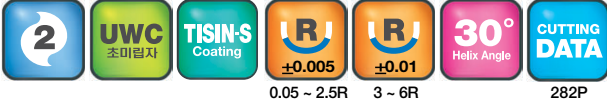


- 고정도강(HRc52~70), 프라하튼강 계열의 고정밀 가공 엔드밀
- 고품질 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 날부인선의 조도가 뛰어나 피삭재의 면조도가 우수합니다.
- 초미립자 초경합금(0.2µm)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.

#### • Endmills for pre-hardened and hardened steel(HRc52~70)

- Good wear resistance by high quality Si-based PVD coating.
- High precise edge tolerance.
- Very nice work surface finish.
- Outstanding performance at high speed machining by ultra fine (0.2 µm) WC grade.



0.05 ~ 2.5R 3 ~ 6R

282P

| D Size      | D Tolerance       |
|-------------|-------------------|
| Ø0.1 ~ 0.15 | +0 ~ -0.005mm     |
| Ø0.2 ~ 5    | +0 ~ -0.01mm      |
| Ø6 ~ 12     | -0.005 ~ -0.015mm |

단위 : mm

| Order Number           | 날경<br>Diameter<br>R × D | 날장<br>Length<br>of cut<br>L1 | 유효장<br>Effective<br>Length<br>L2 | 전장<br>Overall<br>Length<br>L | 샤프트<br>Shank<br>Dia<br>d | 비고 |
|------------------------|-------------------------|------------------------------|----------------------------------|------------------------------|--------------------------|----|
| 2JJRB 001 003 S04      | 0.05R X 0.1             | 0.15                         | 0.3                              | 40                           | 4                        |    |
| 2JJRB 001 005 S04      | 0.05R X 0.1             | 0.15                         | 0.5                              | 40                           | 4                        |    |
| New 2JJRB 0015 003 S04 | 0.075R X 0.15           | 0.15                         | 0.3                              | 40                           | 4                        |    |
| New 2JJRB 0015 005 S04 | 0.075R X 0.15           | 0.15                         | 0.5                              | 40                           | 4                        |    |
| New 2JJRB 0015 010 S04 | 0.075R X 0.15           | 0.15                         | 1                                | 40                           | 4                        |    |
| 2JJRB 002 005 S04      | 0.1R X 0.2              | 0.2                          | 0.5                              | 40                           | 4                        |    |
| 2JJRB 002 010 S04      | 0.1R X 0.2              | 0.2                          | 1                                | 40                           | 4                        |    |
| 2JJRB 002 015 S04      | 0.1R X 0.2              | 0.2                          | 1.5                              | 40                           | 4                        |    |
| 2JJRB 002 020 S04      | 0.1R X 0.2              | 0.2                          | 2                                | 40                           | 4                        |    |
| 2JJRB 002 025 S04      | 0.1R X 0.2              | 0.2                          | 2.5                              | 40                           | 4                        |    |
| 2JJRB 002 030 S04      | 0.1R X 0.2              | 0.2                          | 3                                | 40                           | 4                        |    |
| New 2JJRB 0025 005 S04 | 0.125R X 0.25           | 0.25                         | 0.5                              | 40                           | 4                        |    |
| New 2JJRB 0025 010 S04 | 0.125R X 0.25           | 0.25                         | 1                                | 40                           | 4                        |    |
| New 2JJRB 0025 015 S04 | 0.125R X 0.25           | 0.25                         | 1.5                              | 40                           | 4                        |    |
| New 2JJRB 0025 020 S04 | 0.125R X 0.25           | 0.25                         | 2                                | 40                           | 4                        |    |
| New 2JJRB 0025 025 S04 | 0.125R X 0.25           | 0.25                         | 2.5                              | 40                           | 4                        |    |
| New 2JJRB 0025 030 S04 | 0.125R X 0.25           | 0.25                         | 3                                | 40                           | 4                        |    |
| 2JJRB 003 010 S04      | 0.15R X 0.3             | 0.3                          | 1                                | 40                           | 4                        |    |
| 2JJRB 003 015 S04      | 0.15R X 0.3             | 0.3                          | 1.5                              | 40                           | 4                        |    |
| 2JJRB 003 020 S04      | 0.15R X 0.3             | 0.3                          | 2                                | 40                           | 4                        |    |
| 2JJRB 003 025 S04      | 0.15R X 0.3             | 0.3                          | 2.5                              | 40                           | 4                        |    |
| 2JJRB 003 030 S04      | 0.15R X 0.3             | 0.3                          | 3                                | 40                           | 4                        |    |
| 2JJRB 003 035 S04      | 0.15R X 0.3             | 0.3                          | 3.5                              | 40                           | 4                        |    |
| 2JJRB 003 040 S04      | 0.15R X 0.3             | 0.3                          | 4                                | 40                           | 4                        |    |
| 2JJRB 003 050 S04      | 0.15R X 0.3             | 0.3                          | 5                                | 40                           | 4                        |    |
| 2JJRB 004 010 S04      | 0.2R X 0.4              | 0.4                          | 1                                | 40                           | 4                        |    |
| 2JJRB 004 015 S04      | 0.2R X 0.4              | 0.4                          | 1.5                              | 40                           | 4                        |    |
| 2JJRB 004 020 S04      | 0.2R X 0.4              | 0.4                          | 2                                | 40                           | 4                        |    |
| 2JJRB 004 025 S04      | 0.2R X 0.4              | 0.4                          | 2.5                              | 40                           | 4                        |    |
| 2JJRB 004 030 S04      | 0.2R X 0.4              | 0.4                          | 3                                | 40                           | 4                        |    |
| 2JJRB 004 035 S04      | 0.2R X 0.4              | 0.4                          | 3.5                              | 40                           | 4                        |    |
| 2JJRB 004 040 S04      | 0.2R X 0.4              | 0.4                          | 4                                | 40                           | 4                        |    |
| 2JJRB 004 045 S04      | 0.2R X 0.4              | 0.4                          | 4.5                              | 40                           | 4                        |    |
| 2JJRB 004 050 S04      | 0.2R X 0.4              | 0.4                          | 5                                | 40                           | 4                        |    |
| 2JJRB 004 060 S04      | 0.2R X 0.4              | 0.4                          | 6                                | 40                           | 4                        |    |
| 2JJRB 004 080 S04      | 0.2R X 0.4              | 0.4                          | 8                                | 40                           | 4                        |    |
| 2JJRB 005 010 S04      | 0.25R X 0.5             | 0.5                          | 1                                | 45                           | 4                        |    |
| 2JJRB 005 010 S06      | 0.25R X 0.5             | 0.5                          | 1                                | 50                           | 6                        |    |
| 2JJRB 005 015 S04      | 0.25R X 0.5             | 0.5                          | 1.5                              | 45                           | 4                        |    |
| 2JJRB 005 020 S04      | 0.25R X 0.5             | 0.5                          | 2                                | 45                           | 4                        |    |
| 2JJRB 005 020 S06      | 0.25R X 0.5             | 0.5                          | 2                                | 50                           | 6                        |    |
| 2JJRB 005 025 S04      | 0.25R X 0.5             | 0.5                          | 2.5                              | 45                           | 4                        |    |
| 2JJRB 005 030 S04      | 0.25R X 0.5             | 0.5                          | 3                                | 45                           | 4                        |    |
| 2JJRB 005 030 S06      | 0.25R X 0.5             | 0.5                          | 3                                | 50                           | 6                        |    |
| 2JJRB 005 035 S04      | 0.25R X 0.5             | 0.5                          | 3.5                              | 45                           | 4                        |    |
| 2JJRB 005 040 S04      | 0.25R X 0.5             | 0.5                          | 4                                | 45                           | 4                        |    |
| 2JJRB 005 040 S06      | 0.25R X 0.5             | 0.5                          | 4                                | 50                           | 6                        |    |
| 2JJRB 005 045 S04      | 0.25R X 0.5             | 0.5                          | 4.5                              | 45                           | 4                        |    |
| 2JJRB 005 050 S04      | 0.25R X 0.5             | 0.5                          | 5                                | 45                           | 4                        |    |
| 2JJRB 005 050 S06      | 0.25R X 0.5             | 0.5                          | 5                                | 50                           | 6                        |    |

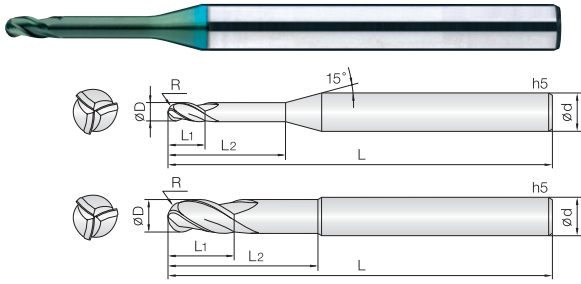
| Order Number      | 날경<br>Diameter<br>R × D | 날장<br>Length<br>of cut<br>L1 | 유효장<br>Effective<br>Length<br>L2 | 전장<br>Overall<br>Length<br>L | 샤프트<br>Shank<br>Dia<br>d | 비고 |
|-------------------|-------------------------|------------------------------|----------------------------------|------------------------------|--------------------------|----|
| 2JJRB 005 060 S04 | 0.25R X 0.5             | 0.5                          | 6                                | 45                           | 4                        |    |
| 2JJRB 005 060 S06 | 0.25R X 0.5             | 0.5                          | 6                                | 50                           | 6                        |    |
| 2JJRB 005 080 S04 | 0.25R X 0.5             | 0.5                          | 8                                | 45                           | 4                        |    |
| 2JJRB 005 100 S04 | 0.25R X 0.5             | 0.5                          | 10                               | 45                           | 4                        |    |
| 2JJRB 005 120 S04 | 0.25R X 0.5             | 0.5                          | 12                               | 45                           | 4                        |    |
| 2JJRB 006 010 S04 | 0.3R X 0.6              | 0.6                          | 1                                | 45                           | 4                        |    |
| 2JJRB 006 010 S06 | 0.3R X 0.6              | 0.6                          | 1                                | 50                           | 6                        |    |
| 2JJRB 006 020 S04 | 0.3R X 0.6              | 0.6                          | 2                                | 45                           | 4                        |    |
| 2JJRB 006 020 S06 | 0.3R X 0.6              | 0.6                          | 2                                | 50                           | 6                        |    |
| 2JJRB 006 030 S04 | 0.3R X 0.6              | 0.6                          | 3                                | 45                           | 4                        |    |
| 2JJRB 006 030 S06 | 0.3R X 0.6              | 0.6                          | 3                                | 50                           | 6                        |    |
| 2JJRB 006 040 S04 | 0.3R X 0.6              | 0.6                          | 4                                | 45                           | 4                        |    |
| 2JJRB 006 040 S06 | 0.3R X 0.6              | 0.6                          | 4                                | 50                           | 6                        |    |
| 2JJRB 006 050 S04 | 0.3R X 0.6              | 0.6                          | 5                                | 45                           | 4                        |    |
| 2JJRB 006 050 S06 | 0.3R X 0.6              | 0.6                          | 5                                | 50                           | 6                        |    |
| 2JJRB 006 060 S04 | 0.3R X 0.6              | 0.6                          | 6                                | 45                           | 4                        |    |
| 2JJRB 006 060 S06 | 0.3R X 0.6              | 0.6                          | 6                                | 50                           | 6                        |    |
| 2JJRB 006 080 S04 | 0.3R X 0.6              | 0.6                          | 8                                | 45                           | 4                        |    |
| 2JJRB 006 080 S06 | 0.3R X 0.6              | 0.6                          | 8                                | 50                           | 6                        |    |
| 2JJRB 006 100 S04 | 0.3R X 0.6              | 0.6                          | 10                               | 45                           | 4                        |    |
| 2JJRB 006 120 S04 | 0.3R X 0.6              | 0.6                          | 12                               | 45                           | 4                        |    |
| 2JJRB 006 140 S04 | 0.3R X 0.6              | 0.6                          | 14                               | 45                           | 4                        |    |
| 2JJRB 007 020 S04 | 0.35R X 0.7             | 0.7                          | 2                                | 45                           | 4                        |    |
| 2JJRB 007 040 S04 | 0.35R X 0.7             | 0.7                          | 4                                | 45                           | 4                        |    |
| 2JJRB 007 060 S04 | 0.35R X 0.7             | 0.7                          | 6                                | 45                           | 4                        |    |
| 2JJRB 007 080 S04 | 0.35R X 0.7             | 0.7                          | 8                                | 45                           | 4                        |    |
| 2JJRB 007 100 S04 | 0.35R X 0.7             | 0.7                          | 10                               | 45                           | 4                        |    |
| 2JJRB 007 120 S04 | 0.35R X 0.7             | 0.7                          | 12                               | 45                           | 4                        |    |
| 2JJRB 008 020 S04 | 0.4R X 0.8              | 0.8                          | 2                                | 45                           | 4                        |    |
| 2JJRB 008 020 S06 | 0.4R X 0.8              | 0.8                          | 2                                | 50                           | 6                        |    |
| 2JJRB 008 030 S04 | 0.4R X 0.8              | 0.8                          | 3                                | 45                           | 4                        |    |
| 2JJRB 008 030 S06 | 0.4R X 0.8              | 0.8                          | 3                                | 50                           | 6                        |    |
| 2JJRB 008 040 S04 | 0.4R X 0.8              | 0.8                          | 4                                | 45                           | 4                        |    |
| 2JJRB 008 040 S06 | 0.4R X 0.8              | 0.8                          | 4                                | 50                           | 6                        |    |
| 2JJRB 008 050 S04 | 0.4R X 0.8              | 0.8                          | 5                                | 45                           | 4                        |    |
| 2JJRB 008 050 S06 | 0.4R X 0.8              | 0.8                          | 5                                | 50                           | 6                        |    |
| 2JJRB 008 060 S04 | 0.4R X 0.8              | 0.8                          | 6                                | 45                           | 4                        |    |
| 2JJRB 008 060 S06 | 0.4R X 0.8              | 0.8                          | 6                                | 50                           | 6                        |    |
| 2JJRB 008 080 S04 | 0.4R X 0.8              | 0.8                          | 8                                | 45                           | 4                        |    |
| 2JJRB 008 080 S06 | 0.4R X 0.8              | 0.8                          | 8                                | 50                           | 6                        |    |
| 2JJRB 008 100 S04 | 0.4R X 0.8              | 0.8                          | 10                               | 45                           | 4                        |    |
| 2JJRB 008 120 S04 | 0.4R X 0.8              | 0.8                          | 12                               | 45                           | 4                        |    |
| 2JJRB 009 040 S04 | 0.45R X 0.9             | 0.9                          | 4                                | 45                           | 4                        |    |
| 2JJRB 009 060 S04 | 0.45R X 0.9             | 0.9                          | 6                                | 45                           | 4                        |    |
| 2JJRB 009 080 S04 | 0.45R X 0.9             | 0.9                          | 8                                | 45                           | 4                        |    |
| 2JJRB 009 100 S04 | 0.45R X 0.9             | 0.9                          | 10                               | 50                           | 4                        |    |
| 2JJRB 009 120 S04 | 0.45R X 0.9             | 0.9                          | 12                               | 50                           | 4                        |    |
| 2JJRB 010 020 S04 | 0.5R X 1                | 1                            | 2                                | 45                           | 4                        |    |
| 2JJRB 010 020 S06 | 0.5R X 1                | 1                            | 2                                | 50                           | 6                        |    |
| 2JJRB 010 030 S04 | 0.5R X 1                | 1                            | 3                                | 45                           | 4                        |    |

단위 : mm

| Order Number      | 날경<br>Diameter<br>R×D | 날장<br>Length<br>of cut<br>L1 | 유효장<br>Effective<br>Length<br>L2 | 전장<br>Overall<br>Length<br>L | 생크<br>Shank<br>Dia<br>d | 비고 | Order Number      | 날경<br>Diameter<br>R×D | 날장<br>Length<br>of cut<br>L1 | 유효장<br>Effective<br>Length<br>L2 | 전장<br>Overall<br>Length<br>L | 생크<br>Shank<br>Dia<br>d | 비고 |
|-------------------|-----------------------|------------------------------|----------------------------------|------------------------------|-------------------------|----|-------------------|-----------------------|------------------------------|----------------------------------|------------------------------|-------------------------|----|
| 2JJRB 010 030 S06 | 0.5R X 1              | 1                            | 3                                | 50                           | 6                       |    | 2JJRB 015 160 S04 | 0.75R X 1.5           | 1.5                          | 16                               | 50                           | 4                       |    |
| 2JJRB 010 040 S04 | 0.5R X 1              | 1                            | 4                                | 45                           | 4                       |    | 2JJRB 015 160 S06 | 0.75R X 1.5           | 1.5                          | 16                               | 60                           | 6                       |    |
| 2JJRB 010 040 S06 | 0.5R X 1              | 1                            | 4                                | 50                           | 6                       |    | 2JJRB 015 180 S04 | 0.75R X 1.5           | 1.5                          | 18                               | 50                           | 4                       |    |
| 2JJRB 010 050 S04 | 0.5R X 1              | 1                            | 5                                | 45                           | 4                       |    | 2JJRB 015 200 S04 | 0.75R X 1.5           | 1.5                          | 20                               | 50                           | 4                       |    |
| 2JJRB 010 050 S06 | 0.5R X 1              | 1                            | 5                                | 50                           | 6                       |    | 2JJRB 015 220 S04 | 0.75R X 1.5           | 1.5                          | 22                               | 60                           | 4                       |    |
| 2JJRB 010 060 S04 | 0.5R X 1              | 1                            | 6                                | 45                           | 4                       |    | 2JJRB 015 250 S04 | 0.75R X 1.5           | 1.5                          | 25                               | 60                           | 4                       |    |
| 2JJRB 010 060 S06 | 0.5R X 1              | 1                            | 6                                | 50                           | 6                       |    | 2JJRB 015 300 S04 | 0.75R X 1.5           | 1.5                          | 30                               | 70                           | 4                       |    |
| 2JJRB 010 080 S04 | 0.5R X 1              | 1                            | 8                                | 45                           | 4                       |    | 2JJRB 016 060 S04 | 0.8R X 1.6            | 1.6                          | 6                                | 45                           | 4                       |    |
| 2JJRB 010 080 S06 | 0.5R X 1              | 1                            | 8                                | 50                           | 6                       |    | 2JJRB 016 080 S04 | 0.8R X 1.6            | 1.6                          | 8                                | 45                           | 4                       |    |
| 2JJRB 010 100 S04 | 0.5R X 1              | 1                            | 10                               | 50                           | 4                       |    | 2JJRB 016 120 S04 | 0.8R X 1.6            | 1.6                          | 12                               | 50                           | 4                       |    |
| 2JJRB 010 100 S06 | 0.5R X 1              | 1                            | 10                               | 50                           | 6                       |    | 2JJRB 016 160 S04 | 0.8R X 1.6            | 1.6                          | 16                               | 50                           | 4                       |    |
| 2JJRB 010 120 S04 | 0.5R X 1              | 1                            | 12                               | 50                           | 4                       |    | 2JJRB 016 200 S04 | 0.8R X 1.6            | 1.6                          | 20                               | 50                           | 4                       |    |
| 2JJRB 010 120 S06 | 0.5R X 1              | 1                            | 12                               | 50                           | 6                       |    | 2JJRB 018 060 S04 | 0.9R X 1.8            | 1.8                          | 6                                | 45                           | 4                       |    |
| 2JJRB 010 140 S04 | 0.5R X 1              | 1                            | 14                               | 50                           | 4                       |    | 2JJRB 018 080 S04 | 0.9R X 1.8            | 1.8                          | 8                                | 45                           | 4                       |    |
| 2JJRB 010 160 S04 | 0.5R X 1              | 1                            | 16                               | 50                           | 4                       |    | 2JJRB 018 120 S04 | 0.9R X 1.8            | 1.8                          | 12                               | 50                           | 4                       |    |
| 2JJRB 010 180 S04 | 0.5R X 1              | 1                            | 18                               | 50                           | 4                       |    | 2JJRB 018 160 S04 | 0.9R X 1.8            | 1.8                          | 16                               | 50                           | 4                       |    |
| 2JJRB 010 200 S04 | 0.5R X 1              | 1                            | 20                               | 50                           | 4                       |    | 2JJRB 018 200 S04 | 0.9R X 1.8            | 1.8                          | 20                               | 50                           | 4                       |    |
| 2JJRB 010 220 S04 | 0.5R X 1              | 1                            | 22                               | 60                           | 4                       |    | 2JJRB 020 040 S04 | 1R X 2                | 2                            | 4                                | 45                           | 4                       |    |
| 2JJRB 010 250 S04 | 0.5R X 1              | 1                            | 25                               | 60                           | 4                       |    | 2JJRB 020 040 S06 | 1R X 2                | 2                            | 4                                | 50                           | 6                       |    |
| 2JJRB 012 040 S04 | 0.6R X 1.2            | 1.2                          | 4                                | 45                           | 4                       |    | 2JJRB 020 060 S04 | 1R X 2                | 2                            | 6                                | 45                           | 4                       |    |
| 2JJRB 012 040 S06 | 0.6R X 1.2            | 1.2                          | 4                                | 50                           | 6                       |    | 2JJRB 020 060 S06 | 1R X 2                | 2                            | 6                                | 50                           | 6                       |    |
| 2JJRB 012 060 S04 | 0.6R X 1.2            | 1.2                          | 6                                | 45                           | 4                       |    | 2JJRB 020 080 S04 | 1R X 2                | 2                            | 8                                | 45                           | 4                       |    |
| 2JJRB 012 060 S06 | 0.6R X 1.2            | 1.2                          | 6                                | 50                           | 6                       |    | 2JJRB 020 080 S06 | 1R X 2                | 2                            | 8                                | 50                           | 6                       |    |
| 2JJRB 012 080 S04 | 0.6R X 1.2            | 1.2                          | 8                                | 45                           | 4                       |    | 2JJRB 020 100 S04 | 1R X 2                | 2                            | 10                               | 50                           | 4                       |    |
| 2JJRB 012 080 S06 | 0.6R X 1.2            | 1.2                          | 8                                | 50                           | 6                       |    | 2JJRB 020 100 S06 | 1R X 2                | 2                            | 10                               | 50                           | 6                       |    |
| 2JJRB 012 100 S04 | 0.6R X 1.2            | 1.2                          | 10                               | 50                           | 4                       |    | 2JJRB 020 120 S04 | 1R X 2                | 2                            | 12                               | 50                           | 4                       |    |
| 2JJRB 012 100 S06 | 0.6R X 1.2            | 1.2                          | 10                               | 50                           | 6                       |    | 2JJRB 020 120 S06 | 1R X 2                | 2                            | 12                               | 50                           | 6                       |    |
| 2JJRB 012 120 S04 | 0.6R X 1.2            | 1.2                          | 12                               | 50                           | 4                       |    | 2JJRB 020 140 S04 | 1R X 2                | 2                            | 14                               | 50                           | 4                       |    |
| 2JJRB 012 120 S06 | 0.6R X 1.2            | 1.2                          | 12                               | 50                           | 6                       |    | 2JJRB 020 140 S06 | 1R X 2                | 2                            | 14                               | 50                           | 6                       |    |
| 2JJRB 012 160 S04 | 0.6R X 1.2            | 1.2                          | 16                               | 50                           | 4                       |    | 2JJRB 020 160 S04 | 1R X 2                | 2                            | 16                               | 50                           | 4                       |    |
| 2JJRB 012 200 S04 | 0.6R X 1.2            | 1.2                          | 20                               | 50                           | 4                       |    | 2JJRB 020 160 S06 | 1R X 2                | 2                            | 16                               | 60                           | 6                       |    |
| 2JJRB 012 240 S04 | 0.6R X 1.2            | 1.2                          | 24                               | 60                           | 4                       |    | 2JJRB 020 180 S04 | 1R X 2                | 2                            | 18                               | 50                           | 4                       |    |
| 2JJRB 014 060 S04 | 0.7R X 1.4            | 1.4                          | 6                                | 45                           | 4                       |    | 2JJRB 020 180 S06 | 1R X 2                | 2                            | 18                               | 60                           | 6                       |    |
| 2JJRB 014 080 S04 | 0.7R X 1.4            | 1.4                          | 8                                | 45                           | 4                       |    | 2JJRB 020 200 S04 | 1R X 2                | 2                            | 20                               | 50                           | 4                       |    |
| 2JJRB 014 120 S04 | 0.7R X 1.4            | 1.4                          | 12                               | 50                           | 4                       |    | 2JJRB 020 200 S06 | 1R X 2                | 2                            | 20                               | 60                           | 6                       |    |
| 2JJRB 014 160 S04 | 0.7R X 1.4            | 1.4                          | 16                               | 50                           | 4                       |    | 2JJRB 020 220 S04 | 1R X 2                | 2                            | 22                               | 60                           | 4                       |    |
| 2JJRB 015 030 S04 | 0.75R X 1.5           | 1.5                          | 3                                | 45                           | 4                       |    | 2JJRB 020 250 S04 | 1R X 2                | 2                            | 25                               | 60                           | 4                       |    |
| 2JJRB 015 030 S06 | 0.75R X 1.5           | 1.5                          | 3                                | 50                           | 6                       |    | 2JJRB 020 300 S04 | 1R X 2                | 2                            | 30                               | 60                           | 4                       |    |
| 2JJRB 015 040 S04 | 0.75R X 1.5           | 1.5                          | 4                                | 45                           | 4                       |    | 2JJRB 025 080 S04 | 1.25R X 2.5           | 2.5                          | 8                                | 45                           | 4                       |    |
| 2JJRB 015 040 S06 | 0.75R X 1.5           | 1.5                          | 4                                | 50                           | 6                       |    | 2JJRB 025 080 S06 | 1.25R X 2.5           | 2.5                          | 8                                | 50                           | 6                       |    |
| 2JJRB 015 060 S04 | 0.75R X 1.5           | 1.5                          | 6                                | 45                           | 4                       |    | 2JJRB 025 100 S04 | 1.25R X 2.5           | 2.5                          | 10                               | 50                           | 4                       |    |
| 2JJRB 015 060 S06 | 0.75R X 1.5           | 1.5                          | 6                                | 50                           | 6                       |    | 2JJRB 025 100 S06 | 1.25R X 2.5           | 2.5                          | 10                               | 50                           | 6                       |    |
| 2JJRB 015 080 S04 | 0.75R X 1.5           | 1.5                          | 8                                | 45                           | 4                       |    | 2JJRB 025 120 S04 | 1.25R X 2.5           | 2.5                          | 12                               | 50                           | 4                       |    |
| 2JJRB 015 080 S06 | 0.75R X 1.5           | 1.5                          | 8                                | 50                           | 6                       |    | 2JJRB 025 120 S06 | 1.25R X 2.5           | 2.5                          | 12                               | 50                           | 6                       |    |
| 2JJRB 015 100 S04 | 0.75R X 1.5           | 1.5                          | 10                               | 50                           | 4                       |    | 2JJRB 025 160 S04 | 1.25R X 2.5           | 2.5                          | 16                               | 50                           | 4                       |    |
| 2JJRB 015 100 S06 | 0.75R X 1.5           | 1.5                          | 10                               | 50                           | 6                       |    | 2JJRB 025 160 S06 | 1.25R X 2.5           | 2.5                          | 16                               | 60                           | 6                       |    |
| 2JJRB 015 120 S04 | 0.75R X 1.5           | 1.5                          | 12                               | 50                           | 4                       |    | 2JJRB 025 200 S04 | 1.25R X 2.5           | 2.5                          | 20                               | 60                           | 4                       |    |
| 2JJRB 015 120 S06 | 0.75R X 1.5           | 1.5                          | 12                               | 50                           | 6                       |    | 2JJRB 025 200 S06 | 1.25R X 2.5           | 2.5                          | 20                               | 60                           | 6                       |    |
| 2JJRB 015 140 S04 | 0.75R X 1.5           | 1.5                          | 14                               | 50                           | 4                       |    | 2JJRB 025 250 S04 | 1.25R X 2.5           | 2.5                          | 25                               | 60                           | 4                       |    |
| 2JJRB 015 140 S06 | 0.75R X 1.5           | 1.5                          | 14                               | 50                           | 6                       |    | 2JJRB 025 300 S04 | 1.25R X 2.5           | 2.5                          | 30                               | 70                           | 4                       |    |

단위 : mm

| Order Number      | 날경<br>Diameter<br>R × D | 날장<br>Length<br>of cut<br>L1 | 유효장<br>Effective<br>Length<br>L2 | 전장<br>Overall<br>Length<br>L | 생크<br>Shank<br>Dia<br>d | 비고 | Order Number | 날경<br>Diameter<br>R × D | 날장<br>Length<br>of cut<br>L1 | 유효장<br>Effective<br>Length<br>L2 | 전장<br>Overall<br>Length<br>L | 생크<br>Shank<br>Dia<br>d | 비고 |
|-------------------|-------------------------|------------------------------|----------------------------------|------------------------------|-------------------------|----|--------------|-------------------------|------------------------------|----------------------------------|------------------------------|-------------------------|----|
| 2JJRB 030 060 S06 | 1.5R X 3                | 3                            | 6                                | 50                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 030 080 S06 | 1.5R X 3                | 3                            | 8                                | 50                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 030 100 S06 | 1.5R X 3                | 3                            | 10                               | 50                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 030 120 S06 | 1.5R X 3                | 3                            | 12                               | 50                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 030 160 S06 | 1.5R X 3                | 3                            | 16                               | 60                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 030 200 S06 | 1.5R X 3                | 3                            | 20                               | 60                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 030 250 S06 | 1.5R X 3                | 3                            | 25                               | 65                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 030 300 S06 | 1.5R X 3                | 3                            | 30                               | 70                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 030 350 S06 | 1.5R X 3                | 3                            | 35                               | 75                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 030 400 S06 | 1.5R X 3                | 3                            | 40                               | 80                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 030 450 S06 | 1.5R X 3                | 3                            | 45                               | 90                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 030 500 S06 | 1.5R X 3                | 3                            | 50                               | 100                          | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 035 100 S06 | 1.75R X 3.5             | 3.5                          | 10                               | 50                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 035 150 S06 | 1.75R X 3.5             | 3.5                          | 15                               | 60                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 035 200 S06 | 1.75R X 3.5             | 3.5                          | 20                               | 60                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 035 250 S06 | 1.75R X 3.5             | 3.5                          | 25                               | 65                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 035 300 S06 | 1.75R X 3.5             | 3.5                          | 30                               | 70                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 035 350 S06 | 1.75R X 3.5             | 3.5                          | 35                               | 75                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 035 400 S06 | 1.75R X 3.5             | 3.5                          | 40                               | 80                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 040 080 S06 | 2R X 4                  | 4                            | 8                                | 50                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 040 100 S06 | 2R X 4                  | 4                            | 10                               | 50                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 040 120 S06 | 2R X 4                  | 4                            | 12                               | 50                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 040 160 S06 | 2R X 4                  | 4                            | 16                               | 60                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 040 200 S06 | 2R X 4                  | 4                            | 20                               | 60                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 040 250 S06 | 2R X 4                  | 4                            | 25                               | 65                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 040 300 S06 | 2R X 4                  | 4                            | 30                               | 70                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 040 350 S06 | 2R X 4                  | 4                            | 35                               | 75                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 040 400 S06 | 2R X 4                  | 4                            | 40                               | 80                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 040 450 S06 | 2R X 4                  | 4                            | 45                               | 90                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 040 500 S06 | 2R X 4                  | 4                            | 50                               | 100                          | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 050 160 S06 | 2.5R X 5                | 6                            | 16                               | 60                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 050 200 S06 | 2.5R X 5                | 6                            | 20                               | 60                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 050 250 S06 | 2.5R X 5                | 6                            | 25                               | 70                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 050 300 S06 | 2.5R X 5                | 6                            | 30                               | 75                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 050 400 S06 | 2.5R X 5                | 6                            | 40                               | 80                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 050 450 S06 | 2.5R X 5                | 6                            | 45                               | 90                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 050 500 S06 | 2.5R X 5                | 6                            | 50                               | 100                          | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 060 150 S06 | 3R X 6                  | 10                           | 15                               | 55                           | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 060 300 100 | 3R X 6                  | 10                           | 30                               | 100                          | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 060 500 120 | 3R X 6                  | 10                           | 50                               | 120                          | 6                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 080 250 060 | 4R X 8                  | 12                           | 25                               | 60                           | 8                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 080 300 100 | 4R X 8                  | 12                           | 30                               | 100                          | 8                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 080 600 120 | 4R X 8                  | 12                           | 60                               | 120                          | 8                       |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 100 300 070 | 5R X 10                 | 16                           | 30                               | 70                           | 10                      |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 100 450 100 | 5R X 10                 | 16                           | 45                               | 100                          | 10                      |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 100 600 130 | 5R X 10                 | 16                           | 60                               | 130                          | 10                      |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 120 300 075 | 6R X 12                 | 18                           | 30                               | 75                           | 12                      |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 120 500 110 | 6R X 12                 | 18                           | 50                               | 110                          | 12                      |    |              |                         |                              |                                  |                              |                         |    |
| 2JJRB 120 600 130 | 6R X 12                 | 18                           | 60                               | 130                          | 12                      |    |              |                         |                              |                                  |                              |                         |    |



- 고정도강(HRc52~70), 프리하든강 계열의 고정밀 가공 엔드밀
- 고품량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 날부인선의 조도가 뛰어나 피삭재의 면조도가 우수합니다.
- 초미립자 초경합금(0.2 $\mu$ m)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.
- Endmills for pre-hardened and hardened steel(HRc52~70)
- Good wear resistance by high quality Si-based PVD coating.
- High precise edge tolerance.
- Very nice work surface finish.
- Outstanding performance at high speed machining by ultra fine (0.2 $\mu$ m) WC grade.

