

Insert Designation System

1. Shape

2. Clearance Angle

3. Tolerance

M class

| IC | m ± | d ± |
|-------|-------|-------|
| 6.35 | ±0.08 | ±0.05 |
| 9.52 | ±0.08 | ±0.05 |
| 12.70 | ±0.13 | ±0.08 |

G class

| class | m | t | d |
|-------|--------|--------|--------|
| H | ±0.013 | ±0.025 | ±0.013 |
| E | ±0.025 | ±0.025 | ±0.025 |
| G | ±0.025 | ±0.13 | ±0.025 |

4. Type

- N**: No chipbreaker, No hole
- A**: No chipbreaker, Straight Hole
- F**: Double sided CB, No hole
- G**: Single sided CB, Straight Hole
- M**: Single sided CB, Straight Hole
- R**: Single sided CB, No Hole
- W,B**: No chipbreaker, Screw hole
- T,H**: Single sided CB, Screw hole
- Z, X**: Special

6. Thickness

- 02 = 2.38mm
- 03 = 3.18mm
- T3 = 3.97mm
- 04 = 4.76mm
- 06 = 6.35mm
- 07 = 7.94mm
- 09 = 9.52mm

C N M G 12 04 08 (R) 46

1 2 3 4 5 6 7 8 9

5. Cutting Edge Length

| I.C(mm) | C | D | R | S | T | V | W | K |
|---------|----|----|----|----|----|----|----|----|
| 3.97 | 03 | 04 | | 03 | 06 | | 02 | |
| 4.76 | 04 | 05 | | 04 | 08 | 08 | | |
| 5.56 | 05 | 06 | | 05 | 09 | 09 | 03 | |
| 6.35 | 06 | 07 | | 06 | 11 | 11 | 04 | |
| 7.94 | 08 | 09 | | 07 | 13 | 13 | 05 | |
| 8.0 | | | 08 | | | | | |
| 9.52 | 09 | 11 | 09 | 09 | 16 | 16 | 06 | 16 |
| 10.0 | | | 10 | | | | | |
| 12.0 | | | 12 | | | | | |
| 12.7 | 12 | 15 | | 12 | 22 | 22 | 08 | |
| 15.88 | 16 | 19 | 15 | 15 | 27 | 27 | 10 | |
| 16.0 | | | 16 | | | | | |
| 19.05 | 19 | 23 | 19 | 19 | 33 | 33 | 13 | |
| 20.0 | | | 20 | | | | | |
| 25.0 | | | 25 | | | | | |
| 25.4 | 25 | 31 | 25 | 25 | 44 | | | |
| 32.0 | | | 32 | | | | | |

7. Coner R

ex) 0.8mm=08

8. Hand of Insert

R Right

L Left

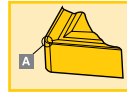
9. Chibreaker


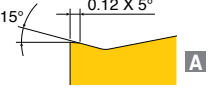





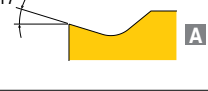

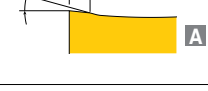









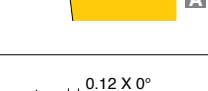
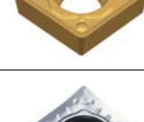



- 41
- 42
- 43
- 45
- 46
- 86
- 53
- MA
- AU
-
-

Cutting Condition

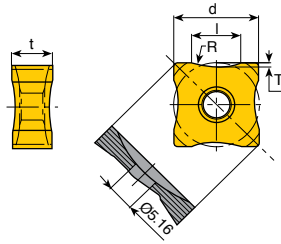
| Material | | Chipbreaker | CVD | | | | |
|-----------------|---------------------------------|---|---------|---------|---------|---------|---------|
| | | | DC610 | DC820 | DC9015 | DC9025 | DC8035 |
| | | Cutting speed(m/min) | | | | | |
| Carbon Steel | Low 0.05-0.25% C SM18C | 41 43 86 | 250-700 | - | 350-500 | 200-420 | 180-350 |
| | Medium 0.25-0.55% C SM45C | 41 43 86 46 | 150-350 | - | 220-380 | 150-330 | 120-250 |
| | High 0.55-0.80% C SM55C | 41 43 86 46 53 | 120-300 | - | 180-380 | 120-300 | - |
| Alloy Steel | Low Alloy SCM415 | 41 43 86 45 | 150-550 | - | 180-350 | 130-300 | 60-320 |
| | Alloy SCM440 | 41 43 86 46 53 | 100-320 | - | 180-350 | 140-300 | 60-200 |
| Cast Iron | Grey Cast Iron | 46 53 | 100-300 | 180-440 | 90-300 | - | - |
| | Ductile Cast Iron | | 100-250 | 200-340 | 90-280 | - | - |
| Stainless Steel | | 41 42 45 | 200-270 | - | - | - | 100-210 |

Feature of Chipbreaker



| Type | Insert • Edge geometry | | Feature • Application |
|----------|------------------------|---|---|
| NEGATIVE | 41 |   | <ul style="list-style-type: none"> • For medium & finishing • Good chip evacuation in low feed and depth of cut • Excellent chip control |
| | 43 |   | <ul style="list-style-type: none"> • Balance between strength and sharpness • For semi finishing to medium machining in steel and alloy steel • Good chip control in profiling |
| | 86 |   | <ul style="list-style-type: none"> • For steel machining • From roughing to semi-finishing applications • Low cutting force • Excellent chip evacuation |
| | New 90 |   | <ul style="list-style-type: none"> • For slender workpiece applications • Vibration free • Steel and stainless steel machining • High positive rake geometry to minimize cutting forces |
| | 46 |   | <ul style="list-style-type: none"> • Medium for carbon steel and alloy steel • From medium to finishing of cast iron machining • Suitable for continuous to interrupted • Geometry of low cutting force |
| | 53 |   | <ul style="list-style-type: none"> • Medium to roughing in steel and cast iron • Strong cutting edge • Recommended for unstable conditions |
| | 42 |   | <ul style="list-style-type: none"> • For medium machining in stainless steel and low carbon steel • Low cutting force with sharp edge geometry |
| | 45 |   | <ul style="list-style-type: none"> • For medium machining in stainless steel, low carbon steel & low carbon alloy steel • Semi finishing in cast Iron • Minimum of built-up edge from sharp edge geometry |
| POSITIVE | 41 |   | <ul style="list-style-type: none"> • Finishing on boring application • Good chip evacuation in low feed and depth of cut • Low cutting force & good chip control |
| | 51 |   | <ul style="list-style-type: none"> • For semi-finishing to medium machining • Good chip evacuation in low feed and depth of cut • Good chip control |
| | 52 |   | <ul style="list-style-type: none"> • Medium to roughing in steel and cast iron • Applicable to both interrupted and continuous |
| | AU |   | <ul style="list-style-type: none"> • For aluminum machining • Low cutting force, excellent chip evacuation |

