

CM Round Inserts

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](#)



CM- Round Inserts

The CM – round inserts are used for indentation marking and are held in the stamp recess/holder with spring clip or set screw. Round inserts are frequently used to provide station ID and part tracking QC marks. Round inserts always center the mark in the tool holder.

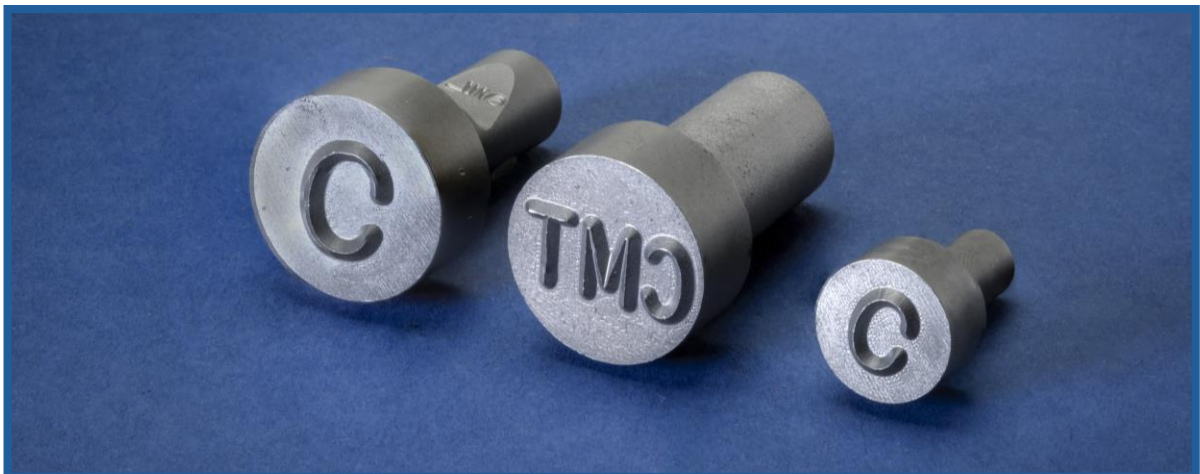
Technical Specifications:

- 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



Large Head Inserts

CMT has a complete line of large head inserts for each of our standard sizes: 1/4", 3/8", and 1/2". These large head inserts allow for larger marking legends to be marked with the standard air impact markers. Care must be taken to assure that the marker has the force required for the respective indentation marking application.



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.

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

CM7X	09	-A
Style	Char Size	Letter or Figure

To order **BLANK SPACERS** add suffix of "-00" to part number. May be used as anvil, wider options available.

CM8X	13	-00
Style	Char Size	Blank Spacer

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

CM9X	25	-RR
Style	Char Size	Asterisk Suffix

2 Digit Character Size

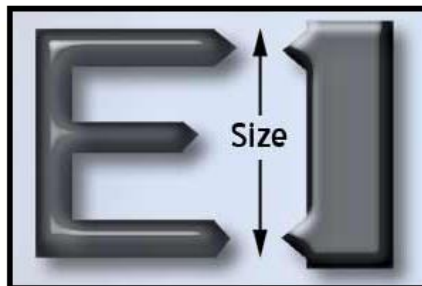
- 1/32" – 03
- 1/16" – 06
- 3/32" – 09
- 1/8" – 13
- 5/32" – 16
- 3/16" – 19
- 1/4" – 25
- 5/16" – 31
- 3/8" – 38
- 1/2" – 50



Character Face Styles

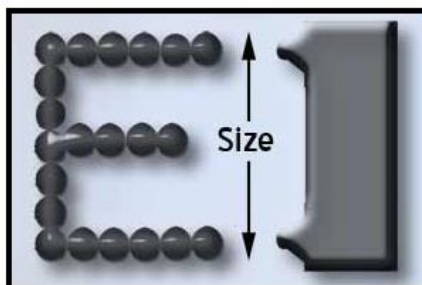
Standard Sharp Face

Standard CM Round Inserts 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 **DOT STYLE** letters and figures add DOT notation to part number as shown.

