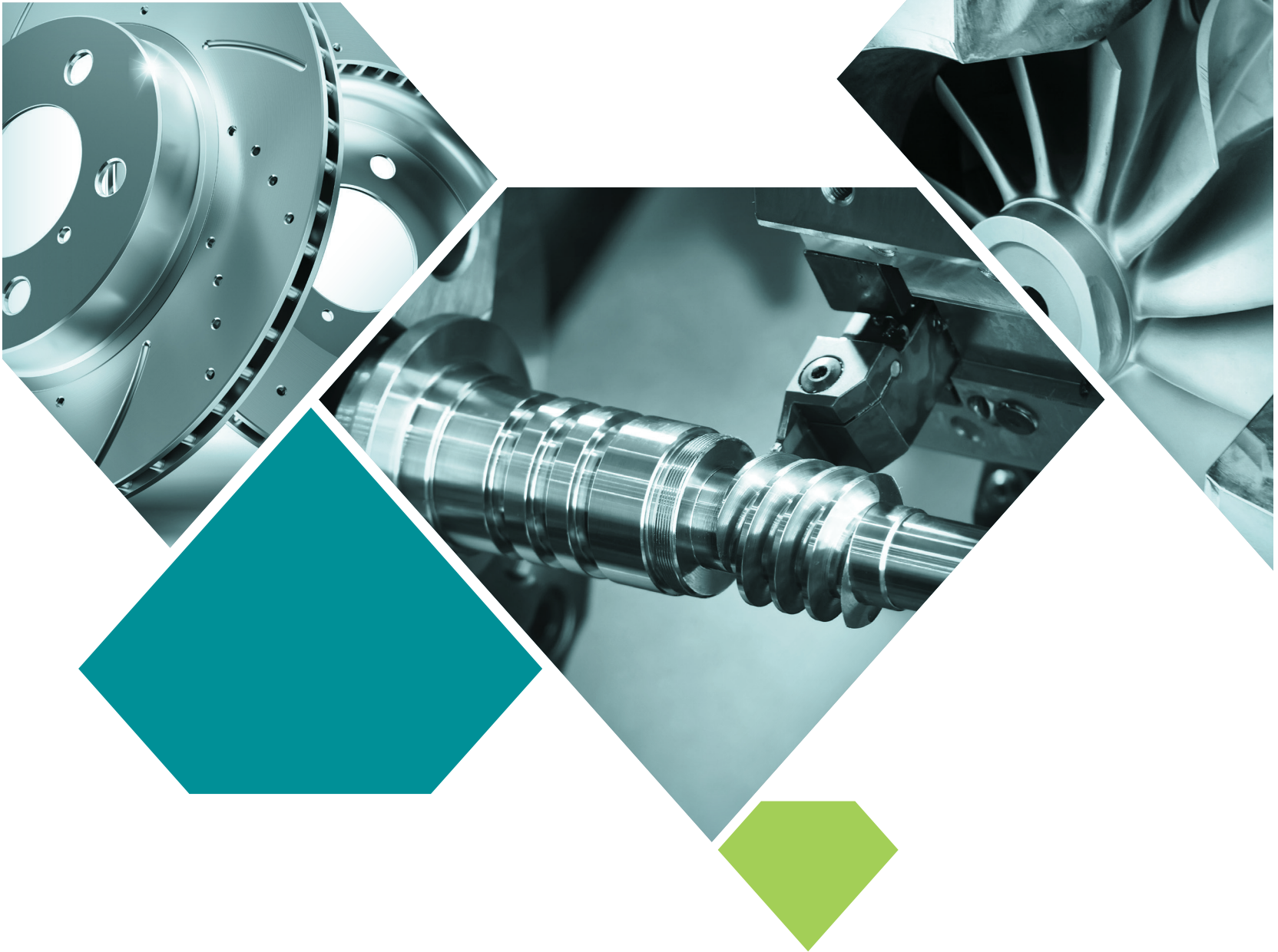


Cutting Tools



Creating Material Change
www.haydale.com  [HaydaleGraphene](#)

Milling Grade Information

Product*	Ceramic Type	Description
CT-10 CT-10C	SiC Whisker Reinforced	NEW! Excellent fracture toughness with a superior finish than CT-25
CT-25 CT-25C		Unsurpassed toughness used primarily for roughing
SBN-550 SBN-550C	Cubic Boron Nitride	Low Content Solid CBN for use in hardened steel applications
SBN-570 SBN-570C		High Content Solid CBN Ideal for cast and ductile irons and abrasive materials

Silicon Nitride, Sialon, and Alumina-TiC Ceramics are available upon request.

