

DISCOVER OUR

# MILLING



# Milling

# NOMENCLATURE

CROMSON «ENDMILL»

# - FLUTES

DIAMETER

**CREM-Ti-5RC-0500-R010 Cr95**

## APPLICATIONS

AL- Aluminum  
 ALR- Aluminum Roughing  
 DM- Die & Mold  
 HD- Hard Material  
 HF- High Feed  
 SA (SAX)- Super Alloy  
 ST- Steel  
 SST- Stainless Steel  
**Ti- Titanium**  
 TiX- Titanium HP  
 TP- Taper (NPT)

## TOOL TYPE

S- Stub Length  
 M- Medium Length  
**R- Reg. Length**  
 L- Long Length  
 E- Extended Length  
 N- Necking  
  
**C- Cylindrical Shank**  
 W- Weldon Shank



















## RADIUS/CHAMFER

BN- Ball Nose  
 C- Chamfer  
**R- Radius**  
 SQ- Square

## COATING

Cr20- Uncoated  
 Cr35- AlCrN  
 Cr55- TiAlN  
 Cr75- TiAlN+  
**Cr95- TiAlCN**

# Summary application chart-Milling




























































Work Material	Type of Cut	Axial DOC	Radial DOC	Speed (SFM)	RECORD ST	STAR SST	ALLIANCE TI
Low carbon steel <= 38HRc 1018, 12L14, 8620	Slotting Peripheral - Rough	1 x D 1.5 x D	1 x D 0.5 x D	350 425			
Medium carbon steels <= 38HRc 4140, 4340	Slotting Peripheral - Rough	1 x D 1.5 x D	1 x D 0.5 x D	325 375			
Tool & die steels <= 38HRc A2, D2, O1, S7, P20, H13	Slotting Peripheral - Rough	1 x D 1.5 x D	1 x D 0.5 x D	325 375			
Tool steel 39HRc to 48HRc	Slotting Peripheral - Rough	.75 x D 1 x D	1 x D 0.5 x D	225 275			
Easy to machine stainless steel 416, 410, 302, 303	Slotting Peripheral - Rough	1 x D 1.5 x D	1 x D 0.5 x D	300 375			
Moderately difficult stainless steel 304, 316, invar, kovar	Slotting Peripheral - Rough	.75 x D 1 x D	1 x D 0.5 x D	275 350			
Difficult to machine stainless steel 316L, 17-4PH, 15-5PH, 13-8Mo	Slotting Peripheral - Rough	0.5 x D 1 x D	1 x D 0.5 x D	250 300			
Cast iron Grey	Slotting Peripheral - Rough	1 x D 1.5 x D	1 x D 0.5 x D	400 500			
Cast iron Ductile	Slotting Peripheral - Rough	1 x D 1.5 x D	1 x D 0.5 x D	300 400			
Cast iron Malleable	Slotting Peripheral - Rough	.75 x D 1 x D	1 x D .75 x D	250 325			
Aluminum alloys 2024, 6061, 7075	Slotting	1 x D	1 x D 0.5 x D	800 1000			
Titanium alloys 6Al4V	Slotting Peripheral - Rough	0.5 x D 1 x D	1 x D 0.5 x D	250 300			
High temperature alloys Inconel, haynes, stellite, hastelloy	Slotting	.25 x D 1 x D	1 x D .25 x D	70 95			