Pipe Skiving Insert

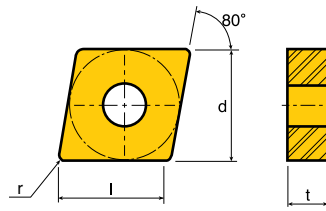


SNMX

| Insert | Designation | Dimension(mm) | | | | | Grade |
|--------|-----------------|---------------|-------|-----|----|-------|--------|
| | | l | d | t | R | T | DC9800 |
| | SNMX 150708R-11 | 10.0 | 15.87 | 7.8 | 11 | 1.202 | ● |
| | 150708R-13 | 10.0 | 15.87 | 7.8 | 13 | 1.000 | ● |
| | 150708R-15 | 10.0 | 15.87 | 7.8 | 14 | 0.858 | ● |
| | 150708R-18 | 10.0 | 15.87 | 7.8 | 18 | 0.708 | ● |
| | 150708R-20 | 10.0 | 15.87 | 7.8 | 20 | 0.635 | ● |
| | 150708R-22 | 10.0 | 15.87 | 7.8 | 22 | 0.576 | ● |
| | 150708R-25 | 10.0 | 15.87 | 7.8 | 25 | 0.505 | ● |
| | 150708R-27 | 10.0 | 15.87 | 7.8 | 27 | 0.467 | ● |
| | 150708R-30 | 10.0 | 15.87 | 7.8 | 30 | 0.420 | ● |
| | 150708R-35 | 10.0 | 15.87 | 7.8 | 35 | 0.359 | ● |
| | 150708R-40 | 10.0 | 15.87 | 7.8 | 40 | 0.314 | ● |
| | 150708R-45 | 10.0 | 15.87 | 7.8 | 45 | 0.279 | ● |
| | 150708R-50 | 10.0 | 15.87 | 7.8 | 50 | 0.251 | ● |
| | 150708R-60 | 10.0 | 15.87 | 7.8 | 60 | 0.209 | ● |
| | 150708R-65 | 10.0 | 15.87 | 7.8 | 65 | 0.193 | ● |
| | 150708R-70 | 10.0 | 15.87 | 7.8 | 70 | 0.179 | ● |
| | 150708R-75 | 10.0 | 15.87 | 7.8 | 75 | 0.167 | ● |
| | 150708R-90 | 10.0 | 15.87 | 7.8 | 90 | 0.139 | ● |



Negative 80° Insert

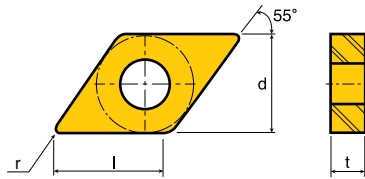


CNM

| Insert | Designation | Dimension(mm) | | | | Recommended cutting condition | | Grade | | | | | | | |
|--------|--|---------------|------|------|------|-------------------------------|-------------|-----------|-------|--------|--------|--------|--------|--------|--|
| | | l | d | t | r | Feed(mm/rev) | D.O.C(mm) | DC610 | DC820 | DC9015 | DC9025 | DC8035 | DP5320 | DP5010 | |
| | CNMA For Cast Iron | 120404 | 12.4 | 12.7 | 4.76 | 0.4 | 0.25 - 0.70 | 3.0 - 7.0 | | ● | | | | | |
| | | 120408 | 12.0 | 12.7 | 4.76 | 0.8 | 0.25 - 0.70 | 3.0 - 7.0 | | ● | | | | | |
| | | 120412 | 11.6 | 12.7 | 4.76 | 1.2 | 0.25 - 0.70 | 3.0 - 7.0 | | ● | | | | | |
| | CNMG 41 Finishing & Medium | 120404 41 | 12.4 | 12.7 | 4.76 | 0.4 | 0.05 - 0.30 | 0.5 - 2.0 | ● | | ● | ● | ● | | |
| | | 120408 41 | 12.0 | 12.7 | 4.76 | 0.8 | 0.07 - 0.30 | 0.5 - 2.0 | ● | | ● | ● | ● | | |
| | | 120412 41 | 11.6 | 12.7 | 4.76 | 1.2 | 0.10 - 0.30 | 0.5 - 2.0 | | | ● | ● | | | |
| | CNMG 42 For Stainless Steel | 120404 42 | 12.4 | 12.7 | 4.76 | 0.4 | 0.10 - 0.50 | 0.5 - 5.0 | | | | | ● | | |
| | | 120408 42 | 12.0 | 12.7 | 4.76 | 0.8 | 0.12 - 0.50 | 0.5 - 5.0 | | | | | ● | ● | |
| | | 120412 42 | 11.6 | 12.7 | 4.76 | 1.2 | 0.14 - 0.50 | 0.5 - 5.0 | | | | | ● | | |
| | CNMG 43 Semi finishing & Medium | 120404 43 | 12.4 | 12.7 | 4.76 | 0.4 | 0.12 - 0.52 | 0.7 - 4.8 | | | ● | ● | | | |
| | | 120408 43 | 12.0 | 12.7 | 4.76 | 0.8 | 0.12 - 0.52 | 0.7 - 4.8 | | | ● | ● | | | |
| | | 120412 43 | 11.6 | 12.7 | 4.76 | 1.2 | 0.12 - 0.52 | 0.7 - 4.8 | | | ● | ● | | | |
| | CNMG 45 Medium & Roughing | 120404 45 | 12.4 | 12.7 | 4.76 | 0.4 | 0.15 - 0.50 | 1.2 - 5.0 | | | ● | ● | ● | ○ | |
| | | 120408 45 | 12.0 | 12.7 | 4.76 | 0.8 | 0.15 - 0.50 | 1.2 - 5.0 | | | ● | ● | ● | ○ | |
| | | 120412 45 | 11.6 | 12.7 | 4.76 | 1.2 | 0.15 - 0.50 | 1.2 - 5.0 | | | ● | ● | ● | ○ | |
| | CNMG 86 Semi finishing, Medium & Semi Roughing | 120408 86 | 12.0 | 12.7 | 4.76 | 0.8 | 0.15 - 0.45 | 0.8 - 4.0 | | | ● | ● | | | |
| | | 120412 86 | 11.6 | 12.7 | 4.76 | 1.2 | 0.15 - 0.45 | 1.0 - 4.0 | | | ● | ● | | | |
| | CNMG 46 Medium | 120404 46 | 12.4 | 12.7 | 4.76 | 0.4 | 0.15 - 0.40 | 1.0 - 5.0 | | | ● | ● | ● | | |
| | | 120408 46 | 12.0 | 12.7 | 4.76 | 0.8 | 0.17 - 0.55 | 1.2 - 5.0 | | ● | ● | ● | ● | | |
| | | 120412 46 | 11.6 | 12.7 | 4.76 | 1.2 | 0.20 - 0.55 | 1.5 - 5.0 | | ● | ● | ● | ● | | |
| | CNMG 53 Medium & Roughing | 120404 53 | 12.4 | 12.7 | 4.76 | 0.4 | 0.22 - 0.60 | 2.3 - 5.5 | | ● | ● | ● | | | |
| | | 120408 53 | 12.0 | 12.7 | 4.76 | 0.8 | 0.22 - 0.60 | 2.3 - 5.5 | | ● | ● | ● | | | |
| | | 120412 53 | 11.6 | 12.7 | 4.76 | 1.2 | 0.22 - 0.60 | 2.3 - 5.5 | | ● | ● | ● | | | |

