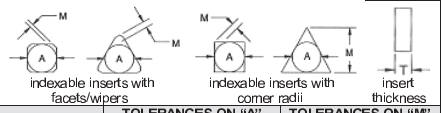
NOTE: tolerances apply prior to edge prep and coating

inch
*metric (mm)*




| A | TOLERANCES ON "A" | | TOLERANCES ON "M" | |
|---|---|---|---|---|
| | CLASSES J, K, L, M, N | CLASS U | CLASSES M, N | CLASS U |
| .1875 through .3937<br>*4,76 through 10,00* | .002<br>*0,051* | .003<br>*0,076* | .003<br>*0,076* | .005<br>*0,127* |
| .4375 through .5625<br>*11,11 through 14,29* | .003<br>*0,076* | .005<br>*0,127* | .005<br>*0,127* | .008<br>*0,203* |
| .5906 through .8125<br>*15,00 through 20,64* | .004<br>*0,102* | .007<br>*0,178* | .006<br>*0,152* | .011<br>*0,279* |
| .8661 through 1.188<br>*22,00 through 31,16* | .005<br>*0,127* | .010<br>*0,254* | .007<br>*0,178* | .015<br>*0,381* |
| 1.250 through 1.378<br>*31,75 through 35,00* | .006<br>*0,152* | .010<br>*0,254* | .008<br>*0,203* | .015<br>*0,381* |

| | A | M | T | | A | M | T |
|---|---|---|---|---|---|---|---|
| A | .001<br>*0,025* | .0002<br>*0,005* | .001<br>*0,025* | H | .0005<br>*0,013* | .0005<br>*0,013* | .001<br>*0,025* |
| B | .001<br>*0,025* | .0002<br>*0,005* | .005<br>*0,130* | J | *.002 - .005<br>**0,05 – 0,13* | .0002<br>*0,005* | .001<br>*0,025* |
| C | .001<br>*0,025* | .0005<br>*0,013* | .001<br>*0,025* | K | *.002 - .005<br>**0,05 – 0,13* | .0005<br>*0,013* | .001<br>*0,025* |
| D | .001<br>*0,025* | .0005<br>*0,013* | .005<br>*0,130* | L | *.002 - .005<br>**0,05 – 0,13* | .001<br>*0,025* | .001<br>*0,025* |
| E | .001<br>*0,025* | .001<br>*0,025* | .001<br>*0,025* | M | *.002 - .004<br>**0,05 – 0,10* | *.002 - .010<br>**0,05 - 0,25* | .005<br>*0,130* |
| F | .0005<br>*0,013* | .0002<br>*0,005* | .001<br>*0,025* | N | *.002 - .004<br>**0,05 – 0,10* | *.002 - .010<br>**0,05 - 0,25* | .001<br>*0,025* |
| G | .001<br>*0,025* | .001<br>*0,025* | .005<br>*0,130* | U | *.003 - .010<br>**0,08 – 0,25* | *.005 - .012<br>**0,13 - 0,30* | .005<br>*0,130* |

* See table above for tolerances according to insert size and class

**3 - TOLERANCE**


inscribed circle "A", cutting edge length "L"

For shapes A, L, and N use length of leading cutting edge (for inch, use increments of ¼")

| INCH | | METRIC | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SYMBOL | A | A | L (for insert shape indicated) | | | | | | |
| | | | S | T | R | O | C | H | E |
| - | - | 6,00 | - | - | 06 | - | - | - | - |
| 2 | 1/4 | 6,35 | 06 | 11 | 06 | 02 | 06 | 03 | 06 |
| - | - | 8,00 | - | - | 08 | - | - | - | - |
| 3 | 3/8 | 9,52 | 09 | 16 | 09 | 04 | 09 | 05 | 09 |
| - | - | 10,00 | - | - | 10 | - | - | - | - |
| - | - | 12,00 | - | - | 12 | - | - | - | - |
| 4 | 1/2 | 12,70 | 12 | 22 | 12 | 05 | 12 | 07 | 13 |
| 5 | 5/8 | 15,88 | 15 | 27 | 15 | 06 | 16 | 09 | 16 |
| - | - | 16,00 | - | - | 16 | - | - | - | - |
| 6 | 3/4 | 19,05 | 19 | 33 | 19 | 07 | 19 | 11 | 19 |
| - | - | 20,00 | - | - | 20 | - | - | - | - |
| - | - | 25,00 | - | - | 25 | - | - | - | - |
| 8 | 1 | 25,40 | 25 | 44 | 25 | 10 | 25 | 14 | 26 |

