



- 중저경도강(HRc52이하), 프리하드강 계열, 탄소강, 금형강 등 가공
- 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(0.5µm)을 채택, 엔드밀의 파손을 최소화

#### • Endmills for various work materials(~HRc52), pre-hardened steels, carbon steels, mold steels

- 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(0.5µm) WC grade.



R0.05 ~ 0.5 R1 ~ 1.5 R2 ~ 5 462P

| Condition | D Size    | D Tolerance  | Condition | D Size  | D Tolerance       |
|-----------|-----------|--------------|-----------|---------|-------------------|
| ØD ≠ Ød   | Ø0.4 ~ 12 | +0 ~ -0.01mm | ØD = Ød   | Ø4 ~ 12 | -0.005 ~ -0.015mm |

단위 : mm

| Order Number       | 날경<br>Diameter<br>D×R | 날장<br>Length of cut<br>L1 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 | Order Number      | 날경<br>Diameter<br>D×R | 날장<br>Length of cut<br>L1 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 |
|--------------------|-----------------------|---------------------------|---------------------------|----------------------|----|-------------------|-----------------------|---------------------------|---------------------------|----------------------|----|
| 2NCRG 004 0005 S04 | 0.4 X R0.05           | 0.8                       | 45                        | 4                    |    | 2NCRG 040 010 060 | 4 X R1                | 9                         | 60                        | 4                    |    |
| 2NCRG 004 001 S04  | 0.4 X R0.1            | 0.8                       | 45                        | 4                    |    | 2NCRG 040 010 080 | 4 X R1                | 9                         | 80                        | 4                    |    |
| 2NCRG 005 0005 S04 | 0.5 X R0.05           | 1                         | 45                        | 4                    |    | 2NCRG 040 010 S06 | 4 X R1                | 10                        | 70                        | 6                    |    |
| 2NCRG 005 001 S04  | 0.5 X R0.1            | 1                         | 45                        | 4                    |    | 2NCRG 050 001 S06 | 5 X R0.1              | 13                        | 75                        | 6                    |    |
| 2NCRG 006 0005 S04 | 0.6 X R0.05           | 1.2                       | 45                        | 4                    |    | 2NCRG 050 002 S06 | 5 X R0.2              | 13                        | 75                        | 6                    |    |
| 2NCRG 006 001 S04  | 0.6 X R0.1            | 1.2                       | 45                        | 4                    |    | 2NCRG 050 003 S06 | 5 X R0.3              | 13                        | 75                        | 6                    |    |
| 2NCRG 006 002 S04  | 0.6 X R0.2            | 1.2                       | 45                        | 4                    |    | 2NCRG 050 005 S06 | 5 X R0.5              | 13                        | 75                        | 6                    |    |
| 2NCRG 007 0005 S04 | 0.7 X R0.05           | 1.4                       | 45                        | 4                    |    | 2NCRG 050 010 S06 | 5 X R1                | 13                        | 75                        | 6                    |    |
| 2NCRG 007 001 S04  | 0.7 X R0.1            | 1.4                       | 45                        | 4                    |    | 2NCRG 060 001 060 | 6 X R0.1              | 11                        | 60                        | 6                    |    |
| 2NCRG 007 002 S04  | 0.7 X R0.2            | 1.4                       | 45                        | 4                    |    | 2NCRG 060 001 090 | 6 X R0.1              | 13                        | 90                        | 6                    |    |
| 2NCRG 008 0005 S04 | 0.8 X R0.05           | 1.6                       | 45                        | 4                    |    | 2NCRG 060 002 060 | 6 X R0.2              | 11                        | 60                        | 6                    |    |
| 2NCRG 008 001 S04  | 0.8 X R0.1            | 1.6                       | 45                        | 4                    |    | 2NCRG 060 002 090 | 6 X R0.2              | 13                        | 90                        | 6                    |    |
| 2NCRG 008 002 S04  | 0.8 X R0.2            | 1.6                       | 45                        | 4                    |    | 2NCRG 060 003 060 | 6 X R0.3              | 11                        | 60                        | 6                    |    |
| 2NCRG 009 0005 S04 | 0.9 X R0.05           | 1.8                       | 45                        | 4                    |    | 2NCRG 060 003 090 | 6 X R0.3              | 13                        | 90                        | 6                    |    |
