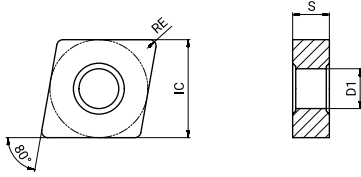


Negative 80° (C)

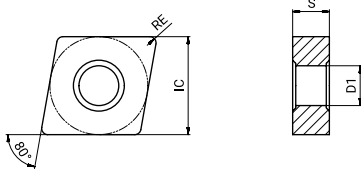


Dimension (in)			
Product code	IC	S	D1
CN_43_	1/2	3/16	0.203
CN_54_	5/8	1/4	0.250
CN_64_	3/4	1/4	0.313

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ➊ General condition ➋ Bad condition														ISO
						● ● ● ➊ ➋ ● ➊ ➋ ➋ ● ➊ ➋ ➋ ➊ ➊														
				Recommended parameters		P					M			K			N	S		
						f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	
Finishing		CNMG 431-PB1	1/64	0.002-0.006	0.01-0.126	●		●	●											CNMG 120404E-PB1
		CNMG 432-PB1	1/32	0.004-0.012	0.02-0.126	●		●	●											CNMG 120408E-PB1
		CNMG 433-PB1	3/64	0.006-0.018	0.031-0.126			●	●											CNMG 120412E-PB1
		CNMG 431-SC1	1/64	0.003-0.007	0.008-0.031								●							CNMG 120404E-SC1
		CNMG 432-SC1	1/32	0.004-0.010	0.008-0.031								●							CNMG 120408E-SC1
		CNMG 431-MB2	1/64	0.002-0.006	0.01-0.126						●	●	●							CNMG 120404E-MB2
CNMG 432-MB2		1/32	0.004-0.012	0.02-0.126						●	●	●							CNMG 120408E-MB2	
Light cutting		CNMG 431-SL3	1/64	0.005-0.010	0.024-0.118							●						●	CNMG 120404E-SL3	
		CNMG 432-SL3	1/32	0.006-0.012	0.031-0.118								●					●	CNMG 120408E-SL3	
Semi-finishing		CNMG 431-PB3	1/64	0.002-0.007	0.012-0.138	●		●	●										CNMG 120404E-PB3	
		CNMG 432-PB3	1/32	0.005-0.014	0.024-0.138	●	●	●	●										CNMG 120408E-PB3	
		CNMG 433-PB3	3/64	0.007-0.021	0.035-0.138	●	●	●	●										CNMG 120412E-PB3	
		CNMG 431-PC3	1/64	0.003-0.008	0.013-0.154	●													CNMG 120404E-PC3	
		CNMG 432-PC3	1/32	0.006-0.016	0.027-0.154	●	●	●	●										CNMG 120408E-PC3	
		CNMG 433-PC3	3/64	0.008-0.024	0.04-0.154	●													CNMG 120412E-PC3	
Medium		CNMG 431-PD3	1/64	0.003-0.009	0.016-0.169	●	●	●	●										CNMG 120404E-PD3	
		CNMG 432-PD3	1/32	0.006-0.017	0.031-0.169	●	●	●	●	●									CNMG 120408E-PD3	
		CNMG 433-PD3	3/64	0.009-0.026	0.047-0.169	●	●	●	●	●									CNMG 120412E-PD3	
		CNMG 542-PD3	1/32	0.006-0.017	0.031-0.209		●	●	●	●									CNMG 160608E-PD3	
		CNMG 543-PD3	3/64	0.009-0.026	0.047-0.209		●	●	●										CNMG 160612E-PD3	
		CNMG 642-PD3	1/32	0.006-0.017	0.031-0.252		●	●	●	●									CNMG 190608E-PD3	
		CNMG 643-PD3	3/64	0.009-0.026	0.047-0.252		●	●	●										CNMG 190612E-PD3	
		CNMG 644-PD3	1/16	0.012-0.026	0.063-0.252		●	●	●										CNMG 190616E-PD3	

● : Stock available

Negative 80° (C)

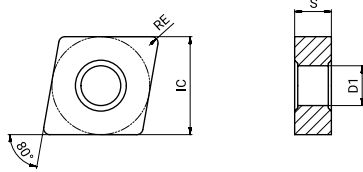


Dimension (in)			
Product code	IC	S	D1
CN_43_	1/2	3/16	0.203
CN_54_	5/8	1/4	0.250
CN_64_	3/4	1/4	0.313

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ● General condition ✖ Bad condition																ISO
						● ● ● ● ✖ ✖ ✖ ✖ ✖ ✖ ✖ ✖ ✖ ✖																
				Recommended parameters		P					M				K			N	S			
f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S							
Medium		CNMG 431-SC3	1/64	0.003-0.009	0.016-0.169						●	●	●					●	CNMG 120404E-SC3			
		CNMG 432-SC3	1/32	0.006-0.017	0.031-0.169						●	●	●					●	CNMG 120408E-SC3			
		CNMG 433-SC3	3/64	0.009-0.026	0.047-0.169						●	●	●					●	CNMG 120412E-SC3			
		CNMG 543-SC3	3/64	0.009-0.026	0.047-0.209						●	●	●					●	CNMG 160612E-SC3			
		CNMG 544-SC3	1/16	0.012-0.035	0.063-0.209						●	●	●					●	CNMG 160616E-SC3			
		CNMG 643-SC3	3/64	0.009-0.026	0.047-0.252						●	●	●					●	CNMG 190612E-SC3			
		CNMG 644-SC3	1/16	0.012-0.035	0.063-0.252						●	●	●					●	CNMG 190616E-SC3			
		CNMG 431-MC3	1/64	0.003-0.009	0.013-0.169						●	●	●						CNMG 120404E-MC3			
		CNMG 432-MC3	1/32	0.006-0.017	0.025-0.169						●	●	●					●	CNMG 120408E-MC3			
		CNMG 433-MC3	3/64	0.009-0.026	0.038-0.169						●	●	●						CNMG 120412E-MC3			
		CNMG 434-MC3	1/16	0.012-0.035	0.05-0.169						●	●	●						CNMG 120416E-MC3			
		CNMG 542-MC3	1/32	0.006-0.017	0.025-0.209						●	●	●						CNMG 160608E-MC3			
		CNMG 543-MC3	3/64	0.009-0.026	0.038-0.209						●	●	●						CNMG 160612E-MC3			
		CNMG 642-MC3	1/32	0.006-0.017	0.025-0.252						●	●	●						CNMG 190608E-MC3			
CNMG 643-MC3	3/64	0.009-0.026	0.038-0.252						●	●	●						CNMG 190612E-MC3					
	CNMG 431-PC4	1/64	0.003-0.009	0.016-0.169			●	●						●	●			CNMG 120404E-PC4				
	CNMG 432-PC4	1/32	0.006-0.017	0.031-0.169		●	●	●						●	●			CNMG 120408E-PC4				
	CNMG 433-PC4	3/64	0.009-0.026	0.047-0.169		●	●	●						●	●			CNMG 120412E-PC4				
	CNMG 543-PC4	3/64	0.009-0.026	0.047-0.209		●	●	●						●	●			CNMG 160612E-PC4				
	CNMG 544-PC4	1/16	0.012-0.035	0.063-0.209		●	●	●						●	●			CNMG 160616E-PC4				
	CNMG 643-PC4	3/64	0.009-0.026	0.047-0.252		●	●	●						●	●			CNMG 190612E-PC4				
Roughing		CNMG 432-MC4	1/32	0.008-0.024	0.047-0.252						●	●	●					●	CNMG 120408E-MC4			
		CNMG 433-MC4	3/64	0.012-0.035	0.071-0.252						●	●	●					●	CNMG 120412E-MC4			
		CNMG 543-MC4	3/64	0.012-0.035	0.071-0.319						●	●	●					●	CNMG 160612E-MC4			
		CNMG 544-MC4	1/16	0.016-0.047	0.094-0.319						●	●	●						CNMG 160616E-MC4			
		CNMG 643-MC4	3/64	0.012-0.035	0.071-0.382						●	●	●						CNMG 190612E-MC4			
		CNMG 644-MC4	1/16	0.016-0.047	0.094-0.382						●	●	●						CNMG 190616E-MC4			

●: Stock available

Negative 80° (C)