○ : on request

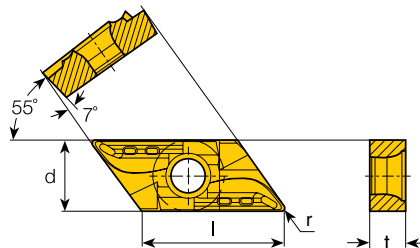
Negative 55° Insert



DNM

| Insert | Designation | Dimension(mm) | | | | Recommended cutting condition | | Grade | | | | | |
|--------|--|---------------|------|------|------|-------------------------------|-------------|-----------|-------|--------|--------|--------|---|
| | | l | d | t | r | Feed(mm/rev) | D.O.C(mm) | DC610 | DC820 | DC9015 | DC9025 | DC8035 | |
| | DNMA For Cast Iron | 150608 | 14.7 | 12.7 | 6.35 | 0.8 | 0.25 - 0.70 | 3.0 - 7.0 | | • | | | |
| | | 150612 | 14.4 | 12.7 | 6.35 | 1.2 | 0.25 - 0.70 | 3.0 - 7.0 | | • | | | |
| | DNMG 41 Finishing & Medium | 150408 41 | 14.7 | 12.7 | 4.76 | 0.8 | 0.07 - 0.30 | 0.5 - 2.0 | • | | • | • | |
| | | 150604 41 | 15.1 | 12.7 | 6.35 | 0.4 | 0.05 - 0.30 | 0.5 - 2.0 | • | | • | • | |
| | | 150608 41 | 14.7 | 12.7 | 6.35 | 0.8 | 0.07 - 0.30 | 0.5 - 2.0 | • | | • | • | |
| | DNMG 42 For Stainless Steel | 150604 42 | 15.1 | 12.7 | 6.35 | 0.4 | 0.10 - 0.50 | 0.5 - 5.0 | | | | | • |
| | | 150608 42 | 15.1 | 12.7 | 6.35 | 0.8 | 0.12 - 0.50 | 0.5 - 5.0 | | | | | • |
| | | 150612 42 | 14.7 | 12.7 | 6.35 | 1.2 | 0.14 - 0.50 | 0.5 - 5.0 | | | | | • |
| | DNMG 43 Semi finishing & Medium | 150604 43 | 15.1 | 12.7 | 6.35 | 0.4 | 0.12 - 0.52 | 0.7 - 4.8 | | | • | • | |
| | | 150608 43 | 15.1 | 12.7 | 6.35 | 0.8 | 0.12 - 0.52 | 0.7 - 4.8 | | | • | • | |
| | | 150612 43 | 14.7 | 12.7 | 6.35 | 1.2 | 0.12 - 0.52 | 0.7 - 4.8 | | | • | • | |
| | DNMG 45 Medium & Roughing | 150604 45 | 15.1 | 12.7 | 6.35 | 0.4 | 0.15 - 0.50 | 1.2 - 5.0 | | | • | • | • |
| | | 150608 45 | 15.1 | 12.7 | 6.35 | 0.8 | 0.15 - 0.50 | 1.2 - 5.0 | | | • | • | • |
| | | 150612 45 | 14.7 | 12.7 | 6.35 | 1.2 | 0.15 - 0.50 | 1.2 - 5.0 | | | • | • | • |
| | DNMG 86 Semi finishing, Medium & Semi Roughing | 150608 86 | 14.7 | 12.7 | 4.76 | 0.8 | 0.15 - 0.40 | 0.7 - 4.0 | | | • | • | |
| | | 150604 46 | 15.1 | 12.7 | 6.35 | 0.4 | 0.15 - 0.40 | 0.8 - 4.0 | | | • | • | • |
| | DNMG 46 Medium | 150608 46 | 15.1 | 12.7 | 6.35 | 0.8 | 0.17 - 0.50 | 1.0 - 4.0 | | • | • | • | • |
| | | 150612 46 | 14.7 | 12.7 | 6.35 | 1.2 | 0.20 - 0.50 | 1.3 - 4.0 | | • | • | • | • |
| | | 150604 53 | 15.1 | 12.7 | 6.35 | 0.4 | 0.22 - 0.60 | 2.3 - 5.5 | | • | • | • | |
| | DNMG 53 Medium & Roughing | 150608 53 | 14.7 | 12.7 | 6.35 | 0.8 | 0.22 - 0.60 | 2.3 - 5.5 | | • | • | • | |
| | | 150612 53 | 14.4 | 12.7 | 6.35 | 1.2 | 0.22 - 0.60 | 2.3 - 5.5 | | • | • | • | |

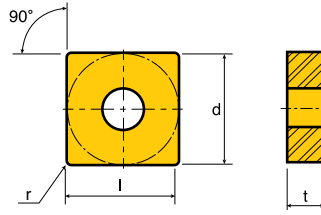
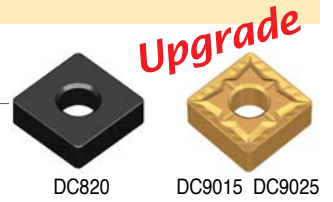
Negative 55° Insert



KNMX

| Insert | Designation | Dimension(mm) | | | | Recommended cutting condition | | Grade | | | |
|--------|-------------|---------------|------|------|-----|-------------------------------|-----------|-------|--------|--------|--------|
| | | l | d | t | r | Feed(mm/rev) | D.O.C(mm) | DC610 | DC9015 | DC9025 | DC8035 |
| | 160405 LP | 19.7 | 9.52 | 4.76 | 0.5 | 0.15 - 0.35 | 1.5 - 5.0 | | | • | |
| | 160405 RP | 19.7 | 9.52 | 4.76 | 0.5 | 0.15 - 0.35 | 1.5 - 5.0 | | | • | |

