



Stamping Dies and Retainers

Technical Data Sheet

CMT
COLUMBIA
MARKING
TOOLS



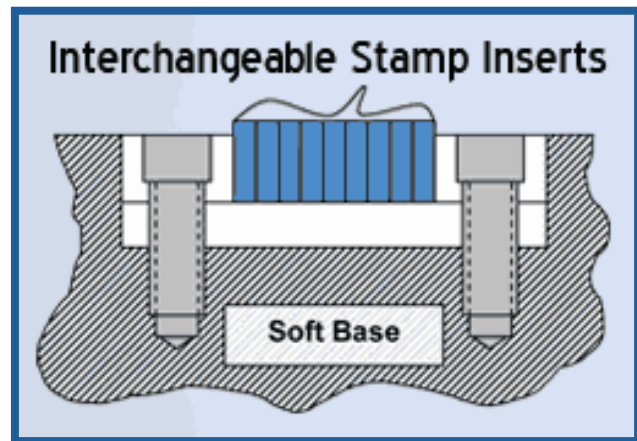
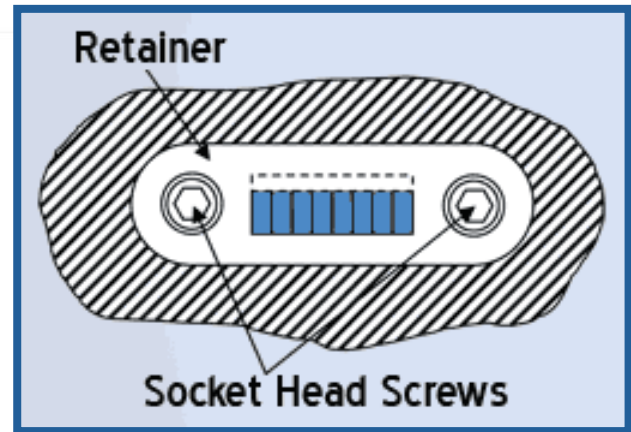
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Stamping die installation

Stamping dies and retainers are an industrial standard that have been used to quickly incorporate part traceability in the primary stamping process.

The pocket for the marking retainer and type is easily milled into an existing die. The width and length of the pocket determined by the number of characters and character size.

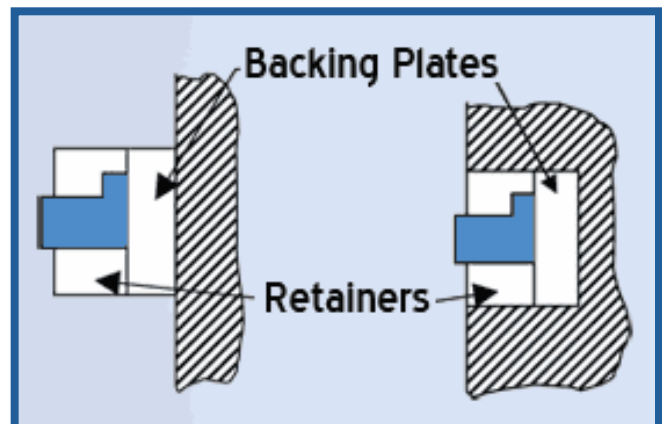


Installation in the die is by (2) socket head cap screws. To reduce on maintenance costs, CMT proprietary manufacturing process provides longer tool life. The longer tool life reduces down time and maintenance costs.

In addition, the low costs of the dies make use in secondary marking processes very economical. CMT offers a line of adapters and mounting accessories.

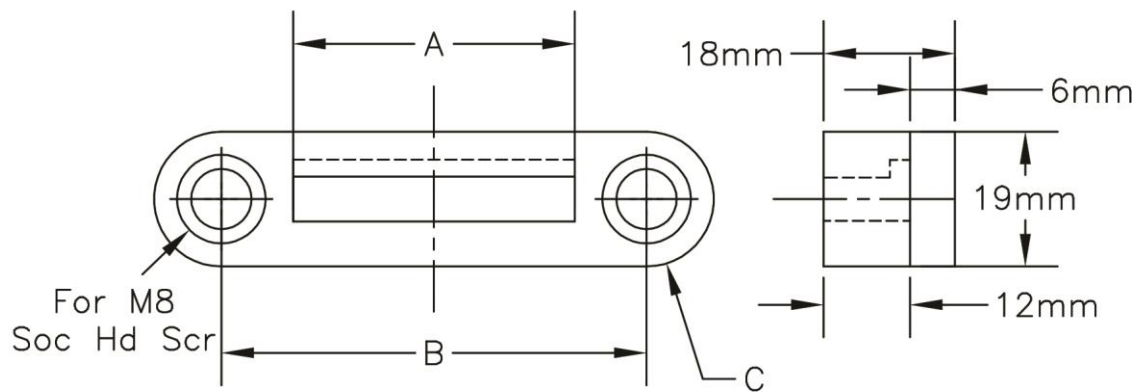
Technical Specifications for Type:

- Double pass engraved (**NOT EDM**)
- W-1 Tool Steel
- 45 Degree engraving angle
- Sharp face character
- Gothic standard (San Serif) font
- Heat treated to 57-59 Rc
- Deburred
- Acc Coating for long life



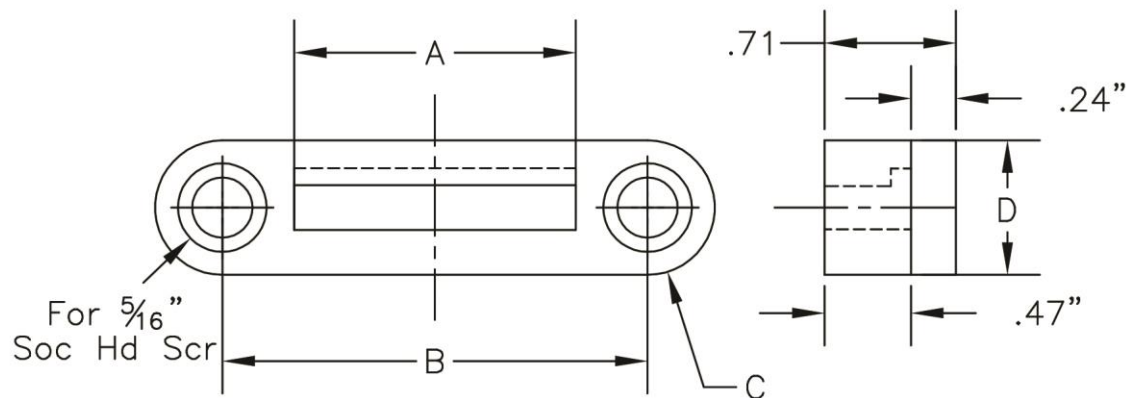
L Shaped Retainers – Metric

Retainer	A	B	C	Type Style (holder capacity)
CMMRN18R1900	40mm	60mm	9.5mm	CMM018 (10)
CMMRN18R7810	48mm	68mm	9.5mm	CMM018 (12)



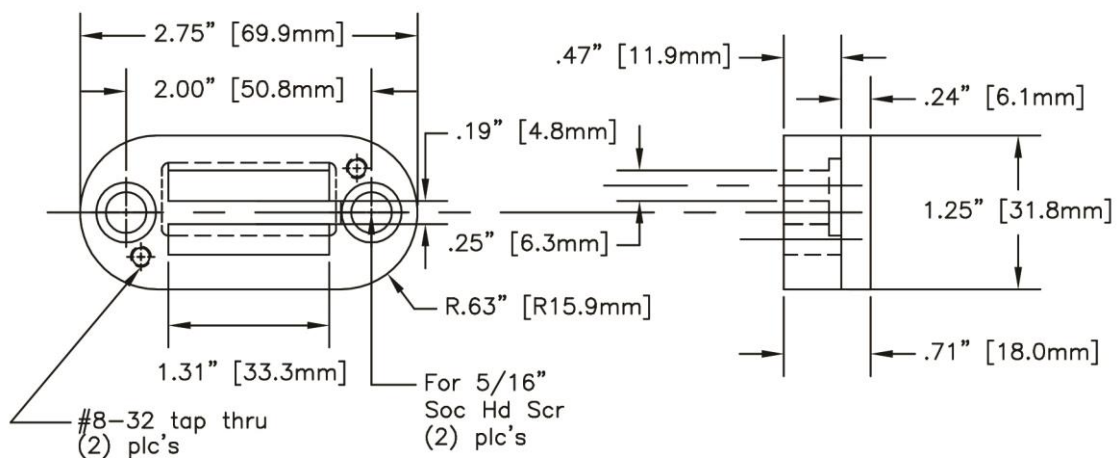
L Shaped Retainers - Standard

Retainer	A	B	C	D	Type Style (holder capacity)
CMM101	1.31"	2.00"	.31"	.62"	CMM103 (7), CMM164 (8), CMM512(8), CMM518 (8)
CMM510	1.64"	2.31"	.31"	.62"	CMM164 (10), CMM512 (10), CMM518 (10)
CMM412	2.25"	2.94"	.38"	.75"	CMM103 (12) CMM125 (18)
CMMRN18	1.10"	2.00"	.38"	.75"	CMM018 (7)

