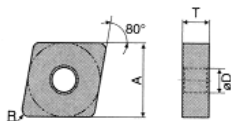
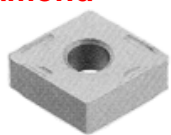


# CNMG 80° DIAMOND INSERTS

## CNMG INSERTS FOR STEELS 80° Diamond

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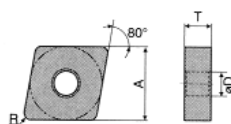
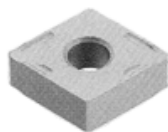


**CNMG 4 3 2**   
 I.C. size (A) Thickness (T) Radius (R) Chipbreaker

| ANSI                         | ISO        | IC (Inch) | T (Inch) | R (Inch)      | Cutting Conditions           | Operation/ Application | Chip Breaker | Grade | Part Number | Price 1-9 Pcs     | Box Price |    |       |         |        |        |
|------------------------------|------------|-----------|----------|---------------|------------------------------|------------------------|--------------|-------|-------------|-------------------|-----------|----|-------|---------|--------|--------|
| CNMG321                      | CNMG090304 | 3/8       | 1/8      | 0.016         | Cont & Int                   | Medium                 | TM           | T9025 | TO-3509     | \$5.67            | \$4.41    |    |       |         |        |        |
| CNMG322                      | CNMG090308 | 3/8       | 1/8      | 0.031<br>1/32 | Cont - GP                    | Medium                 | TM           | T9015 | TO-3510     | \$5.67            | \$4.41    |    |       |         |        |        |
|                              |            |           |          |               | Cont & Int                   | Medium                 |              | T9025 | TO-3511     | \$5.67            | \$4.41    |    |       |         |        |        |
| CNMG431                      | CNMG120404 | 1/2       | 3/16     | 0.016<br>1/64 | Cont                         | Semi Finish            | TS           | NS530 | TO-1317     | \$6.48            | \$5.04    |    |       |         |        |        |
|                              |            |           |          |               | Cont                         | Semi Finish            |              | AT530 | TO-1315     | \$8.35            | \$6.50    |    |       |         |        |        |
|                              |            |           |          |               | Cont - GP                    | Semi Finish            |              | T9015 | TO-3516     | \$8.68            | \$6.75    |    |       |         |        |        |
|                              |            |           |          |               | Cont & Int                   | Semi Finish            |              | T9025 | TO-3517     | \$8.68            | \$6.75    |    |       |         |        |        |
|                              |            |           |          |               | Cont - GP                    | Medium                 | TM           | T9015 | TO-3513     | \$8.68            | \$6.75    |    |       |         |        |        |
|                              |            |           |          |               | Cont & Int                   | Medium                 |              | T9025 | TO-3514     | \$8.68            | \$6.75    |    |       |         |        |        |
|                              |            |           |          |               | Severely Int & Heavy Cutting | Medium                 |              | T9035 | TO-3515     | \$8.68            | \$6.75    |    |       |         |        |        |
|                              |            |           |          |               | Cont                         | Semi Finish            |              | NS530 | TO-1397     | \$6.48            | \$5.04    |    |       |         |        |        |
| CNMG432                      | CNMG120408 | 1/2       | 3/16     | 0.031<br>1/32 | Cont                         | Semi Finish            | TS           | AT530 | TO-1395     | \$8.35            | \$6.50    |    |       |         |        |        |
|                              |            |           |          |               | Cont - GP                    | Semi Finish            |              | T9015 | TO-3527     | \$8.68            | \$6.75    |    |       |         |        |        |
|                              |            |           |          |               | Cont & Int                   | Semi Finish            |              | T9025 | TO-3528     | \$8.68            | \$6.75    |    |       |         |        |        |
|                              |            |           |          |               | Cont - GP                    | Medium                 |              | T9015 | TO-3524     | \$8.68            | \$6.75    |    |       |         |        |        |
|                              |            |           |          |               | Cont & Int                   | Medium                 | TM           | T9025 | TO-3525     | \$8.68            | \$6.75    |    |       |         |        |        |
|                              |            |           |          |               | Severely Int & Heavy Cutting | Medium                 |              | T9035 | TO-3526     | \$8.68            | \$6.75    |    |       |         |        |        |
|                              |            |           |          |               | Cont - GP                    | Heavy                  |              | T9015 | TO-3520     | \$8.68            | \$6.75    |    |       |         |        |        |
|                              |            |           |          |               | Cont & Int                   | Heavy                  |              | T9025 | TO-3521     | \$8.68            | \$6.75    |    |       |         |        |        |
|                              |            |           |          |               | CNMG434                      | CNMG120416             | 1/2          | 3/16  | 0.063       | Cont - High Speed | Heavy     | TH | T9005 | TO-3539 | \$8.68 | \$6.75 |
|                              |            |           |          |               |                              |                        |              |       |             | Cont - GP         | Medium    | TM | T9015 | TO-3536 | \$8.68 | \$6.75 |
| Severely Int & Heavy Cutting | Medium     | T9035     | TO-3538  | \$8.68        | \$6.75                       |                        |              |       |             |                   |           |    |       |         |        |        |
| Severely Int & Heavy Cutting | Heavy      | T9035     | TO-3534  | \$8.68        | \$6.75                       |                        |              |       |             |                   |           |    |       |         |        |        |
| CNMG433                      | CNMG120412 | 1/2       | 3/16     | 0.047<br>3/64 | Cont & Int                   | Medium                 | TM           | T9025 | TO-3548     | \$15.68           | \$12.19   |    |       |         |        |        |
|                              |            |           |          |               | Cont & Int                   | Heavy                  | TH           | T9025 | TO-3545     | \$15.68           | \$12.19   |    |       |         |        |        |
| CNMG543                      | CNMG160612 | 5/8       | 1/4      | 0.047<br>3/64 | Severely Int & Heavy Cutting | Heavy                  |              | T9035 | TO-3546     | \$15.68           | \$12.19   |    |       |         |        |        |
|                              |            |           |          |               | Cont - General Purpose       | Heavy Turning          | TH           | T9015 | TO-3550     | \$15.68           | \$12.19   |    |       |         |        |        |
| CNMG544                      | CNMG160616 | 5/8       | 1/4      | 0.063<br>1/16 | Severely Int & Heavy Cutting | Heavy Turning          |              | T9035 | TO-3552     | \$15.68           | \$12.19   |    |       |         |        |        |
|                              |            |           |          |               | Cont & Int Turning           | Medium Turning         | TM           | T9025 | TO-3553     | \$18.68           | \$14.53   |    |       |         |        |        |
| CNMG643                      | CNMG190612 | 3/4       | 1/4      | 0.047         | Cont & Int Turning           | Heavy Turning          | TH           | T9025 | TO-3556     | \$18.68           | \$14.53   |    |       |         |        |        |