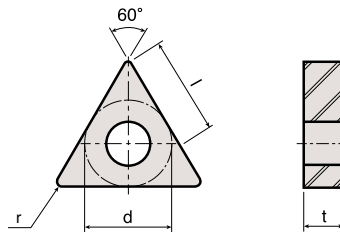
Negative 90° Insert



SNM

| Insert | Designation | Dimension(mm) | | | | Recommended cutting condition | | Grade | | | | |
|--------|----------------|---------------|------|------|-----|-------------------------------|-----------|-------|-------|--------|--------|--------|
| | | l | d | t | r | Feed(mm/rev) | D.O.C(mm) | DC610 | DC820 | DC9015 | DC9025 | DC8035 |
| | SNMA 120408 | 11.9 | 12.7 | 4.76 | 0.8 | 0.25 - 0.70 | 3.0 - 7.0 | | • | | | |
| | 120412 | 11.5 | 12.7 | 4.76 | 1.2 | 0.25 - 0.70 | 3.0 - 7.0 | | • | | | |
| | SNMG 120404 42 | 12.3 | 12.7 | 4.76 | 0.4 | 0.10 - 0.50 | 0.5 - 5.0 | | | | | • |
| | 120408 42 | 11.9 | 12.7 | 4.76 | 0.8 | 0.12 - 0.50 | 0.5 - 5.0 | | | | | • |
| | 120412 42 | 11.5 | 12.7 | 4.76 | 1.2 | 0.14 - 0.50 | 0.5 - 5.0 | | | | | • |
| | SNMG 120404 45 | 12.3 | 12.7 | 4.76 | 0.4 | 0.15 - 0.50 | 1.2 - 5.0 | | | • | • | • |
| | 120408 45 | 11.9 | 12.7 | 4.76 | 0.8 | 0.15 - 0.50 | 1.2 - 5.0 | | | • | • | • |
| | 120412 45 | 11.5 | 12.7 | 4.76 | 1.2 | 0.15 - 0.50 | 1.2 - 5.0 | | | • | • | • |
| | SNMG 120404 46 | 12.3 | 12.7 | 4.76 | 0.4 | 0.12 - 0.40 | 1.0 - 5.0 | | | • | • | • |
| | 120408 46 | 11.9 | 12.7 | 4.76 | 0.8 | 0.17 - 0.55 | 1.2 - 5.0 | | • | • | • | • |
| | 120412 46 | 11.5 | 12.7 | 4.76 | 1.2 | 0.20 - 0.55 | 1.5 - 5.0 | | • | • | • | • |
| | SNMG 120404 53 | 12.3 | 12.7 | 4.76 | 0.4 | 0.22 - 0.60 | 2.3 - 5.5 | | • | • | • | |
| | 120408 53 | 11.9 | 12.7 | 4.76 | 0.8 | 0.22 - 0.60 | 2.3 - 5.5 | | • | • | • | |
| | 120412 53 | 11.5 | 12.7 | 4.76 | 1.2 | 0.22 - 0.60 | 2.3 - 5.5 | | • | • | • | |

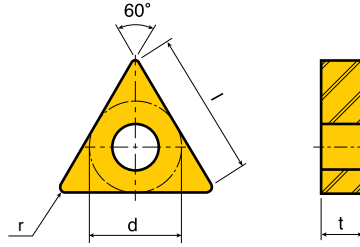
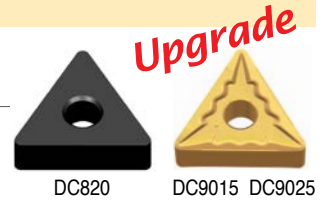
Negative 60° Insert



TNGG

| Insert | Designation | Dimension(mm) | | | | Recommended cutting condition | | Grade | | | | |
|--------|------------------|---------------|------|------|-----|-------------------------------|-----------|-------|-------|--------|--------|--------|
| | | l | d | t | r | Feed(mm/rev) | D.O.C(mm) | DC610 | DC820 | DC9015 | DC9025 | DC8035 |
| | TNGG 160402 L-LC | 10.8 | 9.52 | 4.76 | 0.2 | 0.10 - 0.30 | 1.0 - 4.0 | • | | | | |
| | 160402 R-LC | 10.8 | 9.52 | 4.76 | 0.2 | 0.10 - 0.30 | 1.0 - 4.0 | • | | | | |
| | 160404 L-LC | 10.6 | 9.52 | 4.76 | 0.4 | 0.12 - 0.30 | 1.0 - 4.0 | • | | | | |
| | 160404 R-LC | 10.6 | 9.52 | 4.76 | 0.4 | 0.12 - 0.30 | 1.0 - 4.0 | • | | | | |
| | 160408 L-LC | 10.2 | 9.52 | 4.76 | 0.8 | 0.12 - 0.30 | 1.0 - 4.0 | • | | | | |
| | 160408 R-LC | 10.2 | 9.52 | 4.76 | 0.8 | 0.12 - 0.30 | 1.0 - 4.0 | • | | | | |

Negative 60° Insert

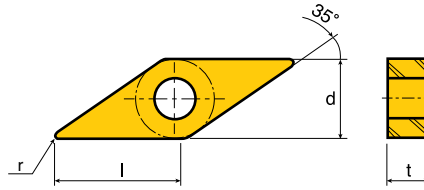


TNM





| Insert | Designation | Dimension(mm) | | | | Recommended cutting condition | | Grade | | | | | | |
|------------|------------------|---------------|------|------|-----|-------------------------------|-----------|-------|-------|--------|--------|--------|--------|--|
| | | l | d | t | r | Feed(mm/rev) | D.O.C(mm) | DC610 | DC820 | DC9015 | DC9025 | DC8035 | DP5320 | |
| | TNMA 160404 | 15.5 | 9.52 | 4.76 | 0.4 | 0.25 - 0.70 | 3.0 - 7.0 | | • | | | | | |
| | 160408 | 14.5 | 9.52 | 4.76 | 0.8 | 0.25 - 0.70 | 3.0 - 7.0 | | • | | | | | |
| | 160412 | 13.5 | 9.52 | 4.76 | 1.2 | 0.25 - 0.70 | 3.0 - 7.0 | | • | | | | | |
| | TNMG 160404 41 | 15.5 | 9.52 | 4.76 | 0.4 | 0.05 - 0.30 | 0.5 - 2.0 | • | | • | • | | | |
| | 160408 41 | 14.5 | 9.52 | 4.76 | 0.8 | 0.07 - 0.30 | 0.5 - 2.0 | • | | • | • | | | |
| | TNMG 160404 42 | 15.5 | 9.52 | 4.76 | 0.4 | 0.10 - 0.50 | 0.5 - 5.0 | | | | | • | | |
| | 160408 42 | 14.5 | 9.52 | 4.76 | 0.8 | 0.12 - 0.50 | 0.5 - 5.0 | | | | | • | | |
| | 160412 42 | 13.5 | 9.52 | 4.76 | 1.2 | 0.14 - 0.50 | 0.5 - 5.0 | | | | | • | | |
| | TNMG 160404 43 | 15.5 | 9.52 | 4.76 | 0.4 | 0.12 - 0.52 | 0.7 - 4.8 | | | • | • | | | |
| | 160408 43 | 14.5 | 9.52 | 4.76 | 0.8 | 0.12 - 0.52 | 0.7 - 4.8 | | | • | • | | | |
| | 160412 43 | 13.5 | 9.52 | 4.76 | 1.2 | 0.12 - 0.52 | 0.7 - 4.8 | | | • | • | | | |
| | TNMG 160404 45 | 15.5 | 9.52 | 4.76 | 0.4 | 0.15 - 0.50 | 1.2 - 5.0 | | | • | • | • | ○ | |
| | 160408 45 | 14.5 | 9.52 | 4.76 | 0.8 | 0.15 - 0.50 | 1.2 - 5.0 | | | • | • | • | ○ | |
| | 160412 45 | 13.5 | 9.52 | 4.76 | 1.2 | 0.15 - 0.50 | 1.2 - 5.0 | | | • | • | • | | |
| | TNMG 160408 86 | 14.5 | 9.52 | 4.76 | 0.8 | 0.15 - 0.40 | 0.8 - 3.5 | | | • | • | | | |
| New | TNMG 160404 L-90 | 7 | 9.52 | 4.76 | 0.4 | 0.10 - 0.30 | 0.7 - 3.5 | | | • | • | | | |
| | 160404 R-90 | 7 | 9.52 | 4.76 | 0.4 | 0.10 - 0.30 | 0.7 - 3.5 | | | • | • | | | |
| | 160408 R-90 | 7 | 9.52 | 4.76 | 0.8 | 0.12 - 0.35 | 1.0 - 3.5 | | | • | • | | | |
| | TNMG 160404 46 | 15.5 | 9.52 | 4.76 | 0.4 | 0.17 - 0.40 | 1.0 - 3.5 | | | • | • | • | | |
| | 160408 46 | 14.5 | 9.52 | 4.76 | 0.8 | 0.17 - 0.50 | 1.2 - 3.5 | | • | • | • | • | | |
| | 160412 46 | 13.5 | 9.52 | 4.76 | 1.2 | 0.20 - 0.50 | 1.5 - 3.5 | | • | • | • | • | | |
| | TNMG 160404 53 | 15.5 | 9.52 | 4.76 | 0.4 | 0.22 - 0.60 | 2.3 - 5.5 | | • | • | • | | | |
| | 160408 53 | 14.5 | 9.52 | 4.76 | 0.8 | 0.22 - 0.60 | 2.3 - 5.5 | | • | • | • | | | |
| | 160412 53 | 13.5 | 9.52 | 4.76 | 1.2 | 0.22 - 0.60 | 2.3 - 5.5 | | • | • | • | | | |

