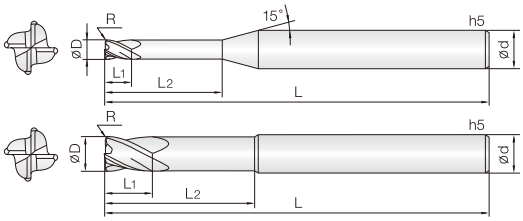
# 4CREG

## 4 Flutes Rib Corner Radius End Mills for General Purpose

## 4날 범용 리브 코너 레디우스 엔드밀




- **중저경도강 (HRc52이하), 프리하든강계열, 탄소강, 금형강등가공**
- JCRO 코팅 처리하여 넓은 영역의 피삭재 가공에 적합합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 코너R 형상을 날부치핑이 적도록 설계하였습니다.
- 다양한 코너R과 유효장으로 맞춤 가공이 가능합니다.
- 항절력이 높은 미립자 초경합금(0.5㎛)을 채택,엔드밀의 파손을 최소화 .
- **Endmills for various work materials(~HRc52), pre-hardened steel, carbon steel, mold steel.**
- Optimum for various work materials by JCRO coating.
- High precise edge tolerance.
- Designed for minimizing edge chipping by corner R shape.
- Various corner R and flute length for wide range application.
- Minimize fracturing by high TRS fine(0.5㎛) WC grade.

4 | WC 미립자 | JCRO Coating | R ±0.005 | R ±0.01 | R ±0.015 | 35° Helix Angle | CUTTING DATA

R0.05 ~ 0.5 R1 ~ 1.5 R2 ~ 3 339P

| D Size | D Tolerance |
|---|---|
| ø1 ~ 5 | +0 ~ -0.01mm |
| ø6 ~ 12 | -0.005 ~ -0.015mm |

단위: mm

| Order Number | 날경 Diameter D×R | 날장 Length of cut L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 생크 Shank Dia d | 비고 |
|---|---|---|---|---|---|---|
| 4CREG 010 0005 040 | 1 X R0.05 | 1.2 | 4 | 45 | 4 | |
| 4CREG 010 0005 060 | 1 X R0.05 | 1.2 | 6 | 45 | 4 | |
| 4CREG 010 0005 080 | 1 X R0.05 | 1.2 | 8 | 45 | 4 | |
| 4CREG 010 0005 100 | 1 X R0.05 | 1.2 | 10 | 50 | 4 | |
| 4CREG 010 0005 120 | 1 X R0.05 | 1.2 | 12 | 50 | 4 | |
| 4CREG 010 0005 160 | 1 X R0.05 | 1.2 | 16 | 50 | 4 | |
| 4CREG 010 0005 200 | 1 X R0.05 | 1.2 | 20 | 50 | 4 | |
| 4CREG 010 001 040 | 1 X R0.1 | 1.2 | 4 | 45 | 4 | |
| 4CREG 010 001 060 | 1 X R0.1 | 1.2 | 6 | 45 | 4 | |
| 4CREG 010 001 080 | 1 X R0.1 | 1.2 | 8 | 45 | 4 | |
| 4CREG 010 001 100 | 1 X R0.1 | 1.2 | 10 | 50 | 4 | |
| 4CREG 010 001 120 | 1 X R0.1 | 1.2 | 12 | 50 | 4 | |
| 4CREG 010 001 160 | 1 X R0.1 | 1.2 | 16 | 50 | 4 | |
| 4CREG 010 001 200 | 1 X R0.1 | 1.2 | 20 | 50 | 4 | |
| 4CREG 010 002 040 | 1 X R0.2 | 1.2 | 4 | 45 | 4 | |