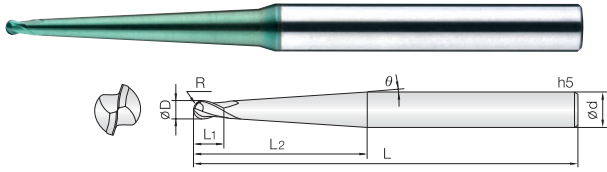


| D Size  | D Tolerance       |
|---------|-------------------|
| Ø1 ~ 5  | +0 ~ -0.01mm      |
| Ø6 ~ 12 | -0.005 ~ -0.015mm |

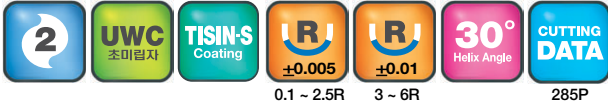
단위 : mm

| Order Number      | 날경<br>Diameter<br>R×D | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 생크<br>Shank Dia<br>d | 비고 |
|-------------------|-----------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| 3JJRB 010 040 S04 | 0.5R X 1              | 1.2                       | 4                             | 50                        | 4                    |    |
| 3JJRB 010 060 S04 | 0.5R X 1              | 1.2                       | 6                             | 50                        | 4                    |    |
| 3JJRB 010 080 S04 | 0.5R X 1              | 1.2                       | 8                             | 50                        | 4                    |    |
| 3JJRB 010 100 S04 | 0.5R X 1              | 1.2                       | 10                            | 50                        | 4                    |    |
| 3JJRB 010 120 S04 | 0.5R X 1              | 1.2                       | 12                            | 50                        | 4                    |    |
| 3JJRB 010 160 S04 | 0.5R X 1              | 1.2                       | 16                            | 50                        | 4                    |    |
| 3JJRB 015 060 S04 | 0.75R X 1.5           | 1.8                       | 6                             | 50                        | 4                    |    |
| 3JJRB 015 080 S04 | 0.75R X 1.5           | 1.8                       | 8                             | 50                        | 4                    |    |
| 3JJRB 015 100 S04 | 0.75R X 1.5           | 1.8                       | 10                            | 50                        | 4                    |    |
| 3JJRB 015 120 S04 | 0.75R X 1.5           | 1.8                       | 12                            | 50                        | 4                    |    |
| 3JJRB 015 160 S04 | 0.75R X 1.5           | 1.8                       | 16                            | 50                        | 4                    |    |
| 3JJRB 015 200 S04 | 0.75R X 1.5           | 1.8                       | 20                            | 60                        | 4                    |    |
| 3JJRB 020 080 S04 | 1R X 2                | 2.4                       | 8                             | 50                        | 4                    |    |
| 3JJRB 020 100 S04 | 1R X 2                | 2.4                       | 10                            | 50                        | 4                    |    |
| 3JJRB 020 120 S04 | 1R X 2                | 2.4                       | 12                            | 50                        | 4                    |    |
| 3JJRB 020 160 S04 | 1R X 2                | 2.4                       | 16                            | 50                        | 4                    |    |
| 3JJRB 020 200 S04 | 1R X 2                | 2.4                       | 20                            | 60                        | 4                    |    |
| 3JJRB 020 250 S04 | 1R X 2                | 2.4                       | 25                            | 70                        | 4                    |    |
| 3JJRB 025 080 S04 | 1.25R X 2.5           | 3                         | 8                             | 50                        | 4                    |    |
| 3JJRB 025 100 S04 | 1.25R X 2.5           | 3                         | 10                            | 50                        | 4                    |    |
| 3JJRB 025 120 S04 | 1.25R X 2.5           | 3                         | 12                            | 50                        | 4                    |    |
| 3JJRB 025 160 S04 | 1.25R X 2.5           | 3                         | 16                            | 50                        | 4                    |    |
| 3JJRB 025 200 S04 | 1.25R X 2.5           | 3                         | 20                            | 60                        | 4                    |    |
| 3JJRB 025 250 S04 | 1.25R X 2.5           | 3                         | 25                            | 70                        | 4                    |    |
| 3JJRB 030 120 S06 | 1.5R X 3              | 3.6                       | 12                            | 60                        | 6                    |    |
| 3JJRB 030 160 S06 | 1.5R X 3              | 3.6                       | 16                            | 60                        | 6                    |    |
| 3JJRB 030 200 S06 | 1.5R X 3              | 3.6                       | 20                            | 65                        | 6                    |    |
| 3JJRB 030 250 S06 | 1.5R X 3              | 3.6                       | 25                            | 70                        | 6                    |    |
| 3JJRB 030 300 S06 | 1.5R X 3              | 3.6                       | 30                            | 75                        | 6                    |    |
| 3JJRB 030 400 S06 | 1.5R X 3              | 3.6                       | 40                            | 90                        | 6                    |    |
| 3JJRB 030 500 S06 | 1.5R X 3              | 3.6                       | 50                            | 100                       | 6                    |    |
| 3JJRB 040 160 S06 | 2R X 4                | 4.8                       | 16                            | 60                        | 6                    |    |
| 3JJRB 040 200 S06 | 2R X 4                | 4.8                       | 20                            | 65                        | 6                    |    |
| 3JJRB 040 250 S06 | 2R X 4                | 4.8                       | 25                            | 70                        | 6                    |    |
| 3JJRB 040 300 S06 | 2R X 4                | 4.8                       | 30                            | 75                        | 6                    |    |
| 3JJRB 040 400 S06 | 2R X 4                | 4.8                       | 40                            | 90                        | 6                    |    |
| 3JJRB 040 500 S06 | 2R X 4                | 4.8                       | 50                            | 100                       | 6                    |    |
| 3JJRB 040 600 S06 | 2R X 4                | 4.8                       | 60                            | 110                       | 6                    |    |
| 3JJRB 050 300 S06 | 2.5R X 5              | 6                         | 30                            | 75                        | 6                    |    |
| 3JJRB 050 400 S06 | 2.5R X 5              | 6                         | 40                            | 90                        | 6                    |    |
| 3JJRB 050 500 S06 | 2.5R X 5              | 6                         | 50                            | 100                       | 6                    |    |
| 3JJRB 050 600 S06 | 2.5R X 5              | 6                         | 60                            | 110                       | 6                    |    |
| 3JJRB 060 200 060 | 3R X 6                | 9                         | 20                            | 60                        | 6                    |    |
| 3JJRB 060 300 090 | 3R X 6                | 9                         | 30                            | 90                        | 6                    |    |
| 3JJRB 080 250 060 | 4R X 8                | 12                        | 25                            | 60                        | 8                    |    |
| 3JJRB 080 400 100 | 4R X 8                | 12                        | 40                            | 100                       | 8                    |    |
| 3JJRB 100 300 070 | 5R X 10               | 15                        | 30                            | 70                        | 10                   |    |
| 3JJRB 100 500 110 | 5R X 10               | 15                        | 50                            | 110                       | 10                   |    |
| 3JJRB 120 350 075 | 6R X 12               | 18                        | 35                            | 75                        | 12                   |    |
| 3JJRB 120 600 110 | 6R X 12               | 18                        | 60                            | 110                       | 12                   |    |





- 고경도강(HRc52~70), 프리하든강 계열의 고정밀 가공 엔드밀
- 고품량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 유효장을 테이퍼 설계하여 깊은 홈 작업시 목부 파손 및 떨림을 최소화 하였습니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 초미립자 초경합금(0.2 $\mu$ m)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.
- Endmills for pre-hardened and hardened steel(HRc52~70)
- Good wear resistance by high quality Si-based PVD coating.
- Minimize chattering and fracturing by taper designed flute.
- High precise edge tolerance.
- Outstanding performance at high speed machining by ultra fine (0.2 $\mu$ m) WC grade.



0.1 ~ 2.5R

3 ~ 6R

285P

| D Size   | D Tolerance       |
|----------|-------------------|
| Ø0.2 ~ 5 | +0 ~ -0.01mm      |
| Ø6 ~ 12  | -0.005 ~ -0.015mm |

단위 : mm

| Order Number          | 날경<br>Diameter<br>R x D | 각도<br>Angle<br>$\theta$ | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샹크<br>Shank Dia<br>d | 비고 |
|-----------------------|-------------------------|-------------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| 2JJTB 002 003 015     | 0.1R X 0.2              | 0°30'                   | 0.2                       | 1.5                           | 40                        | 4                    |    |
| 2JJTB 002 003 020     | 0.1R X 0.2              | 0°30'                   | 0.2                       | 2                             | 40                        | 4                    |    |
| 2JJTB 002 010 015     | 0.1R X 0.2              | 1°                      | 0.2                       | 1.5                           | 40                        | 4                    |    |
| 2JJTB 002 010 020     | 0.1R X 0.2              | 1°                      | 0.2                       | 2                             | 40                        | 4                    |    |
| 2JJTB 002 010 025     | 0.1R X 0.2              | 1°                      | 0.2                       | 2.5                           | 40                        | 4                    |    |
| 2JJTB 002 013 015     | 0.1R X 0.2              | 1°30'                   | 0.2                       | 1.5                           | 40                        | 4                    |    |
| 2JJTB 002 013 020     | 0.1R X 0.2              | 1°30'                   | 0.2                       | 2                             | 40                        | 4                    |    |
| 2JJTB 002 013 025     | 0.1R X 0.2              | 1°30'                   | 0.2                       | 2.5                           | 40                        | 4                    |    |
| 2JJTB 002 020 015     | 0.1R X 0.2              | 2°                      | 0.2                       | 1.5                           | 40                        | 4                    |    |
| 2JJTB 002 020 020     | 0.1R X 0.2              | 2°                      | 0.2                       | 2                             | 40                        | 4                    |    |
| 2JJTB 002 020 025     | 0.1R X 0.2              | 2°                      | 0.2                       | 2.5                           | 40                        | 4                    |    |
| 2JJTB 002 030 015     | 0.1R X 0.2              | 3°                      | 0.2                       | 1.5                           | 40                        | 4                    |    |
| 2JJTB 002 030 020     | 0.1R X 0.2              | 3°                      | 0.2                       | 2                             | 40                        | 4                    |    |
| 2JJTB 002 030 025     | 0.1R X 0.2              | 3°                      | 0.2                       | 2.5                           | 40                        | 4                    |    |
| New 2JJTB 002 030 030 | 0.1R X 0.2              | 3°                      | 0.2                       | 3                             | 45                        | 4                    |    |
| 2JJTB 002 050 020     | 0.1R X 0.2              | 5°                      | 0.2                       | 2                             | 40                        | 4                    |    |
| New 2JJTB 002 050 030 | 0.1R X 0.2              | 5°                      | 0.2                       | 3                             | 45                        | 4                    |    |
| 2JJTB 003 003 030     | 0.15R X 0.3             | 0°30'                   | 0.3                       | 3                             | 40                        | 4                    |    |
| 2JJTB 003 010 020     | 0.15R X 0.3             | 1°                      | 0.3                       | 2                             | 40                        | 4                    |    |
| 2JJTB 003 010 030     | 0.15R X 0.3             | 1°                      | 0.3                       | 3                             | 40                        | 4                    |    |
| 2JJTB 003 010 040     | 0.15R X 0.3             | 1°                      | 0.3                       | 4                             | 40                        | 4                    |    |
| 2JJTB 003 010 050     | 0.15R X 0.3             | 1°                      | 0.3                       | 5                             | 40                        | 4                    |    |
| 2JJTB 003 013 020     | 0.15R X 0.3             | 1°30'                   | 0.3                       | 2                             | 40                        | 4                    |    |
| 2JJTB 003 013 030     | 0.15R X 0.3             | 1°30'                   | 0.3                       | 3                             | 40                        | 4                    |    |
| 2JJTB 003 013 040     | 0.15R X 0.3             | 1°30'                   | 0.3                       | 4                             | 40                        | 4                    |    |
| 2JJTB 003 013 050     | 0.15R X 0.3             | 1°30'                   | 0.3                       | 5                             | 40                        | 4                    |    |
| 2JJTB 003 020 020     | 0.15R X 0.3             | 2°                      | 0.3                       | 2                             | 40                        | 4                    |    |
| 2JJTB 003 020 030     | 0.15R X 0.3             | 2°                      | 0.3                       | 3                             | 40                        | 4                    |    |
| 2JJTB 003 020 040     | 0.15R X 0.3             | 2°                      | 0.3                       | 4                             | 40                        | 4                    |    |
| 2JJTB 003 020 050     | 0.15R X 0.3             | 2°                      | 0.3                       | 5                             | 40                        | 4                    |    |
| New 2JJTB 003 020 060 | 0.15R X 0.3             | 2°                      | 0.3                       | 6                             | 45                        | 4                    |    |
| 2JJTB 003 030 020     | 0.15R X 0.3             | 3°                      | 0.3                       | 2                             | 40                        | 4                    |    |
| 2JJTB 003 030 030     | 0.15R X 0.3             | 3°                      | 0.3                       | 3                             | 40                        | 4                    |    |
| 2JJTB 003 030 040     | 0.15R X 0.3             | 3°                      | 0.3                       | 4                             | 40                        | 4                    |    |
| 2JJTB 003 030 050     | 0.15R X 0.3             | 3°                      | 0.3                       | 5                             | 40                        | 4                    |    |
| New 2JJTB 003 030 060 | 0.15R X 0.3             | 3°                      | 0.3                       | 6                             | 45                        | 4                    |    |
| 2JJTB 003 050 050     | 0.15R X 0.3             | 5°                      | 0.3                       | 5                             | 40                        | 4                    |    |
| New 2JJTB 003 050 080 | 0.15R X 0.3             | 5°                      | 0.3                       | 8                             | 45                        | 4                    |    |
| 2JJTB 004 003 020     | 0.2R X 0.4              | 0°30'                   | 0.4                       | 2                             | 40                        | 4                    |    |
| 2JJTB 004 003 030     | 0.2R X 0.4              | 0°30'                   | 0.4                       | 3                             | 40                        | 4                    |    |
| 2JJTB 004 003 040     | 0.2R X 0.4              | 0°30'                   | 0.4                       | 4                             | 40                        | 4                    |    |
| 2JJTB 004 003 050     | 0.2R X 0.4              | 0°30'                   | 0.4                       | 5                             | 40                        | 4                    |    |
| 2JJTB 004 003 060     | 0.2R X 0.4              | 0°30'                   | 0.4                       | 6                             | 40                        | 4                    |    |
| 2JJTB 004 010 020     | 0.2R X 0.4              | 1°                      | 0.4                       | 2                             | 40                        | 4                    |    |
| 2JJTB 004 010 030     | 0.2R X 0.4              | 1°                      | 0.4                       | 3                             | 40                        | 4                    |    |
| 2JJTB 004 010 040     | 0.2R X 0.4              | 1°                      | 0.4                       | 4                             | 40                        | 4                    |    |
| 2JJTB 004 010 050     | 0.2R X 0.4              | 1°                      | 0.4                       | 5                             | 40                        | 4                    |    |
| 2JJTB 004 010 060     | 0.2R X 0.4              | 1°                      | 0.4                       | 6                             | 40                        | 4                    |    |
| New 2JJTB 004 010 080 | 0.2R X 0.4              | 1°                      | 0.4                       | 8                             | 45                        | 4                    |    |
| 2JJTB 004 013 020     | 0.2R X 0.4              | 1°30'                   | 0.4                       | 2                             | 40                        | 4                    |    |

| Order Number          | 날경<br>Diameter<br>R x D | 각도<br>Angle<br>$\theta$ | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샹크<br>Shank Dia<br>d | 비고 |
|-----------------------|-------------------------|-------------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| 2JJTB 004 013 030     | 0.2R X 0.4              | 1°30'                   | 0.4                       | 3                             | 40                        | 4                    |    |
| 2JJTB 004 013 040     | 0.2R X 0.4              | 1°30'                   | 0.4                       | 4                             | 40                        | 4                    |    |
| 2JJTB 004 013 050     | 0.2R X 0.4              | 1°30'                   | 0.4                       | 5                             | 40                        | 4                    |    |
| 2JJTB 004 013 060     | 0.2R X 0.4              | 1°30'                   | 0.4                       | 6                             | 40                        | 4                    |    |
| New 2JJTB 004 013 080 | 0.2R X 0.4              | 1°30'                   | 0.4                       | 8                             | 45                        | 4                    |    |
| 2JJTB 004 020 020     | 0.2R X 0.4              | 2°                      | 0.4                       | 2                             | 40                        | 4                    |    |
| 2JJTB 004 020 030     | 0.2R X 0.4              | 2°                      | 0.4                       | 3                             | 40                        | 4                    |    |
| 2JJTB 004 020 040     | 0.2R X 0.4              | 2°                      | 0.4                       | 4                             | 40                        | 4                    |    |
| 2JJTB 004 020 050     | 0.2R X 0.4              | 2°                      | 0.4                       | 5                             | 40                        | 4                    |    |
| 2JJTB 004 020 060     | 0.2R X 0.4              | 2°                      | 0.4                       | 6                             | 40                        | 4                    |    |
| New 2JJTB 004 020 080 | 0.2R X 0.4              | 2°                      | 0.4                       | 8                             | 45                        | 4                    |    |
| New 2JJTB 004 020 100 | 0.2R X 0.4              | 2°                      | 0.4                       | 10                            | 45                        | 4                    |    |
| New 2JJTB 004 030 040 | 0.2R X 0.4              | 3°                      | 0.4                       | 4                             | 45                        | 4                    |    |
| New 2JJTB 004 030 060 | 0.2R X 0.4              | 3°                      | 0.4                       | 6                             | 45                        | 4                    |    |
| New 2JJTB 004 030 080 | 0.2R X 0.4              | 3°                      | 0.4                       | 8                             | 45                        | 4                    |    |
| New 2JJTB 004 030 100 | 0.2R X 0.4              | 3°                      | 0.4                       | 10                            | 45                        | 4                    |    |
| New 2JJTB 004 050 060 | 0.2R X 0.4              | 5°                      | 0.4                       | 6                             | 45                        | 4                    |    |
| New 2JJTB 004 050 080 | 0.2R X 0.4              | 5°                      | 0.4                       | 8                             | 45                        | 4                    |    |
| New 2JJTB 004 050 100 | 0.2R X 0.4              | 5°                      | 0.4                       | 10                            | 45                        | 4                    |    |
| 2JJTB 005 003 040     | 0.25R X 0.5             | 0°30'                   | 0.5                       | 4                             | 45                        | 4                    |    |
| 2JJTB 005 003 060     | 0.25R X 0.5             | 0°30'                   | 0.5                       | 6                             | 45                        | 4                    |    |
| 2JJTB 005 010 040     | 0.25R X 0.5             | 1°                      | 0.5                       | 4                             | 45                        | 4                    |    |
| 2JJTB 005 010 060     | 0.25R X 0.5             | 1°                      | 0.5                       | 6                             | 45                        | 4                    |    |
| 2JJTB 005 010 080     | 0.25R X 0.5             | 1°                      | 0.5                       | 8                             | 45                        | 4                    |    |
| 2JJTB 005 010 100     | 0.25R X 0.5             | 1°                      | 0.5                       | 10                            | 45                        | 4                    |    |
| 2JJTB 005 013 040     | 0.25R X 0.5             | 1°30'                   | 0.5                       | 4                             | 45                        | 4                    |    |
| 2JJTB 005 013 060     | 0.25R X 0.5             | 1°30'                   | 0.5                       | 6                             | 45                        | 4                    |    |
| 2JJTB 005 013 080     | 0.25R X 0.5             | 1°30'                   | 0.5                       | 8                             | 45                        | 4                    |    |
| 2JJTB 005 013 100     | 0.25R X 0.5             | 1°30'                   | 0.5                       | 10                            | 45                        | 4                    |    |
| 2JJTB 005 020 040     | 0.25R X 0.5             | 2°                      | 0.5                       | 4                             | 45                        | 4                    |    |
| 2JJTB 005 020 060     | 0.25R X 0.5             | 2°                      | 0.5                       | 6                             | 45                        | 4                    |    |
| 2JJTB 005 020 080     | 0.25R X 0.5             | 2°                      | 0.5                       | 8                             | 45                        | 4                    |    |
| 2JJTB 005 020 100     | 0.25R X 0.5             | 2°                      | 0.5                       | 10                            | 45                        | 4                    |    |
| 2JJTB 005 030 080     | 0.25R X 0.5             | 3°                      | 0.5                       | 8                             | 45                        | 4                    |    |
| 2JJTB 005 030 120     | 0.25R X 0.5             | 3°                      | 0.5                       | 12                            | 50                        | 4                    |    |
| New 2JJTB 005 030 160 | 0.25R X 0.5             | 3°                      | 0.5                       | 16                            | 60                        | 4                    |    |
| 2JJTB 005 030 200     | 0.25R X 0.5             | 3°                      | 0.5                       | 20                            | 60                        | 4                    |    |
| New 2JJTB 005 050 100 | 0.25R X 0.5             | 5°                      | 0.5                       | 10                            | 50                        | 4                    |    |
| New 2JJTB 005 050 150 | 0.25R X 0.5             | 5°                      | 0.5                       | 15                            | 60                        | 4                    |    |
| New 2JJTB 005 050 200 | 0.25R X 0.5             | 5°                      | 0.5                       | 20                            | 60                        | 4                    |    |
| 2JJTB 006 003 040     | 0.3R X 0.6              | 0°30'                   | 0.6                       | 4                             | 45                        | 4                    |    |
| 2JJTB 006 003 060     | 0.3R X 0.6              | 0°30'                   | 0.6                       | 6                             | 45                        | 4                    |    |
| 2JJTB 006 003 080     | 0.3R X 0.6              | 0°30'                   | 0.6                       | 8                             | 45                        | 4                    |    |
| 2JJTB 006 010 040     | 0.3R X 0.6              | 1°                      | 0.6                       | 4                             | 45                        | 4                    |    |
| 2JJTB 006 010 060     | 0.3R X 0.6              | 1°                      | 0.6                       | 6                             | 45                        | 4                    |    |
| 2JJTB 006 010 080     | 0.3R X 0.6              | 1°                      | 0.6                       | 8                             | 45                        | 4                    |    |
| 2JJTB 006 010 100     | 0.3R X 0.6              | 1°                      | 0.6                       | 10                            | 45                        | 4                    |    |
| 2JJTB 006 010 120     | 0.3R X 0.6              | 1°                      | 0.6                       | 12                            | 50                        | 4                    |    |
| 2JJTB 006 010 150     | 0.3R X 0.6              | 1°                      | 0.6                       | 15                            | 50                        | 4                    |    |
| 2JJTB 006 010 200     | 0.3R X 0.6              | 1°                      | 0.6                       | 20                            | 60                        | 4                    |    |



단위 : mm

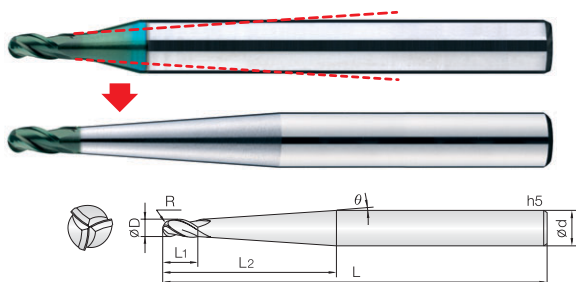
| Order Number          | 날경<br>Diameter<br>R×D | 각도<br>Angle<br>θ | 날장<br>Length<br>of cut<br>L1 | 유효장<br>Effective<br>Length<br>L2 | 전장<br>Overall<br>Length<br>L | 샙크<br>Shank<br>Dia<br>d | 비고 | Order Number      | 날경<br>Diameter<br>R×D | 각도<br>Angle<br>θ | 날장<br>Length<br>of cut<br>L1 | 유효장<br>Effective<br>Length<br>L2 | 전장<br>Overall<br>Length<br>L | 샙크<br>Shank<br>Dia<br>d | 비고 |
|-----------------------|-----------------------|------------------|------------------------------|----------------------------------|------------------------------|-------------------------|----|-------------------|-----------------------|------------------|------------------------------|----------------------------------|------------------------------|-------------------------|----|
| 2JJTB 006 013 040     | 0.3R X 0.6            | 1°30             | 0.6                          | 4                                | 45                           | 4                       |    | 2JJTB 010 010 150 | 0.5R X 1              | 1°               | 1                            | 15                               | 50                           | 4                       |    |
| 2JJTB 006 013 060     | 0.3R X 0.6            | 1°30             | 0.6                          | 6                                | 45                           | 4                       |    | 2JJTB 010 010 200 | 0.5R X 1              | 1°               | 1                            | 20                               | 50                           | 4                       |    |
| 2JJTB 006 013 080     | 0.3R X 0.6            | 1°30             | 0.6                          | 8                                | 45                           | 4                       |    | 2JJTB 010 010 250 | 0.5R X 1              | 1°               | 1                            | 25                               | 60                           | 4                       |    |
| 2JJTB 006 013 100     | 0.3R X 0.6            | 1°30             | 0.6                          | 10                               | 45                           | 4                       |    | 2JJTB 010 010 300 | 0.5R X 1              | 1°               | 1                            | 30                               | 70                           | 4                       |    |
| 2JJTB 006 013 120     | 0.3R X 0.6            | 1°30             | 0.6                          | 12                               | 50                           | 4                       |    | 2JJTB 010 010 350 | 0.5R X 1              | 1°               | 1                            | 35                               | 75                           | 4                       |    |
| 2JJTB 006 013 150     | 0.3R X 0.6            | 1°30             | 0.6                          | 15                               | 50                           | 4                       |    | 2JJTB 010 013 060 | 0.5R X 1              | 1°30             | 1                            | 6                                | 50                           | 4                       |    |
| 2JJTB 006 013 200     | 0.3R X 0.6            | 1°30             | 0.6                          | 20                               | 60                           | 4                       |    | 2JJTB 010 013 080 | 0.5R X 1              | 1°30             | 1                            | 8                                | 50                           | 4                       |    |
| 2JJTB 006 020 060     | 0.3R X 0.6            | 2°               | 0.6                          | 6                                | 45                           | 4                       |    | 2JJTB 010 013 100 | 0.5R X 1              | 1°30             | 1                            | 10                               | 50                           | 4                       |    |
| 2JJTB 006 020 080     | 0.3R X 0.6            | 2°               | 0.6                          | 8                                | 45                           | 4                       |    | 2JJTB 010 013 150 | 0.5R X 1              | 1°30             | 1                            | 15                               | 50                           | 4                       |    |
| 2JJTB 006 020 100     | 0.3R X 0.6            | 2°               | 0.6                          | 10                               | 45                           | 4                       |    | 2JJTB 010 013 200 | 0.5R X 1              | 1°30             | 1                            | 20                               | 50                           | 4                       |    |
| 2JJTB 006 020 150     | 0.3R X 0.6            | 2°               | 0.6                          | 15                               | 50                           | 4                       |    | 2JJTB 010 013 250 | 0.5R X 1              | 1°30             | 1                            | 25                               | 60                           | 4                       |    |
| 2JJTB 006 020 200     | 0.3R X 0.6            | 2°               | 0.6                          | 20                               | 60                           | 4                       |    | 2JJTB 010 013 300 | 0.5R X 1              | 1°30             | 1                            | 30                               | 70                           | 4                       |    |
| 2JJTB 006 030 130     | 0.3R X 0.6            | 3°               | 0.6                          | 13                               | 50                           | 4                       |    | 2JJTB 010 013 350 | 0.5R X 1              | 1°30             | 1                            | 35                               | 80                           | 4                       |    |
| New 2JJTB 006 030 160 | 0.3R X 0.6            | 3°               | 0.6                          | 16                               | 60                           | 4                       |    | 2JJTB 010 013 400 | 0.5R X 1              | 1°30             | 1                            | 40                               | 80                           | 4                       |    |
| 2JJTB 006 030 200     | 0.3R X 0.6            | 3°               | 0.6                          | 20                               | 60                           | 4                       |    | 2JJTB 010 020 150 | 0.5R X 1              | 2°               | 1                            | 15                               | 50                           | 4                       |    |
| New 2JJTB 006 050 100 | 0.3R X 0.6            | 5°               | 0.6                          | 10                               | 50                           | 4                       |    | 2JJTB 010 020 200 | 0.5R X 1              | 2°               | 1                            | 20                               | 50                           | 4                       |    |
| New 2JJTB 006 050 150 | 0.3R X 0.6            | 5°               | 0.6                          | 15                               | 60                           | 4                       |    | 2JJTB 010 020 250 | 0.5R X 1              | 2°               | 1                            | 25                               | 60                           | 4                       |    |
| New 2JJTB 006 050 200 | 0.3R X 0.6            | 5°               | 0.6                          | 20                               | 60                           | 4                       |    | 2JJTB 010 020 300 | 0.5R X 1              | 2°               | 1                            | 30                               | 70                           | 4                       |    |
| 2JJTB 008 003 040     | 0.4R X 0.8            | 0°30             | 0.8                          | 4                                | 45                           | 4                       |    | 2JJTB 010 020 400 | 0.5R X 1              | 2°               | 1                            | 40                               | 80                           | 4                       |    |
| 2JJTB 008 003 060     | 0.4R X 0.8            | 0°30             | 0.8                          | 6                                | 45                           | 4                       |    | 2JJTB 010 030 200 | 0.5R X 1              | 3°               | 1                            | 20                               | 50                           | 4                       |    |
| 2JJTB 008 003 080     | 0.4R X 0.8            | 0°30             | 0.8                          | 8                                | 45                           | 4                       |    | 2JJTB 010 030 300 | 0.5R X 1              | 3°               | 1                            | 30                               | 70                           | 6                       |    |
| 2JJTB 008 003 100     | 0.4R X 0.8            | 0°30             | 0.8                          | 10                               | 45                           | 4                       |    | 2JJTB 010 030 400 | 0.5R X 1              | 3°               | 1                            | 40                               | 80                           | 6                       |    |
| 2JJTB 008 003 120     | 0.4R X 0.8            | 0°30             | 0.8                          | 12                               | 50                           | 4                       |    | 2JJTB 010 030 500 | 0.5R X 1              | 3°               | 1                            | 50                               | 90                           | 6                       |    |
| 2JJTB 008 003 150     | 0.4R X 0.8            | 0°30             | 0.8                          | 15                               | 50                           | 4                       |    | 2JJTB 010 050 230 | 0.5R X 1              | 5°               | 1                            | 23                               | 60                           | 6                       |    |
| 2JJTB 008 003 200     | 0.4R X 0.8            | 0°30             | 0.8                          | 20                               | 60                           | 4                       |    | 2JJTB 012 003 080 | 0.6R X 1.2            | 0°30             | 1.2                          | 8                                | 50                           | 4                       |    |
| New 2JJTB 008 003 250 | 0.4R X 0.8            | 0°30             | 0.8                          | 25                               | 70                           | 4                       |    | 2JJTB 012 003 120 | 0.6R X 1.2            | 0°30             | 1.2                          | 12                               | 50                           | 4                       |    |
| 2JJTB 008 010 040     | 0.4R X 0.8            | 1°               | 0.8                          | 4                                | 45                           | 4                       |    | 2JJTB 012 003 180 | 0.6R X 1.2            | 0°30             | 1.2                          | 18                               | 50                           | 4                       |    |
| 2JJTB 008 010 060     | 0.4R X 0.8            | 1°               | 0.8                          | 6                                | 45                           | 4                       |    | 2JJTB 012 003 240 | 0.6R X 1.2            | 0°30             | 1.2                          | 24                               | 60                           | 4                       |    |
| 2JJTB 008 010 080     | 0.4R X 0.8            | 1°               | 0.8                          | 8                                | 45                           | 4                       |    | 2JJTB 012 010 080 | 0.6R X 1.2            | 1°               | 1.2                          | 8                                | 50                           | 4                       |    |
| 2JJTB 008 010 100     | 0.4R X 0.8            | 1°               | 0.8                          | 10                               | 45                           | 4                       |    | 2JJTB 012 010 120 | 0.6R X 1.2            | 1°               | 1.2                          | 12                               | 50                           | 4                       |    |
| 2JJTB 008 010 120     | 0.4R X 0.8            | 1°               | 0.8                          | 12                               | 50                           | 4                       |    | 2JJTB 012 010 180 | 0.6R X 1.2            | 1°               | 1.2                          | 18                               | 50                           | 4                       |    |
| 2JJTB 008 010 160     | 0.4R X 0.8            | 1°               | 0.8                          | 16                               | 50                           | 4                       |    | 2JJTB 012 010 240 | 0.6R X 1.2            | 1°               | 1.2                          | 24                               | 60                           | 4                       |    |
| 2JJTB 008 010 200     | 0.4R X 0.8            | 1°               | 0.8                          | 20                               | 60                           | 4                       |    | 2JJTB 012 013 080 | 0.6R X 1.2            | 1°30             | 1.2                          | 8                                | 50                           | 4                       |    |
| New 2JJTB 008 010 250 | 0.4R X 0.8            | 1°               | 0.8                          | 25                               | 70                           | 4                       |    | 2JJTB 012 013 120 | 0.6R X 1.2            | 1°30             | 1.2                          | 12                               | 50                           | 4                       |    |
| 2JJTB 008 013 040     | 0.4R X 0.8            | 1°30             | 0.8                          | 4                                | 45                           | 4                       |    | 2JJTB 012 013 180 | 0.6R X 1.2            | 1°30             | 1.2                          | 18                               | 50                           | 4                       |    |
| 2JJTB 008 013 060     | 0.4R X 0.8            | 1°30             | 0.8                          | 6                                | 45                           | 4                       |    | 2JJTB 012 013 240 | 0.6R X 1.2            | 1°30             | 1.2                          | 24                               | 60                           | 4                       |    |
| 2JJTB 008 013 080     | 0.4R X 0.8            | 1°30             | 0.8                          | 8                                | 45                           | 4                       |    | 2JJTB 012 020 080 | 0.6R X 1.2            | 2°               | 1.2                          | 8                                | 50                           | 4                       |    |
| 2JJTB 008 013 100     | 0.4R X 0.8            | 1°30             | 0.8                          | 10                               | 45                           | 4                       |    | 2JJTB 012 020 120 | 0.6R X 1.2            | 2°               | 1.2                          | 12                               | 50                           | 4                       |    |
| 2JJTB 008 013 120     | 0.4R X 0.8            | 1°30             | 0.8                          | 12                               | 50                           | 4                       |    | 2JJTB 012 020 180 | 0.6R X 1.2            | 2°               | 1.2                          | 18                               | 50                           | 4                       |    |
| 2JJTB 008 013 160     | 0.4R X 0.8            | 1°30             | 0.8                          | 16                               | 50                           | 4                       |    | 2JJTB 012 020 240 | 0.6R X 1.2            | 2°               | 1.2                          | 24                               | 60                           | 4                       |    |
| 2JJTB 008 013 200     | 0.4R X 0.8            | 1°30             | 0.8                          | 20                               | 60                           | 4                       |    | 2JJTB 015 003 080 | 0.75R X 1.5           | 0°30             | 1.5                          | 8                                | 50                           | 4                       |    |
| New 2JJTB 008 013 250 | 0.4R X 0.8            | 1°30             | 0.8                          | 25                               | 70                           | 4                       |    | 2JJTB 015 003 100 | 0.75R X 1.5           | 0°30             | 1.5                          | 10                               | 50                           | 4                       |    |
| 2JJTB 008 020 080     | 0.4R X 0.8            | 2°               | 0.8                          | 8                                | 50                           | 4                       |    | 2JJTB 015 003 120 | 0.75R X 1.5           | 0°30             | 1.5                          | 12                               | 50                           | 4                       |    |
| 2JJTB 008 020 100     | 0.4R X 0.8            | 2°               | 0.8                          | 10                               | 50                           | 4                       |    | 2JJTB 015 003 150 | 0.75R X 1.5           | 0°30             | 1.5                          | 15                               | 50                           | 4                       |    |
| 2JJTB 008 020 120     | 0.4R X 0.8            | 2°               | 0.8                          | 12                               | 50                           | 4                       |    | 2JJTB 015 003 200 | 0.75R X 1.5           | 0°30             | 1.5                          | 20                               | 60                           | 4                       |    |
| 2JJTB 008 020 160     | 0.4R X 0.8            | 2°               | 0.8                          | 16                               | 50                           | 4                       |    | 2JJTB 015 003 300 | 0.75R X 1.5           | 0°30             | 1.5                          | 30                               | 70                           | 4                       |    |
| 2JJTB 008 020 200     | 0.4R X 0.8            | 2°               | 0.8                          | 20                               | 60                           | 4                       |    | 2JJTB 015 003 400 | 0.75R X 1.5           | 0°30             | 1.5                          | 40                               | 80                           | 4                       |    |
| New 2JJTB 008 020 250 | 0.4R X 0.8            | 2°               | 0.8                          | 25                               | 70                           | 4                       |    | 2JJTB 015 010 080 | 0.75R X 1.5           | 1°               | 1.5                          | 8                                | 50                           | 4                       |    |
| 2JJTB 008 030 080     | 0.4R X 0.8            | 3°               | 0.8                          | 8                                | 50                           | 4                       |    | 2JJTB 015 010 100 | 0.75R X 1.5           | 1°               | 1.5                          | 10                               | 50                           | 4                       |    |
| 2JJTB 008 030 120     | 0.4R X 0.8            | 3°               | 0.8                          | 12                               | 50                           | 4                       |    | 2JJTB 015 010 120 | 0.75R X 1.5           | 1°               | 1.5                          | 12                               | 50                           | 4                       |    |
| 2JJTB 008 030 160     | 0.4R X 0.8            | 3°               | 0.8                          | 16                               | 50                           | 4                       |    | 2JJTB 015 010 150 | 0.75R X 1.5           | 1°               | 1.5                          | 15                               | 50                           | 4                       |    |
| 2JJTB 008 030 200     | 0.4R X 0.8            | 3°               | 0.8                          | 20                               | 60                           | 4                       |    | 2JJTB 015 010 200 | 0.75R X 1.5           | 1°               | 1.5                          | 20                               | 60                           | 4                       |    |
| New 2JJTB 008 030 250 | 0.4R X 0.8            | 3°               | 0.8                          | 25                               | 70                           | 4                       |    | 2JJTB 015 010 250 | 0.75R X 1.5           | 1°               | 1.5                          | 25                               | 60                           | 4                       |    |
| New 2JJTB 008 050 240 | 0.4R X 0.8            | 5°               | 0.8                          | 24                               | 60                           | 6                       |    | 2JJTB 015 010 300 | 0.75R X 1.5           | 1°               | 1.5                          | 30                               | 70                           | 4                       |    |
| 2JJTB 010 003 060     | 0.5R X 1              | 0°30             | 1                            | 6                                | 50                           | 4                       |    | 2JJTB 015 010 400 | 0.75R X 1.5           | 1°               | 1.5                          | 40                               | 80                           | 4                       |    |
| 2JJTB 010 003 080     | 0.5R X 1              | 0°30             | 1                            | 8                                | 50                           | 4                       |    | 2JJTB 015 010 500 | 0.75R X 1.5           | 1°               | 1.5                          | 50                               | 90                           | 4                       |    |
| 2JJTB 010 003 100     | 0.5R X 1              | 0°30             | 1                            | 10                               | 50                           | 4                       |    | 2JJTB 015 013 080 | 0.75R X 1.5           | 1°30             | 1.5                          | 8                                | 50                           | 4                       |    |
| 2JJTB 010 003 150     | 0.5R X 1              | 0°30             | 1                            | 15                               | 50                           | 4                       |    | 2JJTB 015 013 100 | 0.75R X 1.5           | 1°30             | 1.5                          | 10                               | 50                           | 4                       |    |
| 2JJTB 010 003 200     | 0.5R X 1              | 0°30             | 1                            | 20                               | 60                           | 4                       |    | 2JJTB 015 013 120 | 0.75R X 1.5           | 1°30             | 1.5                          | 12                               | 50                           | 4                       |    |
| 2JJTB 010 003 250     | 0.5R X 1              | 0°30             | 1                            | 25                               | 60                           | 4                       |    | 2JJTB 015 013 150 | 0.75R X 1.5           | 1°30             | 1.5                          | 15                               | 50                           | 4                       |    |
| 2JJTB 010 003 300     | 0.5R X 1              | 0°30             | 1                            | 30                               | 70                           | 4                       |    | 2JJTB 015 013 200 | 0.75R X 1.5           | 1°30             | 1.5                          | 20                               | 60                           | 4                       |    |
| 2JJTB 010 010 060     | 0.5R X 1              | 1°               | 1                            | 6                                | 50                           | 4                       |    | 2JJTB 015 013 250 | 0.75R X 1.5           | 1°30             | 1.5                          | 25                               | 60                           | 4                       |    |
| 2JJTB 010 010 080     | 0.5R X 1              | 1°               | 1                            | 8                                | 50                           | 4                       |    | 2JJTB 015 013 300 | 0.75R X 1.5           | 1°30             | 1.5                          | 30                               | 70                           | 4                       |    |
| 2JJTB 010 010 100     | 0.5R X 1              | 1°               | 1                            | 10                               | 50                           | 4                       |    | 2JJTB 015 013 400 | 0.75R X 1.5           | 1°30             | 1.5                          | 40                               | 80                           | 4                       |    |



