



# Turning Insert Identification System

SYMBOL	SHAPE	NOSE ANGLE (DEGREES)
S	square	90
T	triangle	60
C	diamond	80
D		55
E		75
M		86
V		35
W		trigon
H	hexagon	120
O	octagon	135
P	pentagon	108
L	rectangle	90
A	parallelogram	85
B		82
R	round	-

### 1 - SHAPE

NOTE: tolerances apply prior to edge prep and coating  
 IC: theoretical diameter of the insert inscribed circle  
 T: thickness  
 B: see figures below

TOLERANCE CLASS	TOLERANCE ON "IC"		TOLERANCE ON "B"		TOLERANCE ON "T"	
	inch	mm	inch	mm	inch	mm
C	±.0010	±0,025	±.0005	±0,013	±.001	±0,025
H	±.0005	±0,013	±.0005	±0,013	±.001	±0,025
E	±.0010	±0,025	±.0010	±0,025	±.001	±0,025
G	±.0010	±0,025	±.0010	±0,025	±.005	±0,130
M	See tables at right		See tables at right		±.005	±0,130
U	See tables at right		See tables at right		±.005	±0,130

### 3 - TOLERANCE

N - 0°
A - 3°
B - 5°
C - 7°
P - 11°
D - 15°
E - 20°
F - 25°
G - 30°

### 2 - RELIEF ANGLE

EXAMPLE

inch	<b>C</b>	<b>N</b>	<b>M</b>	<b>G</b>	
metric	<b>C</b>	<b>N</b>	<b>M</b>	<b>G</b>	
position	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	

4 - INSERT TYPE				SYMBOL IF IC LESS THAN 1/4"
SYMBOL	HOLE	SHAPE OF HOLE	CHIPBREAKER	
N	without		without	E
R			single-sided	
F			double-sided	
A	with	cylindrical hole	without	D
M			single-sided	
G, P			double-sided	
W			without	
T		partly cylindrical hole, 40-60° countersink	single-sided	
B		partly cylindrical hole, 70-90° countersink	without	
H			single-sided	
J			double-sided	

INCH	5 - SIZE								
	IC		METRIC CUTTING EDGE LENGTH (per insert shape indicated)						
	in.	mm	C	D	R	S	T	V	W
1.2 (5)	5/32	3,97	S4	04	03	03	06	-	-
1.5 (6)	3/16	4,76	04	05	04	04	08	08	S3
1.8 (7)	7/32	5,56	05	06	05	05	09	09	03
-	.236	6,00	-	-	06	-	-	-	-
2	1/4	6,35	06	07	06	06	11	11	04
2.5	5/16	7,94	08	09	07	07	13	13	05
-	.315	8,00	-	-	08	-	-	-	-
3	3/8	9,52	09	11	09	09	16	16	06
-	.394	10,00	-	-	10	-	-	-	-
3.5	7/16	11,11	11	13	11	11	19	19	07
-	.472	12,00	-	-	12	-	-	-	-
4	1/2	12,70	12	15	12	12	22	22	08
4.5	9/16	14,29	14	17	14	14	24	24	09
5	5/8	15,88	16	19	15	15	27	27	10
-	.630	16,00	-	-	16	-	-	-	-
5.5	11/16	17,46	17	21	17	17	30	30	11
6	3/4	19,05	19	23	19	19	33	33	13
-	.787	20,00	-	-	20	-	-	-	-
7	7/8	22,22	22	27	22	22	38	38	15
-	.984	25,00	-	-	25	-	-	-	-
8	1	25,40	25	31	25	25	44	44	17
10	1-1/4	31,75	32	38	31	31	54	54	21
-	1.260	32,00	-	-	32	-	-	-	-

NOTE: Inch sizes in parentheses for "alternate symbols" D or E (under 1/4" IC)



