



ISO Class

K20-K35

Available Inserts

Positive: CCMT, DCMT, SCMT

Negative: CNMA, CNMG,
DNMG, SNMG, TNMA, TNMG,
VNMG, WNMG

Chip Breakers

Common Style

MT

RT

KT

Flat Top



TT7025

GRADE ADDITION FOR CAST IRON TURNING

Ingersoll has expanded the BlackRush line of ISO turning grades for machining cast iron to include new grade TT7025.

This grade features a tougher substrate than the existing BlackRush grades (TT7005 and TT7015) making it suitable for low speed and interrupted turning of cast iron where edge chipping can occur. TT7025 also incorporates the structurally aligned Al₂O₃ coating (GoldLife+ technology) for more crater and abrasion/wear resistance.

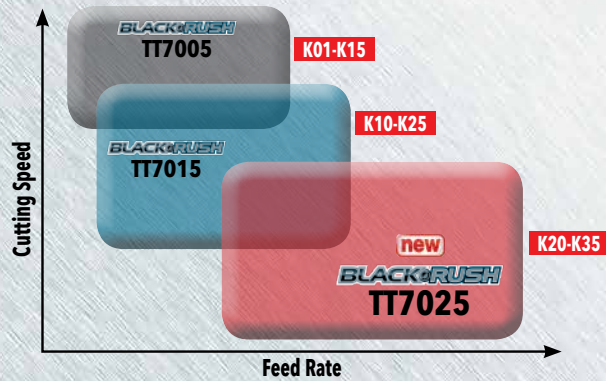
A significant performance advantage of grade TT7025 takes place in the turning of ductile cast iron. The tough substrate combined with a post-coat GOLDRUSH treatment reduces the tendency for build-up to take place on the cutting edge, resulting in improved surface roughness. Better wear detection is possible thanks to the two-tone color - black on the top & bottom and yellow on the periphery.

FEATURES:

- Optimal solution for low speed and interrupted machining of cast iron (Specifically for ductile cast iron machining)
- Aligned structure, GOLDLIFE+ coating provides improved abrasion and chipping resistance
- GOLDRUSH post-coat treatment provides excellent work piece surface finish
- Insert's multicolored appearance facilitates easy identification of insert wear

• **NEW** •
**PRODUCT
ANNOUNCEMENT
2018**

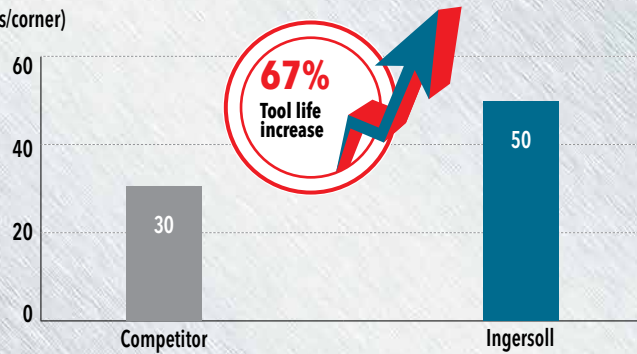
APPLICATION RANGE



CASE STUDY 1

		Competitor	Ingersoll
Component		Center support	
Workpiece material		Ductile cast iron (GGG 70)	
Operation		Interrupted facing	
Insert		WNMG 432 CVD coated	WNMG 432 KTT7025
Cutting speed	V (sfm)	820	820
Feed rate	f (ipr)	.008, .010	.008, .010
Depth of cut	ap (inch)	.060	.060
Coolant		Wet	Wet
Tool life (pcs/corner)		30	50

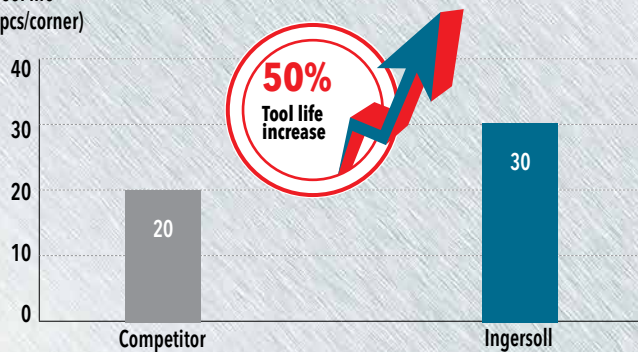
Tool life
(pcs/corner)