Highly recommended

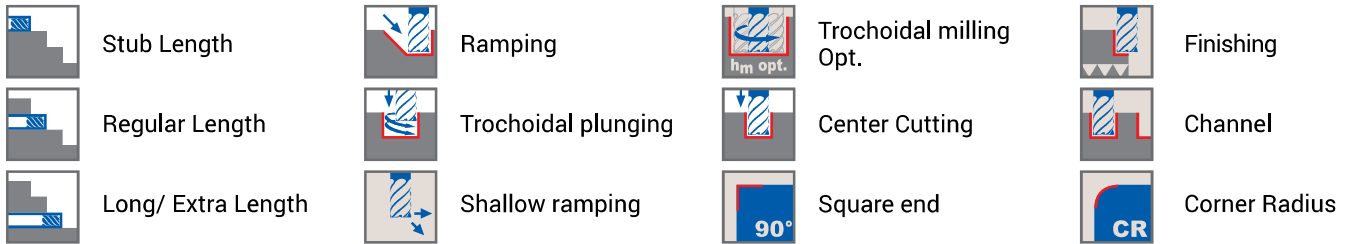


Suitable for some applications

PISTON HD	TURBINE SRGH	OXYGEN HF	TAPER-MILL TP	DRIVER DM	MOTION AL	BOSS ALR	MAGNAT STX	PERFOR-MANCE TIX	BOOSTER SA
									
									
									
									
									
									
									
									
									
									
									
									
									

\*\* The machining values shown are guidelines.  
The optimum data for a particular machining process should be determined in trials or during machining.

# Explanation of Milling symbols



# Grades chart & Milling application

**CROMSON** offers a variety of coating upon special request to meet the demands of every customer's needs and unique application demands. Through extensive testing, research and real world applications, CROMSON has worked to develop a full range of high performance coatings. These coating options allow us to address a multitude of situations with optimal results.

Please refer to the chart below for the various coatings available.

CROMSON GRADE	Cr20	Cr35	Cr55	Cr75	Cr95
Proprietary	Uncoated	AlCrN	TiAlN	TiAlN+	TiAlCN
Coating process		PVD	PVD	PVD	PVD
Layer structure		Nano structure	Nano structure	Nano structure	Nano structure
Hardness (HV)		3000	3300	3300	3060
Coefficient of friction (fetting)		0.25	0.30-0.35	0.25	0.35
Thermal stability (C)		1100	900	900	1000
General Information		New generation PVD coating providing a high level of wear and abrasion resistance in combination with a micro grain carbide substrate for use in all ferrous materials at elevated cutting speed.	A thick PVD coating on a balanced wear resistance/tough fine grain carbide substrate provides users with predictable consistent results in general purpose applications in all materials.	In combination with a tough submicron grain carbide substrate and advanced PVD coating technology a high level of security and wear resistance is seen in demanding applications in titanium and steel up to 52 HRC.	New generation PVD coating providing a high level of wear. lower coefficient of friction combination with a micro grain carbide substrate for use in stainless steel and nickel-based high temperature alloys.

# TAPERMILL TP SERIES

⊙ NPT preparation tools prior to tapping

⊙ These tools feature our Cr55 TiAlN (PVD) coating offering predictable and consistent results in general purpose application

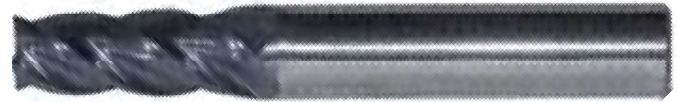
Work Material	Type of Cut	Axial DOC	Radial DOC	Speed (SFM)
Low carbon steel <= 38HRc 1018, 12L14, 8620	Slotting	1 x D	1 x D	350
	Peripheral - Rough	1.5 x D	0.5 x D	425
Medium carbon steel <= 38HRc 4140, 4340	Slotting	1 x D	1 x D	325
	Peripheral - Rough	1.5 x D	0.5 x D	375
Tool & die steel <= 38HRc A2, D2, O1, S7, P20, H13	Slotting	1 x D	1 x D	325
	Peripheral - Rough	1.5 x D	0.5 x D	375
Easy to machine stainless steel 416, 410, 302, 303	Slotting	1 x D	1 x D	300
	Peripheral - Rough	1.5 x D	0.5 x D	375
Moderately difficult stainless steel 304, 316, invar, kovar	Slotting	.75 x D	1 x D	275
	Peripheral - Rough	1 x D	0.5 x D	350
Difficult to machine stainless steel 316L, 17-4PH, 15-5PH, 13-8Mo	Slotting	0.5 x D	1 x D	250
	Peripheral - Rough	1 x D	0.5 x D	300



