
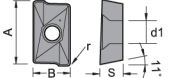



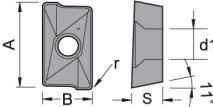



# 90° APKT Shoulder Milling

- ◆ Strong cutting edge and chip-breaker design.
- ◆ Excellent chip evacuation.
- ◆ Large depth of cutting operations.
- ◆ Lower cutting resistance.

## Specification

| Inserts  | Designation        | Grade  |        |  |  | Dimensions (mm) |       |      |     |     |    | Drawing   |  |              |              |
|--|--------------------|--------|--------|--|--|-----------------|-------|------|-----|-----|----|---|--|--------------|--------------|
|  |                    | CX31NA | CX41NA |  |  | A               | B     | S    | r   | d1  | t1 |   |  |              |              |
|  | P Steel            | ●      | ○      |  |  |                 |       |      |     |     |    |   |  |              |              |
|  | M Stainless steel  | ○      | ●      |  |  |                 |       |      |     |     |    |   |  |              |              |
|  | K Cast iron        | ●      | ○      |  |  |                 |       |      |     |     |    |   |  |              |              |
|  |                    |        |        |  |  |                 |       |      |     |     |    |   |  | ● 1st choice | ○ 2st choice |
|    | APKT 100304PDER-MG | ✓      |        |  |  | 10.5            | 6.7   | 3.5  | 0.4 | 2.8 | -  |    |  |              |              |
|    | APKT 100308PDER-MG | ✓      |        |  |  | 10.5            | 6.7   | 3.5  | 0.8 | 2.8 | -  |   |  |              |              |
|    | APKT 100304PDER-RG | ✓      |        |  |  | 10.5            | 6.7   | 3.5  | 0.4 | 2.8 | -  |   |  |              |              |
|  | APKT 160408PDER-MG | ✓      |        |  |  | 16.3            | 9.525 | 5.25 | 0.8 | 4.5 | -  |  |  |              |              |
|  | APKT 160408PDER-RG | ✓      | ✓      |  |  | 16.3            | 9.525 | 5.25 | 0.8 | 4.5 | -  |   |  |              |              |

**RG:** Negative cutting edge protection. General purpose chip breaker for steels and cast iron.

**MG:** Positive edge with radius, low cutting force and chatter reduction.

## Recommended Cutting Conditions

for APKT1003

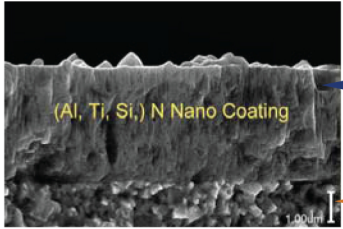
| Working Material        | Vc (Speed) |           | fz (Feed)   |                 | ap (Axial DOC) |          |
|-------------------------|------------|-----------|-------------|-----------------|----------------|----------|
|                         | m/min      | SFM       | FPT mm      | FPT in          | mm             | in       |
| Carbon Steel (HB85-225) | 80 ~ 200   | 260 ~ 660 | 0.08 ~ 0.20 | 0.003" ~ 0.008" | ~ 7.0          | ~ .2756" |
| Stainless 300 Series    | 50 ~ 110   | 165 ~ 360 | 0.05 ~ 0.15 | 0.002" ~ 0.006" | ~ 4.0          | ~ .1575" |
| Cast Iron (HB140-220)   | 80 ~ 180   | 260 ~ 590 | 0.08 ~ 0.20 | 0.003" ~ 0.008" | ~ 6.0          | ~ .2362" |

for APKT1604

| Working Material        | Vc (Speed) |           | fz (Feed)   |                 | ap (Axial DOC) |          |
|-------------------------|------------|-----------|-------------|-----------------|----------------|----------|
|                         | m/min      | SFM       | FPT mm      | FPT in          | mm             | in       |
| Carbon Steel (HB85-225) | 80 ~ 200   | 260 ~ 660 | 0.12 ~ 0.28 | 0.005" ~ 0.011" | ~ 11.0         | ~ .4331" |
| Stainless 300 Series    | 50 ~ 110   | 165 ~ 360 | 0.10 ~ 0.22 | 0.004" ~ 0.009" | ~ 7.0          | ~ .2576" |
| Cast Iron (HB140-220)   | 80 ~ 180   | 260 ~ 590 | 0.12 ~ 0.28 | 0.005" ~ 0.011" | ~ 10.0         | ~ .3937" |

## Coated Carbide

- ✔ New HS Grade for High Speed Milling
- ✔ High adhesion strength to the substrate improves stable cutting performance and achieves longer tool life.
- ✔ Provide excellent heat resistance and oxidation resistance.
- ✔ Maintain highest performance in wet cutting, dry cutting, even hardened material.




Smooth surface prevents chip adhesion.  
Multi-layered structure prevents crack expansion which causes chipping and fracture.


Newly development substrate with heat resistance and strength

| Grade Type | Substrate (HRA) | Coating Type | Thickness | Coolant |     | Suitable Condition |
|------------|-----------------|--------------|-----------|---------|-----|--------------------|
|            |                 |              |           | Dry     | Wet |                    |

- High-performance premium grade with a high level of shock and heat resistance.
- Specially designed to operates at medium to high cutting speeds and is capable of retaining a secure cutting edge at high metal removal condition.
- First choice for mold steel, hardened steel and high-temperature alloys

|        |      |           |     |            |            |   |
|--------|------|-----------|-----|------------|------------|---|
| CX31NA | 91.7 | Al.Ti.X.N | 3~4 | ★ ★<br>★ ★ | ★ ★<br>★ ★ |  |
|--------|------|-----------|-----|------------|------------|---|

- Wide cutting range, both wear resistance and impact resistance are well-balanced at all general machining application.
- Priority grade for semi-finishing or medium cutting.
- Stainless 400 series machining is recommended.

|        |      |           |     |            |            |   |
|--------|------|-----------|-----|------------|------------|---|
| CX41NA | 90.2 | Al.Ti.X.N | 3~4 | ★ ★<br>★ ★ | ★ ★<br>★ ★ |  |
|--------|------|-----------|-----|------------|------------|---|

- Priority grade for roughing purpose, this grade incorporates high temperature strength.
- Excellent shock resistance ability, especially during heavy interrupted machining.
- Stainless 300 series machining is recommended.