## 2날 고정도재 가공용 제이제이 테이퍼 빅볼 엔드밀

단위 : mm

| Order Number      | 날경<br>Diameter<br>R × D | 각도<br>Angle<br>θ | 날장<br>Length<br>of cut<br>L1 | 유효장<br>Effective<br>Length<br>L2 | 전장<br>Overall<br>Length<br>L | 샙크<br>Dia<br>d | 비고 | Order Number       | 날경<br>Diameter<br>R × D | 각도<br>Angle<br>θ | 날장<br>Length<br>of cut<br>L1 | 유효장<br>Effective<br>Length<br>L2 | 전장<br>Overall<br>Length<br>L | 샙크<br>Dia<br>d | 비고 |
|-------------------|-------------------------|------------------|------------------------------|----------------------------------|------------------------------|----------------|----|--------------------|-------------------------|------------------|------------------------------|----------------------------------|------------------------------|----------------|----|
| 2JJTB 015 013 500 | 0.75R X 1.5             | 1°30'            | 1.5                          | 50                               | 90                           | 4              |    | 2JJTB 030 020 160  | 1.5R X 3                | 2°               | 3                            | 16                               | 60                           | 6              |    |
| 2JJTB 015 020 100 | 0.75R X 1.5             | 2°               | 1.5                          | 10                               | 50                           | 4              |    | 2JJTB 030 020 200  | 1.5R X 3                | 2°               | 3                            | 20                               | 65                           | 6              |    |
| 2JJTB 015 020 150 | 0.75R X 1.5             | 2°               | 1.5                          | 15                               | 50                           | 4              |    | 2JJTB 030 020 300  | 1.5R X 3                | 2°               | 3                            | 30                               | 70                           | 6              |    |
| 2JJTB 015 020 200 | 0.75R X 1.5             | 2°               | 1.5                          | 20                               | 60                           | 4              |    | 2JJTB 030 020 480  | 1.5R X 3                | 2°               | 3                            | 48                               | 90                           | 6              |    |
| 2JJTB 015 020 300 | 0.75R X 1.5             | 2°               | 1.5                          | 30                               | 70                           | 4              |    | 2JJTB 030 020 600  | 1.5R X 3                | 2°               | 3                            | 60                               | 110                          | 8              |    |
| 2JJTB 015 020 400 | 0.75R X 1.5             | 2°               | 1.5                          | 40                               | 80                           | 6              |    | 2JJTB 030 020 700  | 1.5R X 3                | 2°               | 3                            | 70                               | 120                          | 8              |    |
| 2JJTB 015 020 500 | 0.75R X 1.5             | 2°               | 1.5                          | 50                               | 90                           | 6              |    | 2JJTB 030 030 300  | 1.5R X 3                | 3°               | 3                            | 30                               | 70                           | 6              |    |
| 2JJTB 015 030 420 | 0.75R X 1.5             | 3°               | 1.5                          | 42                               | 80                           | 6              |    | 2JJTB 030 030 500  | 1.5R X 3                | 3°               | 3                            | 50                               | 90                           | 8              |    |
| 2JJTB 015 050 250 | 0.75R X 1.5             | 5°               | 1.5                          | 25                               | 70                           | 6              |    | 2JJTB 030 030 700  | 1.5R X 3                | 3°               | 3                            | 70                               | 120                          | 10             |    |
| 2JJTB 020 003 080 | 1R X 2                  | 0°30'            | 2                            | 8                                | 50                           | 4              |    | 2JJTB 030 050 330  | 1.5R X 3                | 5°               | 3                            | 33                               | 90                           | 8              |    |
| 2JJTB 020 003 120 | 1R X 2                  | 0°30'            | 2                            | 12                               | 50                           | 4              |    | 2JJTB 040 003 600  | 2R X 4                  | 0°30'            | 4                            | 60                               | 100                          | 6              |    |
| 2JJTB 020 003 160 | 1R X 2                  | 0°30'            | 2                            | 16                               | 50                           | 4              |    | 2JJTB 040 003 700  | 2R X 4                  | 0°30'            | 4                            | 70                               | 110                          | 6              |    |
| 2JJTB 020 003 200 | 1R X 2                  | 0°30'            | 2                            | 20                               | 60                           | 4              |    | 2JJTB 040 003 900  | 2R X 4                  | 0°30'            | 4                            | 90                               | 130                          | 6              |    |
| 2JJTB 020 003 300 | 1R X 2                  | 0°30'            | 2                            | 30                               | 70                           | 4              |    | 2JJTB 040 010 500  | 2R X 4                  | 1°               | 4                            | 50                               | 90                           | 6              |    |
| 2JJTB 020 003 400 | 1R X 2                  | 0°30'            | 2                            | 40                               | 80                           | 4              |    | 2JJTB 040 010 600  | 2R X 4                  | 1°               | 4                            | 60                               | 100                          | 6              |    |
| 2JJTB 020 003 500 | 1R X 2                  | 0°30'            | 2                            | 50                               | 90                           | 4              |    | 2JJTB 040 010 700  | 2R X 4                  | 1°               | 4                            | 70                               | 120                          | 8              |    |
| 2JJTB 020 010 080 | 1R X 2                  | 1°               | 2                            | 8                                | 50                           | 4              |    | 2JJTB 040 010 900  | 2R X 4                  | 1°               | 4                            | 90                               | 150                          | 8              |    |
| 2JJTB 020 010 120 | 1R X 2                  | 1°               | 2                            | 12                               | 50                           | 4              |    | 2JJTB 040 013 450  | 2R X 4                  | 1°30'            | 4                            | 45                               | 90                           | 6              |    |
| 2JJTB 020 010 160 | 1R X 2                  | 1°               | 2                            | 16                               | 50                           | 4              |    | 2JJTB 040 013 600  | 2R X 4                  | 1°30'            | 4                            | 60                               | 110                          | 8              |    |
| 2JJTB 020 010 200 | 1R X 2                  | 1°               | 2                            | 20                               | 60                           | 4              |    | 2JJTB 040 013 700  | 2R X 4                  | 1°30'            | 4                            | 70                               | 120                          | 8              |    |
| 2JJTB 020 010 250 | 1R X 2                  | 1°               | 2                            | 25                               | 60                           | 4              |    | 2JJTB 040 030 250  | 2R X 4                  | 3°               | 4                            | 25                               | 70                           | 6              |    |
| 2JJTB 020 010 300 | 1R X 2                  | 1°               | 2                            | 30                               | 70                           | 4              |    | 2JJTB 040 030 420  | 2R X 4                  | 3°               | 4                            | 42                               | 100                          | 8              |    |
| 2JJTB 020 010 350 | 1R X 2                  | 1°               | 2                            | 35                               | 75                           | 4              |    | 2JJTB 040 050 290  | 2R X 4                  | 5°               | 4                            | 29                               | 90                           | 8              |    |
| 2JJTB 020 010 400 | 1R X 2                  | 1°               | 2                            | 40                               | 80                           | 4              |    | 2JJTB 050 010 400  | 2.5R X 5                | 1°               | 5                            | 40                               | 90                           | 8              |    |
| 2JJTB 020 010 500 | 1R X 2                  | 1°               | 2                            | 50                               | 90                           | 4              |    | 2JJTB 050 010 600  | 2.5R X 5                | 1°               | 5                            | 60                               | 110                          | 8              |    |
| 2JJTB 020 010 600 | 1R X 2                  | 1°               | 2                            | 60                               | 100                          | 6              |    | 2JJTB 050 010 900  | 2.5R X 5                | 1°               | 5                            | 90                               | 150                          | 8              |    |
| 2JJTB 020 013 080 | 1R X 2                  | 1°30'            | 2                            | 8                                | 50                           | 4              |    | 2JJTB 050 013 400  | 2.5R X 5                | 1°30'            | 5                            | 40                               | 90                           | 8              |    |
| 2JJTB 020 013 120 | 1R X 2                  | 1°30'            | 2                            | 12                               | 50                           | 4              |    | 2JJTB 050 013 600  | 2.5R X 5                | 1°30'            | 5                            | 60                               | 110                          | 8              |    |
| 2JJTB 020 013 160 | 1R X 2                  | 1°30'            | 2                            | 16                               | 50                           | 4              |    | 2JJTB 050 013 900  | 2.5R X 5                | 1°30'            | 5                            | 90                               | 150                          | 10             |    |
| 2JJTB 020 013 200 | 1R X 2                  | 1°30'            | 2                            | 20                               | 60                           | 4              |    | 2JJTB 050 030 400  | 2.5R X 5                | 3°               | 5                            | 40                               | 90                           | 8              |    |
| 2JJTB 020 013 250 | 1R X 2                  | 1°30'            | 2                            | 25                               | 60                           | 4              |    | 2JJTB 060 010 400  | 3R X 6                  | 1°               | 9                            | 40                               | 90                           | 8              |    |
| 2JJTB 020 013 300 | 1R X 2                  | 1°30'            | 2                            | 30                               | 70                           | 4              |    | 2JJTB 060 010 500  | 3R X 6                  | 1°               | 9                            | 50                               | 100                          | 8              |    |
| 2JJTB 020 013 350 | 1R X 2                  | 1°30'            | 2                            | 35                               | 75                           | 6              |    | 2JJTB 060 010 600  | 3R X 6                  | 1°               | 9                            | 60                               | 110                          | 8              |    |
| 2JJTB 020 013 400 | 1R X 2                  | 1°30'            | 2                            | 40                               | 80                           | 6              |    | 2JJTB 060 010 700  | 3R X 6                  | 1°               | 9                            | 70                               | 120                          | 10             |    |
| 2JJTB 020 013 500 | 1R X 2                  | 1°30'            | 2                            | 50                               | 90                           | 6              |    | 2JJTB 060 010 800  | 3R X 6                  | 1°               | 9                            | 80                               | 130                          | 10             |    |
| 2JJTB 020 013 600 | 1R X 2                  | 1°30'            | 2                            | 60                               | 100                          | 6              |    | 2JJTB 060 010 1000 | 3R X 6                  | 1°               | 9                            | 100                              | 150                          | 10             |    |
| 2JJTB 020 020 300 | 1R X 2                  | 2°               | 2                            | 30                               | 70                           | 6              |    | 2JJTB 060 013 490  | 3R X 6                  | 1°30'            | 9                            | 49                               | 110                          | 8              |    |
| 2JJTB 020 020 400 | 1R X 2                  | 2°               | 2                            | 40                               | 80                           | 6              |    | 2JJTB 060 013 850  | 3R X 6                  | 1°30'            | 9                            | 85                               | 150                          | 10             |    |
| 2JJTB 020 020 500 | 1R X 2                  | 2°               | 2                            | 50                               | 90                           | 6              |    | 2JJTB 060 020 600  | 3R X 6                  | 2°               | 9                            | 60                               | 110                          | 10             |    |
| 2JJTB 020 030 300 | 1R X 2                  | 3°               | 2                            | 30                               | 70                           | 6              |    | 2JJTB 060 020 900  | 3R X 6                  | 2°               | 9                            | 90                               | 150                          | 12             |    |
| 2JJTB 020 030 400 | 1R X 2                  | 3°               | 2                            | 40                               | 80                           | 6              |    | 2JJTB 060 030 290  | 3R X 6                  | 3°               | 9                            | 29                               | 90                           | 8              |    |
| 2JJTB 020 030 500 | 1R X 2                  | 3°               | 2                            | 50                               | 90                           | 8              |    | 2JJTB 060 050 320  | 3R X 6                  | 5°               | 9                            | 32                               | 110                          | 10             |    |
| 2JJTB 020 050 250 | 1R X 2                  | 5°               | 2                            | 25                               | 60                           | 6              |    | 2JJTB 080 010 500  | 4R X 8                  | 1°               | 12                           | 50                               | 100                          | 10             |    |
| 2JJTB 020 050 380 | 1R X 2                  | 5°               | 2                            | 38                               | 80                           | 8              |    | 2JJTB 080 010 600  | 4R X 8                  | 1°               | 12                           | 60                               | 110                          | 10             |    |
| 2JJTB 030 003 160 | 1.5R X 3                | 0°30'            | 3                            | 16                               | 60                           | 6              |    | 2JJTB 080 010 800  | 4R X 8                  | 1°               | 12                           | 80                               | 130                          | 12             |    |
| 2JJTB 030 003 200 | 1.5R X 3                | 0°30'            | 3                            | 20                               | 65                           | 6              |    | 2JJTB 080 010 1000 | 4R X 8                  | 1°               | 12                           | 100                              | 150                          | 12             |    |
| 2JJTB 030 003 300 | 1.5R X 3                | 0°30'            | 3                            | 30                               | 70                           | 6              |    | 2JJTB 080 013 520  | 4R X 8                  | 1°30'            | 12                           | 52                               | 110                          | 10             |    |
| 2JJTB 030 003 400 | 1.5R X 3                | 0°30'            | 3                            | 40                               | 80                           | 6              |    | 2JJTB 080 013 890  | 4R X 8                  | 1°30'            | 12                           | 89                               | 150                          | 12             |    |
| 2JJTB 030 003 500 | 1.5R X 3                | 0°30'            | 3                            | 50                               | 90                           | 6              |    | 2JJTB 080 030 330  | 4R X 8                  | 3°               | 12                           | 33                               | 100                          | 10             |    |
| 2JJTB 030 003 600 | 1.5R X 3                | 0°30'            | 3                            | 60                               | 100                          | 6              |    | 2JJTB 100 010 600  | 5R X 10                 | 1°               | 18                           | 60                               | 110                          | 12             |    |
| 2JJTB 030 010 160 | 1.5R X 3                | 1°               | 3                            | 16                               | 60                           | 6              |    | 2JJTB 100 010 750  | 5R X 10                 | 1°               | 18                           | 75                               | 130                          | 12             |    |
| 2JJTB 030 010 200 | 1.5R X 3                | 1°               | 3                            | 20                               | 65                           | 6              |    | 2JJTB 100 013 540  | 5R X 10                 | 1°30'            | 18                           | 54                               | 130                          | 12             |    |
| 2JJTB 030 010 300 | 1.5R X 3                | 1°               | 3                            | 30                               | 70                           | 6              |    | 2JJTB 100 030 370  | 5R X 10                 | 3°               | 18                           | 37                               | 110                          | 12             |    |
| 2JJTB 030 010 400 | 1.5R X 3                | 1°               | 3                            | 40                               | 80                           | 6              |    | 2JJTB 120 013 850  | 6R X 12                 | 1°30'            | 22                           | 85                               | 160                          | 16             |    |
| 2JJTB 030 010 500 | 1.5R X 3                | 1°               | 3                            | 50                               | 90                           | 6              |    | 2JJTB 120 030 630  | 6R X 12                 | 3°               | 22                           | 63                               | 130                          | 16             |    |
| 2JJTB 030 010 600 | 1.5R X 3                | 1°               | 3                            | 60                               | 100                          | 6              |    |                    |                         |                  |                              |                                  |                              |                |    |
| 2JJTB 030 010 700 | 1.5R X 3                | 1°               | 3                            | 70                               | 110                          | 6              |    |                    |                         |                  |                              |                                  |                              |                |    |
| 2JJTB 030 013 160 | 1.5R X 3                | 1°30'            | 3                            | 16                               | 60                           | 6              |    |                    |                         |                  |                              |                                  |                              |                |    |
| 2JJTB 030 013 200 | 1.5R X 3                | 1°30'            | 3                            | 20                               | 65                           | 6              |    |                    |                         |                  |                              |                                  |                              |                |    |
| 2JJTB 030 013 300 | 1.5R X 3                | 1°30'            | 3                            | 30                               | 70                           | 6              |    |                    |                         |                  |                              |                                  |                              |                |    |
| 2JJTB 030 013 400 | 1.5R X 3                | 1°30'            | 3                            | 40                               | 80                           | 6              |    |                    |                         |                  |                              |                                  |                              |                |    |
| 2JJTB 030 013 500 | 1.5R X 3                | 1°30'            | 3                            | 50                               | 90                           | 6              |    |                    |                         |                  |                              |                                  |                              |                |    |
| 2JJTB 030 013 600 | 1.5R X 3                | 1°30'            | 3                            | 60                               | 100                          | 6              |    |                    |                         |                  |                              |                                  |                              |                |    |
| 2JJTB 030 013 700 | 1.5R X 3                | 1°30'            | 3                            | 70                               | 120                          | 8              |    |                    |                         |                  |                              |                                  |                              |                |    |



0.5 ~ 2.5R

3 ~ 6R

286P

- **고경도강(HRc52~70), 프리하든강 계열의 고정밀 가공 엔드밀**
- 고탄량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- **깊은 홈 가공이 빈번해진 추세에 맞춰, 고객 요구에 발빠르게 대응하는 맞춤제작 방식입니다. (최고 2일안에 납품 가능)**
- 고객주문에 맞춰, 자사 재고품의 각도 및 윗표 길이를 재조정 가공합니다.
- 초미립자 초경합금(Q 2μm)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.

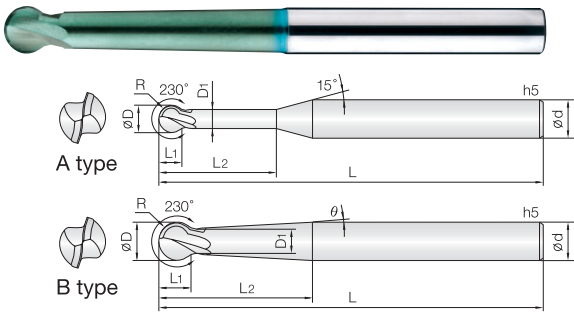
- **Endmills for pre-hardened and hardened steel(HRc52~70)**
- Good wear resistance by high quality Si-based PVD coating.
- In accordance with the recent trend of frequent deep hole machining, It is an order to make system responding to customer' quick delivery request. (within a 2 days)
- In accordance with the customer order, readjust the angle and effective length of own stock
- Outstanding performance at high speed machining by ultra fine ( $0.2\mu\text{m}$ ) WC grade.

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

단위 : mm

[illegible]





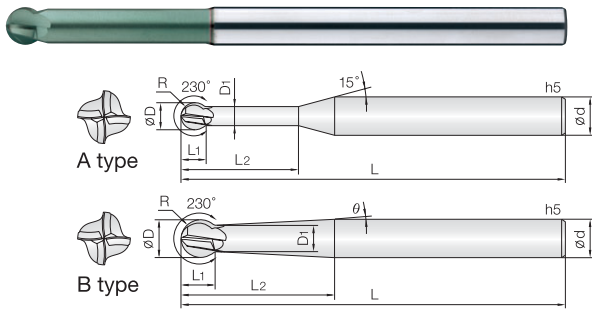
- **고경도강(HRc52~70), 프리하드강 계열의 고정밀 가공 엔드밀**
- 고품량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 230도 구형의 인선으로 광범위한 3D 가공이 가능합니다.
- 유효장을 직선 및 테이퍼 설계하여 다양한 상황에 맞춰 목부파스 및 떨림을 최소화 하였습니다.
- 초미립자 초경합금(0.2 $\mu$ m)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.
- **Endmills for pre-hardened and hardened steel(HRc52~70)**
- Good wear resistance by high quality Si-based PVD coating.
- 230°degree ball shape for wide range 3D machining.
- Minimize chattering and fracturing by taper and straight designed flute.
- Outstanding performance at high speed machining by ultra fine (0.2  $\mu$ m) WC grade.



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

단위 : mm

[illegible]



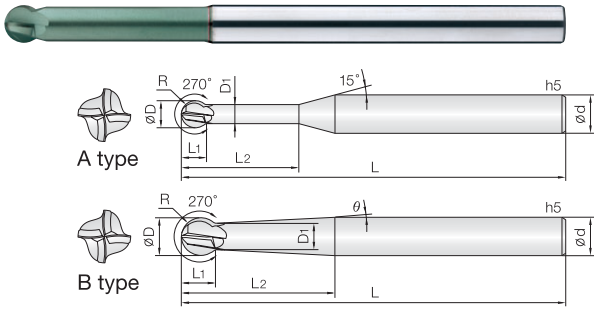
- **고경도강(HRc52~70), 프리하드강 계열의 고정밀 가공 엔드밀**
- 고탄량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 230도 구형의 인선으로 광범위한 3D 가공이 가능합니다.
- 유효장을 직선 및 테이퍼 설계하여 다양한 상황에 맞춰 목부파손 및 떨림을 최소화 하였습니다.
- 초미립자 초경합금(0.2 $\mu$ m)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.
- **Endmills for pre-hardened and hardened steel(HRc52~70)**
- Good wear resistance by high quality Si-based PVD coating.
- 230° degree ball shape for wide range 3D machining.
- Minimize chattering and fracturing by taper and straight designed flute.
- Outstanding performance at high speed machining by ultra fine (0.2  $\mu$ m) WC grade.



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

단위 : mm

[illegible]



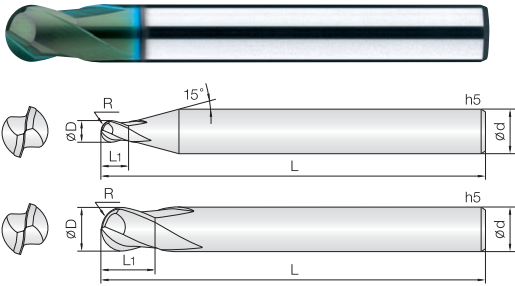
- **고경도강(HRc52~70), 프리하드강 계열의 고정밀 가공 엔드밀**
- 고풍량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 270도 구형의 인선으로 광범위한 3D 가공이 가능합니다.
- 유초장을 작진 및 테이퍼 설계하여 다양한 상황에 맞춰 목부파손 및 떨림을 최소화 하였습니다.
- 초미립자 초경합금(0.2 $\mu$ m)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.
- **Endmills for pre-hardened and hardened steel(HRc52~70)**
- Good wear resistance by high quality Si-based PVD coating.
- 270°degree ball shape for wide range 3D machining.
- Minimize chattering and fracturing by taper and straight designed flute.
- Outstanding performance at high speed machining by ultra fine (0.2  $\mu$ m) WC grade.



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

단위 : mm

[illegible]



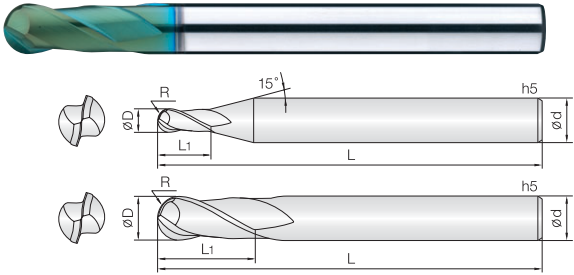
| D Size      | D Tolerance       |
|-------------|-------------------|
| ø0.1 ~ 0.15 | +0 ~ -0.005mm     |
| ø0.2 ~ 5    | +0 ~ -0.01mm      |
| ø6 ~ 12     | -0.005 ~ -0.015mm |

단위 : mm

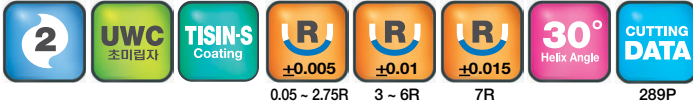
| Order Number          | 날경<br>Diameter<br>R×D | 날장<br>Length of cut<br>L1 | 전장<br>Overall Length<br>L | 생크<br>Shank Dia<br>d | 비고 |
|-----------------------|-----------------------|---------------------------|---------------------------|----------------------|----|
| 2JJSB 001 001 S04     | 0.05R X 0.1           | 0.1                       | 40                        | 4                    |    |
| 2JJSB 001 0015 S04    | 0.05R X 0.1           | 0.15                      | 40                        | 4                    |    |
| 2JJSB 0015 0015 S04   | 0.075R X 0.15         | 0.15                      | 40                        | 4                    |    |
| 2JJSB 0015 002 S04    | 0.075R X 0.15         | 0.2                       | 40                        | 4                    |    |
| 2JJSB 002 002 S04     | 0.1R X 0.2            | 0.2                       | 40                        | 4                    |    |
| 2JJSB 002 003 S04     | 0.1R X 0.2            | 0.3                       | 40                        | 4                    |    |
| 2JJSB 003 003 S04     | 0.15R X 0.3           | 0.3                       | 40                        | 4                    |    |
| 2JJSB 003 0045 S04    | 0.15R X 0.3           | 0.45                      | 40                        | 4                    |    |
| 2JJSB 004 004 S04     | 0.2R X 0.4            | 0.4                       | 40                        | 4                    |    |
| 2JJSB 004 006 S04     | 0.2R X 0.4            | 0.6                       | 40                        | 4                    |    |
| 2JJSB 005 005 S04     | 0.25R X 0.5           | 0.5                       | 40                        | 4                    |    |
| 2JJSB 005 0075 S04    | 0.25R X 0.5           | 0.75                      | 40                        | 4                    |    |
| 2JJSB 006 006 S04     | 0.3R X 0.6            | 0.6                       | 40                        | 4                    |    |
| 2JJSB 006 009 S04     | 0.3R X 0.6            | 0.9                       | 40                        | 4                    |    |
| 2JJSB 007 007 S04     | 0.35R X 0.7           | 0.7                       | 40                        | 4                    |    |
| 2JJSB 007 010 S04     | 0.35R X 0.7           | 1                         | 40                        | 4                    |    |
| 2JJSB 008 008 S04     | 0.4R X 0.8            | 0.8                       | 40                        | 4                    |    |
| 2JJSB 008 012 S04     | 0.4R X 0.8            | 1.2                       | 40                        | 4                    |    |
| 2JJSB 009 009 S04     | 0.45R X 0.9           | 0.9                       | 40                        | 4                    |    |
| 2JJSB 009 013 S04     | 0.45R X 0.9           | 1.3                       | 40                        | 4                    |    |
| 2JJSB 010 010 S04     | 0.5R X 1              | 1                         | 40                        | 4                    |    |
| 2JJSB 010 010 S06     | 0.5R X 1              | 1                         | 40                        | 6                    |    |
| 2JJSB 010 015 S04     | 0.5R X 1              | 1.5                       | 40                        | 4                    |    |
| 2JJSB 010 015 S06     | 0.5R X 1              | 1.5                       | 40                        | 6                    |    |
| New 2JJSB 012 012 S04 | 0.6R X 1.2            | 1.2                       | 40                        | 4                    |    |
| 2JJSB 015 015 S04     | 0.75R X 1.5           | 1.5                       | 40                        | 4                    |    |
| 2JJSB 015 015 S06     | 0.75R X 1.5           | 1.5                       | 40                        | 6                    |    |
| 2JJSB 015 023 S04     | 0.75R X 1.5           | 2.3                       | 40                        | 4                    |    |
| 2JJSB 015 023 S06     | 0.75R X 1.5           | 2.3                       | 40                        | 6                    |    |
| 2JJSB 020 020 S04     | 1R X 2                | 2                         | 45                        | 4                    |    |
| 2JJSB 020 020 S06     | 1R X 2                | 2                         | 45                        | 6                    |    |
| 2JJSB 020 030 S04     | 1R X 2                | 3                         | 45                        | 4                    |    |
| 2JJSB 020 030 S06     | 1R X 2                | 3                         | 45                        | 6                    |    |
| New 2JJSB 025 025 S06 | 1.25R X 2.5           | 2.5                       | 45                        | 6                    |    |
| 2JJSB 030 030 S04     | 1.5R X 3              | 3                         | 45                        | 4                    |    |
| 2JJSB 030 030 S06     | 1.5R X 3              | 3                         | 45                        | 6                    |    |
| 2JJSB 030 045 S04     | 1.5R X 3              | 4.5                       | 45                        | 4                    |    |
| 2JJSB 030 045 S06     | 1.5R X 3              | 4.5                       | 45                        | 6                    |    |
| 2JJSB 040 040 S04     | 2R X 4                | 4                         | 45                        | 4                    |    |
| 2JJSB 040 040 S06     | 2R X 4                | 4                         | 45                        | 6                    |    |
| 2JJSB 040 060 S04     | 2R X 4                | 6                         | 45                        | 4                    |    |
| 2JJSB 040 060 S06     | 2R X 4                | 6                         | 45                        | 6                    |    |
| 2JJSB 050 050 S06     | 2.5R X 5              | 5                         | 50                        | 6                    |    |
| 2JJSB 050 075 S06     | 2.5R X 5              | 7.5                       | 50                        | 6                    |    |
| 2JJSB 060 060 050     | 3R X 6                | 6                         | 50                        | 6                    |    |
| 2JJSB 060 080 055     | 3R X 6                | 8                         | 55                        | 6                    |    |
| 2JJSB 080 080 050     | 4R X 8                | 8                         | 50                        | 8                    |    |
| 2JJSB 080 110 060     | 4R X 8                | 11                        | 60                        | 8                    |    |
| 2JJSB 100 100 060     | 5R X 10               | 10                        | 60                        | 10                   |    |
| 2JJSB 100 130 070     | 5R X 10               | 13                        | 70                        | 10                   |    |

[illegible]





- **고경도강(HRc52~70), 프리하든강 계열의 고속 가공 엔드밀**
- 고탄량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 날부인선의 조도가 뛰어나 피삭재의 면조도가 우수합니다.
- 초미립자 초경합금(0.2 $\mu$ m)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.
- **Endmills for pre-hardened and hardened steel(HRc52~70)**
- Good wear resistance by high quality Si-based PVD coating.
- High precise edge tolerance.
- Very nice work surface finish.
- Outstanding performance at high speed machining by ultra fine (0.2 $\mu$ m) WC grade.