CM7X	09	DOT	-A
Style	Char Size	Dot-Style Notation	Letter or Figure

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

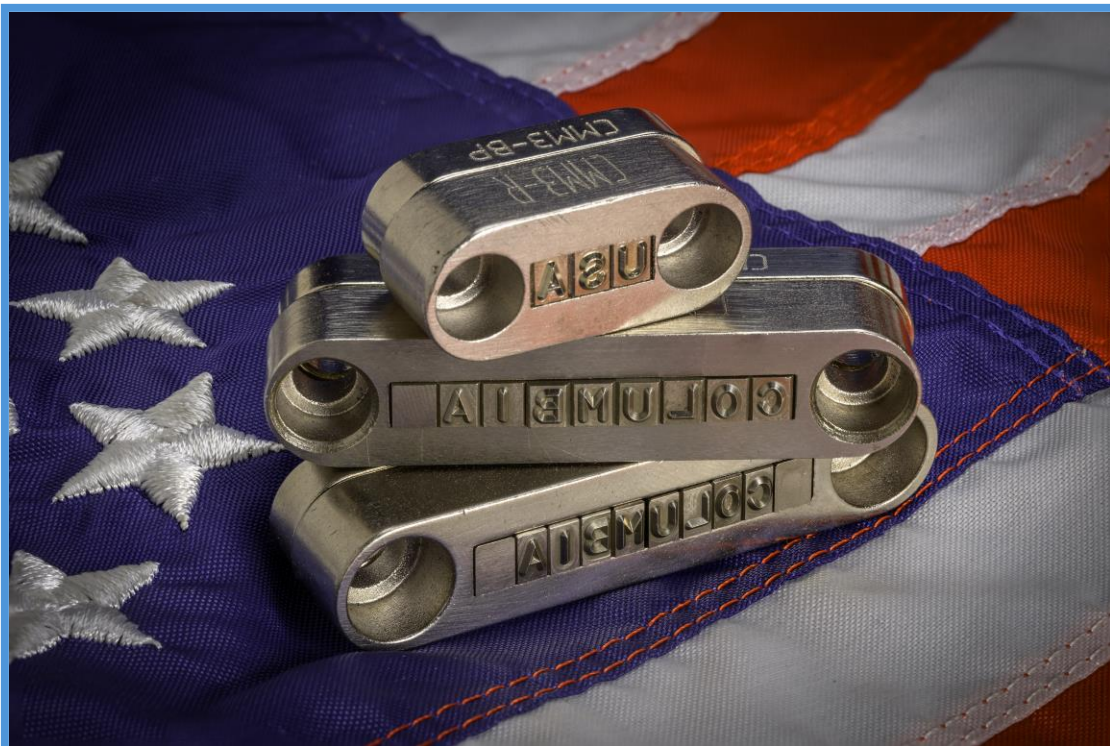
N O P Q R S T U V W X Y Z

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 CM8X25 1/4" insert with an Ampersand - the following code would be used:

CM8X25AA

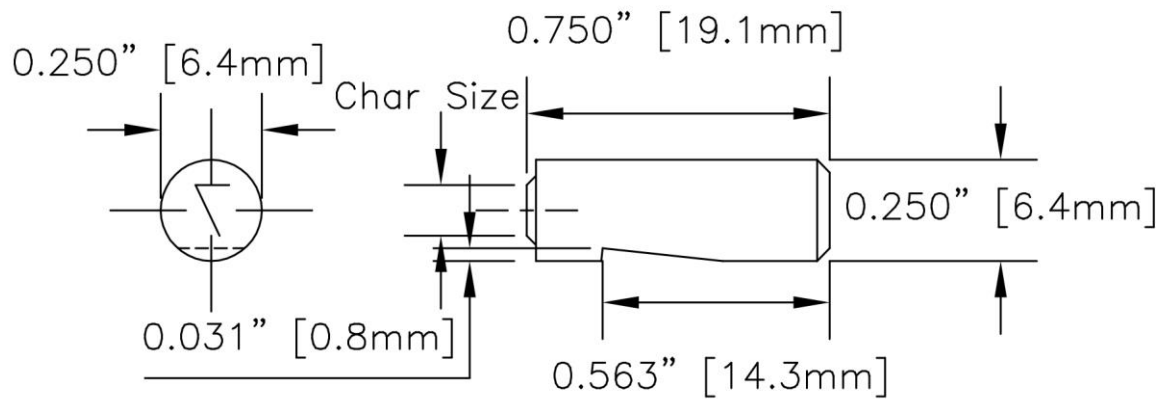
To order punctuation on a die or stamps use the appropriate code from the following list.



- 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 <
> ^ ~ []

CM7X - 1/4" Round Inserts



Char Size – Measured from the top of the character.

Char Width – All sizes are 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.



CM7X How to Order

Char. Size	Catalog Number	Engraving Depth
1/16" 1.6mm	CM7X06	.018" .5mm
3/32" 2.4mm	CM7X09	.020" .5mm
1/8" 3.2mm	CM7X13	.023" .6mm
5/32" 4mm	CM7X16	.025" .6mm
3/16" 4.8mm	CM7X19	.025" .6mm



The CM7X inserts are used in the CMT air impact marker Model 78 "OB" rod retained with a set screw.

CM7X – 1/4" Round Multi-character Inserts

To order **MULTI-CHARACTER INSERTS** add character size designation, and suffix of **ACTUAL LEGEND** to catalog number.

CM7X	13	-OK
-------------	-----------	------------

Style Char
Size

Stamp reads "OK"

CM7X	06	-PASS
-------------	-----------	--------------

Style Char
Size

Stamp reads "PASS"

CM7X How to Order

Char. Size	Catalog Number	Engraving Depth	Maximum Characters
1/16" 1.6mm	CM7X06	.018" .5mm	4*
3/32" 2.4mm	CM7X09	.020" .5mm	2*
1/8" 3.2mm	CM7X13	.023" .6mm	2*
5/32" 4mm	CM7X16	.025" .6mm	1*
3/16" 4.8mm	CM7X19	.025" .6mm	1**

*Style 3A

**Style 2A

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

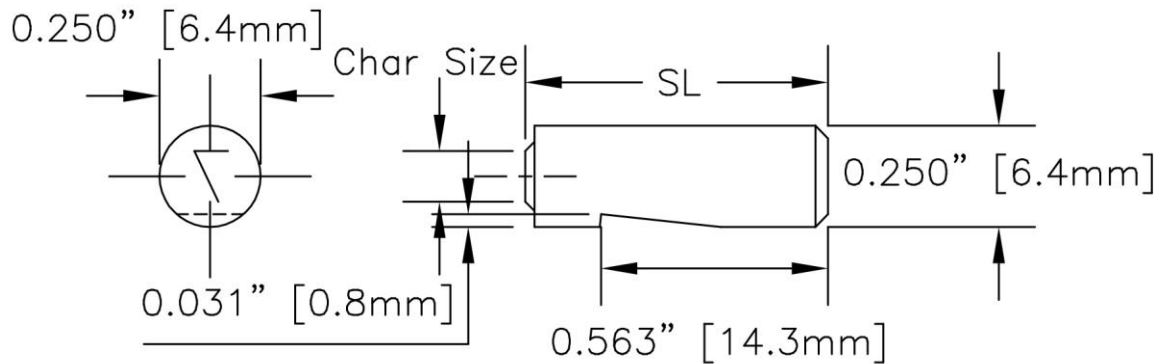
Benefits of multi-character dies

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



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

CM7X-SL – 1/4" Round Special Length Stamps



CM7X-SL How to Order

Char. Size	Catalog Number	SL	Engraving Depth
1/16" 1.6mm	CM7X06	1/2" To 2.50" 12.7mm To 63.5mm	.018" .5mm
3/32" 2.4mm	CM7X09		.020" .5mm
1/8" 3.2mm	CM7X13		.023" .6mm
5/32" 4mm	CM7X16		.025" .6mm
3/16" 4.8mm	CM7X19		.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 – All sizes are Style 3A, width is 60% of the character size. Except 3/16" character size style 2A, width 50% of the character size.

