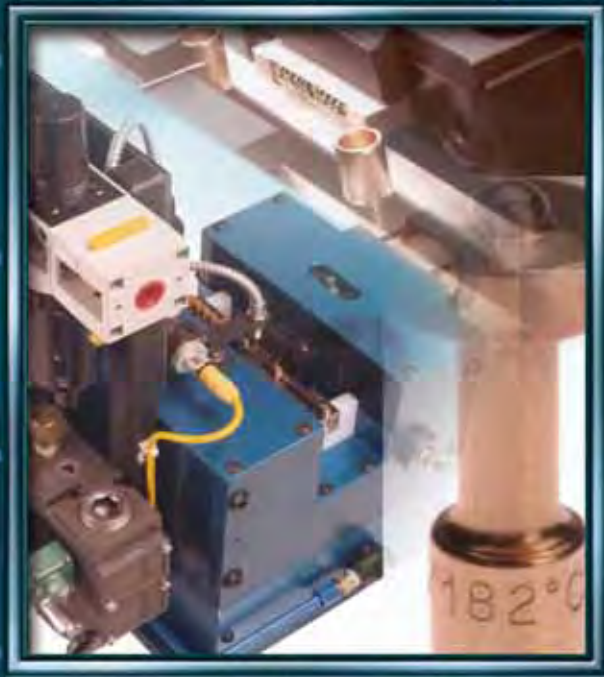


CMT

**COLUMBIA
MARKING
TOOLS**



**Roll Marking
Methods &
Machines**

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Product Overview

Roll Marking Options by Application

1. Mark Around the Periphery: 860/260, 400, 960, Mite-E-Roll
2. Mark Along the Axis of a Round Part or on a Flat: 860, 260, 400
3. Mark Thin Wall or Tubular: 860, 260, 400 with mandrel support
4. Mark Thin Wall or Tubular: Mite-E-Roll without mandrel support
5. Mark Large Diameter - 3" to 20": 400, 960
6. Mark Medium Diameter - 3/8" to 5": 860, 260, 400
7. Mark Small Diameter - 1/4" to 1 1/2": Mite-E-Roll
8. Mark High Speed In-Line: Mite-E-Roll
9. Mark Continuous High Speed Round Bars or Hex Stock: Bar Stock Marking Systems

Examples of Marks by Machine

**Barstock
Marking**

860 Roll Marking

College Park
Industries, Inc.
800-728-7950

Mite-E-Roll



400 Series Hydraulic

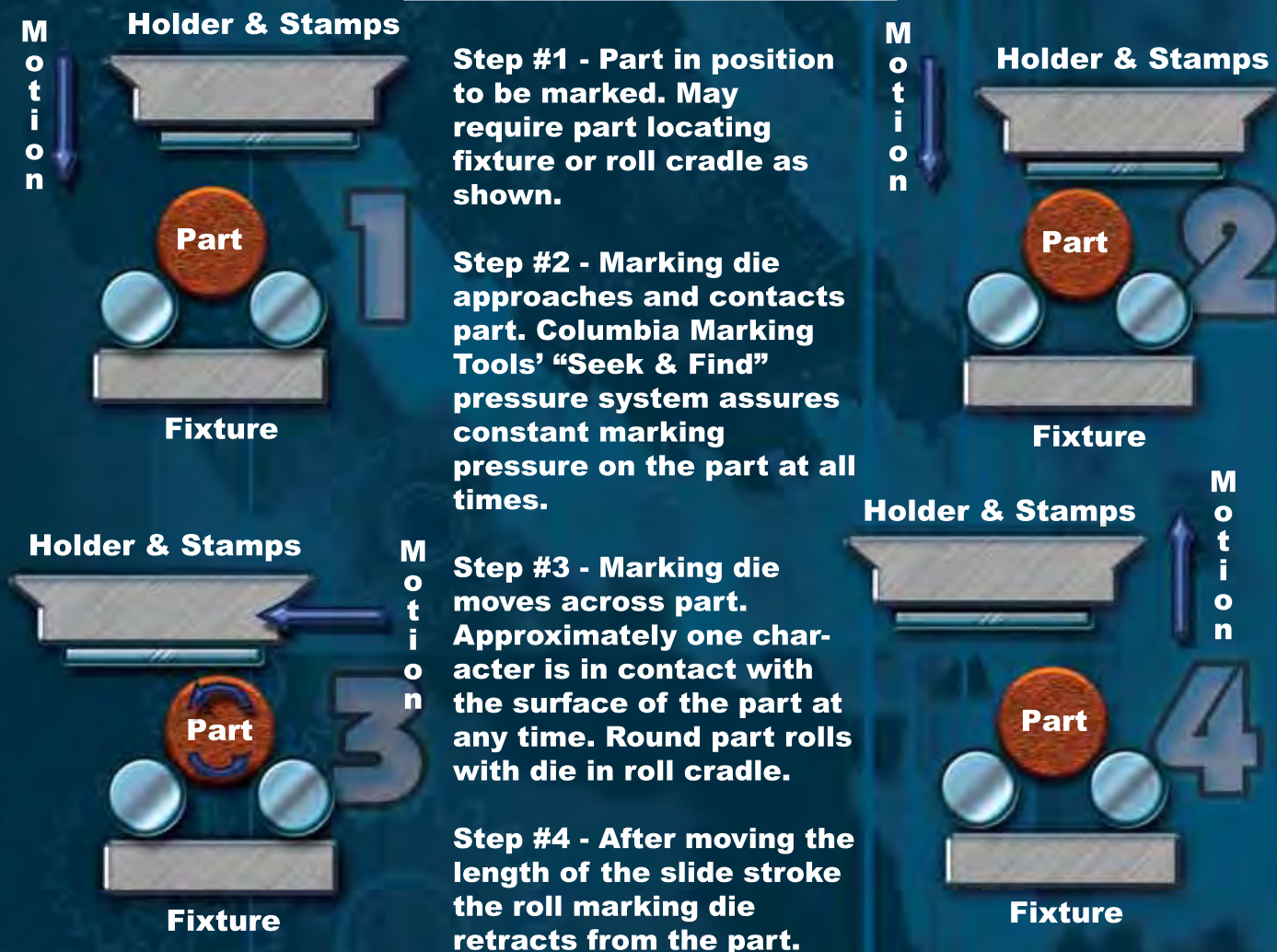
Motorcraft
U.S.A.
A050630




Roll Marking The Concept

Basic Roll Marking : For roll marking, the mark is “rolled” onto the part. It is an economic solution in applications where tonnage requirements make a press too costly. Also, a practical method where fragile parts would be damaged by stamping pressure. This method can be used on both flat and round parts.

Roll Marking Sequence



For all Columbia roll marking machines we suggest using quality Columbia Marking Tools dies and inserts:

- ✓ Individual type
- ✓ Segment type with multiple characters - company logos and special symbols
- ✓ Timing marks
- ✓ Roll dies with designs (knurling)
- ✓ Roll marking numbering dies



Marking round parts:
This method uses a
type holder with or
without a roll cradle.



