

Work Materials	Applications	Insert	Grade	Cutting speed Vc (m/min)	Feed f (mm/rev)	Depth of cut ap (mm)
P Mild Carbon Steels C10-C35 / 20NiCrMo2 / 18CrMo4 Medium to High Carbon steels C40-C60 / 34CrMo4 / 42CrMo4 / 41CrNiMo2 Tool Steels X100CrMoV5 / HS6-5-2 ISO	Roughing / Heavy Cutting	CNMG120408-TH	T9235	50 - 200	0.3 - 0.5	1.0 - 4.0
	Roughing	CNMG120408-THS	T9225	120 - 300	0.3 - 0.5	1.0 - 4.0
	Medium Cutting	CNMG120408-TM	T9225	120 - 300	0.2 - 0.4	1.0 - 4.0
	Finishing / General Purpose	CNMG120408-TSF	T9215	150 - 400	0.08 - 0.2	0.3 - 1.5
	Roughing / Gummy Steels	CNMG120408-ZM	T9225	120 - 300	0.1 - 0.3	0.5 - 2.5
	Finishing / Gummy Steels	CNMG120408-ZF	T9215	150 - 400	0.08 - 0.20	0.2 - 1.0
	Finishing / Faster	CNMG120408-TSF	GT9530	80 - 300	0.08 - 0.20	0.3 - 1.5
	Finishing / Fastest	CNMG120408-TS	GT9530	80 - 300	0.08 - 0.15	0.3 - 1.0
	Precision Finishing	CNMG120408-01	NS9530	80 - 250	0.03 - 0.15	0.1 - 0.3
	Roughing / Heavy Cutting	CNMG120408-TH	T9235	50 - 200	0.3 - 0.5	1.0 - 4.0
	Roughing / Heavy Cutting / Forging	CNMG120408-TH	T9215	150 - 400	0.3 - 0.5	1.0 - 4.0
	Roughing	CNMG120408-DM	T9215	150 - 400	0.2 - 0.4	1.0 - 4.0
	Medium Cutting	CNMG120408-TM	T9215	150 - 400	0.2 - 0.4	1.0 - 4.0
	Medium Cutting / Slower Speeds	CNMG120408-TM	T9225	120 - 300	0.2 - 0.4	1.0 - 4.0
	Finishing / General Purpose	CNMG120408-TSF	T9205	180 - 400	0.08 - 0.2	0.3 - 1.5
	Finishing / Size control and superb finishing	CNMG120408-TSF	GT9530	80 - 300	0.08 - 0.2	0.3 - 1.5
	Precision Finishing	CNMG120408-01	NS9530	80 - 250	0.03 - 0.15	0.1 - 0.3
	Roughing #1	CNMG120408-TH	T9205	180 - 400	0.3 - 0.5	1.0 - 4.0
Roughing #2	CNMG120408-DM	T9205	180 - 400	0.2 - 0.4	1.0 - 4.0	
Medium Cutting #1	CNMG120408-TM	T9205	180 - 400	0.2 - 0.4	1.0 - 4.0	
Medium Cutting #2	CNMG120408-TM	T9215	150 - 400	0.2 - 0.4	1.0 - 4.0	
Finishing / General Purpose	CNMG120408-TSF	GT9530	80 - 300	0.08 - 0.2	0.3 - 1.5	
Finishing / Size control and superb finishing	CNMG120408-TSF	GT9530	80 - 300	0.08 - 0.2	0.3 - 1.5	
Finishing / Carbide option	CNMG120408-TSF	T9205	180 - 400	0.08 - 0.2	0.3 - 1.5	
Precision Finishing	CNMG120408-01	NS9530	80 - 250	0.03 - 0.15	0.1 - 0.3	