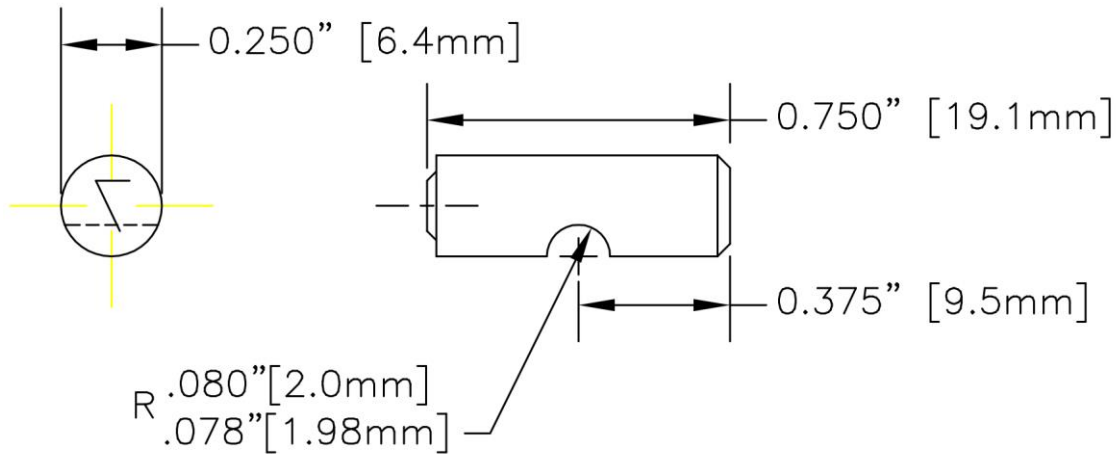
Tolerance - +.000"/-.001" on all

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

CM7X	13	SL100	-A
-------------	-----------	--------------	-----------

Style Char Size SL###, replace ### with the length required. Letter or Figure

CM7G – 1/4" Groove Round Inserts



Char Size – Measured from the top of the character.

Char Width – All sizes are 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.

CM7G How to Order

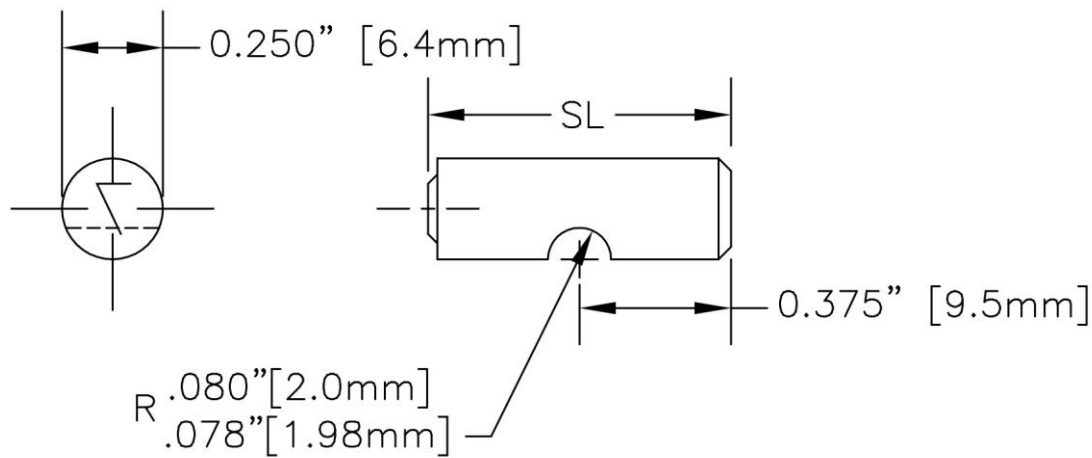
Char. Size	Catalog Number	Engraving Depth
1/16" 1.6mm	CM7G06	.018" .5mm
3/32" 2.4mm	CM7G09	.020" .5mm
1/8" 3.2mm	CM7G13	.023" .6mm
5/32" 4mm	CM7G16	.025" .6mm
3/16" 4.8mm	CM7G19	.025" .6mm



The CM7G inserts are used in the CMT air impact marker Model 78 "GB" rod retained with a pin and o-ring. This is a great

solution for applications with significant vibrations.

CM7G-SL – 1/4" Round Special Length Stamps



CM7G-SL How to Order

Char. Size	Catalog Number	SL	Engraving Depth
1/16" 1.6mm	CM7G06	1/2" To 2.50" 12.7mm To 63.5mm	.018" .5mm
3/32" 2.4mm	CM7G09		.020" .5mm
1/8" 3.2mm	CM7G13		.023" .6mm
5/32" 4mm	CM7G16		.025" .6mm
3/16" 4.8mm	CM7G19		.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 – All sizes are 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