# Turning Insert Identification System

IC		± TOLERANCE ON "IC"								IC		± TOLERANCE ON "B"																				
		CLASS "M" TOLERANCE						CLASS "U" TOLERANCE				CLASS "M" TOLERANCE						CLASS "U" TOLERANCE														
		SHAPES S, T, C, R & W		SHAPE D		SHAPE V		SHAPES S, T, & C				SHAPES S, T, C, R & W		SHAPE D		SHAPE V		SHAPES S, T, & C														
inch	metric	inch	mm	inch	mm	inch	mm	inch	mm	inch	metric	inch	mm	inch	mm	inch	mm	inch	mm													
5/32	3,97	.002	0,05	-	-	-	-	-	-	.003	0,06	5/32	3,97	.003	0,06	-	-	-	-	-	-											
3/16	4,76			-	-	-	-	-	-			-	-			-	-	-	-	-	-	-	-	-								
7/32	5,56			-	-	-	-	-	-			-	-			-	-	-	-	-	-	-	-	-	-							
1/4	6,35			.002	0,05	.002	0,05	.002	0,05			.003	0,06			.004	0,11	-	-	.005	0,13	-	-	-	-							
5/16	7,94			-	-	-	-	-	-			-	-			-	-	-	-	-	-	-	-	-	-							
3/8	9,52			-	-	-	-	-	-			-	-			.007	0,18	-	-	-	-	-	-	-	-							
7/16	11,11	.003	0,06	.003	0,06	.003	0,06	.005	0,13	.005	0,13	7/16	11,11	.005	0,13	.006	0,15	-	-	-	-											
1/2	12,70											-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9/16	14,29											-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/8	15,88	.004	0,10	.004	0,10	.004	0,10	.007	0,18	.007	0,18	5/8	15,88	.006	0,15	.007	0,18	-	-	-	-											
11/16	17,46											-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3/4	19,05											-	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/8	22,22	.005	0,13	-	-	-	-	.010	0,25	-	-	-	-	-	-	-	-	-	-	-												
1	25,40			-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-									
1-1/4	31,75	.006	0,15	-	-	-	-	-	-	.007	0,18	-	-	-	-	-	-	-	-	.015	0,38											
1-1/4	31,75	.008	0,20	-	-	-	-	-	-	.008	0,20	-	-	-	-	-	-	-	-	-	-											

	<b>4</b>	<b>3</b>	<b>2</b>	<b>-</b>	<b>E</b>	<b>P3</b>
	<b>12</b>	<b>04</b>	<b>08</b>	<b>-</b>	<b>E</b>	<b>P3</b>
	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>

9 & 10 - CUTTING EDGE CONDITION OR CHIP CONTROL FEATURES (optional)			
F	sharp, no hone	HM	Medium machining
E	hone only	VM	Medium machining
A	.001" - .003" hone only	LR	Light roughing
B	.003" - .005" hone only	KR	Roughing
C	.005" - .008" hone only	GR	Roughing
K	K-land	MR	Roughing
FF	Fine finishing	HR	Heavy roughing
LF	Finishing	XR	Heavy roughing
GF	Finishing	P2	Finishing
FM	Light machining	P3	Medium machining
LM	Light machining	P4	Roughing
SM	Medium machining	P5	Heavy roughing
GM	Medium machining	HP	High positive
MM	Medium machining	HF	High feed finishing

6 - THICKNESS			
SYMBOL		THICKNESS	
inch	metric	inch	mm
.5 (1)	-	1/32	0,79
.6	T0	.040	1,00
1 (2)	01	1/16	1,59
1.2	T1	5/64	1,98
1.5 (3)	02	3/32	2,38
2	03	1/8	3,18
2.5	T3	5/32	3,97
3	04	3/16	4,76
3.5	05	7/32	5,56
4	06	1/4	6,35
5	07	5/16	7,94
6	09	3/8	9,52
7	11	7/16	11,11
8	12	1/2	12,70

NOTE: Inch sizes in parentheses for "alternate symbols" D or E (under 1/4" IC)

7 - CORNER RADIUS			
SYMBOL		CORNER RADIUS	
inch	metric	inch	mm
X0	X0	.0015	0,04
0	01	.004	0,1
.5	02	.008	0,2
1	04	1/64	0,4
2	08	1/32	0,8
3	12	3/64	1,2
4	16	1/16	1,6
5	20	5/64	2,0
6	24	3/32	2,4
7	28	7/64	2,8
8	32	1/8	3,2
-	00	round insert (inch)	
-	M0	round insert (metric)	

