mm
3/8" 9.8mm	CMSH38	3/8" 9.8mm	1/2" 12.7mm		.035" .9mm
1/2" 12.7mm	CMSH50	1/2" 12.7mm	5/8" 15.9mm		.050" 1.3mm

Double Step Type – CMTH

These stamps are used when marking in a multi-line holder or to offer flexibility in orientation of the marking legend.



A = Width

B = Height

C = Width

Char Size –
Measured from the
top of the
character.

Char Width – Style
2A, width is 50% of
the character size.

Tolerance -
+.000\"/>

SW=.031\"/>

Except CMT03N & CMT06N SW=.024\"/>

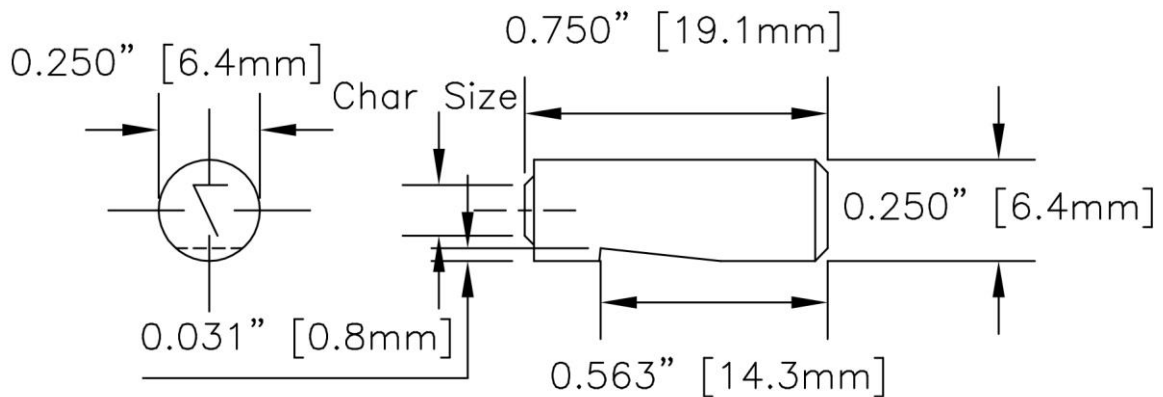
To order individual **DOUBLE STEP** letters and figures add CMT notation to part number as shown.

CMTH	13	-A
Style	Char Size	Letter or Figure

Double Step Dimensions

Char. Size	Catalog Number	"A"	"B"	"C"	Engraving Depth
1/32" .8mm	CMTH03N	1/16" 1.6mm	1/8" 3.2mm	7/8" 22.2mm	.012" .3mm
1/32" .8mm	CMTH03	1/16" 1.6mm	1/4" 6.3mm		.012" .3mm
1/16" 1.6mm	CMTH06N	1/16" 1.6mm	1/8" 3.2mm		.018" .5mm
1/16" 1.6mm	CMTH06	1/16" 1.6mm	1/4" 6.3mm		.018" .5mm
3/32" 2.4mm	CMTH09N	3/32" 2.4mm	3/16" 4.8mm		.020" .5mm
3/32" 2.4mm	CMTH09	3/32" 2.4mm	1/4" 6.3mm		.020" .5mm
1/8" 3.2mm	CMTH13	1/8" 3.2mm	1/4" 6.3mm		.023" .6mm
5/32" 4mm	CMTH16N	5/32" 4mm	1/4" 6.3mm		.025" .6mm
5/32" 4mm	CMTH16	3/16" 4.8mm	5/16" 7.9mm		.025" .6mm
3/16" 4.8mm	CMTH19	3/16" 4.8mm	5/16" 7.9mm		.025" .6mm
1/4" 6.3mm	CMTH25	1/4" 6.3mm	3/8" 9.5mm		.030" .8mm
5/16" 7.9mm	CMTH31	5/16" 7.9mm	7/16" 11.1mm	1 25.4mm	.032" .8mm
3/8" 9.8mm	CMTH38	3/8" 9.8mm	1/2" 12.7mm		.035" .9mm
1/2" 12.7mm	CMTH50	1/2" 12.7mm	5/8" 15.9mm	1 1/8" 28.6mm	.050" 1.3mm

CM7XH – Round Hot Stamping Inserts



Char Size – Measured from the top of the character.