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

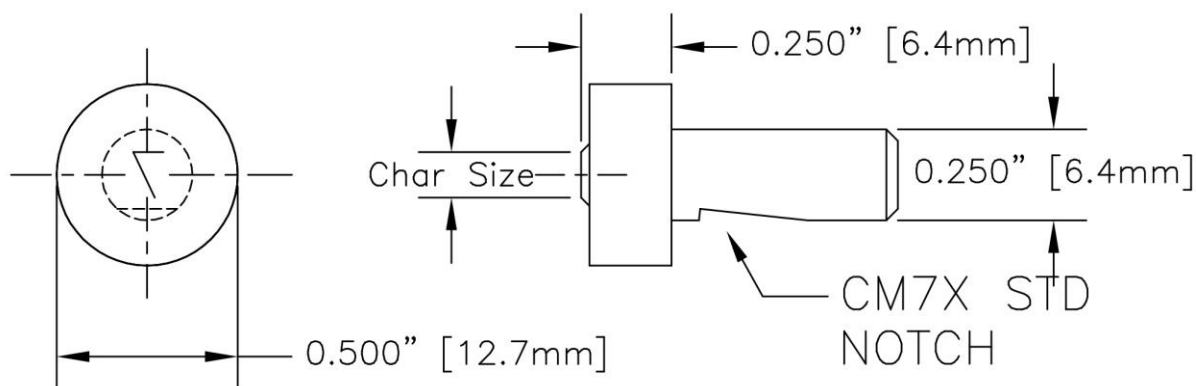
CM7G	13	SL100	-A
Style	Char Size	SL###, replace ### with the length required.	Letter or Figure

CM7Y – 1/4" Round Insert Large Head

- The CM7Y inserts are for use in the rod style "Y".
- The model 78 has limited force and it is best to review the parameters for marking before purchasing a Custom CM7Y insert.
- The CM7Y is a great insert for Tier style marking of small characters. Example: 1 above 2 in 1/16" characters

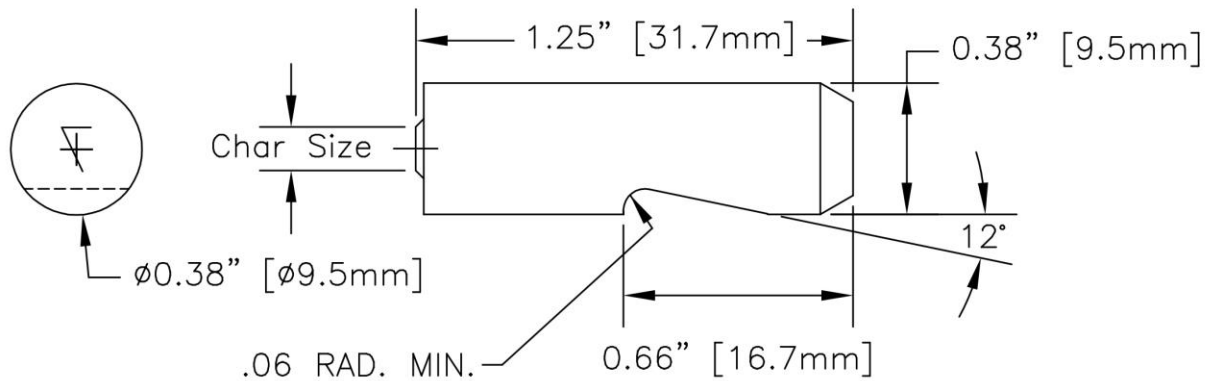
CM7Y How to Order

CM7Y Round Insert		
Catalog No	Char Size	# of Char
CM7Y06C#-	1/16"	Up to (7)
CM7Y09C#-	3/32"	Up to (4)
CM7Y13C#-	1/8"	Up to (3)
CM7Y16C#-	5/32"	Up to (2)
CM7Y19C#-	3/16"	Up to (2)
CM7Y25C#-	1/4"	Up to (2)
CM7YLOGO	Custom Logo <7/16"	
CM7YCUST	Custom character layout to fit 7/16" circle	
CM7YANVIL	Blank hammer end, for use as anvil	



- The CM7Y can be purchased as an "Anvil". The blunt force can be used for non-marking assembly operations, or to provide the force needed to mark characters sitting on the reverse side of the part from the marker.

CM8X – 3/8" Round Inserts



Char Size – Measured from the top of the character.

Char Width – Style 3A, width is 60% of the character size.

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

CM8X How to Order

Char. Size	Catalog Number	Engraving Depth
1/16" 1.6mm	CM8X06	.018" .5mm
3/32" 2.4mm	CM8X09	.020" .5mm
1/8" 3.2mm	CM8X13	.023" .6mm
5/32" 4mm	CM8X16	.025" .6mm
3/16" 4.8mm	CM8X19	.025" .6mm
1/4" 6.3mm	CM8X25	.030" .8mm



The CM8X inserts are used in the CMT air



impact marker Model 88 and 288 "OB" rod retained with a set screw. They are also used in the #8 Inspectors hammer.

CM8X - 3/8" Round Multi-character Inserts

To order **MULTI-CHARACTER INSERTS** add character size designation, and suffix of **ACTUAL LEGEND** to catalog number.

CM8X	13	-OK
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Style Char Size Stamp reads "OK"

CM8X	06	-PASS
-------------	-----------	--------------

Style Char Size Stamp reads "PASS"

CM8X-Multi-Characters How to Order

Char. Size	Catalog Number	Engraving Depth	Maximum Characters	Style
1/16" 1.6mm	CM8X06	.018" .5mm	4	3A
3/32" 2.4mm	CM8X09	.020" .5mm	4	3A
1/8" 3.2mm	CM8X13	.023" .6mm	3	3A
5/32" 4mm	CM8X16	.025" .6mm	2	2A
3/16" 4.8mm	CM8X19	.025" .6mm	2	2A
1/4" 6.3mm	CM8X25	.030" .8mm	2	1A