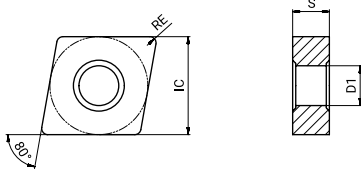


Dimension (in)			
Product code	IC	S	D1
CN_32_	3/8	1/8	0.150
CN_43_	1/2	3/16	0.203
CN_54_	5/8	1/4	0.250
CN_64_	3/4	1/4	0.313

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ½ General condition ✖ Bad condition																ISO
						●	●	●	½	✖	●	½	½	½	●	½	✖	½	●			
				Recommended parameters		P					M				K			N	S			
f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S							
Roughing		CNMG 322-KC4	1/32	0.007-0.019	0.038-0.154										●	●			CNMG 090308E-KC4			
		CNMG 431-KC4	1/64	0.004-0.009	0.019-0.205										●	●			CNMG 120404E-KC4			
		CNMG 432-KC4	1/32	0.007-0.019	0.038-0.205								●	●	●				CNMG 120408E-KC4			
		CNMG 433-KC4	3/64	0.01-0.028	0.057-0.205								●	●	●				CNMG 120412E-KC4			
		CNMG 434-KC4	1/16	0.014-0.038	0.076-0.205									●	●				CNMG 120416E-KC4			
		CNMG 542-KC4	1/32	0.007-0.019	0.038-0.252									●	●				CNMG 160608E-KC4			
		CNMG 543-KC4	3/64	0.01-0.028	0.057-0.252									●	●				CNMG 160612E-KC4			
		CNMG 544-KC4	1/16	0.014-0.038	0.076-0.252									●	●				CNMG 160616E-KC4			
		CNMG 642-KC4	1/32	0.007-0.019	0.038-0.303									●	●				CNMG 190608E-KC4			
		CNMG 643-KC4	3/64	0.01-0.028	0.057-0.303									●	●				CNMG 190612E-KC4			
		CNMG 644-KC4	1/16	0.014-0.038	0.076-0.303									●	●				CNMG 190616E-KC4			
		CNMG 646-KC4	3/32	0.021-0.057	0.113-0.303									●	●				CNMG 190624E-KC4			
		CNMG 432-PD5	1/32	0.008-0.024	0.047-0.252		●	●	●	●									CNMG 120408E-PD5			
		CNMG 433-PD5	3/64	0.012-0.035	0.071-0.252		●	●	●	●									CNMG 120412E-PD5			
		CNMG 543-PD5	3/64	0.012-0.035	0.071-0.319		●	●	●	●									CNMG 160612E-PD5			
		CNMG 544-PD5	1/16	0.016-0.047	0.094-0.319		●	●	●	●									CNMG 160616E-PD5			
		CNMG 546-PD5	3/32	0.024-0.071	0.142-0.319		●	●	●										CNMG 160624E-PD5			
		CNMG 643-PD5	3/64	0.012-0.035	0.071-0.382		●	●	●	●									CNMG 190612E-PD5			
		CNMG 644-PD5	1/16	0.016-0.047	0.094-0.382		●	●	●	●									CNMG 190616E-PD5			
		CNMA 431-KD5	1/64	0.004-0.012	0.024-0.252										●	●			CNMA 120404E-KD5			
		CNMA 432-KD5	1/32	0.008-0.024	0.047-0.252								●	●	●				CNMA 120408E-KD5			
		CNMA 433-KD5	3/64	0.012-0.035	0.071-0.252								●	●	●				CNMA 120412E-KD5			
		CNMA 434-KD5	1/16	0.016-0.047	0.094-0.252								●	●	●				CNMA 120416E-KD5			
		CNMA 542-KD5	1/32	0.008-0.024	0.047-0.319									●	●				CNMA 160608E-KD5			
		CNMA 543-KD5	3/64	0.012-0.035	0.071-0.319								●	●	●				CNMA 160612E-KD5			
		CNMA 544-KD5	1/16	0.016-0.047	0.094-0.319								●	●	●				CNMA 160616E-KD5			
		CNMA 545-KD5	0.079	0.02-0.059	0.118-0.319									●	●				CNMA 160620E-KD5			
		CNMA 642-KD5	1/32	0.008-0.024	0.047-0.382								●	●	●				CNMA 190608E-KD5			
		CNMA 643-KD5	3/64	0.012-0.035	0.071-0.382								●	●	●				CNMA 190612E-KD5			
		CNMA 644-KD5	1/16	0.016-0.047	0.094-0.382								●	●	●				CNMA 190616E-KD5			

●: Stock available

Negative 80° (C)

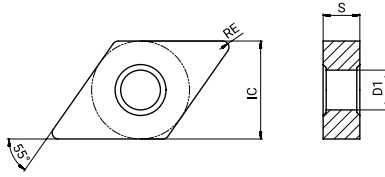


Dimension (in)			
Product code	IC	S	D1
CN_43_	1/2	3/16	0.203
CN_54_	5/8	1/4	0.250
CN_64_	3/4	1/4	0.313
CN_85_	1.0	5/16	0.359
CN_86_	1.0	3/8	0.359

Inserts		ANSI	RE (in)	Machining conditions		● Good condition General condition ✖ Bad condition																ISO
						● ● ● ✖ ✖ ● ✖ ✖ ✖ ✖ ● ✖ ✖ ✖ ✖																
				Recommended parameters		P					M				K			N	S			
						f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Heavy roughing		CNMM 644-PC8	1/16	0.013-0.025	0.113-0.303				●											CNMM 190616E-PC8		
	CNMM 646-PC8	3/32	0.019-0.038	0.17-0.303				●												CNMM 190624E-PC8		
		CNMM 432-PD8	1/32	0.006-0.013	0.057-0.205			●	●	●											CNMM 120408E-PD8	
		CNMM 433-PD8	3/64	0.009-0.019	0.085-0.205			●	●												CNMM 120412E-PD8	
		CNMM 543-PD8	3/64	0.009-0.019	0.085-0.252			●	●												CNMM 160612E-PD8	
		CNMM 544-PD8	1/16	0.013-0.025	0.113-0.252			●	●												CNMM 160616E-PD8	
		CNMM 546-PD8	3/32	0.019-0.038	0.17-0.252			●	●												CNMM 160624E-PD8	
		CNMM 643-PD8	3/64	0.009-0.019	0.085-0.303			●	●												CNMM 190612E-PD8	
		CNMM 644-PD8	1/16	0.013-0.025	0.113-0.303			●	●	●											CNMM 190616E-PD8	
		CNMM 646-PD8	3/32	0.019-0.038	0.17-0.303			●	●	●											CNMM 190624E-PD8	
		CNMM 856-PD8	3/32	0.019-0.038	0.17-0.406			●	●												CNMM 250724E-PD8	
		CNMM 866-PD8	3/32	0.019-0.038	0.17-0.406			●	●												CNMM 250924E-PD8	
		CNMM 643-PC9	3/64	0.01-0.024	0.094-0.382			●	●	●											CNMM 190612S-PC9	
		CNMM 644-PC9	1/16	0.014-0.031	0.126-0.382			●	●	●											CNMM 190616S-PC9	
		CNMM 646-PC9	3/32	0.021-0.047	0.189-0.382			●	●	●											CNMM 190624S-PC9	
		CNMM 856-PC9	3/32	0.021-0.047	0.189-0.508			●	●	●											CNMM 250724S-PC9	
		CNMM 866-PC9	3/32	0.021-0.047	0.189-0.508			●	●	●											CNMM 250924S-PC9	
		CNMM 643-PD9	3/64	0.012-0.028	0.104-0.457			●	●	●											CNMM 190612S-PD9	
		CNMM 644-PD9	1/16	0.016-0.038	0.139-0.457			●	●	●											CNMM 190616S-PD9	
		CNMM 646-PD9	3/32	0.024-0.057	0.208-0.457			●	●	●											CNMM 190624S-PD9	
		CNMM 856-PD9	3/32	0.024-0.057	0.208-0.61			●	●												CNMM 250724S-PD9	
		CNMM 866-PD9	3/32	0.024-0.057	0.208-0.61			●	●	●											CNMM 250924S-PD9	

●: Stock available

Negative 55° (D)

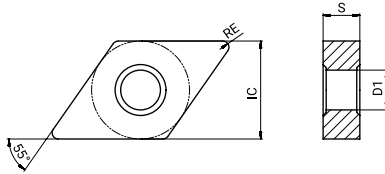


Dimension (in)			
Product code	IC	S	D1
DN_33_	3/8	3/16	0.150
DN_43_	1/2	3/16	0.203
DN_44_	1/2	1/4	0.203