○ : on request

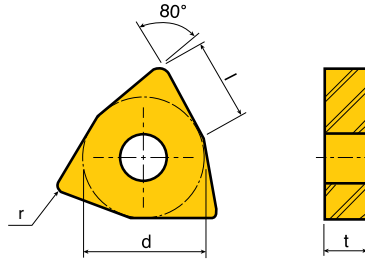
Negative 35° Insert



VNMG

| Insert | Designation | Dimension(mm) | | | | Recommended cutting condition | | Grade | | | | | |
|--|--------------------------------------|---------------|------|------|-----|-------------------------------|-----------|-------|-------|--------|--------|--------|--------|
| | | l | d | t | r | Feed(mm/rev) | D.O.C(mm) | DC610 | DC820 | DC9015 | DC9025 | DC8035 | DP5320 |
|  | VNMG 160404 41 Finishing & Medium | 15.6 | 9.52 | 4.76 | 0.4 | 0.05 - 0.30 | 0.5 - 2.0 | ● | | ● | ● | | |
| | | 14.6 | 9.52 | 4.76 | 0.8 | 0.07 - 0.30 | 0.5 - 2.0 | ● | | ● | ● | | |
|  | VNMG 160404 45 Medium & Roughing | 15.6 | 9.52 | 4.76 | 0.4 | 0.15 - 0.50 | 1.2 - 5.0 | | | ● | ● | ● | ● |
| | | 14.6 | 9.52 | 4.76 | 0.8 | 0.15 - 0.50 | 1.2 - 5.0 | | | ● | ● | ● | |
| | | 13.6 | 9.52 | 4.76 | 1.2 | 0.15 - 0.50 | 1.2 - 5.0 | | | ● | ● | ● | |
|  | VNMG 160404 46 Medium | 15.6 | 9.52 | 4.76 | 0.4 | 0.15 - 0.36 | 0.8 - 3.0 | | | ● | ● | ● | |
| | | 14.6 | 9.52 | 4.76 | 0.8 | 0.17 - 0.36 | 1.0 - 2.5 | | ● | ● | ● | ● | |
| | | 13.6 | 9.52 | 4.76 | 1.2 | 0.20 - 0.36 | 1.2 - 2.5 | | ● | ● | ● | ● | |
|  | VNMG 160404 53 Medium & Roughing | 15.6 | 9.52 | 4.76 | 0.4 | 0.22 - 0.60 | 2.3 - 5.5 | | ● | ● | ● | | |
| | | 14.6 | 9.52 | 4.76 | 0.8 | 0.22 - 0.60 | 2.3 - 5.5 | | ● | ● | ● | | |
| | | 13.6 | 9.52 | 4.76 | 1.2 | 0.22 - 0.60 | 2.3 - 5.5 | | ● | ● | ● | | |