Marking flat parts: This
method uses a roll type
holder and part
locating fixture.

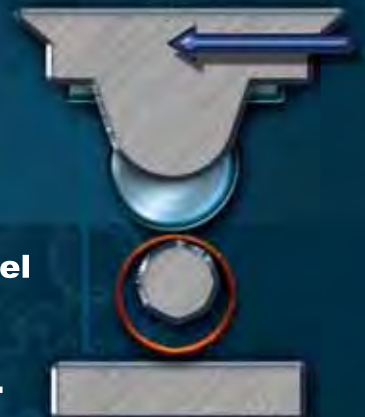


**A roll type holder (shown
at left) is also used for
parts with a curved
surface or large radius.**

**Marking hollow
round parts:**
This method
uses a type
holder and
mandrel, or
other internal
support.



**Diameter to
diameter rotary
roll marking
machines have a
motorized mandrel
to allow for
extremely long
marking legends.**



**Columbia Marking Tools special-
izes in custom marking applica-
tions. The following features can
be integrated into our marking
machines:**

- ✓ Automated feeding system
- ✓ Automated cycle (part present
cycle start)
- ✓ Numbering heads
- ✓ Serializing and automated date
coding
- ✓ Custom roll dies
- ✓ Custom roll type holders



Roll Marking Machines

Ram cylinder =
Approach stroke

Dovetail quick-change
tooling

Cast iron, T-slot,
adjustable table
(shown with roll
cradle)

Dual, anti-tie
down anti-
repeat, palm
buttons

Heavy duty
machine base

Adjustable Slide stroke =
3 1/2" for the Model 860
and 6" for the Model 260.

The Slide-Stroke should
be longer than the
marking legend.



Customized turn-key
systems :

- ✓ Part locating fixture
- ✓ Slide feed chase
- ✓ Feeding systems
- ✓ Communications
- ✓ Vision verification

Industrial grade air
filter, regulator,
pressure gauge, lubrica-
tor, and shut-off valve

Connect to 1/2" air
line and machine is
ready to mark

Optional casters

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Roll Marking Retro-Fit

Retro-fit roll marking units are easily incorporated into production equipment:

- ✓ Air piloted or Electrically controlled
- ✓ Variable pressure ranges
- ✓ Position sensors available for all motions
- ✓ Choice of approach and slide stroke lengths
- ✓ Flexible tooling options

Ram cylinder

Position sensors or limit switches for advance and retract of slide and ram cylinders

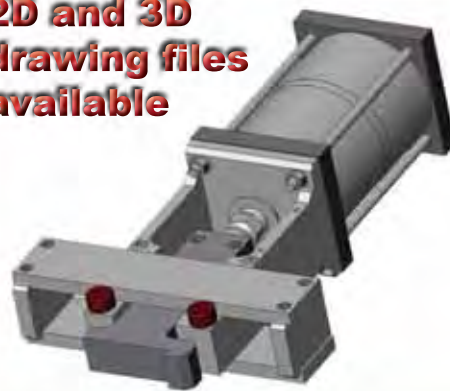
Four bolt mounting

Dovetail quick-change tooling

Adjustable stroke, internal die slide system (3 1/2" maximum)



**2D and 3D
drawing files
available**



Standard and custom tooling available. Shown here with random select numbering head.

Basic Systems How to Order

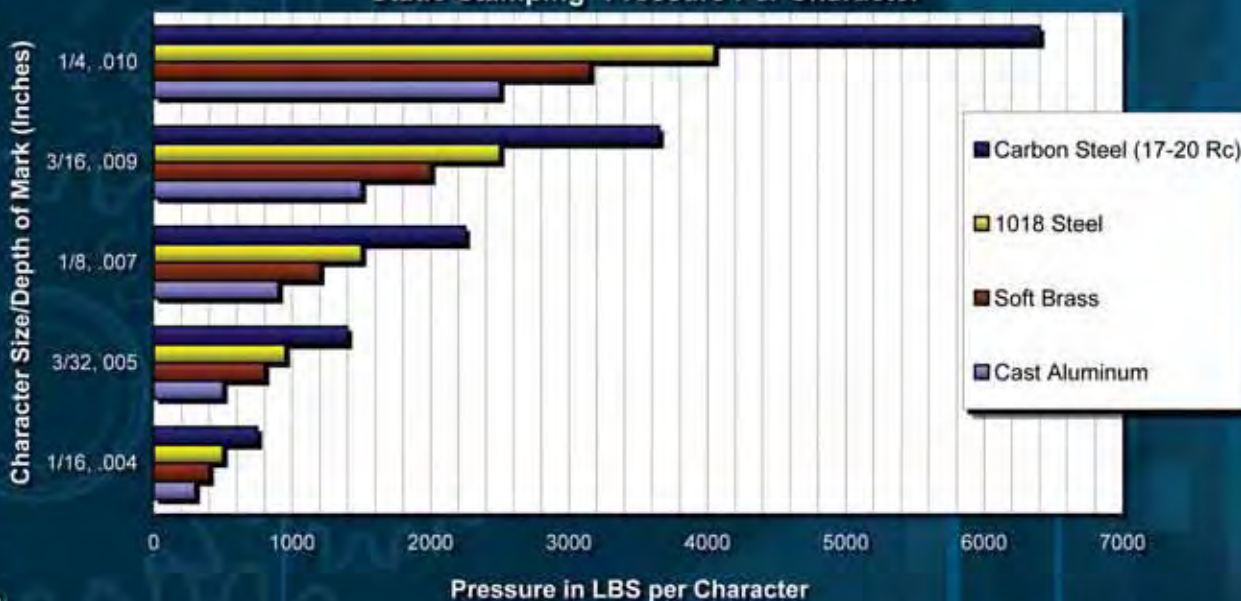
Model/Feature	Symbol	Example
860 - 3 1/2" marking legend length (Slide Stroke)	860	860BM-A43-20-R9S9
260 - 6" marking legend length (Slide Stroke)	260	
Bench Style	B	
Floor Style	F	
Retro-Fit Unit	R	
Double Palm Buttons - Air (anti-tie down anti-repeat)	M	
Double Palm Buttons Electric (ergonomic touchless)	T	
Automatic Air Pilot Cycling with electric cycle start	E	
Automatic (completely electrically controlled)	K	
Mark Pressure Min 251# - Max 1006# (air powered)*	A10	
Mark Pressure Min 565# - Max 2260# (air powered)*	A22	
Mark Pressure Min 565# - Max 4390# (air powered)*	A43	
Mark Pressure Min 565# - Max 6300# (air powered)*	A61	
Mark Pressure Max 1884# (hydraulically powered)**	H18	
Mark Pressure Max 4980# (hydraulically powered)**	H49	
Mark Pressure Max 8000# (hydraulically powered)**	H80	
1" Max Approach Stroke	10	
2" Max Approach Stroke	20	
3" Max Approach Stroke	30	
Ram Returned L/S Option	R1	
Ram Returned and Extended L/S Option	R2	
Ram Returned Position Switch Option***	R3	
Ram Returned and Extended Position Switch Option***	R4	
No Switches	R9	
Slide Returned L/S Option	S1	
Slide Returned and Extended L/S Option	S2	
Slide Returned Position Switch Option***	S3	
Slide Returned and Extended Position Switch Option***	S4	
No Switches	S9	

One size does not fit all applications.