Work Materials	Applications	Insert	Grade	Cutting speed Vc (m/min)	Feed f (mm/rev)	Depth of cut ap (mm)
M Stainless Steels	Roughing / Interrupted Cutting	CNMG120408-SH	T6130 / AH645	70 - 200	0.2 - 0.4	1.0 - 4.0
	Roughing / Continuous Cutting	CNMG120408-SH	T6130 / AH630	90 - 200	0.2 - 0.4	1.0 - 4.0
	Cast or Forging	CNMG120408-SH	T6130 / AH630	90 - 200	0.2 - 0.4	1.0 - 4.0
	Austenitic / Interrupted Cutting	CNMG120408-SM	T6130 / AH645	70 - 200	0.2 - 0.4	1.0 - 4.0
	Ferritic, Martensite, Precipitation Hardened Stainless Steel	CNMG120408-SM	T6120 / AH630	90 - 240	0.2 - 0.4	1.0 - 4.0
	Austenitic, Tubing / Light Cutting	CNMG120408-SF	AH630	90 - 190	0.08 - 0.25	0.5 - 1.5
	Austenitic, Tubing / Sharper Edg	CNMG120408-SA	AH630	90 - 190	0.2 - 0.4	1.0 - 4.0
	Finishing / General Purpose	CNMG120408-SM	T6130 / AH630	90 - 200	0.2 - 0.4	1.0 - 4.0
	Finishing / General Purpose, Precipitation Hardened Stainless Steel	CNMG120408-SF	T6120 / AH630	90 - 240	0.08 - 0.25	0.5 - 1.5
	Finishing Chatter-prone Parts	CNMG120408-SS	T6120 / AH630	90 - 240	0.08 - 0.2	0.5 - 3.0
	Precision Finishing	CNMG120408-SS	T6120 / AH630	90 - 240	0.08 - 0.2	0.5 - 3.0

Work Materials	Applications	Insert	Grade	Cutting speed Vc (m/min)	Feed f (mm/rev)	Depth of cut ap (mm)
K Grey Cast Iron Ductile Cast Iron	Roughing / Heavy Cutting	CNMA120408	T5125	100 - 350	0.2 - 0.4	1.0 - 5.0
	Roughing / Heavy and Interrupted Cutting	CNMA120408	T5125	100 - 350	0.2 - 0.4	1.0 - 5.0
	Medium Cutting	CNMG120408	T515	150 - 700	0.2 - 0.4	1.0 - 4.5
	Fast	CNMA120408	FX105	350 - 700	0.1 - 0.3	1.0 - 4.0
	Fastest	HNGD050716	FX105	300 - 1000	0.1 - 0.6	0.1 - 3.0
	Medium Cutting	CNMG120408-CM	T515	150 - 700	0.15 - 0.3	0.6 - 3.0
	Finishing	2QP-CNGA120408	BX930	350 - 1200	0.08 - 0.2	0.1 - 0.3
	Chilled (52-62 Rc)	S-CNCG120408	BXC90	100 - 150	0.08 - 0.2	0.1 - 0.6
	Roughing / Heavy and Interrupted Cutting	CNMA120408	T5125	100 - 250	0.2 - 0.4	1.0 - 4.0
	Roughing #1	CNMG120408	T515	150 - 350	0.2 - 0.4	1.0 - 4.0
	Roughing #2	CNMG120408-CH	T515	150 - 350	0.2 - 0.45	2.0 - 4.0
	Medium Cutting	CNMG120408-CM	T515	150 - 350	0.15 - 0.3	1.0 - 3.0
	Finishing / General Purpose	CNMG120408-CF	T5105	200 - 400	0.1 - 0.25	0.5 - 2.0
	Precision Finishing	2QP-CNGA	BX930	350 - 700	0.08 - 0.2	0.1 - 0.3

Work Materials	Applications	Insert	Grade	Cutting speed Vc (m/min)	Feed f (mm/rev)	Depth of cut ap (mm)
N Aluminium Brass, Bronze	Roughing / Heavy Cutting	CNGG120408R-P	GH110	100 - 500	0.2 - 0.5	0.5 - 4.0
	Roughing	CNGG120408R-P	GH110	100 - 1000	0.2 - 0.5	0.5 - 4.0
	Medium Cutting	CCGT120408-AL	KS05F	100 - 1000	0.1 - 0.5	0.5 - 5.0
	Finishing / Die Cast	CNGA120408-DIA	DX140	300 - 1000	0.08 - 0.2	0.1 - 1.0
	Roughing / Heavy Cutting	CNMG120408-HRM	AH8005	150 - 250	0.1 - 0.3	0.6 - 4.0
	Roughing	CNMG120408-HRM	AH8015	120 - 200	0.1 - 0.3	0.6 - 4.0
	Medium Cutting	CNMG120408-TM	AH110	150 - 250	0.2 - 0.4	0.5 - 4.0
	Finishing	CNMG120408-SA	AH110	180 - 300	0.2 - 0.4	1.0 - 4.0