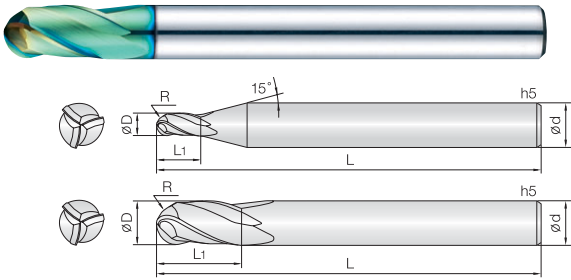


| D Size      | D Tolerance     |
|-------------|-----------------|
| ø0.1 ~ 0.15 | +0 ~ -0.005mm   |
| ø0.2 ~ 5    | +0 ~ -0.01mm    |
| ø5.5 ~ 14   | -0.01 ~ -0.02mm |

단위 : mm

| Order Number         | 날경<br>Diameter<br>R×D | 날장<br>Length of cut<br>L1 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 |
|----------------------|-----------------------|---------------------------|---------------------------|----------------------|----|
| 2JJB 001 002 S04     | 0.05R X 0.1           | 0.2                       | 40                        | 4                    |    |
| 2JJB 0015 003 S04    | 0.075R X 0.15         | 0.3                       | 40                        | 4                    |    |
| 2JJB 002 004 S04     | 0.1R X 0.2            | 0.4                       | 40                        | 4                    |    |
| 2JJB 003 006 S04     | 0.15R X 0.3           | 0.6                       | 40                        | 4                    |    |
| 2JJB 004 008 S04     | 0.2R X 0.4            | 0.8                       | 40                        | 4                    |    |
| 2JJB 005 010 S04     | 0.25R X 0.5           | 1                         | 45                        | 4                    |    |
| 2JJB 006 012 S04     | 0.3R X 0.6            | 1.2                       | 45                        | 4                    |    |
| 2JJB 007 015 S04     | 0.35R X 0.7           | 1.5                       | 45                        | 4                    |    |
| 2JJB 008 020 S04     | 0.4R X 0.8            | 2                         | 45                        | 4                    |    |
| 2JJB 009 020 S04     | 0.45R X 0.9           | 2                         | 45                        | 4                    |    |
| New 2JJB 010 025 S03 | 0.5R X 1              | 2.5                       | 50                        | 3                    |    |
| 2JJB 010 025 S04     | 0.5R X 1              | 2.5                       | 50                        | 4                    |    |
| 2JJB 010 025 S06     | 0.5R X 1              | 2.5                       | 50                        | 6                    |    |
| 2JJB 010 025 070     | 0.5R X 1              | 2.5                       | 70                        | 6                    |    |
| New 2JJB 012 030 S03 | 0.6R X 1.2            | 3                         | 50                        | 3                    |    |
| 2JJB 012 030 S04     | 0.6R X 1.2            | 3                         | 50                        | 4                    |    |
| New 2JJB 015 040 S03 | 0.75R X 1.5           | 4                         | 50                        | 3                    |    |
| 2JJB 015 040 S04     | 0.75R X 1.5           | 4                         | 50                        | 4                    |    |
| 2JJB 015 040 S06     | 0.75R X 1.5           | 4                         | 50                        | 6                    |    |
| 2JJB 015 040 070     | 0.75R X 1.5           | 4                         | 70                        | 6                    |    |
| New 2JJB 020 050 S03 | 1R X 2                | 5                         | 50                        | 3                    |    |
| 2JJB 020 050 S04     | 1R X 2                | 5                         | 50                        | 4                    |    |
| 2JJB 020 050 S06     | 1R X 2                | 5                         | 50                        | 6                    |    |
| 2JJB 020 050 075     | 1R X 2                | 5                         | 75                        | 6                    |    |
| New 2JJB 025 060 S03 | 1.25R X 2.5           | 6                         | 50                        | 3                    |    |
| 2JJB 025 060 S04     | 1.25R X 2.5           | 6                         | 50                        | 4                    |    |
| 2JJB 025 060 S06     | 1.25R X 2.5           | 6                         | 75                        | 6                    |    |
| New 2JJB 030 080 S03 | 1.5R X 3              | 8                         | 50                        | 3                    |    |
| 2JJB 030 080 S04     | 1.5R X 3              | 8                         | 50                        | 4                    |    |
| 2JJB 030 080 S06     | 1.5R X 3              | 8                         | 60                        | 6                    |    |
| 2JJB 030 080 080     | 1.5R X 3              | 8                         | 80                        | 6                    |    |
| 2JJB 035 080 S06     | 1.75R X 3.5           | 8                         | 60                        | 6                    |    |
| 2JJB 040 080 S04     | 2R X 4                | 8                         | 60                        | 4                    |    |
| 2JJB 040 080 080     | 2R X 4                | 8                         | 80                        | 4                    |    |
| 2JJB 040 080 S06     | 2R X 4                | 8                         | 70                        | 6                    |    |
| 2JJB 040 080 090     | 2R X 4                | 8                         | 90                        | 6                    |    |
| 2JJB 045 080 S06     | 2.25R X 4.5           | 8                         | 70                        | 6                    |    |
| 2JJB 050 100 S06     | 2.5R X 5              | 10                        | 75                        | 6                    |    |
| 2JJB 055 100 S06     | 2.75R X 5.5           | 10                        | 75                        | 6                    |    |
| 2JJB 060 100 060     | 3R X 6                | 10                        | 60                        | 6                    |    |
| 2JJB 060 120 080     | 3R X 6                | 12                        | 80                        | 6                    |    |
| 2JJB 060 120 090     | 3R X 6                | 12                        | 90                        | 6                    |    |
| 2JJB 070 140 S08     | 3.5R X 7              | 14                        | 80                        | 8                    |    |
| 2JJB 080 120 060     | 4R X 8                | 12                        | 60                        | 8                    |    |
| 2JJB 080 140 090     | 4R X 8                | 14                        | 90                        | 8                    |    |
| 2JJB 080 140 100     | 4R X 8                | 14                        | 100                       | 8                    |    |
| 2JJB 100 150 070     | 5R X 10               | 15                        | 70                        | 10                   |    |
| 2JJB 100 180 100     | 5R X 10               | 18                        | 100                       | 10                   |    |
| 2JJB 120 180 075     | 6R X 12               | 18                        | 75                        | 12                   |    |
| 2JJB 120 220 110     | 6R X 12               | 22                        | 110                       | 12                   |    |

[illegible]



- 고경도강(HRc52~70), 프리하든강 계열의 고속 가공 엔드밀
- 고품량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 3날 볼타입 적용으로 고속, 고이송 작업이 가능합니다.
- 초미립자 초경합금(0.2 $\mu$ m)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.
- Endmills for pre-hardened and hardened steel(HRc52~70)
- Good wear resistance by high quality Si-based PVD coating.
- High precise edge tolerance.
- Three flutes ball edge design for high speed, feed condition.
- Outstanding performance at high speed machining by ultra fine (0.2 $\mu$ m) WC grade.



0.5 ~ 2.5R

3 ~ 6R

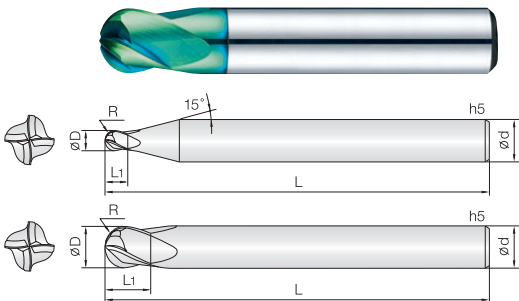
289P

| D Size  | D Tolerance       |
|---------|-------------------|
| Ø1 ~ 5  | +0 ~ -0.01mm      |
| Ø6 ~ 12 | -0.005 ~ -0.015mm |

단위 : mm

| Order Number     | 날경<br>Diameter<br>R x D | 날장<br>Length of cut<br>L1 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 |
|------------------|-------------------------|---------------------------|---------------------------|----------------------|----|
| 3JJB 010 025 S04 | 0.5R X 1                | 2.5                       | 50                        | 4                    |    |
| 3JJB 012 030 S04 | 0.6R X 1.2              | 3                         | 50                        | 4                    |    |
| 3JJB 015 040 S04 | 0.75R X 1.5             | 4                         | 50                        | 4                    |    |
| 3JJB 020 050 S06 | 1R X 2                  | 5                         | 50                        | 6                    |    |
| 3JJB 030 080 S06 | 1.5R X 3                | 8                         | 65                        | 6                    |    |
| 3JJB 040 080 S04 | 2R X 4                  | 8                         | 60                        | 4                    |    |
| 3JJB 040 080 S06 | 2R X 4                  | 8                         | 70                        | 6                    |    |
| 3JJB 050 100 S06 | 2.5R X 5                | 10                        | 75                        | 6                    |    |

| Order Number     | 날경<br>Diameter<br>R x D | 날장<br>Length of cut<br>L1 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 |
|------------------|-------------------------|---------------------------|---------------------------|----------------------|----|
| 3JJB 060 120 S06 | 3R X 6                  | 12                        | 80                        | 6                    |    |
| 3JJB 060 120 120 | 3R X 6                  | 12                        | 120                       | 6                    |    |
| 3JJB 080 140 S08 | 4R X 8                  | 14                        | 90                        | 8                    |    |
| 3JJB 080 140 150 | 4R X 8                  | 14                        | 150                       | 8                    |    |
| 3JJB 100 180 S10 | 5R X 10                 | 18                        | 100                       | 10                   |    |
| 3JJB 100 180 150 | 5R X 10                 | 18                        | 150                       | 10                   |    |
| 3JJB 120 220 S12 | 6R X 12                 | 22                        | 110                       | 12                   |    |
| 3JJB 120 220 150 | 6R X 12                 | 22                        | 150                       | 12                   |    |



- 고경도강(HRc52~70), 프리하든강 계열의 고정밀 가공 엔드밀
- 고품량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 짧은 전장을 채택하여 열박음척 사용이 용이합니다.
- 4날 볼타입 적용으로 고속, 고이송 작업이 가능합니다.
- 초미립자 초경합금(0.2 $\mu$ m)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.
- Endmills for pre-hardened and hardened steel(HRc52~70)
- Good wear resistance by high quality Si-based PVD coating.
- High precise edge tolerance.
- Short overall length for easy use with shrinking chuck.
- Four flutes ball edge design for high speed, feed condition.
- Outstanding performance at high speed machining by ultra fine (0.2 $\mu$ m) WC grade.



0.5 ~ 2.5R

3 ~ 6R

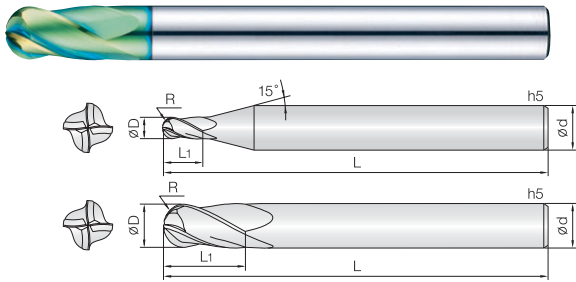
289P

| D Size  | D Tolerance       |
|---------|-------------------|
| Ø1 ~ 5  | +0 ~ -0.01mm      |
| Ø6 ~ 12 | -0.005 ~ -0.015mm |

단위 : mm

| Order Number      | 날경<br>Diameter<br>R x D | 날장<br>Length of cut<br>L1 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 |
|-------------------|-------------------------|---------------------------|---------------------------|----------------------|----|
| 4JJSB 010 012 S04 | 0.5R X 1                | 1.2                       | 40                        | 4                    |    |
| 4JJSB 012 015 S04 | 0.6R X 1.2              | 1.5                       | 40                        | 4                    |    |
| 4JJSB 015 018 S04 | 0.75R X 1.5             | 1.8                       | 40                        | 4                    |    |
| 4JJSB 020 024 S04 | 1R X 2                  | 2.4                       | 40                        | 4                    |    |
| 4JJSB 025 030 S04 | 1.25R X 2.5             | 3                         | 45                        | 4                    |    |
| 4JJSB 030 036 S06 | 1.5R X 3                | 3.6                       | 45                        | 6                    |    |
| 4JJSB 040 050 S04 | 2R X 4                  | 5                         | 45                        | 4                    |    |
| 4JJSB 040 050 S06 | 2R X 4                  | 5                         | 45                        | 6                    |    |
| 4JJSB 050 060 S06 | 2.5R X 5                | 6                         | 50                        | 6                    |    |
| 4JJSB 060 070 S06 | 3R X 6                  | 7                         | 50                        | 6                    |    |
| 4JJSB 060 070 060 | 3R X 6                  | 7                         | 60                        | 6                    |    |
| 4JJSB 080 080 S08 | 4R X 8                  | 8                         | 60                        | 8                    |    |
| 4JJSB 100 100 S10 | 5R X 10                 | 10                        | 60                        | 10                   |    |
| 4JJSB 120 120 S12 | 6R X 12                 | 12                        | 75                        | 12                   |    |

| Order Number | 날경<br>Diameter<br>R x D | 날장<br>Length of cut<br>L1 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 |
|--------------|-------------------------|---------------------------|---------------------------|----------------------|----|
|              |                         |                           |                           |                      |    |
|              |                         |                           |                           |                      |    |
|              |                         |                           |                           |                      |    |
|              |                         |                           |                           |                      |    |
|              |                         |                           |                           |                      |    |
|              |                         |                           |                           |                      |    |
|              |                         |                           |                           |                      |    |
|              |                         |                           |                           |                      |    |
|              |                         |                           |                           |                      |    |
|              |                         |                           |                           |                      |    |
|              |                         |                           |                           |                      |    |
|              |                         |                           |                           |                      |    |
|              |                         |                           |                           |                      |    |
|              |                         |                           |                           |                      |    |



- **고경도강(HRC52~70), 프리하드강 계열의 고경도 가공 엔드밀**
- 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 4날 볼타입 적용으로 고속, 고이송 작업이 가능합니다.
- 항절력이 높은 미립자 초경합금( $0.5\mu\text{m}$ )을 채택, 엔드밀의 파손을 최소화 하였습니다.
- **Endmills for pre-hardened and hardened steel (HRC52~70)**
- Good wear resistance by high quality Si-based PVD coating.
- High precise edge tolerance.
- Four flutes ball edge design for high speed, feed condition.
- Minimize fracturing by high TRS fine( $0.5\mu\text{m}$ ) WC grade.



0.5 ~ 2.5R

3 ~ 6R

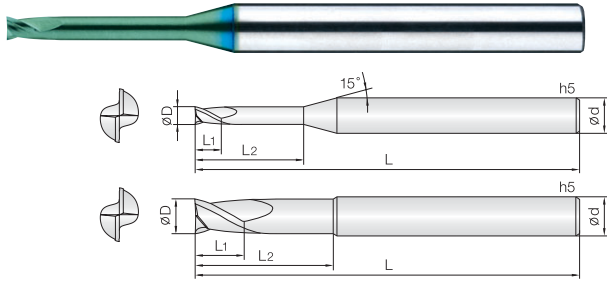
7 ~ 10R

289P

| D Size   | D Tolerance       |
|----------|-------------------|
| ø1 ~ 5   | +0 ~ -0.01mm      |
| ø6 ~ 12  | -0.005 ~ -0.015mm |
| ø14 ~ 20 | -0.01 ~ -0.02mm   |

단위 : mm

[illegible][illegible]



- 고정도강(HRc52~65), 프리하든강 계열의 고정밀 가공 엔드밀
- 고품량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 인선부 강성을 보강하여 날부치핑을 최소화 하였습니다.
- 초미립자 초경합금(0.2 $\mu$ m)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.
- Endmills for pre-hardened and hardened steel(HRc52~70)
- Good wear resistance by high quality Si-based PVD coating.
- High precise edge tolerance.
- Reinforced edge design for preventing edge chipping.
- Outstanding performance at high speed machining by ultra fine (0.2 $\mu$ m) WC grade.



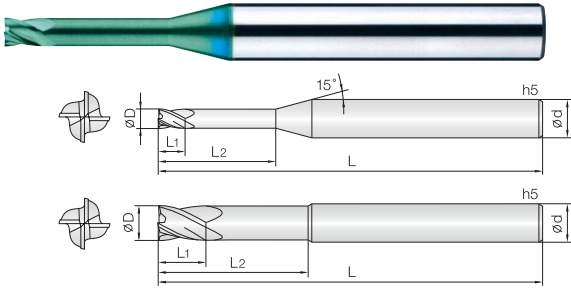
| D Size      | D Tolerance       |
|-------------|-------------------|
| ø0.1 ~ 0.15 | +0 ~ -0.005mm     |
| ø0.2 ~ 5    | +0 ~ -0.01mm      |
| ø6 ~ 12     | -0.005 ~ -0.025mm |

| Order Number            | 날경<br>Diameter<br>D | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샤프크<br>Shank Dia<br>d | 비고 |
|-------------------------|---------------------|---------------------------|-------------------------------|---------------------------|-----------------------|----|
| 2JJRE 001 003 S04       | 0.1                 | 0.15                      | 0.3                           | 40                        | 4                     |    |
| 2JJRE 001 005 S04       | 0.1                 | 0.15                      | 0.5                           | 40                        | 4                     |    |
| New 2JJRE 0015 003 S04  | 0.15                | 0.15                      | 0.3                           | 40                        | 4                     |    |
| New 2JJRE 0015 005 S04  | 0.15                | 0.15                      | 0.5                           | 40                        | 4                     |    |
| New 2JJRE 0015 0075 S04 | 0.15                | 0.15                      | 0.75                          | 40                        | 4                     |    |
| New 2JJRE 0015 010 S04  | 0.15                | 0.15                      | 1                             | 40                        | 4                     |    |
| 2JJRE 002 005 S04       | 0.2                 | 0.2                       | 0.5                           | 40                        | 4                     |    |
| 2JJRE 002 010 S04       | 0.2                 | 0.2                       | 1                             | 40                        | 4                     |    |
| 2JJRE 002 015 S04       | 0.2                 | 0.2                       | 1.5                           | 40                        | 4                     |    |
| 2JJRE 002 020 S04       | 0.2                 | 0.2                       | 2                             | 40                        | 4                     |    |
| 2JJRE 002 025 S04       | 0.2                 | 0.2                       | 2.5                           | 40                        | 4                     |    |
| 2JJRE 002 030 S04       | 0.2                 | 0.2                       | 3                             | 40                        | 4                     |    |
| New 2JJRE 0025 005 S04  | 0.25                | 0.25                      | 0.5                           | 40                        | 4                     |    |
| New 2JJRE 0025 010 S04  | 0.25                | 0.25                      | 1                             | 40                        | 4                     |    |
| New 2JJRE 0025 015 S04  | 0.25                | 0.25                      | 1.5                           | 40                        | 4                     |    |
| New 2JJRE 0025 020 S04  | 0.25                | 0.25                      | 2                             | 40                        | 4                     |    |
| New 2JJRE 0025 025 S04  | 0.25                | 0.25                      | 2.5                           | 40                        | 4                     |    |
| New 2JJRE 0025 030 S04  | 0.25                | 0.25                      | 3                             | 40                        | 4                     |    |
| 2JJRE 003 010 S04       | 0.3                 | 0.3                       | 1                             | 40                        | 4                     |    |
| 2JJRE 003 015 S04       | 0.3                 | 0.3                       | 1.5                           | 40                        | 4                     |    |
| 2JJRE 003 020 S04       | 0.3                 | 0.3                       | 2                             | 40                        | 4                     |    |
| 2JJRE 003 025 S04       | 0.3                 | 0.3                       | 2.5                           | 40                        | 4                     |    |
| 2JJRE 003 030 S04       | 0.3                 | 0.3                       | 3                             | 40                        | 4                     |    |
| 2JJRE 003 035 S04       | 0.3                 | 0.3                       | 3.5                           | 40                        | 4                     |    |
| 2JJRE 003 040 S04       | 0.3                 | 0.3                       | 4                             | 40                        | 4                     |    |
| New 2JJRE 003 050 S04   | 0.3                 | 0.3                       | 5                             | 40                        | 4                     |    |
| New 2JJRE 003 060 S04   | 0.3                 | 0.3                       | 6                             | 40                        | 4                     |    |
| New 2JJRE 003 070 S04   | 0.3                 | 0.3                       | 7                             | 40                        | 4                     |    |
| New 2JJRE 003 080 S04   | 0.3                 | 0.3                       | 8                             | 40                        | 4                     |    |
| 2JJRE 004 010 S04       | 0.4                 | 0.4                       | 1                             | 40                        | 4                     |    |
| 2JJRE 004 015 S04       | 0.4                 | 0.4                       | 1.5                           | 40                        | 4                     |    |
| 2JJRE 004 020 S04       | 0.4                 | 0.4                       | 2                             | 40                        | 4                     |    |
| 2JJRE 004 025 S04       | 0.4                 | 0.4                       | 2.5                           | 40                        | 4                     |    |
| 2JJRE 004 030 S04       | 0.4                 | 0.4                       | 3                             | 40                        | 4                     |    |
| 2JJRE 004 035 S04       | 0.4                 | 0.4                       | 3.5                           | 40                        | 4                     |    |
| 2JJRE 004 040 S04       | 0.4                 | 0.4                       | 4                             | 40                        | 4                     |    |
| 2JJRE 004 050 S04       | 0.4                 | 0.4                       | 5                             | 40                        | 4                     |    |
| 2JJRE 004 060 S04       | 0.4                 | 0.4                       | 6                             | 40                        | 4                     |    |
| 2JJRE 004 080 S04       | 0.4                 | 0.4                       | 8                             | 40                        | 4                     |    |
| New 2JJRE 004 100 S04   | 0.4                 | 0.4                       | 10                            | 45                        | 4                     |    |
| New 2JJRE 004 120 S04   | 0.4                 | 0.4                       | 12                            | 45                        | 4                     |    |
| 2JJRE 005 010 S04       | 0.5                 | 0.5                       | 1                             | 40                        | 4                     |    |
| 2JJRE 005 020 S04       | 0.5                 | 0.5                       | 2                             | 40                        | 4                     |    |
| 2JJRE 005 030 S04       | 0.5                 | 0.5                       | 3                             | 40                        | 4                     |    |
| 2JJRE 005 040 S04       | 0.5                 | 0.5                       | 4                             | 40                        | 4                     |    |
| 2JJRE 005 050 S04       | 0.5                 | 0.5                       | 5                             | 40                        | 4                     |    |
| 2JJRE 005 060 S04       | 0.5                 | 0.5                       | 6                             | 40                        | 4                     |    |
| 2JJRE 005 080 S04       | 0.5                 | 0.5                       | 8                             | 45                        | 4                     |    |
| 2JJRE 005 100 S04       | 0.5                 | 0.5                       | 10                            | 45                        | 4                     |    |
| New 2JJRE 005 120 S04   | 0.5                 | 0.5                       | 12                            | 45                        | 4                     |    |
| New 2JJRE 005 140 S04   | 0.5                 | 0.5                       | 14                            | 45                        | 4                     |    |
| New 2JJRE 005 160 S04   | 0.5                 | 0.5                       | 16                            | 45                        | 4                     |    |
| New 2JJRE 005 180 S04   | 0.5                 | 0.5                       | 18                            | 45                        | 4                     |    |
| New 2JJRE 006 010 S04   | 0.6                 | 0.6                       | 1                             | 40                        | 4                     |    |
| 2JJRE 006 020 S04       | 0.6                 | 0.6                       | 2                             | 40                        | 4                     |    |
| 2JJRE 006 030 S04       | 0.6                 | 0.6                       | 3                             | 40                        | 4                     |    |
| 2JJRE 006 040 S04       | 0.6                 | 0.6                       | 4                             | 40                        | 4                     |    |
| 2JJRE 006 050 S04       | 0.6                 | 0.6                       | 5                             | 40                        | 4                     |    |
| 2JJRE 006 060 S04       | 0.6                 | 0.6                       | 6                             | 40                        | 4                     |    |
| 2JJRE 006 080 S04       | 0.6                 | 0.6                       | 8                             | 45                        | 4                     |    |
| 2JJRE 006 100 S04       | 0.6                 | 0.6                       | 10                            | 45                        | 4                     |    |
| New 2JJRE 006 120 S04   | 0.6                 | 0.6                       | 12                            | 45                        | 4                     |    |
| New 2JJRE 006 140 S04   | 0.6                 | 0.6                       | 14                            | 45                        | 4                     |    |
| New 2JJRE 006 160 S04   | 0.6                 | 0.6                       | 16                            | 45                        | 4                     |    |
| New 2JJRE 006 180 S04   | 0.6                 | 0.6                       | 18                            | 50                        | 4                     |    |
| 2JJRE 007 020 S04       | 0.7                 | 0.7                       | 2                             | 40                        | 4                     |    |
| 2JJRE 007 040 S04       | 0.7                 | 0.7                       | 4                             | 40                        | 4                     |    |
| 2JJRE 007 060 S04       | 0.7                 | 0.7                       | 6                             | 40                        | 4                     |    |
| 2JJRE 007 080 S04       | 0.7                 | 0.7                       | 8                             | 45                        | 4                     |    |
| 2JJRE 007 100 S04       | 0.7                 | 0.7                       | 10                            | 45                        | 4                     |    |
| New 2JJRE 007 120 S04   | 0.7                 | 0.7                       | 12                            | 45                        | 4                     |    |
| New 2JJRE 007 140 S04   | 0.7                 | 0.7                       | 14                            | 45                        | 4                     |    |
| New 2JJRE 007 160 S04   | 0.7                 | 0.7                       | 16                            | 45                        | 4                     |    |
| 2JJRE 008 010 S04       | 0.8                 | 0.8                       | 1                             | 40                        | 4                     |    |
| 2JJRE 008 020 S04       | 0.8                 | 0.8                       | 2                             | 40                        | 4                     |    |
| 2JJRE 008 030 S04       | 0.8                 | 0.8                       | 3                             | 40                        | 4                     |    |
| 2JJRE 008 040 S04       | 0.8                 | 0.8                       | 4                             | 40                        | 4                     |    |
| 2JJRE 008 050 S04       | 0.8                 | 0.8                       | 5                             | 40                        | 4                     |    |
| 2JJRE 008 060 S04       | 0.8                 | 0.8                       | 6                             | 40                        | 4                     |    |
| 2JJRE 008 080 S04       | 0.8                 | 0.8                       | 8                             | 45                        | 4                     |    |
| 2JJRE 008 100 S04       | 0.8                 | 0.8                       | 10                            | 45                        | 4                     |    |
| 2JJRE 008 120 S04       | 0.8                 | 0.8                       | 12                            | 45                        | 4                     |    |
| New 2JJRE 008 140 S04   | 0.8                 | 0.8                       | 14                            | 45                        | 4                     |    |
| New 2JJRE 008 160 S04   | 0.8                 | 0.8                       | 16                            | 45                        | 4                     |    |
| New 2JJRE 008 180 S04   | 0.8                 | 0.8                       | 18                            | 50                        | 4                     |    |
| New 2JJRE 008 200 S04   | 0.8                 | 0.8                       | 20                            | 50                        | 4                     |    |
| 2JJRE 009 040 S04       | 0.9                 | 0.9                       | 4                             | 40                        | 4                     |    |
| 2JJRE 009 060 S04       | 0.9                 | 0.9                       | 6                             | 40                        | 4                     |    |
| 2JJRE 009 080 S04       | 0.9                 | 0.9                       | 8                             | 45                        | 4                     |    |
| 2JJRE 009 100 S04       | 0.9                 | 0.9                       | 10                            | 45                        | 4                     |    |
| 2JJRE 010 020 S04       | 1                   | 1                         | 2                             | 45                        | 4                     |    |
| 2JJRE 010 030 S04       | 1                   | 1                         | 3                             | 45                        | 4                     |    |
| 2JJRE 010 040 S04       | 1                   | 1                         | 4                             | 45                        | 4                     |    |
| 2JJRE 010 050 S04       | 1                   | 1                         | 5                             | 45                        | 4                     |    |
| 2JJRE 010 060 S04       | 1                   | 1                         | 6                             | 45                        | 4                     |    |
| 2JJRE 010 080 S04       | 1                   | 1                         | 8                             | 45                        | 4                     |    |
| 2JJRE 010 100 S04       | 1                   | 1                         | 10                            | 45                        | 4                     |    |
| 2JJRE 010 120 S04       | 1                   | 1                         | 12                            | 50                        | 4                     |    |
| 2JJRE 010 140 S04       | 1                   | 1                         | 14                            | 50                        | 4                     |    |
| 2JJRE 010 160 S04       | 1                   | 1                         | 16                            | 50                        | 4                     |    |
| 2JJRE 010 180 S04       | 1                   | 1                         | 18                            | 50                        | 4                     |    |