| 4CREG 010 002 060 | 1 X R0.2 | 1.2 | 6 | 45 | 4 | |
| 4CREG 010 002 080 | 1 X R0.2 | 1.2 | 8 | 45 | 4 | |
| 4CREG 010 002 100 | 1 X R0.2 | 1.2 | 10 | 50 | 4 | |
| 4CREG 010 002 120 | 1 X R0.2 | 1.2 | 12 | 50 | 4 | |
| 4CREG 010 002 160 | 1 X R0.2 | 1.2 | 16 | 50 | 4 | |
| 4CREG 010 002 200 | 1 X R0.2 | 1.2 | 20 | 50 | 4 | |
| 4CREG 010 003 040 | 1 X R0.3 | 1.2 | 4 | 45 | 4 | |
| 4CREG 010 003 060 | 1 X R0.3 | 1.2 | 6 | 45 | 4 | |
| 4CREG 010 003 080 | 1 X R0.3 | 1.2 | 8 | 45 | 4 | |
| 4CREG 010 003 100 | 1 X R0.3 | 1.2 | 10 | 50 | 4 | |
| 4CREG 010 003 120 | 1 X R0.3 | 1.2 | 12 | 50 | 4 | |
| 4CREG 010 003 160 | 1 X R0.3 | 1.2 | 16 | 50 | 4 | |
| 4CREG 010 003 200 | 1 X R0.3 | 1.2 | 20 | 50 | 4 | |
| 4CREG 012 001 040 | 1.2 X R0.1 | 1.4 | 4 | 45 | 4 | |
| 4CREG 012 001 060 | 1.2 X R0.1 | 1.4 | 6 | 45 | 4 | |
| 4CREG 012 001 080 | 1.2 X R0.1 | 1.4 | 8 | 45 | 4 | |
| 4CREG 012 001 100 | 1.2 X R0.1 | 1.4 | 10 | 50 | 4 | |
| 4CREG 012 001 120 | 1.2 X R0.1 | 1.4 | 12 | 50 | 4 | |
| 4CREG 012 001 160 | 1.2 X R0.1 | 1.4 | 16 | 50 | 4 | |
| 4CREG 012 001 200 | 1.2 X R0.1 | 1.4 | 20 | 50 | 4 | |
| 4CREG 012 002 040 | 1.2 X R0.2 | 1.4 | 4 | 45 | 4 | |
| 4CREG 012 002 060 | 1.2 X R0.2 | 1.4 | 6 | 45 | 4 | |
| 4CREG 012 002 080 | 1.2 X R0.2 | 1.4 | 8 | 45 | 4 | |
| 4CREG 012 002 100 | 1.2 X R0.2 | 1.4 | 10 | 50 | 4 | |
| 4CREG 012 002 120 | 1.2 X R0.2 | 1.4 | 12 | 50 | 4 | |
| 4CREG 012 002 160 | 1.2 X R0.2 | 1.4 | 16 | 50 | 4 | |
| 4CREG 012 002 200 | 1.2 X R0.2 | 1.4 | 20 | 50 | 4 | |
| 4CREG 012 003 040 | 1.2 X R0.3 | 1.4 | 4 | 45 | 4 | |
| 4CREG 012 003 060 | 1.2 X R0.3 | 1.4 | 6 | 45 | 4 | |
| 4CREG 012 003 080 | 1.2 X R0.3 | 1.4 | 8 | 45 | 4 | |
| 4CREG 012 003 100 | 1.2 X R0.3 | 1.4 | 10 | 50 | 4 | |
| 4CREG 012 003 120 | 1.2 X R0.3 | 1.4 | 12 | 50 | 4 | |
| 4CREG 012 003 160 | 1.2 X R0.3 | 1.4 | 16 | 50 | 4 | |
| 4CREG 012 003 200 | 1.2 X R0.3 | 1.4 | 20 | 50 | 4 | |
| 4CREG 015 001 060 | 1.5 X R0.1 | 1.8 | 6 | 45 | 4 | |