Work Materials	Applications	Insert	Grade	Cutting speed Vc (m/min)	Feed f (mm/rev)	Depth of cut ap (mm)
S High Temperature Alloys	Roughing / Interrupted Cutting	CNMG120408	AH120	10 - 60	0.25 - 0.4	1.0 - 4.0
	Continuous Cutting	CNMG120408-HRM	AH8015	20 - 80	0.1 - 0.3	0.6 - 4.0
	Medium Cutting / Inconel	CNMG120408-HRM	AH8015	20 - 80	0.1 - 0.3	0.6 - 4.0
	Finishing / General Purpose	CNMG120408-HRF	AH8005	20 - 100	0.05 - 0.25	0.25 - 1.5
	Hard	2QP-CNGA120408	BX950	100 - 150	0.08 - 0.15	0.1 - 0.3
	Roughing / Hastalloy	CNMG120408-HRM	AH8015	20 - 80	0.1 - 0.3	0.6 - 4.0
	Titanium	CNMG120408-HRM	AH8015	20 - 80	0.1 - 0.3	0.6 - 4.0
	Roughing / Inconel	CNMG120408-HRM	AH8015	20 - 80	0.1 - 0.3	0.6 - 4.0
	Finishing / Inconel	2QP-CNGA120408	BX950	100 - 150	0.08 - 0.15	0.1 - 0.3
	Continuous Cutting in Powered Metal	2QP-CNGA120408	BX470	100 - 280	0.08 - 0.15	0.1 - 0.5
	Interrupted Cutting in Powered Metal	2QP-CNGA120408	BX480	100 - 280	0.08 - 0.15	0.1 - 0.3

Work Materials	Applications	Insert	Grade	Cutting speed Vc (m/min)	Feed f (mm/rev)	Depth of cut ap (mm)
H Hard Turning	Low Cost Cutting	CNGA120408	LX11	80 - 150	0.05 - 0.15	0.05 - 0.3
	General Purpose	2QP-CNGA120408	BXA20	80 - 200	0.05 - 0.2	0.05 - 0.3
	Continuous Cutting	2QP-CNGA120408	BX310	80 - 200	0.05 - 0.2	0.05 - 0.2
	Continuous, High Speed Cutting	2QP-CNGA120408	BXM10	120 - 300	0.05 - 0.15	0.05 - 0.3
	Light Interrupted, Low Speed Cutting	2QP-CNGA120408	BX360	50 - 150	0.05 - 0.2	0.05 - 0.3
	Light Interrupted, High Speed Cutting	2QP-CNGA120408	BXA20	80 - 200	0.05 - 0.25	0.05 - 0.3
	Interrupted Cutting	2QP-CNGA120408-H	BXA20	80 - 180	0.05 - 0.15	0.05 - 0.2
	Tool Steel	2QP-CNGA120408	BXM10	80 - 150	0.05 - 0.15	0.05 - 0.3
	Roughing / Carborized Steel	2QP-CNGA120408-HM	BXA20	120 - 180	0.05 - 0.2	0.4 - 0.7
	Medium Cutting / Carborized Steel	2QP-CNGA120408-HF	BXA20	150 - 250	0.05 - 0.15	0.2 - 0.4
	Hardened Stainless Steel	2QP-CNGA120408	BXA20	100 - 180	0.05 - 0.2	0.05 - 0.3

Applications	Insert	Grade	Cutting speed Vc (m/min)	Feed f (mm/rev)	Depth of cut ap (mm)
Roughing / Heavy Cutting	CNMG120408-THS	T9225	120 - 300	0.3 - 0.9	1.0 - 4.0
Roughing / General Purpose	CNMG120408-TH	T9225	120 - 300	0.3 - 0.5	1.0 - 4.0
Roughing / Interrupted Cutting	CNMG120408-TH	T9235	50 - 200	0.3 - 0.5	1.0 - 4.0
Medium Cutting / General Purpose	CNMG120408-TM	T9215	150 - 400	0.2 - 0.4	1.0 - 4.0
Medium Cutting / Gummy Steels #1	CNMG120408-ZM	T9215	150 - 400	0.1 - 0.3	0.5 - 2.5
Medium Cutting / Gummy Steels #2	CNMG120408-NM	T9215	150 - 400	0.15 - 0.4	0.5 - 2.0
Finishing / Low Carbon Steels	CNMG120408-TSF	T9215	150 - 400	0.08 - 0.2	0.3 - 1.5
Finishing / Low Carbon Steels	CNMG120408-TSF	NS9530	80 - 250	0.08 - 0.2	0.3 - 1.5
Finishing / Medium to High Carbon Steels	CNMG120408-TSF	T9215	150 - 400	0.08 - 0.2	0.3 - 1.5
Finishing / Medium to High Carbon Steels	CNMG120408-TSF	GT9530	80 - 300	0.08 - 0.2	0.3 - 1.5
Finishing / Gummy Steels	CNMG120408-ZF	T9215	150 - 400	0.08 - 0.2	0.2 - 1.0
Precision Finishing	CNMG120408-01	NS9530	80 - 250	0.03 - 0.15	0.1 - 0.3