| 2NCRG 009 001 S04  | 0.9 X R0.1            | 1.8                       | 45                        | 4                    |    | 2NCRG 060 005 060 | 6 X R0.5              | 11                        | 60                        | 6                    |    |
| 2NCRG 010 001 S04  | 1 X R0.1              | 2.5                       | 45                        | 4                    |    | 2NCRG 060 005 090 | 6 X R0.5              | 13                        | 90                        | 6                    |    |
| 2NCRG 010 002 S04  | 1 X R0.2              | 2.5                       | 45                        | 4                    |    | 2NCRG 060 010 060 | 6 X R1                | 11                        | 60                        | 6                    |    |
| 2NCRG 010 003 S04  | 1 X R0.3              | 2.5                       | 45                        | 4                    |    | 2NCRG 060 010 090 | 6 X R1                | 13                        | 90                        | 6                    |    |
| 2NCRG 012 001 S04  | 1.2 X R0.1            | 3.2                       | 45                        | 4                    |    | 2NCRG 060 015 060 | 6 X R1.5              | 11                        | 60                        | 6                    |    |
| 2NCRG 012 002 S04  | 1.2 X R0.2            | 3.2                       | 45                        | 4                    |    | 2NCRG 060 015 090 | 6 X R1.5              | 13                        | 90                        | 6                    |    |
| 2NCRG 012 003 S04  | 1.2 X R0.3            | 3.2                       | 45                        | 4                    |    | 2NCRG 060 020 060 | 6 X R2                | 11                        | 60                        | 6                    |    |
| 2NCRG 015 001 S04  | 1.5 X R0.1            | 4                         | 45                        | 4                    |    | 2NCRG 060 020 090 | 6 X R2                | 13                        | 90                        | 6                    |    |
| 2NCRG 015 002 S04  | 1.5 X R0.2            | 4                         | 45                        | 4                    |    | 2NCRG 060 025 090 | 6 X R2.5              | 13                        | 90                        | 6                    |    |
| 2NCRG 015 003 S04  | 1.5 X R0.3            | 4                         | 45                        | 4                    |    | 2NCRG 080 001 070 | 8 X R0.1              | 16                        | 70                        | 8                    |    |
| 2NCRG 015 005 S04  | 1.5 X R0.5            | 4                         | 45                        | 4                    |    | 2NCRG 080 001 100 | 8 X R0.1              | 19                        | 100                       | 8                    |    |
| 2NCRG 020 001 S04  | 2 X R0.1              | 6                         | 45                        | 4                    |    | 2NCRG 080 002 070 | 8 X R0.2              | 16                        | 70                        | 8                    |    |
| 2NCRG 020 002 S04  | 2 X R0.2              | 6                         | 45                        | 4                    |    | 2NCRG 080 002 100 | 8 X R0.2              | 19                        | 100                       | 8                    |    |
| 2NCRG 020 003 S04  | 2 X R0.3              | 6                         | 45                        | 4                    |    | 2NCRG 080 003 070 | 8 X R0.3              | 16                        | 70                        | 8                    |    |
| 2NCRG 020 005 S04  | 2 X R0.5              | 6                         | 45                        | 4                    |    | 2NCRG 080 003 100 | 8 X R0.3              | 19                        | 100                       | 8                    |    |
| 2NCRG 025 001 S04  | 2.5 X R0.1            | 6                         | 50                        | 4                    |    | 2NCRG 080 005 070 | 8 X R0.5              | 16                        | 70                        | 8                    |    |
| 2NCRG 025 002 S04  | 2.5 X R0.2            | 6                         | 50                        | 4                    |    | 2NCRG 080 005 100 | 8 X R0.5              | 19                        | 100                       | 8                    |    |
| 2NCRG 025 003 S04  | 2.5 X R0.3            | 6                         | 50                        | 4                    |    | 2NCRG 080 005 120 | 8 X R0.5              | 19                        | 120                       | 8                    |    |