| Order Number | 날경 Diameter D×R | 날장 Length of cut L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 생크 Shank Dia d | 비고 |
|---|---|---|---|---|---|---|
| 4CREG 015 001 080 | 1.5 X R0.1 | 1.8 | 8 | 45 | 4 | |
| 4CREG 015 001 100 | 1.5 X R0.1 | 1.8 | 10 | 50 | 4 | |
| 4CREG 015 001 120 | 1.5 X R0.1 | 1.8 | 12 | 50 | 4 | |
| 4CREG 015 001 160 | 1.5 X R0.1 | 1.8 | 16 | 50 | 4 | |
| 4CREG 015 001 200 | 1.5 X R0.1 | 1.8 | 20 | 50 | 4 | |
| 4CREG 015 001 220 | 1.5 X R0.1 | 1.8 | 22 | 60 | 4 | |
| 4CREG 015 001 250 | 1.5 X R0.1 | 1.8 | 25 | 60 | 4 | |
| 4CREG 015 002 060 | 1.5 X R0.2 | 1.8 | 6 | 45 | 4 | |
| 4CREG 015 002 080 | 1.5 X R0.2 | 1.8 | 8 | 45 | 4 | |
| 4CREG 015 002 100 | 1.5 X R0.2 | 1.8 | 10 | 50 | 4 | |
| 4CREG 015 002 120 | 1.5 X R0.2 | 1.8 | 12 | 50 | 4 | |
| 4CREG 015 002 160 | 1.5 X R0.2 | 1.8 | 16 | 50 | 4 | |
| 4CREG 015 002 200 | 1.5 X R0.2 | 1.8 | 20 | 50 | 4 | |
| 4CREG 015 002 220 | 1.5 X R0.2 | 1.8 | 22 | 60 | 4 | |
| 4CREG 015 002 250 | 1.5 X R0.2 | 1.8 | 25 | 60 | 4 | |
| 4CREG 015 003 060 | 1.5 X R0.3 | 1.8 | 6 | 45 | 4 | |
| 4CREG 015 003 080 | 1.5 X R0.3 | 1.8 | 8 | 45 | 4 | |
| 4CREG 015 003 100 | 1.5 X R0.3 | 1.8 | 10 | 50 | 4 | |
| 4CREG 015 003 120 | 1.5 X R0.3 | 1.8 | 12 | 50 | 4 | |
| 4CREG 015 003 160 | 1.5 X R0.3 | 1.8 | 16 | 50 | 4 | |
| 4CREG 015 003 200 | 1.5 X R0.3 | 1.8 | 20 | 50 | 4 | |
| 4CREG 015 003 220 | 1.5 X R0.3 | 1.8 | 22 | 60 | 4 | |
| 4CREG 015 003 250 | 1.5 X R0.3 | 1.8 | 25 | 60 | 4 | |
| 4CREG 015 005 060 | 1.5 X R0.5 | 1.8 | 6 | 45 | 4 | |
| 4CREG 015 005 080 | 1.5 X R0.5 | 1.8 | 8 | 45 | 4 | |
| 4CREG 015 005 100 | 1.5 X R0.5 | 1.8 | 10 | 50 | 4 | |
| 4CREG 015 005 120 | 1.5 X R0.5 | 1.8 | 12 | 50 | 4 | |
| 4CREG 015 005 160 | 1.5 X R0.5 | 1.8 | 16 | 50 | 4 | |
| 4CREG 015 005 200 | 1.5 X R0.5 | 1.8 | 20 | 50 | 4 | |
| 4CREG 015 005 220 | 1.5 X R0.5 | 1.8 | 22 | 60 | 4 | |
| 4CREG 015 005 250 | 1.5 X R0.5 | 1.8 | 25 | 60 | 4 | |
| 4CREG 020 001 060 | 2 X R0.1 | 2.4 | 6 | 45 | 4 | |
| 4CREG 020 001 080 | 2 X R0.1 | 2.4 | 8 | 45 | 4 | |
| 4CREG 020 001 100 | 2 X R0.1 | 2.4 | 10 | 50 | 4 | |
| 4CREG 020 001 120 | 2 X R0.1 | 2.4 | 12 | 50 | 4 | |
| 4CREG 020 001 160 | 2 X R0.1 | 2.4 | 16 | 50 | 4 | |
| 4CREG 020 001 200 | 2 X R0.1 | 2.4 | 20 | 50 | 4 | |
| 4CREG 020 001 250 | 2 X R0.1 | 2.4 | 25 | 60 | 4 | |
| 4CREG 020 001 300 | 2 X R0.1 | 2.4 | 30 | 70 | 4 | |
| 4CREG 020 001 350 | 2 X R0.1 | 2.4 | 35 | 70 | 4 | |
| 4CREG 020 002 060 | 2 X R0.2 | 2.4 | 6 | 45 | 4 | |
| 4CREG 020 002 080 | 2 X R0.2 | 2.4 | 8 | 45 | 4 | |
| 4CREG 020 002 100 | 2 X R0.2 | 2.4 | 10 | 50 | 4 | |
| 4CREG 020 002 120 | 2 X R0.2 | 2.4 | 12 | 50 | 4 | |
| 4CREG 020 002 160 | 2 X R0.2 | 2.4 | 16 | 50 | 4 | |
| 4CREG 020 002 200 | 2 X R0.2 | 2.4 | 20 | 50 | 4 | |
| 4CREG 020 002 250 | 2 X R0.2 | 2.4 | 25 | 60 | 4 | |
| 4CREG 020 002 300 | 2 X R0.2 | 2.4 | 30 | 70 | 4 | |
| 4CREG 020 002 350 | 2 X R0.2 | 2.4 | 35 | 70 | 4 | |
| 4CREG 020 003 060 | 2 X R0.3 | 2.4 | 6 | 45 | 4 | |