CMT makes it easy to select the right options for your application. Please choose the features that meet your requirements, from the marking legend length to the system power.

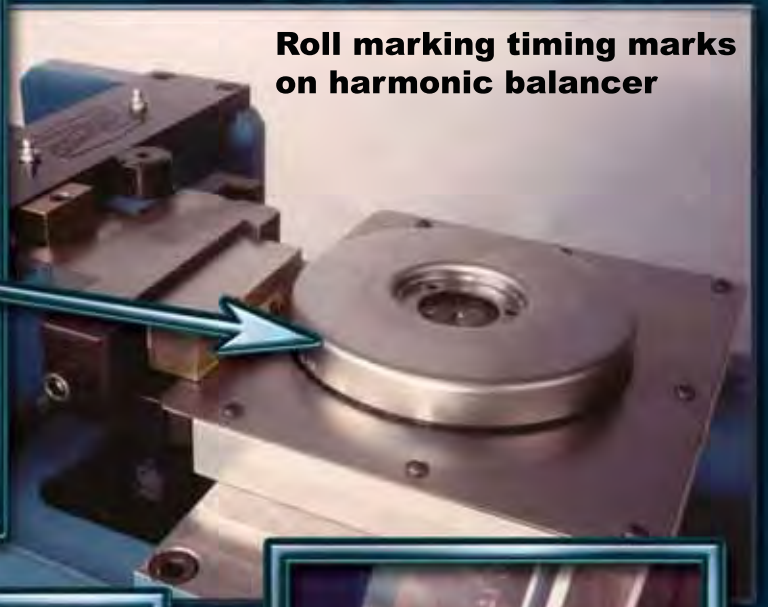
* Air units rated at 80 PSI
** Hydraulic units rated at 600 PSI
*** Standard DC connection

Static Stamping* Pressure Per Character





**Roll marking timing marks
on harmonic balancer**



**Roll marking 3 lines of
data on valve cover**



**Roll marking gear
data on ring gear**



Roll Marking: 400 Series

Hydraulic Roll Marking 9 or 18 tons

NEMA 12
electrical
control
panel with
safety dis-
connect

Dual anti-tie down
anti-repeat cycle start
palm buttons/ring guards
(special location)

- ✓ Graduated slide stroke control bar
- ✓ High/Low pressure switch selector
- ✓ Dual anti-tie down anti-repeat cycle start palm buttons
- ✓ Up to 90 cycles/minute
- ✓ 9" - 15" die space
- ✓ Standard roll carriages and roll type holders available (for marking flat parts)
- ✓ Standard flat type holders available (for marking round parts)

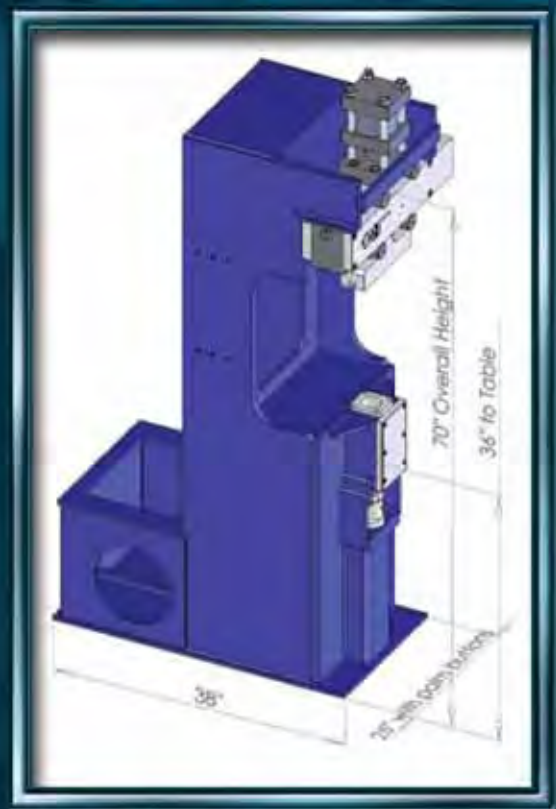
Integral
hydraulic
power unit

Heavy duty
sealed
roller bearings

Table height
lock

Table height
adjustment
wheel

- ✓ Heavy duty machine frame
- ✓ Hydraulic power unit with 5HP TEFC 230/460 VAC 3 phase electric motor, high performance oil pump, oil filtration system, 27 gallon reservoir, directional and pressure valves, temperature, level and pressure gauges
- ✓ 1/2 to 18 tons of force
- ✓ NEMA 12 electrical control panel with safety disconnect
- ✓ Heavy duty sealed roller bearings



All dimensions are approximate.
Please request current drawing of
configuration required.

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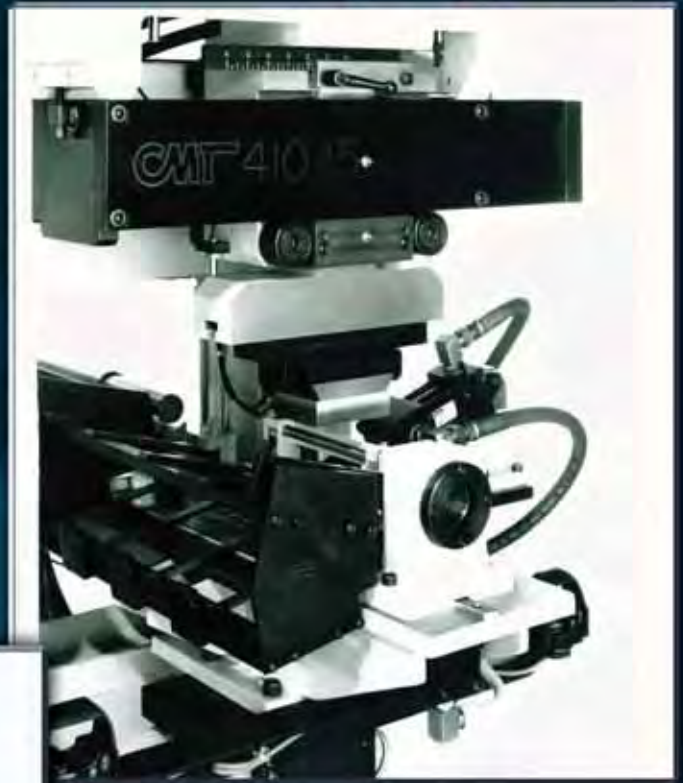