CASE STUDY 2

		Competitor	Ingersoll
Component		Differential case	
Workpiece material		Ductile cast iron (GGG 50)	
Operation		External interrupted turning	
Insert		CNMG 433 CVD coated	CNMG 433 KT TT7025
Cutting speed	V (sfm)	900	900
Feed rate	f (ipr)	.012	.012
Depth of cut	ap (inch)	2	2
Coolant		Wet	Wet
Tool life (pcs/corner)		20	30

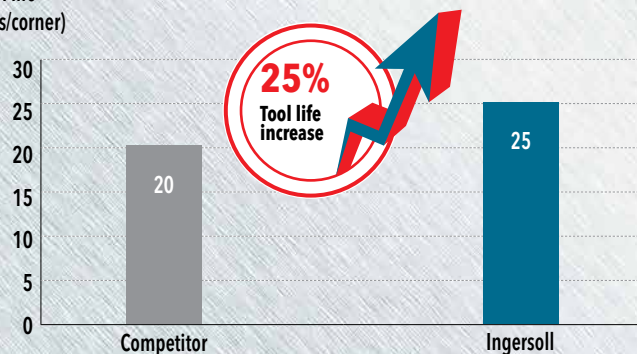
Tool life
(pcs/corner)



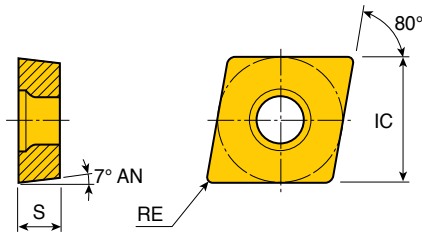
CASE STUDY 3

		Competitor	Ingersoll
Component		Differential case cover	
Workpiece material		Ductile cast iron (GGG 50)	
Operation		External, interrupted facing	
Insert		CNMG 432 CVD coated	CNMG 432 TT7025
Cutting speed	V (sfm)	820	820
Feed rate	f (ipr)	.010	.010
Depth of cut	ap (inch)	.050	.050
Coolant		Wet	Wet
Tool life (pcs/corner)		20	25

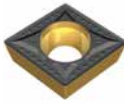
Tool life
(pcs/corner)



CCMT Positive 7° clearance 80° rhombic inserts

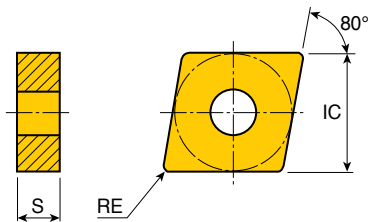


Size	Dimensions (inch)		
	IC Inscribed Circle	S Insert Thickness	RE Corner Radius
32.5 ₋	.375	.156	.016 - .031
43 ₋	.500	.187	.031

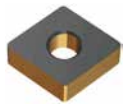
Insert	Part Number	Feed (ipr)	ap (inch)	CVD coated
				TT7025
 Medium	CCMT 32.51 (09T304) MT	.004 - .010	.028 - .138	•
	CCMT 32.52 (09T308) MT	.005 - .012	.040 - .138	•
	CCMT 432 (120408) MT	.005 - .012	.050 - .197	•

•: Standard items

CNMA Negative 80° rhombic inserts

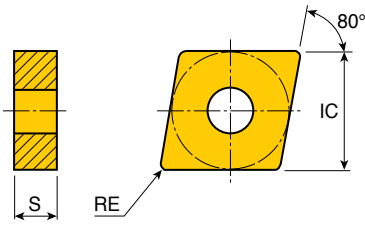


Size	Dimensions (inch)		
	IC Inscribed Circle	S Insert Thickness	RE Corner Radius
43 ₋	.500	.187	.031 - .047
54 ₋	.625	.250	.047
64 ₋	.750	.250	.047