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ● General condition ✖ Bad condition														ISO	
						● ● ● ● ✖ ● ● ● ● ● ● ● ● ● ●															
				Recommended parameters		P					M			K		N	S				
						f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K		AW100K
Profiling		DNMG 332-BS	1/32	0.004-0.010	0.028-0.079		●													DNMG 110408E-BS	
Finishing		DNMG 331-PB1	1/64	0.002-0.006	0.01-0.091	●		●	●											DNMG 110404E-PB1	
		DNMG 431-PB1	1/64	0.002-0.006	0.01-0.122	●		●	●											DNMG 150404E-PB1	
		DNMG 432-PB1	1/32	0.004-0.012	0.02-0.122	●	●	●	●											DNMG 150408E-PB1	
		DNMG 441-PB1	1/64	0.002-0.006	0.01-0.122	●		●	●											DNMG 150604E-PB1	
		DNMG 442-PB1	1/32	0.004-0.012	0.02-0.122	●	●	●	●											DNMG 150608E-PB1	
		DNMG 443-PB1	3/64	0.006-0.014	0.031-0.122															DNMG 150612E-PB1	
		DNMG 431-SC1	1/64	0.003-0.007	0.008-0.031															DNMG 150404E-SC1	
		DNMG 432-SC1	1/32	0.004-0.010	0.008-0.031															DNMG 150408E-SC1	
		DNMG 441-SC1	1/64	0.003-0.007	0.008-0.031															DNMG 150604E-SC1	
		DNMG 442-SC1	1/32	0.004-0.010	0.008-0.031															DNMG 150608E-SC1	
		DNMG 431-MB2	1/64	0.002-0.006	0.01-0.114						●	●							●	DNMG 150404E-MB2	
		DNMG 432-MB2	1/32	0.004-0.012	0.02-0.114						●	●							●	DNMG 150408E-MB2	
		DNMG 441-MB2	1/64	0.002-0.006	0.01-0.114						●	●							●	DNMG 150604E-MB2	
		DNMG 442-MB2	1/32	0.004-0.012	0.02-0.114						●	●							●	DNMG 150608E-MB2	
Light cutting		DNMG 332-SL3	1/32	0.005-0.012	0.031-0.098								●						●	DNMG 110408E-SL3	
		DNMG 431-SL3	1/64	0.005-0.010	0.024-0.098								●						●	DNMG 150404E-SL3	
		DNMG 432-SL3	1/32	0.005-0.012	0.031-0.098								●						●	DNMG 150408E-SL3	
		DNMG 441-SL3	1/64	0.005-0.010	0.024-0.098								●						●	DNMG 150604E-SL3	
		DNMG 442-SL3	1/32	0.005-0.012	0.031-0.098								●						●	DNMG 150608E-SL3	
Semi-finishing		DNMG 431R-M1T	1/64	0.004-0.014	0.028-0.177	●														DNMG 150404R-M1T	
		DNMG 432L-M1T	1/32	0.004-0.014	0.028-0.177	●														DNMG 150408L-M1T	
		DNMG 431-PB3	1/64	0.002-0.007	0.012-0.122	●		●	●												DNMG 150404E-PB3
		DNMG 432-PB3	1/32	0.005-0.014	0.024-0.122	●	●	●	●												DNMG 150408E-PB3
		DNMG 433-PB3	3/64	0.007-0.021	0.035-0.122	●	●	●	●												DNMG 150412E-PB3
		DNMG 441-PB3	1/64	0.002-0.007	0.012-0.122	●		●	●												DNMG 150604E-PB3
		DNMG 442-PB3	1/32	0.005-0.014	0.024-0.122	●	●	●	●												DNMG 150608E-PB3
		DNMG 443-PB3	3/64	0.007-0.021	0.035-0.122	●	●	●	●												DNMG 150612E-PB3

● : Stock available

Negative 55° (D)

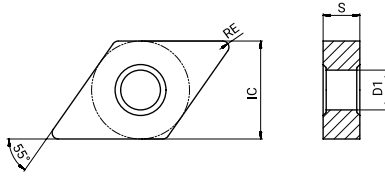


Dimension (in)			
Product code	IC	S	D1
DN_33_	3/8	3/16	0.150
DN_43_	1/2	3/16	0.203
DN_44_	1/2	1/4	0.203

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ● General condition ✖ Bad condition														ISO
						●	●	●	●	✖	●	●	●	●	●	✖	●	●		
				Recommended parameters		P					M				K		N	S		
f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S					
Semi-finishing		DNMG 332-PC3	1/32	0.006-0.016	0.027-0.102		●	●	●								DNMG 110408E-PC3			
		DNMG 333-PC3	3/64	0.008-0.024	0.04-0.102		●	●	●								DNMG 110412E-PC3			
		DNMG 431-PC3	1/64	0.003-0.008	0.013-0.138	●	●	●	●								DNMG 150404E-PC3			
		DNMG 432-PC3	1/32	0.006-0.016	0.027-0.138	●	●	●	●								DNMG 150408E-PC3			
		DNMG 433-PC3	3/64	0.008-0.024	0.04-0.138	●	●	●	●								DNMG 150412E-PC3			
		DNMG 441-PC3	1/64	0.003-0.008	0.013-0.138	●	●	●	●								DNMG 150604E-PC3			
		DNMG 442-PC3	1/32	0.006-0.016	0.027-0.138	●	●	●	●								DNMG 150608E-PC3			
		DNMG 443-PC3	3/64	0.008-0.024	0.04-0.138	●	●	●	●								DNMG 150612E-PC3			
Medium		DNMG 331-PD3	1/64	0.003-0.009	0.016-0.114	●		●	●								DNMG 110404E-PD3			
		DNMG 332-PD3	1/32	0.006-0.017	0.031-0.114	●	●	●	●								DNMG 110408E-PD3			
		DNMG 431-PD3	1/64	0.003-0.009	0.016-0.154	●		●	●								DNMG 150404E-PD3			
		DNMG 432-PD3	1/32	0.006-0.017	0.031-0.154	●	●	●	●	●							DNMG 150408E-PD3			
		DNMG 433-PD3	3/64	0.009-0.026	0.047-0.154		●	●	●	●							DNMG 150412E-PD3			
		DNMG 441-PD3	1/64	0.003-0.009	0.016-0.154			●	●								DNMG 150604E-PD3			
		DNMG 442-PD3	1/32	0.006-0.017	0.031-0.154		●	●	●	●							DNMG 150608E-PD3			
		DNMG 443-PD3	3/64	0.009-0.026	0.047-0.154		●	●	●	●							DNMG 150612E-PD3			
		DNMG 442R-PL5	1/32	0.006-0.017	0.031-0.154			●	●								DNMG 150608R-PL5			
		DNMG 431-SC3	1/64	0.003-0.009	0.016-0.154						●	●	●				●	DNMG 150404E-SC3		
		DNMG 432-SC3	1/32	0.006-0.017	0.031-0.154						●	●	●				●	DNMG 150408E-SC3		
		DNMG 433-SC3	3/64	0.009-0.026	0.047-0.154						●	●	●				●	DNMG 150412E-SC3		
		DNMG 441-SC3	1/64	0.003-0.009	0.016-0.154						●	●	●				●	DNMG 150604E-SC3		
		DNMG 442-SC3	1/32	0.006-0.017	0.031-0.154						●	●	●				●	DNMG 150608E-SC3		
		DNMG 443-SC3	3/64	0.009-0.026	0.047-0.154						●	●	●				●	DNMG 150612E-SC3		
		DNMG 331-MC3	1/64	0.003-0.009	0.013-0.114						●	●	●					DNMG 110404E-MC3		
		DNMG 332-MC3	1/32	0.006-0.017	0.025-0.114						●	●	●					DNMG 110408E-MC3		
		DNMG 431-MC3	1/64	0.003-0.009	0.013-0.154						●	●	●					DNMG 150404E-MC3		
		DNMG 432-MC3	1/32	0.006-0.017	0.025-0.154						●	●	●					DNMG 150408E-MC3		
		DNMG 433-MC3	3/64	0.009-0.026	0.038-0.154						●	●	●					DNMG 150412E-MC3		
		DNMG 441-MC3	1/64	0.003-0.009	0.013-0.154						●	●	●					DNMG 150604E-MC3		
		DNMG 442-MC3	1/32	0.006-0.017	0.025-0.154						●	●	●					DNMG 150608E-MC3		
	DNMG 443-MC3	3/64	0.009-0.026	0.038-0.154						●	●	●					DNMG 150612E-MC3			