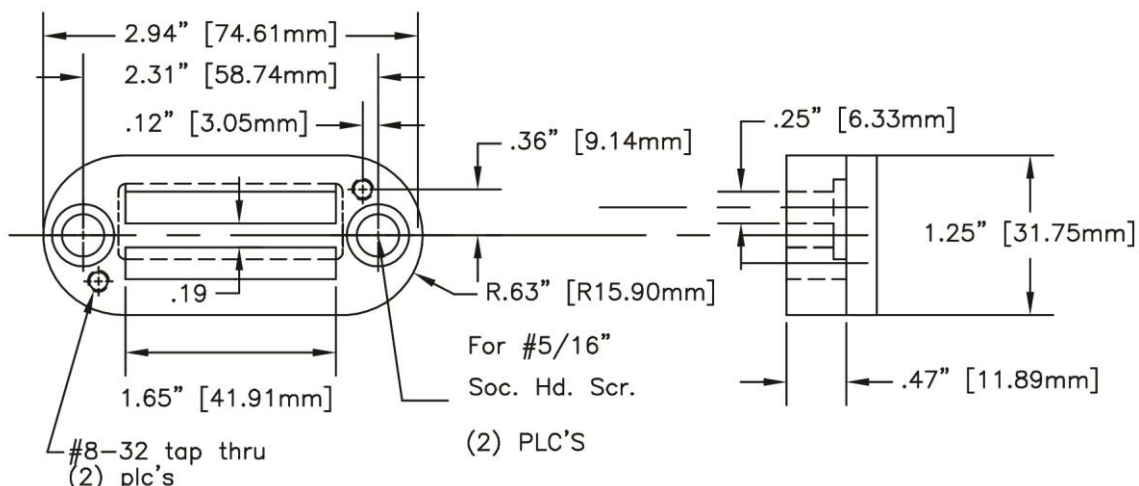


L shaped Retainers – 2 Line

CMM106/CMM107 – Retainer and backing plate set. Each row holds CMM103 (7), CMM512 (8), CMM164 (8), CMM512 (8).



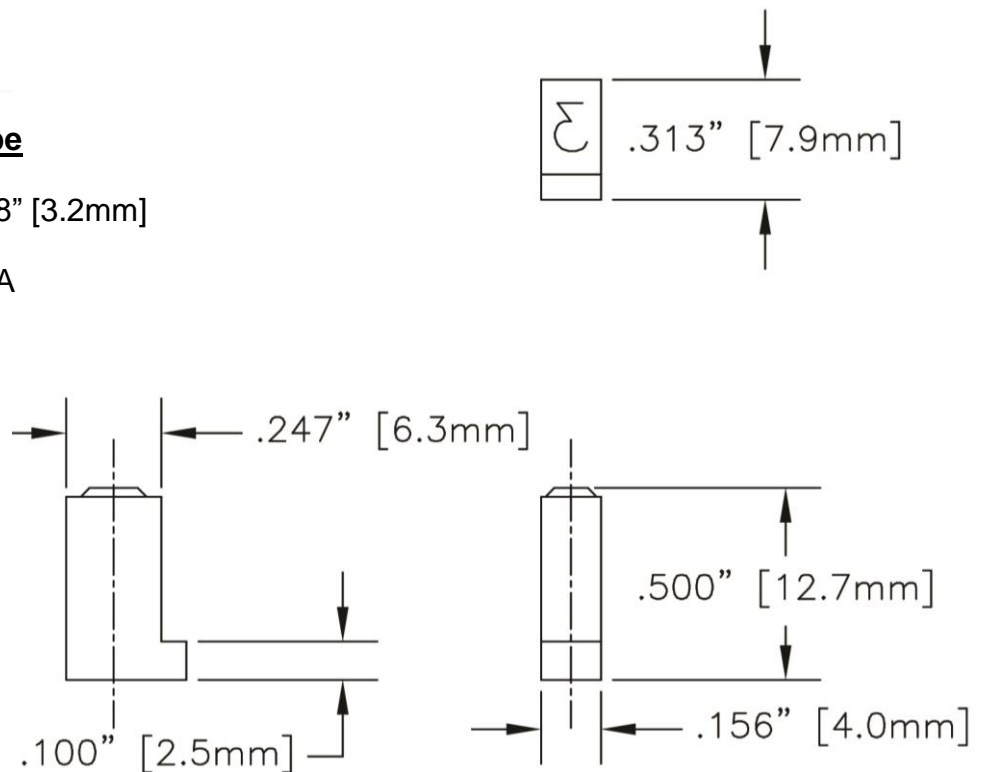
CMM520/CMM521 – Retainer and baking plate set. Each row holds CMM164 (10), CMM512 (10), CMM518 (10)



L shaped Type

CMM018 L Shaped Type

- Character size 1/8" [3.2mm]
- Character style 4A
- Engraving Depth .023" [.6mm]
- W-1 Tool Steel
- Heat treated to 57-59 Rc
- Acc Coating for long life



CMM518 L Shaped Type

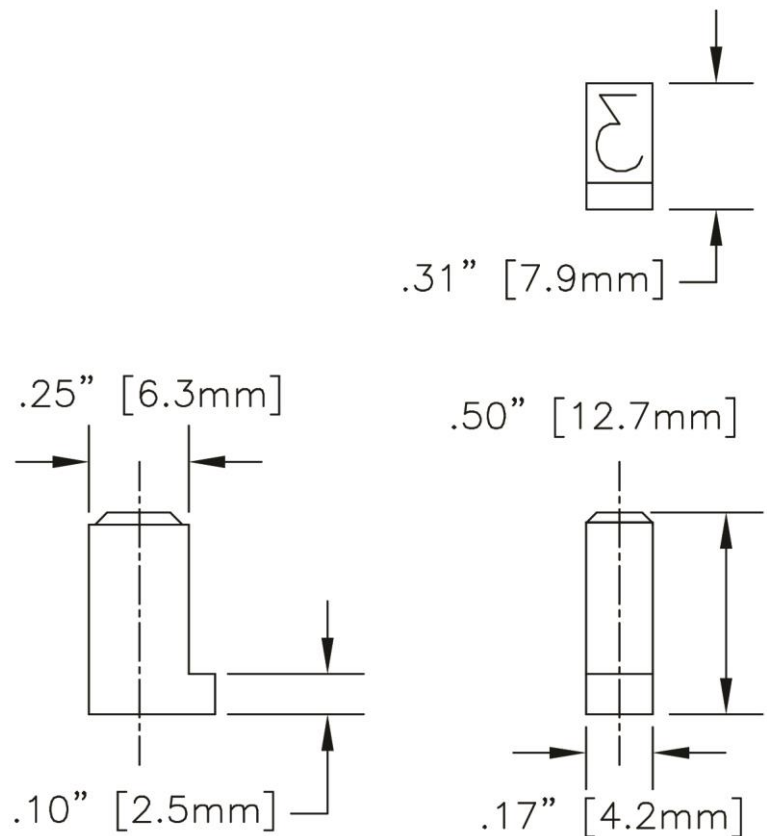
- Character size 3/16" [4.7mm]
- Character style 3A
- Engraving Depth .025" [.6mm]