## CNMG INSERTS FOR STAINLESS STEELS 80° Diamond

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**CNMG 4 3 2**   
 I.C. size (A) Thickness (T) Radius (R) Chipbreaker

| ANSI    | ISO        | IC (Inch) | T (Inch) | R (Inch)      | Cutting Conditions     | Operation/ Application | Chip Breaker | Grade | Part Number | Price 1-9 Pcs | Box Price |
|---------|------------|-----------|----------|---------------|------------------------|------------------------|--------------|-------|-------------|---------------|-----------|
| CNMG431 | CNMG120404 | 1/2       | 3/16     | 0.016<br>1/64 | Cont - General Purpose | Finish Turning         | SS           | T6020 | TO-1271     | \$8.35        | \$6.50    |
|         |            |           |          |               | Rough & Heavy Turning  | Finish Turning         | SS           | T6030 | TO-1272     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont - General Purpose | Medium Turning         | SM           | T6020 | TO-1267     | \$8.35        | \$6.50    |
|         |            |           |          |               | Rough & Heavy Turning  | Medium Turning         | SM           | T6030 | TO-1268     | \$8.35        | \$6.50    |
| CNMG432 | CNMG120408 | 1/2       | 3/16     | 0.031<br>1/32 | Cont - General Purpose | Finish Turning         | SS           | T6020 | TO-1340     | \$8.35        | \$6.50    |
|         |            |           |          |               | Rough & Heavy Turning  | Finish Turning         | SS           | T6030 | TO-1341     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont - General Purpose | Medium Turning         | SM           | T6020 | TO-1336     | \$8.35        | \$6.50    |
|         |            |           |          |               | Rough & Heavy Turning  | Medium Turning         | SM           | T6030 | TO-1337     | \$8.35        | \$6.50    |
| CNMG433 | CNMG120412 | 1/2       | 3/16     | 0.047<br>3/64 | Rough & Heavy Turning  | Heavy Turning          | TH           | T6030 | TO-1356     | \$8.35        | \$6.50    |
|         |            |           |          |               | Rough & Heavy Turning  | Finish Turning         | SS           | T6030 | TO-1417     | \$8.35        | \$6.50    |
|         |            |           |          |               | Rough & Heavy Turning  | Medium Turning         | SM           | T6030 | TO-1415     | \$8.35        | \$6.50    |

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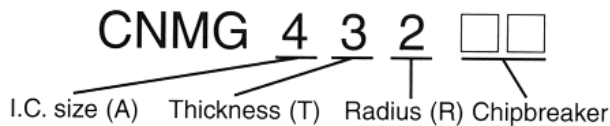
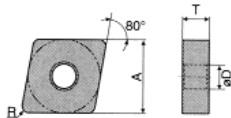
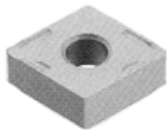
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# CNMG 80° DIAMOND INSERTS

## CNMG INSERTS FOR SUPER ALLOYS

80° Diamond

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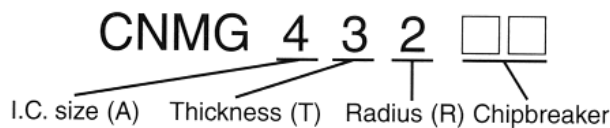
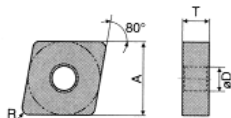
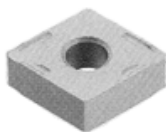


| ANSI    | ISO        | IC (Inch) | T (Inch) | R (Inch)      | Cutting Conditions | Operation/ Application | Chip Breaker | Grade | Part Number | Price 1-9 Pcs | Box Price |
|---------|------------|-----------|----------|---------------|--------------------|------------------------|--------------|-------|-------------|---------------|-----------|
| CNMG431 | CNMG120404 | 1/2       | 3/16     | 0.016<br>1/64 | Cont               | Finish Turning         | SA           | AH110 | TO-1265     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont & Int Turning | Finish Turning         | SA           | AH120 | TO-1266     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont               | Medium Turning         | TM           | AH110 | TO-1284     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont & Int Turning | Medium Turning         | TM           | AH120 | TO-1285     | \$8.35        | \$6.50    |
| CNMG432 | CNMG120408 | 1/2       | 3/16     | 0.031<br>1/32 | Cont               | Finish Turning         | SA           | AH110 | TO-1330     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont & Int Turning | Finish Turning         | SA           | AH120 | TO-1331     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont               | Medium Turning         | TM           | AH110 | TO-1363     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont & Int Turning | Medium Turning         | TM           | AH120 | TO-1364     | \$8.35        | \$6.50    |
| CNMG433 | CNMG120412 | 1/2       | 3/16     | 0.047<br>3/64 | Cont & Int Turning | Heavy Turning          | TH           | AH120 | TO-1352     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont & Int Turning | Medium Turning         | TM           | AH120 | TO-1435     | \$8.35        | \$6.50    |
| CNMG543 | CNMG160612 | 5/8       | 1/4      | 0.047         | Cont & Int Turning | Heavy Turning          | TH           | AH120 | TO-1425     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont & Int Turning | Heavy Turning          | TH           | AH120 | TO-1477     | \$15.07       | \$11.72   |