● : Stock available

Negative 55° (D)

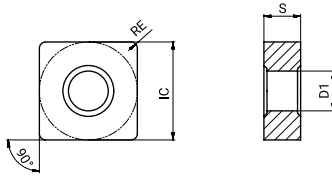


Dimension (in)			
Product code	IC	S	D1
DN_33_	3/8	3/16	0.150
DN_43_	1/2	3/16	0.203
DN_44_	1/2	1/4	0.203

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ½ General condition ✖ Bad condition												ISO
						●	●	●	½	✖	●	½	½	½	●	½	✖	
				Recommended parameters		P					M				K		N	
f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S			
Medium		DNMG 431-PC4	1/64	0.003-0.009	0.016-0.154	●		●	●						●	●		DNMG 150404E-PC4
		DNMG 432-PC4	1/32	0.006-0.017	0.031-0.154	●	●	●	●						●	●		DNMG 150408E-PC4
		DNMG 433-PC4	3/64	0.009-0.026	0.047-0.154		●	●	●						●	●		DNMG 150412E-PC4
		DNMG 441-PC4	1/64	0.003-0.009	0.016-0.154	●		●	●						●	●		DNMG 150604E-PC4
		DNMG 442-PC4	1/32	0.006-0.017	0.031-0.154	●	●	●	●						●	●		DNMG 150608E-PC4
		DNMG 443-PC4	3/64	0.009-0.026	0.047-0.154		●	●	●						●	●		DNMG 150612E-PC4
Roughing		DNMG 432-MC4	1/32	0.008-0.024	0.047-0.213						●	●	●					DNMG 150408E-MC4
		DNMG 433-MC4	3/64	0.012-0.035	0.071-0.213						●	●	●					DNMG 150412E-MC4
		DNMG 442-MC4	1/32	0.008-0.024	0.047-0.213						●	●	●				●	DNMG 150608E-MC4
		DNMG 443-MC4	3/64	0.012-0.035	0.071-0.213						●	●	●				●	DNMG 150612E-MC4
		DNMG 331-KC4	1/64	0.004-0.009	0.019-0.138										●	●		DNMG 110404E-KC4
		DNMG 332-KC4	1/32	0.007-0.019	0.038-0.138										●	●		DNMG 110408E-KC4
		DNMG 431-KC4	1/64	0.004-0.009	0.019-0.181										●	●		DNMG 150404E-KC4
		DNMG 432-KC4	1/32	0.007-0.019	0.038-0.181										●	●		DNMG 150408E-KC4
		DNMG 433-KC4	3/64	0.01-0.028	0.057-0.181										●	●		DNMG 150412E-KC4
		DNMG 441-KC4	1/64	0.004-0.009	0.019-0.181										●	●		DNMG 150604E-KC4
		DNMG 442-KC4	1/32	0.007-0.019	0.038-0.181										●	●		DNMG 150608E-KC4
		DNMG 443-KC4	3/64	0.01-0.028	0.057-0.181										●	●		DNMG 150612E-KC4
		DNMG 432-PD5	1/32	0.008-0.024	0.047-0.213		●	●	●	●								DNMG 150408E-PD5
		DNMG 433-PD5	3/64	0.012-0.035	0.071-0.213		●	●	●	●								DNMG 150412E-PD5
		DNMG 434-PD5	1/16	0.016-0.047	0.094-0.213		●	●	●									DNMG 150416E-PD5
		DNMG 442-PD5	1/32	0.008-0.024	0.047-0.213		●	●	●	●								DNMG 150608E-PD5
		DNMG 443-PD5	3/64	0.012-0.035	0.071-0.213		●	●	●	●								DNMG 150612E-PD5
		DNMG 444-PD5	1/16	0.016-0.047	0.094-0.213		●	●	●	●								DNMG 150616E-PD5
		DNMA 431-KD5	1/64	0.004-0.012	0.024-0.213										●	●		DNMA 150404E-KD5
		DNMA 432-KD5	1/32	0.008-0.024	0.047-0.213										●	●	●	DNMA 150408E-KD5
		DNMA 433-KD5	3/64	0.012-0.035	0.071-0.213										●	●	●	DNMA 150412E-KD5
		DNMA 441-KD5	1/64	0.004-0.012	0.024-0.213										●	●		DNMA 150604E-KD5
		DNMA 442-KD5	1/32	0.008-0.024	0.047-0.213										●	●	●	DNMA 150608E-KD5
		DNMA 443-KD5	3/64	0.012-0.035	0.071-0.213										●	●	●	DNMA 150612E-KD5

●: Stock available

Negative 90° (S)



Dimension (in)			
Product code	IC	S	D1
SN_43_	1/2	3/16	0.203
SN_54_	5/8	1/4	0.250
SN_64_	3/4	1/4	0.313

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ½ General condition ✖ Bad condition														ISO
						●	●	●	½	✖	●	½	½	½	●	½	✖	½	●	
				Recommended parameters		P					M				K			N	S	
			f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S		
Finishing		SNMG 431-PB1	1/64	0.002-0.006	0.01-0.126	●		●	●										SNMG 120404E-PB1	
		SNMG 432-PB1	1/32	0.004-0.012	0.02-0.126	●	●	●	●										SNMG 120408E-PB1	
		SNMG 433-PB1	3/64	0.006-0.018	0.031-0.126		●	●	●										SNMG 120412E-PB1	
		SNMG 431-MB2	1/64	0.002-0.006	0.01-0.126						●	●	●						SNMG 120404E-MB2	
		SNMG 432-MB2	1/32	0.004-0.012	0.02-0.126						●	●	●						SNMG 120408E-MB2	
Light cutting		SNMG 431-SL3	1/64	0.005-0.010	0.024-0.118							●						●	SNMG 120404E-SL3	
		SNMG 432-SL3	1/32	0.006-0.012	0.031-0.118							●						●	SNMG 120408E-SL3	
		SNMG 433-SL3	3/64	0.007-0.014	0.039-0.118							●						●	SNMG 120412E-SL3	
Semi-finishing		SNMG 431-PC3	1/64	0.003-0.008	0.013-0.15	●		●	●										SNMG 120404E-PC3	
		SNMG 432-PC3	1/32	0.006-0.016	0.027-0.15	●		●	●										SNMG 120408E-PC3	
		SNMG 433-PC3	3/64	0.008-0.024	0.04-0.15	●		●	●										SNMG 120412E-PC3	
Medium		SNMG 431-PD3	1/64	0.003-0.009	0.016-0.165	●		●	●	●									SNMG 120404E-PD3	
		SNMG 432-PD3	1/32	0.006-0.017	0.031-0.165	●	●	●	●	●									SNMG 120408E-PD3	
		SNMG 433-PD3	3/64	0.009-0.026	0.047-0.165	●	●	●	●	●									SNMG 120412E-PD3	
		SNMG 642-PD3	1/32	0.006-0.017	0.031-0.248		●	●	●	●									SNMG 190608E-PD3	
		SNMG 432-SC3	1/32	0.006-0.017	0.031-0.165						●	●	●						●	SNMG 120408E-SC3
		SNMG 433-SC3	3/64	0.009-0.026	0.047-0.165						●	●	●						●	SNMG 120412E-SC3
		SNMG 543-SC3	3/64	0.009-0.026	0.047-0.205						●	●	●						●	SNMG 150612E-SC3
		SNMG 544-SC3	1/16	0.012-0.035	0.063-0.205						●	●	●						●	SNMG 150616E-SC3
		SNMG 643-SC3	3/64	0.009-0.026	0.047-0.248						●	●	●						●	SNMG 190612E-SC3
		SNMG 431-M3T	1/64	0.008-0.016	0.039-0.157	●														SNMG 120404-M3T
		SNMG 432-M3T	1/32	0.008-0.016	0.039-0.157	●														SNMG 120408-M3T
		SNMG 431-MC3	1/64	0.003-0.009	0.013-0.165						●	●	●							SNMG 120404E-MC3
		SNMG 432-MC3	1/32	0.006-0.017	0.025-0.165						●	●	●							SNMG 120408E-MC3
		SNMG 433-MC3	3/64	0.009-0.026	0.038-0.165						●	●	●							SNMG 120412E-MC3
		SNMG 543-MC3	3/64	0.009-0.026	0.038-0.205						●	●	●							SNMG 150612E-MC3
		SNMG 544-MC3	1/16	0.012-0.035	0.05-0.205						●	●	●							SNMG 150616E-MC3
		SNMG 643-MC3	3/64	0.009-0.026	0.038-0.248						●	●	●							SNMG 190612E-MC3
SNMG 644-MC3		1/16	0.012-0.035	0.05-0.248						●	●	●							SNMG 190616E-MC3	