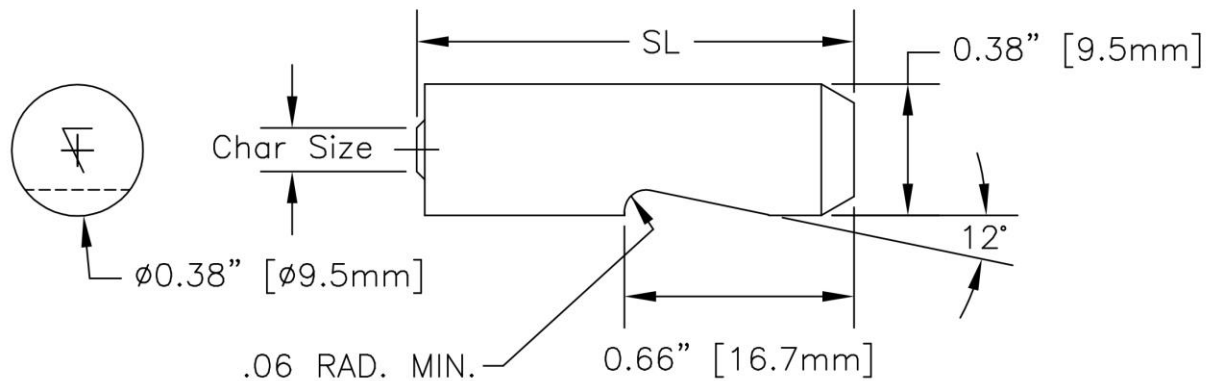
Dimensions for multi-character inserts are **EXACTLY** the same as the individual characters.

As more characters are put on the die, the **STYLE** of the character must be condensed.

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



CM8X-SL – 3/8" Round Special Length Inserts



CM8X-SL How to Order

Char. Size	Catalog Number	SL	Engraving Depth
1/16" 1.6mm	CM8X06	1/2" To 2.50" 12.7mm To 63.5mm	.018" .5mm
3/32" 2.4mm	CM8X09		.020" .5mm
1/8" 3.2mm	CM8X13		.023" .6mm
5/32" 4mm	CM8X16		.025" .6mm
3/16" 4.8mm	CM8X19		.025" .6mm
1/4" 6.3mm	CM8X25		.030" .8mm

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.

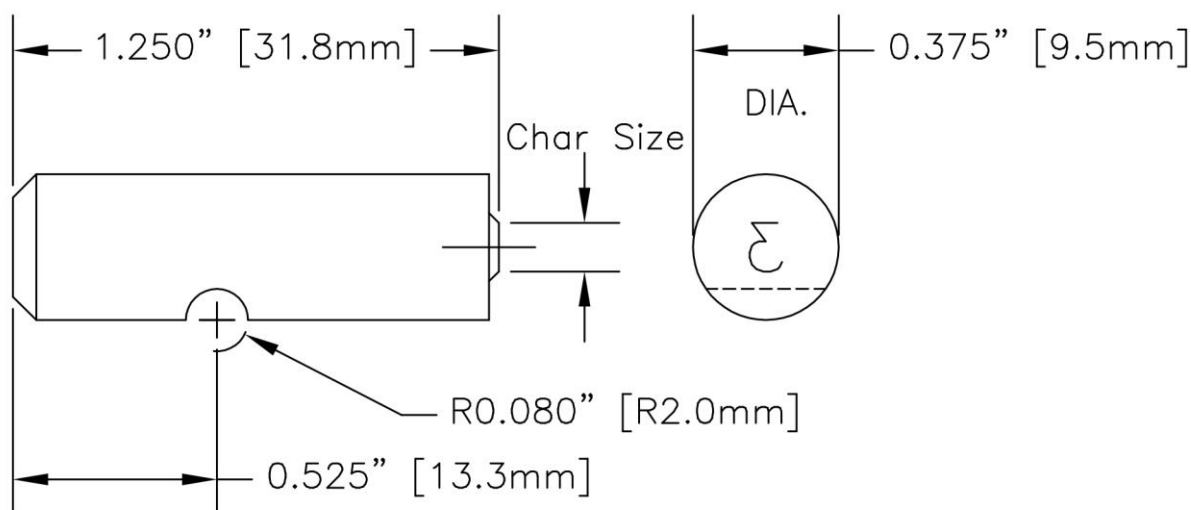
Char Width – Style 3A, width is 60% of the character size.

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

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

CM8X	13	SL100	-A
Style	Char Size	SL###, replace ### with the length required.	Letter or Figure

CM8G – 3/8" Groove Round Inserts



Char Size – Measured from the top of the character.

Char Width – Style 3A, width is 60% of the character size.

Tolerance - $\pm .000$ / $- .001$ on all dimensions.

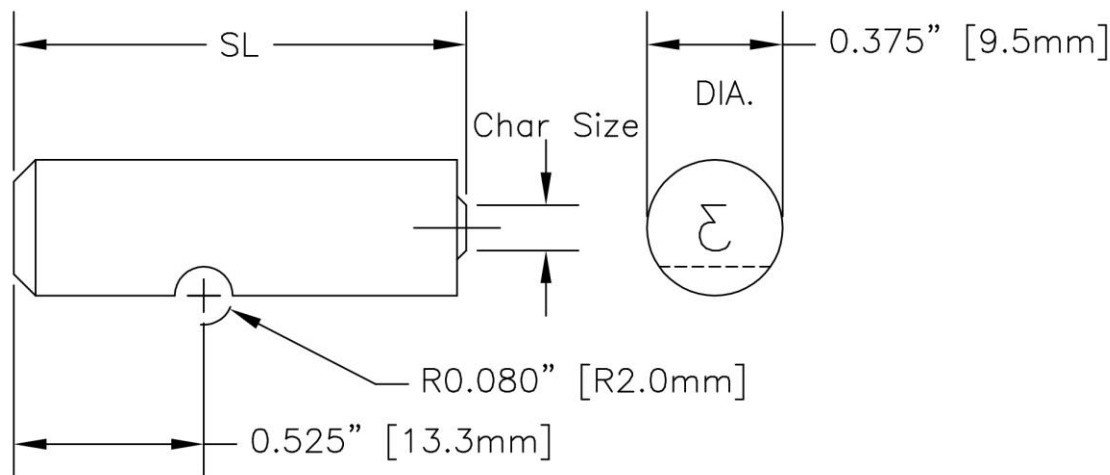
CM8G How to Order

Char. Size	Catalog Number	Engraving Depth
1/16" 1.6mm	CM8G06	.018" .5mm
3/32" 2.4mm	CM8G09	.020" .5mm
1/8" 3.2mm	CM8G13	.023" .6mm
5/32" 4mm	CM8G16	.025" .6mm
3/16" 4.8mm	CM8G19	.025" .6mm
1/4" 6.3mm	CM8X25	.030" .8mm

The CM8G inserts are used in the CMT air impact marker Model 88/288 "GB" rod retained with a pin and o-ring.



