

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

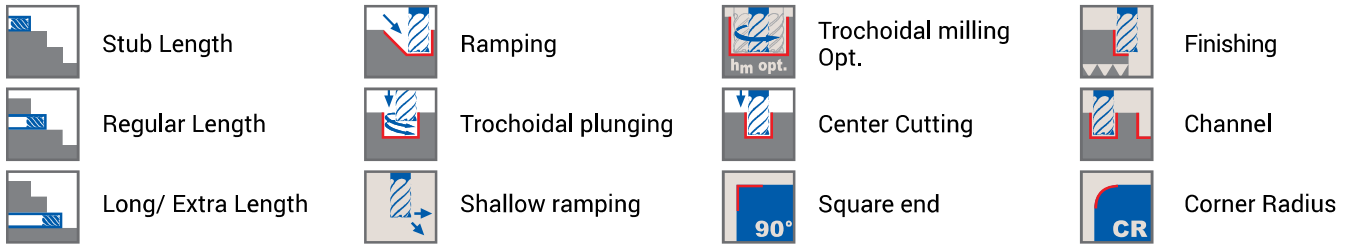


Suitable for some applications

PISTON HD	TURBINE SRGH	OXYGEN HF	TAPER-MILL TP	DRIVER DM	MOTION AL	BOSS ALR	MAGNAT STX	PERFORMANCE 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.

CARBIDE END MILL

MOTION AL SERIES

- ⦿ Polished flutes to ensure effective chip evacuation and reduce friction
- ⦿ Specifically designed to machine aluminum
- ⦿ Coated option available including Diamond Like Coating (DLC) for optimum results
- ⦿ Controlled edge preparation assures a longer tool life
- ⦿ h6 tolerance for conventional and shrink fit applications
- ⦿ Available in 2 and 3 flutes design with multiple lengths and radius available (Ball Nose also available)
- ⦿ Cutting speed is only limited by your machine (tool balancing for higher speeds recommended)

Work Material	Type of Cut	Axial DOC	Radial DOC	Speed (SFM)
Aluminum alloy 2024, 6061, 7075	Slotting	1 x D	1 x D 0.5 x D	800 1000



MOTION-AL

CARBIDE END MILL - SQUARE OR RADIUS
2 FLUTES

TECHNICAL DETAILS

Tool Diameter Range	0.125 - 1.000 in
Shank tolerance	h6
Cutter tolerance	(+0.00-0.002 in) +0.00-0.05 mm
Number of flutes	2
Coating	No
Center cutting	Yes
Variable pitch	Standard
Variable helix	Standard
Helix angle	45°