*All grades designated with a C suffix are coated.

Milling Grade for Workpiece

Milling							
Application	Workpiece	Grade	Ceramic	Type	Speed	Feed	Depth of Cut
Milling	Gray Cast Iron Chilled Cast Iron	CT-25 CT-25C	SiC Whisker	Rough	1,800–3,000 sfm	.004 - .010 ipt	.020" - .200"
Milling	Ductile Iron Nodular Iron	CT-25 CT-25C	SiC Whisker	Rough	1,200–2,400 sfm	.004 - .008 ipt	.020" - .200"
Milling	High Temperature Alloys (HTAs)	CT-25 CT-25C	SiC Whisker	Rough	1,800–3,600 sfm	.004 - .010 ipt	.040" - .120"

Common Aerospace Milling Geometries

Round Inserts, Negative

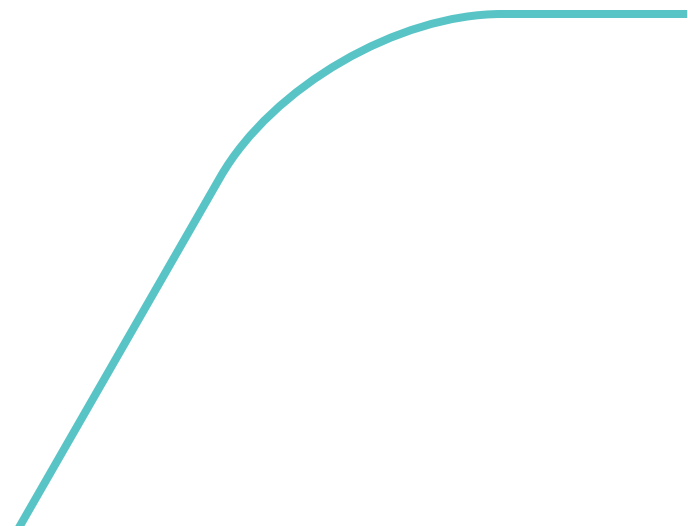
Geometry	IC	T
RNGN 32	3/8	1/8
RNGN 33	3/8	3/16
RNGN 43	1/2	3/16
RNGN 45	1/2	5/16

Round Inserts, Positive

Geometry	IC	T
RPGN 215	1/4	3/32
RPGN 32	3/8	1/8
RPGN 43	1/2	3/16

Square Inserts, 90°, Negative

Geometry	IC	T	R
SNGN 432	1/2	3/16	0.031
SNGN 433	1/2	3/16	0.047
SNGN 434	1/2	3/16	0.063
SNGN 434	1/2	3/16	0.063
SNGN 437	1/2	3/16	0.109



Turning Grade Information

Product*	Ceramic Type	Description
CT-10 CT-10C	SiC Whisker Reinforced	NEW! Excellent fracture toughness with a superior finish than CT-25
CT-25 CT-25C		Unsurpassed toughness used primarily for roughing
SBN-550 SBN-550C	Cubic Boron Nitride	Low Content Solid CBN for use in hardened steel applications
SBN-570 SBN-570C		High Content Solid CBN Ideal for cast and ductile irons and abrasive materials