## CNMG/CNGG INSERTS FOR ALUMINUM

80° Diamond

Buy In Box Quantities & Save!



| ANSI    | ISO        | IC (Inch) | T (Inch) | R (Inch)      | Coating              | Cutting Conditions | Chip Breaker | Grade | Part Number | Price 1-9 Pcs | Box Price |
|---------|------------|-----------|----------|---------------|----------------------|--------------------|--------------|-------|-------------|---------------|-----------|
| CNMG431 | CNMG120404 | 1/2       | 3/16     | 0.016<br>1/64 | Tialn Coated Carbide | Cont               | 28           | AH110 | TO-1302     | \$8.35        | \$6.50    |
|         |            |           |          |               | Tialn Coated Carbide | Cont & Int Turning | 28           | AH120 | TO-1303     | \$8.35        | \$6.50    |
| CNMG432 | CNMG120408 | 1/2       | 3/16     | 0.031<br>1/32 | Tialn Coated Carbide | Cont               | 28           | AH110 | TO-1381     | \$8.35        | \$6.50    |
|         |            |           |          |               | Tialn Coated Carbide | Cont & Int Turning | 28           | AH120 | TO-1382     | \$8.35        | \$6.50    |
| CNMG433 | CNMG120412 | 1/2       | 3/16     | 0.047<br>3/64 | Tialn Coated Carbide | Cont               | 28           | AH110 | TO-1434     | \$8.35        | \$6.50    |

|         |            |     |      |               |                  |      |    |      |         |         |         |
|---------|------------|-----|------|---------------|------------------|------|----|------|---------|---------|---------|
| CNGG431 | CNGG120404 | 1/2 | 3/16 | 0.016<br>1/64 | Uncoated Carbide | Cont | LP | TH10 | TO-1205 | \$16.18 | \$12.59 |
| CNGG432 | CNGG120408 | 1/2 | 3/16 | 0.031<br>1/32 | Uncoated Carbide | Cont | LP | TH10 | TO-1208 | \$16.18 | \$12.59 |

## GRADES & CHIPBREAKERS

### TUNGALOY GRADES

### TUNGALOY CHIPBREAKERS



| Breaker | Operation               |
|---------|-------------------------|
| TS      | Semi Finish Turning     |
| TM      | Medium Turning          |
| TH      | Heavy Turning           |
| SS      | Finish Turning          |
| SM      | Medium Turning          |
| SA      | Finish Turning          |
| P       | Very sharp cutting edge |
| PM      | Medium To Rough Boring  |
| PP      | General Purpose Boring  |
| PS      | Finish To Medium Boring |
| 28      | General Turning         |

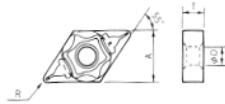
| Grade | Coating/ Carbide Or Cermet   | Cutting Conditions             |
|-------|------------------------------|--------------------------------|
| NS530 | Uncoated Cermet              | Cont                           |
| AT530 | Tialn Coated Cermet          | Cont                           |
| T9005 | Ticn+al Oxide Coated Carbide | Cont - High Speed Turning      |
| T9015 | Ticn+al Oxide Coated Carbide | Cont - General Purpose Turning |
| T9025 | Ticn+al Oxide Coated Carbide | Cont & Int Turning             |
| T9035 | Ticn+al Oxide Coated Carbide | Severely Int & Heavy Cutting   |
| T6020 | Ticn+al Oxide Coated Carbide | Cont - General Purpose Turning |
| T6030 | Ticn+al Oxide Coated Carbide | Rough & Heavy Turning          |
| T5020 | Tin Coated Carbide           | Rough & Int Turning            |
| AH110 | Tialn Coated Carbide         | Cont                           |
| AH120 | Tialn Coated Carbide         | Cont & Int Turning             |
| TH10  | Uncoated Carbide             | Cont                           |
| H10T  | Uncoated Carbide             | Cont                           |

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# DNMG 55° DIAMOND INSERTS

## DNMG INSERTS FOR STEELS 55° Diamond

Buy In Box Quantities & Save!