Roll Marking: 400 Series

Machines and Tooling

Columbia Marking Tools specializes in custom applications, the following features can be intergrated into our hydraulic roll marking machines:

- ✓Automated feeding system
- ✓Automated cycle (part present cycle start)
- ✓Numbering heads
- ✓Serializing and automated date coding
- ✓Custom roll dies



For all Columbia roll marking machines we suggest using quality Columbia Marking Tools dies and inserts:

- ✓Individual type
- ✓Segment type with multiple characters for ease of setup and changeover
- ✓Company logos and special symbols

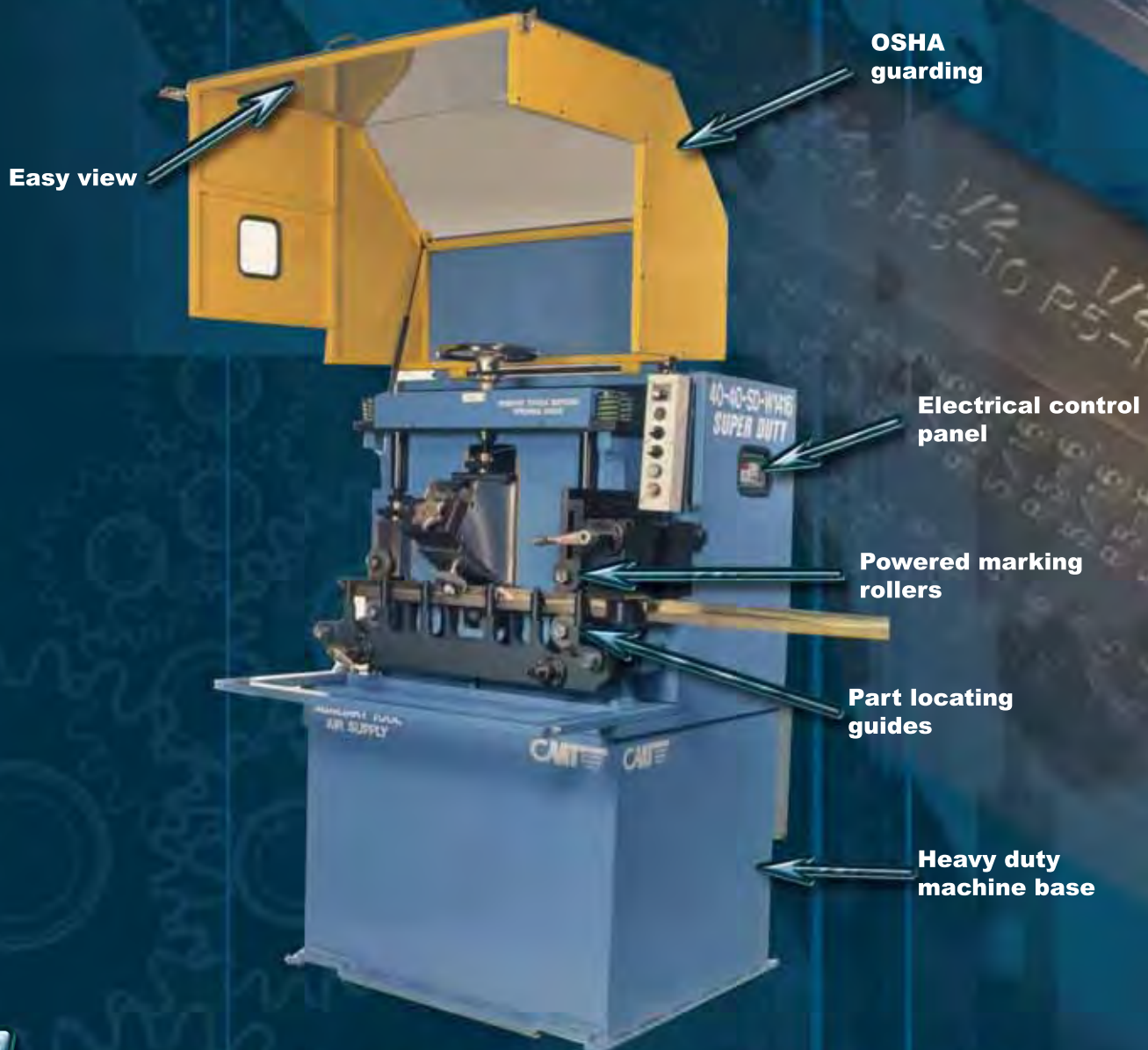




Barstock Marking Machine

2 or 4 Sided

- ✓ Heavy duty machine style base
- ✓ Continuous duty feed system
- ✓ Adjustable part locating guides with sealed bearings for trouble free operation
- ✓ Micro-mark depth adjustment
- ✓ Heavy duty GEAR DRIVEN marking rollers
- ✓ Independent pressure rams with self centering backup support rolls (one lead screw adjusts backup & marking roll simultaneously)
- ✓ Variable speed high performance drive with "set-up jog" feature



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Barstock Marking Machine

**210 ft per min
3/8" to 3"
Hex and
Round stock
size**

- ✓ Switch for backward and reverse drive
- ✓ Oil bath transmission
- ✓ Central lubrication manifold with all internal points piped to external access lube point
- ✓ Hardened & ground drive shafts with heavy duty sealed bearings
- ✓ Continuous rated motor 2 HP 230 V/1750 RPM