Negative 80° Insert

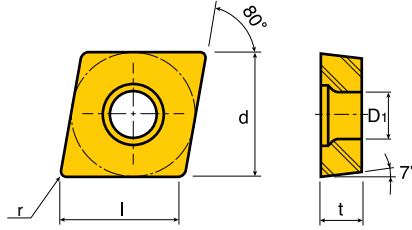


WNM

| Insert | Designation | Dimension(mm) | | | | Recommended cutting condition | | Grade | | | | | | |
|------------|------------------|---------------|------|------|-----|-------------------------------|-----------|-------|-------|--------|--------|--------|--------|--|
| | | l | d | t | r | Feed(mm/rev) | D.O.C(mm) | DC610 | DC820 | DC9015 | DC9025 | DC8035 | DP5320 | |
| | WNMA 080408 | 8.3 | 12.7 | 4.76 | 0.8 | 0.25 - 0.70 | 3.0 - 7.0 | | • | | | | | |
| | 080412 | 8.2 | 12.7 | 4.76 | 1.2 | 0.25 - 0.70 | 3.0 - 7.0 | | • | | | | | |
| | WNMG 080408 41 | 8.3 | 12.7 | 4.76 | 0.8 | 0.07 - 0.30 | 0.5 - 2.0 | • | | • | • | • | | |
| | 080412 41 | 8.3 | 12.7 | 4.76 | 1.2 | 0.10 - 0.30 | 0.5 - 2.0 | • | | • | • | | | |
| | WNMG 080404 42 | 8.4 | 12.7 | 4.76 | 0.4 | 0.10 - 0.50 | 0.5 - 5.0 | | | | | • | | |
| | 080408 42 | 8.3 | 12.7 | 4.76 | 0.8 | 0.12 - 0.50 | 0.5 - 5.0 | | | | | • | | |
| | 080412 42 | 8.2 | 12.7 | 4.76 | 1.2 | 0.14 - 0.50 | 0.5 - 5.0 | | | | | • | | |
| | WNMG 080404 43 | 8.4 | 12.7 | 4.76 | 0.4 | 0.12 - 0.52 | 0.7 - 4.8 | | | • | • | | | |
| | 080408 43 | 8.3 | 12.7 | 4.76 | 0.8 | 0.12 - 0.52 | 0.7 - 4.8 | | | • | • | | | |
| | 080412 43 | 8.2 | 12.7 | 4.76 | 1.2 | 0.12 - 0.52 | 0.7 - 4.8 | | | • | • | | | |
| | WNMG 060404 45 | 6.2 | 9.52 | 4.76 | 0.4 | 0.15 - 0.50 | 1.2 - 5.0 | | | • | • | • | | |
| | 060408 45 | 6.1 | 9.52 | 4.76 | 0.8 | 0.15 - 0.50 | 1.2 - 5.0 | | | • | • | • | | |
| | 060412 45 | 6.0 | 9.52 | 4.76 | 1.2 | 0.15 - 0.50 | 1.2 - 5.0 | | | • | • | • | | |
| | 080404 45 | 8.4 | 12.7 | 4.76 | 0.4 | 0.15 - 0.50 | 1.2 - 5.0 | | | • | • | • | ○ | |
| | 080408 45 | 8.3 | 12.7 | 4.76 | 0.8 | 0.15 - 0.50 | 1.2 - 5.0 | | | • | • | • | ○ | |
| | 080412 45 | 8.2 | 12.7 | 4.76 | 1.2 | 0.15 - 0.50 | 1.2 - 5.0 | | | • | • | • | ○ | |
| | WNMG 080408 86 | 8.3 | 12.7 | 4.76 | 0.8 | 0.15 - 0.45 | 0.8 - 4.0 | | | • | • | | | |
| | 080412 86 | 8.2 | 12.7 | 4.76 | 1.2 | 0.15 - 0.45 | 1.0 - 4.0 | | | • | • | | | |
| | 080416 86 | 8.1 | 12.7 | 4.76 | 1.6 | 0.15 - 0.45 | 1.0 - 4.0 | | | • | • | | | |
| New | WNMG 080408 L-90 | 7 | 12.7 | 4.76 | 0.8 | 0.12 - 0.35 | 1.0 - 3.5 | | | • | • | | | |
| | 080408 R-90 | 7 | 12.7 | 4.76 | 0.8 | 0.12 - 0.35 | 1.0 - 3.5 | | | • | • | | | |
| | WNMG 080404 46 | 8.4 | 12.7 | 4.76 | 0.4 | 0.12 - 0.40 | 1.0 - 4.0 | | | • | • | • | | |
| | 080408 46 | 8.3 | 12.7 | 4.76 | 0.8 | 0.17 - 0.55 | 1.2 - 4.0 | | • | • | • | • | | |
| | 080412 46 | 8.2 | 12.7 | 4.76 | 1.2 | 0.25 - 0.55 | 1.5 - 4.0 | | • | • | • | • | | |
| | WNMG 080404 53 | 8.4 | 12.7 | 4.76 | 0.4 | 0.22 - 0.60 | 2.3 - 5.5 | | • | | | | | |
| | 080408 53 | 8.3 | 12.7 | 4.76 | 0.8 | 0.22 - 0.60 | 2.3 - 5.5 | | • | | | | | |
| | 080412 53 | 8.2 | 12.7 | 4.76 | 1.2 | 0.22 - 0.60 | 2.3 - 5.5 | | • | • | | | | |

○ : on request

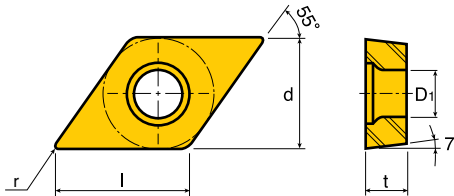
Positive 80° Insert



CCMT

| Insert | Designation | Dimension(mm) | | | | | | Recommended cutting condition | | Grade | | | |
|--------|----------------|---------------|------|------|-----|----------------|--------------|-------------------------------|-------|-------|--------|--------|--|
| | | l | d | t | r | D ₁ | Feed(mm/rev) | D.O.C(mm) | DC610 | DC820 | DC9015 | DC9025 | |
| | CCMT 09T304 41 | 9.2 | 9.52 | 3.97 | 0.4 | 4.4 | 0.05 - 0.15 | 0.5 - 2.5 | | | ● | ● | |
| | 09T308 41 | 8.8 | 9.52 | 3.97 | 0.8 | 4.4 | 0.07 - 0.15 | 0.5 - 2.5 | | | ● | ● | |
| | CCMT 09T304 51 | 9.2 | 9.52 | 3.97 | 0.4 | 4.4 | 0.07 - 0.25 | 1.0 - 3.0 | | ● | ● | ● | |
| | 09T308 51 | 8.8 | 9.52 | 3.97 | 0.8 | 4.4 | 0.09 - 0.25 | 1.0 - 3.0 | | ● | ● | ● | |
| | CCMT 060204 52 | 6.0 | 6.35 | 2.38 | 0.4 | 2.8 | 0.10 - 0.25 | 1.0 - 2.0 | ● | | ● | ● | |
| | 09T304 52 | 9.2 | 9.52 | 3.97 | 0.4 | 4.4 | 0.12 - 0.30 | 1.2 - 3.0 | ● | | ● | ● | |
| | 09T308 52 | 8.8 | 9.52 | 3.97 | 0.8 | 4.4 | 0.12 - 0.30 | 1.2 - 3.0 | ● | | ● | ● | |

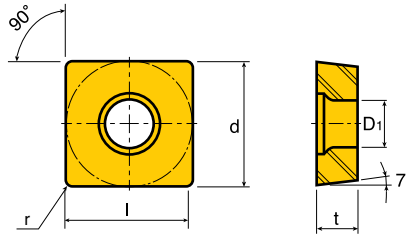
Positive 55° Insert





DCMT

| Insert | Designation | Dimension(mm) | | | | | | Recommended cutting condition | | Grade | | | |
|--------|----------------|---------------|------|------|-----|----------------|--------------|-------------------------------|-------|-------|--------|--------|--|
| | | l | d | t | r | D ₁ | Feed(mm/rev) | D.O.C(mm) | DC610 | DC820 | DC9015 | DC9025 | |
| | DCMT 11T304 41 | 11.2 | 9.52 | 3.97 | 0.4 | 4.4 | 0.05 - 0.15 | 0.5 - 2.5 | | | ● | ● | |
| | 11T308 41 | 10.8 | 9.52 | 3.97 | 0.8 | 4.4 | 0.07 - 0.15 | 0.5 - 2.5 | | | ● | ● | |
| | DCMT 11T304 51 | 11.2 | 9.52 | 3.97 | 0.4 | 4.4 | 0.07 - 0.25 | 1.0 - 3.0 | | ● | ● | ● | |
| | 11T308 51 | 10.8 | 9.52 | 3.97 | 0.8 | 4.4 | 0.09 - 0.25 | 1.0 - 3.0 | | ● | ● | ● | |
| | 11T312 51 | 10.5 | 9.52 | 3.97 | 1.2 | 4.4 | 0.10 - 0.25 | 1.0 - 3.0 | | ● | ● | ● | |
| | DCMT 070204 52 | 7.3 | 6.35 | 2.38 | 0.4 | 2.8 | 0.10 - 0.25 | 1.0 - 2.0 | ● | | ● | ● | |
| | 11T304 52 | 11.2 | 9.52 | 3.97 | 0.4 | 4.4 | 0.12 - 0.30 | 1.2 - 3.0 | ● | | ● | ● | |
| | 11T308 52 | 10.8 | 9.52 | 3.97 | 0.8 | 4.4 | 0.12 - 0.30 | 1.2 - 3.0 | ● | | ● | ● | |