단위 : mm

| Order Number          | 날경<br>Diameter<br>D | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 | Order Number          | 날경<br>Diameter<br>D | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 |
|-----------------------|---------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|-----------------------|---------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| 2JJRE 010 200 S04     | 1                   | 1                         | 20                            | 50                        | 4                    |    | 2JJRE 025 350 S04     | 2.5                 | 2.5                       | 35                            | 70                        | 4                    |    |
| 2JJRE 010 220 S04     | 1                   | 1                         | 22                            | 60                        | 4                    |    | 2JJRE 025 400 S04     | 2.5                 | 2.5                       | 40                            | 80                        | 4                    |    |
| 2JJRE 010 250 S04     | 1                   | 1                         | 25                            | 60                        | 4                    |    | New 2JJRE 025 450 S04 | 2.5                 | 2.5                       | 45                            | 90                        | 4                    |    |
| New 2JJRE 010 300 S04 | 1                   | 1                         | 30                            | 70                        | 4                    |    | New 2JJRE 025 500 S04 | 2.5                 | 2.5                       | 50                            | 90                        | 4                    |    |
| 2JJRE 012 040 S04     | 1.2                 | 1.2                       | 4                             | 45                        | 4                    |    | 2JJRE 030 060 S06     | 3                   | 3                         | 6                             | 45                        | 6                    |    |
| 2JJRE 012 060 S04     | 1.2                 | 1.2                       | 6                             | 45                        | 4                    |    | 2JJRE 030 080 S06     | 3                   | 3                         | 8                             | 45                        | 6                    |    |
| 2JJRE 012 080 S04     | 1.2                 | 1.2                       | 8                             | 45                        | 4                    |    | 2JJRE 030 100 S06     | 3                   | 3                         | 10                            | 50                        | 6                    |    |
| 2JJRE 012 100 S04     | 1.2                 | 1.2                       | 10                            | 45                        | 4                    |    | 2JJRE 030 120 S06     | 3                   | 3                         | 12                            | 50                        | 6                    |    |
| 2JJRE 012 120 S04     | 1.2                 | 1.2                       | 12                            | 50                        | 4                    |    | 2JJRE 030 160 S06     | 3                   | 3                         | 16                            | 55                        | 6                    |    |
| 2JJRE 012 160 S04     | 1.2                 | 1.2                       | 16                            | 50                        | 4                    |    | 2JJRE 030 200 S06     | 3                   | 3                         | 20                            | 60                        | 6                    |    |
| 2JJRE 012 200 S04     | 1.2                 | 1.2                       | 20                            | 50                        | 4                    |    | 2JJRE 030 250 S06     | 3                   | 3                         | 25                            | 65                        | 6                    |    |
| 2JJRE 012 250 S04     | 1.2                 | 1.2                       | 25                            | 60                        | 4                    |    | 2JJRE 030 300 S06     | 3                   | 3                         | 30                            | 70                        | 6                    |    |
| 2JJRE 014 080 S04     | 1.4                 | 1.4                       | 8                             | 45                        | 4                    |    | 2JJRE 030 350 S06     | 3                   | 3                         | 35                            | 75                        | 6                    |    |
| 2JJRE 014 100 S04     | 1.4                 | 1.4                       | 10                            | 45                        | 4                    |    | 2JJRE 030 400 S06     | 3                   | 3                         | 40                            | 80                        | 6                    |    |
| 2JJRE 014 140 S04     | 1.4                 | 1.4                       | 14                            | 50                        | 4                    |    | 2JJRE 030 450 S06     | 3                   | 3                         | 45                            | 90                        | 6                    |    |
| 2JJRE 014 160 S04     | 1.4                 | 1.4                       | 16                            | 50                        | 4                    |    | 2JJRE 030 500 S06     | 3                   | 3                         | 50                            | 100                       | 6                    |    |
| 2JJRE 014 200 S04     | 1.4                 | 1.4                       | 20                            | 50                        | 4                    |    | New 2JJRE 030 600 S06 | 3                   | 3                         | 60                            | 100                       | 6                    |    |
| New 2JJRE 014 220 S04 | 1.4                 | 1.4                       | 22                            | 60                        | 4                    |    | New 2JJRE 035 120 S06 | 3.5                 | 3.5                       | 12                            | 50                        | 6                    |    |
| 2JJRE 015 040 S04     | 1.5                 | 1.5                       | 4                             | 45                        | 4                    |    | New 2JJRE 035 160 S06 | 3.5                 | 3.5                       | 16                            | 55                        | 6                    |    |
| 2JJRE 015 060 S04     | 1.5                 | 1.5                       | 6                             | 45                        | 4                    |    | New 2JJRE 035 200 S06 | 3.5                 | 3.5                       | 20                            | 60                        | 6                    |    |
| 2JJRE 015 080 S04     | 1.5                 | 1.5                       | 8                             | 45                        | 4                    |    | New 2JJRE 035 250 S06 | 3.5                 | 3.5                       | 25                            | 65                        | 6                    |    |
| 2JJRE 015 100 S04     | 1.5                 | 1.5                       | 10                            | 50                        | 4                    |    | New 2JJRE 035 300 S06 | 3.5                 | 3.5                       | 30                            | 70                        | 6                    |    |
| 2JJRE 015 120 S04     | 1.5                 | 1.5                       | 12                            | 50                        | 4                    |    | New 2JJRE 035 350 S06 | 3.5                 | 3.5                       | 35                            | 75                        | 6                    |    |
| 2JJRE 015 140 S04     | 1.5                 | 1.5                       | 14                            | 50                        | 4                    |    | New 2JJRE 035 400 S06 | 3.5                 | 3.5                       | 40                            | 80                        | 6                    |    |
| 2JJRE 015 160 S04     | 1.5                 | 1.5                       | 16                            | 50                        | 4                    |    | 2JJRE 040 080 S06     | 4                   | 4                         | 8                             | 50                        | 6                    |    |
| 2JJRE 015 180 S04     | 1.5                 | 1.5                       | 18                            | 50                        | 4                    |    | 2JJRE 040 100 S06     | 4                   | 4                         | 10                            | 50                        | 6                    |    |
| 2JJRE 015 200 S04     | 1.5                 | 1.5                       | 20                            | 50                        | 4                    |    | 2JJRE 040 120 S06     | 4                   | 4                         | 12                            | 50                        | 6                    |    |
| 2JJRE 015 220 S04     | 1.5                 | 1.5                       | 22                            | 60                        | 4                    |    | 2JJRE 040 160 S06     | 4                   | 4                         | 16                            | 55                        | 6                    |    |
| 2JJRE 015 250 S04     | 1.5                 | 1.5                       | 25                            | 60                        | 4                    |    | 2JJRE 040 200 S06     | 4                   | 4                         | 20                            | 60                        | 6                    |    |
| New 2JJRE 015 350 S04 | 1.5                 | 1.5                       | 35                            | 70                        | 4                    |    | 2JJRE 040 250 S06     | 4                   | 4                         | 25                            | 65                        | 6                    |    |
| New 2JJRE 015 400 S04 | 1.5                 | 1.5                       | 40                            | 80                        | 4                    |    | 2JJRE 040 300 S06     | 4                   | 4                         | 30                            | 70                        | 6                    |    |
| 2JJRE 016 060 S04     | 1.6                 | 1.6                       | 6                             | 45                        | 4                    |    | 2JJRE 040 350 S06     | 4                   | 4                         | 35                            | 75                        | 6                    |    |
| 2JJRE 016 100 S04     | 1.6                 | 1.6                       | 10                            | 50                        | 4                    |    | New 2JJRE 040 400 S06 | 4                   | 4                         | 40                            | 80                        | 6                    |    |
| 2JJRE 016 140 S04     | 1.6                 | 1.6                       | 14                            | 50                        | 4                    |    | New 2JJRE 040 450 S06 | 4                   | 4                         | 45                            | 90                        | 6                    |    |
| 2JJRE 016 180 S04     | 1.6                 | 1.6                       | 18                            | 50                        | 4                    |    | New 2JJRE 040 500 S06 | 4                   | 4                         | 50                            | 100                       | 6                    |    |
| New 2JJRE 016 200 S04 | 1.6                 | 1.6                       | 20                            | 50                        | 4                    |    | New 2JJRE 040 600 S06 | 4                   | 4                         | 60                            | 100                       | 6                    |    |
| 2JJRE 018 100 S04     | 1.8                 | 1.8                       | 10                            | 50                        | 4                    |    | New 2JJRE 045 120 S06 | 4.5                 | 4.5                       | 12                            | 50                        | 6                    |    |
| New 2JJRE 018 120 S04 | 1.8                 | 1.8                       | 12                            | 50                        | 4                    |    | New 2JJRE 045 160 S06 | 4.5                 | 4.5                       | 16                            | 55                        | 6                    |    |
| 2JJRE 018 140 S04     | 1.8                 | 1.8                       | 14                            | 50                        | 4                    |    | New 2JJRE 045 200 S06 | 4.5                 | 4.5                       | 20                            | 60                        | 6                    |    |
| New 2JJRE 018 160 S04 | 1.8                 | 1.8                       | 16                            | 50                        | 4                    |    | New 2JJRE 045 250 S06 | 4.5                 | 4.5                       | 25                            | 65                        | 6                    |    |
| 2JJRE 018 180 S04     | 1.8                 | 1.8                       | 18                            | 50                        | 4                    |    | New 2JJRE 045 300 S06 | 4.5                 | 4.5                       | 30                            | 70                        | 6                    |    |
| New 2JJRE 018 200 S04 | 1.8                 | 1.8                       | 20                            | 50                        | 4                    |    | New 2JJRE 045 400 S06 | 4.5                 | 4.5                       | 40                            | 80                        | 6                    |    |
| New 2JJRE 018 250 S04 | 1.8                 | 1.8                       | 25                            | 60                        | 4                    |    | 2JJRE 050 160 S06     | 5                   | 6                         | 16                            | 60                        | 6                    |    |
| 2JJRE 020 060 S04     | 2                   | 2                         | 6                             | 45                        | 4                    |    | 2JJRE 050 200 S06     | 5                   | 6                         | 20                            | 60                        | 6                    |    |
| 2JJRE 020 080 S04     | 2                   | 2                         | 8                             | 45                        | 4                    |    | 2JJRE 050 250 S06     | 5                   | 6                         | 25                            | 65                        | 6                    |    |
| 2JJRE 020 100 S04     | 2                   | 2                         | 10                            | 50                        | 4                    |    | 2JJRE 050 300 S06     | 5                   | 6                         | 30                            | 70                        | 6                    |    |
| 2JJRE 020 120 S04     | 2                   | 2                         | 12                            | 50                        | 4                    |    | 2JJRE 050 350 S06     | 5                   | 6                         | 35                            | 75                        | 6                    |    |
| 2JJRE 020 140 S04     | 2                   | 2                         | 14                            | 50                        | 4                    |    | 2JJRE 050 400 S06     | 5                   | 6                         | 40                            | 80                        | 6                    |    |
| 2JJRE 020 160 S04     | 2                   | 2                         | 16                            | 50                        | 4                    |    | 2JJRE 050 500 S06     | 5                   | 6                         | 50                            | 100                       | 6                    |    |
| 2JJRE 020 180 S04     | 2                   | 2                         | 18                            | 50                        | 4                    |    | New 2JJRE 050 600 S06 | 5                   | 6                         | 60                            | 100                       | 6                    |    |
| 2JJRE 020 200 S04     | 2                   | 2                         | 20                            | 50                        | 4                    |    | 2JJRE 060 200 S06     | 6                   | 10                        | 20                            | 60                        | 6                    |    |
| 2JJRE 020 220 S04     | 2                   | 2                         | 22                            | 60                        | 4                    |    | 2JJRE 060 300 S06     | 6                   | 10                        | 30                            | 75                        | 6                    |    |
| 2JJRE 020 250 S04     | 2                   | 2                         | 25                            | 60                        | 4                    |    | 2JJRE 060 400 S06     | 6                   | 10                        | 40                            | 80                        | 6                    |    |
| 2JJRE 020 300 S04     | 2                   | 2                         | 30                            | 60                        | 4                    |    | 2JJRE 060 500 S06     | 6                   | 10                        | 50                            | 90                        | 6                    |    |
| 2JJRE 020 350 S04     | 2                   | 2                         | 35                            | 70                        | 4                    |    | 2JJRE 060 600 S06     | 6                   | 10                        | 60                            | 110                       | 6                    |    |
| 2JJRE 020 400 S04     | 2                   | 2                         | 40                            | 80                        | 4                    |    | New 2JJRE 080 300 S08 | 8                   | 12                        | 30                            | 80                        | 8                    |    |
| New 2JJRE 020 450 S04 | 2                   | 2                         | 45                            | 90                        | 4                    |    | New 2JJRE 080 500 S08 | 8                   | 12                        | 50                            | 100                       | 8                    |    |
| New 2JJRE 020 500 S04 | 2                   | 2                         | 50                            | 90                        | 4                    |    | New 2JJRE 100 400 S10 | 10                  | 15                        | 40                            | 90                        | 10                   |    |
| 2JJRE 025 100 S04     | 2.5                 | 2.5                       | 10                            | 50                        | 4                    |    | New 2JJRE 100 600 S10 | 10                  | 15                        | 60                            | 110                       | 10                   |    |
| 2JJRE 025 120 S04     | 2.5                 | 2.5                       | 12                            | 50                        | 4                    |    | New 2JJRE 120 500 S12 | 12                  | 18                        | 50                            | 100                       | 12                   |    |
| 2JJRE 025 160 S04     | 2.5                 | 2.5                       | 16                            | 50                        | 4                    |    | New 2JJRE 120 700 S12 | 12                  | 18                        | 70                            | 120                       | 12                   |    |
| 2JJRE 025 200 S04     | 2.5                 | 2.5                       | 20                            | 50                        | 4                    |    |                       |                     |                           |                               |                           |                      |    |
| 2JJRE 025 250 S04     | 2.5                 | 2.5                       | 25                            | 60                        | 4                    |    |                       |                     |                           |                               |                           |                      |    |
| 2JJRE 025 300 S04     | 2.5                 | 2.5                       | 30                            | 70                        | 4                    |    |                       |                     |                           |                               |                           |                      |    |





- 고정도강(HRc52~65), 프리하드강 계열의 고정밀 가공 엔드밀
- 고함량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 인선부 강성을 보장하여 날부치핑을 최소화 하였습니다.
- 초미립자 초경합금(0.2 $\mu$ m)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.
- Endmills for pre-hardened and hardened steel(HRc52~70)
- Good wear resistance by high quality Si-based PVD coating.
- High precise edge tolerance.
- Reinforced edge design for preventing edge chipping.
- Outstanding performance at high speed machining by ultra fine (0.2 $\mu$ m) WC grade.



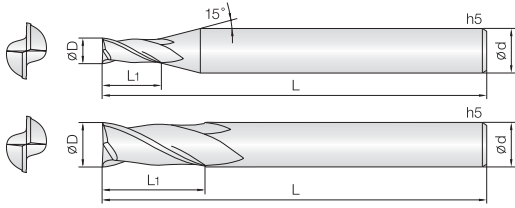
| D Size   | D Tolerance      |
|----------|------------------|
| Ø0.5 ~ 5 | +0 ~ -0.01mm     |
| Ø6 ~ 12  | -0.01 ~ -0.025mm |

단위 : mm

| Order Number          | 날경<br>Diameter<br>D | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 |
|-----------------------|---------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| New 4JJRE 005 010 S04 | 0.5                 | 0.5                       | 1                             | 40                        | 4                    |    |
| New 4JJRE 005 020 S04 | 0.5                 | 0.5                       | 2                             | 40                        | 4                    |    |
| New 4JJRE 005 030 S04 | 0.5                 | 0.5                       | 3                             | 45                        | 4                    |    |
| New 4JJRE 005 040 S04 | 0.5                 | 0.5                       | 4                             | 45                        | 4                    |    |
| New 4JJRE 005 050 S04 | 0.5                 | 0.5                       | 5                             | 45                        | 4                    |    |
| New 4JJRE 005 060 S04 | 0.5                 | 0.5                       | 6                             | 45                        | 4                    |    |
| New 4JJRE 005 080 S04 | 0.5                 | 0.5                       | 8                             | 45                        | 4                    |    |
| New 4JJRE 005 100 S04 | 0.5                 | 0.5                       | 10                            | 50                        | 4                    |    |
| New 4JJRE 006 010 S04 | 0.6                 | 0.6                       | 1                             | 45                        | 4                    |    |
| New 4JJRE 006 020 S04 | 0.6                 | 0.6                       | 2                             | 45                        | 4                    |    |
| New 4JJRE 006 030 S04 | 0.6                 | 0.6                       | 3                             | 45                        | 4                    |    |
| New 4JJRE 006 040 S04 | 0.6                 | 0.6                       | 4                             | 45                        | 4                    |    |
| New 4JJRE 006 050 S04 | 0.6                 | 0.6                       | 5                             | 45                        | 4                    |    |
| New 4JJRE 006 060 S04 | 0.6                 | 0.6                       | 6                             | 45                        | 4                    |    |
| New 4JJRE 006 080 S04 | 0.6                 | 0.6                       | 8                             | 45                        | 4                    |    |
| New 4JJRE 006 100 S04 | 0.6                 | 0.6                       | 10                            | 50                        | 4                    |    |
| New 4JJRE 006 120 S04 | 0.6                 | 0.6                       | 12                            | 50                        | 4                    |    |
| New 4JJRE 007 020 S04 | 0.7                 | 0.7                       | 2                             | 45                        | 4                    |    |
| New 4JJRE 007 040 S04 | 0.7                 | 0.7                       | 4                             | 45                        | 4                    |    |
| New 4JJRE 007 060 S04 | 0.7                 | 0.7                       | 6                             | 45                        | 4                    |    |
| New 4JJRE 007 080 S04 | 0.7                 | 0.7                       | 8                             | 45                        | 4                    |    |
| New 4JJRE 007 100 S04 | 0.7                 | 0.7                       | 10                            | 50                        | 4                    |    |
| 4JJRE 008 010 S04     | 0.8                 | 0.8                       | 1                             | 40                        | 4                    |    |
| 4JJRE 008 020 S04     | 0.8                 | 0.8                       | 2                             | 40                        | 4                    |    |
| 4JJRE 008 030 S04     | 0.8                 | 0.8                       | 3                             | 40                        | 4                    |    |
| 4JJRE 008 040 S04     | 0.8                 | 0.8                       | 4                             | 40                        | 4                    |    |
| 4JJRE 008 050 S04     | 0.8                 | 0.8                       | 5                             | 40                        | 4                    |    |
| 4JJRE 008 060 S04     | 0.8                 | 0.8                       | 6                             | 40                        | 4                    |    |
| 4JJRE 008 080 S04     | 0.8                 | 0.8                       | 8                             | 40                        | 4                    |    |
| New 4JJRE 008 100 S04 | 0.8                 | 0.8                       | 10                            | 50                        | 4                    |    |
| New 4JJRE 008 120 S04 | 0.8                 | 0.8                       | 12                            | 50                        | 4                    |    |
| New 4JJRE 008 160 S04 | 0.8                 | 0.8                       | 16                            | 50                        | 4                    |    |
| 4JJRE 010 020 S04     | 1                   | 1                         | 2                             | 45                        | 4                    |    |
| 4JJRE 010 030 S04     | 1                   | 1                         | 3                             | 45                        | 4                    |    |
| 4JJRE 010 040 S04     | 1                   | 1                         | 4                             | 45                        | 4                    |    |
| 4JJRE 010 060 S04     | 1                   | 1                         | 6                             | 45                        | 4                    |    |
| 4JJRE 010 080 S04     | 1                   | 1                         | 8                             | 45                        | 4                    |    |
| 4JJRE 010 100 S04     | 1                   | 1                         | 10                            | 50                        | 4                    |    |
| 4JJRE 010 120 S04     | 1                   | 1                         | 12                            | 50                        | 4                    |    |
| 4JJRE 010 140 S04     | 1                   | 1                         | 14                            | 50                        | 4                    |    |
| 4JJRE 010 160 S04     | 1                   | 1                         | 16                            | 50                        | 4                    |    |
| New 4JJRE 010 180 S04 | 1                   | 1                         | 18                            | 60                        | 4                    |    |
| New 4JJRE 010 200 S04 | 1                   | 1                         | 20                            | 60                        | 4                    |    |
| 4JJRE 012 040 S04     | 1.2                 | 1.2                       | 4                             | 45                        | 4                    |    |
| 4JJRE 012 060 S04     | 1.2                 | 1.2                       | 6                             | 45                        | 4                    |    |
| 4JJRE 012 080 S04     | 1.2                 | 1.2                       | 8                             | 45                        | 4                    |    |
| 4JJRE 012 100 S04     | 1.2                 | 1.2                       | 10                            | 50                        | 4                    |    |
| 4JJRE 012 120 S04     | 1.2                 | 1.2                       | 12                            | 50                        | 4                    |    |
| 4JJRE 012 160 S04     | 1.2                 | 1.2                       | 16                            | 50                        | 4                    |    |
| New 4JJRE 012 180 S04 | 1.2                 | 1.2                       | 18                            | 60                        | 4                    |    |
| New 4JJRE 012 200 S04 | 1.2                 | 1.2                       | 20                            | 60                        | 4                    |    |
| New 4JJRE 012 220 S04 | 1.2                 | 1.2                       | 22                            | 60                        | 4                    |    |
| New 4JJRE 012 250 S04 | 1.2                 | 1.2                       | 25                            | 60                        | 4                    |    |
| New 4JJRE 012 300 S04 | 1.2                 | 1.2                       | 30                            | 70                        | 4                    |    |
| 4JJRE 025 100 S04     | 2.5                 | 2.5                       | 10                            | 50                        | 4                    |    |
| 4JJRE 025 120 S04     | 2.5                 | 2.5                       | 12                            | 50                        | 4                    |    |
| 4JJRE 025 160 S04     | 2.5                 | 2.5                       | 16                            | 50                        | 4                    |    |
| 4JJRE 025 200 S04     | 2.5                 | 2.5                       | 20                            | 50                        | 4                    |    |
| 4JJRE 025 250 S04     | 2.5                 | 2.5                       | 25                            | 60                        | 4                    |    |

단위 : mm

| Order Number          | 날경<br>Diameter<br>D | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 | Order Number | 날경<br>Diameter<br>D | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 |
|-----------------------|---------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|--------------|---------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| New 4JJRE 025 300 S04 | 2.5                 | 2.5                       | 30                            | 70                        | 4                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 030 060 S06     | 3                   | 3                         | 6                             | 45                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 030 080 S06     | 3                   | 3                         | 8                             | 45                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 030 100 S06     | 3                   | 3                         | 10                            | 50                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 030 120 S06     | 3                   | 3                         | 12                            | 50                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 030160 S06      | 3                   | 3                         | 16                            | 55                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 030 200 S06     | 3                   | 3                         | 20                            | 60                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 030 250 S06     | 3                   | 3                         | 25                            | 65                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 030 300 S06     | 3                   | 3                         | 30                            | 70                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 030 350 S06 | 3                   | 3                         | 35                            | 75                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 030 400 S06 | 3                   | 3                         | 40                            | 80                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 030 450 S06 | 3                   | 3                         | 45                            | 90                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 030 500 S06 | 3                   | 3                         | 50                            | 100                       | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 030 600 S06 | 3                   | 3                         | 60                            | 110                       | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 035 120 S06 | 3.5                 | 3.5                       | 12                            | 50                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 035 160 S06 | 3.5                 | 3.5                       | 16                            | 55                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 035 200 S06 | 3.5                 | 3.5                       | 20                            | 60                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 035 250 S06 | 3.5                 | 3.5                       | 25                            | 65                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 035 300 S06 | 3.5                 | 3.5                       | 30                            | 70                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 035 350 S06 | 3.5                 | 3.5                       | 35                            | 75                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 035 400 S06 | 3.5                 | 3.5                       | 40                            | 80                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 040 060 S06     | 4                   | 4                         | 6                             | 50                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 040 080 S06     | 4                   | 4                         | 8                             | 50                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 040 100 S06     | 4                   | 4                         | 10                            | 50                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 040 120 S06     | 4                   | 4                         | 12                            | 50                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 040 160 S06     | 4                   | 4                         | 16                            | 55                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 040 200 S06     | 4                   | 4                         | 20                            | 60                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 040 250 S06     | 4                   | 4                         | 25                            | 65                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 040 300 S06     | 4                   | 4                         | 30                            | 70                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 040 400 S06     | 4                   | 4                         | 40                            | 80                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 040 450 S06 | 4                   | 4                         | 45                            | 90                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 040 500 S06 | 4                   | 4                         | 50                            | 100                       | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 040 600 S06 | 4                   | 4                         | 60                            | 110                       | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 045 120 S06 | 4.5                 | 4.5                       | 12                            | 50                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 045 160 S06 | 4.5                 | 4.5                       | 16                            | 55                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 045 200 S06 | 4.5                 | 4.5                       | 20                            | 60                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 045 250 S06 | 4.5                 | 4.5                       | 25                            | 65                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 045 300 S06 | 4.5                 | 4.5                       | 30                            | 70                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 045 400 S06 | 4.5                 | 4.5                       | 40                            | 80                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 050 160 S06     | 5                   | 5                         | 16                            | 60                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 050 200 S06     | 5                   | 5                         | 20                            | 60                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 050 250 S06     | 5                   | 5                         | 25                            | 65                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 050 300 S06     | 5                   | 5                         | 30                            | 70                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 050 400 S06     | 5                   | 5                         | 40                            | 80                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 050 500 S06 | 5                   | 5                         | 50                            | 100                       | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 050 600 S06 | 5                   | 5                         | 60                            | 110                       | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 060 200 S06     | 6                   | 6                         | 20                            | 60                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 060 300 S06     | 6                   | 6                         | 30                            | 75                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 060 400 S06     | 6                   | 6                         | 40                            | 80                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 060 500 S06     | 6                   | 6                         | 50                            | 90                        | 6                    |    |              |                     |                           |                               |                           |                      |    |
| New 4JJRE 060 600 S06 | 6                   | 6                         | 60                            | 100                       | 6                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 080 250 S08     | 8                   | 12                        | 25                            | 65                        | 8                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 080 400 S08     | 8                   | 12                        | 40                            | 100                       | 8                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 080 500 S08     | 8                   | 12                        | 50                            | 110                       | 8                    |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 100 300 S10     | 10                  | 15                        | 30                            | 70                        | 10                   |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 100 500 S10     | 10                  | 15                        | 50                            | 100                       | 10                   |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 100 600 S10     | 10                  | 15                        | 60                            | 120                       | 10                   |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 120 400 S12     | 12                  | 18                        | 40                            | 80                        | 12                   |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 120 600 S12     | 12                  | 18                        | 60                            | 110                       | 12                   |    |              |                     |                           |                               |                           |                      |    |
| 4JJRE 120 700 S12     | 12                  | 18                        | 70                            | 130                       | 12                   |    |              |                     |                           |                               |                           |                      |    |
|                       |                     |                           |                               |                           |                      |    |              |                     |                           |                               |                           |                      |    |
|                       |                     |                           |                               |                           |                      |    |              |                     |                           |                               |                           |                      |    |
|                       |                     |                           |                               |                           |                      |    |              |                     |                           |                               |                           |                      |    |



- 고정도강(HRc52~65), 프리하든강 계열의 고속 가공 엔드밀
- 고품량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 인선부 강성을 보강하여 날부치핑을 최소화 하였습니다.
- 국내최초 날경 0.03mm 제품부터 생산합니다.
- 초미립자 초경합금(0.2μm)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.

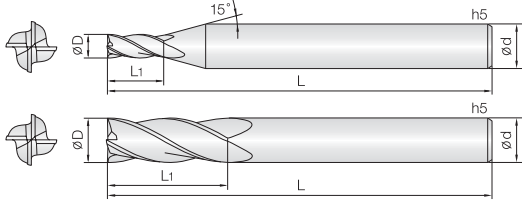
#### • Endmills for pre-hardened and hardened steel(HRc52~65)

- Good wear resistance by high quality Si-based PVD coating.
- High precise edge tolerance.
- Reinforced edge design for preventing edge chipping.
- Produce down to 0.03mm in diameter endmills at the first time in Korea.
- Outstanding performance at high speed machining by ultra fine (0.2μm) WC grade.



| D Size       | D Tolerance      |
|--------------|------------------|
| ø0.03 ~ 0.15 | +0 ~ -0.005mm    |
| ø0.2 ~ 5.5   | +0 ~ -0.01mm     |
| ø6 ~ 12      | -0.01 ~ -0.025mm |
| ø14 ~ 20     | -0.015 ~ -0.03mm |

| Order Number         | 날경<br>Diameter<br>D | 날장<br>Length<br>of cut<br>L1 | 전장<br>Overall<br>Length<br>L | 샙크<br>Shank<br>Dia<br>d | 비고 | Order Number         | 날경<br>Diameter<br>D | 날장<br>Length<br>of cut<br>L1 | 전장<br>Overall<br>Length<br>L | 샙크<br>Shank<br>Dia<br>d | 비고 |
|----------------------|---------------------|------------------------------|------------------------------|-------------------------|----|----------------------|---------------------|------------------------------|------------------------------|-------------------------|----|
| 2JJE 0003 00045 S04  | 0.03                | 0.045                        | 40                           | 4                       |    | 2JJE 026 080 S04     | 2.6                 | 8                            | 45                           | 4                       |    |
| 2JJE 0004 0006 S04   | 0.04                | 0.06                         | 40                           | 4                       |    | 2JJE 027 080 S04     | 2.7                 | 8                            | 45                           | 4                       |    |
| 2JJE 0005 0008 S04   | 0.05                | 0.08                         | 40                           | 4                       |    | 2JJE 028 080 S04     | 2.8                 | 8                            | 45                           | 4                       |    |
| 2JJE 0006 001 S04    | 0.06                | 0.1                          | 40                           | 4                       |    | 2JJE 029 080 S04     | 2.9                 | 8                            | 45                           | 4                       |    |
| 2JJE 0007 0012 S04   | 0.07                | 0.12                         | 40                           | 4                       |    | New 2JJE 030 080 S03 | 3                   | 8                            | 50                           | 3                       |    |
| 2JJE 0008 0015 S04   | 0.08                | 0.15                         | 40                           | 4                       |    | 2JJE 030 080 S04     | 3                   | 8                            | 45                           | 4                       |    |
| 2JJE 0009 0017 S04   | 0.09                | 0.17                         | 40                           | 4                       |    | 2JJE 030 080 S06     | 3                   | 8                            | 45                           | 6                       |    |
| 2JJE 001 002 S04     | 0.1                 | 0.2                          | 40                           | 4                       |    | 2JJE 035 100 S06     | 3.5                 | 10                           | 45                           | 6                       |    |
| 2JJE 0015 003 S04    | 0.15                | 0.3                          | 40                           | 4                       |    | 2JJE 040 100 S04     | 4                   | 10                           | 45                           | 4                       |    |
| 2JJE 002 004 S04     | 0.2                 | 0.4                          | 40                           | 4                       |    | 2JJE 040 110 S06     | 4                   | 11                           | 45                           | 6                       |    |
| 2JJE 0025 005 S04    | 0.25                | 0.5                          | 40                           | 4                       |    | 2JJE 045 110 S06     | 4.5                 | 11                           | 45                           | 6                       |    |
| 2JJE 003 006 S04     | 0.3                 | 0.6                          | 40                           | 4                       |    | 2JJE 050 130 S06     | 5                   | 13                           | 50                           | 6                       |    |
| 2JJE 0035 007 S04    | 0.35                | 0.7                          | 40                           | 4                       |    | 2JJE 055 130 S06     | 5.5                 | 13                           | 50                           | 6                       |    |
| 2JJE 004 008 S04     | 0.4                 | 0.8                          | 40                           | 4                       |    | 2JJE 060 130 S06     | 6                   | 13                           | 50                           | 6                       |    |
| 2JJE 0045 009 S04    | 0.45                | 0.9                          | 40                           | 4                       |    | 2JJE 065 160 S08     | 6.5                 | 16                           | 60                           | 8                       |    |
| 2JJE 005 010 S04     | 0.5                 | 1                            | 40                           | 4                       |    | 2JJE 070 160 S08     | 7                   | 16                           | 60                           | 8                       |    |
| 2JJE 0055 011 S04    | 0.55                | 1.1                          | 40                           | 4                       |    | 2JJE 075 160 S08     | 7.5                 | 16                           | 60                           | 8                       |    |
| 2JJE 006 012 S04     | 0.6                 | 1.2                          | 40                           | 4                       |    | 2JJE 080 190 S08     | 8                   | 19                           | 60                           | 8                       |    |
| 2JJE 0065 013 S04    | 0.65                | 1.3                          | 40                           | 4                       |    | 2JJE 085 190 S10     | 8.5                 | 19                           | 70                           | 10                      |    |
| 2JJE 007 014 S04     | 0.7                 | 1.4                          | 40                           | 4                       |    | 2JJE 090 190 S10     | 9                   | 19                           | 70                           | 10                      |    |
| 2JJE 0075 015 S04    | 0.75                | 1.5                          | 40                           | 4                       |    | 2JJE 095 190 S10     | 9.5                 | 19                           | 70                           | 10                      |    |
| 2JJE 008 016 S04     | 0.8                 | 1.6                          | 40                           | 4                       |    | 2JJE 100 220 S10     | 10                  | 22                           | 70                           | 10                      |    |
| 2JJE 0085 017 S04    | 0.85                | 1.7                          | 40                           | 4                       |    | 2JJE 105 220 S12     | 10.5                | 22                           | 75                           | 12                      |    |
| 2JJE 009 020 S04     | 0.9                 | 2                            | 40                           | 4                       |    | 2JJE 110 220 S12     | 11                  | 22                           | 75                           | 12                      |    |
| 2JJE 0095 020 S04    | 0.95                | 2                            | 40                           | 4                       |    | 2JJE 115 220 S12     | 11.5                | 22                           | 75                           | 12                      |    |
| New 2JJE 010 025 S03 | 1                   | 2.5                          | 40                           | 3                       |    | 2JJE 120 260 S12     | 12                  | 26                           | 75                           | 12                      |    |
| 2JJE 010 025 S04     | 1                   | 2.5                          | 40                           | 4                       |    | 2JJE 140 260 S14     | 14                  | 26                           | 80                           | 14                      |    |
| 2JJE 010 025 S06     | 1                   | 2.5                          | 40                           | 6                       |    | 2JJE 140 260 S16     | 14                  | 26                           | 90                           | 16                      |    |
| 2JJE 011 027 S04     | 1.1                 | 2.7                          | 40                           | 4                       |    | 2JJE 160 350 S16     | 16                  | 35                           | 100                          | 16                      |    |
| New 2JJE 012 030 S03 | 1.2                 | 3                            | 40                           | 3                       |    | 2JJE 180 350 S18     | 18                  | 35                           | 100                          | 18                      |    |
| 2JJE 012 030 S04     | 1.2                 | 3                            | 40                           | 4                       |    | 2JJE 200 400 S20     | 20                  | 40                           | 100                          | 20                      |    |
| 2JJE 013 032 S04     | 1.3                 | 3.2                          | 40                           | 4                       |    |                      |                     |                              |                              |                         |    |
| 2JJE 014 035 S04     | 1.4                 | 3.5                          | 40                           | 4                       |    |                      |                     |                              |                              |                         |    |
| New 2JJE 015 040 S03 | 1.5                 | 4                            | 40                           | 3                       |    |                      |                     |                              |                              |                         |    |
| 2JJE 015 040 S04     | 1.5                 | 4                            | 40                           | 4                       |    |                      |                     |                              |                              |                         |    |
| 2JJE 015 040 S06     | 1.5                 | 4                            | 40                           | 6                       |    |                      |                     |                              |                              |                         |    |
| 2JJE 016 040 S04     | 1.6                 | 4                            | 40                           | 4                       |    |                      |                     |                              |                              |                         |    |
| 2JJE 017 042 S04     | 1.7                 | 4.2                          | 40                           | 4                       |    |                      |                     |                              |                              |                         |    |
| 2JJE 018 045 S04     | 1.8                 | 4.5                          | 40                           | 4                       |    |                      |                     |                              |                              |                         |    |
| 2JJE 019 050 S04     | 1.9                 | 5                            | 40                           | 4                       |    |                      |                     |                              |                              |                         |    |
| New 2JJE 020 060 S03 | 2                   | 6                            | 40                           | 3                       |    |                      |                     |                              |                              |                         |    |
| 2JJE 020 060 S04     | 2                   | 6                            | 40                           | 4                       |    |                      |                     |                              |                              |                         |    |
| 2JJE 020 060 S06     | 2                   | 6                            | 40                           | 6                       |    |                      |                     |                              |                              |                         |    |
| 2JJE 021 060 S04     | 2.1                 | 6                            | 40                           | 4                       |    |                      |                     |                              |                              |                         |    |
| 2JJE 022 060 S04     | 2.2                 | 6                            | 40                           | 4                       |    |                      |                     |                              |                              |                         |    |
| 2JJE 023 060 S04     | 2.3                 | 6                            | 40                           | 4                       |    |                      |                     |                              |                              |                         |    |
| 2JJE 024 080 S04     | 2.4                 | 8                            | 45                           | 4                       |    |                      |                     |                              |                              |                         |    |
| New 2JJE 025 080 S03 | 2.5                 | 8                            | 45                           | 3                       |    |                      |                     |                              |                              |                         |    |
| 2JJE 025 080 S04     | 2.5                 | 8                            | 45                           | 4                       |    |                      |                     |                              |                              |                         |    |
| 2JJE 025 080 S06     | 2.5                 | 8                            | 45                           | 6                       |    |                      |                     |                              |                              |                         |    |



- **고경도강(HRc52~65), 프리하드강 계열의 고속 가공 엔드밀**
- 고탄량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 인선부 강성을 보강하여 날부차핑을 최소화 하였습니다.
- 초미립자 초경합금(0.2 $\mu$ m)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.
- **Endmills for pre-hardened and hardened steel(HRc52~65)**
- Good wear resistance by high quality Si-based PVD coating.
- High precise edge tolerance.
- Reinforced edge design for preventing edge chipping.
- Outstanding performance at high speed machining by ultra fine (0.2 $\mu$ m) WC grade.

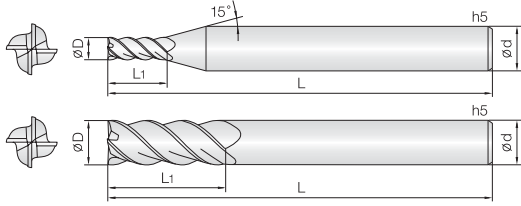


| D Size     | D Tolerance      |
|------------|------------------|
| ø0.3 ~ 5.5 | +0 ~ -0.01mm     |
| ø6 ~ 12    | -0.01 ~ -0.025mm |
| ø14 ~ 20   | -0.015 ~ -0.03mm |

단위 : mm

[illegible]

## 4날 고정도재 가공용 제이제이 45° 헬릭스 엔드밀



- 고정도강(HRc52~65), 프리하든강 계열의 고속 가공 엔드밀
- 고품량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 인선부 강성을 보강하여 날부치핑을 최소화 하였습니다.
- 45° 헬릭스 형상으로 설계하여 고속, 고이송 가공에 적합합니다.
- 초미립자 초경합금(0.2μm)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.
- Endmills for pre-hardened and hardened steel(HRc52~65)
- Good wear resistance by high quality Si-based PVD coating.
- High precise edge tolerance.
- Reinforced edge design for preventing edge chipping.
- 45° degree helix design for high speed, feed condition.
- Outstanding performance at high speed machining by ultra fine (0.2 μm) WC grade.