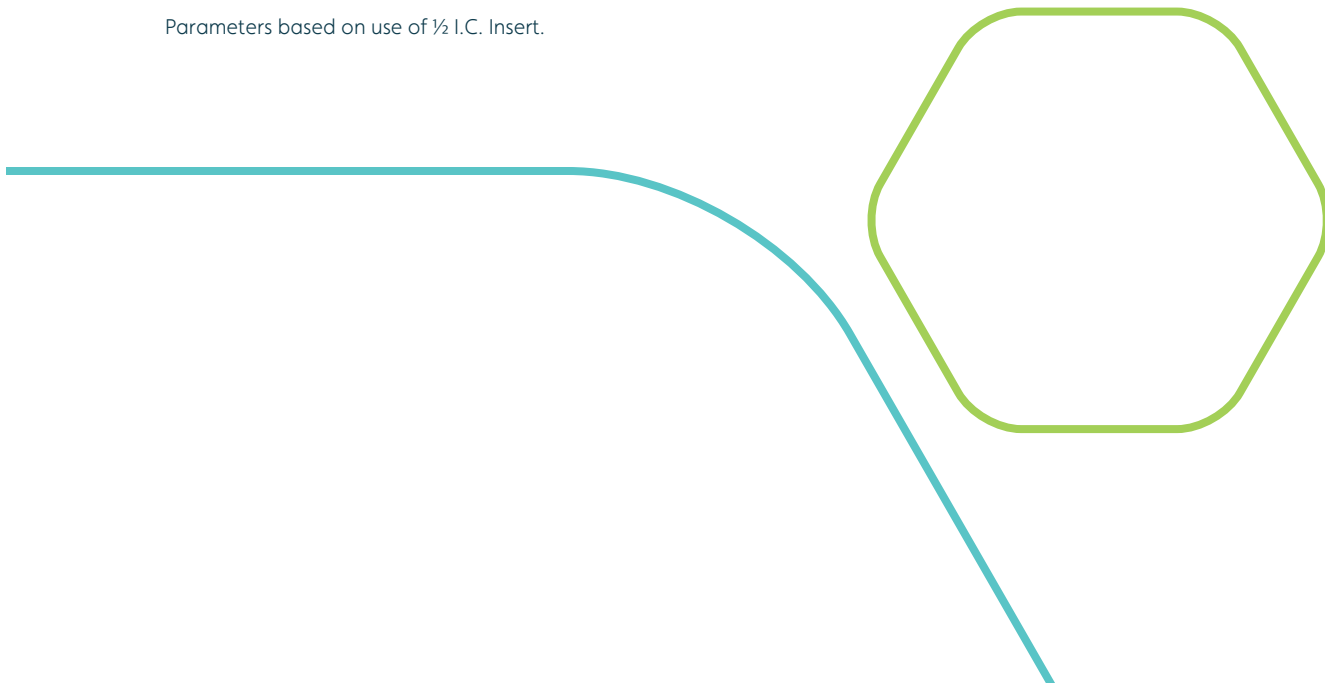
Silicon Nitride, Sialon, and Alumina-TiC Ceramics are available upon request.

*All grades designated with a C suffix are coated.

Turning Grade for Workpiece

Turning							
Application	Workpiece	Grade	Ceramic	Type	Speed	Feed	Depth of Cut
Turning	Gray Cast Iron, Chilled Cast Iron	CT-25 CT-25C	SiC Whisker	Rough	1,200 – 2,400 sfm	.008 - .024 ipr	.020" - .100"
		CT-10 CT-10C	SiC Whisker	Finish	600 – 1,200 sfm	.004 - .012 ipr	.010" - .020"
Turning	Ductile Iron Nodular Iron	CT-25 CT-25C	SiC Whisker	Rough	600 – 1,800 sfm	.006 - .018 ipr	.020" - .080"
		CT-10 CT-10C	SiC Whisker	Finish	600 – 1,600 sfm	.004 - .010 ipr	.010" - .020"
Turning	Tool Steel HRC 30-60	CT-25 CT-25C	SiC Whisker	Rough	300 – 1,000 sfm	.002 - .010 ipr	.010" - .040"
		CT-10 CT-10C	SiC Whisker	Finish	150 – 600 sfm	.002 - .010 ipr	.006" - .020"
Turning	High Temperature Alloys (HTAs)	CT-25 CT-25C	SiC Whisker	Rough	600 – 1,600 sfm	.004 - .016 ipr	.020" - .120"
		CT-10 CT-10C	SiC Whisker	Finish	600 – 1,200 sfm	.004 - .010 ipr	.010" - .020"

Parameters based on use of 1/2 I.C. Insert.