**5 - SIZE**

| SYMBOL | HOLE | SHAPE OF HOLE | CHIPBREAKER |
|---|---|---|---|
| N | without | | without |
| R | | | single-sided |
| F | | | double-sided |
| A | with | cylindrical hole | without |
| M | | | single-sided |
| G | | | double-sided |
| W | | partly cylindrical hole, 40-60° countersink | without |
| T | | | single-sided |
| B | | partly cylindrical hole, 70-90° countersink | without |
| H | | | single-sided |
| C | | partly cylindrical hole, 70-90° double countersink | without |
| J | | | double-sided |

**4 - INSERT TYPE**

**EXAMPLE**

| | | | | | | |
|---|---|---|---|---|---|---|
| inch | S | E | K | N | | |
| metric | S | E | K | N | | |
| position | 1 | 2 | 3 | 4 | | |

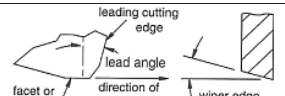
| 1 – SHAPE | | |
|---|---|---|
| SYMBOL SHAPE | SHAPE | NOSE ANGLE (DEGREES) |
| A | parallelogram | 85 |
| C | diamond | 80 |
| E | diamond | 75 |
| H | hexagon | 120 |
| L | rectangle | 90 |
| M | diamond | 86 |
| N | diamond | 87 |
| O | octagon | 135 |
| R | round | - |
| S | square | 90 |
| T | triangle | 60 |

**2 – RELIEF ANGLE**

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









| If symbols are letters, lead angle and wiper edge clearance | | | | | If symbols are numbers, corner radius | | | |
|---|---|---|---|---|---|---|---|---|
| LEAD ANGLE | | | WIPER EDGE CLEARANCE | | INCH | | METRIC | |
| SYMBOL | INCH | METRIC | SYMBOL | INCH/METRIC | SYMBOL | inch | SYMBOL | mm |
| A | 45° | 45° | A | 3° | - | - | M0 | round insert |
| D | Handed 30° | 60° | B | 5° | 0 | .004 | 01 | 0,1 |
| K | Neutral 30° | - | C | 7° | .5 | .008 | 02 | 0,2 |
| E | Handed 15° | 75° | D | 15° | 1 | 1/64 | 04 | 0,4 |
| L | Handed 15° | - | E | 20° | - | - | 05 | 0,5 |
| P | 0° | 90° | F | 25° | 2 | 1/32 | 08 | 0,8 |
| | | | G | 30° | - | - | 10 | 1,0 |
| | | | N | 0° | 3 | 3/64 | 12 | 1,2 |
| | | | P | 11° | - | - | 15 | 1,5 |
| | | | | | 4 | 1/16 | 16 | 1,6 |
| | | | | | 5 | 5/64 | 20 | 2,0 |
| | | | | | 6 | 3/32 | 24 | 2,4 |
| | | | | | 7 | 7/64 | 28 | 2,8 |
| | | | | | 8 | 1/8 | 32 | 3,2 |

**7 – CORNER CONFIGURATION**

| INCH | | METRIC | |
|---|---|---|---|
| SYMBOL (1/16") | inch | SYMBOL | mm |
| 1,5 | 3/32 | 02 | 2,38 |
| 2 | 1/8 | 03 | 3,18 |
| 2,5 | 5/32 | T3 | 3,97 |
| 3 | 3/16 | 04 | 4,76 |
| - | - | M5 | 5,00 |
| 3,5 | 7/32 | 05 | 5,56 |
| 4 | 1/4 | 06 | 6,35 |
| 5 | 5/16 | 07 | 7,94 |

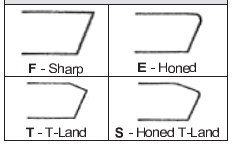
**6 – THICKNESS**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 4 | 2 | AF | T | N | 6 | |
| | 12 | 03 | AF | T | N | - | |
| | 5 | 6 | 7 | 8 | 9 | 10 | |

| SYMBOL | inch |
|---|---|
| 2 | .0312 |
| 3 | .0469 |
| 4 | .0625 |
| 6 | .0938 |
| Facet width is number of 1/64" increments (1/32" for old styles) | |

**10 – FACET WIDTH**

**8 – CUTTING EDGE**




**9 – HAND OF INSERT**