General Purpose Job Shop Inserts

GRADE COMPARISON CHART

ISO CODE	P05	P15	P25	P35
TUNGALOY	T9205	T9215	T9225	T9235
Conventional	T9105	T9115	T9125	T9135
SUMITOMO	AC8015P	AC8015P	AC8025P	AC8035P
MITSUBISHI	MC6015	MC6015	MC6025	MC6035
KYOCERA	CA510	CA515	CA025P	CA530
HITACHI	HG8010	HG8010	HG8025	GM8035
SANDVIK	GC4305	GC4315	GC4325	GC4335
KENNANMETAL	KCP05	KCP10	KCP25	KCP30
SECO	TP0501	TP1501	TP2501	TP3501
WALTER	WPP05S	WPP10S	WPP20S	WPP30S

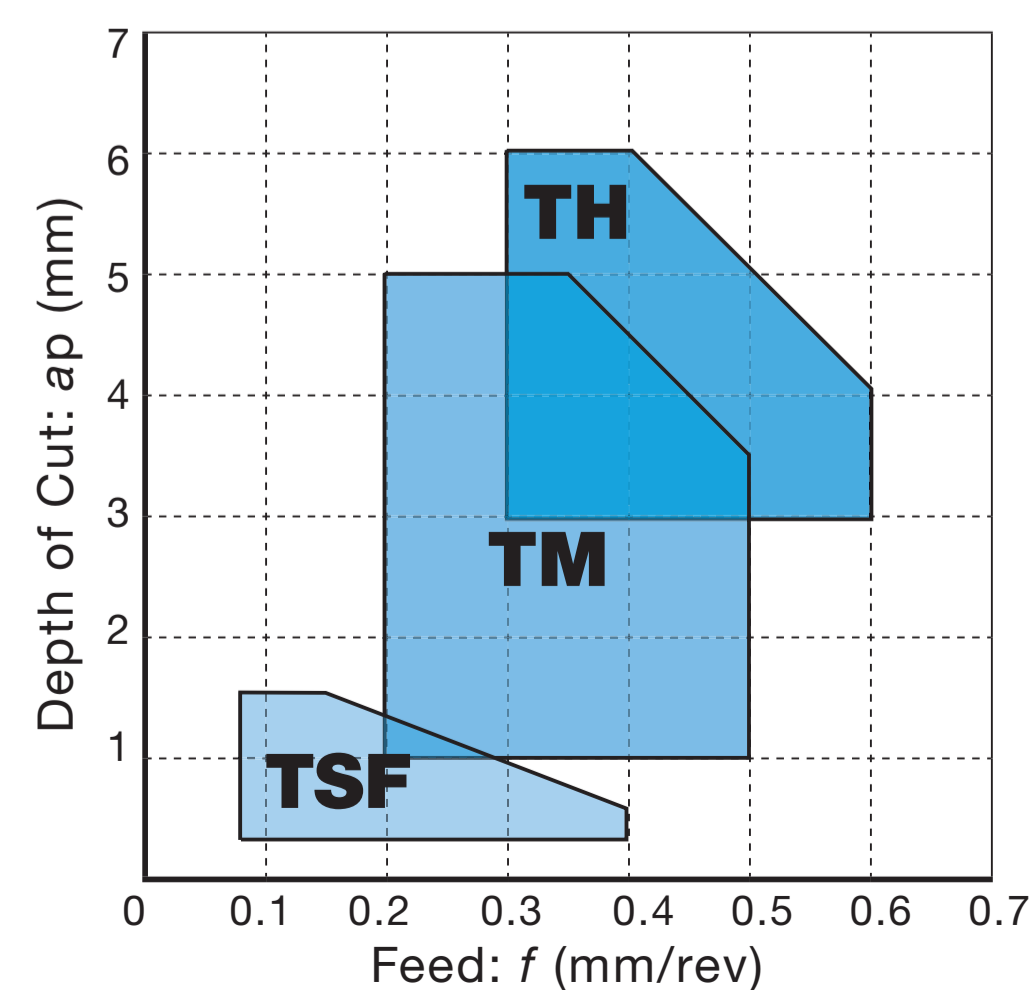
CHIPBREAKER COMPARISON CHART

APPLICATION	Finishing	Medium Cutting	Medium to Heavy Cutting	Heavy Cutting
TUNGALOY	TSF	TM	TH, THS	TUS
SUMITOMO	SU, SE	GU, GE	MU, ME	HG, HP
MITSUBISHI	LP, FP	MA, MP	MH, RP	HX, HR
KYOCERA	HQ, PP	PQ, PG	PG, GT	PX
HITACHI	BH, FE	AH, AB	AY	RE, TE
SANDVIK	PF, QF	PM, QM	PR, MR	PR, QR
KENNANMETAL	FN, FF	MN	RN, RP	RM, RH
SECO	MF2	MF5, M3	M5, MR7	R, RR
WALTER	FP5	MP3, MP5	RP5, RP7	NRF, NRR