DNMG 4 3 2   
 I.C. size (A) Thickness (T) Radius (R) Chipbreaker

| ANSI    | ISO        | IC (Inch) | T (Inch) | R (Inch)      | Cutting Conditions           | Operation/ Application | Chip Breaker | Grade | Part Number | Price 1-9 Pcs | Box Price |
|---------|------------|-----------|----------|---------------|------------------------------|------------------------|--------------|-------|-------------|---------------|-----------|
| DNMG331 | DNMG110404 | 3/8       | 3/16     | 0.016         | Cont & Int Turning           | Medium Turning         | TM           | T9025 | TO-3572     | \$9.40        | \$7.31    |
| DNMG332 | DNMG110408 | 3/8       | 3/16     | 0.031         | Cont - General Purpose       | Medium Turning         | TM           | T9015 | TO-3573     | \$9.40        | \$7.31    |
| DNMG431 | DNMG150404 | 1/2       | 3/16     | 0.016<br>1/64 | Cont                         | Semi Finish Turning    | TS           | NS530 | TO-1733     | \$7.60        | \$5.91    |
|         |            |           |          |               | Cont                         | Semi Finish Turning    | TS           | AT530 | TO-1731     | \$9.94        | \$7.73    |
|         |            |           |          |               | Cont - General Purpose       | Semi Finish Turning    | TS           | T9015 | TO-3579     | \$10.31       | \$8.02    |
|         |            |           |          |               | Cont & Int Turning           | Semi Finish Turning    | TS           | T9025 | TO-3580     | \$10.31       | \$8.02    |
|         |            |           |          |               | Cont - General Purpose       | Medium Turning         | TM           | T9015 | TO-3576     | \$10.31       | \$8.02    |
|         |            |           |          |               | Cont & Int Turning           | Medium Turning         | TM           | T9025 | TO-3577     | \$10.31       | \$8.02    |
| DNMG432 | DNMG150408 | 1/2       | 3/16     | 0.031<br>1/32 | Severely Int & Heavy Cutting | Medium Turning         | TM           | T9035 | TO-3578     | \$10.31       | \$8.02    |
|         |            |           |          |               | Cont                         | Semi Finish Turning    | TS           | NS530 | TO-1802     | \$7.60        | \$5.91    |
|         |            |           |          |               | Cont                         | Semi Finish Turning    | TS           | AT530 | TO-1800     | \$9.94        | \$7.73    |
|         |            |           |          |               | Cont - General Purpose       | Semi Finish Turning    | TS           | T9015 | TO-3589     | \$10.31       | \$8.02    |
|         |            |           |          |               | Cont & Int Turning           | Semi Finish Turning    | TS           | T9025 | TO-3590     | \$10.31       | \$8.02    |
|         |            |           |          |               | Cont - General Purpose       | Medium Turning         | TM           | T9015 | TO-3586     | \$10.31       | \$8.02    |
| DNMG433 | DNMG150412 | 1/2       | 3/16     | 0.047<br>3/64 | Cont & Int Turning           | Medium Turning         | TM           | T9025 | TO-3587     | \$10.31       | \$8.02    |
|         |            |           |          |               | Cont & Int Turning           | Heavy Turning          | TH           | T9025 | TO-3583     | \$10.31       | \$8.02    |
|         |            |           |          |               | Cont & Int Turning           | Medium Turning         | TM           | T9025 | TO-3595     | \$10.31       | \$8.02    |
|         |            |           |          |               | Cont & Int Turning           | Heavy Turning          | TH           | T9025 | TO-3592     | \$10.31       | \$8.02    |
|         |            |           |          |               | Severely Int & Heavy Cutting | Heavy Turning          | TH           | T9035 | TO-3593     | \$10.31       | \$8.02    |

## DNMG INSERTS FOR STAINLESS STEELS 55° Diamond

Buy In Box Quantities & Save!



| ANSI    | ISO        | IC (Inch) | T (Inch) | R (Inch)      | Cutting Conditions     | Operation/ Application | Chip Breaker | Grade | Part Number | Price 1-9 Pcs | Box Price |
|---------|------------|-----------|----------|---------------|------------------------|------------------------|--------------|-------|-------------|---------------|-----------|
| DNMG431 | DNMG150404 | 1/2       | 3/16     | 0.016<br>1/64 | Cont - General Purpose | Finish Turning         | SS           | T6020 | TO-1695     | \$9.94        | \$7.73    |
|         |            |           |          |               | Rough & Heavy Turning  | Finish Turning         | SS           | T6030 | TO-1696     | \$9.94        | \$7.73    |
|         |            |           |          |               | Cont - General Purpose | Medium Turning         | SM           | T6020 | TO-1691     | \$9.94        | \$7.73    |
| DNMG432 | DNMG150408 | 1/2       | 3/16     | 0.031<br>1/32 | Rough & Heavy Turning  | Medium Turning         | SM           | T6030 | TO-1692     | \$9.94        | \$7.73    |
|         |            |           |          |               | Cont - General Purpose | Finish Turning         | SS           | T6020 | TO-1753     | \$9.94        | \$7.73    |
|         |            |           |          |               | Rough & Heavy Turning  | Finish Turning         | SS           | T6030 | TO-1754     | \$9.94        | \$7.73    |
|         |            |           |          |               | Cont - General Purpose | Medium Turning         | SM           | T6020 | TO-1749     | \$9.94        | \$7.73    |
|         |            |           |          |               | Rough & Heavy Turning  | Medium Turning         | SM           | T6030 | TO-1750     | \$9.94        | \$7.73    |
|         |            |           |          |               | Rough & Heavy Turning  | Heavy Turning          | TH           | T6030 | TO-1766     | \$9.94        | \$7.73    |
| DNMG433 | DNMG150412 | 1/2       | 3/16     | 0.047         | Rough & Heavy Turning  | Medium Turning         | SM           | T6030 | TO-1817     | \$9.94        | \$7.73    |

## DNMG INSERTS FOR SUPER ALLOYS 55° Diamond

Buy In Box Quantities & Save!



| ANSI    | ISO        | IC (Inch) | T (Inch) | R (Inch)      | Cutting Conditions | Operation/ Application | Chip Breaker | Grade | Part Number | Price 1-9 Pcs | Box Price |
|---------|------------|-----------|----------|---------------|--------------------|------------------------|--------------|-------|-------------|---------------|-----------|
| DNMG431 | DNMG150404 | 1/2       | 3/16     | 0.016<br>1/64 | Cont & Int Turning | Finish Turning         | SA           | AH120 | TO-1690     | \$9.94        | \$7.73    |
|         |            |           |          |               | Cont & Int Turning | Medium Turning         | TM           | AH120 | TO-1709     | \$9.94        | \$7.73    |
| DNMG432 | DNMG150408 | 1/2       | 3/16     | 0.031<br>1/32 | Cont & Int Turning | Finish Turning         | SA           | AH120 | TO-1747     | \$9.94        | \$7.73    |
|         |            |           |          |               | Cont & Int Turning | Medium Turning         | TM           | AH120 | TO-1774     | \$9.94        | \$7.73    |
|         |            |           |          |               | Cont & Int Turning | Heavy Turning          | TH           | AH120 | TO-1764     | \$9.94        | \$7.73    |
| DNMG433 | DNMG150412 | 1/2       | 3/16     | 0.047         | Cont & Int Turning | Medium Turning         | TM           | AH120 | TO-1834     | \$9.94        | \$7.73    |

## DNMG/DNMG INSERTS FOR ALUMINUM 55° Diamond

Buy In Box Quantities & Save!