Common Aerospace Turning Geometries

Diamond Inserts, 80°, Negative, with hole

Geometry	IC	T	R
CNGA 432	1/2	3/16	0.031
CNGA 433	1/2	3/16	0.047
CNGA 434	1/2	3/16	0.063
CNGA 543	5/8	1/4	0.047
CNGA 544	5/8	1/4	0.063
CNGA 643	3/4	1/4	0.047

Diamond Inserts, 80°, Negative

Geometry	IC	T	R
CNGN 432	1/2	3/16	0.031
CNGN 433	1/2	3/16	0.047
CNGN 434	1/2	3/16	0.063
CNGN 452	1/2	5/16	0.031
CNGN 453	1/2	5/16	0.047
CNGN 454	1/2	5/16	0.063

Diamond Inserts, 55°, Negative, with hole

Geometry	IC	T	R
DNGA 432	1/2	3/16	0.031
DNGA 433	1/2	3/16	0.047
DNGA 434	1/2	3/16	0.063

Diamond Inserts, 55°, Negative

Geometry	IC	T	R
DNGN 432	1/2	3/16	0.031
DNGN 433	1/2	3/16	0.047
DNGN 434	1/2	3/16	0.063

Round Inserts, 7°, V-Bottom

Geometry	IC	T	θ
RCGX 23	1/4	3/16	120°
RCGX 35	3/8	5/16	120°
RCGX 45	1/2	5/16	120°

Grooving and Side Turning Inserts

Geometry	W	L	T	R
VGW 4125-R	0.125	0.500	0.187	0.063
VGW 4125-1	0.125	0.500	0.187	0.016
VGW 4125-2	0.125	0.500	0.187	0.031
VGW 4156-R	0.156	0.500	0.187	0.078
VGW 4156-1	0.156	0.500	0.187	0.016
VGW 4156-2	0.156	0.500	0.187	0.031
VGW 4187-R	0.187	0.500	0.187	0.094
VGW 4187-1	0.187	0.500	0.187	0.016
VGW 4187-2	0.187	0.500	0.187	0.031
VGW 6218-R	0.218	0.750	0.250	0.109
VGW 6218-1	0.218	0.750	0.250	0.016
VGW 6218-2	0.218	0.750	0.250	0.031
VGW 6250-R	0.250	0.750	0.250	0.125
VGW 6250-1	0.250	0.750	0.250	0.016
VGW 6250-2	0.250	0.750	0.250	0.031
VGW 6250-3	0.250	0.750	0.250	0.047

Round Inserts, 11°, V-Bottom

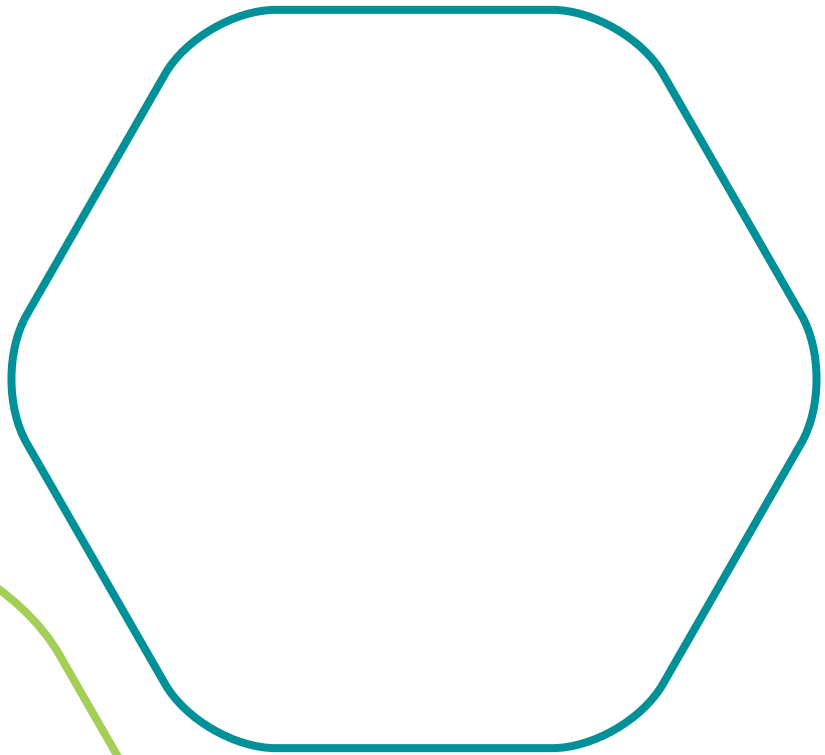
Geometry	IC	T	θ
RPGX 23	1/4	3/16	120°
RPGX 35	3/8	5/16	120°
RPGX 45	1/2	5/16	120°