Insert	Part Number	Feed (ipr)	ap (inch)	CVD coated
				TT7025
 Roughing	CNMA 432 (120408)	.006 - .024	.040 - .236	•
	CNMA 433 (120412)	.006 - .028	.060 - .236	•
	CNMA 543 (160612)	.006 - .028	.080 - .315	•
	CNMA 643 (190612)	.006 - .028	.080 - .394	•

•: Standard items

CNMG Negative 80° rhombic inserts

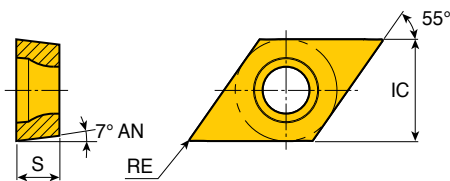


Size	Dimensions (inch)		
	IC Inscribed Circle	S Insert Thickness	RE Corner Radius
43_	.500	.187	.016 - .047

Insert	Part Number	Feed (ipr)	ap (inch)	CVD coated
				TT7025
Medium	CNMG 432 (120408)	.009 - .024	.060 - .197	•
Roughing	CNMG 432 (120408) KT	.007 - .021	.015 - .276	•
	CNMG 433 (120412) KT	.010 - .028	.020 - .276	•
	CNMG 434 (120416) KT	.011 - .033	.030 - .276	•
	CNMG 543 (160612) KT	.010 - .028	.020 - .276	•
Medium	CNMG 431 (120404) MT	.006 - .016	.040 - .197	•
	CNMG 432 (120408) MT	.007 - .022	.047 - .197	•
Roughing	CNMG 432 (120408) RT	.010 - .028	.098 - .236	•
	CNMG 433 (120412) RT	.010 - .028	.098 - .236	•
	CNMG 543 (160612) RT	.010 - .028	.118 - .276	•
	CNMG 643 (190612) RT	.010 - .028	.118 - .354	•
Wiper	CNMG 432 (120408) WT	.006 - .024	.040 - .197	•

•: Standard items

DCMT Positive 7° clearance 55° rhombic inserts

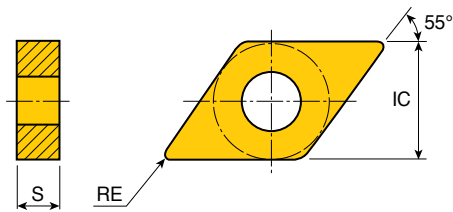


Size	Dimensions (inch)		
	IC Inscribed Circle	S Insert Thickness	RE Corner Radius
32.5_	.375	.156	.031

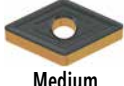
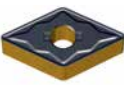
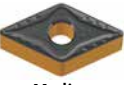
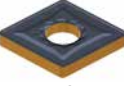
Insert	Part Number	Feed (ipr)	ap (inch)	CVD coated
				TT7025
Medium	DCMT 32.52 (11T308) MT	.005 - .012	.040 - .118	•

•: Standard items

DNMG Negative 55° rhombic inserts

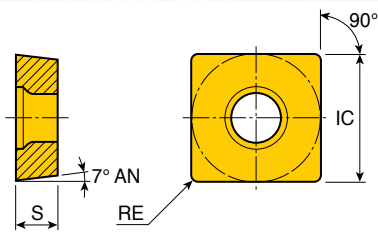


Size	Dimensions (inch)		
	IC Inscribed Circle	S Insert Thickness	RE Corner Radius
43_	.500	.187	.031 - .047
44_	.500	.250	.031 - .047