Char Width – Style 3A, width is 60% of the character size. Except 3/16" character size style 2A, width 50% of the character size.

Tolerance - +.000"/-.001" on all dimensions.

CM7XH How to Order

Char. Size	Catalog Number	Engraving Depth
1/16" 1.6mm	CM7XH06	.018" .5mm
3/32" 2.4mm	CM7XH09	.020" .5mm
1/8" 3.2mm	CM7XH13	.023" .6mm
5/32" 4mm	CM7XH16	.025" .6mm
3/16" 4.8mm	CM7XH19	.025" .6mm



The CM7XH inserts are used in the CMT hot stamping units 911 and 912.

These units are perfect for

- Passing Mark
- QC mark
- Station ID

CM7XH – 1/4" Round Multi-character Inserts

To order **MULTI-CHARACTER DIES** (multiple character stamps) in Inserts style, and character size designation, and suffix of **ACTUAL LEGEND** to catalog number.

CM7XH	13	-OK
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Style Char Size Stamp reads "OK"

CM7XH	06	-PASS
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Style Char Size Stamp reads "PASS"

CM7XH How to Order Multi-Character

Char. Size	Catalog Number	Engraving Depth	Maximum Characters
1/16" 1.6mm	CM7XH06	.018" .5mm	4*
3/32" 2.4mm	CM7HX09	.020" .5mm	2*
1/8" 3.2mm	CM7XH13	.023" .6mm	2*
5/32" 4mm	CM7XH16	.025" .6mm	1*
3/16" 4.8mm	CM7XH19	.025" .6mm	1**

*Style 3A

**Style 2A

For Custom logo dies, please email artwork or logo, stamp style, and size required to quotes@columbiamt.com.

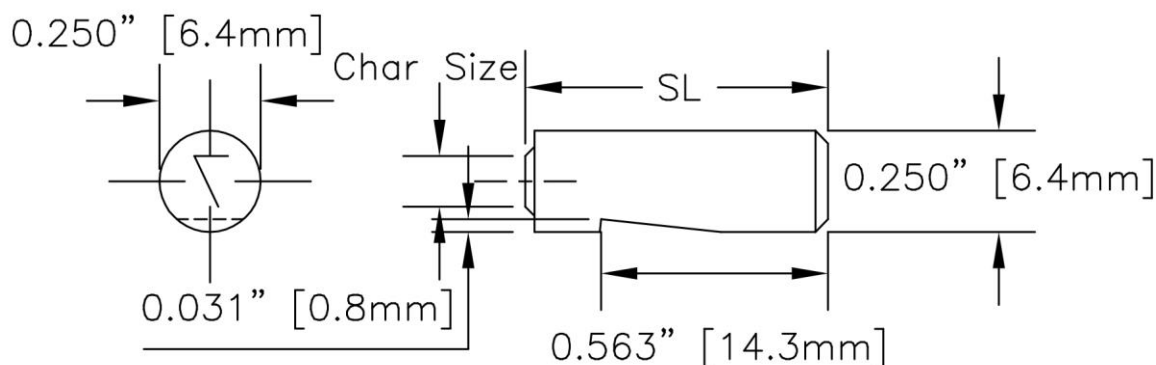
Dimensions for multi-character inserts are **EXACTLY** the same as the individual characters.

Benefits of multi-character dies

1. Characters are exactly lined up.
2. Ability to reduce spacing or marking length.
3. Same wear, all characters mark same depth.
4. Easily add custom logos or characters



CM7XH-SL – 1/4" Round Special Length Stamps



CM7XH-SL How to Order

Char. Size	Catalog Number	SL	Engraving Depth
1/16\" 1.6mm	CM7XH06	1/2\" To 2.50\" 12.7mm To 63.5mm	.018\" .5mm
3/32\" 2.4mm	CM7XH09		.020\" .5mm
1/8\" 3.2mm	CM7XH13		.023\" .6mm
5/32\" 4mm	CM7XH16		.025\" .6mm
3/16\" 4.8mm	CM7XH19		.025\" .6mm

These stamps are used when marking in a recess or needing additional reach to mark the part.