CMM164 L Shaped Type

- Character size 5/32" [4mm]
- Character style 3A
- Engraving Depth .025" [.6mm]

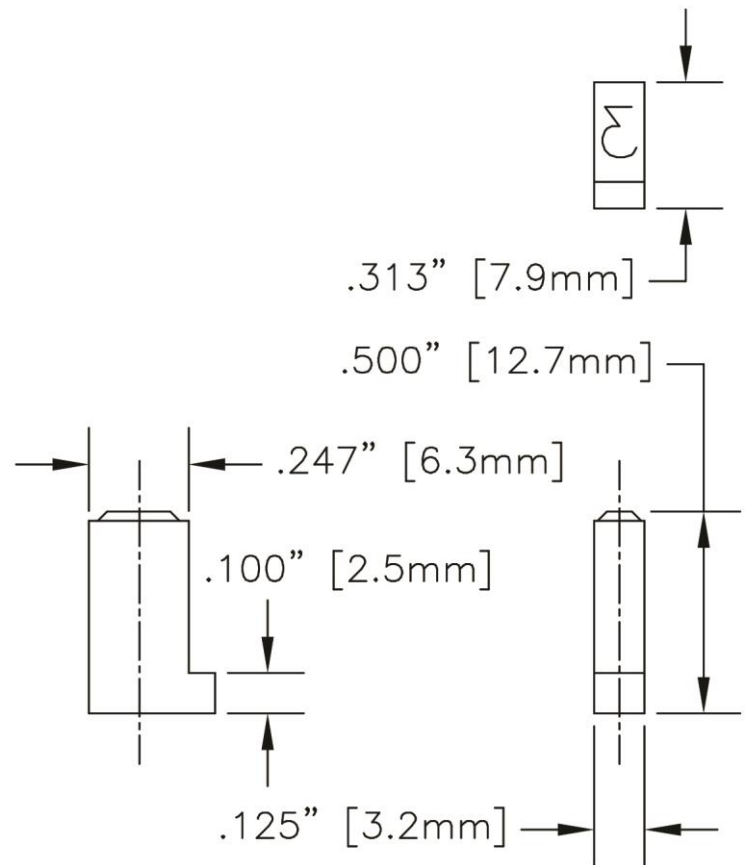
CMM512 L Shaped Type

- Character size 1/8" [3.2mm]
- Character style 3A
- Engraving Depth .023" [.6mm]
- W-1 Tool Steel
- Heat treated to 57-59 Rc
- Acc Coating for long life



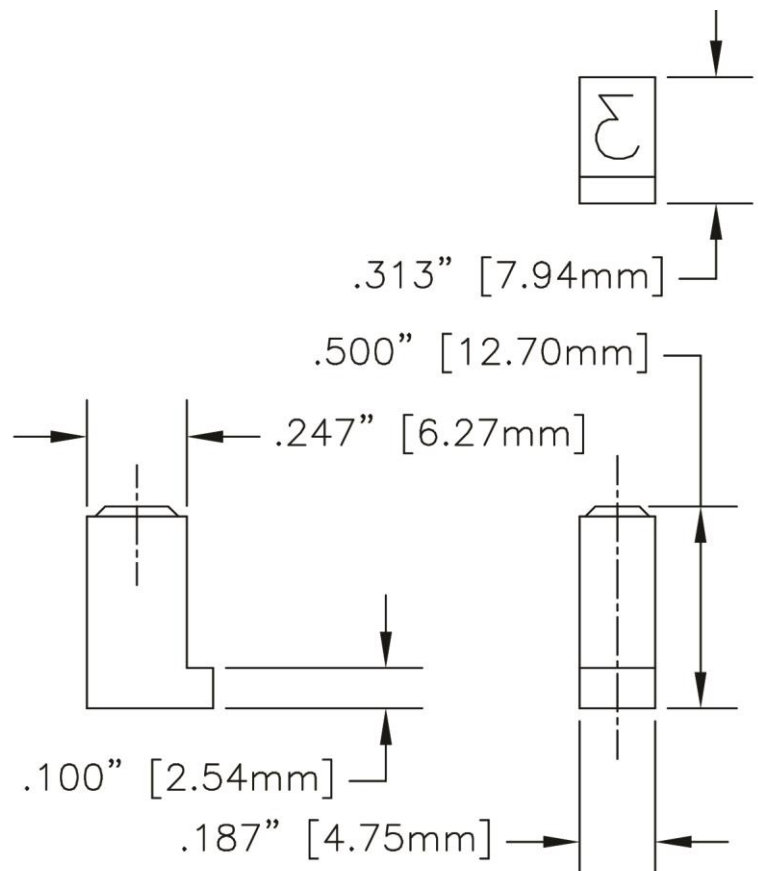
CMM125 L Shaped Type

- Character size 1/8" [3.2mm]
- Character style 2A
- Engraving Depth .023" [.6mm]
- W-1 Tool Steel
- Heat treated to 57-59 Rc
- Acc Coating for long life



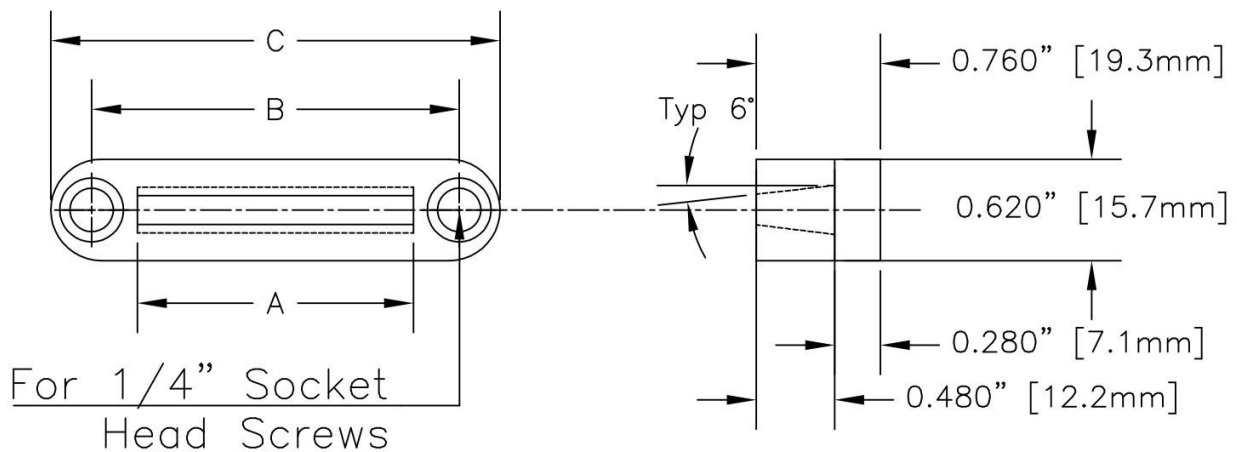
CMM103 L Shaped Type

- Character size 5/32" [4mm]
- Character style 4A
- Engraving Depth .025" [.6mm]
- W-1 Tool Steel
- Heat treated to 57-59 Rc
- Acc Coating for long life



3/32" [2.3mm] & 1/8" [3.2mm] Wedge Shaped Type and Retainers

Retainer	A	B	C	Type Style (holder capacity)
CMM3	.562" [14.2mm]	1.00" [25.4mm]	1.50" [38.1mm]	CMM180 (3) CMM090 (6)
CMM5	.936" [23.8mm]	1.38" [35.1mm]	1.88" [47.7mm]	CMM180 (5) CMM090 (10)
CMM7	1.310" [33.3mm]	1.75" [44.5mm]	2.25" [57.1mm]	CMM180 (7) CMM090 (14)
CMM9	1.683" [42.7mm]	2.25" [57.1mm]	2.75" [69.8mm]	CMM180 (9) CMM090 (18)