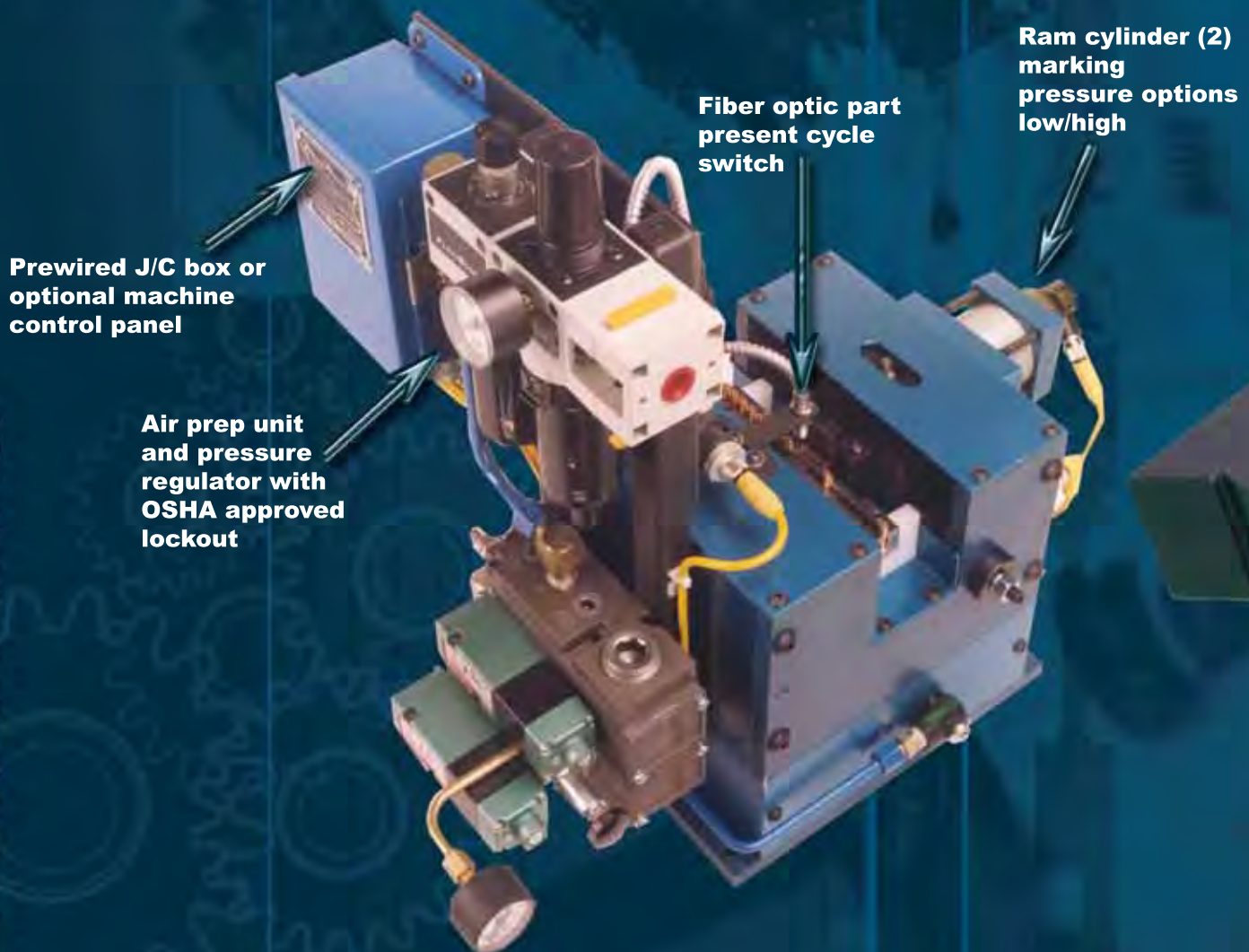
- ✓ Electrical control panel with DC variable speed controller and drive, power transformer, fused safety disconnect, master start/stop and all component devices terminated and wired
- ✓ OSHA required guarding complete with access panels and hinged tool access gate, latched, mounted and switched for "no operation"



Operation as seen through
"Easy-View" guarding

Model 2000 Mite-E-Roll

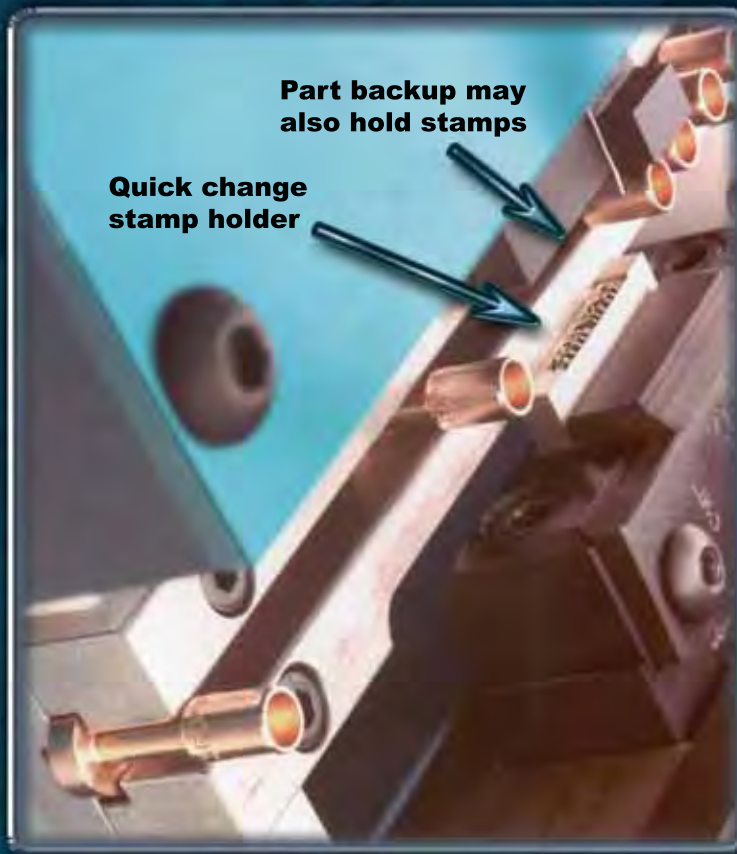
- ✓ Reduced low force marking method with opposing directional slides
- ✓ Marks up to 4,000 parts per hour, depending on part diameter
- ✓ Air powered ram and dual action slide
- ✓ Gear timed cross slides, for accurate mark repeatability
- ✓ Fiber optic (adjustable) part present cycle switch
- ✓ Cross slide start and stop proximity switches
- ✓ Optional adjustable machine style base
- ✓ Part "Stop-In-Mark Station" locator finger
- ✓ All box ways with standard industrial bearings
- ✓ Quick change stamp holder mounting
- ✓ Air inline OSHA required power out valve
- ✓ All necessary air control valves





High Speed Mite-E-Roll

**For production
marking of
round parts**



**Quick change
stamp holder**

**Part backup may
also hold stamps**



- ✓ **Electrical control panel with 110vac, programmable functions with look-up menu for program review, and self diagnostics**
- ✓ **Automated load and unload track available upon customer request**