| ANSI    | ISO        | IC (Inch) | T (Inch) | R (Inch)      | Coating              | Cutting Conditions | Chip Breaker | Grade | Part Number | Price 1-9 Pcs | Box Price |
|---------|------------|-----------|----------|---------------|----------------------|--------------------|--------------|-------|-------------|---------------|-----------|
| DNMG431 | DNMG150404 | 1/2       | 3/16     | 0.016<br>1/64 | Tialn Coated Carbide | Cont               | 28           | AH110 | TO-1726     | \$9.94        | \$7.73    |
|         |            |           |          |               | Tialn Coated Carbide | Cont & Int Turning | 28           | AH120 | TO-1727     | \$9.94        | \$7.73    |
| DNMG432 | DNMG150408 | 1/2       | 3/16     | 0.031<br>1/32 | Tialn Coated Carbide | Cont               | 28           | AH110 | TO-1791     | \$9.94        | \$7.73    |
|         |            |           |          |               | Tialn Coated Carbide | Cont & Int Turning | 28           | AH120 | TO-1792     | \$9.94        | \$7.73    |
| DNMG431 | DNMG150404 | 1/2       | 3/16     | 0.016<br>1/64 | Uncoated Carbide     | Cont               | LP           | TH10  | TO-1655     | \$14.04       | \$10.92   |

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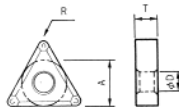
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# TNMG 60° TRIANGLE INSERTS

## TNMG INSERTS FOR STEELS

60° Triangle

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TNMG 3 3 2

I.C. size (A) Thickness (T) Radius (R) Chipbreaker

| ANSI    | ISO        | IC (Inch) | T (Inch) | R (Inch)      | Cutting Conditions           | Operation/ Application | Chip Breaker | Grade | Part Number | Price 1-9 Pcs | Box Price |
|---------|------------|-----------|----------|---------------|------------------------------|------------------------|--------------|-------|-------------|---------------|-----------|
| TNMG331 | TNMG160404 | 3/8       | 3/16     | 0.016         | Cont & Int Turning           | Medium Turning         | TM           | T9025 | TO-3640     | \$7.18        | \$5.59    |
| TNMG322 | TNMG160308 | 3/8       | 1/8      | 0.031         | Cont & Int Turning           | Medium Turning         | TM           | T9025 | TO-7455     | \$5.74        | \$4.47    |
| TNMG332 | TNMG160408 | 3/8       | 3/16     | 0.031<br>1/32 | Cont & Int Turning           | Medium Turning         | TM           | T9025 | TO-3645     | \$7.18        | \$5.59    |
|         |            |           |          |               | Severely Int & Heavy Cutting | Medium Turning         | TM           | T9035 | TO-3646     | \$7.18        | \$5.59    |
| TNMG333 | TNMG160412 | 3/8       | 3/16     | 0.047         | Cont - General Purpose       | Medium Turning         | TM           | T9015 | TO-7701     | \$7.18        | \$5.59    |
| TNMG432 | TNMG220408 | 1/2       | 3/16     | 0.031<br>1/32 | Cont & Int Turning           | Medium Turning         | TM           | T9025 | TO-3657     | \$10.24       | \$7.97    |
|         |            |           |          |               | Severely Int & Heavy Cutting | Medium Turning         | TM           | T9035 | TO-3658     | \$10.24       | \$7.97    |
|         |            |           |          |               | Cont - General Purpose       | Heavy Turning          | TH           | T9015 | TO-3653     | \$10.24       | \$7.97    |
|         |            |           |          |               | Cont & Int Turning           | Heavy Turning          | TH           | T9025 | TO-3654     | \$10.24       | \$7.97    |
|         |            |           |          |               | Severely Int & Heavy Cutting | Heavy Turning          | TH           | T9035 | TO-3655     | \$10.24       | \$7.97    |
| TNMG433 | TNMG220412 | 1/2       | 3/16     | 0.047<br>3/64 | Cont & Int Turning           | Medium Turning         | TM           | T9025 | TO-3465     | \$10.24       | \$7.97    |
|         |            |           |          |               | Severely Int & Heavy Cutting | Medium Turning         | TM           | T9035 | TO-3664     | \$10.24       | \$7.97    |

## TNMG INSERTS FOR STAINLESS STEELS

60° Triangle

Buy In Box Quantities & Save!



| ANSI    | ISO        | IC (Inch) | T (Inch) | R (Inch)      | Cutting Conditions     | Operation/ Application | Chip Breaker | Grade | Part Number | Price 1-9 Pcs | Box Price |
|---------|------------|-----------|----------|---------------|------------------------|------------------------|--------------|-------|-------------|---------------|-----------|
| TNMG331 | TNMG160404 | 3/8       | 3/16     | 0.016<br>1/64 | Cont - General Purpose | Finish Turning         | SS           | T6020 | TO-2703     | \$6.95        | \$5.40    |
|         |            |           |          |               | Cont - General Purpose | Medium Turning         | SM           | T6020 | TO-2699     | \$6.95        | \$5.40    |
|         |            |           |          |               | Rough & Heavy Turning  | Medium Turning         | SM           | T6030 | TO-2700     | \$6.95        | \$5.40    |
| TNMG332 | TNMG160408 | 3/8       | 3/16     | 0.031<br>1/32 | Cont - General Purpose | Medium Turning         | SM           | T6020 | TO-2751     | \$6.95        | \$5.40    |
|         |            |           |          |               | Rough & Heavy Turning  | Medium Turning         | SM           | T6030 | TO-2752     | \$6.95        | \$5.40    |
| TNMG431 | TNMG220404 | 1/2       | 3/16     | 0.016<br>1/64 | Cont - General Purpose | Finish Turning         | SS           | T6020 | TO-2829     | \$9.86        | \$7.67    |
|         |            |           |          |               | Rough & Heavy Turning  | Finish Turning         | SS           | T6030 | TO-2830     | \$9.86        | \$7.67    |
| TNMG432 | TNMG220408 | 1/2       | 3/16     | 0.031         | Cont - General Purpose | Finish Turning         | SS           | T6020 | TO-2850     | \$9.86        | \$7.67    |