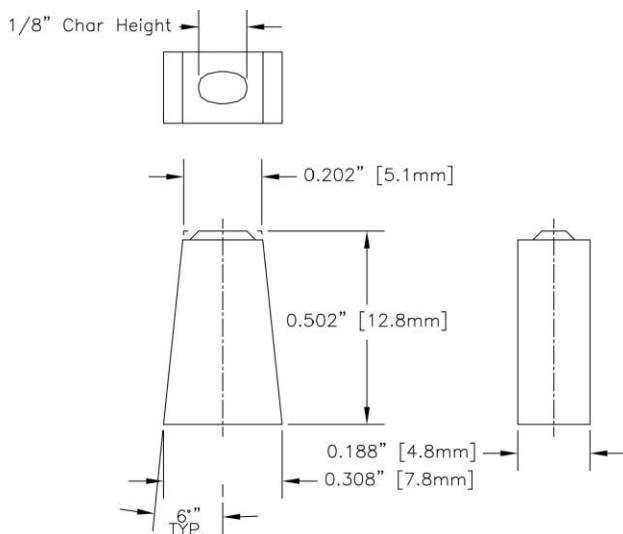
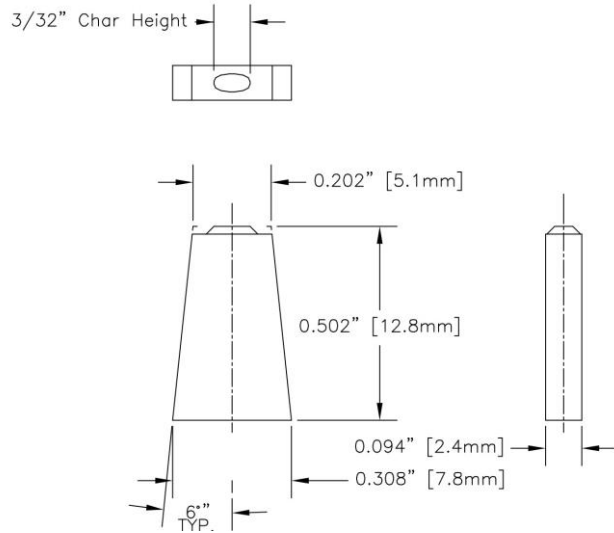
Specifications

- W-1 Tool Steel
- Heat treated to 57-59 Rc
- Acc Coating for long life



CMM090 Wedge type

- Character size 3/32" [2.3mm]
- Character style 2A
- Engraving Depth .020" [.5mm]
- W-1 Tool Steel
- Heat treated to 57-59 Rc
- Acc Coating for long life

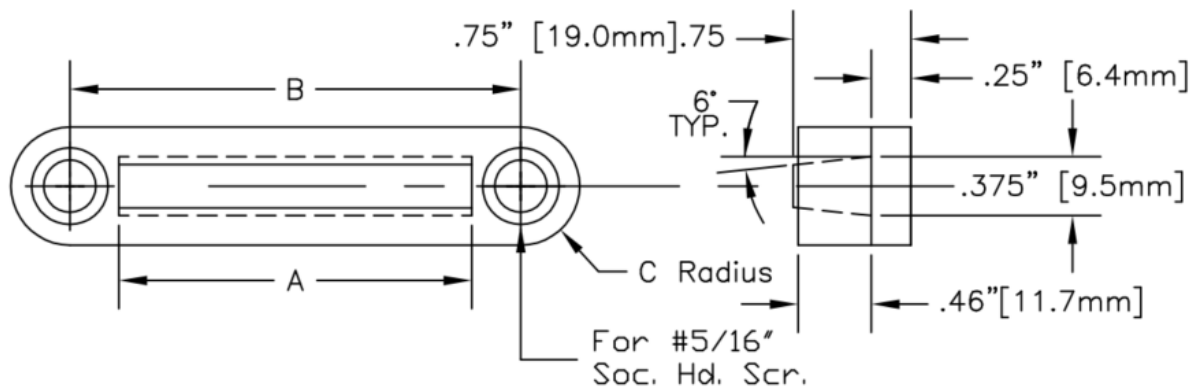


CMM180 Wedge type

- Character size 1/8" [3.2mm]
- Character style 2A
- Engraving Depth .020" [.5mm]
- W-1 Tool Steel
- Heat treated to 57-59 Rc
- Acc Coating for long life

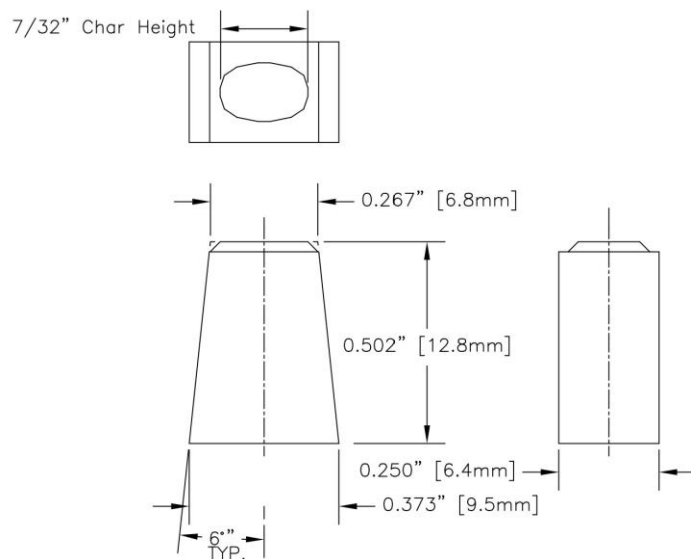
7/32" [5mm] Wedge Shaped Type and Retainers

Retainer	A	B	C	Type Style (holder capacity)
CMM50	1.25" [14.2mm]	1.81" [25.4mm]	.31" [7.9mm]	CMM250 (5)
CMM54	.2.265 [23.8mm]	2.88" [35.1mm]	.38" [9.6mm]	CMM250 (9)



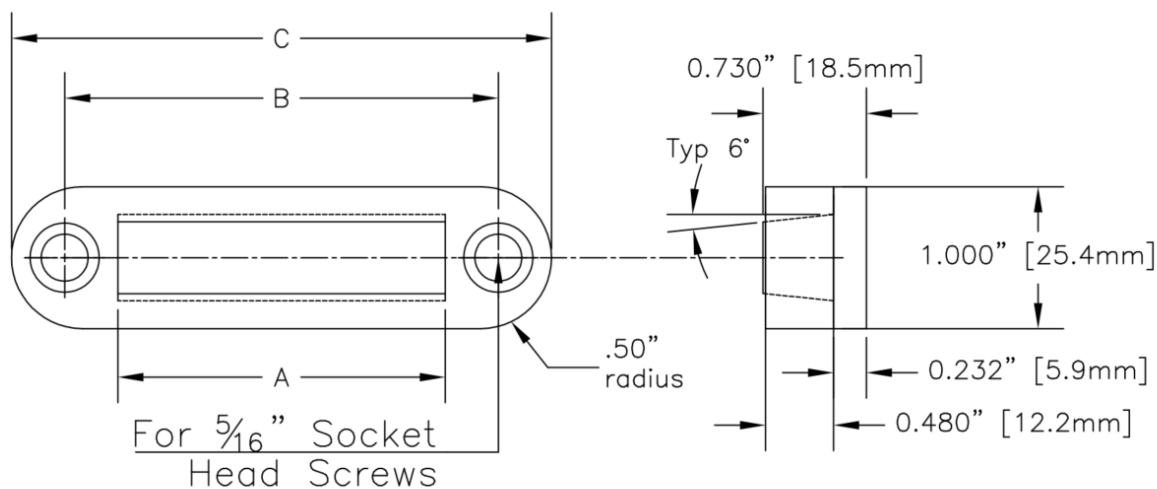
CMM250 Wedge type

- Character size 7/32" [5mm]
- Character style 2A
- Engraving Depth .025" [.6mm]
- W-1 Tool Steel
- Heat treated to 57-59 Rc
- Acc Coating for long life