CM8G-SL – 3/8" Round Special Length Inserts



CM8G-SL How to Order

Char. Size	Catalog Number	SL	Engraving Depth
1/16" 1.6mm	CM8G06	1/2" To 2.50"	.018" .5mm
3/32" 2.4mm	CM8G09		.020" .5mm
1/8" 3.2mm	CM8G13		.023" .6mm
5/32" 4mm	CM8G16	12.7mm To 63.5mm	.025" .6mm
3/16" 4.8mm	CM8G19		.025" .6mm
1/4" 6.3mm	CM8G25		.030" .8mm

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"

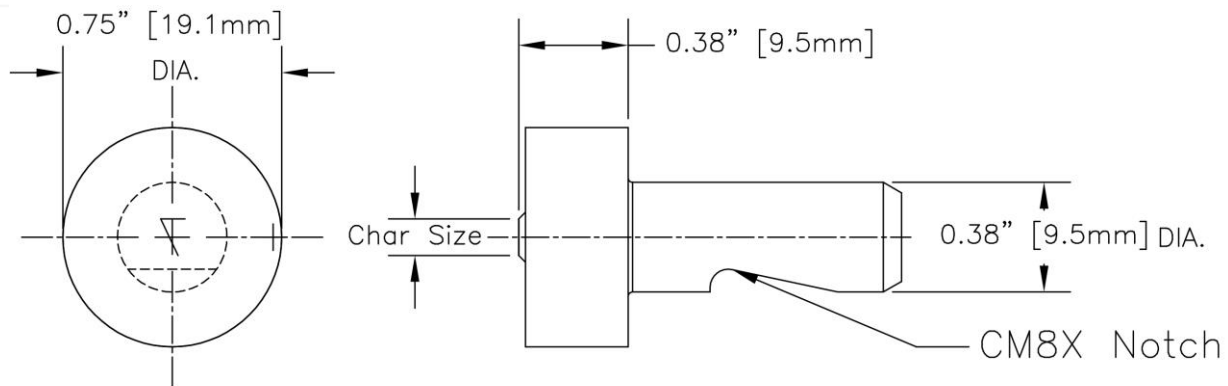
Char Size – Measured from the top of the character.

Char Width – Style 3A, width is 60% 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.	CM8G	13		SL100	-A
	Style	Char Size		SL###, replace ### with the length required.	Letter or Figure

CM8Y – 3/8" Round Insert Large Head



- The CM8Y inserts are for use in the rod style "Y".
- The model 88/288 has limited force and it is best to review the parameters for marking before purchasing a Custom CM8Y insert.
- The CM8Y is a great insert for Tier style marking of small characters. Example: 11 above 22 in 1/16" characters