Insert	Part Number	Feed (ipr)	ap (inch)	CVD coated
				TT7025
 Medium	DNMG 442 (150608)	.006 - .022	.060 - .157	•
 Roughing	DNMG 432 (150408) KT	.006 - .018	.015 - .276	•
	DNMG 442 (150608) KT	.006 - .018	.015 - .276	•
	DNMG 433 (150412) KT	.009 - .025	.020 - .276	•
	DNMG 443 (150612) KT	.009 - .025	.020 - .276	•
 Medium	DNMG 432 (150408) MT	.006 - .020	.040 - .157	•
	DNMG 442 (150608) MT	.006 - .020	.040 - .157	•
	DNMG 443 (150612) MT	.008 - .020	.051 - .157	•
 Roughing	DNMG 433 (150412) RT	.010 - .025	.051 - .157	•

•: Standard items

SCMT Positive 7° clearance square inserts

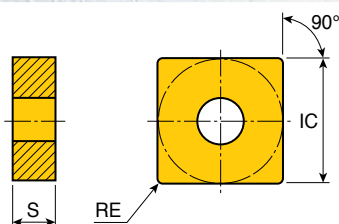


Size	Dimensions (inch)		
	IC Inscribed Circle	S Insert Thickness	RE Corner Radius
32.52	.375	.156	.031
432	.500	.187	.031

Insert	Part Number	Feed (ipr)	ap (inch)	CVD coated
				TT7025
 Medium	SCMT 32.52 (09T308) MT	.006 - .012	.040 - .138	•
	SCMT 432 (120408) MT	.006 - .012	.040 - .197	•

•: Standard items

■ SNMG Negative square inserts

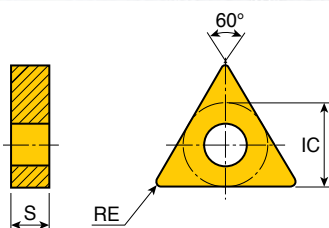


Size	Dimensions (inch)		
	IC Inscribed Circle	S Insert Thickness	RE Corner Radius
43_	.500	.187	.031 - .047

Insert	Part Number	Feed (ipr)	ap (inch)	CVD coated
				TT7025
 Medium	SNMG 432 (120408)	.009 - .024	.060 - .197	•
 Roughing	SNMG 432 (120408) KT	.007 - .021	.015 - .276	•
	SNMG 433 (120412) KT	.011 - .028	.020 - .276	•

•: Standard items

■ TNMA Negative triangular inserts

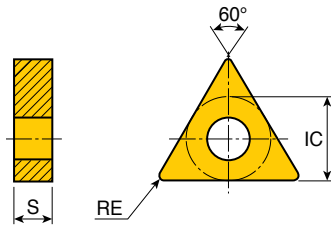


Size	Dimensions (inch)		
	IC Inscribed Circle	S Insert Thickness	RE Corner Radius
33_	.375	.187	.031 - .047

Insert	Part Number	Feed (ipr)	ap (inch)	CVD coated
				TT7025
	TNMA 333 (160412)	.008 - .020	.060 - .177	•

•: Standard items

TNMG Negative triangular inserts

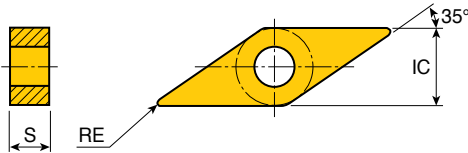


Size	Dimensions (inch)		
	IC Inscribed Circle	S Insert Thickness	RE Corner Radius
33_	.375	.187	.031 - .047

Insert	Part Number	Feed (ipr)	ap (inch)	CVD coated
				TT7025
 Roughing	TNMG 332 (160408) KT	.006 - .016	.013 - .244	•
	TNMG 333 (160412) KT	.008 - .022	.018 - .248	•
 Medium	TNMG 332 (160408) RT	.006 - .020	.047 - .138	•

•: Standard items

VNMG Negative 35° rhombic inserts



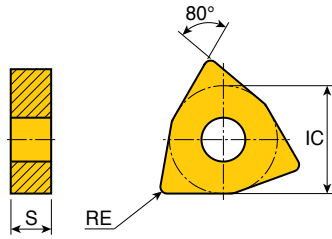
Size	Dimensions (inch)		
	IC Inscribed Circle	S Insert Thickness	RE Corner Radius
2.531	.312	.187	.016
33_	.375	.187	.016 - .031