Macho-Roll for larger parts

**Shown here with manual load
and auto-eject function**

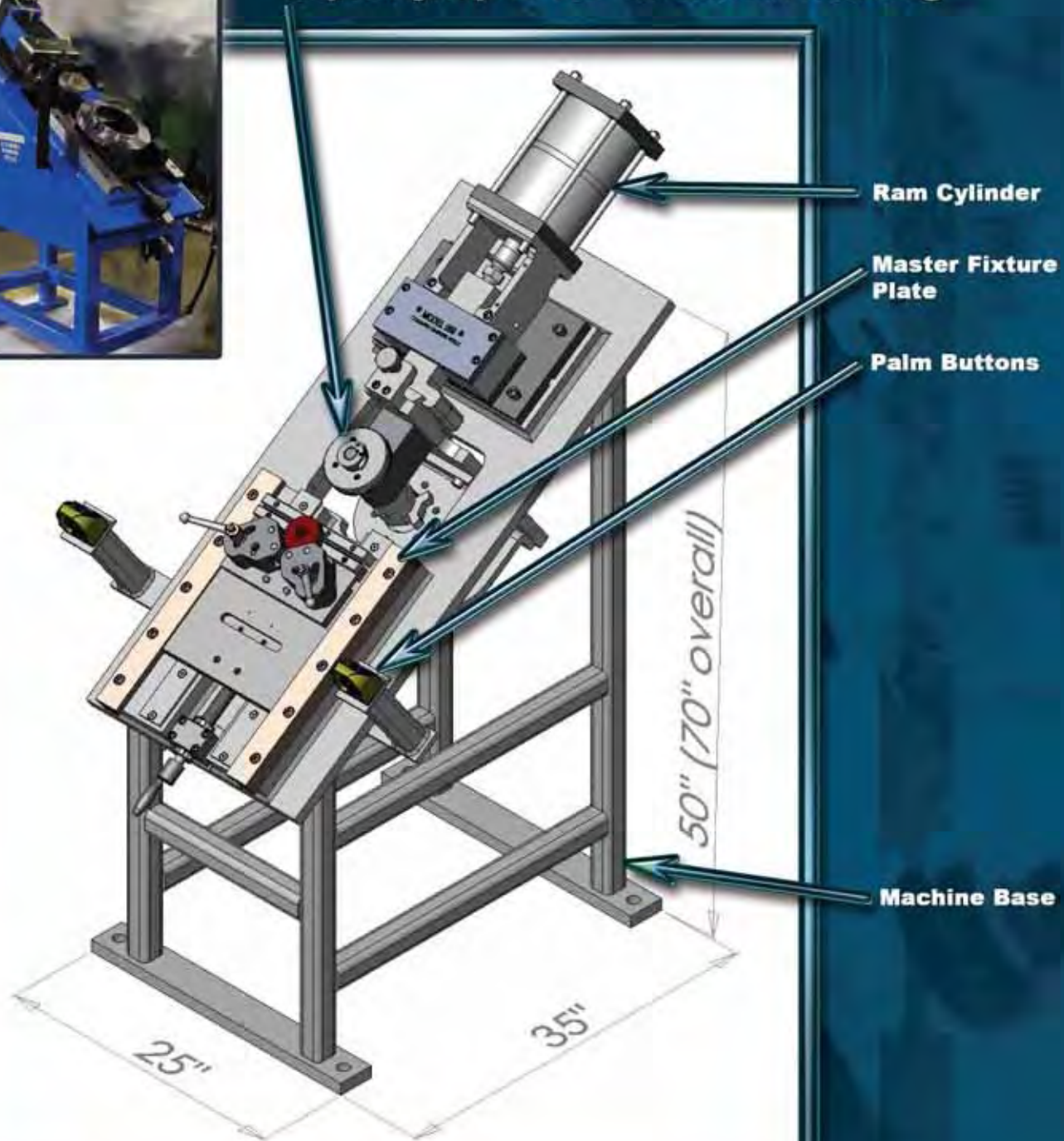
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Rotary Roll Marking



Rotary Marking Head

✓Industrial duty rated 180° "Rotary Drive" allows for increased marking length capacity. Up to 7.5" maximum marking





Rotary Roll Marking

Machine Features:

- ✓ Heavy duty (special angle) floor style machine frame
- ✓ Machine surface and tapping plate for special fixturing
- ✓ High power "3 ton" at 80 psi marking ram
- ✓ All heat treated high strength square press ram
- ✓ Quick change dovetail tooling mount
- ✓ Modular air inline air filtration, pressure regulator and lubricator
- ✓ OSHA required air inline main power lockout valve (1/2" NPT inlet)
- ✓ 110 VAC plug in power cord (10')
- ✓ Ergonomic "touchless" palm buttons with protective ring guards
- ✓ All necessary air logic control valves (manifold mounted)
- ✓ Machine program control panel including: Machine mounted NEMA 12 rated enclosure, fused power supply and PLC permanent memory programmable control

Rotary Marking Head



Marks legend lengths up to 7.5"



Tooling For Round Parts

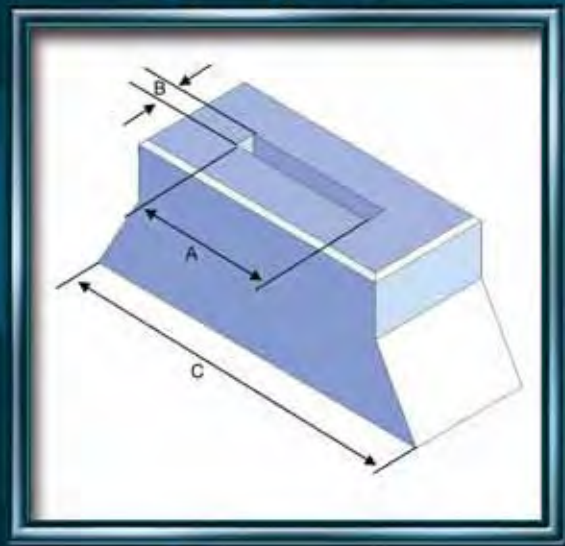
DM and TM Series Step type holders use a retaining clip to secure type and/or logo dies in holders. This standard type lock allows remarkable time savings when changing marking legends.



Series DM holders

- ✓ **Dovetail mounted holder**
- ✓ **For use with S style standard type**
- ✓ **"Quick Change" tooling for Model 860, 260, Mite-E-Roll and 960 Rotary roll marking machines**

Catalog No.	Max Number of Characters						Dim		
	1/16	3/32	1/8	5/16	3/16	1/4	A	B	C
DMA-20	32	21	16				2	1/4	4 1/2
DMA-30	48	32	24				3	1/4	4 1/2
DMB-30				16	16		3	5/16	4 1/2
DMC-30						12	3	3/8	4 1/2



DM and TM Series use CMS Type

Custom Mandrel for support when marking hollow parts, features:

- ✓ **Accurately sized for different diameter parts**
- ✓ **Interchangeable**
- ✓ **Hardened and ground**

Free turning hollow part, with mandrel for support

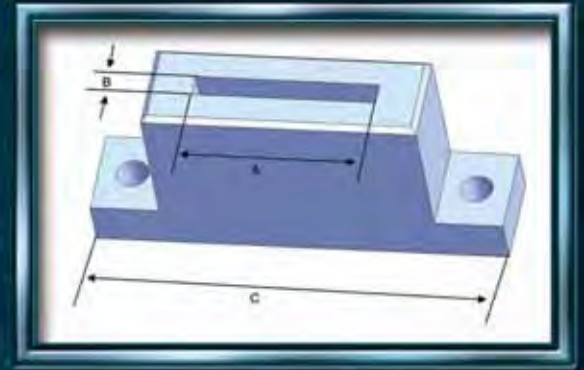


Straight type holder shown with dovetail mounting

Series TM holders

- ✓ T-slot mounted holder
- ✓ For use with S style standard type
- ✓ General multipurpose mounting
- ✓ For use in 400 Hydraulic series roll marking machines