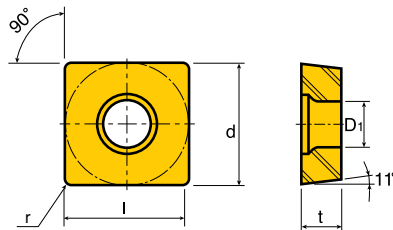
Positive 90° Insert



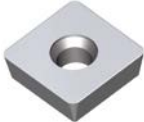
SCMT

| Insert | Designation | Dimension(mm) | | | | | | Recommended cutting condition | | Grade | | | |
|---|----------------|---------------|------|------|-----|----------------|--------------|-------------------------------|-------|-------|--------|--------|--|
| | | l | d | t | r | D ₁ | Feed(mm/rev) | D.O.C(mm) | DC610 | DC820 | DC9015 | DC9025 | |
|  SCMT 41 Finishing | SCMT 09T304 41 | 9.2 | 9.52 | 3.97 | 0.4 | 4.4 | 0.05 - 0.15 | 0.5 - 2.5 | | | • | • | |
| | 09T308 41 | 8.7 | 9.52 | 3.97 | 0.8 | 4.4 | 0.07 - 0.15 | 0.5 - 2.5 | | | • | • | |
|  SCMT 51 Medium | SCMT 09T304 51 | 9.2 | 9.52 | 3.97 | 0.4 | 4.4 | 0.07 - 0.25 | 1.0 - 3.0 | | • | • | • | |
| | 09T308 51 | 9.2 | 9.52 | 3.97 | 0.4 | 4.4 | 0.09 - 0.25 | 1.0 - 3.0 | | • | • | • | |

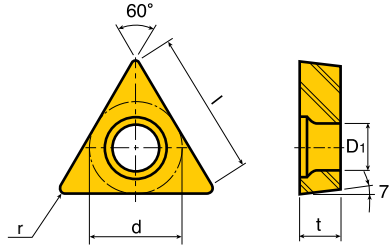
Positive 90° Insert



SPGW

| Insert | Designation | Dimension(mm) | | | | | Grade | | | |
|---|-------------|---------------|------|------|-----|----------------|-------|-------|--------|--------|
| | | l | d | t | r | D ₁ | DC610 | DC820 | DC9015 | DC9025 |
|  SPGW 090308T-X01 | | 8.7 | 9.52 | 3.18 | 0.8 | 3.3 | • | | | |

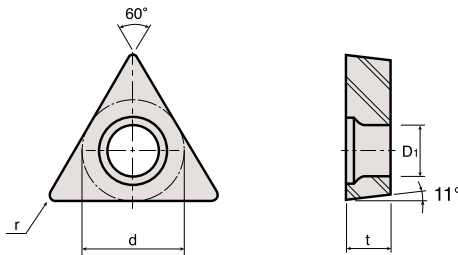
Positive 60° Insert



TCMT

| Insert | Designation | Dimension(mm) | | | | | | Recommended cutting condition | | Grade | | | |
|--------|----------------|---------------|------|------|-----|----------------|--------------|-------------------------------|-------|-------|--------|--------|--|
| | | l | d | t | r | D ₁ | Feed(mm/rev) | D.O.C(mm) | DC610 | DC820 | DC9015 | DC9025 | |
| | TCMT 16T304 41 | 15.5 | 9.52 | 3.97 | 0.4 | 4.4 | 0.05 - 0.15 | 0.5 - 2.5 | | | ● | ● | |
| | 16T308 41 | 14.5 | 9.52 | 3.97 | 0.8 | 4.4 | 0.07 - 0.15 | 0.5 - 2.5 | | | ● | ● | |
| | TCMT 16T304 51 | 15.5 | 9.52 | 3.97 | 0.4 | 4.4 | 0.07 - 0.25 | 1.0 - 3.0 | | ● | ● | ● | |
| | 16T308 51 | 14.5 | 9.52 | 3.97 | 0.8 | 4.4 | 0.09 - 0.25 | 1.0 - 3.0 | | ● | ● | ● | |
| | 16T312 51 | 13.5 | 9.52 | 3.97 | 1.2 | 4.4 | 0.10 - 0.25 | 1.0 - 3.0 | | ● | ● | ● | |
| | TCMT 110204 52 | 10.0 | 6.35 | 2.38 | 0.4 | 2.8 | 0.10 - 0.25 | 1.0 - 2.5 | | | ● | ● | |

Positive 60° Insert

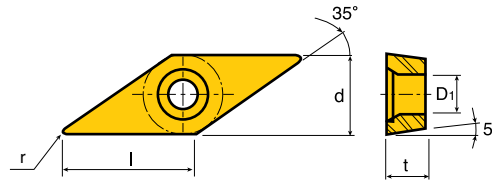


TPGH R/L-H

| Insert | Designation | Dimension(mm) | | | | Grade | |
|--------|-----------------|---------------|------|-----|----------------|-------|--------|
| | | d | t | r | D ₁ | DC610 | DC9800 |
| | TPGH 090204 L-H | 5.56 | 2.38 | 0.4 | 2.5 | ● | ● |
| | 110302 R/L-H | 6.35 | 3.18 | 0.2 | 3.3 | ● | ● |
| | 110304 R/L-H | 6.35 | 3.18 | 0.4 | 3.3 | ● | ● |
| | 160404 L | 9.525 | 4.76 | 0.4 | 4.4 | ● | |