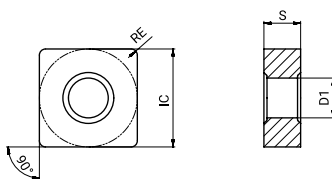
●: Stock available

Dimension (in)			
Product code	IC	S	D1
SN_32_	3/8	1/8	0.150
SN_43_	1/2	3/16	0.203
SN_54_	5/8	1/4	0.250
SN_64_	3/4	1/4	0.313

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✖ Bad condition																ISO
						●	●	●	◐	✖	●	◐	◐	◐	◐	●	◐	✖	◐	●		
				Recommended parameters		P					M				K			N	S			
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S			
Medium		SNMG 431-PC4	1/64	0.003-0.009	0.016-0.165	●		●	●							●	●			SNMG 120404E-PC4		
		SNMG 432-PC4	1/32	0.006-0.017	0.031-0.165	●	●	●	●							●	●			SNMG 120408E-PC4		
		SNMG 433-PC4	3/64	0.009-0.026	0.047-0.165	●	●	●	●							●	●			SNMG 120412E-PC4		
Roughing		SNMG 432-MC4	1/32	0.008-0.024	0.047-0.252							●	●	●						SNMG 120408E-MC4		
		SNMG 433-MC4	3/64	0.012-0.035	0.071-0.252							●	●	●						SNMG 120412E-MC4		
		SNMG 543-MC4	3/64	0.012-0.035	0.071-0.311							●	●	●						SNMG 150612E-MC4		
		SNMG 544-MC4	1/16	0.016-0.047	0.094-0.311							●	●	●						SNMG 150616E-MC4		
		SNMG 643-MC4	3/64	0.012-0.035	0.071-0.374							●	●	●						SNMG 190612E-MC4		
		SNMG 644-MC4	1/16	0.016-0.047	0.094-0.374							●	●	●						SNMG 190616E-MC4		
		SNMG 321-KC4	1/64	0.004-0.009	0.019-0.15															SNMG 090304E-KC4		
		SNMG 322-KC4	1/32	0.007-0.019	0.038-0.15															SNMG 090308E-KC4		
		SNMG 431-KC4	1/64	0.004-0.009	0.019-0.201											●	●			SNMG 120404E-KC4		
		SNMG 432-KC4	1/32	0.007-0.019	0.038-0.201											●	●			SNMG 120408E-KC4		
		SNMG 433-KC4	3/64	0.01-0.028	0.057-0.201											●	●			SNMG 120412E-KC4		
		SNMG 542-KC4	1/32	0.007-0.019	0.038-0.252											●	●			SNMG 150608E-KC4		
		SNMG 543-KC4	3/64	0.01-0.028	0.057-0.252											●	●			SNMG 150612E-KC4		
		SNMG 544-KC4	1/16	0.014-0.038	0.076-0.252											●	●			SNMG 150616E-KC4		
		SNMG 642-KC4	1/32	0.007-0.019	0.038-0.299											●	●			SNMG 190608E-KC4		
		SNMG 643-KC4	3/64	0.01-0.028	0.057-0.299											●	●			SNMG 190612E-KC4		
		SNMG 644-KC4	1/16	0.014-0.038	0.076-0.299											●	●			SNMG 190616E-KC4		
		SNMG 646-KC4	3/32	0.021-0.057	0.113-0.299																SNMG 190624E-KC4	
		SNMG 542-PD5	1/32	0.008-0.024	0.047-0.311		●	●	●	●											SNMG 150608E-PD5	
		SNMG 543-PD5	3/64	0.012-0.035	0.071-0.311		●	●	●	●											SNMG 150612E-PD5	
		SNMG 544-PD5	1/16	0.016-0.047	0.094-0.311		●	●	●	●											SNMG 150616E-PD5	
		SNMG 643-PD5	3/64	0.012-0.035	0.071-0.374		●	●	●	●											SNMG 190612E-PD5	
		SNMG 644-PD5	1/16	0.016-0.047	0.094-0.374		●	●	●	●											SNMG 190616E-PD5	

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Negative 90° (S)

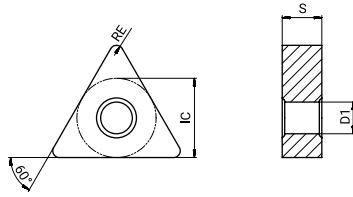


Dimension (in)			
Product code	IC	S	D1
SN_43_	1/2	3/16	0.203
SN_54_	5/8	1/4	0.250
SN_64_	3/4	1/4	0.313
SN_85_	1	5/16	0.359
SN_86_	1	3/8	0.359
SN_10(6)_	1¼	3/8	0.372

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✖ Bad condition																ISO
						●	●	●	◐	✖	●	◐	◐	◐	●	◐	✖	◐	●			
				Recommended parameters		P				M				K		N	S					
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S			
Roughing		SNMA 432-KD5	1/32	0.008-0.024	0.047-0.252										●	●	●			SNMA 120408E-KD5		
		SNMA 433-KD5	3/64	0.012-0.035	0.071-0.252										●	●	●			SNMA 120412E-KD5		
		SNMA 434-KD5	1/16	0.016-0.047	0.094-0.252										●	●	●			SNMA 120416E-KD5		
		SNMA 543-KD5	3/64	0.012-0.035	0.071-0.311										●	●				SNMA 150612E-KD5		
		SNMA 544-KD5	1/16	0.016-0.047	0.094-0.311										●	●				SNMA 150616E-KD5		
		SNMA 643-KD5	3/64	0.012-0.035	0.071-0.374										●	●				SNMA 190612E-KD5		
		SNMA 644-KD5	1/16	0.016-0.047	0.094-0.374										●	●				SNMA 190616E-KD5		
Heavy roughing		SNMM 432-PD8	1/32	0.006-0.013	0.057-0.201			●	●	●										SNMM 120408E-PD8		
		SNMM 433-PD8	3/64	0.009-0.019	0.085-0.201			●	●	●										SNMM 120412E-PD8		
		SNMM 543-PD8	3/64	0.009-0.019	0.085-0.252			●	●	●										SNMM 150612E-PD8		
		SNMM 544-PD8	1/16	0.013-0.025	0.113-0.252		●	●	●	●										SNMM 150616E-PD8		
		SNMM 643-PD8	3/64	0.009-0.019	0.085-0.299			●	●	●										SNMM 190612E-PD8		
		SNMM 644-PD8	1/16	0.013-0.025	0.113-0.299		●	●	●	●										SNMM 190616E-PD8		
		SNMM 646-PD8	3/32	0.019-0.038	0.17-0.299		●	●	●	●										SNMM 190624E-PD8		
		SNMM 856-PD8	3/32	0.019-0.038	0.17-0.402			●	●	●										SNMM 250724E-PD8		
		SNMM 866-PD8	3/32	0.019-0.038	0.17-0.402			●	●	●										SNMM 250924E-PD8		
		SNMM 643-PC9	3/64	0.01-0.024	0.094-0.374			●	●											SNMG 190612S-PC9		
		SNMM 644-PC9	1/16	0.014-0.031	0.126-0.374			●	●	●										SNMG 190616S-PC9		
		SNMM 646-PC9	3/32	0.021-0.047	0.189-0.374			●	●	●										SNMG 190624S-PC9		
		SNMM 856-PC9	3/32	0.021-0.047	0.189-0.5			●	●	●										SNMG 250724S-PC9		
		SNMM 866-PC9	3/32	0.021-0.047	0.189-0.5			●	●	●										SNMG 250924S-PC9		
		SNMH 10(6)6-PC9	3/32	0.021-0.047	0.189-0.626				●											SNMH 310924S-PC9		
		SNMM 643-PD9	3/64	0.012-0.028	0.104-0.449			●	●	●										SNMM 190612S-PD9		
		SNMM 644-PD9	1/16	0.016-0.038	0.139-0.449			●	●	●										SNMM 190616S-PD9		
		SNMM 646-PD9	3/32	0.024-0.057	0.208-0.449			●	●	●										SNMM 190624S-PD9		
		SNMM 856-PD9	3/32	0.024-0.057	0.208-0.598			●	●	●										SNMM 250724S-PD9		
		SNMM 866-PD9	3/32	0.024-0.057	0.208-0.598			●	●	●										SNMM 250924S-PD9		
SNMX 10(6)6-PD9		3/32	0.024-0.057	0.208-0.752				●	●										SNMX 310924S-PD9			