## TNMG INSERTS FOR SUPER ALLOYS

60° Triangle

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| ANSI    | ISO        | IC (Inch) | T (Inch) | R (Inch)      | Cutting Conditions | Operation/ Application | Chip Breaker | Grade | Part Number | Price 1-9 Pcs | Box Price |
|---------|------------|-----------|----------|---------------|--------------------|------------------------|--------------|-------|-------------|---------------|-----------|
| TNMG331 | TNMG160404 | 3/8       | 3/16     | 0.016<br>1/64 | Cont & Int Turning | Finish Turning         | SA           | AH120 | TO-2698     | \$6.95        | \$5.40    |
|         |            |           |          |               | Cont & Int Turning | Medium Turning         | TM           | AH120 | TO-2716     | \$6.95        | \$5.40    |
| TNMG332 | TNMG160408 | 3/8       | 3/16     | 0.031<br>1/32 | Cont               | Medium Turning         | TM           | AH110 | TO-2768     | \$6.95        | \$5.40    |
|         |            |           |          |               | Cont & Int Turning | Medium Turning         | TM           | AH120 | TO-2769     | \$6.95        | \$5.40    |
| TNMG431 | TNMG220404 | 1/2       | 3/16     | 0.016<br>1/64 | Cont & Int Turning | Medium Turning         | TM           | AH120 | TO-2833     | \$9.86        | \$7.67    |
| TNMG432 | TNMG220408 | 1/2       | 3/16     | 0.031<br>1/32 | Cont & Int Turning | Finish Turning         | SA           | AH120 | TO-2844     | \$9.86        | \$7.67    |
|         |            |           |          |               | Cont & Int Turning | Medium Turning         | TM           | AH120 | TO-2868     | \$9.86        | \$7.67    |
|         |            |           |          |               | Cont & Int Turning | Heavy Turning          | TH           | AH120 | TO-2859     | \$9.86        | \$7.67    |
| TNMG433 | TNMG220412 | 1/2       | 3/16     | 0.047         | Cont & Int Turning | Finish Turning         | SA           | AH120 | TO-2888     | \$9.86        | \$7.67    |

## TUNGALOY GRADES & CHIPBREAKERS



### TUNGALOY CHIPBREAKERS

| Breaker | Operation           |
|---------|---------------------|
| TS      | Semi Finish Turning |
| TM      | Medium Turning      |
| TH      | Heavy Turning       |

### TUNGALOY GRADES

| Grade | Coating/ Carbide Or Cermet   | Cutting Conditions             |
|-------|------------------------------|--------------------------------|
| NS530 | Uncoated Cermet              | Cont                           |
| AT530 | TiAlN Coated Cermet          | Cont                           |
| T9005 | TiCN+Al Oxide Coated Carbide | Cont - High Speed Turning      |
| T9015 | TiCN+Al Oxide Coated Carbide | Cont - General Purpose Turning |
| T9025 | TiCN+Al Oxide Coated Carbide | Cont & Int Turning             |
| T9035 | TiCN+Al Oxide Coated Carbide | Severely Int & Heavy Cutting   |

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# VNMG DIAMOND/SNMG SQUARE INSERTS

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MACHINERY

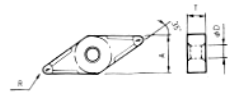
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## VNMG INSERTS FOR STEELS 35° Diamond

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VNMG 3 3 2

I.C. size (A) Thickness (T) Radius (R) Chipbreaker

| ANSI    | ISO        | IC (Inch) | T (Inch) | R (Inch)      | Cutting Conditions           | Operation/ Application | Chip Breaker | Grade | Part Number | Price 1-9 Pcs | Box Price |
|---------|------------|-----------|----------|---------------|------------------------------|------------------------|--------------|-------|-------------|---------------|-----------|
| VNMG331 | VNMG160404 | 3/8       | 3/16     | 0.016<br>1/64 | Cont                         | Semi Finish Turning    | TS           | NS530 | TO-3175     | \$7.40        | \$5.75    |
|         |            |           |          |               | Cont                         | Semi Finish Turning    | TS           | AT530 | TO-3173     | \$9.68        | \$7.53    |
|         |            |           |          |               | Cont & Int Turning           | Semi Finish Turning    | TS           | T9025 | TO-3683     | \$10.06       | \$7.83    |
|         |            |           |          |               | Cont - General Purpose       | Medium Turning         | TM           | T9015 | TO-3679     | \$10.06       | \$7.83    |
|         |            |           |          |               | Cont & Int Turning           | Medium Turning         | TM           | T9025 | TO-3680     | \$10.06       | \$7.83    |
|         |            |           |          |               | Severely Int & Heavy Cutting | Medium Turning         | TM           | T9035 | TO-3681     | \$10.06       | \$7.83    |
| VNMG332 | VNMG160408 | 3/8       | 3/16     | 0.031<br>1/32 | Cont                         | Semi Finish Turning    | TS           | NS530 | TO-3207     | \$7.40        | \$5.75    |
|         |            |           |          |               | Cont                         | Semi Finish Turning    | TS           | AT530 | TO-3205     | \$9.68        | \$7.53    |
|         |            |           |          |               | Cont & Int Turning           | Semi Finish Turning    | TS           | T9025 | TO-3689     | \$10.06       | \$7.83    |
|         |            |           |          |               | Cont - General Purpose       | Medium Turning         | TM           | T9015 | TO-3685     | \$10.06       | \$7.83    |
|         |            |           |          |               | Cont & Int Turning           | Medium Turning         | TM           | T9025 | TO-3686     | \$10.06       | \$7.83    |
|         |            |           |          |               | Severely Int & Heavy Cutting | Medium Turning         | TM           | T9035 | TO-3687     | \$10.06       | \$7.83    |
| VNMG333 | VNMG160412 | 3/8       | 3/16     | 0.047         | Cont & Int Turning           | Medium Turning         | TM           | T9025 | TO-3691     | \$10.06       | \$7.83    |