Catalog No.	Max Number of Characters						Dim		
	1/16	3/32	1/8	5/16	3/16	1/4	A	B	C
TMA-20	32	21	16				2	1/4	4 1/2
TMA-30	48	32	24				3	1/4	4 1/2
TMB-30				16	16		3	5/16	6 1/4
TMC-30						12	3	3/8	6 1/4



Holder & stamps

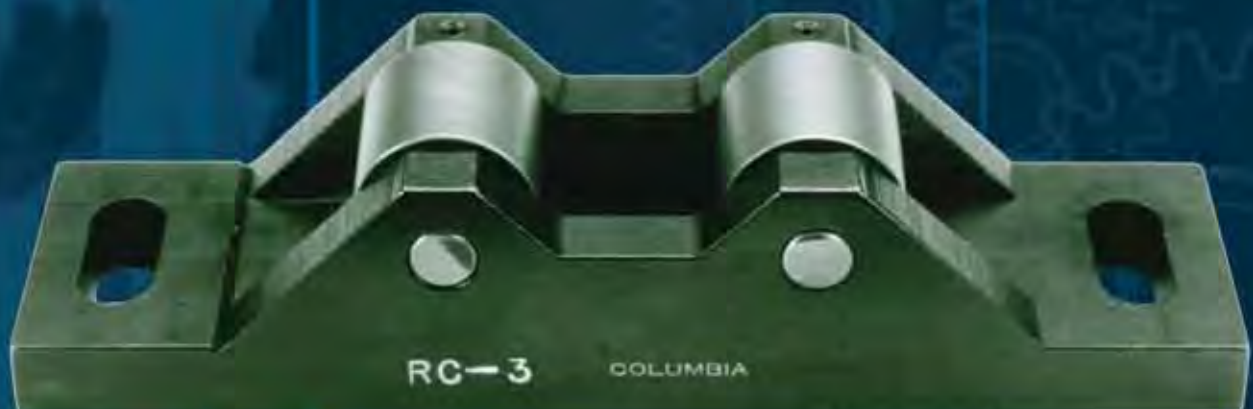


Roll Cradle

Roll Cradles mounted on the work table of a roll marking machine provide a free turning rest for marking round or conical parts.

- ✓ Standard sizes available for various diameter parts
- ✓ Custom roll cradles are useful for conical parts or parts having several diameters

Catalog No.	DIM		Dim over rollers to mounting face	For Part Diameters
	A	B		
RC-0	3/4	1 3/4	1 9/16	1/4 to 7/16
RC-1	1	2	2 1/16	3/8 to 1
RC-2	1	2	2 5/32	1 to 2 1/4
RC-3	1 1/4	2 1/4	2 3/32	2 1/4 to 4
RC-4	1 1/4	2 1/4	2 1/8	4 to 6 1/2



Roll Marking: Round Tooling

Roll Carriages:

Are used on roll marking machines to hold a roll die or roll type holder when marking on flat surfaces or contoured surfaces. The basic principle is to let the roll die turn freely while in contact with the work piece, and to turn the roll die, automatically, to its starting position once the die is released from the contact with the work piece.

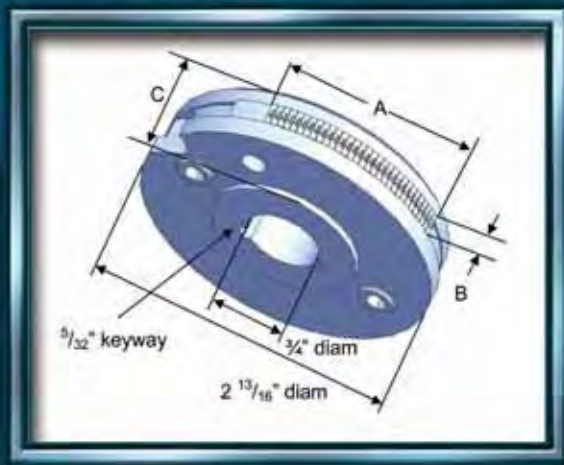
Catalog No.	Shaft Diameter	Roll Type Holder Width
DCA-75	3/4	3/4
DCA-100	3/4	1
DCA-125	3/4	1 1/4
DCC-100	1	1
DCC-125	1	1 1/4



- ✓ Rugged construction for long, trouble-free operation
- ✓ All components interchangeable, including stock bearings
- ✓ Superior dovetail mounting
- ✓ For use with roll type holders shown below
- ✓ For use with custom roll dies, please specify requirements for quotation

Roll Type Holders:

Developed to efficiently mark both flat and contoured surfaces, are designed to hold individual step style wedge type or combinations of wedge type, logo-type and segment dies.



- ✓ Step in the cover plate retains the type in the holder
- ✓ "Take-up" screw holds the type in perfect alignment
- ✓ Quick release of cover plate allows change-over of marking legends

Catalog No.	Character Sizes	Dim			Use in Roll Carriage
		A	B	C	
RMA-2	1/32 1/16 3/32 1/8	7/32	2	3/4	DCA-75
RMA-3	1/32 1/16 3/32 1/8	7/32	3	3/4	DCA-75
RMB-2	5/32 3/16	9/32	2	1	DCA-100
RMB-3	5/32 3/16	9/32	3	1	DCA-100
RMC-2	1/4	11/32	2	1	DCA-100
RMC-3	1/4	11/32	3	1	DCA-100

RMA Series uses CMW Type

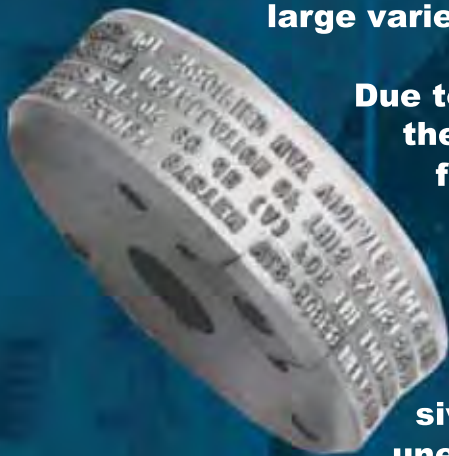




Roll Marking: Roll Dies

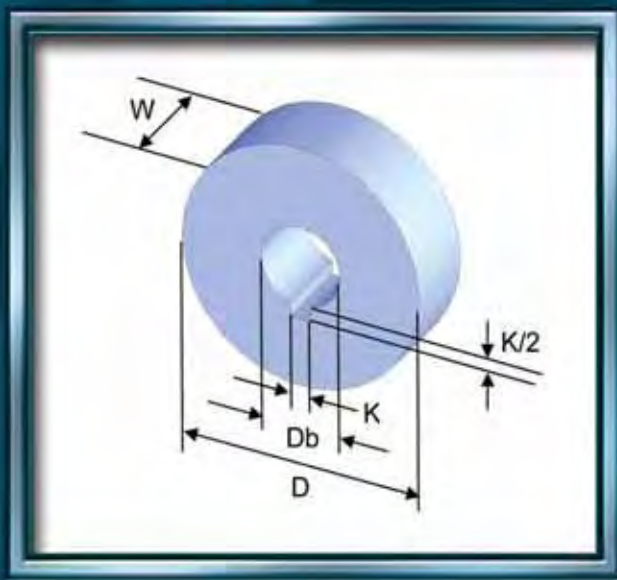
Marking by means of a roll die is one of the fastest and most efficient methods known. Roll dies, used in manually operated marking fixtures, hand, air, and hydraulic marking machines, bar markers, and special

purpose marking machines, solve a large variety of marking needs.