# 4CREG

## 4 Flutes Rib Corner Radius End Mills for General Purpose

## 4날 범용 리브 코너 레디우스 엔드밀

단위: mm

| Order Number | 날경 Diameter D×R | 날장 Length of cut L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 생크 Shank Dia d | 비고 |
|---|---|---|---|---|---|---|
| 4CREG 020 003 080 | 2 X R0.3 | 2.4 | 8 | 45 | 4 | |
| 4CREG 020 003 100 | 2 X R0.3 | 2.4 | 10 | 50 | 4 | |
| 4CREG 020 003 120 | 2 X R0.3 | 2.4 | 12 | 50 | 4 | |
| 4CREG 020 003 160 | 2 X R0.3 | 2.4 | 16 | 50 | 4 | |
| 4CREG 020 003 200 | 2 X R0.3 | 2.4 | 20 | 50 | 4 | |
| 4CREG 020 003 250 | 2 X R0.3 | 2.4 | 25 | 60 | 4 | |
| 4CREG 020 003 300 | 2 X R0.3 | 2.4 | 30 | 70 | 4 | |
| 4CREG 020 003 350 | 2 X R0.3 | 2.4 | 35 | 70 | 4 | |
| 4CREG 020 005 060 | 2 X R0.5 | 2.4 | 6 | 45 | 4 | |
| 4CREG 020 005 080 | 2 X R0.5 | 2.4 | 8 | 45 | 4 | |
| 4CREG 020 005 100 | 2 X R0.5 | 2.4 | 10 | 50 | 4 | |
| 4CREG 020 005 120 | 2 X R0.5 | 2.4 | 12 | 50 | 4 | |
| 4CREG 020 005 160 | 2 X R0.5 | 2.4 | 16 | 50 | 4 | |
| 4CREG 020 005 200 | 2 X R0.5 | 2.4 | 20 | 50 | 4 | |
| 4CREG 020 005 250 | 2 X R0.5 | 2.4 | 25 | 60 | 4 | |
| 4CREG 020 005 300 | 2 X R0.5 | 2.4 | 30 | 70 | 4 | |
| 4CREG 020 005 350 | 2 X R0.5 | 2.4 | 35 | 70 | 4 | |
| 4CREG 025 001 100 | 2.5 X R0.1 | 3 | 10 | 50 | 4 | |
| 4CREG 025 001 160 | 2.5 X R0.1 | 3 | 16 | 50 | 4 | |
| 4CREG 025 001 200 | 2.5 X R0.1 | 3 | 20 | 50 | 4 | |
| 4CREG 025 001 250 | 2.5 X R0.1 | 3 | 25 | 60 | 4 | |
| 4CREG 025 001 300 | 2.5 X R0.1 | 3 | 30 | 70 | 4 | |
| 4CREG 025 002 100 | 2.5 X R0.2 | 3 | 10 | 50 | 4 | |
| 4CREG 025 002 160 | 2.5 X R0.2 | 3 | 16 | 50 | 4 | |
| 4CREG 025 002 200 | 2.5 X R0.2 | 3 | 20 | 50 | 4 | |
| 4CREG 025 002 250 | 2.5 X R0.2 | 3 | 25 | 60 | 4 | |
| 4CREG 025 002 300 | 2.5 X R0.2 | 3 | 30 | 70 | 4 | |
| 4CREG 025 003 100 | 2.5 X R0.3 | 3 | 10 | 50 | 4 | |
| 4CREG 025 003 160 | 2.5 X R0.3 | 3 | 16 | 50 | 4 | |
| 4CREG 025 003 200 | 2.5 X R0.3 | 3 | 20 | 50 | 4 | |
| 4CREG 025 003 250 | 2.5 X R0.3 | 3 | 25 | 60 | 4 | |
| 4CREG 025 003 300 | 2.5 X R0.3 | 3 | 30 | 70 | 4 | |
| 4CREG 025 005 100 | 2.5 X R0.5 | 3 | 10 | 50 | 4 | |
| 4CREG 025 005 160 | 2.5 X R0.5 | 3 | 16 | 50 | 4 | |
| 4CREG 025 005 200 | 2.5 X R0.5 | 3 | 20 | 50 | 4 | |
| 4CREG 025 005 250 | 2.5 X R0.5 | 3 | 25 | 60 | 4 | |
| 4CREG 025 005 300 | 2.5 X R0.5 | 3 | 30 | 70 | 4 | |
| 4CREG 030 001 100 | 3 X R0.1 | 3.6 | 10 | 50 | 6 | |
| 4CREG 030 001 160 | 3 X R0.1 | 3.6 | 16 | 55 | 6 | |
| 4CREG 030 001 200 | 3 X R0.1 | 3.6 | 20 | 60 | 6 | |
| 4CREG 030 001 250 | 3 X R0.1 | 3.6 | 25 | 65 | 6 | |
| 4CREG 030 001 300 | 3 X R0.1 | 3.6 | 30 | 70 | 6 | |
| 4CREG 030 001 350 | 3 X R0.1 | 3.6 | 35 | 75 | 6 | |
| 4CREG 030 001 400 | 3 X R0.1 | 3.6 | 40 | 80 | 6 | |
| 4CREG 030 001 500 | 3 X R0.1 | 3.6 | 50 | 100 | 6 | |
| 4CREG 030 002 100 | 3 X R0.2 | 3.6 | 10 | 50 | 6 | |
| 4CREG 030 002 160 | 3 X R0.2 | 3.6 | 16 | 55 | 6 | |
| 4CREG 030 002 200 | 3 X R0.2 | 3.6 | 20 | 60 | 6 | |
| 4CREG 030 002 250 | 3 X R0.2 | 3.6 | 25 | 65 | 6 | |
| 4CREG 030 002 300 | 3 X R0.2 | 3.6 | 30 | 70 | 6 | |
| 4CREG 030 002 350 | 3 X R0.2 | 3.6 | 35 | 75 | 6 | |
| 4CREG 030 002 400 | 3 X R0.2 | 3.6 | 40 | 80 | 6 | |
| 4CREG 030 002 500 | 3 X R0.2 | 3.6 | 50 | 100 | 6 | |
| 4CREG 030 003 100 | 3 X R0.3 | 3.6 | 10 | 50 | 6 | |
| 4CREG 030 003 160 | 3 X R0.3 | 3.6 | 16 | 55 | 6 | |
| 4CREG 030 003 200 | 3 X R0.3 | 3.6 | 20 | 60 | 6 | |
| 4CREG 030 003 250 | 3 X R0.3 | 3.6 | 25 | 65 | 6 | |
| 4CREG 030 003 300 | 3 X R0.3 | 3.6 | 30 | 70 | 6 | |
| 4CREG 030 003 350 | 3 X R0.3 | 3.6 | 35 | 75 | 6 | |
| 4CREG 030 003 400 | 3 X R0.3 | 3.6 | 40 | 80 | 6 | |
| 4CREG 030 003 500 | 3 X R0.3 | 3.6 | 50 | 100 | 6 | |
| 4CREG 030 005 100 | 3 X R0.5 | 3.6 | 10 | 50 | 6 | |
| 4CREG 030 005 160 | 3 X R0.5 | 3.6 | 16 | 55 | 6 | |
| 4CREG 030 005 200 | 3 X R0.5 | 3.6 | 20 | 60 | 6 | |