## VNMG INSERTS FOR STAINLESS STEELS 35° Diamond

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| ANSI    | ISO        | IC (Inch) | T (Inch) | R (Inch)      | Cutting Conditions     | Operation/ Application | Chip Breaker | Grade | Part Number | Price 1-9 Pcs | Box Price |
|---------|------------|-----------|----------|---------------|------------------------|------------------------|--------------|-------|-------------|---------------|-----------|
| VNMG331 | VNMG160404 | 3/8       | 3/16     | 0.016<br>1/64 | Cont - General Purpose | Finish Turning         | SS           | T6020 | TO-3154     | \$9.68        | \$7.53    |
|         |            |           |          |               | Rough & Heavy Turning  | Finish Turning         | SS           | T6030 | TO-3155     | \$9.68        | \$7.53    |
| VNMG332 | VNMG160408 | 3/8       | 3/16     | 0.031<br>1/32 | Cont - General Purpose | Finish Turning         | SS           | T6020 | TO-3184     | \$9.68        | \$7.53    |
|         |            |           |          |               | Rough & Heavy Turning  | Finish Turning         | SS           | T6030 | TO-3185     | \$9.68        | \$7.53    |

## VNMG INSERTS FOR SUPER ALLOYS 35° Diamond

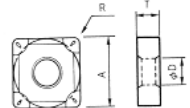
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| ANSI    | ISO        | IC (Inch) | T (Inch) | R (Inch)      | Cutting Conditions | Operation/ Application | Chip Breaker | Grade | Part Number | Price 1-9 Pcs | Box Price |
|---------|------------|-----------|----------|---------------|--------------------|------------------------|--------------|-------|-------------|---------------|-----------|
| VNMG331 | VNMG160404 | 3/8       | 3/16     | 0.016<br>1/64 | Cont               | Medium Turning         | TM           | AH110 | TO-3161     | \$9.68        | \$7.53    |
|         |            |           |          |               | Cont & Int Turning | Medium Turning         | TM           | AH120 | TO-3162     | \$9.68        | \$7.53    |
| VNMG332 | VNMG160408 | 3/8       | 3/16     | 0.031<br>1/32 | Cont               | Medium Turning         | TM           | AH110 | TO-3193     | \$9.68        | \$7.53    |
|         |            |           |          |               | Cont & Int Turning | Medium Turning         | TM           | AH120 | TO-3194     | \$9.68        | \$7.53    |

## SNMG INSERTS FOR SUPER ALLOYS 90° Square

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SNMG 4 3 2

I.C. size (A) Thickness (T) Radius (R) Chipbreaker

| ANSI    | ISO        | IC (Inch) | T (Inch) | R (Inch)      | Cutting Conditions | Operation/ Application | Chip Breaker | Grade | Part Number | Price 1-9 Pcs | Box Price |
|---------|------------|-----------|----------|---------------|--------------------|------------------------|--------------|-------|-------------|---------------|-----------|
| SNMG431 | SNMG120404 | 1/2       | 3/16     | 0.016         | Cont & Int Turning | Medium Turning         | TM           | AH120 | TO-2247     | \$8.35        | \$6.50    |
| SNMG432 | SNMG120408 | 1/2       | 3/16     | 0.031<br>1/32 | Cont & Int Turning | Finish Turning         | SA           | AH120 | TO-2269     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont & Int Turning | Heavy Turning          | TH           | AH120 | TO-2284     | \$8.35        | \$6.50    |
| SNMG433 | SNMG120412 | 1/2       | 3/16     | 0.047<br>3/64 | Cont & Int Turning | Finish Turning         | SA           | AH120 | TO-2313     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont & Int Turning | Heavy Turning          | TH           | AH120 | TO-2323     | \$8.35        | \$6.50    |
| SNMG543 | SNMG150612 | 5/8       | 1/4      | 0.047         | Cont & Int Turning | Heavy Turning          | TH           | AH120 | TO-2349     | \$14.13       | \$10.99   |

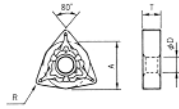
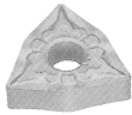
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# WNMG 80° TRIGON INSERTS

## WNMG INSERTS FOR STEELS

80° Trigon

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WNMG 4 3 2

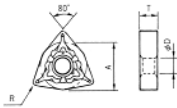
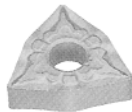
I.C. size (A) Thickness (T) Radius (R) Chipbreaker