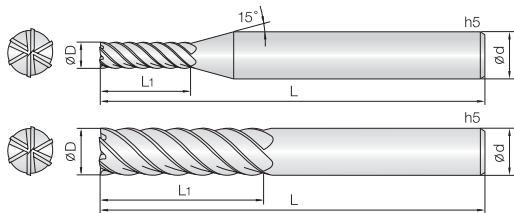


| D Size   | D Tolerance      |
|----------|------------------|
| ø1 ~ 5   | +0 ~ -0.01mm     |
| ø6 ~ 12  | -0.01 ~ -0.025mm |
| ø14 ~ 20 | -0.015 ~ -0.03mm |

| Order Number      | 날경<br>Diameter<br>D | 날장<br>Length of cut<br>L1 | 전장<br>Overall Length<br>L | 생크<br>Shank Dia<br>d | 비고 | Order Number      | 날경<br>Diameter<br>D | 날장<br>Length of cut<br>L1 | 전장<br>Overall Length<br>L | 생크<br>Shank Dia<br>d | 비고 |
|-------------------|---------------------|---------------------------|---------------------------|----------------------|----|-------------------|---------------------|---------------------------|---------------------------|----------------------|----|
| 4JJHE 010 015 S06 | 1                   | 1.5                       | 40                        | 6                    |    | 4JJHE 160 350 S16 | 16                  | 35                        | 90                        | 16                   |    |
| 4JJHE 010 025 S06 | 1                   | 2.5                       | 40                        | 6                    |    | 4JJHE 160 500 S16 | 16                  | 50                        | 110                       | 16                   |    |
| 4JJHE 010 035 S06 | 1                   | 3.5                       | 40                        | 6                    |    | 4JJHE 160 700 S16 | 16                  | 70                        | 130                       | 16                   |    |
| 4JJHE 010 050 S06 | 1                   | 5                         | 45                        | 6                    |    | 4JJHE 180 380 S18 | 18                  | 38                        | 100                       | 18                   |    |
| 4JJHE 015 040 S06 | 1.5                 | 4                         | 40                        | 6                    |    | 4JJHE 200 400 S20 | 20                  | 40                        | 100                       | 20                   |    |
| 4JJHE 015 060 S06 | 1.5                 | 6                         | 40                        | 6                    |    | 4JJHE 200 550 S20 | 20                  | 55                        | 120                       | 20                   |    |
| 4JJHE 015 080 S06 | 1.5                 | 8                         | 40                        | 6                    |    | 4JJHE 200 750 S20 | 20                  | 75                        | 150                       | 20                   |    |
| 4JJHE 020 030 S06 | 2                   | 3                         | 40                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 020 050 S06 | 2                   | 5                         | 40                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 020 080 S06 | 2                   | 8                         | 40                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 020 100 S06 | 2                   | 10                        | 45                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 025 060 S06 | 2.5                 | 6                         | 45                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 025 080 S06 | 2.5                 | 8                         | 45                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 025 100 S06 | 2.5                 | 10                        | 50                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 030 060 S06 | 3                   | 6                         | 45                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 030 080 S06 | 3                   | 8                         | 45                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 030 120 S06 | 3                   | 12                        | 50                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 030 150 S06 | 3                   | 15                        | 50                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 035 080 S06 | 3.5                 | 8                         | 45                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 040 080 S06 | 4                   | 8                         | 45                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 040 110 S06 | 4                   | 11                        | 45                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 040 150 S06 | 4                   | 15                        | 55                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 040 200 S06 | 4                   | 20                        | 60                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 045 110 S06 | 4.5                 | 11                        | 50                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 050 100 S06 | 5                   | 10                        | 50                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 050 130 S06 | 5                   | 13                        | 50                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 050 200 S06 | 5                   | 20                        | 60                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 050 250 S06 | 5                   | 25                        | 70                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 050 300 S06 | 5                   | 30                        | 75                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 060 130 S06 | 6                   | 13                        | 50                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 060 150 S06 | 6                   | 15                        | 55                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 060 200 S06 | 6                   | 20                        | 60                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 060 250 S06 | 6                   | 25                        | 70                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 060 300 S06 | 6                   | 30                        | 75                        | 6                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 070 160 S08 | 7                   | 16                        | 60                        | 8                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 080 200 S08 | 8                   | 20                        | 60                        | 8                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 080 250 S08 | 8                   | 25                        | 70                        | 8                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 080 300 S08 | 8                   | 30                        | 80                        | 8                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 080 400 S08 | 8                   | 40                        | 90                        | 8                    |    |                   |                     |                           |                           |                      |    |
| 4JJHE 090 220 S10 | 9                   | 22                        | 70                        | 10                   |    |                   |                     |                           |                           |                      |    |
| 4JJHE 100 220 S10 | 10                  | 22                        | 70                        | 10                   |    |                   |                     |                           |                           |                      |    |
| 4JJHE 100 300 S10 | 10                  | 30                        | 80                        | 10                   |    |                   |                     |                           |                           |                      |    |
| 4JJHE 100 400 S10 | 10                  | 40                        | 90                        | 10                   |    |                   |                     |                           |                           |                      |    |
| 4JJHE 100 500 S10 | 10                  | 50                        | 100                       | 10                   |    |                   |                     |                           |                           |                      |    |
| 4JJHE 120 260 S12 | 12                  | 26                        | 75                        | 12                   |    |                   |                     |                           |                           |                      |    |
| 4JJHE 120 350 S12 | 12                  | 35                        | 90                        | 12                   |    |                   |                     |                           |                           |                      |    |
| 4JJHE 120 500 S12 | 12                  | 50                        | 100                       | 12                   |    |                   |                     |                           |                           |                      |    |
| 4JJHE 120 600 S12 | 12                  | 60                        | 110                       | 12                   |    |                   |                     |                           |                           |                      |    |
| 4JJHE 140 350 S14 | 14                  | 35                        | 90                        | 14                   |    |                   |                     |                           |                           |                      |    |
| 4JJHE 140 550 S14 | 14                  | 55                        | 110                       | 14                   |    |                   |                     |                           |                           |                      |    |



## 6&8날 고경도재 가공용 제이제이 45° 헬릭스 엔드밀

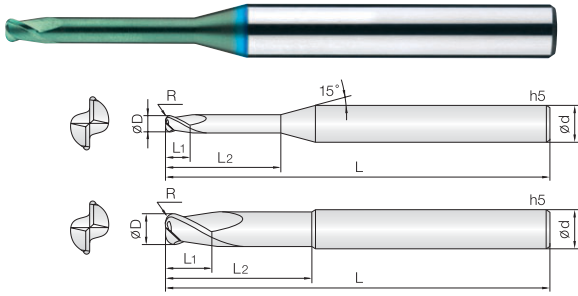


| D Size   | D Tolerance      |
|----------|------------------|
| ø3 ~ 5   | +0 ~ -0.01mm     |
| ø6 ~ 12  | -0.01 ~ -0.025mm |
| ø14 ~ 25 | -0.015 ~ -0.03mm |

단위 : mm

| Order Number          | 날경<br>Diameter<br>D | 날장<br>Length of cut<br>L1 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 |
|-----------------------|---------------------|---------------------------|---------------------------|----------------------|----|
| 6JJHE 030 100 S06     | 3                   | 10                        | 50                        | 6                    |    |
| 6JJHE 030 150 S06     | 3                   | 15                        | 50                        | 6                    |    |
| 6JJHE 030 200 S06     | 3                   | 20                        | 60                        | 6                    |    |
| 6JJHE 040 120 S06     | 4                   | 12                        | 50                        | 6                    |    |
| 6JJHE 040 160 S06     | 4                   | 16                        | 50                        | 6                    |    |
| 6JJHE 040 200 S06     | 4                   | 20                        | 60                        | 6                    |    |
| 6JJHE 050 150 S06     | 5                   | 15                        | 50                        | 6                    |    |
| 6JJHE 050 200 S06     | 5                   | 20                        | 60                        | 6                    |    |
| 6JJHE 050 250 S06     | 5                   | 25                        | 60                        | 6                    |    |
| 6JJHE 060 150 S06     | 6                   | 15                        | 50                        | 6                    |    |
| 6JJHE 060 200 S06     | 6                   | 20                        | 60                        | 6                    |    |
| 6JJHE 060 250 S06     | 6                   | 25                        | 65                        | 6                    |    |
| 6JJHE 060 300 S06     | 6                   | 30                        | 70                        | 6                    |    |
| 6JJHE 060 350 S06     | 6                   | 35                        | 75                        | 6                    |    |
| 6JJHE 060 400 S06     | 6                   | 40                        | 80                        | 6                    |    |
| 6JJHE 080 200 S08     | 8                   | 20                        | 60                        | 8                    |    |
| 6JJHE 080 250 S08     | 8                   | 25                        | 65                        | 8                    |    |
| 6JJHE 080 300 S08     | 8                   | 30                        | 75                        | 8                    |    |
| 6JJHE 080 350 S08     | 8                   | 35                        | 80                        | 8                    |    |
| 6JJHE 080 400 S08     | 8                   | 40                        | 90                        | 8                    |    |
| 6JJHE 080 450 S08     | 8                   | 45                        | 100                       | 8                    |    |
| 6JJHE 080 500 S08     | 8                   | 50                        | 100                       | 8                    |    |
| 6JJHE 100 250 S10     | 10                  | 25                        | 70                        | 10                   |    |
| 6JJHE 100 350 S10     | 10                  | 35                        | 90                        | 10                   |    |
| 6JJHE 100 450 S10     | 10                  | 45                        | 100                       | 10                   |    |
| 6JJHE 100 500 S10     | 10                  | 50                        | 100                       | 10                   |    |
| 6JJHE 100 600 S10     | 10                  | 60                        | 110                       | 10                   |    |
| 6JJHE 120 300 S12     | 12                  | 30                        | 80                        | 12                   |    |
| 6JJHE 120 400 S12     | 12                  | 40                        | 90                        | 12                   |    |
| 6JJHE 120 500 S12     | 12                  | 50                        | 100                       | 12                   |    |
| 6JJHE 120 600 S12     | 12                  | 60                        | 110                       | 12                   |    |
| 6JJHE 120 700 S12     | 12                  | 70                        | 120                       | 12                   |    |
| 6JJHE 140 350 S14     | 14                  | 35                        | 90                        | 14                   |    |
| 6JJHE 140 550 S14     | 14                  | 55                        | 110                       | 14                   |    |
| New 6JJHE 140 750 S14 | 14                  | 75                        | 150                       | 14                   |    |
| 6JJHE 160 350 S16     | 16                  | 35                        | 90                        | 16                   |    |
| 6JJHE 160 500 S16     | 16                  | 50                        | 110                       | 16                   |    |
| 6JJHE 160 650 S16     | 16                  | 65                        | 120                       | 16                   |    |
| 6JJHE 160 800 S16     | 16                  | 80                        | 150                       | 16                   |    |
| 6JJHE 160 900 S16     | 16                  | 90                        | 160                       | 16                   |    |
| 6JJHE 160 1000 S16    | 16                  | 100                       | 160                       | 16                   |    |
| 6JJHE 180 400 S18     | 18                  | 40                        | 100                       | 18                   |    |
| 6JJHE 180 650 S18     | 18                  | 65                        | 120                       | 18                   |    |
| 6JJHE 200 450 S20     | 20                  | 45                        | 100                       | 20                   |    |
| 6JJHE 200 600 S20     | 20                  | 60                        | 120                       | 20                   |    |
| 6JJHE 200 800 S20     | 20                  | 80                        | 150                       | 20                   |    |
| 6JJHE 200 900 S20     | 20                  | 90                        | 160                       | 20                   |    |
| 6JJHE 200 1000 S20    | 20                  | 100                       | 160                       | 20                   |    |
| 6JJHE 200 1100 S20    | 20                  | 110                       | 170                       | 20                   |    |
| 6JJHE 200 1200 S20    | 20                  | 120                       | 180                       | 20                   |    |

[illegible]



- 고정도강(HRC52~70), 프리하드강 계열의 고정밀 가공 엔드밀
- 고품질 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 코너R 형상을 날부치핑이 적도록 설계하였습니다.
- 다양한 코너R과 유효장으로 맞춤 가공이 가능합니다.
- 초미립자 초경합금(0.2 $\mu$ m)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.
- Endmills for pre-hardened and hardened steel(HRC52~70)
- Good wear resistance by high quality Si-based PVD coating.
- High precise edge tolerance.
- Designed for minimizing edge chipping by corner R shape.
- Various corner R and flute length for wide range application.
- Outstanding performance at high speed machining by ultra fine (0.2 $\mu$ m) WC grade.



R0.2 ~ 0.5 R1 ~ 1.5 R2 ~ 3 293P

| D Size   | D Tolerance       |
|----------|-------------------|
| Ø0.2 ~ 5 | +0 ~ -0.01mm      |
| Ø6 ~ 12  | -0.005 ~ -0.015mm |
| Ø16      | -0.01 ~ -0.02mm   |

단위 : mm

| Order Number           | 날경<br>D x R | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 |
|------------------------|-------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| 2JJCR 002 0002 005     | 0.2 X R0.02 | 0.2                       | 0.5                           | 40                        | 4                    |    |
| 2JJCR 002 0002 010     | 0.2 X R0.02 | 0.2                       | 1                             | 40                        | 4                    |    |
| 2JJCR 002 0002 015     | 0.2 X R0.02 | 0.2                       | 1.5                           | 40                        | 4                    |    |
| 2JJCR 002 0005 005     | 0.2 X R0.05 | 0.2                       | 0.5                           | 40                        | 4                    |    |
| 2JJCR 002 0005 010     | 0.2 X R0.05 | 0.2                       | 1                             | 40                        | 4                    |    |
| 2JJCR 002 0005 015     | 0.2 X R0.05 | 0.2                       | 1.5                           | 40                        | 4                    |    |
| 2JJCR 003 0002 010     | 0.3 X R0.02 | 0.3                       | 1                             | 40                        | 4                    |    |
| 2JJCR 003 0002 020     | 0.3 X R0.02 | 0.3                       | 2                             | 40                        | 4                    |    |
| 2JJCR 003 0002 030     | 0.3 X R0.02 | 0.3                       | 3                             | 40                        | 4                    |    |
| 2JJCR 003 0005 010     | 0.3 X R0.05 | 0.3                       | 1                             | 40                        | 4                    |    |
| 2JJCR 003 0005 020     | 0.3 X R0.05 | 0.3                       | 2                             | 40                        | 4                    |    |
| 2JJCR 003 0005 030     | 0.3 X R0.05 | 0.3                       | 3                             | 40                        | 4                    |    |
| 2JJCR 004 0002 010     | 0.4 X R0.02 | 0.4                       | 1                             | 40                        | 4                    |    |
| 2JJCR 004 0002 020     | 0.4 X R0.02 | 0.4                       | 2                             | 40                        | 4                    |    |
| 2JJCR 004 0002 030     | 0.4 X R0.02 | 0.4                       | 3                             | 40                        | 4                    |    |
| 2JJCR 004 0002 040     | 0.4 X R0.02 | 0.4                       | 4                             | 40                        | 4                    |    |
| 2JJCR 004 0005 010     | 0.4 X R0.05 | 0.4                       | 1                             | 40                        | 4                    |    |
| 2JJCR 004 0005 020     | 0.4 X R0.05 | 0.4                       | 2                             | 40                        | 4                    |    |
| 2JJCR 004 0005 030     | 0.4 X R0.05 | 0.4                       | 3                             | 40                        | 4                    |    |
| 2JJCR 004 0005 040     | 0.4 X R0.05 | 0.4                       | 4                             | 40                        | 4                    |    |
| 2JJCR 004 001 010      | 0.4 X R0.1  | 0.4                       | 1                             | 40                        | 4                    |    |
| 2JJCR 004 001 015      | 0.4 X R0.1  | 0.4                       | 1.5                           | 40                        | 4                    |    |
| 2JJCR 004 001 020      | 0.4 X R0.1  | 0.4                       | 2                             | 40                        | 4                    |    |
| 2JJCR 004 001 030      | 0.4 X R0.1  | 0.4                       | 3                             | 40                        | 4                    |    |
| 2JJCR 004 001 040      | 0.4 X R0.1  | 0.4                       | 4                             | 40                        | 4                    |    |
| 2JJCR 005 0002 010     | 0.5 X R0.02 | 0.5                       | 1                             | 45                        | 4                    |    |
| 2JJCR 005 0002 015     | 0.5 X R0.02 | 0.5                       | 1.5                           | 45                        | 4                    |    |
| 2JJCR 005 0002 020     | 0.5 X R0.02 | 0.5                       | 2                             | 45                        | 4                    |    |
| 2JJCR 005 0002 025     | 0.5 X R0.02 | 0.5                       | 2.5                           | 45                        | 4                    |    |
| 2JJCR 005 0002 030     | 0.5 X R0.02 | 0.5                       | 3                             | 45                        | 4                    |    |
| 2JJCR 005 0002 040     | 0.5 X R0.02 | 0.5                       | 4                             | 45                        | 4                    |    |
| 2JJCR 005 0002 050     | 0.5 X R0.02 | 0.5                       | 5                             | 45                        | 4                    |    |
| 2JJCR 005 0002 060     | 0.5 X R0.02 | 0.5                       | 6                             | 45                        | 4                    |    |
| New 2JJCR 005 0002 080 | 0.5 X R0.02 | 0.5                       | 8                             | 45                        | 4                    |    |
| New 2JJCR 005 0002 100 | 0.5 X R0.02 | 0.5                       | 10                            | 45                        | 4                    |    |
| 2JJCR 005 0005 010     | 0.5 X R0.05 | 0.5                       | 1                             | 45                        | 4                    |    |
| 2JJCR 005 0005 015     | 0.5 X R0.05 | 0.5                       | 1.5                           | 45                        | 4                    |    |
| 2JJCR 005 0005 020     | 0.5 X R0.05 | 0.5                       | 2                             | 45                        | 4                    |    |
| 2JJCR 005 0005 025     | 0.5 X R0.05 | 0.5                       | 2.5                           | 45                        | 4                    |    |
| 2JJCR 005 0005 030     | 0.5 X R0.05 | 0.5                       | 3                             | 45                        | 4                    |    |
| 2JJCR 005 0005 040     | 0.5 X R0.05 | 0.5                       | 4                             | 45                        | 4                    |    |
| 2JJCR 005 0005 050     | 0.5 X R0.05 | 0.5                       | 5                             | 45                        | 4                    |    |
| 2JJCR 005 0005 060     | 0.5 X R0.05 | 0.5                       | 6                             | 45                        | 4                    |    |
| New 2JJCR 005 0005 080 | 0.5 X R0.05 | 0.5                       | 8                             | 45                        | 4                    |    |
| New 2JJCR 005 0005 100 | 0.5 X R0.05 | 0.5                       | 10                            | 45                        | 4                    |    |
| 2JJCR 005 001 010      | 0.5 X R0.1  | 0.5                       | 1                             | 45                        | 4                    |    |
| 2JJCR 005 001 015      | 0.5 X R0.1  | 0.5                       | 1.5                           | 45                        | 4                    |    |
| 2JJCR 005 001 020      | 0.5 X R0.1  | 0.5                       | 2                             | 45                        | 4                    |    |
| 2JJCR 005 001 025      | 0.5 X R0.1  | 0.5                       | 2.5                           | 45                        | 4                    |    |
| 2JJCR 005 001 030      | 0.5 X R0.1  | 0.5                       | 3                             | 45                        | 4                    |    |
| 2JJCR 005 001 040      | 0.5 X R0.1  | 0.5                       | 4                             | 45                        | 4                    |    |
| 2JJCR 005 001 050      | 0.5 X R0.1  | 0.5                       | 5                             | 45                        | 4                    |    |
| 2JJCR 005 001 060      | 0.5 X R0.1  | 0.5                       | 6                             | 45                        | 4                    |    |
| 2JJCR 005 001 070      | 0.5 X R0.1  | 0.5                       | 7                             | 45                        | 4                    |    |
| 2JJCR 005 001 080      | 0.5 X R0.1  | 0.5                       | 8                             | 45                        | 4                    |    |
| 2JJCR 005 001 090      | 0.5 X R0.1  | 0.5                       | 9                             | 45                        | 4                    |    |
| 2JJCR 005 001 100      | 0.5 X R0.1  | 0.5                       | 10                            | 45                        | 4                    |    |
| 2JJCR 005 001 110      | 0.5 X R0.1  | 0.5                       | 11                            | 45                        | 4                    |    |
| 2JJCR 005 001 120      | 0.5 X R0.1  | 0.5                       | 12                            | 45                        | 4                    |    |
| 2JJCR 005 001 130      | 0.5 X R0.1  | 0.5                       | 13                            | 45                        | 4                    |    |
| 2JJCR 005 001 140      | 0.5 X R0.1  | 0.5                       | 14                            | 45                        | 4                    |    |
| 2JJCR 005 001 150      | 0.5 X R0.1  | 0.5                       | 15                            | 45                        | 4                    |    |
| 2JJCR 005 001 160      | 0.5 X R0.1  | 0.5                       | 16                            | 45                        | 4                    |    |
| 2JJCR 005 001 170      | 0.5 X R0.1  | 0.5                       | 17                            | 45                        | 4                    |    |
| 2JJCR 005 001 180      | 0.5 X R0.1  | 0.5                       | 18                            | 45                        | 4                    |    |
| 2JJCR 005 001 190      | 0.5 X R0.1  | 0.5                       | 19                            | 45                        | 4                    |    |
| 2JJCR 005 001 200      | 0.5 X R0.1  | 0.5                       | 20                            | 45                        | 4                    |    |
| 2JJCR 005 001 210      | 0.5 X R0.1  | 0.5                       | 21                            | 45                        | 4                    |    |
| 2JJCR 005 001 220      | 0.5 X R0.1  | 0.5                       | 22                            | 45                        | 4                    |    |
| 2JJCR 005 001 230      | 0.5 X R0.1  | 0.5                       | 23                            | 45                        | 4                    |    |
| 2JJCR 005 001 240      | 0.5 X R0.1  | 0.5                       | 24                            | 45                        | 4                    |    |
| 2JJCR 005 001 250      | 0.5 X R0.1  | 0.5                       | 25                            | 45                        | 4                    |    |
| 2JJCR 005 001 260      | 0.5 X R0.1  | 0.5                       | 26                            | 45                        | 4                    |    |
| 2JJCR 005 001 270      | 0.5 X R0.1  | 0.5                       | 27                            | 45                        | 4                    |    |
| 2JJCR 005 001 280      | 0.5 X R0.1  | 0.5                       | 28                            | 45                        | 4                    |    |
| 2JJCR 005 001 290      | 0.5 X R0.1  | 0.5                       | 29                            | 45                        | 4                    |    |
| 2JJCR 005 001 300      | 0.5 X R0.1  | 0.5                       | 30                            | 45                        | 4                    |    |
| 2JJCR 005 001 310      | 0.5 X R0.1  | 0.5                       | 31                            | 45                        | 4                    |    |
| 2JJCR 005 001 320      | 0.5 X R0.1  | 0.5                       | 32                            | 45                        | 4                    |    |
| 2JJCR 005 001 330      | 0.5 X R0.1  | 0.5                       | 33                            | 45                        | 4                    |    |
| 2JJCR 005 001 340      | 0.5 X R0.1  | 0.5                       | 34                            | 45                        | 4                    |    |
| 2JJCR 005 001 350      | 0.5 X R0.1  | 0.5                       | 35                            | 45                        | 4                    |    |
| 2JJCR 005 001 360      | 0.5 X R0.1  | 0.5                       | 36                            | 45                        | 4                    |    |
| 2JJCR 005 001 370      | 0.5 X R0.1  | 0.5                       | 37                            | 45                        | 4                    |    |
| 2JJCR 005 001 380      | 0.5 X R0.1  | 0.5                       | 38                            | 45                        | 4                    |    |
| 2JJCR 005 001 390      | 0.5 X R0.1  | 0.5                       | 39                            | 45                        | 4                    |    |
| 2JJCR 005 001 400      | 0.5 X R0.1  | 0.5                       | 40                            | 45                        | 4                    |    |
| 2JJCR 005 001 410      | 0.5 X R0.1  | 0.5                       | 41                            | 45                        | 4                    |    |
| 2JJCR 005 001 420      | 0.5 X R0.1  | 0.5                       | 42                            | 45                        | 4                    |    |
| 2JJCR 005 001 430      | 0.5 X R0.1  | 0.5                       | 43                            | 45                        | 4                    |    |
| 2JJCR 005 001 440      | 0.5 X R0.1  | 0.5                       | 44                            | 45                        | 4                    |    |
| 2JJCR 005 001 450      | 0.5 X R0.1  | 0.5                       | 45                            | 45                        | 4                    |    |
| 2JJCR 005 001 460      | 0.5 X R0.1  | 0.5                       | 46                            | 45                        | 4                    |    |
| 2JJCR 005 001 470      | 0.5 X R0.1  | 0.5                       | 47                            | 45                        | 4                    |    |
| 2JJCR 005 001 480      | 0.5 X R0.1  | 0.5                       | 48                            | 45                        | 4                    |    |
| 2JJCR 005 001 490      | 0.5 X R0.1  | 0.5                       | 49                            | 45                        | 4                    |    |
| 2JJCR 005 001 500      | 0.5 X R0.1  | 0.5                       | 50                            | 45                        | 4                    |    |
| 2JJCR 005 001 510      | 0.5 X R0.1  | 0.5                       | 51                            | 45                        | 4                    |    |
| 2JJCR 005 001 520      | 0.5 X R0.1  | 0.5                       | 52                            | 45                        | 4                    |    |
| 2JJCR 005 001 530      | 0.5 X R0.1  | 0.5                       | 53                            | 45                        | 4                    |    |
| 2JJCR 005 001 540      | 0.5 X R0.1  | 0.5                       | 54                            | 45                        | 4                    |    |
| 2JJCR 005 001 550      | 0.5 X R0.1  | 0.5                       | 55                            | 45                        | 4                    |    |
| 2JJCR 005 001 560      | 0.5 X R0.1  | 0.5                       | 56                            | 45                        | 4                    |    |
| 2JJCR 005 001 570      | 0.5 X R0.1  | 0.5                       | 57                            | 45                        | 4                    |    |
| 2JJCR 005 001 580      | 0.5 X R0.1  | 0.5                       | 58                            | 45                        | 4                    |    |
| 2JJCR 005 001 590      | 0.5 X R0.1  | 0.5                       | 59                            | 45                        | 4                    |    |
| 2JJCR 005 001 600      | 0.5 X R0.1  | 0.5                       | 60                            | 45                        | 4                    |    |
| 2JJCR 005 001 610      | 0.5 X R0.1  | 0.5                       | 61                            | 45                        | 4                    |    |
| 2JJCR 005 001 620      | 0.5 X R0.1  | 0.5                       | 62                            | 45                        | 4                    |    |
| 2JJCR 005 001 630      | 0.5 X R0.1  | 0.5                       | 63                            | 45                        | 4                    |    |
| 2JJCR 005 001 640      | 0.5 X R0.1  | 0.5                       | 64                            | 45                        | 4                    |    |
| 2JJCR 005 001 650      | 0.5 X R0.1  | 0.5                       | 65                            | 45                        | 4                    |    |
| 2JJCR 005 001 660      | 0.5 X R0.1  | 0.5                       | 66                            | 45                        | 4                    |    |
| 2JJCR 005 001 670      | 0.5 X R0.1  | 0.5                       | 67                            | 45                        | 4                    |    |
| 2JJCR 005 001 680      | 0.5 X R0.1  | 0.5                       | 68                            | 45                        | 4                    |    |
| 2JJCR 005 001 690      | 0.5 X R0.1  | 0.5                       | 69                            | 45                        | 4                    |    |
| 2JJCR 005 001 700      | 0.5 X R0.1  | 0.5                       | 70                            | 45                        | 4                    |    |
| 2JJCR 005 001 710      | 0.5 X R0.1  | 0.5                       | 71                            | 45                        | 4                    |    |
| 2JJCR 005 001 720      | 0.5 X R0.1  | 0.5                       | 72                            | 45                        | 4                    |    |
| 2JJCR 005 001 730      | 0.5 X R0.1  | 0.5                       | 73                            | 45                        | 4                    |    |
| 2JJCR 005 001 740      | 0.5 X R0.1  | 0.5                       | 74                            | 45                        | 4                    |    |
| 2JJCR 005 001 750      | 0.5 X R0.1  | 0.5                       | 75                            | 45                        | 4                    |    |
| 2JJCR 005 001 760      | 0.5 X R0.1  | 0.5                       | 76                            | 45                        | 4                    |    |
| 2JJCR 005 001 770      | 0.5 X R0.1  | 0.5                       | 77                            | 45                        | 4                    |    |
| 2JJCR 005 001 780      | 0.5 X R0.1  | 0.5                       | 78                            | 45                        | 4                    |    |
| 2JJCR 005 001 790      | 0.5 X R0.1  | 0.5                       | 79                            | 45                        | 4                    |    |
| 2JJCR 005 001 800      | 0.5 X R0.1  | 0.5                       | 80                            | 45                        | 4                    |    |
| 2JJCR 005 001 810      | 0.5 X R0.1  | 0.5                       | 81                            | 45                        | 4                    |    |
| 2JJCR 005 001 820      | 0.5 X R0.1  | 0.5                       | 82                            | 45                        | 4                    |    |
| 2JJCR 005 001 830      | 0.5 X R0.1  | 0.5                       | 83                            | 45                        | 4                    |    |
| 2JJCR 005 001 840      | 0.5 X R0.1  | 0.5                       | 84                            | 45                        | 4                    |    |
| 2JJCR 005 001 850      | 0.5 X R0.1  | 0.5                       | 85                            | 45                        | 4                    |    |
| 2JJCR 005 001 860      | 0.5 X R0.1  | 0.5                       | 86                            | 45                        | 4                    |    |
| 2JJCR 005 001 870      | 0.5 X R0.1  | 0.5                       | 87                            | 45                        | 4                    |    |
| 2JJCR 005 001 880      | 0.5 X R0.1  | 0.5                       | 88                            | 45                        | 4                    |    |
| 2JJCR 005 001 890      | 0.5 X R0.1  | 0.5                       | 89                            | 45                        | 4                    |    |
| 2JJCR 005 001 900      | 0.5 X R0.1  | 0.5                       | 90                            | 45                        | 4                    |    |
| 2JJCR 005 001 910      | 0.5 X R0.1  | 0.5                       | 91                            | 45                        | 4                    |    |
| 2JJCR 005 001 920      | 0.5 X R0.1  | 0.5                       | 92                            | 45                        | 4                    |    |
| 2JJCR 005 001 930      | 0.5 X R0.1  | 0.5                       | 93                            | 45                        | 4                    |    |
| 2JJCR 005 001 940      | 0.5 X R0.1  | 0.5                       | 94                            | 45                        | 4                    |    |
| 2JJCR 005 001 950      | 0.5 X R0.1  | 0.5                       | 95                            | 45                        | 4                    |    |
| 2JJCR 005 001 960      | 0.5 X R0.1  | 0.5                       | 96                            | 45                        | 4                    |    |
| 2JJCR 005 001 970      | 0.5 X R0.1  | 0.5                       | 97                            | 45                        | 4                    |    |
| 2JJCR 005 001 980      | 0.5 X R0.1  | 0.5                       | 98                            | 45                        | 4                    |    |
| 2JJCR 005 001 990      | 0.5 X R0.1  | 0.5                       | 99                            | 45                        | 4                    |    |
| 2JJCR 005 001 1000     | 0.5 X R0.1  | 0.5                       | 1000                          | 45                        | 4                    |    |
| 2JJCR 005 001 1010     | 0.5 X R0.1  | 0.5                       | 1010                          | 45                        | 4                    |    |
| 2JJCR 005 001 1020     | 0.5 X R0.1  | 0.5                       | 1020                          | 45                        | 4                    |    |
| 2JJCR 005 001 1030     | 0.5 X R0.1  | 0.5                       | 1030                          | 45                        | 4                    |    |
| 2JJCR 005 001 1040     | 0.5 X R0.1  | 0.5                       | 1040                          | 45                        | 4                    |    |
| 2JJCR 005 001 1050     | 0.5 X R0.1  | 0.5                       | 1050                          | 45                        | 4                    |    |
| 2JJCR 005 001 1060     | 0.5 X R0.1  | 0.5                       | 1060                          | 45                        | 4                    |    |
| 2JJCR 005 001 1070     | 0.5 X R0.1  | 0.5                       | 1070                          | 45                        | 4                    |    |
| 2JJCR 005 001 1080     | 0.5 X R0.1  | 0.5                       | 1080                          | 45                        | 4                    |    |
| 2JJCR 005 001 1090     | 0.5 X R0.1  | 0.5                       | 1090                          | 45                        | 4                    |    |
| 2JJCR 005 001 1100     | 0.5 X R0.1  | 0.5                       | 1100                          | 45                        | 4                    |    |
| 2JJCR 005 001 1110     | 0.5 X R0.1  | 0.5                       | 1110                          | 45                        | 4                    |    |
| 2JJCR 005 001 1120     | 0.5 X R0.1  | 0.5                       | 1120                          | 45                        | 4                    |    |
| 2JJCR 005 001 1130     | 0.5 X R0.1  | 0.5                       | 1130                          | 45                        | 4                    |    |
| 2JJCR 005 001 1140     | 0.5 X R0.1  | 0.5                       | 1140                          | 45                        | 4                    |    |