Insert	Part Number	Feed (ipr)	ap (inch)	CVD coated
				TT7025
 OLD Medium	VNMG 331 (160404) MT ✓	.006 - .014	.031 - .118	•
	VNMG 332 (160408) MT	.006 - .014	.040 - .100	•

• ✓ Marked: Old type chip breaker

•: Standard items

WNMG Negative 80° trigon inserts



Size	Dimensions (inch)		
	IC Inscribed Circle	S Insert Thickness	RE Corner Radius
43_	.500	.187	.031 - .047

Insert	Part Number	Feed (ipr)	ap (inch)	CVD coated
				T7025
 Roughing	WNMG 432 (080408) KT	.006 - .018	.011 - .216	•
	WNMG 433 (080412) KT	.009 - .025	.015 - .216	•
 Medium	WNMG 432 (080408) MT	.006 - .022	.047 - .157	•
	WNMG 433 (080412) MT	.010 - .022	.060 - .157	•
 Roughing	WNMG 433 (080412) RT	.010 - .028	.010 - .157	•

•: Standard items

RECOMMENDED CUTTING CONDITIONS

ISO	Material	Condition	Tensile strength (N/mm ²)	Hardness HB	Material No.	Cutting speed Vc (sfm)		
						Coated		
						TT7005	TT7015	TT7025
P	Non-alloy steel, cast steel, free cutting steel	< 0.25%C Annealed	420	125	1			
		>= 0.25%C Annealed	650	190	2			
		< 0.55%C Quenched and tempered	850	250	3			
		>= 0.55%C Annealed	750	220	4			
		Quenched and tempered	1000	300	5			
	Low alloy steel and cast steel (less than 5% of alloying elements)	Annealed	600	200	6			
		Quenched and tempered	930	275	7			
			1000	300	8			
			1200	350	9			
	High alloy steel, cast steel and tool steel	Annealed	680	200	10			
		Quenched and tempered	1100	325	11			
M	Stainless steel and cast steel	Ferritic / martensitic	680	200	12			
		Martensitic	820	240	13			
		Austenitic	600	180	14			
K	Gray cast iron (GG)	Ferritic		160	15	980 - 1800	950 - 1480	920 - 1300
		Pearlitic		250	16	980 - 1410	820 - 1180	650 - 1050
	Cast iron nodular (GGG)	Ferritic		180	17	525 - 1310	490 - 1150	460 - 980
		Pearlitic		260	18	460 - 1150	430 - 980	395 - 920
	Malleable cast iron	Ferritic		130	19	650 - 1510	820 - 1280	750 - 1150
		Pearlitic		230	20	590 - 1150	650 - 1050	590 - 980
N	Aluminum - wrought alloy	Not cureable		60	21			
		Cured		100	22			
	Aluminum-cast, alloyed	<=12% Si Not cureable		75	23			
		Cured		90	24			
		>12% Si High temp.		130	25			
	Copper alloys	>1% Pb Free cutting		110	26			
		Brass		90	27			
		Electrolitic copper		100	28			
	Non-metallic	Duroplastics, fiber plastics			29			
		Hard rubber			30			
S	High temp. alloys	Fe based	Annealed	200	31			
			Cured	280	32			
		Ni or Co based	Annealed	250	33			
			Cured	350	34			
			Cast	320	35			
	Titanium, Ti alloys		Rm 400		36			
		Alpha+beta alloys cured	Rm 1050		37			
H	Hardened steel	Hardened		55HRC	38			
		Hardened		60HRC	39			
	Chilled cast iron	Cast		400	40			
	Cast iron nodular	Hardened		55HRC	41			

■ Steel
 ■ Stainless steel
 ■ Cast iron
 ■ Nonferrous
 ■ High temp. alloys
 ■ Hardened steel