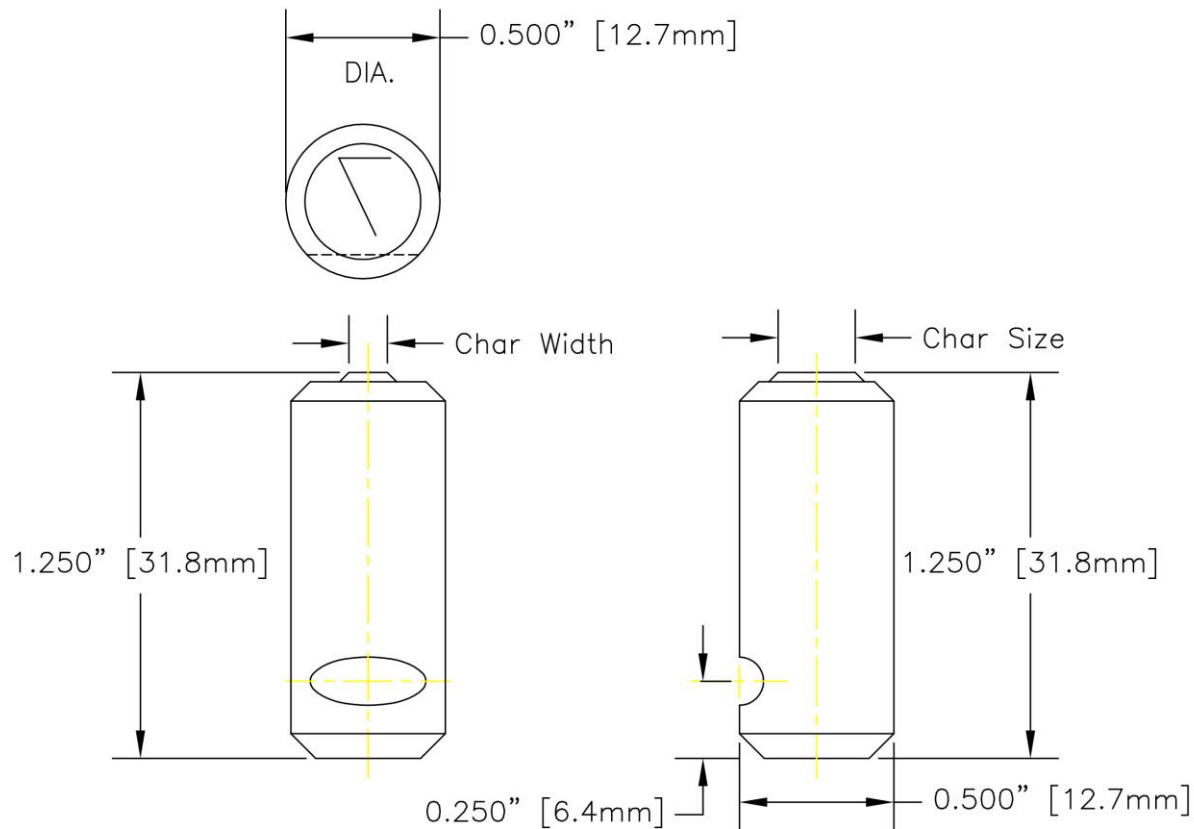
CM8Y How to Order

CM8Y Round Insert		
Catalog No	Char Size	# of Char
CM8Y06C#-	1/16"	Up to (10)
CM8Y09C#-	3/32"	Up to (7)
CM8Y13C#-	1/8"	Up to (5)
CM8Y16C#-	5/32"	Up to (4)
CM8Y19C#-	3/16"	Up to (3)
CM8Y25C#-	1/4"	Up to (2)
CM8YLOGO	Custom Logo <5/8"	
CM78YCUST	Custom character layout to fit 5/8" circle	
CM8YANVIL	Blank hammer end, for use as anvil	



- The CM8Y can be purchased as an "Anvil". The blunt force can be used for non-marking assembly operations, or to provide the force needed to mark characters sitting on the reverse side of the part from the marker.

CM9X – 1/2" Round Inserts



CM9X How to Order

Char. Size	Catalog Number	Engraving Depth
3/32" 2.4mm	CM9X09	.020" .5mm
1/8" 3.2mm	CM9X13	.023" .6mm
5/32" 4mm	CM9X16	.025" .6mm
3/16" 4.8mm	CM9X19	.025" .6mm
1/4" 6.3mm	CM9X25	.030" .8mm
3/8" 9.8mm	CM9X38	.035" .9mm

Char Size – Measured from the top of the character.

Char Width – Style 3A, width is 60% of the character size.

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



CM9X – 1/2” Round Multi-character Inserts

To order **MULTI-CHARACTER INSERTS** add character size designation, and suffix of **ACTUAL LEGEND** to catalog number.

CM9X	06	-COMPANY
-------------	-----------	-----------------

Style Char
Size

Stamp reads “COMPANY”

CM9X	09	-PASS
-------------	-----------	--------------

Style Char
Size

Stamp reads “PASS”

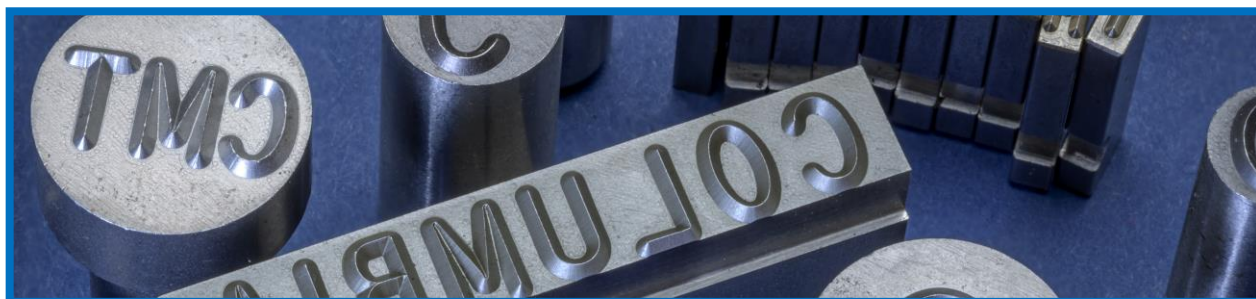
CM9X-Multi-Characters How to Order

Char. Size	Catalog Number	Engraving Depth	Maximum Characters	Style
1/16” 1.6mm	CM9X06	.018” .5mm	7	3A
3/32” 2.4mm	CM9X09	.020” .5mm	4	3A
1/8” 3.2mm	CM9X13	.023” .6mm	3	3A
5/32” 4mm	CM9X16	.025” .6mm	2	2A
3/16” 4.8mm	CM9X19	.025” .6mm	2	2A

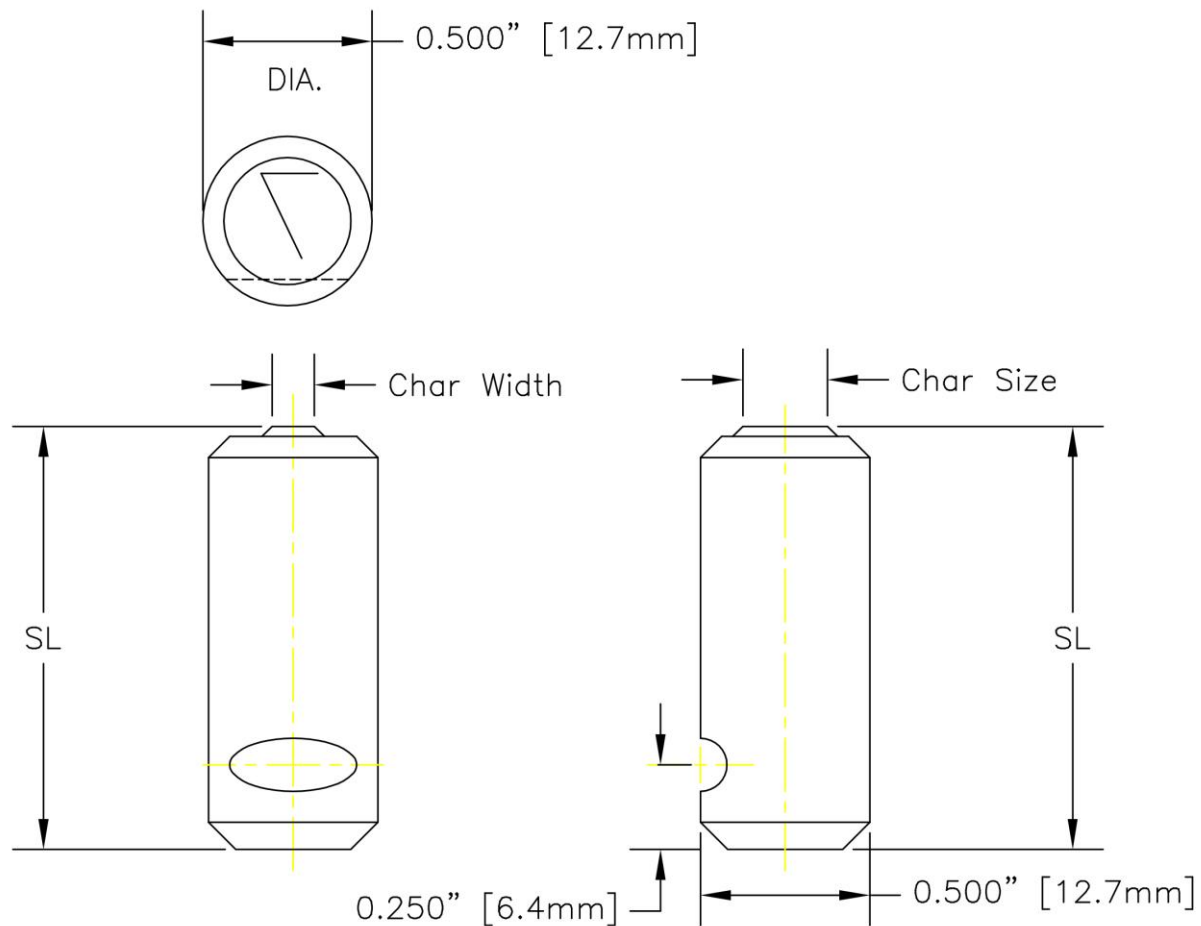
Dimensions for multi-character inserts are **EXACTLY** the same as the individual characters.