| Order Number | 날경 Diameter D×R | 날장 Length of cut L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 생크 Shank Dia d | 비고 |
|---|---|---|---|---|---|---|
| 4CREG 030 005 250 | 3 X R0.5 | 3.6 | 25 | 65 | 6 | |
| 4CREG 030 005 300 | 3 X R0.5 | 3.6 | 30 | 70 | 6 | |
| 4CREG 030 005 350 | 3 X R0.5 | 3.6 | 35 | 75 | 6 | |
| 4CREG 030 005 400 | 3 X R0.5 | 3.6 | 40 | 80 | 6 | |
| 4CREG 030 005 500 | 3 X R0.5 | 3.6 | 50 | 100 | 6 | |
| 4CREG 030 010 100 | 3 X R1 | 3.6 | 10 | 50 | 6 | |
| 4CREG 030 010 160 | 3 X R1 | 3.6 | 16 | 55 | 6 | |
| 4CREG 030 010 200 | 3 X R1 | 3.6 | 20 | 60 | 6 | |
| 4CREG 030 010 250 | 3 X R1 | 3.6 | 25 | 65 | 6 | |
| 4CREG 030 010 300 | 3 X R1 | 3.6 | 30 | 70 | 6 | |
| 4CREG 030 010 350 | 3 X R1 | 3.6 | 35 | 75 | 6 | |
| 4CREG 030 010 400 | 3 X R1 | 3.6 | 40 | 80 | 6 | |
| 4CREG 030 010 500 | 3 X R1 | 3.6 | 50 | 100 | 6 | |
| 4CREG 040 001 050 | 4 X R0.1 | 4.8 | 12 | 50 | 4 | |
| 4CREG 040 001 070 | 4 X R0.1 | 4.8 | 20 | 70 | 4 | |
| 4CREG 040 001 120 | 4 X R0.1 | 4.8 | 12 | 50 | 6 | |
| 4CREG 040 001 160 | 4 X R0.1 | 4.8 | 16 | 55 | 6 | |
| 4CREG 040 001 200 | 4 X R0.1 | 4.8 | 20 | 60 | 6 | |
| 4CREG 040 001 250 | 4 X R0.1 | 4.8 | 25 | 65 | 6 | |
| 4CREG 040 001 300 | 4 X R0.1 | 4.8 | 30 | 70 | 6 | |
| 4CREG 040 001 350 | 4 X R0.1 | 4.8 | 35 | 75 | 6 | |
| 4CREG 040 001 400 | 4 X R0.1 | 4.8 | 40 | 80 | 6 | |
| 4CREG 040 001 450 | 4 X R0.1 | 4.8 | 45 | 90 | 6 | |
| 4CREG 040 001 500 | 4 X R0.1 | 4.8 | 50 | 100 | 6 | |
| 4CREG 040 002 050 | 4 X R0.2 | 4.8 | 12 | 50 | 4 | |
| 4CREG 040 002 070 | 4 X R0.2 | 4.8 | 20 | 70 | 4 | |
| 4CREG 040 002 120 | 4 X R0.2 | 4.8 | 12 | 50 | 6 | |
| 4CREG 040 002 160 | 4 X R0.2 | 4.8 | 16 | 55 | 6 | |
| 4CREG 040 002 200 | 4 X R0.2 | 4.8 | 20 | 60 | 6 | |
| 4CREG 040 002 250 | 4 X R0.2 | 4.8 | 25 | 65 | 6 | |
| 4CREG 040 002 300 | 4 X R0.2 | 4.8 | 30 | 70 | 6 | |
| 4CREG 040 002 350 | 4 X R0.2 | 4.8 | 35 | 75 | 6 | |
| 4CREG 040 002 400 | 4 X R0.2 | 4.8 | 40 | 80 | 6 | |
| 4CREG 040 002 450 | 4 X R0.2 | 4.8 | 45 | 90 | 6 | |
| 4CREG 040 002 500 | 4 X R0.2 | 4.8 | 50 | 100 | 6 | |
| 4CREG 040 003 050 | 4 X R0.3 | 4.8 | 12 | 50 | 4 | |
| 4CREG 040 003 070 | 4 X R0.3 | 4.8 | 20 | 70 | 4 | |
| 4CREG 040 003 120 | 4 X R0.3 | 4.8 | 12 | 50 | 6 | |
| 4CREG 040 003 160 | 4 X R0.3 | 4.8 | 16 | 55 | 6 | |
| 4CREG 040 003 200 | 4 X R0.3 | 4.8 | 20 | 60 | 6 | |
| 4CREG 040 003 250 | 4 X R0.3 | 4.8 | 25 | 65 | 6 | |
| 4CREG 040 003 300 | 4 X R0.3 | 4.8 | 30 | 70 | 6 | |
| 4CREG 040 003 350 | 4 X R0.3 | 4.8 | 35 | 75 | 6 | |
| 4CREG 040 003 400 | 4 X R0.3 | 4.8 | 40 | 80 | 6 | |
| 4CREG 040 003 450 | 4 X R0.3 | 4.8 | 45 | 90 | 6 | |
| 4CREG 040 003 500 | 4 X R0.3 | 4.8 | 50 | 100 | 6 | |
| 4CREG 040 005 050 | 4 X R0.5 | 4.8 | 12 | 50 | 4 | |
| 4CREG 040 005 070 | 4 X R0.5 | 4.8 | 20 | 70 | 4 | |
| 4CREG 040 005 120 | 4 X R0.5 | 4.8 | 12 | 50 | 6 | |
| 4CREG 040 005 160 | 4 X R0.5 | 4.8 | 16 | 55 | 6 | |
| 4CREG 040 005 200 | 4 X R0.5 | 4.8 | 20 | 60 | 6 | |
| 4CREG 040 005 250 | 4 X R0.5 | 4.8 | 25 | 65 | 6 | |
| 4CREG 040 005 300 | 4 X R0.5 | 4.8 | 30 | 70 | 6 | |
| 4CREG 040 005 350 | 4 X R0.5 | 4.8 | 35 | 75 | 6 | |
| 4CREG 040 005 400 | 4 X R0.5 | 4.8 | 40 | 80 | 6 | |
| 4CREG 040 005 450 | 4 X R0.5 | 4.8 | 45 | 90 | 6 | |
| 4CREG 040 005 500 | 4 X R0.5 | 4.8 | 50 | 100 | 6 | |
| 4CREG 040 010 050 | 4 X R1 | 4.8 | 12 | 50 | 4 | |
| 4CREG 040 010 070 | 4 X R1 | 4.8 | 20 | 70 | 4 | |
| 4CREG 040 010 120 | 4 X R1 | 4.8 | 12 | 50 | 6 | |
| 4CREG 040 010 160 | 4 X R1 | 4.8 | 16 | 55 | 6 | |
| 4CREG 040 010 200 | 4 X R1 | 4.8 | 20 | 60 | 6 | |
| 4CREG 040 010 250 | 4 X R1 | 4.8 | 25 | 65 | 6 | |
| 4CREG 040 010 300 | 4 X R1 | 4.8 | 30 | 70 | 6 | |