단위 : mm

| Order Number           | 날경<br>D x R | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 |
|------------------------|-------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| 2JJCR 008 002 040      | 0.8 X R0.2  | 0.8                       | 4                             | 45                        | 4                    |    |
| 2JJCR 008 002 060      | 0.8 X R0.2  | 0.8                       | 6                             | 45                        | 4                    |    |
| 2JJCR 008 002 080      | 0.8 X R0.2  | 0.8                       | 8                             | 45                        | 4                    |    |
| 2JJCR 008 002 100      | 0.8 X R0.2  | 0.8                       | 10                            | 45                        | 4                    |    |
| New 2JJCR 008 002 120  | 0.8 X R0.2  | 0.8                       | 12                            | 50                        | 4                    |    |
| 2JJCR 010 0002 040     | 1 X R0.02   | 1                         | 4                             | 45                        | 4                    |    |
| 2JJCR 010 0002 060     | 1 X R0.02   | 1                         | 6                             | 45                        | 4                    |    |
| 2JJCR 010 0002 080     | 1 X R0.02   | 1                         | 8                             | 45                        | 4                    |    |
| 2JJCR 010 0002 100     | 1 X R0.02   | 1                         | 10                            | 50                        | 4                    |    |
| 2JJCR 010 0002 120     | 1 X R0.02   | 1                         | 12                            | 50                        | 4                    |    |
| New 2JJCR 010 0002 140 | 1 X R0.02   | 1                         | 14                            | 50                        | 4                    |    |
| 2JJCR 010 0002 160     | 1 X R0.02   | 1                         | 16                            | 50                        | 4                    |    |
| 2JJCR 010 0002 200     | 1 X R0.02   | 1                         | 20                            | 50                        | 4                    |    |
| 2JJCR 010 0005 040     | 1 X R0.05   | 1                         | 4                             | 45                        | 4                    |    |
| 2JJCR 010 0005 060     | 1 X R0.05   | 1                         | 6                             | 45                        | 4                    |    |
| 2JJCR 010 0005 080     | 1 X R0.05   | 1                         | 8                             | 45                        | 4                    |    |
| 2JJCR 010 0005 100     | 1 X R0.05   | 1                         | 10                            | 50                        | 4                    |    |
| 2JJCR 010 0005 120     | 1 X R0.05   | 1                         | 12                            | 50                        | 4                    |    |
| New 2JJCR 010 0005 140 | 1 X R0.05   | 1                         | 14                            | 50                        | 4                    |    |
| 2JJCR 010 0005 160     | 1 X R0.05   | 1                         | 16                            | 50                        | 4                    |    |
| 2JJCR 010 0005 200     | 1 X R0.05   | 1                         | 20                            | 50                        | 4                    |    |
| 2JJCR 010 001 040      | 1 X R0.1    | 1                         | 4                             | 45                        | 4                    |    |
| 2JJCR 010 001 060      | 1 X R0.1    | 1                         | 6                             | 45                        | 4                    |    |
| 2JJCR 010 001 080      | 1 X R0.1    | 1                         | 8                             | 45                        | 4                    |    |
| 2JJCR 010 001 100      | 1 X R0.1    | 1                         | 10                            | 50                        | 4                    |    |
| 2JJCR 010 001 120      | 1 X R0.1    | 1                         | 12                            | 50                        | 4                    |    |
| New 2JJCR 010 001 140  | 1 X R0.1    | 1                         | 14                            | 50                        | 4                    |    |
| 2JJCR 010 001 160      | 1 X R0.1    | 1                         | 16                            | 50                        | 4                    |    |
| 2JJCR 010 001 200      | 1 X R0.1    | 1                         | 20                            | 50                        | 4                    |    |
| 2JJCR 010 002 040      | 1 X R0.2    | 1                         | 4                             | 45                        | 4                    |    |
| 2JJCR 010 002 060      | 1 X R0.2    | 1                         | 6                             | 45                        | 4                    |    |
| 2JJCR 010 002 080      | 1 X R0.2    | 1                         | 8                             | 45                        | 4                    |    |
| 2JJCR 010 002 100      | 1 X R0.2    | 1                         | 10                            | 50                        | 4                    |    |
| 2JJCR 010 002 120      | 1 X R0.2    | 1                         | 12                            | 50                        | 4                    |    |
| New 2JJCR 010 002 140  | 1 X R0.2    | 1                         | 14                            | 50                        | 4                    |    |
| 2JJCR 010 002 160      | 1 X R0.2    | 1                         | 16                            | 50                        | 4                    |    |
| 2JJCR 010 002 200      | 1 X R0.2    | 1                         | 20                            | 50                        | 4                    |    |
| 2JJCR 010 003 040      | 1 X R0.3    | 1                         | 4                             | 45                        | 4                    |    |
| 2JJCR 010 003 060      | 1 X R0.3    | 1                         | 6                             | 45                        | 4                    |    |
| 2JJCR 010 003 080      | 1 X R0.3    | 1                         | 8                             | 45                        | 4                    |    |
| 2JJCR 010 003 100      | 1 X R0.3    | 1                         | 10                            | 50                        | 4                    |    |
| 2JJCR 010 003 120      | 1 X R0.3    | 1                         | 12                            | 50                        | 4                    |    |
| New 2JJCR 010 003 140  | 1 X R0.3    | 1                         | 14                            | 50                        | 4                    |    |
| 2JJCR 010 003 160      | 1 X R0.3    | 1                         | 16                            | 50                        | 4                    |    |
| 2JJCR 010 003 200      | 1 X R0.3    | 1                         | 20                            | 50                        | 4                    |    |
| 2JJCR 012 0002 040     | 1.2 X R0.02 | 1.2                       | 4                             | 45                        | 4                    |    |
| 2JJCR 012 0002 060     | 1.2 X R0.02 | 1.2                       | 6                             | 45                        | 4                    |    |
| 2JJCR 012 0002 080     | 1.2 X R0.02 | 1.2                       | 8                             | 45                        | 4                    |    |
| 2JJCR 012 0002 100     | 1.2 X R0.02 | 1.2                       | 10                            | 50                        | 4                    |    |
| 2JJCR 012 0002 120     | 1.2 X R0.02 | 1.2                       | 12                            | 50                        | 4                    |    |
| New 2JJCR 012 0002 140 | 1.2 X R0.02 | 1.2                       | 14                            | 50                        | 4                    |    |
| 2JJCR 012 0002 160     | 1.2 X R0.02 | 1.2                       | 16                            | 50                        | 4                    |    |
| 2JJCR 012 0002 200     | 1.2 X R0.02 | 1.2                       | 20                            | 50                        | 4                    |    |
| 2JJCR 012 0005 040     | 1.2 X R0.05 | 1.2                       | 4                             | 45                        | 4                    |    |
| 2JJCR 012 0005 060     | 1.2 X R0.05 | 1.2                       | 6                             | 45                        | 4                    |    |
| 2JJCR 012 0005 080     | 1.2 X R0.05 | 1.2                       | 8                             | 45                        | 4                    |    |
| 2JJCR 012 0005 100     | 1.2 X R0.05 | 1.2                       | 10                            | 50                        | 4                    |    |
| 2JJCR 012 0005 120     | 1.2 X R0.05 | 1.2                       | 12                            | 50                        | 4                    |    |
| New 2JJCR 012 0005 140 | 1.2 X R0.05 | 1.2                       | 14                            | 50                        | 4                    |    |
| 2JJCR 012 0005 160     | 1.2 X R0.05 | 1.2                       | 16                            | 50                        | 4                    |    |
| 2JJCR 012 0005 200     | 1.2 X R0.05 | 1.2                       | 20                            | 50                        | 4                    |    |
| 2JJCR 012 001 040      | 1.2 X R0.1  | 1.2                       | 4                             | 45                        | 4                    |    |
| 2JJCR 012 001 060      | 1.2 X R0.1  | 1.2                       | 6                             | 45                        | 4                    |    |
| 2JJCR 012 001 080      | 1.2 X R0.1  | 1.2                       | 8                             | 45                        | 4                    |    |

| Order Number           | 날경<br>D x R | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 |
|------------------------|-------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| 2JJCR 012 001 100      | 1.2 X R0.1  | 1.2                       | 10                            | 50                        | 4                    |    |
| 2JJCR 012 001 120      | 1.2 X R0.1  | 1.2                       | 12                            | 50                        | 4                    |    |
| New 2JJCR 012 001 140  | 1.2 X R0.1  | 1.2                       | 14                            | 50                        | 4                    |    |
| 2JJCR 012 001 160      | 1.2 X R0.1  | 1.2                       | 16                            | 50                        | 4                    |    |
| 2JJCR 012 001 200      | 1.2 X R0.1  | 1.2                       | 20                            | 50                        | 4                    |    |
| 2JJCR 012 002 040      | 1.2 X R0.2  | 1.2                       | 4                             | 45                        | 4                    |    |
| 2JJCR 012 002 060      | 1.2 X R0.2  | 1.2                       | 6                             | 45                        | 4                    |    |
| 2JJCR 012 002 080      | 1.2 X R0.2  | 1.2                       | 8                             | 45                        | 4                    |    |
| 2JJCR 012 002 100      | 1.2 X R0.2  | 1.2                       | 10                            | 50                        | 4                    |    |
| 2JJCR 012 002 120      | 1.2 X R0.2  | 1.2                       | 12                            | 50                        | 4                    |    |
| New 2JJCR 012 002 140  | 1.2 X R0.2  | 1.2                       | 14                            | 50                        | 4                    |    |
| 2JJCR 012 002 160      | 1.2 X R0.2  | 1.2                       | 16                            | 50                        | 4                    |    |
| 2JJCR 012 002 200      | 1.2 X R0.2  | 1.2                       | 20                            | 50                        | 4                    |    |
| 2JJCR 012 003 040      | 1.2 X R0.3  | 1.2                       | 4                             | 45                        | 4                    |    |
| 2JJCR 012 003 060      | 1.2 X R0.3  | 1.2                       | 6                             | 45                        | 4                    |    |
| 2JJCR 012 003 080      | 1.2 X R0.3  | 1.2                       | 8                             | 45                        | 4                    |    |
| 2JJCR 012 003 100      | 1.2 X R0.3  | 1.2                       | 10                            | 50                        | 4                    |    |
| 2JJCR 012 003 120      | 1.2 X R0.3  | 1.2                       | 12                            | 50                        | 4                    |    |
| New 2JJCR 012 003 140  | 1.2 X R0.3  | 1.2                       | 14                            | 50                        | 4                    |    |
| 2JJCR 012 003 160      | 1.2 X R0.3  | 1.2                       | 16                            | 50                        | 4                    |    |
| 2JJCR 012 003 200      | 1.2 X R0.3  | 1.2                       | 20                            | 50                        | 4                    |    |
| 2JJCR 015 0002 040     | 1.5 X R0.02 | 1.5                       | 4                             | 45                        | 4                    |    |
| 2JJCR 015 0002 060     | 1.5 X R0.02 | 1.5                       | 6                             | 45                        | 4                    |    |
| 2JJCR 015 0002 080     | 1.5 X R0.02 | 1.5                       | 8                             | 45                        | 4                    |    |
| 2JJCR 015 0002 100     | 1.5 X R0.02 | 1.5                       | 10                            | 50                        | 4                    |    |
| 2JJCR 015 0002 120     | 1.5 X R0.02 | 1.5                       | 12                            | 50                        | 4                    |    |
| New 2JJCR 015 0002 140 | 1.5 X R0.02 | 1.5                       | 14                            | 50                        | 4                    |    |
| 2JJCR 015 0002 160     | 1.5 X R0.02 | 1.5                       | 16                            | 50                        | 4                    |    |
| 2JJCR 015 0002 200     | 1.5 X R0.02 | 1.5                       | 20                            | 50                        | 4                    |    |
| 2JJCR 015 0005 040     | 1.5 X R0.05 | 1.5                       | 4                             | 45                        | 4                    |    |
| 2JJCR 015 0005 060     | 1.5 X R0.05 | 1.5                       | 6                             | 45                        | 4                    |    |
| 2JJCR 015 0005 080     | 1.5 X R0.05 | 1.5                       | 8                             | 45                        | 4                    |    |
| 2JJCR 015 0005 100     | 1.5 X R0.05 | 1.5                       | 10                            | 50                        | 4                    |    |
| 2JJCR 015 0005 120     | 1.5 X R0.05 | 1.5                       | 12                            | 50                        | 4                    |    |
| New 2JJCR 015 0005 140 | 1.5 X R0.05 | 1.5                       | 14                            | 50                        | 4                    |    |
| 2JJCR 015 0005 160     | 1.5 X R0.05 | 1.5                       | 16                            | 50                        | 4                    |    |
| 2JJCR 015 0005 200     | 1.5 X R0.05 | 1.5                       | 20                            | 50                        | 4                    |    |
| 2JJCR 015 001 040      | 1.5 X R0.1  | 1.5                       | 4                             | 45                        | 4                    |    |
| 2JJCR 015 001 060      | 1.5 X R0.1  | 1.5                       | 6                             | 45                        | 4                    |    |
| 2JJCR 015 001 080      | 1.5 X R0.1  | 1.5                       | 8                             | 45                        | 4                    |    |
| 2JJCR 015 001 100      | 1.5 X R0.1  | 1.5                       | 10                            | 50                        | 4                    |    |
| 2JJCR 015 001 120      | 1.5 X R0.1  | 1.5                       | 12                            | 50                        | 4                    |    |
| New 2JJCR 015 001 140  | 1.5 X R0.1  | 1.5                       | 14                            | 50                        | 4                    |    |
| 2JJCR 015 001 160      | 1.5 X R0.1  | 1.5                       | 16                            | 50                        | 4                    |    |
| 2JJCR 015 001 200      | 1.5 X R0.1  | 1.5                       | 20                            | 50                        | 4                    |    |
| 2JJCR 015 002 040      | 1.5 X R0.2  | 1.5                       | 4                             | 45                        | 4                    |    |
| 2JJCR 015 002 060      | 1.5 X R0.2  | 1.5                       | 6                             | 45                        | 4                    |    |
| 2JJCR 015 002 080      | 1.5 X R0.2  | 1.5                       | 8                             | 45                        | 4                    |    |
| 2JJCR 015 002 100      | 1.5 X R0.2  | 1.5                       | 10                            | 50                        | 4                    |    |
| 2JJCR 015 002 120      | 1.5 X R0.2  | 1.5                       | 12                            | 50                        | 4                    |    |
| New 2JJCR 015 002 140  | 1.5 X R0.2  | 1.5                       | 14                            | 50                        | 4                    |    |
| 2JJCR 015 002 160      | 1.5 X R0.2  | 1.5                       | 16                            | 50                        | 4                    |    |
| 2JJCR 015 002 200      | 1.5 X R0.2  | 1.5                       | 20                            | 50                        | 4                    |    |
| 2JJCR 015 003 040      | 1.5 X R0.3  | 1.5                       | 4                             | 45                        | 4                    |    |
| 2JJCR 015 003 060      | 1.5 X R0.3  | 1.5                       | 6                             | 45                        | 4                    |    |
| 2JJCR 015 003 080      | 1.5 X R0.3  | 1.5                       | 8                             | 45                        | 4                    |    |
| 2JJCR 015 003 100      | 1.5 X R0.3  | 1.5                       | 10                            | 50                        | 4                    |    |
| 2JJCR 015 003 120      | 1.5 X R0.3  | 1.5                       | 12                            | 50                        | 4                    |    |
| New 2JJCR 015 003 140  | 1.5 X R0.3  | 1.5                       | 14                            | 50                        | 4                    |    |
| 2JJCR 015 003 160      | 1.5 X R0.3  | 1.5                       | 16                            | 50                        | 4                    |    |
| 2JJCR 015 003 200      | 1.5 X R0.3  | 1.5                       | 20                            | 50                        | 4                    |    |
| 2JJCR 015 005 040      | 1.5 X R0.5  | 1.5                       | 4                             | 45                        | 4                    |    |
| 2JJCR 015 005 060      | 1.5 X R0.5  | 1.5                       | 6                             | 45                        | 4                    |    |
| 2JJCR 015 005 080      | 1.5 X R0.5  | 1.5                       | 8                             | 45                        | 4                    |    |

단위 : mm

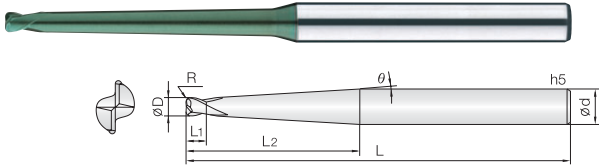
| Order Number           | 날경<br>Diameter<br>D × R | 날장<br>Length<br>of cut<br>L1 | 유효장<br>Effective<br>Length<br>L2 | 전장<br>Overall<br>Length<br>L | 샙크<br>Shank<br>Dia<br>d | 비고 | Order Number      | 날경<br>Diameter<br>D × R | 날장<br>Length<br>of cut<br>L1 | 유효장<br>Effective<br>Length<br>L2 | 전장<br>Overall<br>Length<br>L | 샙크<br>Shank<br>Dia<br>d | 비고 |
|------------------------|-------------------------|------------------------------|----------------------------------|------------------------------|-------------------------|----|-------------------|-------------------------|------------------------------|----------------------------------|------------------------------|-------------------------|----|
| 2JJCR 015 005 100      | 1.5 X R0.5              | 1.5                          | 10                               | 50                           | 4                       |    | 2JJCR 025 002 200 | 2.5 X R0.2              | 2.5                          | 20                               | 50                           | 4                       |    |
| 2JJCR 015 005 120      | 1.5 X R0.5              | 1.5                          | 12                               | 50                           | 4                       |    | 2JJCR 025 003 100 | 2.5 X R0.3              | 2.5                          | 10                               | 50                           | 4                       |    |
| New 2JJCR 015 005 140  | 1.5 X R0.5              | 1.5                          | 14                               | 50                           | 4                       |    | 2JJCR 025 003 160 | 2.5 X R0.3              | 2.5                          | 16                               | 50                           | 4                       |    |
| 2JJCR 015 005 160      | 1.5 X R0.5              | 1.5                          | 16                               | 50                           | 4                       |    | 2JJCR 025 003 200 | 2.5 X R0.3              | 2.5                          | 20                               | 50                           | 4                       |    |
| 2JJCR 015 005 200      | 1.5 X R0.5              | 1.5                          | 20                               | 50                           | 4                       |    | 2JJCR 025 005 100 | 2.5 X R0.5              | 2.5                          | 10                               | 50                           | 4                       |    |
| 2JJCR 020 0002 060     | 2 X R0.02               | 2                            | 6                                | 45                           | 4                       |    | 2JJCR 025 005 160 | 2.5 X R0.5              | 2.5                          | 16                               | 50                           | 4                       |    |
| 2JJCR 020 0002 080     | 2 X R0.02               | 2                            | 8                                | 45                           | 4                       |    | 2JJCR 025 005 200 | 2.5 X R0.5              | 2.5                          | 20                               | 50                           | 4                       |    |
| 2JJCR 020 0002 100     | 2 X R0.02               | 2                            | 10                               | 50                           | 4                       |    | 2JJCR 030 001 100 | 3 X R0.1                | 3                            | 10                               | 50                           | 6                       |    |
| 2JJCR 020 0002 120     | 2 X R0.02               | 2                            | 12                               | 50                           | 4                       |    | 2JJCR 030 001 120 | 3 X R0.1                | 3                            | 12                               | 50                           | 6                       |    |
| New 2JJCR 020 0002 140 | 2 X R0.02               | 2                            | 14                               | 50                           | 4                       |    | 2JJCR 030 001 160 | 3 X R0.1                | 3                            | 16                               | 55                           | 6                       |    |
| 2JJCR 020 0002 160     | 2 X R0.02               | 2                            | 16                               | 50                           | 4                       |    | 2JJCR 030 001 200 | 3 X R0.1                | 3                            | 20                               | 60                           | 6                       |    |
| 2JJCR 020 0002 200     | 2 X R0.02               | 2                            | 20                               | 50                           | 4                       |    | 2JJCR 030 001 250 | 3 X R0.1                | 3                            | 25                               | 65                           | 6                       |    |
| 2JJCR 020 0002 250     | 2 X R0.02               | 2                            | 25                               | 60                           | 4                       |    | 2JJCR 030 001 300 | 3 X R0.1                | 3                            | 30                               | 70                           | 6                       |    |
| 2JJCR 020 0005 060     | 2 X R0.05               | 2                            | 6                                | 45                           | 4                       |    | 2JJCR 030 001 350 | 3 X R0.1                | 3                            | 35                               | 75                           | 6                       |    |
| 2JJCR 020 0005 080     | 2 X R0.05               | 2                            | 8                                | 45                           | 4                       |    | 2JJCR 030 001 400 | 3 X R0.1                | 3                            | 40                               | 80                           | 6                       |    |
| 2JJCR 020 0005 100     | 2 X R0.05               | 2                            | 10                               | 50                           | 4                       |    | 2JJCR 030 002 100 | 3 X R0.2                | 3                            | 10                               | 50                           | 6                       |    |
| 2JJCR 020 0005 120     | 2 X R0.05               | 2                            | 12                               | 50                           | 4                       |    | 2JJCR 030 002 120 | 3 X R0.2                | 3                            | 12                               | 50                           | 6                       |    |
| New 2JJCR 020 0005 140 | 2 X R0.05               | 2                            | 14                               | 50                           | 4                       |    | 2JJCR 030 002 160 | 3 X R0.2                | 3                            | 16                               | 55                           | 6                       |    |
| 2JJCR 020 0005 160     | 2 X R0.05               | 2                            | 16                               | 50                           | 4                       |    | 2JJCR 030 002 200 | 3 X R0.2                | 3                            | 20                               | 60                           | 6                       |    |
| 2JJCR 020 0005 200     | 2 X R0.05               | 2                            | 20                               | 50                           | 4                       |    | 2JJCR 030 002 250 | 3 X R0.2                | 3                            | 25                               | 65                           | 6                       |    |
| 2JJCR 020 0005 250     | 2 X R0.05               | 2                            | 25                               | 60                           | 4                       |    | 2JJCR 030 002 300 | 3 X R0.2                | 3                            | 30                               | 70                           | 6                       |    |
| 2JJCR 020 001 060      | 2 X R0.1                | 2                            | 6                                | 45                           | 4                       |    | 2JJCR 030 002 350 | 3 X R0.2                | 3                            | 35                               | 75                           | 6                       |    |
| 2JJCR 020 001 080      | 2 X R0.1                | 2                            | 8                                | 45                           | 4                       |    | 2JJCR 030 002 400 | 3 X R0.2                | 3                            | 40                               | 80                           | 6                       |    |
| 2JJCR 020 001 100      | 2 X R0.1                | 2                            | 10                               | 50                           | 4                       |    | 2JJCR 030 003 100 | 3 X R0.3                | 3                            | 10                               | 50                           | 6                       |    |
| 2JJCR 020 001 120      | 2 X R0.1                | 2                            | 12                               | 50                           | 4                       |    | 2JJCR 030 003 120 | 3 X R0.3                | 3                            | 12                               | 50                           | 6                       |    |
| New 2JJCR 020 001 140  | 2 X R0.1                | 2                            | 14                               | 50                           | 4                       |    | 2JJCR 030 003 160 | 3 X R0.3                | 3                            | 16                               | 55                           | 6                       |    |
| 2JJCR 020 001 160      | 2 X R0.1                | 2                            | 16                               | 50                           | 4                       |    | 2JJCR 030 003 200 | 3 X R0.3                | 3                            | 20                               | 60                           | 6                       |    |
| 2JJCR 020 001 200      | 2 X R0.1                | 2                            | 20                               | 50                           | 4                       |    | 2JJCR 030 003 250 | 3 X R0.3                | 3                            | 25                               | 65                           | 6                       |    |
| 2JJCR 020 001 250      | 2 X R0.1                | 2                            | 25                               | 60                           | 4                       |    | 2JJCR 030 003 300 | 3 X R0.3                | 3                            | 30                               | 70                           | 6                       |    |
| 2JJCR 020 001 300      | 2 X R0.1                | 2                            | 30                               | 70                           | 4                       |    | 2JJCR 030 003 350 | 3 X R0.3                | 3                            | 35                               | 75                           | 6                       |    |
| 2JJCR 020 002 060      | 2 X R0.2                | 2                            | 6                                | 45                           | 4                       |    | 2JJCR 030 003 400 | 3 X R0.3                | 3                            | 40                               | 80                           | 6                       |    |
| 2JJCR 020 002 080      | 2 X R0.2                | 2                            | 8                                | 45                           | 4                       |    | 2JJCR 030 005 100 | 3 X R0.5                | 3                            | 10                               | 50                           | 6                       |    |
| 2JJCR 020 002 100      | 2 X R0.2                | 2                            | 10                               | 50                           | 4                       |    | 2JJCR 030 005 120 | 3 X R0.5                | 3                            | 12                               | 50                           | 6                       |    |
| 2JJCR 020 002 120      | 2 X R0.2                | 2                            | 12                               | 50                           | 4                       |    | 2JJCR 030 005 160 | 3 X R0.5                | 3                            | 16                               | 55                           | 6                       |    |
| New 2JJCR 020 002 140  | 2 X R0.2                | 2                            | 14                               | 50                           | 4                       |    | 2JJCR 030 005 200 | 3 X R0.5                | 3                            | 20                               | 60                           | 6                       |    |
| 2JJCR 020 002 160      | 2 X R0.2                | 2                            | 16                               | 50                           | 4                       |    | 2JJCR 030 005 250 | 3 X R0.5                | 3                            | 25                               | 65                           | 6                       |    |
| 2JJCR 020 002 200      | 2 X R0.2                | 2                            | 20                               | 50                           | 4                       |    | 2JJCR 030 005 300 | 3 X R0.5                | 3                            | 30                               | 70                           | 6                       |    |
| 2JJCR 020 002 250      | 2 X R0.2                | 2                            | 25                               | 60                           | 4                       |    | 2JJCR 030 005 350 | 3 X R0.5                | 3                            | 35                               | 75                           | 6                       |    |
| 2JJCR 020 002 300      | 2 X R0.2                | 2                            | 30                               | 70                           | 4                       |    | 2JJCR 030 005 400 | 3 X R0.5                | 3                            | 40                               | 80                           | 6                       |    |
| 2JJCR 020 003 060      | 2 X R0.3                | 2                            | 6                                | 45                           | 4                       |    | 2JJCR 030 010 100 | 3 X R1                  | 3                            | 10                               | 50                           | 6                       |    |
| 2JJCR 020 003 080      | 2 X R0.3                | 2                            | 8                                | 45                           | 4                       |    | 2JJCR 030 010 120 | 3 X R1                  | 3                            | 12                               | 50                           | 6                       |    |
| 2JJCR 020 003 100      | 2 X R0.3                | 2                            | 10                               | 50                           | 4                       |    | 2JJCR 030 010 160 | 3 X R1                  | 3                            | 16                               | 55                           | 6                       |    |
| 2JJCR 020 003 120      | 2 X R0.3                | 2                            | 12                               | 50                           | 4                       |    | 2JJCR 030 010 200 | 3 X R1                  | 3                            | 20                               | 60                           | 6                       |    |
| New 2JJCR 020 003 140  | 2 X R0.3                | 2                            | 14                               | 50                           | 4                       |    | 2JJCR 030 010 250 | 3 X R1                  | 3                            | 25                               | 65                           | 6                       |    |
| 2JJCR 020 003 160      | 2 X R0.3                | 2                            | 16                               | 50                           | 4                       |    | 2JJCR 030 010 300 | 3 X R1                  | 3                            | 30                               | 70                           | 6                       |    |
| 2JJCR 020 003 200      | 2 X R0.3                | 2                            | 20                               | 50                           | 4                       |    | 2JJCR 030 010 350 | 3 X R1                  | 3                            | 35                               | 75                           | 6                       |    |
| 2JJCR 020 003 250      | 2 X R0.3                | 2                            | 25                               | 60                           | 4                       |    | 2JJCR 030 010 400 | 3 X R1                  | 3                            | 40                               | 80                           | 6                       |    |
| 2JJCR 020 003 300      | 2 X R0.3                | 2                            | 30                               | 70                           | 4                       |    | 2JJCR 040 001 120 | 4 X R0.1                | 4                            | 12                               | 50                           | 6                       |    |
| 2JJCR 020 005 060      | 2 X R0.5                | 2                            | 6                                | 45                           | 4                       |    | 2JJCR 040 001 160 | 4 X R0.1                | 4                            | 16                               | 55                           | 6                       |    |
| 2JJCR 020 005 080      | 2 X R0.5                | 2                            | 8                                | 45                           | 4                       |    | 2JJCR 040 001 200 | 4 X R0.1                | 4                            | 20                               | 60                           | 6                       |    |
| 2JJCR 020 005 100      | 2 X R0.5                | 2                            | 10                               | 50                           | 4                       |    | 2JJCR 040 001 250 | 4 X R0.1                | 4                            | 25                               | 65                           | 6                       |    |
| 2JJCR 020 005 120      | 2 X R0.5                | 2                            | 12                               | 50                           | 4                       |    | 2JJCR 040 001 300 | 4 X R0.1                | 4                            | 30                               | 70                           | 6                       |    |
| New 2JJCR 020 005 140  | 2 X R0.5                | 2                            | 14                               | 50                           | 4                       |    | 2JJCR 040 001 350 | 4 X R0.1                | 4                            | 35                               | 75                           | 6                       |    |
| 2JJCR 020 005 160      | 2 X R0.5                | 2                            | 16                               | 50                           | 4                       |    | 2JJCR 040 001 400 | 4 X R0.1                | 4                            | 40                               | 80                           | 6                       |    |
| 2JJCR 020 005 200      | 2 X R0.5                | 2                            | 20                               | 50                           | 4                       |    | 2JJCR 040 002 120 | 4 X R0.2                | 4                            | 12                               | 50                           | 6                       |    |
| 2JJCR 020 005 250      | 2 X R0.5                | 2                            | 25                               | 60                           | 4                       |    | 2JJCR 040 002 160 | 4 X R0.2                | 4                            | 16                               | 55                           | 6                       |    |
| 2JJCR 020 005 300      | 2 X R0.5                | 2                            | 30                               | 70                           | 4                       |    | 2JJCR 040 002 200 | 4 X R0.2                | 4                            | 20                               | 60                           | 6                       |    |
| 2JJCR 025 001 100      | 2.5 X R0.1              | 2.5                          | 10                               | 50                           | 4                       |    | 2JJCR 040 002 250 | 4 X R0.2                | 4                            | 25                               | 65                           | 6                       |    |
| 2JJCR 025 001 160      | 2.5 X R0.1              | 2.5                          | 16                               | 50                           | 4                       |    | 2JJCR 040 002 300 | 4 X R0.2                | 4                            | 30                               | 70                           | 6                       |    |
| 2JJCR 025 001 200      | 2.5 X R0.1              | 2.5                          | 20                               | 50                           | 4                       |    | 2JJCR 040 002 350 | 4 X R0.2                | 4                            | 35                               | 75                           | 6                       |    |
| 2JJCR 025 001 250      | 2.5 X R0.1              | 2.5                          | 25                               | 60                           | 4                       |    | 2JJCR 040 002 400 | 4 X R0.2                | 4                            | 40                               | 80                           | 6                       |    |
| 2JJCR 025 001 300      | 2.5 X R0.1              | 2.5                          | 30                               | 70                           | 4                       |    | 2JJCR 040 003 120 | 4 X R0.3                | 4                            | 12                               | 50                           | 6                       |    |
| 2JJCR 025 002 100      | 2.5 X R0.2              | 2.5                          | 10                               | 50                           | 4                       |    | 2JJCR 040 003 160 | 4 X R0.3                | 4                            | 16                               | 55                           | 6                       |    |
| 2JJCR 025 002 160      | 2.5 X R0.2              | 2.5                          | 16                               | 50                           | 4                       |    | 2JJCR 040 003 200 | 4 X R0.3                | 4                            | 20                               | 60                           | 6                       |    |



단위 : mm

| Order Number      | 날경<br>Diameter<br>D ×R | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 생크<br>Shank Dia<br>d | 비고 | Order Number | 날경<br>Diameter<br>D ×R | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 생크<br>Shank Dia<br>d | 비고 |
|-------------------|------------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|--------------|------------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| 2JJCR 040 003 250 | 4 X R0.3               | 4                         | 25                            | 65                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 040 003 300 | 4 X R0.3               | 4                         | 30                            | 70                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 040 003 350 | 4 X R0.3               | 4                         | 35                            | 75                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 040 003 400 | 4 X R0.3               | 4                         | 40                            | 80                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 040 005 120 | 4 X R0.5               | 4                         | 12                            | 50                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 040 005 160 | 4 X R0.5               | 4                         | 16                            | 55                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 040 005 200 | 4 X R0.5               | 4                         | 20                            | 60                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 040 005 250 | 4 X R0.5               | 4                         | 25                            | 65                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 040 005 300 | 4 X R0.5               | 4                         | 30                            | 70                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 040 005 350 | 4 X R0.5               | 4                         | 35                            | 75                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 040 005 400 | 4 X R0.5               | 4                         | 40                            | 80                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 040 010 120 | 4 X R1                 | 4                         | 12                            | 50                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 040 010 160 | 4 X R1                 | 4                         | 16                            | 55                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 040 010 200 | 4 X R1                 | 4                         | 20                            | 60                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 040 010 250 | 4 X R1                 | 4                         | 25                            | 65                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 040 010 300 | 4 X R1                 | 4                         | 30                            | 70                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 040 010 350 | 4 X R1                 | 4                         | 35                            | 75                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 040 010 400 | 4 X R1                 | 4                         | 40                            | 80                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 050 002 150 | 5 X R0.2               | 6                         | 15                            | 60                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 050 002 250 | 5 X R0.2               | 6                         | 25                            | 70                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 050 002 300 | 5 X R0.2               | 6                         | 30                            | 70                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 050 002 400 | 5 X R0.2               | 6                         | 40                            | 80                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 050 005 150 | 5 X R0.5               | 6                         | 15                            | 60                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 050 005 250 | 5 X R0.5               | 6                         | 25                            | 70                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 050 005 300 | 5 X R0.5               | 6                         | 30                            | 70                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 050 005 400 | 5 X R0.5               | 6                         | 40                            | 80                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 050 010 150 | 5 X R1                 | 6                         | 15                            | 60                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 050 010 250 | 5 X R1                 | 6                         | 25                            | 70                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 050 010 300 | 5 X R1                 | 6                         | 30                            | 70                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 050 010 400 | 5 X R1                 | 6                         | 40                            | 80                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 060 001 200 | 6 X R0.1               | 7                         | 20                            | 60                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 060 001 400 | 6 X R0.1               | 7                         | 40                            | 80                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 060 002 200 | 6 X R0.2               | 7                         | 20                            | 60                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 060 002 400 | 6 X R0.2               | 7                         | 40                            | 80                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 060 003 200 | 6 X R0.3               | 7                         | 20                            | 60                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 060 003 400 | 6 X R0.3               | 7                         | 40                            | 80                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 060 005 200 | 6 X R0.5               | 7                         | 20                            | 60                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 060 005 400 | 6 X R0.5               | 7                         | 40                            | 80                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 060 010 200 | 6 X R1                 | 7                         | 20                            | 60                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 060 010 400 | 6 X R1                 | 7                         | 40                            | 80                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 060 015 200 | 6 X R1.5               | 7                         | 20                            | 60                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 060 015 400 | 6 X R1.5               | 7                         | 40                            | 80                        | 6                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 080 002 220 | 8 X R0.2               | 9                         | 22                            | 65                        | 8                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 080 003 220 | 8 X R0.3               | 9                         | 22                            | 65                        | 8                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 080 005 220 | 8 X R0.5               | 9                         | 22                            | 65                        | 8                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 080 010 220 | 8 X R1                 | 9                         | 22                            | 65                        | 8                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 080 015 220 | 8 X R1.5               | 9                         | 22                            | 65                        | 8                    |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 100 002 240 | 10 X R0.2              | 11                        | 24                            | 70                        | 10                   |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 100 003 240 | 10 X R0.3              | 11                        | 24                            | 70                        | 10                   |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 100 005 240 | 10 X R0.5              | 11                        | 24                            | 70                        | 10                   |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 100 010 240 | 10 X R1                | 11                        | 24                            | 70                        | 10                   |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 100 015 240 | 10 X R1.5              | 11                        | 24                            | 70                        | 10                   |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 100 020 240 | 10 X R2                | 11                        | 24                            | 70                        | 10                   |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 120 002 260 | 12 X R0.2              | 13                        | 26                            | 80                        | 12                   |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 120 003 260 | 12 X R0.3              | 13                        | 26                            | 80                        | 12                   |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 120 005 260 | 12 X R0.5              | 13                        | 26                            | 80                        | 12                   |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 120 010 260 | 12 X R1                | 13                        | 26                            | 80                        | 12                   |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 120 015 260 | 12 X R1.5              | 13                        | 26                            | 80                        | 12                   |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 120 020 260 | 12 X R2                | 13                        | 26                            | 80                        | 12                   |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 120 030 260 | 12 X R3                | 13                        | 26                            | 80                        | 12                   |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 160 005 110 | 16 X R0.5              | 20                        | 35                            | 110                       | 16                   |    |              |                        |                           |                               |                           |                      |    |
| 2JJCR 160 010 110 | 16 X R1                | 20                        | 35                            | 110                       | 16                   |    |              |                        |                           |                               |                           |                      |    |
|                   |                        |                           |                               |                           |                      |    |              |                        |                           |                               |                           |                      |    |





- 고정도강(HRc52~70), 프리하드강 계열의 고정밀 가공 엔드밀
- 고품량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 유효장을 테이퍼 설계하여 깊은 홈 작업시 목부파손 및 떨림을 최소화 하였습니다.
- 코너R 형상을 날부치평이 적도록 설계하였습니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 초미립자 초경합금(0.2 $\mu$ m)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.
- Endmills for pre-hardened and hardened steel (HRc52~70)
- Good wear resistance by high quality Si-based PVD coating.
- Minimize chattering and fracturing by taper designed flute.
- Designed for minimizing edge chipping by corner R shape.
- High precise edge tolerance.
- Outstanding performance at high speed machining by ultra fine (0.2 $\mu$ m) WC grade.