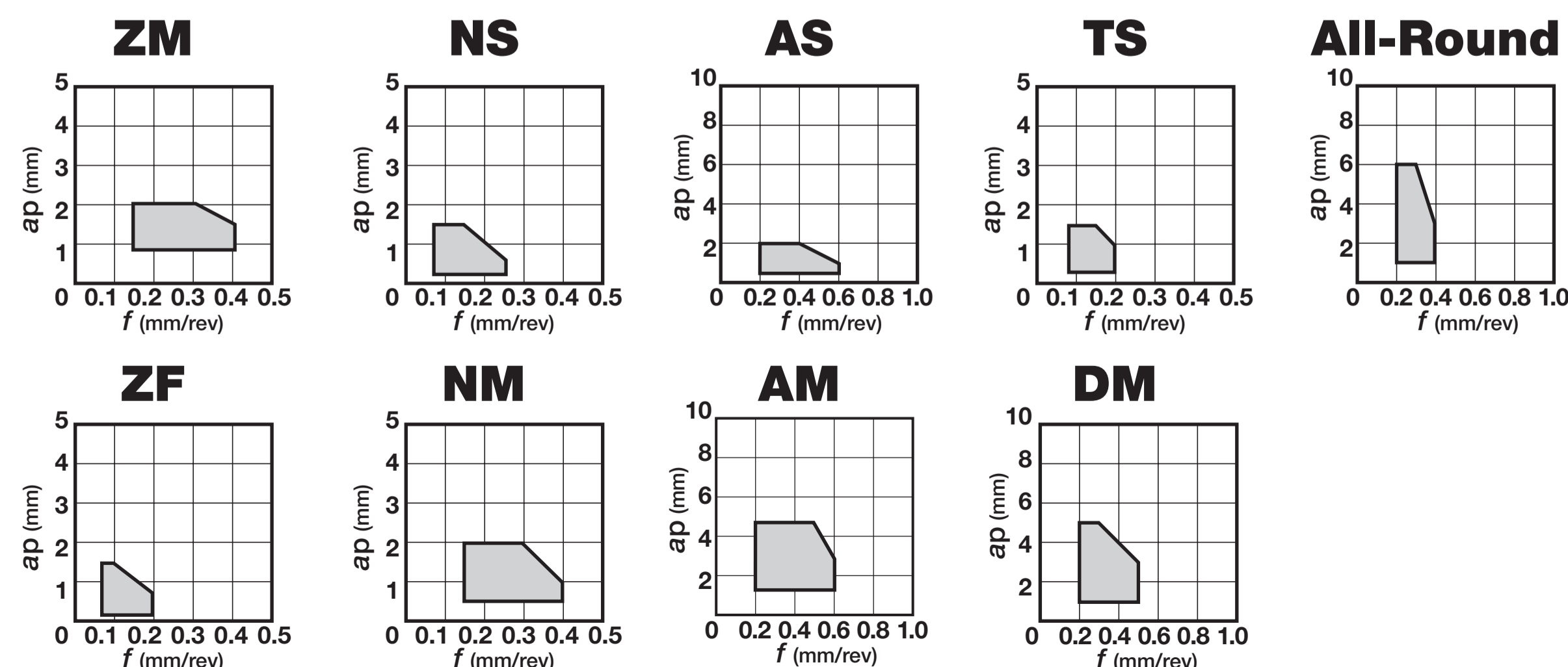
CUTTING CONDITION OF TURNING INSERTS FOR STEEL

APPLICATIONS	CHIP-BREAKERS	GRADES		CUTTING SPEED Vc (m/min)			FEED f (mm/rev)	DEPTH OF CUT ap (mm)	
		CERMET	COATED CARBIDE	HIGH CARBON STEELS	MEDIUM CARBON STEELS	LOW CARBON STEELS			
PRECISION FINISHING	-	TF	NS9530	-	150 - 250	80 - 220	80 - 180	0.03 - 0.15	0.1 - 0.5
FINISHING	SURFACE	TSF	GT9530	-	150 - 300	80 - 250	80 - 200	0.08 - 0.4	0.2 - 1.5
			AT9530	-	150 - 300	80 - 250	80 - 200	0.08 - 0.4	0.2 - 1.5
	CONTINUOUS	TSF	-	T9215	150 - 400	150 - 400	120 - 300	0.08 - 0.4	0.2 - 1.5
	INTERRUPTED	TSF	-	T9225	120 - 300	120 - 300	100 - 250	0.08 - 0.4	0.2 - 1.5