EDP Cromson	Cromson Description	Diam.	Length of cut	Overall length	Chamfer / radius	Cromson Grade	# Flutes
72002190	CREM-AL-2RC-0125- SQ Cr20	1/8	3/8	1.1/2	---	Cr20	2
72002195	CREM-AL-2EC-0125- SQ Cr20	1/8	1/2	1.1/2	---	Cr20	2
72002200	CREM-AL-2LC-0125- SQ Cr20	1/8	3/4	2.1/2	---	Cr20	2
72002205	CREM-AL-2RC-0187- SQ Cr20	3/16	5/16	2	---	Cr20	2
72002210	CREM-AL-2EC-0187- SQ Cr20	3/16	9/16	2	---	Cr20	2
72002215	CREM-AL-2RC-0250- SQ Cr20	1/4	1/2	2.1/2	---	Cr20	2
72002220	CREM-AL-2RC-0250-R015- Cr20	1/4	1/2	2.1/2	.015	Cr20	2
72002225	CREM-AL-2RC-0250-R030- Cr20	1/4	1/2	2.1/2	.030	Cr20	2
72002230	CREM-AL-2RC-0250-R060- Cr20	1/4	1/2	2.1/2	.060	Cr20	2
72002235	CREM-AL-2EC-0250- SQ Cr20	1/4	3/4	2.1/2	---	Cr20	2
72002240	CREM-AL-2EC-0250-R015- Cr20	1/4	3/4	2.1/2	.015	Cr20	2
72002245	CREM-AL-2LC-0250- SQ Cr20	1/4	1.1/8	2.1/2	---	Cr20	2
72002250	CREM-AL-2LC-0250-R015- Cr20	1/4	1.1/8	2.1/2	.015	Cr20	2
72002255	CREM-AL-2RC-0312- SQ Cr20	5/16	5/8	2.1/2	---	Cr20	2
72002260	CREM-AL-2RC-0312-R030- Cr20	5/16	5/8	2.1/2	.030	Cr20	2
72002265	CREM-AL-2LC-0312- SQ Cr20	5/16	1.1/8	3	---	Cr20	2
72002270	CREM-AL-2RC-0375- SQ Cr20	3/8	3/4	2.1/2	---	Cr20	2
72002275	CREM-AL-2RC-0375-R030- Cr20	3/8	3/4	2.1/2	.030	Cr20	2
72002280	CREM-AL-2EC-0375- SQ Cr20	3/8	1.1/8	3	---	Cr20	2
72002285	CREM-AL-2EC-0375-R030- Cr20	3/8	1.1/8	3	.030	Cr20	2
72002290	CREM-AL-2LC-0375- SQ Cr20	3/8	2	4	---	Cr20	2
72002295	CREM-AL-2LC-0375-R030- Cr20	3/8	2	4	.030	Cr20	2
72002300	CREM-AL-2RC-0500- SQ Cr20	1/2	1	3	---	Cr20	2
72002305	CREM-AL-2RC-0500-R030- Cr20	1/2	1	3	.030	Cr20	2
72002310	CREM-AL-2EC-0500- SQ Cr20	1/2	1.1/4	3	---	Cr20	2
72002315	CREM-AL-2EC-0500-R030- Cr20	1/2	1.1/4	3	.030	Cr20	2
72002320	CREM-AL-2EC-0500-R060- Cr20	1/2	1.1/4	3	.060	Cr20	2
72002325	CREM-AL-2LC-0500- SQ Cr20	1/2	2	4	---	Cr20	2
72002330	CREM-AL-2LC-0500-R030- Cr20	1/2	2	4	.030	Cr20	2
72002335	CREM-AL-2RC-0625- SQ Cr20	5/8	1.1/4	3.1/2	---	Cr20	2
72002340	CREM-AL-2RC-0625-R030- Cr20	5/8	1.1/4	3.1/2	.030	Cr20	2

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0 HARDNESS (HRC)

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EDP Cromson	Cromson Description	Diam.	Length of cut	Overall length	Chamfer / radius	Cromson Grade	# Flutes
72002345	CREM-AL-2RC-0625-R060- Cr20	5/8	1.1/4	3.1/2	.060	Cr20	2
72002350	CREM-AL-2EC-0625- SQ Cr20	5/8	1.5/8	3.1/2	---	Cr20	2
72002355	CREM-AL-2EC-0625-R030- Cr20	5/8	1.5/8	3.1/2	.030	Cr20	2
72002360	CREM-AL-2LC-0625- SQ Cr20	5/8	2	4	---	Cr20	2
72002365	CREM-AL-2RC-0750- SQ Cr20	3/4	1.1/2	4	---	Cr20	2
72002370	CREM-AL-2RC-0750-R030- Cr20	3/4	1.1/2	4	.030	Cr20	2
72002375	CREM-AL-2EC-0750- SQ Cr20	3/4	1.3/4	4	---	Cr20	2
72002380	CREM-AL-2EC-0750-R030- Cr20	3/4	1.3/4	4	.030	Cr20	2
72002385	CREM-AL-2LC-0750- SQ Cr20	3/4	3	6	---	Cr20	2
72002390	CREM-AL-2RC-1000- SQ Cr20	1	1.1/2	4	---	Cr20	2
72002395	CREM-AL-2EC-1000- SQ Cr20	1	2	4.1/2	---	Cr20	2
72002400	CREM-AL-2EC-1000-R030- Cr20	1	2	4.1/2	.030	Cr20	2
72002405	CREM-AL-2LC-1000-SQ Cr20	1	3	6	---	Cr20	2

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0 HARDNESS (HRC)

CARBIDE END MILL - BALL NOSE
2 FLUTES

TECHNICAL DETAILS

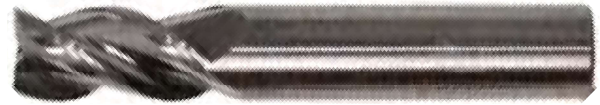


Tool Diameter Range	0.250-0.750 in
Shank tolerance	h6
Cutter tolerance	(+0.00-0.002 in) +0.00-0.05 mm
Number of flutes	2
Coating	No
Center cutting	yes
Variable pitch	Standard
Variable helix	Standard
Helix angle	45°