# 4CREG

## 4 Flutes Rib Corner Radius End Mills for General Purpose

## 4날 범용 리브 코너 레디우스 엔드밀

단위: mm

| Order Number | 날경 Diameter D×R | 날장 Length of cut L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 생크 Shank Dia d | 비고 |
|---|---|---|---|---|---|---|
| 4CREG 040 010 350 | 4 X R1 | 4.8 | 35 | 75 | 6 | |
| 4CREG 040 010 400 | 4 X R1 | 4.8 | 40 | 80 | 6 | |
| 4CREG 040 010 450 | 4 X R1 | 4.8 | 45 | 90 | 6 | |
| 4CREG 040 010 500 | 4 X R1 | 4.8 | 50 | 100 | 6 | |
| 4CREG 050 001 150 | 5 X R0.1 | 6 | 15 | 55 | 6 | |
| 4CREG 050 001 300 | 5 X R0.1 | 6 | 30 | 70 | 6 | |
| 4CREG 050 001 400 | 5 X R0.1 | 6 | 40 | 80 | 6 | |
| 4CREG 050 001 500 | 5 X R0.1 | 6 | 50 | 100 | 6 | |
| 4CREG 050 002 150 | 5 X R0.2 | 6 | 15 | 55 | 6 | |
| 4CREG 050 002 300 | 5 X R0.2 | 6 | 30 | 70 | 6 | |
| 4CREG 050 002 400 | 5 X R0.2 | 6 | 40 | 80 | 6 | |
| 4CREG 050 002 500 | 5 X R0.2 | 6 | 50 | 100 | 6 | |
| 4CREG 050 003 150 | 5 X R0.3 | 6 | 15 | 55 | 6 | |
| 4CREG 050 003 300 | 5 X R0.3 | 6 | 30 | 70 | 6 | |
| 4CREG 050 003 400 | 5 X R0.3 | 6 | 40 | 80 | 6 | |
| 4CREG 050 003 500 | 5 X R0.3 | 6 | 50 | 100 | 6 | |
| 4CREG 050 005 150 | 5 X R0.5 | 6 | 15 | 55 | 6 | |
| 4CREG 050 005 300 | 5 X R0.5 | 6 | 30 | 70 | 6 | |
| 4CREG 050 005 400 | 5 X R0.5 | 6 | 40 | 80 | 6 | |
| 4CREG 050 005 500 | 5 X R0.5 | 6 | 50 | 100 | 6 | |
| 4CREG 050 010 150 | 5 X R1 | 6 | 15 | 55 | 6 | |
| 4CREG 050 010 300 | 5 X R1 | 6 | 30 | 70 | 6 | |
| 4CREG 050 010 400 | 5 X R1 | 6 | 40 | 80 | 6 | |
| 4CREG 050 010 500 | 5 X R1 | 6 | 50 | 100 | 6 | |
| 4CREG 060 001 200 | 6 X R0.1 | 7 | 20 | 60 | 6 | |
| 4CREG 060 001 400 | 6 X R0.1 | 7 | 40 | 80 | 6 | |
| 4CREG 060 001 500 | 6 X R0.1 | 7 | 50 | 100 | 6 | |
| 4CREG 060 002 200 | 6 X R0.2 | 7 | 20 | 60 | 6 | |
| 4CREG 060 002 400 | 6 X R0.2 | 7 | 40 | 80 | 6 | |
| 4CREG 060 002 500 | 6 X R0.2 | 7 | 50 | 100 | 6 | |
| 4CREG 060 003 200 | 6 X R0.3 | 7 | 20 | 60 | 6 | |
| 4CREG 060 003 400 | 6 X R0.3 | 7 | 40 | 80 | 6 | |
| 4CREG 060 003 500 | 6 X R0.3 | 7 | 50 | 100 | 6 | |
| 4CREG 060 005 200 | 6 X R0.5 | 7 | 20 | 60 | 6 | |
| 4CREG 060 005 400 | 6 X R0.5 | 7 | 40 | 80 | 6 | |
| 4CREG 060 005 500 | 6 X R0.5 | 7 | 50 | 100 | 6 | |
| 4CREG 060 010 200 | 6 X R1 | 7 | 20 | 60 | 6 | |
| 4CREG 060 010 400 | 6 X R1 | 7 | 40 | 80 | 6 | |
| 4CREG 060 010 500 | 6 X R1 | 7 | 50 | 100 | 6 | |
| 4CREG 060 015 200 | 6 X R1.5 | 7 | 20 | 60 | 6 | |
| 4CREG 060 015 400 | 6 X R1.5 | 7 | 40 | 80 | 6 | |
| 4CREG 060 015 500 | 6 X R1.5 | 7 | 50 | 100 | 6 | |
| 4CREG 080 002 220 | 8 X R0.2 | 9 | 22 | 65 | 8 | |
| 4CREG 080 003 220 | 8 X R0.3 | 9 | 22 | 65 | 8 | |
| 4CREG 080 005 220 | 8 X R0.5 | 9 | 22 | 65 | 8 | |
| 4CREG 080 005 400 | 8 X R0.5 | 9 | 40 | 100 | 8 | |
| 4CREG 080 010 220 | 8 X R1 | 9 | 22 | 65 | 8 | |
| 4CREG 080 010 400 | 8 X R1 | 9 | 40 | 100 | 8 | |
| 4CREG 080 015 220 | 8 X R1.5 | 9 | 22 | 65 | 8 | |
| 4CREG 080 015400 | 8 X R1.5 | 9 | 40 | 100 | 8 | |
| 4CREG 080 020 220 | 8 X R2 | 9 | 22 | 65 | 8 | |
| 4CREG 100 002 240 | 10 X R0.2 | 11 | 24 | 70 | 10 | |
| 4CREG 100 003 240 | 10 X R0.3 | 11 | 24 | 70 | 10 | |
| 4CREG 100 005 240 | 10 X R0.5 | 11 | 24 | 70 | 10 | |
| 4CREG 100 005 400 | 10 X R0.5 | 11 | 40 | 100 | 10 | |
| 4CREG 100 010 240 | 10 X R1 | 11 | 24 | 70 | 10 | |
| 4CREG 100 010 400 | 10 X R1 | 11 | 40 | 100 | 10 | |
| 4CREG 100 015 240 | 10 X R1.5 | 11 | 24 | 70 | 10 | |
| 4CREG 100 015 400 | 10 X R1.5 | 11 | 40 | 100 | 10 | |
| 4CREG 100 020 240 | 10 X R2 | 11 | 24 | 70 | 10 | |
| 4CREG 100 025 240 | 10 X R2.5 | 11 | 24 | 70 | 10 | |
| 4CREG 120 003 260 | 12 X R0.3 | 13 | 26 | 80 | 12 | |
| 4CREG 120 005 260 | 12 X R0.5 | 13 | 26 | 80 | 12 | |
| 4CREG 120 005 400 | 12 X R0.5 | 13 | 40 | 110 | 12 | |