| ANSI    | ISO        | IC (Inch) | T (Inch) | R (Inch)      | Cutting Conditions           | Operation/ Application | Chip Breaker | Grade | Part Number | Price 1-9 Pcs | Box Price |
|---------|------------|-----------|----------|---------------|------------------------------|------------------------|--------------|-------|-------------|---------------|-----------|
| WNMG331 | WNMG060404 | 3/8       | 3/16     | 0.016         | Cont & Int Turning           | Medium Turning         | TM           | T9025 | TO-3695     | \$6.77        | \$5.26    |
| WNMG332 | WNMG060408 | 3/8       | 3/16     | 0.031         | Cont & Int Turning           | Medium Turning         | TM           | T9025 | TO-3698     | \$6.77        | \$5.26    |
| WNMG431 | WNMG080404 | 1/2       | 3/16     | 0.016<br>1/64 | Cont                         | Semi Finish Turning    | TS           | NS530 | TO-3296     | \$6.50        | \$5.05    |
|         |            |           |          |               | Cont                         | Semi Finish Turning    | TS           | AT530 | TO-3294     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont - General Purpose       | Medium Turning         | TM           | T9015 | TO-3699     | \$8.68        | \$6.75    |
|         |            |           |          |               | Cont & Int Turning           | Medium Turning         | TM           | T9025 | TO-3700     | \$8.68        | \$6.75    |
| WNMG432 | WNMG080408 | 1/2       | 3/16     | 0.031<br>1/32 | Cont                         | Semi Finish Turning    | TS           | NS530 | TO-3358     | \$6.50        | \$5.05    |
|         |            |           |          |               | Cont & Int Turning           | Semi Finish Turning    | TS           | T9025 | TO-3713     | \$8.68        | \$6.75    |
|         |            |           |          |               | Cont - General Purpose       | Medium Turning         | TM           | T9015 | TO-3709     | \$8.68        | \$6.75    |
|         |            |           |          |               | Cont & Int Turning           | Medium Turning         | TM           | T9025 | TO-3710     | \$8.68        | \$6.75    |
|         |            |           |          |               | Severely Int & Heavy Cutting | Medium Turning         | TM           | T9035 | TO-3711     | \$8.68        | \$6.75    |
|         |            |           |          |               | Cont - High Speed Turning    | Heavy Turning          | TH           | T9005 | TO-3704     | \$8.68        | \$6.75    |
|         |            |           |          |               | Cont & Int Turning           | Heavy Turning          | TH           | T9025 | TO-3705     | \$8.68        | \$6.75    |
|         |            |           |          |               | Severely Int & Heavy Cutting | Heavy Turning          | TH           | T9035 | TO-3707     | \$8.68        | \$6.75    |
| WNMG433 | WNMG080412 | 1/2       | 3/16     | 0.047<br>3/64 | Cont - General Purpose       | Medium Turning         | TM           | T9015 | TO-3718     | \$8.68        | \$6.75    |
|         |            |           |          |               | Cont & Int Turning           | Medium Turning         | TM           | T9025 | TO-3719     | \$8.68        | \$6.75    |
|         |            |           |          |               | Cont & Int Turning           | Heavy Turning          | TH           | T9025 | TO-3715     | \$8.68        | \$6.75    |
| WNMG434 | WNMG080416 | 1/2       | 3/16     | 0.063         | Cont & Int Turning           | Medium Turning         | TM           | T9025 | TO-3723     | \$8.68        | \$6.75    |

## WNMG INSERTS FOR STAINLESS STEELS

80° Trigon

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WNMG 4 3 2

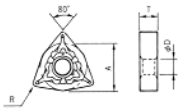
I.C. size (A) Thickness (T) Radius (R) Chipbreaker

| ANSI    | ISO        | IC (Inch) | T (Inch) | R (Inch)      | Cutting Conditions     | Operation/ Application | Chip Breaker | Grade | Part Number | Price 1-9 Pcs | Box Price |
|---------|------------|-----------|----------|---------------|------------------------|------------------------|--------------|-------|-------------|---------------|-----------|
| WNMG431 | WNMG080404 | 1/2       | 3/16     | 0.016<br>1/64 | Cont - General Purpose | Finish Turning         | SS           | T6020 | TO-3267     | \$8.35        | \$6.50    |
|         |            |           |          |               | Rough & Heavy Turning  | Medium Turning         | SM           | T6030 | TO-3263     | \$8.35        | \$6.50    |
| WNMG432 | WNMG080408 | 1/2       | 3/16     | 0.031<br>1/32 | Cont - General Purpose | Finish Turning         | SS           | T6020 | TO-3318     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont - General Purpose | Finish Turning         | SS           | T6020 | TO-3319     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont - General Purpose | Medium Turning         | SM           | T6020 | TO-3314     | \$8.35        | \$6.50    |
|         |            |           |          |               | Rough & Heavy Turning  | Medium Turning         | SM           | T6030 | TO-3315     | \$8.35        | \$6.50    |
|         |            |           |          |               | Rough & Heavy Turning  | Heavy Turning          | TH           | T6030 | TO-3332     | \$8.35        | \$6.50    |
| WNMG433 | WNMG080412 | 1/2       | 3/16     | 0.047<br>3/64 | Cont - General Purpose | Medium Turning         | SM           | T6020 | TO-3374     | \$8.35        | \$6.50    |
|         |            |           |          |               | Rough & Heavy Turning  | Medium Turning         | SM           | T6030 | TO-3375     | \$8.35        | \$6.50    |

## WNMG INSERTS FOR SUPER ALLOYS

80° Trigon

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WNMG 4 3 2

I.C. size (A) Thickness (T) Radius (R) Chipbreaker

| ANSI    | ISO        | IC (Inch) | T (Inch) | R (Inch)      | Cutting Conditions | Operation/ Application | Chip Breaker | Grade | Part Number | Price 1-9 Pcs | Box Price |
|---------|------------|-----------|----------|---------------|--------------------|------------------------|--------------|-------|-------------|---------------|-----------|
| WNMG431 | WNMG080404 | 1/2       | 3/16     | 0.016<br>1/64 | Cont               | Medium Turning         | TM           | AH110 | TO-3276     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont & Int Turning | Medium Turning         | TM           | AH120 | TO-3277     | \$8.35        | \$6.50    |
| WNMG432 | WNMG080408 | 1/2       | 3/16     | 0.031<br>1/32 | Cont               | Finish Turning         | SA           | AH110 | TO-3310     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont & Int Turning | Finish Turning         | SA           | AH120 | TO-3311     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont               | Medium Turning         | TM           | AH110 | TO-3337     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont & Int Turning | Medium Turning         | TM           | AH120 | TO-3338     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont & Int Turning | Heavy Turning          | TH           | AH120 | TO-3329     | \$8.35        | \$6.50    |
| WNMG433 | WNMG080412 | 1/2       | 3/16     | 0.047<br>3/64 | Cont & Int Turning | Medium Turning         | TM           | AH120 | TO-3391     | \$8.35        | \$6.50    |
|         |            |           |          |               | Cont & Int Turning | Heavy Turning          | TH           | AH120 | TO-3383     | \$8.35        | \$6.50    |

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