EDP Cromson	Cromson Description	Diam.	Length of cut	Overall length	Chamfer / radius	Cromson Grade	# Flutes
72002130	CREM-AL-2RC-0250-BN Cr20	1/4	3/4	2.1/2	.125	Cr20	2
72002135	CREM-AL-2RC-0312-BN Cr20	5/16	13/16	2.1/2	.156	Cr20	2
72002140	CREM-AL-2RC-0375-BN Cr20	3/8	3/4	2.1/2	.188	Cr20	2
72002145	CREM-AL-2EC-0500-BN Cr20	1/2	1.1/4	3	.250	Cr20	2
72002150	CREM-AL-2RC-0625-BN Cr20	5/8	1.1/4	3.1/2	.313	Cr20	2
72002155	CREM-AL-2RC-0750-BN Cr20	3/4	1.1/2	4	.375	Cr20	2

CARBIDE END MILL - SQUARE OR RADIUS
3 FLUTES
TECHNICAL DETAILS



Tool Diameter Range	0.125 - 1.000 in
Shank tolerance	h6
Cutter tolerance	(+0.00-0.002 in) +0.00-0.05 mm
Number of flutes	3
Coating	No
Center cutting	Yes
Variable pitch	Standard
Variable helix	Standard
Helix angle	41°



EDP Cromson	Cromson Description	Diam.	Length of cut	Overall length	Chamfer / radius	Cromson Grade	# Flutes
72002410	CREM-AL-3RC-0125-SQ Cr20	1/8	3/8	1.1/2	---	Cr20	3
72002415	CREM-AL-3EC-0125-SQ Cr20	1/8	1/2	1.1/2	---	Cr20	3
72002420	CREM-AL-3LC-0125-SQ Cr20	1/8	3/4	2.1/2	---	Cr20	3
72002425	CREM-AL-3RC-0187-SQ Cr20	3/16	5/16	2	---	Cr20	3
72002430	CREM-AL-3EC-0187-SQ Cr20	3/16	9/16	2	---	Cr20	3
72002435	CREM-AL-3RC-0250-SQ Cr20	1/4	1/2	2.1/2	---	Cr20	3
72002440	CREM-AL-3RC-0250-R015- Cr20	1/4	1/2	2.1/2	.015	Cr20	3
72002445	CREM-AL-3EC-0250- SQ Cr20	1/4	3/4	2.1/2	---	Cr20	3
72002450	CREM-AL-3EC-0250-R015- Cr20	1/4	3/4	2.1/2	.015	Cr20	3
72002455	CREM-AL-3LC-0250- SQ Cr20	1/4	1.1/8	2.1/2	---	Cr20	3
72002460	CREM-AL-3LC-0250-R015- Cr20	1/4	1.1/8	2.1/2	.015	Cr20	3
72002465	CREM-AL-3RC-0312- SQ Cr20	5/16	5/8	2.1/2	---	Cr20	3
72002470	CREM-AL-3RC-0312-R030- Cr20	5/16	5/8	2.1/2	.030	Cr20	3
72002475	CREM-AL-3LC-0312- SQ Cr20	5/16	1.1/8	3	---	Cr20	3
72002480	CREM-AL-3RC-0375- SQ Cr20	3/8	3/4	2.1/2	---	Cr20	3
72002485	CREM-AL-3RC-0375-R030- Cr20	3/8	3/4	2.1/2	.030	Cr20	3
72002490	CREM-AL-3EC-0375- SQ Cr20	3/8	1.1/8	3	---	Cr20	3
72002495	CREM-AL-3EC-0375-R030- Cr20	3/8	1.1/8	3	.030	Cr20	3
72002500	CREM-AL-3LC-0375- SQ Cr20	3/8	2	4	---	Cr20	3
72002505	CREM-AL-3LC-0375-R030- Cr20	3/8	2	4	.030	Cr20	3
72002510	CREM-AL-3RC-0500- SQ Cr20	1/2	1	3	---	Cr20	3
72002515	CREM-AL-3RC-0500-R030- Cr20	1/2	1	3	.030	Cr20	3
72002520	CREM-AL-3EC-0500- SQ Cr20	1/2	1.1/4	3	---	Cr20	3
72002525	CREM-AL-3EC-0500-R030- Cr20	1/2	1.1/4	3	.030	Cr20	3
72002530	CREM-AL-3LC-0500- SQ Cr20	1/2	2	4	---	Cr20	3
72002535	CREM-AL-3LC-0500-R030- Cr20	1/2	2	4	.030	Cr20	3
72002540	CREM-AL-3RC-0625- SQ Cr20	5/8	1.1/4	3.1/2	---	Cr20	3
72002545	CREM-AL-3RC-0625-R030- Cr20	5/8	1.1/4	3.1/2	.030	Cr20	3
72002550	CREM-AL-3EC-0625- SQ Cr20	5/8	1.5/8	3.1/2	---	Cr20	3
72002555	CREM-AL-3EC-0625-R030- Cr20	5/8	1.5/8	3.1/2	.030	Cr20	3