Positive 35° Insert

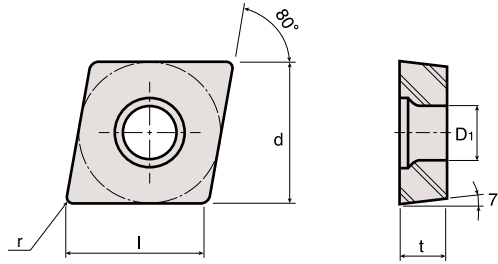
Upgrade



VBMT

| Insert | Designation | Dimension(mm) | | | | | Recommended cutting condition | | Grade | | | |
|--------|----------------|---------------|------|------|-----|----------------|-------------------------------|-----------|-------|-------|--------|--------|
| | | l | d | t | r | D ₁ | Feed(mm/rev) | D.O.C(mm) | DC610 | DC820 | DC9015 | DC9025 |
| | VBMT 160404 41 | 15.6 | 9.52 | 4.76 | 0.4 | 4.4 | 0.05 - 0.15 | 0.5 - 2.5 | ● | | ● | ● |
| | 160408 41 | 14.6 | 9.52 | 4.76 | 0.8 | 4.4 | 0.07 - 0.15 | 0.5 - 2.5 | ● | | ● | ● |
| | VBMT 160404 51 | 15.6 | 9.52 | 4.76 | 0.4 | 4.4 | 0.07 - 0.25 | 1.0 - 3.0 | | ● | ● | ● |
| | 160408 51 | 14.6 | 9.52 | 4.76 | 0.8 | 4.4 | 0.09 - 0.25 | 1.0 - 3.0 | | ● | ● | ● |
| | 160412 51 | 13.6 | 9.52 | 4.76 | 1.2 | 4.4 | 0.10 - 0.25 | 1.0 - 3.0 | | ● | ● | ● |
| | VBMT 160404 52 | 15.6 | 9.52 | 4.76 | 0.4 | 4.4 | 0.10 - 0.25 | 1.2 - 3.0 | ● | | ● | ● |
| | 160408 52 | 14.6 | 9.52 | 4.76 | 0.8 | 4.4 | 0.10 - 0.30 | 1.2 - 3.0 | ● | | ● | ● |

Positive 80° Insert - For Aluminum

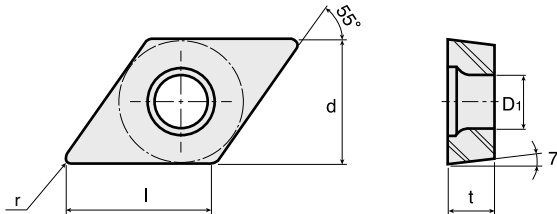


CCGT AU

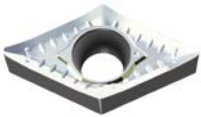


| Insert | Designation | Dimension(mm) | | | | | Grade |
|--------|----------------|---------------|------|------|-----|----------------|-------|
| | | l | d | t | r | D ₁ | |
| | CCGT 060202 AU | 6.0 | 6.35 | 2.38 | 0.2 | 2.8 | • |
| | 060204 AU | 6.0 | 6.35 | 2.38 | 0.4 | 2.8 | • |
| | 09T302 AU | 9.2 | 9.52 | 3.97 | 0.2 | 4.4 | • |
| | 09T304 AU | 9.2 | 9.52 | 3.97 | 0.4 | 4.4 | • |
| | 09T308 AU | 9.2 | 9.52 | 3.97 | 0.8 | 4.4 | • |
| | 120404 AU | 12.4 | 12.7 | 4.76 | 0.4 | 5.5 | • |
| | 120408 AU | 12.4 | 12.7 | 4.76 | 0.8 | 5.5 | • |

Positive 55° Insert - For Aluminum

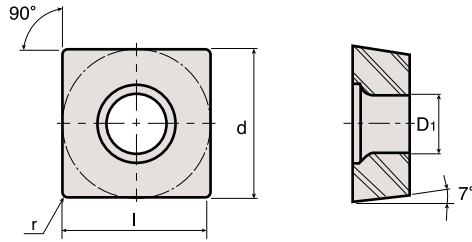


DCGT AU



| Insert | Designation | Dimension(mm) | | | | | Grade |
|--------|----------------|---------------|-------|------|-----|----------------|-------|
| | | l | d | t | r | D ₁ | |
| | DCGT 070202 AU | 7.5 | 6.35 | 2.38 | 0.2 | 2.8 | • |
| | 070204 AU | 7.3 | 6.35 | 2.38 | 0.4 | 2.8 | • |
| | 11T302 AU | 11.4 | 9.525 | 3.97 | 0.2 | 4.4 | • |
| | 11T304 AU | 11.4 | 9.525 | 3.97 | 0.4 | 4.4 | • |
| | 11T308 AU | 11.2 | 9.525 | 3.97 | 0.8 | 4.4 | • |

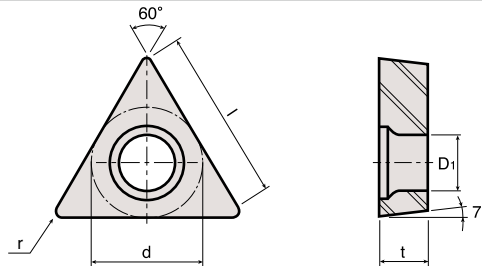
Positive 90° Insert - For Aluminum



SCGT AU

| Insert | Designation | Dimension(mm) | | | | | Grade |
|--------|----------------|---------------|-------|------|-----|----------------|-------|
| | | l | d | t | r | D ₁ | |
| | SCGT 120404 AU | 12.3 | 12.70 | 4.76 | 0.4 | 5.5 | • |
| | 120408 AU | 11.9 | 12.70 | 4.76 | 0.8 | 5.5 | • |

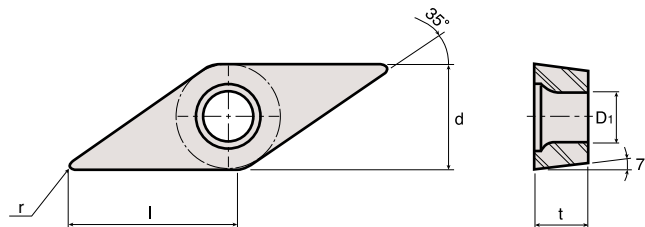
Positive 60° Insert - For Aluminum



TCGT AU

| Insert | Designation | Dimension(mm) | | | | | Grade |
|--------|----------------|---------------|-------|------|-----|----------------|-------|
| | | l | d | t | r | D ₁ | |
| | TCGT 110204 AU | 10.0 | 6.35 | 2.38 | 0.4 | 2.8 | • |
| | 16T304 AU | 15.5 | 9.525 | 3.97 | 0.4 | 4.4 | • |
| | 16T308 AU | 15.5 | 9.525 | 3.97 | 0.8 | 4.4 | • |

Positive 35° Insert - For Aluminum



VCGT AU

| Insert | Designation | Dimension(mm) | | | | | Grade |
|--------|----------------|---------------|------|------|-----|----------------|-------|
| | | l | d | t | r | D ₁ | |
| | VCGT 110302 AU | 10.0 | 6.35 | 3.18 | 0.2 | 2.8 | • |
| | 110304 AU | 10.0 | 6.35 | 3.18 | 0.4 | 2.8 | • |
| | 160404 AU | 15.6 | 9.52 | 4.76 | 0.4 | 4.4 | • |
| | 160408 AU | 14.6 | 9.52 | 4.76 | 0.8 | 4.4 | • |