●: Stock available

Negative 60° (T)

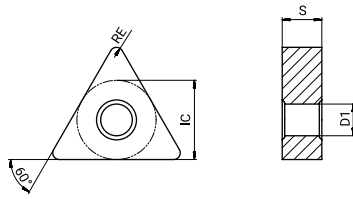


Dimension (in)			
Product code	IC	S	D1
TN_22_	1/4	1/8	0.089
TN_33_	3/8	3/16	0.150
TN_43_	1/2	3/16	0.203

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ½ General condition ✖ Bad condition																ISO
						● ● ● ½ ✖ ✖ ✖ ✖ ● ● ✖ ✖ ●																
				Recommended parameters		P				M				K				N	S			
f (in/rev)		ap (in)		AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S					
Finishing		TNMG 331-PB1	1/64	0.002-0.006	0.01-0.122	●		●	●										TNMG 160404E-PB1			
		TNMG 332-PB1	1/32	0.004-0.012	0.02-0.122	●	●	●	●										TNMG 160408E-PB1			
		TNMG 333-PB1	3/64	0.006-0.018	0.031-0.122	●	●	●	●										TNMG 160412E-PB1			
		TNMG 331-SC1	1/64	0.003-0.007	0.008-0.031														TNMG 160404E-SC1			
		TNMG 332-SC1	1/32	0.004-0.010	0.008-0.031														TNMG 160408E-SC1			
		TNMG 331-MB2	1/64	0.002-0.006	0.01-0.122						●	●	●					●	TNMG 160404E-MB2			
TNMG 332-MB2		1/32	0.004-0.012	0.02-0.122						●	●	●					●	TNMG 160408E-MB2				
Light cutting		TNMG 331-SL3	1/64	0.005-0.010	0.024-0.118							●					●	TNMG 160404E-SL3				
		TNMG 332-SL3	1/32	0.006-0.012	0.031-0.118							●					●	TNMG 160408E-SL3				
		TNMG 333-SL3	3/64	0.007-0.012	0.039-0.118							●					●	TNMG 160412E-SL3				
Semi-finishing		TNMG 331R-M1T	1/64	0.004-0.012	0.028-0.138	●												TNMG 160404R-M1T				
		TNMG 331L-M1T	1/64	0.004-0.012	0.028-0.138	●												TNMG 160404L-M1T				
		TNMG 332R-M1T	1/32	0.004-0.012	0.028-0.138	●												TNMG 160408R-M1T				
		TNMG 332L-M1T	1/32	0.004-0.012	0.028-0.138	●												TNMG 160408L-M1T				
		TNMG 331-PB3	1/64	0.002-0.007	0.012-0.13	●		●	●										TNMG 160404E-PB3			
		TNMG 332-PB3	1/32	0.005-0.014	0.024-0.13	●	●	●	●										TNMG 160408E-PB3			
		TNMG 333-PB3	3/64	0.007-0.021	0.035-0.13	●	●	●	●										TNMG 160412E-PB3			
		TNMG 331-PC3	1/64	0.003-0.008	0.013-0.146	●		●	●										TNMG 160404E-PC3			
		TNMG 332-PC3	1/32	0.006-0.016	0.027-0.146	●		●	●										TNMG 160408E-PC3			
TNMG 333-PC3		3/64	0.008-0.024	0.04-0.146	●		●	●										TNMG 160412E-PC3				
Medium		TNMG 331-PD3	1/64	0.003-0.009	0.016-0.161	●		●	●	●								TNMG 160404E-PD3				
		TNMG 332-PD3	1/32	0.006-0.017	0.031-0.161	●	●	●	●	●									TNMG 160408E-PD3			
		TNMG 333-PD3	3/64	0.009-0.026	0.047-0.161	●	●	●	●	●									TNMG 160412E-PD3			
		TNMG 331R-M2T	1/64	0.004-0.012	0.028-0.138	●													TNMG 160404R-M2T			
		TNMG 331L-M2T	1/64	0.004-0.012	0.028-0.138	●													TNMG 160404L-M2T			
		TNMG 331R-PL5	1/64	0.003-0.009	0.016-0.161	●		●	●										TNMG 160404R-PL5			
		TNMG 332R-PL5	1/32	0.006-0.017	0.031-0.161	●	●	●	●										TNMG 160408R-PL5			
		TNMG 331L-PL5	1/64	0.003-0.009	0.016-0.161	●		●	●										TNMG 160404L-PL5			
		TNMG 332L-PL5	1/32	0.006-0.017	0.031-0.161	●	●	●	●										TNMG 160408L-PL5			

●: Stock available

Negative 60° (T)

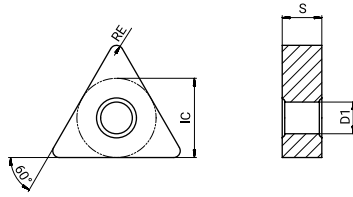


Dimension (in)			
Product code	IC	S	D1
TN_22_	1/4	1/8	0.089
TN_33_	3/8	3/16	0.150
TN_43_	1/2	3/16	0.203

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✖ Bad condition														ISO
						● ● ● ◐ ✖ ● ◐ ◐ ◐ ● ● ✖ ◐ ●														
				Recommended parameters		P					M			K		N	S			
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Medium		TNMG 331-SC3	1/64	0.003-0.009	0.016-0.161						●	●	●					●	TNMG 160404E-SC3	
		TNMG 332-SC3	1/32	0.006-0.017	0.031-0.161						●	●	●					●	TNMG 160408E-SC3	
		TNMG 333-SC3	3/64	0.009-0.026	0.047-0.161						●	●	●					●	TNMG 160412E-SC3	
		TNMG 331-MC3	1/64	0.003-0.009	0.013-0.161						●	●	●						TNMG 160404E-MC3	
		TNMG 332-MC3	1/32	0.006-0.017	0.025-0.161						●	●	●						TNMG 160408E-MC3	
		TNMG 333-MC3	3/64	0.009-0.026	0.038-0.161						●	●	●						TNMG 160412E-MC3	
		TNMG 432-MC3	1/32	0.006-0.017	0.025-0.193						●	●	●					●	TNMG 220408E-MC3	
		TNMG 433-MC3	3/64	0.009-0.026	0.038-0.193						●	●	●						TNMG 220412E-MC3	
		TNMG 331-PC4	1/64	0.003-0.009	0.016-0.161	●		●	●										TNMG 160404E-PC4	
		TNMG 332-PC4	1/32	0.006-0.017	0.031-0.161	●	●	●	●										TNMG 160408E-PC4	
		TNMG 333-PC4	3/64	0.009-0.026	0.047-0.161		●	●	●										TNMG 160412E-PC4	
		TNMG 433-PC4	3/64	0.009-0.026	0.047-0.193			●	●										TNMG 220412E-PC4	
Roughing		TNMG 332-MC4	1/32	0.008-0.024	0.047-0.228						●	●	●					●	TNMG 160408E-MC4	
		TNMG 333-MC4	3/64	0.012-0.035	0.071-0.228						●	●	●					●	TNMG 160412E-MC4	
		TNMG 432-MC4	1/32	0.008-0.024	0.047-0.26						●	●	●						TNMG 220408E-MC4	
		TNMG 433-MC4	3/64	0.012-0.035	0.071-0.26						●	●	●						TNMG 220412E-MC4	
		TNMG 221-KC4	1/64	0.004-0.009	0.019-0.13											●	●		TNMG 110304E-KC4	
		TNMG 331-KC4	1/64	0.004-0.009	0.019-0.193											●	●		TNMG 160404E-KC4	
		TNMG 332-KC4	1/32	0.007-0.019	0.038-0.193											●	●		TNMG 160408E-KC4	
		TNMG 333-KC4	3/64	0.01-0.028	0.057-0.193											●	●		TNMG 160412E-KC4	
		TNMG 334-KC4	1/16	0.014-0.038	0.076-0.193											●	●		TNMG 160416E-KC4	
		TNMG 433-KC4	3/64	0.01-0.028	0.057-0.236											●	●		TNMG 220412E-KC4	
		TNMG 434-KC4	1/16	0.014-0.038	0.076-0.236											●	●		TNMG 220416E-KC4	
		TNMG 332-PD5	1/32	0.008-0.024	0.047-0.228		●	●	●	●									TNMG 160408E-PD5	
		TNMG 333-PD5	3/64	0.012-0.035	0.071-0.228		●	●	●	●									TNMG 160412E-PD5	
		TNMG 432-PD5	1/32	0.008-0.024	0.047-0.303		●	●	●	●									TNMG 220408E-PD5	
		TNMG 433-PD5	3/64	0.012-0.035	0.071-0.303		●	●	●	●									TNMG 220412E-PD5	
		TNMG 434-PD5	1/16	0.016-0.047	0.094-0.303		●	●	●	●									TNMG 220416E-PD5	