As more characters are put on the die, the **STYLE** of the character must be condensed.

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



CM9X-SL – 1/2" Round Special Length Inserts



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 - $\pm .000"/- .001"$ on all



CM9X-SL How to Order

Char. Size	Catalog Number	SL	Engraving Depth
3/32" 2.4mm	CM9X09	1/2" To 2.50"	.020" .5mm
1/8" 3.2mm	CM9X13		.023" .6mm
5/32" 4mm	CM9X16		.025" .6mm
3/16" 4.8mm	CM9X19		.025" .6mm
1/4" 6.3mm	CM9X25		.030" .8mm
3/8" 9.8mm	CM9X	12.7mm To 63.5mm	.035" .9mm

Special length round inserts used in combination with extended rods can provide the maximum reach.

Applications include:

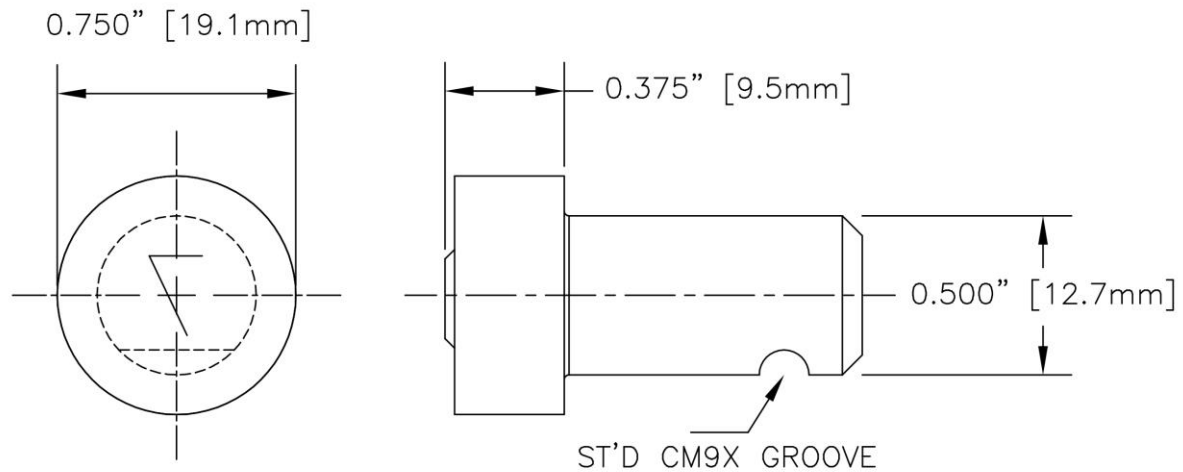
- Mark inside recess
- Mark next to part relief
- Extend approach stroke tight opening to marking area

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

CM9X	13	SL100	-A
Style	Char Size	SL###, replace ### with the length required.	Letter or Figure required.



CM9Y – 1/2 Round Insert Large Head



- The CM9Y inserts are for use in the rod style "Y".
- The model 98/298 has limited force and it is best to review the parameters for marking before purchasing a Custom CM9Y insert.
- The CM9Y is a great insert for Tier style marking of small characters. Example: 11 above 22 in 1/16" characters



CM9Y Round Insert		
Catalog No	Char Size	# of Char
CM9Y06C#-	1/16"	Up to (10)
CM9Y09C#-	3/32"	Up to (7)
CM9Y13C#-	1/8"	Up to (5)
CM9Y16C#-	5/32"	Up to (4)
CM9Y19C#-	3/16"	Up to (3)
C9Y25C#-	1/4"	Up to (2)
CM9YLOGO	Custom Logo <5/8"	
CM9YCUST	Custom character layout to fit 5/8" circle	
CM9YANVIL	Blank hammer end, for use as anvil	

- The CM9Y can be purchased as an "Anvil". The blunt force can be used for non-marking assembly operations, or to provide the force needed to mark characters sitting on the reverse side of the part from the marker.

Custom Round Inserts

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:

- Character Size
- D – Diameter
- L – Length
- Dimensions of Groove
- Dimensions of Step
- Tapped hole
- Font
- Material
- Engraving Angle
- Engraving Depth

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