SL = Special Length. Special lengths available for up to 2.5"

Char Size – Measured from the top of the character.

Char Width – Style 2A, width is 50% of the character size.

Tolerance - +.000"/-.001" on all

To order individual **SPECIAL LENGTH** letters and figures add SL### notation to part number as shown.

CM7XH	13	SL100	-A
Style	Char Size	SL###, replace ### with the length required.	Letter or Figure required.

Custom Hot Stamping Dies

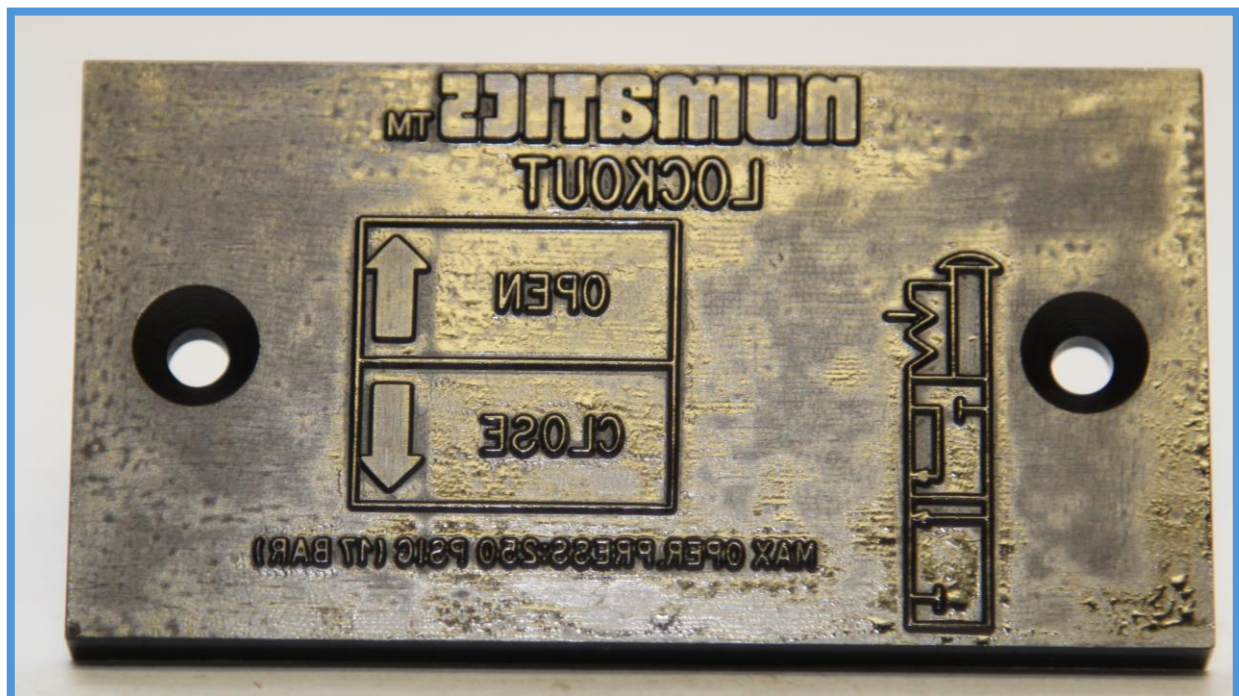
Columbia Marking Tools can design and manufacture custom step type and dies. CMT can provide a quotation to any customer custom print. The print or the request may be sent to quotes@columbiamt.com.



Parameters:

- Custom Die Dimensions
- Character Size
- Font
- Material
- Engraving Angle
- Engraving Depth

CMT will provide standard parameters for any component not defined by request or print.



Standard Font

Columbia Marking Tools uses a font called "Gothic". This sans serif font is plain and easy to read.