## CARBIDE END MILL - CONICAL

### TECHNICAL DETAILS

Tool Diameter Range	0.375-0.500 in
Shank tolerance	h6
Cutter tolerance	(+0.00-0.002 in) +0.00-0.05 mm
Number of flutes	4
Coating	TiAlN (PVD)
Center cutting	No
Variable pitch	Standard
Variable helix	Standard
Helix angle	38°



70  
35  
0 HARDNESS (HRC)



EDP Cromson	Cromson Description	Diam.	Length of cut	Overall length	Thread Diam.	Cromson Grade	# Flutes
72001965	CREM-TP-4RC-0375- Cr55	3/8	.95	3	1/8" - 1" NPT	Cr55	4
72001970	CREM-TP-4RC-0500- Cr55	1/2	1.1/4	3.1/2	1/4" - 3" NPT	Cr55	4
72001975	CREM-TP-4LC-0500- Cr55	1/2	1.1/4	6	1/4" - 3" NPT	Cr55	4

Work Material		TAPERMILL-TP							Feed (inches Per Tooth)						
		Type of Cut	Axial DOC	Radial DOC	Speed (SFM)	1/8	1/4	3/8	1/2	5/8	3/4	1			
Low carbon steel <= 38HRc 1018, 12L14, 8620	Slotting Peripheral - Rough	1 x D 1.5 x D	1 x D 0.5 x D	350 425	.0008 .0010	.0016 .0020	.0024 .0030	.0032 .0040	.0040 .0050	.0048 .0060	.0064 .0080				
Medium carbon steel <= 38HRc 4140, 4340	Slotting Peripheral - Rough	1 x D 1.5 x D	1 x D 0.5 x D	325 375	.0006 .0008	.0013 .0017	.0020 .0026	.0027 .0035	.0034 .0044	.0040 .0053	.0054 .0070				
Tool & die steel <= 38HRc A2, D2, O1, S7, P20, H13	Slotting Peripheral - Rough	1 x D 1.5 x D	1 x D 0.5 x D	325 375	.0006 .0008	.0013 .0017	.0020 .0026	.0027 .0035	.0034 .0044	.0040 .0053	.0054 .0070				
Tool steel 39HRc to 48HRc	Slotting Peripheral - Rough	.75 x D 1 x D	1 x D 0.5 x D												
Easy to machine stainless steel 416, 410, 302, 303	Slotting Peripheral - Rough	1 x D 1.5 x D	1 x D 0.5 x D	300 375	.0006 .0008"	.0012 .0016	.0018 .0024	.0025 .0032	.0031 .0040	.0037 .0048	.0050 .0064				
Moderately difficult stainless steel 304, 316, invar, kovar	Slotting Peripheral - Rough	.75 x D 1 x D	1 x D 0.5 x D	275 350	.0005 .0007	.0011 .0015	.0016 .0023	.0022 .0032	.0027 .0037	.0033 .0045	.0044 .0064				
Difficult to machine stainless steel 316L, 17-4PH, 15-5PH, 13-8Mo	Slotting Peripheral - Rough	0.5 x D 1 x D	1 x D 0.5 x D	250 300	.0004 .0005	.0009 .0011	.0012 .0016	.0018 .0022	.0022 .0028	.0027 .0033	.0036 .0044				
Cast iron Grey	Slotting Peripheral - Rough	1 x D 1.5 x D	1 x D 0.5 x D												
Cast iron Ductile	Slotting Peripheral - Rough	1 x D 1.5 x D	1 x D 0.5 x D												
Cast iron Malleable	Slotting Peripheral - Rough	.75 x D 1 x D	1 x D .75 x D												
Aluminum alloy 2024, 6061, 7075	Slotting	1 x D	1 x D 0.5 x D												
Titanium alloy 6Al4V	Slotting Peripheral - Rough	0.5 x D 1 x D	1 x D 0.5 x D												
High temperature alloy Inconel, haynes, stellite, hastelloy	Slotting	.25 x D 1 x D	1 x D .25 x D												

\*\* The machining values shown are guidelines. The optimum data for a particular machining process should be determined in trials or during machining.