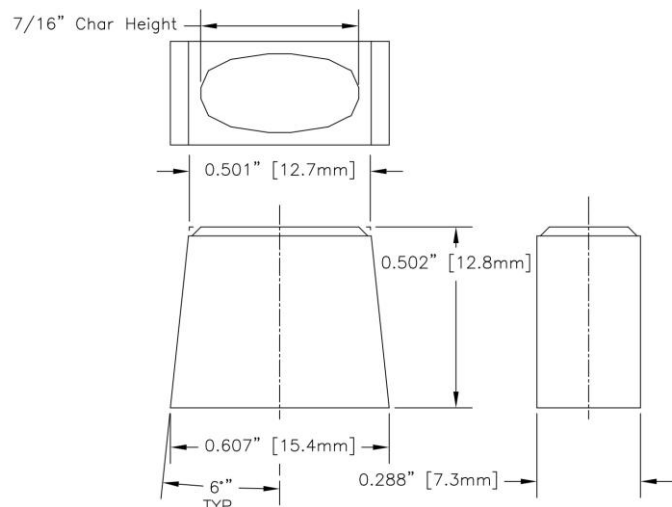
7/16" [11mm] Wedge Shaped Type and Retainers

Retainer	A	B	C	Type Style (holder capacity)
CMM301	1.44" [36.6mm]	2.00" [50.8mm]	2.94" [75.7mm]	CMM310 (5)
CMM306	1.73" [43.9mm]	2.25" [57.1mm]	3.25" [82.5mm]	CMM310 (6)
CMM308	2.31" [58.7mm]	3.06" [77.7mm]	3.81" [96.8mm]	CMM310 (8)



CMM310 Wedge type

- Character size 7/16" [11mm]
- Character style 2A
- Engraving Depth .025" [.6mm]
- W-1 Tool Steel
- Heat treated to 57-59 Rc
- Acc Coating for long life



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

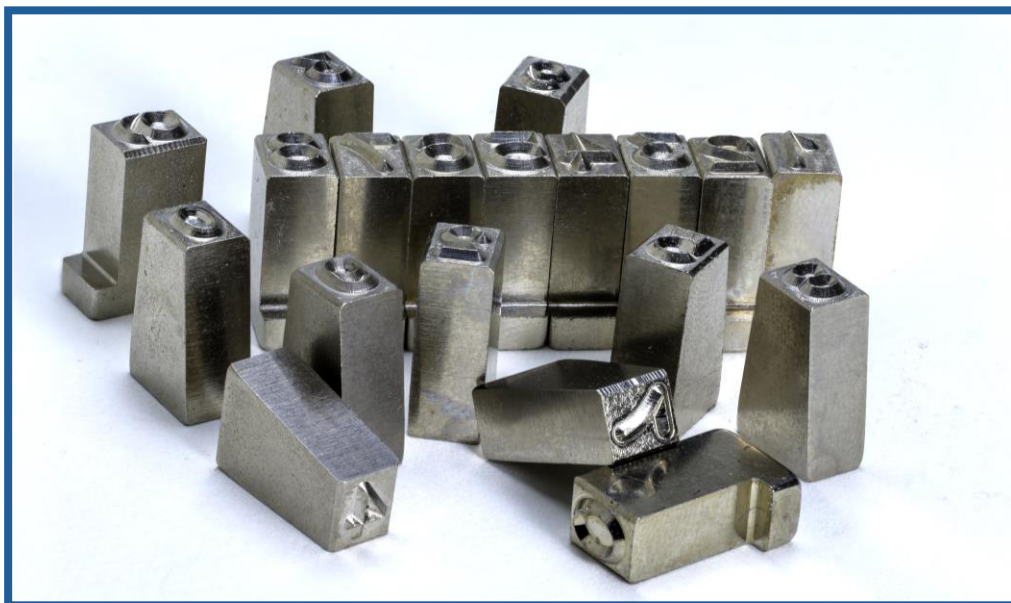
CMM	090	-A
Style	Char Size	Letter or Figure

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

CMM	180	-00
Style	Char Size	Blank Spacer

To order **PUNCTUATION*** add suffix from [Table](#) to part number.

CMM	090	-RR
Style	Char Size	Asterisk Suffix



Standard Font

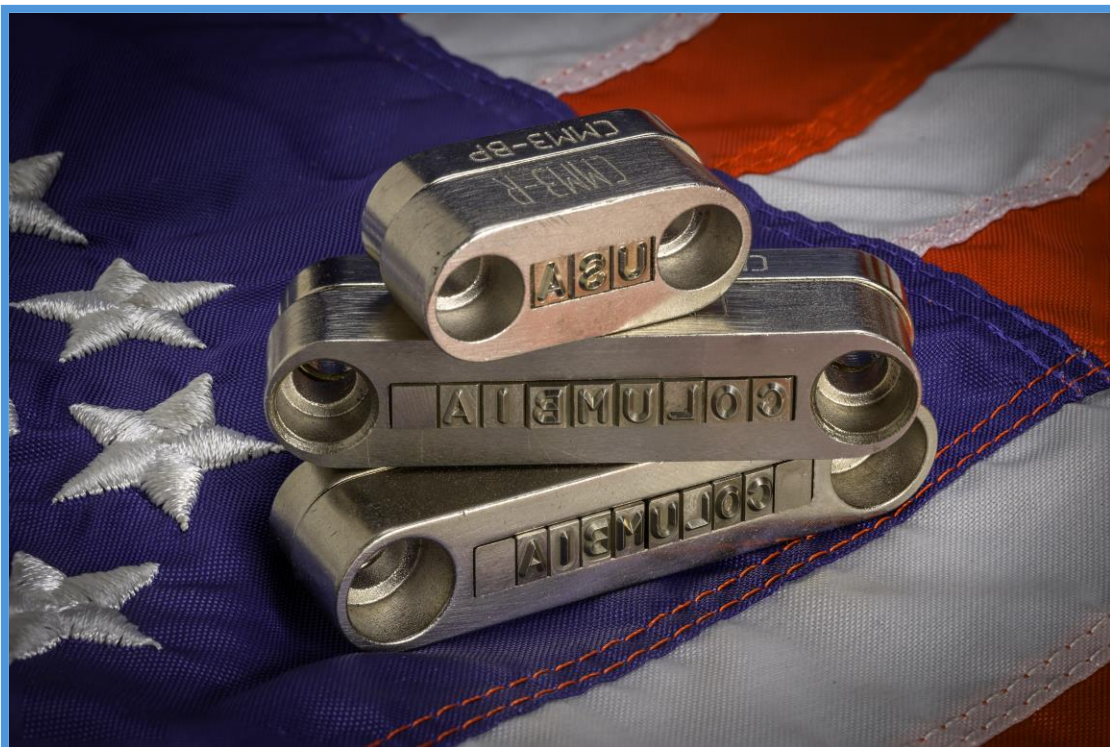
Columbia Marking Tools uses a font called “Gothic”. This sans serif font is plain and easy to read.

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.

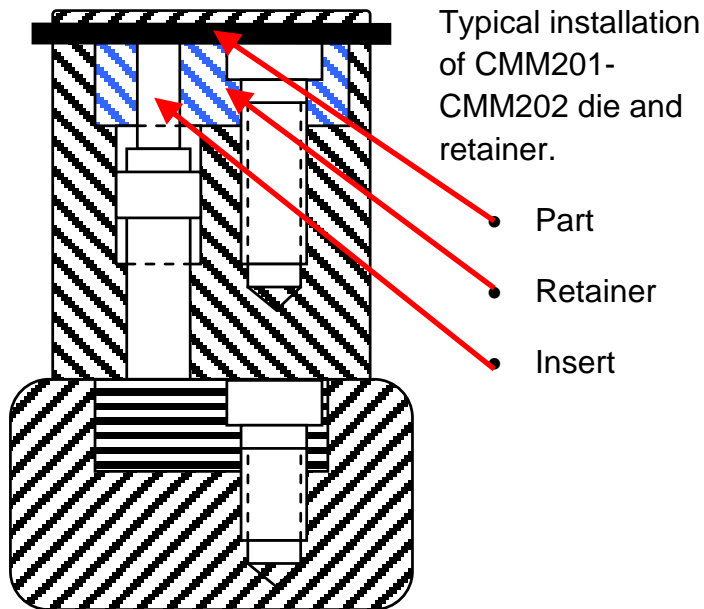
Even from year to year, the exact font changes slightly. The top part on figure 3, or the top flag on the figure one may be slightly more curved or a different size. CMT strongly recommends providing a picture or rubbing for the exact font recreation when required.