Due to the relatively small point of contact, the roll marking method requires only a fraction of the pressure that would be needed to mark the same legend by a press method.

The roll die marking method is used exclusively when marking uneven surfaces by employing COLUMBIA roll marking machines. In contouring, the machine allows the roll die to follow an uneven surface while, simultaneously, keeping the impression depth uniform.



Lettering Knurl (Round Die)

D = diameter

W = width

D_b = diameter of bore

K = width of keyway

$K/2$ = depth of keyway

$(D \times W \times D_b \times K \times K/2)$

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Roll Marking: Machines and Tooling

Ordering Stamps:

- ✓ To order individual **LETTERS** and **FIGURES** add suffix of actual letter to catalog number
- ✓ To order **BLANK SPACERS** add suffix of "-OO"
- ✓ To order **PUNCTUATION MARKS** add suffix shown below
- ✓ To order **SYMBOLS** add S with symbol # from table

Punctuation Marks		
Mark	Symbol	Suffix
Space		-OO
Dash	-	-DD
Period	.	-PP
Comma	,	-CC
Diagonal	/	-SS
Ampersand	&	-AA
Number Sign	#	-TT
Number Sign	O	-NN
Multiplication	x	-MM
Equals Sign	=	-EE
Colon	:	-LL
Plus Sign	+	-UU
Asterisk	*	-RR
Percent Sign	%	-QQ



CMG	09	A
Style	Char Size	Letter or Figure

CMW	13	S32
Style	Char Size	Symbol #32 Circle

Ordering Logo Dies and Segments:

- ✓ To order **LOGO DIES** (multiple character stamps) for Groove style G and Step style S stamps, add the prefix L and denote the actual legend required
- ✓ To order **SEGMENT DIES** (multiple character wedge stamps) for Wedge style W, add the prefix S and denote the actual legend required



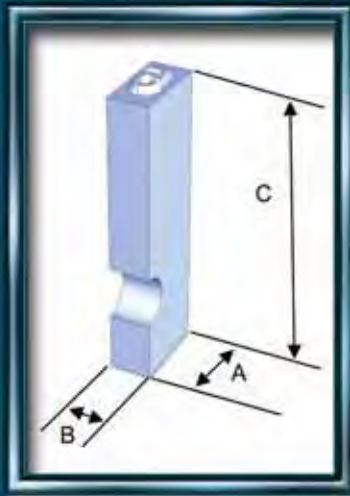
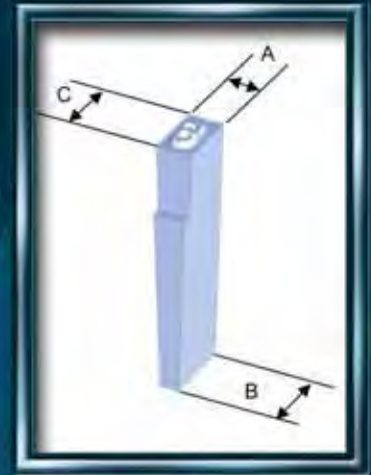
Legend Length - Multiply the number of characters by the character size, count spaces and punctuation as 1/2 a character.

L	CMG	09	PAT. PEND
Logo Die	Style	Char Size	Stamp reads "PAT. PEND"

S	CMW	13	MADE IN USA
Segment Die	Style	Char Size	Stamp reads "MADE IN USA"

Style W				Catalog
Char Size	A	B	C	
1/32	1/16	1/4	7/32	CMW03-
1/16	1/16	1/4	7/32	CMW06-
3/32	3/32	1/4	7/32	CMW09-
1/8	1/8	1/4	7/32	CMW13-
5/32	3/16	5/16	9/32	CMW16-
3/16	3/16	5/16	9/32	CMW19-
1/4	1/4	3/8	11/32	CMW25-

**Wedge Style
Type:**
**For use in RM
Series holders**

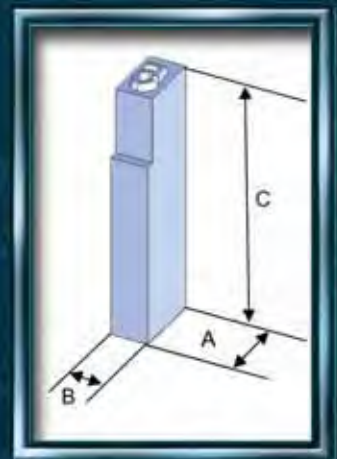


**Groove Style
Type:**
**For use in
type holders**

Style G				Catalog
Char Size	A	B	C	
1/32	1/16	1/4	7/8	CMG03-
1/16	1/16	1/4	7/8	CMG06-
3/32	3/32	1/4	7/8	CMG09-
1/8	1/8	1/4	7/8	CMG13-
5/32	3/16	5/16	7/8	CMG16-
3/16	3/16	5/16	7/8	CMG19-
1/4	1/4	3/8	7/8	CMG25-
5/16	5/16	7/16	1	CMG31-
3/8	3/8	1/2	1	CMG38-

Style S				Catalog
Char Size	A	B	C	
1/32	1/16	1/4	7/8	CMS03-
1/16	1/16	1/4	7/8	CMS06-
3/32	3/32	1/4	7/8	CMS09-
1/8	1/8	1/4	7/8	CMS13-
5/32	3/16	5/16	7/8	CMS16-
3/16	3/16	5/16	7/8	CMS19-
1/4	1/4	3/8	7/8	CMS25-
5/16	5/16	7/16	1	CMS31-
3/8	3/8	1/2	1	CMS38-

**Step Style
Type:**
**For use in DM
and TM Series
holders**



CMT

**COLUMBIA
MARKING
TOOLS**



Wide Range of Products:
Impact Markers
Programmable Systems
Dot-Peen & Scribe
Laser
Numbering Heads
Air & Hydraulic Presses
Hot Stamping Systems & Machines
Stamping Dies & Retainers
Standard Type
Hand Tools
Custom Marking Dies
Embossing Dies



**27430 Luckino Dr
Chesterfield MI 48047**

**586.949.8400
586.949.8401 fax
info@columbiamt.com**

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