| Order Number | 날경 Diameter D×R | 날장 Length of cut L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 생크 Shank Dia d | 비고 |
|---|---|---|---|---|---|---|
| 4CREG 120 010 260 | 12 X R1 | 13 | 26 | 80 | 12 | |
| 4CREG 120 010 400 | 12 X R1 | 13 | 40 | 110 | 12 | |
| 4CREG 120 015 260 | 12 X R1.5 | 13 | 26 | 80 | 12 | |
| 4CREG 120 015 400 | 12 X R1.5 | 13 | 40 | 110 | 12 | |
| 4CREG 120 020 260 | 12 X R2 | 13 | 26 | 80 | 12 | |
| 4CREG 120 030 260 | 12 X R3 | 13 | 26 | 80 | 12 | |

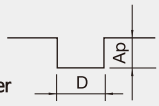
# 4CREG Cutting Condition

• RPM : rev./min • Feed : mm/min

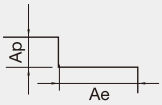
| 피삭재 Material | | 탄소강/ 합금강 Carbon Steel/ Alloy Steels | | | | 프리하든강 Prehardened Steels | | | | 고경도강 Hardened Steels | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 경도 Hardness | | ~ 35HRC | | | | 40 ~ 50HRC | | | | 50 ~ 52HRC | | | |
| 외경 Outside Diameter | 유효장 Effective Length | RPM | FEED | Ap Axial Depth | Ae Radial Depth | RPM | FEED | Ap Axial Depth | Ae Radial Depth | RPM | FEED | Ap Axial Depth | Ae Radial Depth |
| ø 1 | 4 | 13,110 | 1,884 | 0.216 | 0.435 | 13,110 | 1,047 | 0.032 | 0.290 | 11,144 | 851 | 0.038 | 0.290 |
| 〃 | 10 | 8,194 | 727 | 0.052 | 0.339 | 8,194 | 404 | 0.012 | 0.135 | 7,101 | 343 | 0.014 | 0.135 |
| ø 1.2 | 4 | 8,740 | 1,346 | 0.200 | 0.503 | 8,740 | 748 | 0.019 | 0.097 | 7,757 | 628 | 0.237 | 0.097 |
| 〃 | 10 | 6,337 | 861 | 0.058 | 0.435 | 6,337 | 478 | 0.008 | 0.077 | 5,681 | 389 | 0.009 | 0.077 |
| ø 1.5 | 6 | 12,236 | 2,503 | 0.323 | 0.726 | 12,236 | 1,390 | 0.048 | 0.484 | 11,144 | 1,196 | 0.065 | 0.484 |
| 〃 | 12 | 7,866 | 1,722 | 0.161 | 0.610 | 7,866 | 957 | 0.034 | 0.310 | 7,211 | 822 | 0.045 | 0.310 |
| ø 2 | 6 | 11,908 | 2,341 | 0.345 | 0.919 | 11,908 | 1,301 | 0.046 | 0.871 | 11,144 | 1,181 | 0.065 | 0.871 |
| 〃 | 12 | 8,740 | 1,884 | 0.200 | 0.774 | 8,740 | 1,047 | 0.033 | 0.484 | 7,866 | 942 | 0.047 | 0.484 |
| ø 2.5 | 10 | 9,833 | 2,341 | 0.365 | 0.919 | 9,833 | 1,301 | 0.056 | 0.581 | 9,286 | 1,226 | 0.081 | 0.581 |
| 〃 | 20 | 5,900 | 1,023 | 0.074 | 0.677 | 5,900 | 568 | 0.012 | 0.194 | 5,572 | 538 | 0.017 | 0.194 |