Bottoming Markers

Bottoming markers for a single character or I.D. can have a threaded design that can be screwed directly into a bored and tapped hole in the die platen, or they can be mounted in a retainer that is located in a machined pocket in the platen.

CMM201/CMM202

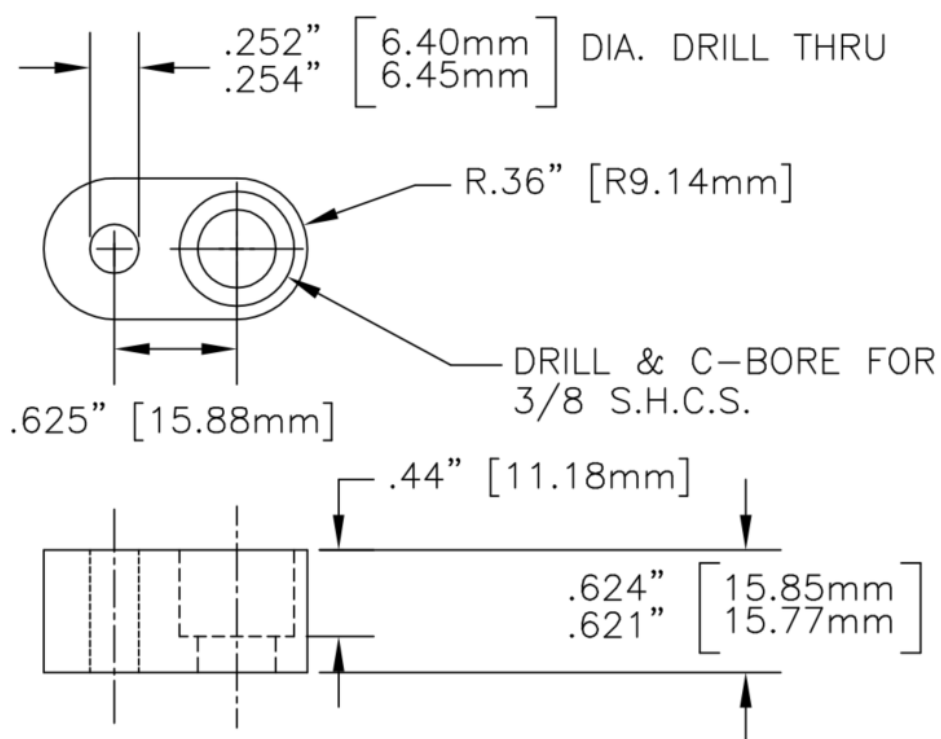




Retainer

Item# CMM201

Ford # DG!0201



Stamp

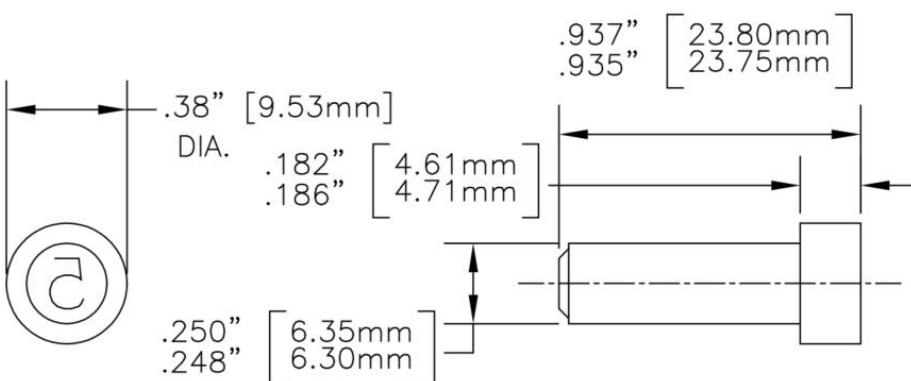
Item# CMM202

Ford# DG1-202

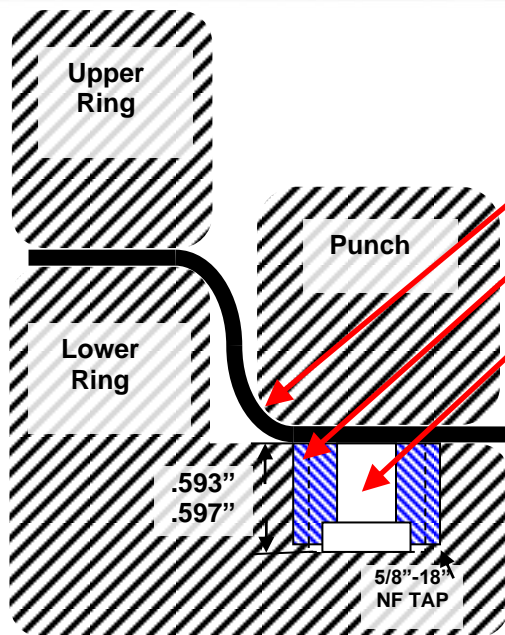
Character size 5/32"

Engraving depth .030"

Style 3A

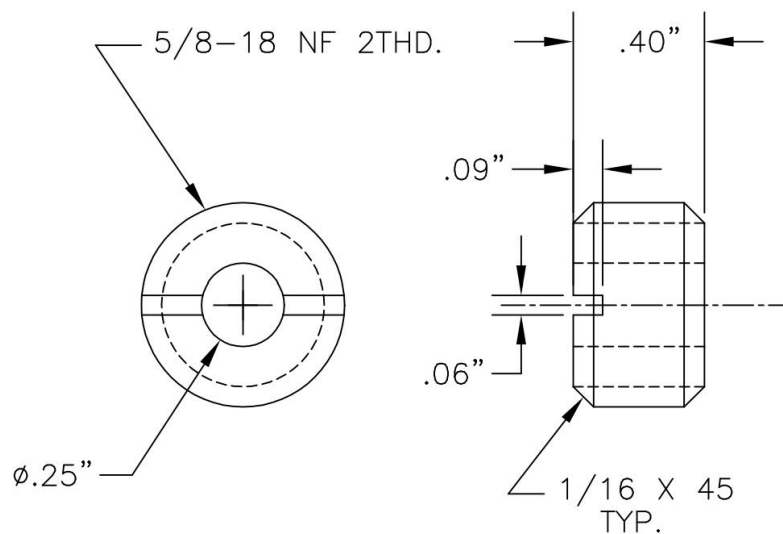


CMM104 - CMM105 Imperial



Typical installation of CMM104-CMM105 die and retainer. For use in stamping press.

