Inserts for general turning

Inserts, metric

C	N	M	G	12	04	08	–			–	PF
1	2	3	4	5	6	7		8	9		12

Inserts, inch

C	N	M	G	4	3	2	–			–	PF
1	2	3	4	5	6	7		8	9		12

Inserts, advanced cutting materials, metric

C	N	M	G	12	04	08	–	T	010	20
1	2	3	4	5	6	7		8	10	11

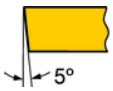
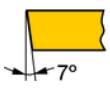
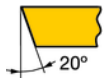
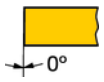
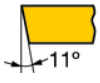
Inserts, advanced cutting materials, inch

C	N	G	A	4	3	2	–	T	03	20
1	2	3	4	5	6	7		8	10	11

1 Insert shape

C		D	
K		R	
S		T	
V		W	

2 Insert clearance angle

B		C	
E		N	
P		O	Specific description

3 Tolerances, metric

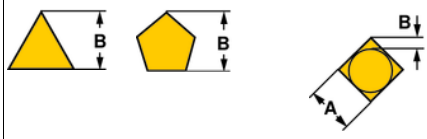
Class	*s*	*iC* / *iW*
G	±0.13	±0.025
M	±0.13	±0.05 – ±0.15[1)]
U	±0.13	±0.08 – ±0.25[1)]
E	±0.025	±0.025

[1)]Varies depending on the size of *iC*. See below.

Inscribed circle *iC* mm	Tolerance class M	U
3.97 5.0 5.56 6.0 6.35 8.0 9.525 10.0	±0.05	±0.08
12.0 12.7	±0.08	±0.13
15.875 16.0 19.05 20.0	±0.10	±0.18
25.0 25.4	±0.13	±0.25
31.75 32.0	±0.15	±0.25

For positive inserts iC is valid for a sharp corner. See cutting edge condition F. (Picture 8).

3 Tolerances, inch



A: Theoretical diameter of the insert
T: Thickness of the insert.
B: See figures.

Tolerances in inch

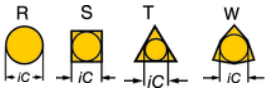
Clas	B:	A:	T:
A	±.0002	±.001	±.001
B	.0002	.001	.005
C	.0005	.001	.001
D	.0005	.001	.005
E	.001	.001	.001
F	.0002	.0005	.001
G	.001	.001	.005
H	.0005	.0005	.001
J	.0002	.002-.005	.001
K	.0005	.002-.005	.001
L	.001	.002-.005	.001
M	.002-.005	.002-.005	.005
U	.005-.012	.005-.010	.005
N	.002-.010	.002-.004	.001

Inserts for general turning

4 Insert type

A		Q	
G		R	
M		T	
N		W	
P		X	 Special design

5 Insert size



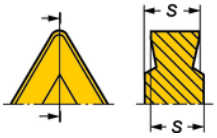
Inscribed circle is indicated in 1/8".

*) For insert shape K (KNMX, KNUX) only the theoretical cutting edge length is indicated.

1) Metric base design
2) Inch base design

Cutting edge length, metric									
iC mm	*iC* inch	C	D	R	S	T	V	W	K
3.18	1/8"					05			
3.97	5/32"					06		02	
5.0				05					
5.56	7/32"			09					
6.0			06						
6.35	1/4"	06	07			11	11	04	
8.0				08					
9.525	3/8"	09	11	09	09	16	16	06	16*)
10.0	10.0			10					
12.0				12					
12.7	1/2"	12	15	12	12	22	22	08	
13			13				13		
15.875	5/8"	16		15	15	27			
16.0				16					
19.0	3/4"	19		19	19	33			
20.0				20					
25.0				25 1)					
25.4	1"	25		25 2)	25				
31.75	1/4"			31					
32				32					

6 Insert thickness, *s* mm, inch



Metric			Inch		
01	s =	1.59	1	s =	.0625
T1	s =	1.98	(1.2)	s =	.075
02	s =	2.38	(1.5)	s =	3/32
03	s =	3.18	2	s =	1/8
T3	s =	3.97	(2.5)	s =	5/32
04	s =	4.76	3	s =	3/16
05	s =	5.56	4	s =	1/4
06	s =	6.35	5	s =	5/16
07	s =	7.94	6	s =	3/8
09	s =	9.52	6.3	s =	.394
10	s =	10.00	7.6	s =	.475
12	s =	12.00			

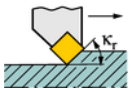
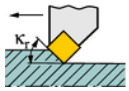
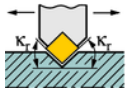
7 Nose radius, r_ε mm, inch

Metric:	Inch:	Actual inch
00 = 0	00	Round
01 = 0.1	03	.004
02 = 0.2	0	.008
04 = 0.4	1 = 1/64	.0156
05 = 0.5		
08 = 0.8	2 = 1/32	.0312
10 = 1.0		
12 = 1.2	3 = 3/64	.047
15 = 1.5		
16 = 1.6	4 = 1/16	.0625
24 = 2.4	6 = 3/32	.094
32 = 3.2	8 = 1/8	.125

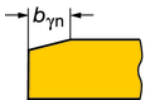
8 Cutting edge condition

F		Sharp cutting edge
A		ER treated cutting edge (ANSI)
E		ER treated cutting edge
T		Negative land
K		Double negative lands
S		Negative land and ER treated cutting edge

9 Hand of tool

R		Feed
L		Feed
N		Feed Feed

10 Chamfer width metric, inch



Metric:

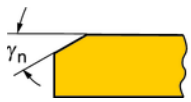
010	$b_{\gamma n}$ = 0.10
025	$b_{\gamma n}$ = 0.25
070	$b_{\gamma n}$ = 0.70
150	$b_{\gamma n}$ = 1.50
200	$b_{\gamma n}$ = 2.00

Inch:

03	$b_{\gamma n}$ = .003
08	$b_{\gamma n}$ = .008
30	$b_{\gamma n}$ = .030
60	$b_{\gamma n}$ = .060
80	$b_{\gamma n}$ = .080

For more information, see code key on page A76

11 Chamfer angle



15 γn = 15°
20 γn = 20°

12 Manufacturer's option

The ISO code consists of nine symbols including 8 and 9 which are used only when required. In addition the manufacturer may add further three symbols e. g.

- WF = Wiper – finishing
- WMX = Wiper, medium machining
- PF = ISO P – finishing
- PR = ISO P – roughing