A B C D E F G H I J K L M

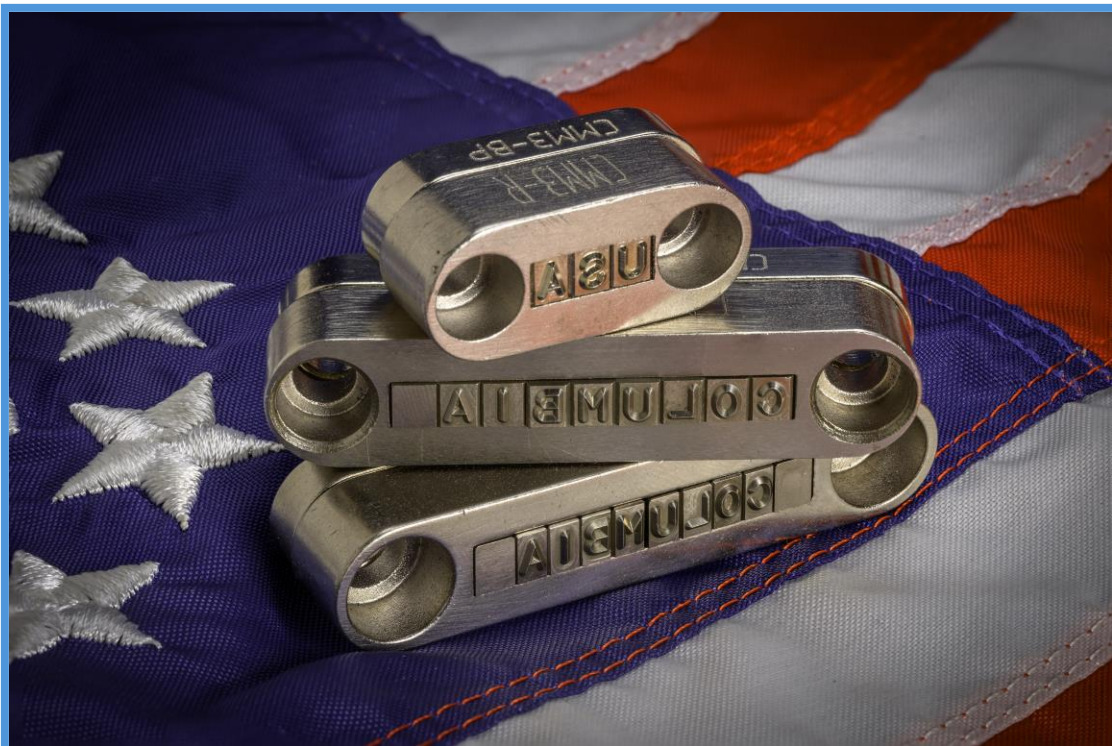
N O P Q R S T U V W X Y Z

0 1 2 3 4 5 6 7 8 9

" ' # / , : . * ~ - > < + % \$ = & x

The alpha/numeric listing above is a reference for the style of font CMT uses. However, there are slight variations between different manufacturing processes.

Even from year to year, the exact font changes slightly. The top part on figure 3, or the top flag on the figure one may be slightly more curved or a different size. CMT strongly recommends providing a picture or rubbing for the exact font recreation when required.



Punctuation

All CMT standard die and stamps are available with a wide variety of punctuation or symbols.

How to order:

For a CMS 3/8" step type with an Ampersand - the following code would be used:

CMS38AA

To order punctuation on a die or stamps use the appropriate code from the following list.



- AA Ampersand (&)
- BB Dollar Sign (\$)
- BS Back Slash (\)
- CC Comma (,)
- DD Dash (-)
- EE Equals Sign (=)
- GG Semi Colon (;)
- HH Apostrophe (')
- II Inch Mark, Quotes (")
- JJ Underscore (_)
- KK Question Mark (?)
- LL Colon (:)
- MM Multiplication (X)
- NN Number Sign (#)
- Degree Symbol (°)

- PP Period (.)
- QQ Percent Sign (%)
- RR Asterisk (*)
- SS Slash, Diagonal (/)
- TT Number Sign (#)
- US Underscore (_) use JJ
- UU Plus Sign (+)
- VV Left Parenthesis [(
- WW Right Parenthesis ()]
- YY Exclamation Point (!)
- ZZ At Sign (@)
- REG- Registration Symbol (®)
- PEN- Pentastar
- PUN- Punctuation Other Examples < > ^ ~ []