| 2NCRG 025 005 S04  | 2.5 X R0.5            | 6                         | 50                        | 4                    |    | 2NCRG 080 010 070 | 8 X R1                | 16                        | 70                        | 8                    |    |
| 2NCRG 030 001 S06  | 3 X R0.1              | 8                         | 60                        | 6                    |    | 2NCRG 080 010 100 | 8 X R1                | 19                        | 100                       | 8                    |    |
| 2NCRG 030 002 S06  | 3 X R0.2              | 8                         | 60                        | 6                    |    | 2NCRG 080 010 120 | 8 X R1                | 19                        | 120                       | 8                    |    |
| 2NCRG 030 003 S06  | 3 X R0.3              | 8                         | 60                        | 6                    |    | 2NCRG 080 015 070 | 8 X R1.5              | 16                        | 70                        | 8                    |    |
| 2NCRG 030 005 S06  | 3 X R0.5              | 8                         | 60                        | 6                    |    | 2NCRG 080 015 100 | 8 X R1.5              | 19                        | 100                       | 8                    |    |
| 2NCRG 030 010 S06  | 3 X R1                | 8                         | 60                        | 6                    |    | 2NCRG 080 020 070 | 8 X R2                | 16                        | 70                        | 8                    |    |
| 2NCRG 040 001 060  | 4 X R0.1              | 9                         | 60                        | 4                    |    | 2NCRG 080 020 100 | 8 X R2                | 19                        | 100                       | 8                    |    |
| 2NCRG 040 001 080  | 4 X R0.1              | 9                         | 80                        | 4                    |    | 2NCRG 080 025 100 | 8 X R2.5              | 19                        | 100                       | 8                    |    |
| 2NCRG 040 001 S06  | 4 X R0.1              | 10                        | 70                        | 6                    |    | 2NCRG 080 030 100 | 8 X R3                | 19                        | 100                       | 8                    |    |
| 2NCRG 040 002 060  | 4 X R0.2              | 9                         | 60                        | 4                    |    | 2NCRG 080 035 100 | 8 X R3.5              | 19                        | 100                       | 8                    |    |
| 2NCRG 040 002 080  | 4 X R0.2              | 9                         | 80                        | 4                    |    | 2NCRG 100 001 075 | 10 X R0.1             | 19                        | 75                        | 10                   |    |
| 2NCRG 040 002 S06  | 4 X R0.2              | 10                        | 70                        | 6                    |    | 2NCRG 100 001 100 | 10 X R0.1             | 22                        | 100                       | 10                   |    |
| 2NCRG 040 003 060  | 4 X R0.3              | 9                         | 60                        | 4                    |    | 2NCRG 100 002 075 | 10 X R0.2             | 19                        | 75                        | 10                   |    |
| 2NCRG 040 003 080  | 4 X R0.3              | 9                         | 80                        | 4                    |    | 2NCRG 100 002 100 | 10 X R0.2             | 22                        | 100                       | 10                   |    |
| 2NCRG 040 003 S06  | 4 X R0.3              | 10                        | 70                        | 6                    |    | 2NCRG 100 003 075 | 10 X R0.3             | 19                        | 75                        | 10                   |    |
| 2NCRG 040 005 060  | 4 X R0.5              | 9                         | 60                        | 4                    |    | 2NCRG 100 003 100 | 10 X R0.3             | 22                        | 100                       | 10                   |    |
| 2NCRG 040 005 080  | 4 X R0.5              | 9                         | 80                        | 4                    |    | 2NCRG 100 005 075 | 10 X R0.5             | 19                        | 75                        | 10                   |    |
| 2NCRG 040 005 S06  | 4 X R0.5              | 10                        | 70                        | 6                    |    | 2NCRG 100 005 100 | 10 X R0.5             | 22                        | 100                       | 10                   |    |

단위 : mm

[illegible]