●: Stock available

Negative 60° (T)

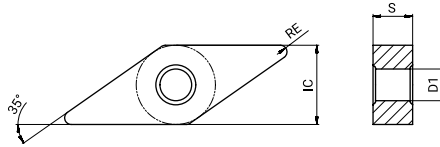


Dimension (in)			
Product code	IC	S	D1
TN_22_	1/4	1/8	0.089
TN_33_	3/8	3/16	0.150
TN_43_	1/2	3/16	0.203

Inserts Left-hand shown where it's applicable		ANSI	RE (in)	Machining conditions		● Good condition ● General condition ✖ Bad condition												ISO			
						●	●	●	●	✖	●	●	●	●	●	✖	●		●		
				Recommended parameters		P				M				K		N	S				
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K		AW100K	AP100S	
Roughing		TNMA 331-KD5	1/64	0.004-0.012	0.024-0.228											●	●			TNMA 160404E-KD5	
		TNMA 332-KD5	1/32	0.008-0.024	0.047-0.228											●	●	●		TNMA 160408E-KD5	
		TNMA 333-KD5	3/64	0.012-0.035	0.071-0.228											●	●	●		TNMA 160412E-KD5	
		TNMA 334-KD5	1/16	0.016-0.047	0.094-0.228											●	●	●		TNMA 160416E-KD5	
		TNMA 432-KD5	1/32	0.008-0.024	0.047-0.303												●	●		TNMA 220408E-KD5	
		TNMA 433-KD5	3/64	0.012-0.035	0.071-0.303												●	●		TNMA 220412E-KD5	
		TNMA 434-KD5	1/16	0.016-0.047	0.094-0.303												●	●		TNMA 220416E-KD5	
Heavy roughing		TNMM 332-PD8	1/32	0.006-0.013	0.057-0.193				●											TNMM 160408E-PD8	
		TNMM 333-PD8	3/64	0.009-0.019	0.085-0.193				●											TNMM 160412E-PD8	
		TNMM 432-PD8	1/32	0.006-0.013	0.057-0.236				●											TNMM 220408E-PD8	
		TNMM 433-PD8	3/64	0.009-0.019	0.085-0.236				●											TNMM 220412E-PD8	
		TNMM 434-PD8	1/16	0.013-0.025	0.113-0.236				●											TNMM 220416E-PD8	
Finishing		TNGG 3(3)03FP-UF	0.004	0.001-0.004	0.012-0.098									●						TNGG 160401FP-UF	
		TNGG 3(3)05FP-UF	0.008	0.001-0.004	0.012-0.098										●					TNGG 160402FP-UF	
		TNGG 331FP-UF	1/64	0.001-0.004	0.012-0.098											●				TNGG 160404FP-UF	
		TNGG 3(3)05FR-F	0.008	0.003-0.008	0.02-0.091										●						TNGG 160402FR-F
		TNGG 3(3)05FL-F	0.008	0.003-0.008	0.02-0.091											●					TNGG 160402FL-F
		TNGG 331FR-F	1/64	0.003-0.008	0.02-0.091												●				TNGG 160404FR-F
		TNGG 331FL-F	1/64	0.003-0.008	0.02-0.091													●			TNGG 160404FL-F
Semi-finishing-Roughing		TNGG 331R-H	1/64	0.009-0.015	0.047-0.15										●					TNGG 160404R-H	
		TNGG 331L-H	1/64	0.009-0.015	0.047-0.15											●					TNGG 160404L-H
		TNGG 332R-H	1/32	0.009-0.015	0.047-0.15												●				TNGG 160408R-H
		TNGG 332L-H	1/32	0.009-0.015	0.047-0.15													●			TNGG 160408L-H

● : Stock available

Negative 35° (V)

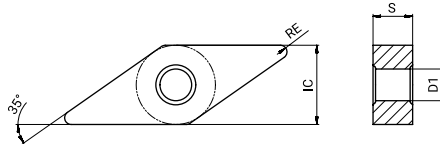


Dimension (in)			
Product code	IC	S	D1
VN_33_	3/8	3/16	0.150

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✖ Bad condition														ISO
						●	●	●	◐	✖	●	◐	◐	◐	●	●	✖	◐	●	
				Recommended parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		VNMG 331-PB1	1/64	0.002-0.006	0.01-0.083	●		●	●											VNMG 160404E-PB1
		VNMG 332-PB1	1/32	0.004-0.012	0.02-0.083	●	●	●	●											VNMG 160408E-PB1
		VNMG 331-SC1	1/64	0.004-0.010	0.008-0.031								●							VNMG 160404E-SC1
		VNMG 332-SC1	1/32	0.006-0.012	0.008-0.031								●							VNMG 160408E-SC1
		VNMG 331-MB2	1/64	0.002-0.006	0.01-0.083						●	●	●						●	VNMG 160404E-MB2
Light cutting		VNMG 332-MB2	1/32	0.004-0.012	0.02-0.083						●	●	●						●	VNMG 160408E-MB2
		VNMG 331-SL3	1/64	0.004-0.008	0.024-0.098								●						●	VNMG 160404E-SL3
		VNMG 332-SL3	1/32	0.005-0.010	0.031-0.098								●						●	VNMG 160408E-SL3
Profiling		VNMG 331-BS	1/64	0.003-0.008	0.008-0.079	●	●													VNMG 160404E-BS
		VNMG 332-BS	1/32	0.003-0.008	0.008-0.079	●	●													VNMG 160408E-BS
Semi-finishing		VNMG 331-PB3	1/64	0.002-0.007	0.012-0.122	●		●	●											VNMG 160404E-PB3
		VNMG 332-PB3	1/32	0.005-0.014	0.024-0.122	●	●	●	●											VNMG 160408E-PB3
		VNMG 333-PB3	3/64	0.007-0.021	0.035-0.122	●	●	●	●											VNMG 160412E-PB3
		VNMG 331-PC3	1/64	0.003-0.008	0.013-0.13	●		●	●											VNMG 160404E-PC3
		VNMG 332-PC3	1/32	0.006-0.016	0.027-0.13	●		●	●											VNMG 160408E-PC3
		VNMG 333-PC3	3/64	0.008-0.024	0.04-0.13	●		●	●											VNMG 160412E-PC3

●: Stock available

Negative 35° (V)



