

# ISO Insert Identification System

symbol shape	insert	shape	nose angle (degree)	symbol	hole	shape of hole	chipbreaker	shape of insert's section	alternate symbols	
									ordinary system	"D" less than 1/4**
S		square	90	N	without		without		N	E
T		triangular	60	R			single sided		R	
C			80	F			double sided		F	
D		rhombic (diamond)	80	A	cylindrical hole		without		A	D
E			75	M,P,S			single sided		M	
F			50	G,P,Z			double sided		G	
M			86	W			without		A	
V			35	T			single sided		M	
W			80	Q			without		A	
H		hexagonal	120	U	partly cylindrical hole, 40-60° double countersink	double sided		G		
O		octagonal	135	B	partly cylindrical hole, 70-90° countersink	without		A		
P		pentagonal	108	H		single sided		M		
L		rectangular	90	C	partly cylindrical hole, 70-90° double countersink	without		A		
A		parallelogram-shaped	85	J		double sided		G		
B			82							
N/K			55							
R		round	-	X		special		X	X	

## 1. Shape

## 4. Insert Type

Example:

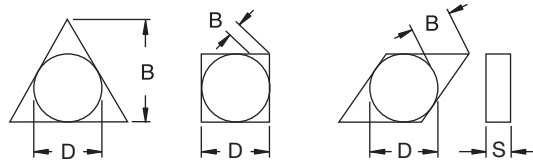
INCH **T** **N** **M** **G** **4**  
 METRIC **T** **N** **M** **G** **22**

## 2. Relief Angle

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

## 3. Tolerance

**tolerances: apply prior to edge prep and coating**  
 D: theoretical diameter of the insert inscribed circle  
 S: thickness  
 B: See figures below.



tolerance class	tolerance on "D"		tolerance on "B"		tolerance on "S"	
	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	±0,13
M	See tables at right.				±.005	±0,13
U	See tables at right.				±.005	±0,13
R	Grind all Over.					
S	Grind Top and Bottom Only.					

## 5. Size

inch	"D"		Code for metric cutting edge length "L10"							
	inch	mm	C	D	R	S	T	V	W	
1.2 (5)	5/32	3,97	54	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	-	-	-	-	
<b>4</b>	<b>1/2</b>	<b>12,70</b>	12	15	12	12	<b>22</b>	<b>22</b>	<b>08</b>	
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 parenthesis for "alternate symbols" D or E (under 1/4 inch "D").

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## 3. Tolerance Explanation

symbol		thickness	
inch	mm	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
<b>3</b>	<b>04</b>	<b>3/16</b>	<b>4,76</b>
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 inch "D").

"D"		± Tolerance on "D"										"D"		± Tolerance on "D"									
		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	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm				
5/32	3,97			-	-	-	-	-	-	-	-	5/32	3,97			-	-	-	-	-	-		
3/16	4,76			-	-	-	-	-	-	-	-	3/16	4,76			-	-	-	-	-	-		
7/32	5,56											7/32	5,56			-	-	-	-	-	-		
1/4	6,35	.002	0,05	.002	0,05	.002	0,05	.003	0,06			1/4	6,35	.003	0,06					.005	0,13		
5/16	7,94											5/16	7,94			.004	0,11						
3/8	9,52											3/8	9,52					.007	0,18				
7/16	11,11											7/16	11,11										
1/2	12,70	.003	0,06	.003	0,06	.003	0,06	.005	0,13			1/2	12,70	.005	0,13	.006	0,15	.010	0,25	.008	0,20		
9/16	14,29											9/16	14,29										
5/8	15,88											5/8	15,88										
11/16	17,46	.004	0,10	.004	0,10	.004	0,10	.007	0,18			11/16	17,46	.006	0,15	.007	0,18			.011	0,27		
3/4	19,05											3/4	19,05										
7/8	22,22											7/8	22,22										
1	25,40	.005	0,13							.010	0,25	1	25,40	.007	0,18								
1 1/4	31,75	.006	0,15									1 1/4	31,75	.008	0,20								

## 6. Thickness "S"

**3**      **2**  
**04**     **08**

## 7. Corner Radius "R"

symbol		corner radius	
inch	mm	inch	mm
X0	X0	.0015	.04
0	01	.004	0,1
.5	02	.008	0,2
1	04	1/64	0,4
<b>2</b>	<b>08</b>	<b>1/32</b>	<b>0,8</b>
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 (mm)	