Round Inserts, Negative

Geometry	IC	T
RNGN 32	3/8	1/8
RNGN 33	3/8	3/16
RNGN 43	1/2	3/16
RNGN 45	1/2	5/16
RNGN 55	5/8	5/16
RNGN 64	3/4	1/4
RNGN 65	3/4	5/16
RNGN 85	1	5/16
RNGN 86	1	3/8
RNGN 106	1 1/4	3/8

Cross Reference

	CAST IRON			HEAT RESISTANT ALLOY			HARDENED MATERIAL	
Haydale	CT-10 (C)	CT-10 (C)	CT-10 (C)	CT-10 (C)	CT-25 (C)	CT-25 (C)	CT-10 (C) CT-25 (C)	CT-25 (C)
NTK	HC1 HW2	HC2 HC5 HC6	SX6 SP9	JX0 JX1	WA1	SX3 SX5 SX7 SX9	HC4 HC5 HC7 ZC4 ZC7	WA1
Greenleaf	GEM19	GEM7	CSM100 CSN200 GSN100 HSN100 HSN200		WG300 WG600 WG700	XYTIN-1	GEM7	WG300 WG600 WG700
Hertel	ACS	HT610CA MC2					HT610CA	
Indexable	I50	I100	MW30 MW43			MW37	I100	
Iscar	IN11	IN22 IN23	IS6 IS8 IS80		IW7	IS9	IN22 IN23 IN420	IW7
Kennametal	K060	K090 KY1615	KY1320 KY3000 KY3400 KY3500 KY4400 KYK10 KYK25 KYK35		KY1525 KY4300	KY1540 KY2100 KYS25 KYS30 KYSP30 KYSM10	KY1615 KY4400	KY4300 KYS25
Kyocera	KA30	A65 A66N PT600M	CS7050 KS500 KS6000 KS6050			CFI KS6030 KS6040	A65 A66N KT66 PT600M	
Newcomer	NP5200	NP5000						
Romay	CCIO	CC20 CC30	CC510 CC513 CC514 CC514C CC515 CC516 CC5165C		CC60	CC5477	CC305C	
Sandvik		CC620 CC650 CC6050	CC1690 CC6090 CC6190		CC670	CC6060 CC650 CC6065	CC6050 CC650	CC670
SPK		SN60 SN80 SH2	SL506 SL508 SL550C SL554C SL654 SL808 SL854C					
Union	SZ200 SZ300	SD200 ST100 ST200 ST300 ST500 TA300 TC300	SN26 SN300 SN400 SN500 SN600 SN700 SN800		SW400 SW500 SW700 SW800	SN800 SN900	ST500 TC100 TC300 TM300	SW400 SW500 SW700 SW800
Sumitomo		NB90S	NS260 NS260C SN2000K SN2100K		WX120 WX1500	WX2000 WX2500	NB90S NB150H	
Taegutech	AB120 AW20	AB30	AB20 AB30 AS10 AS500 AW20 SC10		TC430	AS20	AB30 AW120	
Tungaloy		LX11 LX21 CX710	CX710 FX105			M101S	LX11	
Valenite		Q32	VPQ130 VPQ135				Q35 VPZ205 VPZ215	



Contact Customer Service at Silar@Haydale.com to get your copy of the new Haydale Catalog.

Creating Material Change

www.haydale.com  [HaydaleGraphene](#)

Haydale Products are manufactured in the USA and sold exclusively through technical Manufacturer's Rep Agencies throughout North America. Contact us today so we can put you in touch with your local experts.