- Part
- Retainer
- Insert

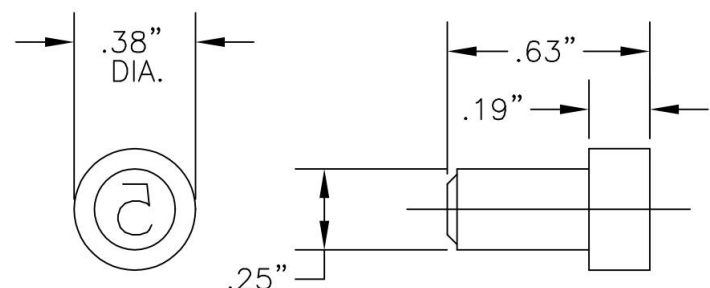


Retainer

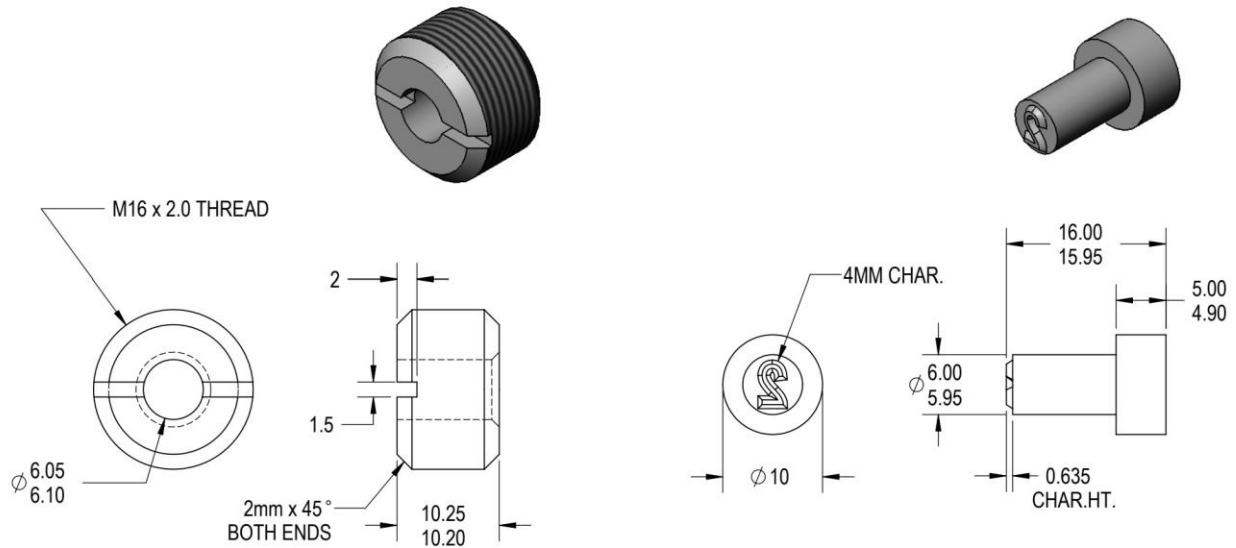
Item# CMM104
Ford# DG1-104
FCA# 21-912-0005

Stamp

Character size 5/32\"/>



CMM104MM – CMM105MM Metric



Retainer

Item# CMM104MM

Ford# WDX20-60-0603

Stamp

Character size 4mm

Style 3A

Item# CMM105MM

Ford #WDX20-60-605

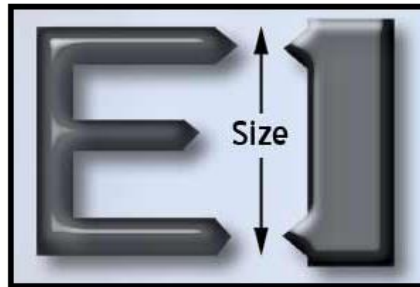


Note: CMT's proprietary manufacturing process provides extended stamp life and saves time in lowering maintenance costs.

Character Face Styles

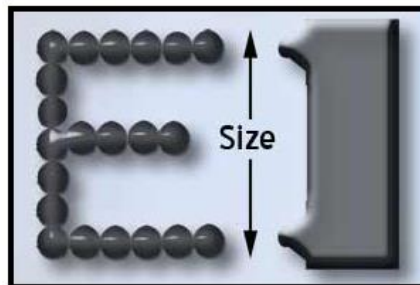
Standard Sharp Face

Standard CMM Stamps are engraved as sharp face characters. This type of face style is engraved with a sharp edge. A sharp face tool penetrates more easily than flat face style.



Custom Dot Style

Dot Style Characters are engraved with a series of conical dots for the lowest possible stress when marking. Recommended for high pressure fittings, aircraft, and other parts where sharp tools might disrupt the molecular structure of the metal.



To order individual Stamping letters and figures add DOT notation to part number as shown.

CMM	090	DOT	-A
Style	Char Size	Dot-Style Notation	Letter or Figure

How to Order Multi-character or Logo Dies

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

L	CMM	090	-FoMoCo
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Logo Die Style Char Size Stamp reads "FoMoCo". Width is A*6

L	CMM	180	-COMPANY
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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

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

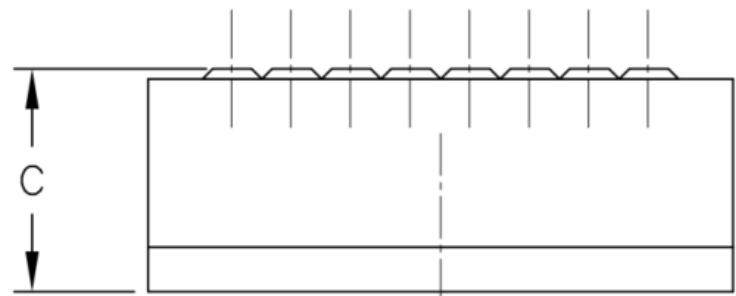
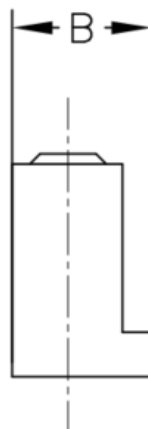
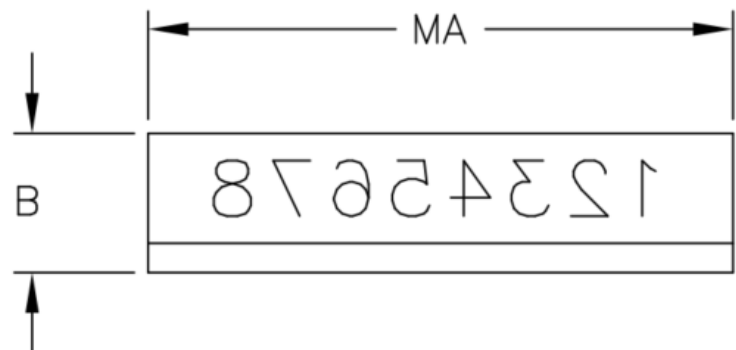
C = Length

Char Size – Measured from the top of the character.

Tolerance - $\pm .000"/- .001"$ 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- L Shaped

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	Retainer	Character Size	Number of characters
LCMM103C7	CMM101, CMM106	5/32" [4mm]	7
LCMM164C8	CMM101, CMM106	5/32" [4mm]	8
LCMM512C8	CMM101, CMM106	1/8" [3.2mm]	8
LCMM518C8	CMM101, CMM106	3/16" [4.7mm]	8
LCMM018C7	CMMRN18	1/8" [3.2mm]	7
LCMM164C10	CMM510	5/32" [4mm]	10
LCMM512C10	CMM510	1/8" [3.2mm]	10
LCMM518C10	CMM510	3/16" [4.7mm]	10
LCMM103C12	CMM412	5/32" [4mm]	12
LCMM125C18	CMM412	1/8" [3.2mm]	18
LCMM018C10	CMMRN18R1900	1/8" [3.2mm]	10
LCMM018C12	CMMRN18R7810	1/8" [3.2mm]	12

Custom Die to fill pocket - Wedge Shaped

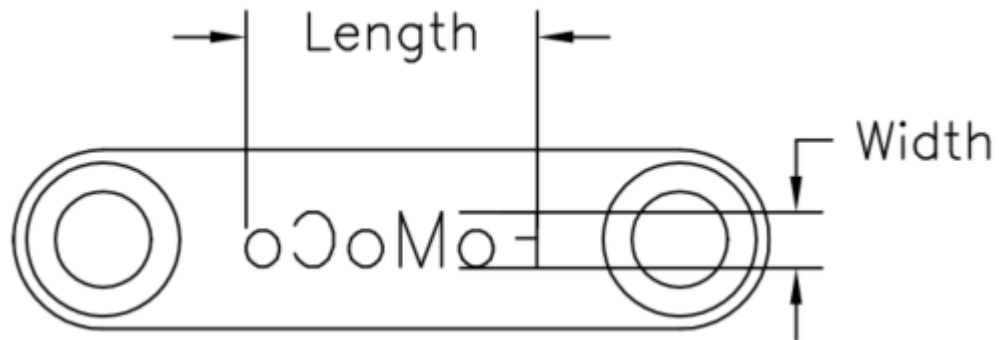
Specify alpha-numeric characters required when ordering. Spaces count as characters, and marking legends with less character than the blank will be centered unless otherwise specified.