| ø 3 | 10 | 9,833 | 2,637 | 0.419 | 0.914 | 9,833 | 1,465 | 0.113 | 0.678 | 9,286 | 1,136 | 0.113 | 0.720 |
| 〃 | 20 | 7,757 | 2,018 | 0.280 | 0.839 | 5,748 | 1,121 | 0.078 | 0.624 | 3,249 | 867 | 0.078 | 0.624 |
| ø 4 | 12 | 8,303 | 2,476 | 0.441 | 1.677 | 8,303 | 1,375 | 0.089 | 1.237 | 6,992 | 1,196 | 0.129 | 1.237 |
| 〃 | 20 | 6,446 | 1,895 | 0.413 | 1.457 | 5,586 | 1,053 | 0.058 | 0.968 | 5,463 | 1,091 | 0.086 | 0.968 |
| 〃 | 30 | 5,463 | 978 | 0.215 | 1.331 | 2,803 | 543 | 0.031 | 0.738 | 2,413 | 852 | 0.046 | 0.738 |
| ø 6 | 20 | 5,681 | 2,852 | 0.660 | 2.414 | 5,187 | 1,585 | 0.524 | 1.491 | 3,387 | 1,346 | 0.205 | 1.491 |
| 〃 | 40 | 4,370 | 2,126 | 0.622 | 2.254 | 2,261 | 1,181 | 0.451 | 1.435 | 2,052 | 987 | 0.180 | 1.435 |
| ø 8 | 22 | 5,244 | 2,530 | 0.581 | 2.796 | 5,244 | 1,405 | 0.461 | 1.670 | 3,059 | 1,181 | 0.180 | 1.670 |
| ø 10 | 24 | 4,370 | 2,153 | 0.494 | 3.175 | 4,261 | 1,196 | 0.392 | 1.809 | 2,622 | 1,002 | 0.153 | 1.809 |
| ø 12 | 26 | 3,605 | 1,803 | 0.415 | 3.314 | 3,605 | 1,002 | 0.329 | 2.226 | 2,185 | 837 | 0.129 | 2.226 |

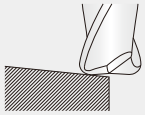
**절입량**
Depth of Cut

Slotting
- Ap : Axial Depth
- D : Outside Diameter




Side Milling
- Ap : Axial Depth
- Ae : Radial Depth



경사진면절삭
Inclined Cutting

- HRC52 이상인 경우 같은 직경의 같은 비율로 20% DOWN 시켜 주십시오.
- 유효장이 긴 경우에는 회전수와 이송속도를 최대30% 이하로 줄이십시오.
- Ae 값 설정시 코너R 치수를 고려해 주십시오.
- 곡면 절삭시 날경의 코너R 보다 낮은 이동 PITCH를 설정 하십시오.
- 곡면 절삭시 안정적인 속도 내에서 피드를 최대 30%까지 UP 해주십시오.

- When milling workpiece HRC over 52 hardened steel , reduce 20% of the RPM and feed compared to the same diameter.
- If the effective length is long, reduce the RPM and feed maximum 30%.
- Consider the corner radius value when you set up the Ae value.
- For curved milling, set up the lower value of the pitch than the corner radius value of tool diameter.
- For curved milling, raise up the feed up to 30% in stable milling condition.

# Your specials are our standards.

## 당신의스페셜은우리의표준품입니다.

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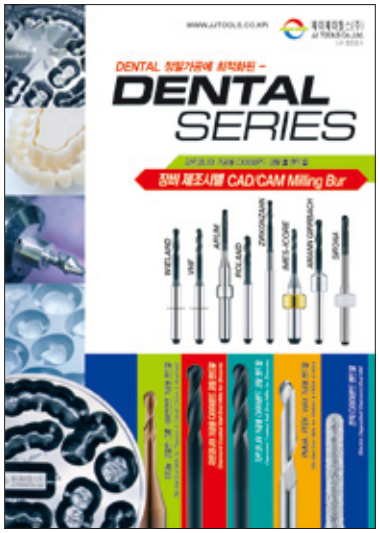

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ISO 9001 ISO 14001

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