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0 HARDNESS (HRC)

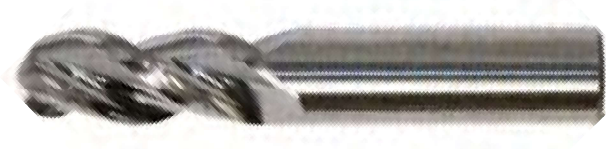
EDP Cromson	Cromson Description	Diam.	Length of cut	Overall length	Chamfer / radius	Cromson Grade	# Flutes
72002560	CREM-AL-3LC-0625- SQ Cr20	5/8	2	4	---	Cr20	3
72002565	CREM-AL-3LC-0625-R030- Cr20	5/8	2	4	.030	Cr20	3
72002570	CREM-AL-3RC-0750- SQ Cr20	3/4	1.1/2	4	---	Cr20	3
72002575	CREM-AL-3RC-0750-R030- Cr20	3/4	1.1/2	4	.030	Cr20	3
72002580	CREM-AL-3EC-0750- SQ Cr20	3/4	1.3/4	4	---	Cr20	3
72002585	CREM-AL-3EC-0750-R030- Cr20	3/4	1.3/4	4	.030	Cr20	3
72002590	CREM-AL-3LC-0750- SQ Cr20	3/4	3	6	---	Cr20	3
72002595	CREM-AL-3LC-0750-R030- Cr20	3/4	3	6	.030	Cr20	3
72002600	CREM-AL-3RC-1000- SQ Cr20	1	1.1/2	4	---	Cr20	3
72002605	CREM-AL-3RC-1000-R030- Cr20	1	1.1/2	4	.030	Cr20	3
72002610	CREM-AL-3EC-1000- SQ Cr20	1	2	4.1/2	---	Cr20	3
72002615	CREM-AL-3EC-1000-R030- Cr20	1	2	4.1/2	.030	Cr20	3
72002620	CREM-AL-3LC-1000- SQ Cr20	1	3	6	---	Cr20	3
72002625	CREM-AL-3LC-1000-R030- Cr20	1	3	6	.030	Cr20	3

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0 HARDNESS (HRC)

**CARBIDE END MILL - BALL NOSE
3 FLUTES**

TECHNICAL DETAILS

- Tool Diameter Range 0.250-0.750 in
- Shank tolerance h6
- Cutter tolerance (+0.00-0.002 in) +0.00-0.05 mm
- Number of flutes 3
- Coating No
- Center cutting Yes
- Variable pitch Standard
- Variable helix Standard
- Helix angle 41°



EDP Cromson	Cromson Description	Diam.	Length of cut	Overall length	Chamfer / radius	Cromson Grade	# Flutes
72002160	CREM-AL-3RC-0250-BN Cr20	1/4	3/4	2.1/2	.125	Cr20	3
72002165	CREM-AL-3RC-0312-BN Cr20	5/16	13/16	2.1/2	.156	Cr20	3
72002170	CREM-AL-3RC-0375-BN Cr20	3/8	3/4	2.1/2	.188	Cr20	3
72002175	CREM-AL-3EC-0500-BN Cr20	1/2	1.1/4	3	.250	Cr20	3
72002180	CREM-AL-3RC-0625-BN Cr20	5/8	1.1/4	3.1/2	.313	Cr20	3
72002185	CREM-AL-3RC-0750-BN Cr20	3/4	1.1/2	4	.375	Cr20	3

MOTION-AL							Feed (inches Per Tooth)						
Work Material	Type of Cut	Axiale DOC	Radicale DOC	Vitesse (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										
Medium carbon steel <= 38HRc 4140, 4340	Slotting Peripheral - Rough	1 x D 1.5 x D	1 x D 0.5 x D										
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										
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										
Moderately difficult stainless steel 304, 316, invar, kovar	Slotting Peripheral - Rough	.75 x D 1 x D	1 x D 0.5 x D										
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										
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	800 2000	.0008 .0010	.0018 .0043	.0027 .0052	.0036 .0061	.0045 .0075"	.0054 .0081	.0072 .0110		
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.