Custom Die	Retainer	Character Size	Number of characters
LCMM180C3	CMM3	1/8" [3.2mm]	3
LCMM090C6	CMM3	3/32" [2.3mm]	6
LCMM180C5	CMM5	1/8" [3.2mm]	5
LCMM090C10	CMM5	3/32" [2.3mm]	10
LCMM180C7	CMM7	1/8" [3.2mm]	7
LCMM090C14	CMM7	3/32" [2.3mm]	14
LCMM180C9	CMM9	1/8" [3.2mm]	9
LCMM090C18	CMM9	3/32" [2.3mm]	18
LCMM310C5	CMM301	7/16" [11mm]	5
LCMM310C6	CMM306	7/16" [11mm]	6
LCMM310C8	CMM308	7/16" [11mm]	8
LCMM250C5	CMM50	7/32" [5mm]	5
LCMM250C9	CMM54	7/32" [5mm]	9

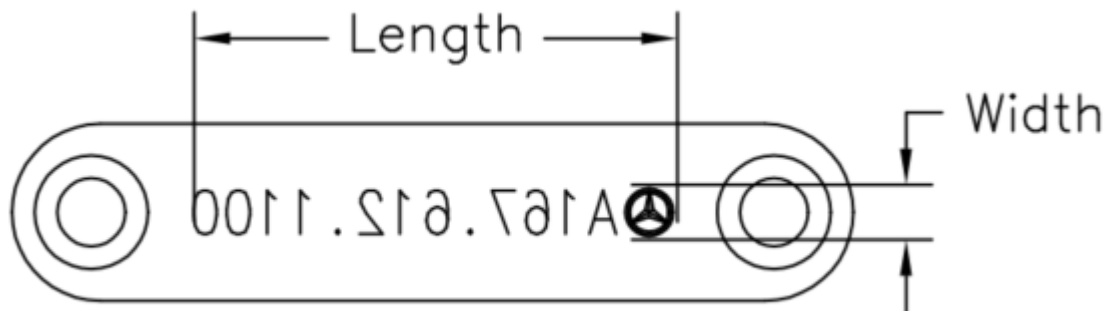
Custom Die Replacement for Retainer

Replace the complete retainer and backing plate with a custom die.

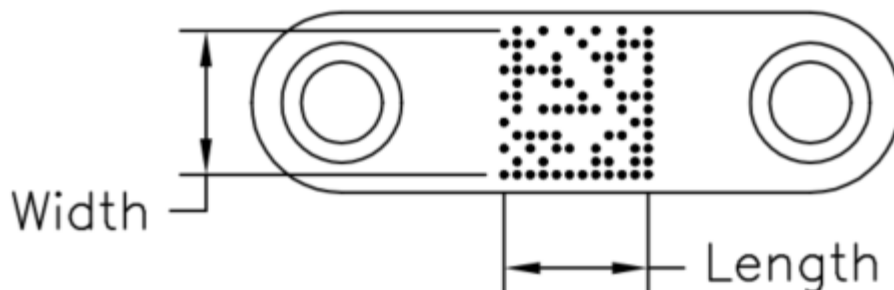
Example 1 – Logo. Line drawing of logo required and required size of the longest dimension.



Example 2 – Part number and Logo. Line drawing of logo required, and required size of the longest dimension, and size and reading of part number.



Example 3 – 2D Code. The fastest method to mark a 2D code. Provide the characters encrypted and the length and width required for the 2D code.



How to Order Chart for Retainer Logo Dies

Part number list for solid dies for standard retainer and backing plates.

Custom Die	Retainer	Engraving Area
CMM101LOGO	CMM101	1.31" [33.3mm] x .47" [12mm]
CMM106LOGO	CMM106	1.31." [33.3mm] x .47" [12mm]
CMMRN18LOGO	CMMRN18	1.31." [33.3mm] x .47" [12mm]
CMM510LOGO	CMM510	1.31." [33.3mm] x .47" [12mm]
CMM412LOGO	CMM412	1.31." [33.3mm] x .47" [12mm]
CMMRN18R1900LOGO	CMMRN18R1900	40mm x 12mm
CMMRN18R7810LOGO	CMMRN18R7810	48mm x 12mm
CMM520LOGO	CMM520	1.65" [41.9mm] x 1" [25.4mm]
CMM412LOGO	CMM412	.1.31" [33.3mm] x 1" [25.4mm]
CMM3LOGO	CMM3	.562" [14.2mm] x .47" [12mm]
CMM5LOGO	CMM5	.936" [23.8mm] x .47" [12mm]
CMM7LOGO	CMM7	1.310" [33.3mm] x .47" [12mm]
CMM9LOGO	CMM9	1.683" [42.7mm] x .47" [12mm]
CMM301LOGO	CMM301	1.44" [36.6mm] x .47" [12mm]
CMM306LOGO	CMM306	1.73" [43.9mm] x .47" [12mm]
CMM308LOGO	CMM308	2.31" [58.7mm] x .47" [12mm]
CMM50LOGO	CMM50	1.25" [14.2mm] x .47" [12mm]
CMM54LOGO	CMM54	.2.265 [23.8mm] x .47" [12mm]

Custom Stamping Dies

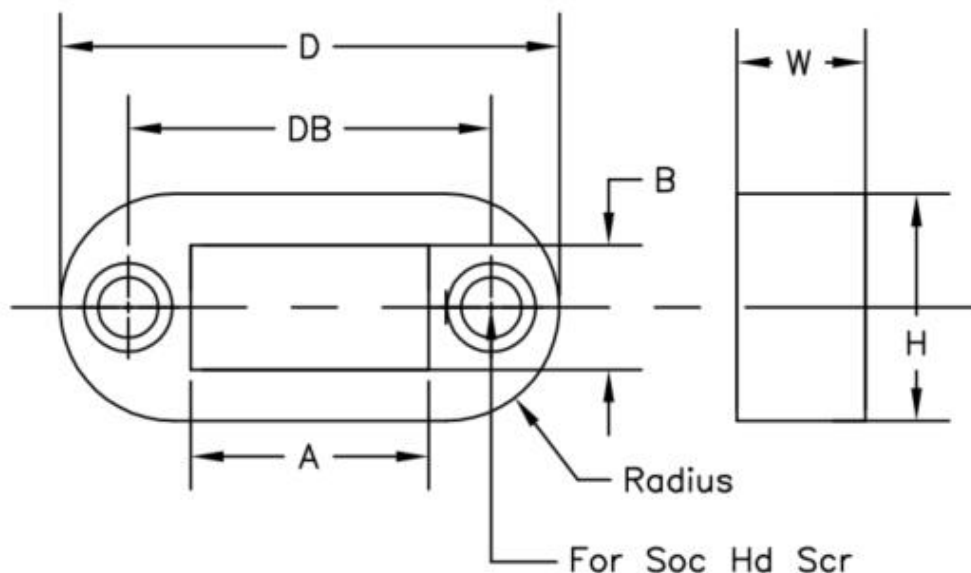
Columbia Marking Tools can design and manufacture custom stamping dies. CMT can provide a quotation to any customer custom print. The print or the request may be sent to quotes@columbiamt.com.

Customizations:

- Dimensions: This is the most common customization. W – Width, H – Height, and D – Length, DB – Length between centerline of mounting holes. Radius for ease of installation
- Marking area A x B
- Through holes for use with specified Socket head screw
- Font - Classic styles and replication of characters. Also, marking in reverse or mirror for mold marking or the back of thin material.
- Material
- Engraving Angle
- Engraving Depth



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



Custom Stamping Retainers

Columbia Marking Tools can design and manufacture custom retainers. The retainer may have engraving incorporated into the design.

Customizations:

- Dimensions: This is the most common customization. W – Width of retainer and backing plate, WB – Width of backing plate, WR- Width of retainer, H – Height, and D – Length. DB – Length between centerline of mounting holes. Radius for ease of installation
- Pockets for use for specified amount of wedge or L shaped type
- Through holes for use with specified Socket head screw
- Font - Classic styles and replication of characters. Also, marking in reverse or mirror for mold marking or the back of thin material.
- Material
- Engraving Angle
- Engraving Depth