Dimension (in)			
Product code	IC	S	D1
VN_33_	3/8	3/16	0.150

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✖ Bad condition																ISO
						●	●	●	◐	✖	●	◐	◐	◐	●	◐	✖	◐	●			
				Recommended parameters		P					M				K			N	S			
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S			
Medium		VNMG 331-PD3	1/64	0.003-0.009	0.016-0.13	●		●	●										VNMG 160404E-PD3			
		VNMG 332-PD3	1/32	0.006-0.017	0.031-0.13	●	●	●	●	●									VNMG 160408E-PD3			
		VNMG 333-PD3	3/64	0.009-0.026	0.047-0.13	●	●	●	●	●									VNMG 160412E-PD3			
		VNMG 331-M3T	1/64	0.008-0.016	0.039-0.157	●													VNMG 160404-M3T			
		VNMG 332-M3T	1/32	0.008-0.016	0.039-0.157	●													VNMG 160408-M3T			
		VNMG 331-SC3	1/64	0.003-0.009	0.016-0.13						●	●	●					●	VNMG 160404E-SC3			
		VNMG 332-SC3	1/32	0.006-0.017	0.031-0.13						●	●	●					●	VNMG 160408E-SC3			
		VNMG 333-SC3	3/64	0.009-0.026	0.047-0.13						●	●	●					●	VNMG 160412E-SC3			
		VNMG 331-MC3	1/64	0.003-0.009	0.013-0.13						●	●	●						VNMG 160404E-MC3			
		VNMG 332-MC3	1/32	0.006-0.017	0.025-0.13						●	●	●						VNMG 160408E-MC3			
		VNMG 331-PC4	1/64	0.003-0.009	0.016-0.13	●		●	●							●	●		VNMG 160404E-PC4			
		VNMG 332-PC4	1/32	0.006-0.017	0.031-0.13	●	●	●	●							●	●		VNMG 160408E-PC4			
VNMG 333-PC4		3/64	0.009-0.026	0.047-0.13	●	●	●	●							●	●		VNMG 160412E-PC4				
Roughing		VNMG 331-KC4	1/64	0.004-0.009	0.019-0.13										●	●		VNMG 160404E-KC4				
		VNMG 332-KC4	1/32	0.007-0.019	0.038-0.13										●	●		VNMG 160408E-KC4				
		VNMG 333-KC4	3/64	0.01-0.028	0.057-0.13										●	●		VNMG 160412E-KC4				
Finishing		VNGG 3(3)03FP-UF	0.004	0.001-0.004	0.020-0.079								●					VNGG 160401FP-UF				
		VNGG 3(3)05FP-UF	0.008	0.001-0.004	0.020-0.079								●					VNGG 160402FP-UF				
		VNGG 331FP-UF	1/64	0.001-0.004	0.020-0.079								●					VNGG 160404FP-UF				

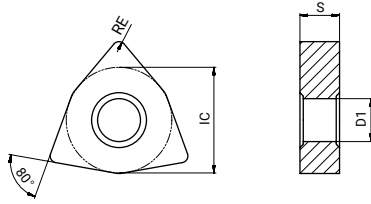
●: Stock available

Dimension (in)			
Product code	IC	S	D1
WN_33_	3/8	3/16	0.150
WN_43_	1/2	3/16	0.203

[illegible]

S0 Turning Insert

Negative 80° (W)

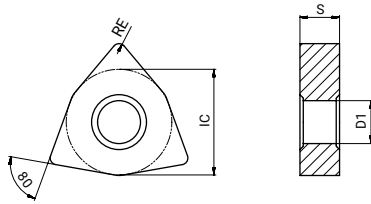


Dimension (in)			
Product code	IC	S	D1
WN_33_	3/8	3/16	0.150
WN_43_	1/2	3/16	0.203

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✖ Bad condition																ISO
						● ● ● ◐ ✖ ● ◐ ◐ ◐ ● ✖ ✖ ◐ ●																
				Recommended parameters		P					M				K		N	S				
						f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Medium		WNMG 431R-PL5	1/64	0.008-0.020	0.016-0.157				●										WNMG 080404R-PL5			
		WNMG 431L-PL5	1/64	0.008-0.020	0.016-0.157				●										WNMG 080404L-PL5			
		WNMG 432R-PL5	1/32	0.008-0.020	0.016-0.197				●			●							WNMG 080408R-PL5			
		WNMG 432L-PL5	1/32	0.008-0.020	0.016-0.197				●			●							WNMG 080408L-PL5			
		WNMG 332-PD3	1/32	0.006-0.017	0.031-0.083		●	●	●										WNMG 060408E-PD3			
		WNMG 431-PD3	1/64	0.003-0.009	0.016-0.114	●	●	●	●	●									WNMG 080404E-PD3			
		WNMG 432-PD3	1/32	0.006-0.017	0.031-0.114	●	●	●	●	●									WNMG 080408E-PD3			
		WNMG 433-PD3	3/64	0.009-0.026	0.047-0.114	●	●	●	●	●									WNMG 080412E-PD3			
		WNMG 431-SC3	1/64	0.003-0.009	0.016-0.114						●	●	●					●	WNMG 080404E-SC3			
		WNMG 432-SC3	1/32	0.006-0.017	0.031-0.114						●	●	●					●	WNMG 080408E-SC3			
		WNMG 433-SC3	3/64	0.009-0.026	0.047-0.114						●	●	●					●	WNMG 080412E-SC3			
		WNMG 431-M3T	1/64	0.008-0.016	0.039-0.157	●													WNMG 080404-M3T			
		WNMG 432-M3T	1/32	0.008-0.016	0.039-0.157	●													WNMG 080408-M3T			
		WNMG 332-MC3	1/32	0.006-0.017	0.025-0.083						●	●	●						WNMG 060408E-MC3			
		WNMG 333-MC3	3/64	0.009-0.026	0.038-0.083						●	●	●						WNMG 060412E-MC3			
		WNMG 431-MC3	1/64	0.003-0.009	0.013-0.114						●	●	●						WNMG 080404E-MC3			
		WNMG 432-MC3	1/32	0.006-0.017	0.025-0.114						●	●	●					●	WNMG 080408E-MC3			
		WNMG 433-MC3	3/64	0.009-0.026	0.038-0.114						●	●	●						WNMG 080412E-MC3			
		WNMG 431-PC4	1/64	0.003-0.009	0.016-0.114	●		●	●						●	●			WNMG 080404E-PC4			
		WNMG 432-PC4	1/32	0.006-0.017	0.031-0.114	●	●	●	●						●	●			WNMG 080408E-PC4			
		WNMG 433-PC4	3/64	0.009-0.026	0.047-0.114	●	●	●	●						●	●			WNMG 080412E-PC4			

● : Stock available

Negative 80° (W)



Dimension (in)			
Product code	IC	S	D1
WN_33_	3/8	3/16	0.150
WN_43_	1/2	3/16	0.203

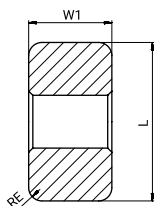
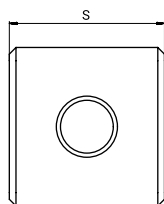
Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✖ Bad condition												ISO	
				Recommended parameters		P					M				K		N		S
						f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K		AC102K
Roughing		WNMG 332-MC4	1/32	0.008-0.024	0.047-0.13														WNMG 060408E-MC4
		WNMG 333-MC4	3/64	0.012-0.035	0.071-0.13						●	●	●						WNMG 060412E-MC4
		WNMG 432-MC4	1/32	0.008-0.024	0.047-0.169						●	●	●					●	WNMG 080408E-MC4
		WNMG 433-MC4	3/64	0.012-0.035	0.071-0.169						●	●	●					●	WNMG 080412E-MC4
		WNMG 331-KC4	1/64	0.004-0.009	0.019-0.102											●	●		WNMG 060404E-KC4
		WNMG 332-KC4	1/32	0.007-0.019	0.038-0.102											●	●		WNMG 060408E-KC4
		WNMG 431-KC4	1/64	0.004-0.009	0.019-0.138											●	●		WNMG 080404E-KC4
		WNMG 432-KC4	1/32	0.007-0.019	0.038-0.138									●	●	●			WNMG 080408E-KC4
		WNMG 433-KC4	3/64	0.01-0.028	0.057-0.138									●	●	●			WNMG 080412E-KC4
		WNMG 434-KC4	1/16	0.014-0.038	0.076-0.138										●	●			WNMG 080416E-KC4
		WNMG 432-PD5	1/32	0.008-0.024	0.047-0.169		●	●	●	●									WNMG 080408E-PD5
		WNMG 433-PD5	3/64	0.012-0.035	0.071-0.169		●	●	●	●									WNMG 080412E-PD5
		WNMA 431-KD5	1/64	0.004-0.012	0.024-0.169											●	●		WNMA 080404E-KD5
		WNMA 432-KD5	1/32	0.008-0.024	0.047-0.169										●	●	●		WNMA 080408E-KD5
		WNMA 433-KD5	3/64	0.012-0.035	0.071-0.169										●	●	●		WNMA 080412E-KD5
		WNMA 434-KD5	1/16	0.016-0.047	0.094-0.169											●	●		WNMA 080416E-KD5

●: Stock available

[illegible]

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Railway wheel re-turning



Dimension (in)			
Product code	L	S	W1
LN_1919_	3/4	3/4	0.394
LN_3019_	1.181	1.181	0.472

[illegible]

●: Stock available