MEDIUM CUTTING	SURFACE	TS	GT9530	-	150 - 300	80 - 250	80 - 200	0.1 - 0.3	0.5 - 2.5
			AT9530	-	150 - 300	80 - 250	80 - 200	0.1 - 0.3	0.5 - 2.5
	CONTINUOUS	TM	-	T9215	150 - 400	150 - 400	120 - 300	0.2 - 0.5	1.0 - 5.0
	INTERRUPTED	TM	-	T9225	120 - 300	120 - 300	100 - 250	0.2 - 0.5	1.0 - 5.0
MEDIUM TO HEAVY CUTTING	CONTINUOUS	TH THS	-	T9215	150 - 400	150 - 400	120 - 300	0.3 - 0.6	3.0 - 6.0
			-	T9225	120 - 300	120 - 300	100 - 250	0.3 - 0.6	3.0 - 6.0
	INTERRUPTED	TH THS	-	T9215	150 - 400	150 - 400	120 - 300	0.3 - 0.6	3.0 - 6.0
			-	T9225	120 - 300	120 - 300	100 - 250	0.3 - 0.6	3.0 - 6.0

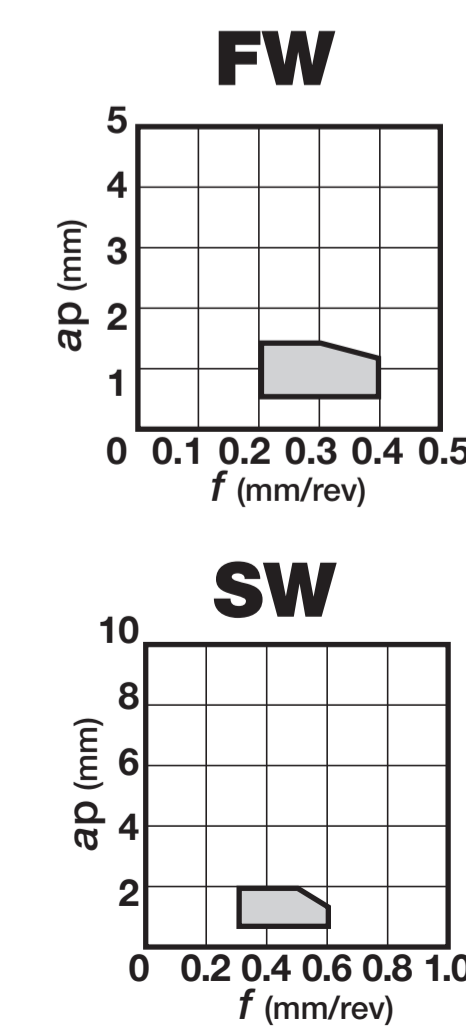
BASIC CHIPBREAKERS



COMPLEMENTARY CHIPBREAKERS



WIPERS



CHIPBREAKERS - HEAVY TURNING