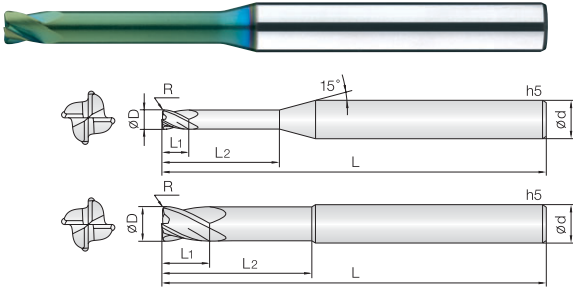


| D Size | D Tolerance  |
|--------|--------------|
| ø1 ~ 4 | +0 ~ -0.01mm |

| Order Number       | 날경<br>Diameter<br>D x R | 각도<br>Angle<br>θ | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샤프크<br>Shank Dia<br>d | 비고 |
|--------------------|-------------------------|------------------|---------------------------|-------------------------------|---------------------------|-----------------------|----|
| 2JJTC 010 001 0601 | 1 X R0.1                | 1°               | 1                         | 6                             | 50                        | 4                     |    |
| 2JJTC 010 001 1001 | 1 X R0.1                | 1°               | 1                         | 10                            | 50                        | 4                     |    |
| 2JJTC 010 001 1501 | 1 X R0.1                | 1°               | 1                         | 15                            | 50                        | 4                     |    |
| 2JJTC 010 001 2001 | 1 X R0.1                | 1°               | 1                         | 20                            | 60                        | 4                     |    |
| 2JJTC 010 001 2501 | 1 X R0.1                | 1°               | 1                         | 25                            | 60                        | 4                     |    |
| 2JJTC 010 001 3001 | 1 X R0.1                | 1°               | 1                         | 30                            | 70                        | 4                     |    |
| 2JJTC 010 001 3501 | 1 X R0.1                | 1°               | 1                         | 35                            | 75                        | 4                     |    |
| 2JJTC 010 002 0601 | 1 X R0.2                | 1°               | 1                         | 6                             | 50                        | 4                     |    |
| 2JJTC 010 002 1001 | 1 X R0.2                | 1°               | 1                         | 10                            | 50                        | 4                     |    |
| 2JJTC 010 002 1501 | 1 X R0.2                | 1°               | 1                         | 15                            | 50                        | 4                     |    |
| 2JJTC 010 002 2001 | 1 X R0.2                | 1°               | 1                         | 20                            | 60                        | 4                     |    |
| 2JJTC 010 002 2501 | 1 X R0.2                | 1°               | 1                         | 25                            | 60                        | 4                     |    |
| 2JJTC 010 002 3001 | 1 X R0.2                | 1°               | 1                         | 30                            | 70                        | 4                     |    |
| 2JJTC 010 002 3501 | 1 X R0.2                | 1°               | 1                         | 35                            | 75                        | 4                     |    |
| 2JJTC 010 003 0601 | 1 X R0.3                | 1°               | 1                         | 6                             | 50                        | 4                     |    |
| 2JJTC 010 003 1001 | 1 X R0.3                | 1°               | 1                         | 10                            | 50                        | 4                     |    |
| 2JJTC 010 003 1501 | 1 X R0.3                | 1°               | 1                         | 15                            | 50                        | 4                     |    |
| 2JJTC 010 003 2001 | 1 X R0.3                | 1°               | 1                         | 20                            | 60                        | 4                     |    |
| 2JJTC 010 003 3001 | 1 X R0.3                | 1°               | 1                         | 30                            | 70                        | 4                     |    |
| 2JJTC 010 003 3501 | 1 X R0.3                | 1°               | 1                         | 35                            | 75                        | 4                     |    |
| 2JJTC 015 002 1001 | 1.5 X R0.2              | 1°               | 1.5                       | 10                            | 50                        | 4                     |    |
| 2JJTC 015 002 1501 | 1.5 X R0.2              | 1°               | 1.5                       | 15                            | 50                        | 4                     |    |
| 2JJTC 015 002 2001 | 1.5 X R0.2              | 1°               | 1.5                       | 20                            | 60                        | 4                     |    |
| 2JJTC 015 002 2501 | 1.5 X R0.2              | 1°               | 1.5                       | 25                            | 60                        | 4                     |    |
| 2JJTC 015 002 3001 | 1.5 X R0.2              | 1°               | 1.5                       | 30                            | 70                        | 4                     |    |
| 2JJTC 015 002 3501 | 1.5 X R0.2              | 1°               | 1.5                       | 35                            | 75                        | 4                     |    |
| 2JJTC 015 003 1001 | 1.5 X R0.3              | 1°               | 1.5                       | 10                            | 50                        | 4                     |    |
| 2JJTC 015 003 1501 | 1.5 X R0.3              | 1°               | 1.5                       | 15                            | 50                        | 4                     |    |
| 2JJTC 015 003 2001 | 1.5 X R0.3              | 1°               | 1.5                       | 20                            | 60                        | 4                     |    |
| 2JJTC 015 003 2501 | 1.5 X R0.3              | 1°               | 1.5                       | 25                            | 60                        | 4                     |    |
| 2JJTC 015 003 3001 | 1.5 X R0.3              | 1°               | 1.5                       | 30                            | 70                        | 4                     |    |
| 2JJTC 015 003 3501 | 1.5 X R0.3              | 1°               | 1.5                       | 35                            | 75                        | 4                     |    |
| 2JJTC 015 005 1001 | 1.5 X R0.5              | 1°               | 1.5                       | 10                            | 50                        | 4                     |    |
| 2JJTC 015 005 1501 | 1.5 X R0.5              | 1°               | 1.5                       | 15                            | 50                        | 4                     |    |
| 2JJTC 015 005 2001 | 1.5 X R0.5              | 1°               | 1.5                       | 20                            | 60                        | 4                     |    |
| 2JJTC 015 005 2501 | 1.5 X R0.5              | 1°               | 1.5                       | 25                            | 60                        | 4                     |    |
| 2JJTC 015 005 3001 | 1.5 X R0.5              | 1°               | 1.5                       | 30                            | 70                        | 4                     |    |
| 2JJTC 015 005 3501 | 1.5 X R0.5              | 1°               | 1.5                       | 35                            | 75                        | 4                     |    |
| 2JJTC 020 002 1201 | 2 X R0.2                | 1°               | 2                         | 12                            | 50                        | 4                     |    |
| 2JJTC 020 002 1601 | 2 X R0.2                | 1°               | 2                         | 16                            | 50                        | 4                     |    |
| 2JJTC 020 002 2001 | 2 X R0.2                | 1°               | 2                         | 20                            | 60                        | 4                     |    |
| 2JJTC 020 002 2501 | 2 X R0.2                | 1°               | 2                         | 25                            | 60                        | 4                     |    |
| 2JJTC 020 002 3001 | 2 X R0.2                | 1°               | 2                         | 30                            | 70                        | 4                     |    |
| 2JJTC 020 002 3501 | 2 X R0.2                | 1°               | 2                         | 35                            | 75                        | 4                     |    |
| 2JJTC 020 002 4001 | 2 X R0.2                | 1°               | 2                         | 40                            | 80                        | 4                     |    |
| 2JJTC 020 002 5001 | 2 X R0.2                | 1°               | 2                         | 50                            | 90                        | 4                     |    |
| 2JJTC 020 003 1201 | 2 X R0.3                | 1°               | 2                         | 12                            | 50                        | 4                     |    |
| 2JJTC 020 003 1601 | 2 X R0.3                | 1°               | 2                         | 16                            | 50                        | 4                     |    |
| 2JJTC 020 003 2001 | 2 X R0.3                | 1°               | 2                         | 20                            | 60                        | 4                     |    |
| 2JJTC 020 003 2501 | 2 X R0.3                | 1°               | 2                         | 25                            | 60                        | 4                     |    |
| 2JJTC 020 003 3001 | 2 X R0.3                | 1°               | 2                         | 30                            | 70                        | 4                     |    |
| 2JJTC 020 003 3501 | 2 X R0.3                | 1°               | 2                         | 35                            | 75                        | 4                     |    |
| 2JJTC 020 003 4001 | 2 X R0.3                | 1°               | 2                         | 40                            | 80                        | 4                     |    |
| 2JJTC 020 003 5001 | 2 X R0.3                | 1°               | 2                         | 50                            | 90                        | 4                     |    |
| 2JJTC 020 005 1201 | 2 X R0.5                | 1°               | 2                         | 12                            | 50                        | 4                     |    |
| 2JJTC 020 005 1601 | 2 X R0.5                | 1°               | 2                         | 16                            | 50                        | 4                     |    |
| 2JJTC 020 005 2001 | 2 X R0.5                | 1°               | 2                         | 20                            | 60                        | 4                     |    |
| 2JJTC 020 005 2501 | 2 X R0.5                | 1°               | 2                         | 25                            | 60                        | 4                     |    |
| 2JJTC 020 005 3001 | 2 X R0.5                | 1°               | 2                         | 30                            | 70                        | 4                     |    |
| 2JJTC 020 005 3501 | 2 X R0.5                | 1°               | 2                         | 35                            | 75                        | 4                     |    |
| 2JJTC 020 005 4001 | 2 X R0.5                | 1°               | 2                         | 40                            | 80                        | 4                     |    |
| 2JJTC 020 005 5001 | 2 X R0.5                | 1°               | 2                         | 50                            | 90                        | 4                     |    |
| 2JJTC 030 002 2001 | 3 X R0.2                | 1°               | 3                         | 20                            | 60                        | 6                     |    |
| 2JJTC 030 002 3001 | 3 X R0.2                | 1°               | 3                         | 30                            | 70                        | 6                     |    |
| 2JJTC 030 002 4001 | 3 X R0.2                | 1°               | 3                         | 40                            | 80                        | 6                     |    |
| 2JJTC 030 002 5001 | 3 X R0.2                | 1°               | 3                         | 50                            | 90                        | 6                     |    |
| 2JJTC 030 002 6001 | 3 X R0.2                | 1°               | 3                         | 60                            | 100                       | 6                     |    |
| 2JJTC 030 003 2001 | 3 X R0.3                | 1°               | 3                         | 20                            | 60                        | 6                     |    |
| 2JJTC 030 003 3001 | 3 X R0.3                | 1°               | 3                         | 30                            | 70                        | 6                     |    |
| 2JJTC 030 003 4001 | 3 X R0.3                | 1°               | 3                         | 40                            | 80                        | 6                     |    |
| 2JJTC 030 003 5001 | 3 X R0.3                | 1°               | 3                         | 50                            | 90                        | 6                     |    |
| 2JJTC 030 003 6001 | 3 X R0.3                | 1°               | 3                         | 60                            | 100                       | 6                     |    |
| 2JJTC 030 005 2001 | 3 X R0.5                | 1°               | 3                         | 20                            | 60                        | 6                     |    |
| 2JJTC 030 005 3001 | 3 X R0.5                | 1°               | 3                         | 30                            | 70                        | 6                     |    |
| 2JJTC 030 005 4001 | 3 X R0.5                | 1°               | 3                         | 40                            | 80                        | 6                     |    |
| 2JJTC 030 005 5001 | 3 X R0.5                | 1°               | 3                         | 50                            | 90                        | 6                     |    |
| 2JJTC 030 005 6001 | 3 X R0.5                | 1°               | 3                         | 60                            | 100                       | 6                     |    |
| 2JJTC 030 010 2001 | 3 X R1                  | 1°               | 3                         | 20                            | 60                        | 6                     |    |
| 2JJTC 030 010 3001 | 3 X R1                  | 1°               | 3                         | 30                            | 70                        | 6                     |    |
| 2JJTC 030 010 4001 | 3 X R1                  | 1°               | 3                         | 40                            | 80                        | 6                     |    |
| 2JJTC 030 010 5001 | 3 X R1                  | 1°               | 3                         | 50                            | 90                        | 6                     |    |
| 2JJTC 030 010 6001 | 3 X R1                  | 1°               | 3                         | 60                            | 100                       | 6                     |    |
| 2JJTC 040 002 2001 | 4 X R0.2                | 1°               | 4                         | 20                            | 60                        | 6                     |    |
| 2JJTC 040 002 3001 | 4 X R0.2                | 1°               | 4                         | 30                            | 70                        | 6                     |    |
| 2JJTC 040 002 4001 | 4 X R0.2                | 1°               | 4                         | 40                            | 80                        | 6                     |    |
| 2JJTC 040 002 5001 | 4 X R0.2                | 1°               | 4                         | 50                            | 90                        | 6                     |    |
| 2JJTC 040 002 6001 | 4 X R0.2                | 1°               | 4                         | 60                            | 100                       | 6                     |    |
| 2JJTC 040 003 2001 | 4 X R0.3                | 1°               | 4                         | 20                            | 60                        | 6                     |    |
| 2JJTC 040 003 3001 | 4 X R0.3                | 1°               | 4                         | 30                            | 70                        | 6                     |    |
| 2JJTC 040 003 4001 | 4 X R0.3                | 1°               | 4                         | 40                            | 80                        | 6                     |    |
| 2JJTC 040 003 5001 | 4 X R0.3                | 1°               | 4                         | 50                            | 90                        | 6                     |    |
| 2JJTC 040 003 6001 | 4 X R0.3                | 1°               | 4                         | 60                            | 100                       | 6                     |    |
| 2JJTC 040 005 2001 | 4 X R0.5                | 1°               | 4                         | 20                            | 60                        | 6                     |    |
| 2JJTC 040 005 3001 | 4 X R0.5                | 1°               | 4                         | 30                            | 70                        | 6                     |    |
| 2JJTC 040 005 4001 | 4 X R0.5                | 1°               | 4                         | 40                            | 80                        | 6                     |    |
| 2JJTC 040 005 5001 | 4 X R0.5                | 1°               | 4                         | 50                            | 90                        | 6                     |    |
| 2JJTC 040 005 6001 | 4 X R0.5                | 1°               | 4                         | 60                            | 100                       | 6                     |    |
| 2JJTC 040 010 2001 | 4 X R1                  | 1°               | 4                         | 20                            | 60                        | 6                     |    |
| 2JJTC 040 010 3001 | 4 X R1                  | 1°               | 4                         | 30                            | 70                        | 6                     |    |

단위 : mm

[illegible]



- 고정도강(HRc52~70), 프리하든강 계열의 고정밀 가공 엔드밀
- 고품량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 코너R 형상을 날부치평이 적도록 설계하였습니다.
- 다양한 코너R과 유효장으로 맞춤 가공이 가능합니다.
- 초미립자 초경합금(0.2µm)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.

#### Endmills for pre-hardened and hardened steel(HRc52~70)

- Good wear resistance by high quality Si-based PVD coating.
- High precise edge tolerance.
- Designed for minimizing edge chipping by corner R shape.
- Various corner R and flute length for wide range application.
- Outstanding performance at high speed machining by ultra fine (0.2µm) WC grade.



| D Size   | D Tolerance       |
|----------|-------------------|
| Ø0.5 ~ 5 | +0 ~ -0.01mm      |
| Ø6 ~ 12  | -0.005 ~ -0.015mm |

| Order Number           | 날경<br>Diameter<br>D x R | 날장<br>Length<br>of cut<br>L1 | 유효장<br>Effective<br>Length<br>L2 | 전장<br>Overall<br>Length<br>L | 샤프트<br>Shank<br>Dia<br>d | 비고 |
|------------------------|-------------------------|------------------------------|----------------------------------|------------------------------|--------------------------|----|
| 4JJCR 005 0005 020     | 0.5 X R0.05             | 0.5                          | 2                                | 45                           | 4                        |    |
| 4JJCR 005 0005 040     | 0.5 X R0.05             | 0.5                          | 4                                | 45                           | 4                        |    |
| 4JJCR 005 0005 060     | 0.5 X R0.05             | 0.5                          | 6                                | 45                           | 4                        |    |
| 4JJCR 005 0005 080     | 0.5 X R0.05             | 0.5                          | 8                                | 45                           | 4                        |    |
| 4JJCR 005 001 020      | 0.5 X R0.1              | 0.5                          | 2                                | 45                           | 4                        |    |
| 4JJCR 005 001 040      | 0.5 X R0.1              | 0.5                          | 4                                | 45                           | 4                        |    |
| 4JJCR 005 001 060      | 0.5 X R0.1              | 0.5                          | 6                                | 45                           | 4                        |    |
| 4JJCR 005 001 080      | 0.5 X R0.1              | 0.5                          | 8                                | 45                           | 4                        |    |
| 4JJCR 006 0005 020     | 0.6 X R0.05             | 0.6                          | 2                                | 45                           | 4                        |    |
| 4JJCR 006 0005 040     | 0.6 X R0.05             | 0.6                          | 4                                | 45                           | 4                        |    |
| 4JJCR 006 0005 060     | 0.6 X R0.05             | 0.6                          | 6                                | 45                           | 4                        |    |
| 4JJCR 006 0005 080     | 0.6 X R0.05             | 0.6                          | 8                                | 45                           | 4                        |    |
| 4JJCR 006 001 020      | 0.6 X R0.1              | 0.6                          | 2                                | 45                           | 4                        |    |
| 4JJCR 006 001 040      | 0.6 X R0.1              | 0.6                          | 4                                | 45                           | 4                        |    |
| 4JJCR 006 001 060      | 0.6 X R0.1              | 0.6                          | 6                                | 45                           | 4                        |    |
| 4JJCR 006 001 080      | 0.6 X R0.1              | 0.6                          | 8                                | 45                           | 4                        |    |
| 4JJCR 007 0005 020     | 0.7 X R0.05             | 0.7                          | 2                                | 45                           | 4                        |    |
| 4JJCR 007 0005 040     | 0.7 X R0.05             | 0.7                          | 4                                | 45                           | 4                        |    |
| 4JJCR 007 0005 060     | 0.7 X R0.05             | 0.7                          | 6                                | 45                           | 4                        |    |
| 4JJCR 007 0005 080     | 0.7 X R0.05             | 0.7                          | 8                                | 45                           | 4                        |    |
| 4JJCR 007 001 020      | 0.7 X R0.1              | 0.7                          | 2                                | 45                           | 4                        |    |
| 4JJCR 007 001 040      | 0.7 X R0.1              | 0.7                          | 4                                | 45                           | 4                        |    |
| 4JJCR 007 001 060      | 0.7 X R0.1              | 0.7                          | 6                                | 45                           | 4                        |    |
| 4JJCR 007 001 080      | 0.7 X R0.1              | 0.7                          | 8                                | 45                           | 4                        |    |
| 4JJCR 008 0002 020     | 0.8 X R0.02             | 0.8                          | 2                                | 45                           | 4                        |    |
| 4JJCR 008 0002 040     | 0.8 X R0.02             | 0.8                          | 4                                | 45                           | 4                        |    |
| 4JJCR 008 0002 060     | 0.8 X R0.02             | 0.8                          | 6                                | 45                           | 4                        |    |
| 4JJCR 008 0002 080     | 0.8 X R0.02             | 0.8                          | 8                                | 45                           | 4                        |    |
| 4JJCR 008 0002 100     | 0.8 X R0.02             | 0.8                          | 10                               | 45                           | 4                        |    |
| New 4JJCR 008 0002 120 | 0.8 X R0.02             | 0.8                          | 12                               | 50                           | 4                        |    |
| 4JJCR 008 0005 020     | 0.8 X R0.05             | 0.8                          | 2                                | 45                           | 4                        |    |
| 4JJCR 008 0005 040     | 0.8 X R0.05             | 0.8                          | 4                                | 45                           | 4                        |    |
| 4JJCR 008 0005 060     | 0.8 X R0.05             | 0.8                          | 6                                | 45                           | 4                        |    |
| 4JJCR 008 0005 080     | 0.8 X R0.05             | 0.8                          | 8                                | 45                           | 4                        |    |
| 4JJCR 008 0005 100     | 0.8 X R0.05             | 0.8                          | 10                               | 45                           | 4                        |    |
| New 4JJCR 008 0005 120 | 0.8 X R0.05             | 0.8                          | 12                               | 50                           | 4                        |    |
| 4JJCR 008 001 020      | 0.8 X R0.1              | 0.8                          | 2                                | 45                           | 4                        |    |
| 4JJCR 008 001 040      | 0.8 X R0.1              | 0.8                          | 4                                | 45                           | 4                        |    |
| 4JJCR 008 001 060      | 0.8 X R0.1              | 0.8                          | 6                                | 45                           | 4                        |    |
| 4JJCR 008 001 080      | 0.8 X R0.1              | 0.8                          | 8                                | 45                           | 4                        |    |
| 4JJCR 008 001 100      | 0.8 X R0.1              | 0.8                          | 10                               | 45                           | 4                        |    |
| 4JJCR 008 001 120      | 0.8 X R0.1              | 0.8                          | 12                               | 50                           | 4                        |    |
| 4JJCR 010 0002 040     | 1 X R0.02               | 1                            | 4                                | 45                           | 4                        |    |
| 4JJCR 010 0002 060     | 1 X R0.02               | 1                            | 6                                | 45                           | 4                        |    |
| 4JJCR 010 0002 080     | 1 X R0.02               | 1                            | 8                                | 45                           | 4                        |    |
| 4JJCR 010 0002 100     | 1 X R0.02               | 1                            | 10                               | 50                           | 4                        |    |
| 4JJCR 010 0002 120     | 1 X R0.02               | 1                            | 12                               | 50                           | 4                        |    |
| New 4JJCR 010 0002 140 | 1 X R0.02               | 1                            | 14                               | 50                           | 4                        |    |
| New 4JJCR 010 0002 160 | 1 X R0.02               | 1                            | 16                               | 50                           | 4                        |    |
| New 4JJCR 010 0002 200 | 1 X R0.02               | 1                            | 20                               | 50                           | 4                        |    |
| 4JJCR 010 0005 040     | 1 X R0.05               | 1                            | 4                                | 45                           | 4                        |    |
| 4JJCR 010 0005 060     | 1 X R0.05               | 1                            | 6                                | 45                           | 4                        |    |
| 4JJCR 010 0005 080     | 1 X R0.05               | 1                            | 8                                | 45                           | 4                        |    |
| 4JJCR 010 0005 100     | 1 X R0.05               | 1                            | 10                               | 50                           | 4                        |    |
| 4JJCR 010 0005 120     | 1 X R0.05               | 1                            | 12                               | 50                           | 4                        |    |
| New 4JJCR 010 0005 140 | 1 X R0.05               | 1                            | 14                               | 50                           | 4                        |    |
| New 4JJCR 010 0005 160 | 1 X R0.05               | 1                            | 16                               | 50                           | 4                        |    |
| New 4JJCR 010 0005 200 | 1 X R0.05               | 1                            | 20                               | 50                           | 4                        |    |
| 4JJCR 010 001 040      | 1 X R0.1                | 1                            | 4                                | 45                           | 4                        |    |
| 4JJCR 010 001 060      | 1 X R0.1                | 1                            | 6                                | 45                           | 4                        |    |
| 4JJCR 010 001 080      | 1 X R0.1                | 1                            | 8                                | 45                           | 4                        |    |
| 4JJCR 010 001 100      | 1 X R0.1                | 1                            | 10                               | 50                           | 4                        |    |
| 4JJCR 010 001 120      | 1 X R0.1                | 1                            | 12                               | 50                           | 4                        |    |
| New 4JJCR 010 001 140  | 1 X R0.1                | 1                            | 14                               | 50                           | 4                        |    |
| New 4JJCR 010 001 160  | 1 X R0.1                | 1                            | 16                               | 50                           | 4                        |    |
| New 4JJCR 010 001 200  | 1 X R0.1                | 1                            | 20                               | 50                           | 4                        |    |
| 4JJCR 010 002 040      | 1 X R0.2                | 1                            | 4                                | 45                           | 4                        |    |
| 4JJCR 010 002 060      | 1 X R0.2                | 1                            | 6                                | 45                           | 4                        |    |
| 4JJCR 010 002 080      | 1 X R0.2                | 1                            | 8                                | 45                           | 4                        |    |
| 4JJCR 010 002 100      | 1 X R0.2                | 1                            | 10                               | 50                           | 4                        |    |
| 4JJCR 010 002 120      | 1 X R0.2                | 1                            | 12                               | 50                           | 4                        |    |
| New 4JJCR 010 002 140  | 1 X R0.2                | 1                            | 14                               | 50                           | 4                        |    |
| New 4JJCR 010 002 160  | 1 X R0.2                | 1                            | 16                               | 50                           | 4                        |    |
| New 4JJCR 010 002 200  | 1 X R0.2                | 1                            | 20                               | 50                           | 4                        |    |
| 4JJCR 010 003 040      | 1 X R0.3                | 1                            | 4                                | 45                           | 4                        |    |
| 4JJCR 010 003 060      | 1 X R0.3                | 1                            | 6                                | 45                           | 4                        |    |
| 4JJCR 010 003 080      | 1 X R0.3                | 1                            | 8                                | 45                           | 4                        |    |
| 4JJCR 010 003 100      | 1 X R0.3                | 1                            | 10                               | 50                           | 4                        |    |
| 4JJCR 010 003 120      | 1 X R0.3                | 1                            | 12                               | 50                           | 4                        |    |
| New 4JJCR 010 003 140  | 1 X R0.3                | 1                            | 14                               | 50                           | 4                        |    |
| New 4JJCR 010 003 160  | 1 X R0.3                | 1                            | 16                               | 50                           | 4                        |    |
| New 4JJCR 010 003 200  | 1 X R0.3                | 1                            | 20                               | 50                           | 4                        |    |
| 4JJCR 012 0002 040     | 1.2 X R0.02             | 1.2                          | 4                                | 45                           | 4                        |    |
| 4JJCR 012 0002 060     | 1.2 X R0.02             | 1.2                          | 6                                | 45                           | 4                        |    |
| 4JJCR 012 0002 080     | 1.2 X R0.02             | 1.2                          | 8                                | 45                           | 4                        |    |
| 4JJCR 012 0002 100     | 1.2 X R0.02             | 1.2                          | 10                               | 50                           | 4                        |    |
| 4JJCR 012 0002 120     | 1.2 X R0.02             | 1.2                          | 12                               | 50                           | 4                        |    |
| New 4JJCR 012 0002 140 | 1.2 X R0.02             | 1.2                          | 14                               | 50                           | 4                        |    |
| New 4JJCR 012 0002 160 | 1.2 X R0.02             | 1.2                          | 16                               | 50                           | 4                        |    |
| New 4JJCR 012 0002 200 | 1.2 X R0.02             | 1.2                          | 20                               | 50                           | 4                        |    |
| 4JJCR 012 0005 040     | 1.2 X R0.05             | 1.2                          | 4                                | 45                           | 4                        |    |
| 4JJCR 012 0005 060     | 1.2 X R0.05             | 1.2                          | 6                                | 45                           | 4                        |    |
| 4JJCR 012 0005 080     | 1.2 X R0.05             | 1.2                          | 8                                | 45                           | 4                        |    |
| 4JJCR 012 0005 100     | 1.2 X R0.05             | 1.2                          | 10                               | 50                           | 4                        |    |
| 4JJCR 012 0005 120     | 1.2 X R0.05             | 1.2                          | 12                               | 50                           | 4                        |    |
| New 4JJCR 012 0005 140 | 1.2 X R0.05             | 1.2                          | 14                               | 50                           | 4                        |    |
| New 4JJCR 012 0005 160 | 1.2 X R0.05             | 1.2                          | 16                               | 50                           | 4                        |    |
| New 4JJCR 012 0005 200 | 1.2 X R0.05             | 1.2                          | 20                               | 50                           | 4                        |    |
| 4JJCR 012 001 040      | 1.2 X R0.1              | 1.2                          | 4                                | 45                           | 4                        |    |
| 4JJCR 012 001 060      | 1.2 X R0.1              | 1.2                          | 6                                | 45                           | 4                        |    |

단위 : mm

| Order Number           | 날경<br>D × R | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 | Order Number           | 날경<br>D × R | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 |
|------------------------|-------------|---------------------------|-------------------------------|---------------------------|----------------------|----|------------------------|-------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| 4JJCR 012 001 080      | 1.2 X R0.1  | 1.2                       | 8                             | 45                        | 4                    |    | 4JJCR 015 005 120      | 1.5 X R0.5  | 1.5                       | 12                            | 50                        | 4                    |    |
| 4JJCR 012 001 100      | 1.2 X R0.1  | 1.2                       | 10                            | 50                        | 4                    |    | New 4JJCR 015 005 140  | 1.5 X R0.5  | 1.5                       | 14                            | 50                        | 4                    |    |
| 4JJCR 012 001 120      | 1.2 X R0.1  | 1.2                       | 12                            | 50                        | 4                    |    | 4JJCR 015 005 160      | 1.5 X R0.5  | 1.5                       | 16                            | 50                        | 4                    |    |
| New 4JJCR 012 001 140  | 1.2 X R0.1  | 1.2                       | 14                            | 50                        | 4                    |    | New 4JJCR 015 005 200  | 1.5 X R0.5  | 1.5                       | 20                            | 50                        | 4                    |    |
| New 4JJCR 012 001 160  | 1.2 X R0.1  | 1.2                       | 16                            | 50                        | 4                    |    | New 4JJCR 015 005 220  | 1.5 X R0.5  | 1.5                       | 22                            | 60                        | 4                    |    |
| New 4JJCR 012 001 200  | 1.2 X R0.1  | 1.2                       | 20                            | 50                        | 4                    |    | New 4JJCR 015 005 250  | 1.5 X R0.5  | 1.5                       | 25                            | 60                        | 4                    |    |
| 4JJCR 012 002 040      | 1.2 X R0.2  | 1.2                       | 4                             | 45                        | 4                    |    | 4JJCR 020 0002 060     | 2 X R0.02   | 2                         | 6                             | 45                        | 4                    |    |
| 4JJCR 012 002 060      | 1.2 X R0.2  | 1.2                       | 6                             | 45                        | 4                    |    | 4JJCR 020 0002 080     | 2 X R0.02   | 2                         | 8                             | 45                        | 4                    |    |
| 4JJCR 012 002 080      | 1.2 X R0.2  | 1.2                       | 8                             | 45                        | 4                    |    | 4JJCR 020 0002 100     | 2 X R0.02   | 2                         | 10                            | 50                        | 4                    |    |
| 4JJCR 012 002 100      | 1.2 X R0.2  | 1.2                       | 10                            | 50                        | 4                    |    | 4JJCR 020 0002 120     | 2 X R0.02   | 2                         | 12                            | 50                        | 4                    |    |
| 4JJCR 012 002 120      | 1.2 X R0.2  | 1.2                       | 12                            | 50                        | 4                    |    | New 4JJCR 020 0002 140 | 2 X R0.02   | 2                         | 14                            | 50                        | 4                    |    |
| New 4JJCR 012 002 140  | 1.2 X R0.2  | 1.2                       | 14                            | 50                        | 4                    |    | 4JJCR 020 0002 160     | 2 X R0.02   | 2                         | 16                            | 50                        | 4                    |    |
| New 4JJCR 012 002 160  | 1.2 X R0.2  | 1.2                       | 16                            | 50                        | 4                    |    | 4JJCR 020 0002 200     | 2 X R0.02   | 2                         | 20                            | 50                        | 4                    |    |
| New 4JJCR 012 002 200  | 1.2 X R0.2  | 1.2                       | 20                            | 50                        | 4                    |    | 4JJCR 020 0002 250     | 2 X R0.02   | 2                         | 25                            | 60                        | 4                    |    |
| 4JJCR 012 003 040      | 1.2 X R0.3  | 1.2                       | 4                             | 45                        | 4                    |    | New 4JJCR 020 0002 300 | 2 X R0.02   | 2                         | 30                            | 70                        | 4                    |    |
| 4JJCR 012 003 060      | 1.2 X R0.3  | 1.2                       | 6                             | 45                        | 4                    |    | 4JJCR 020 0005 060     | 2 X R0.05   | 2                         | 6                             | 45                        | 4                    |    |
| 4JJCR 012 003 080      | 1.2 X R0.3  | 1.2                       | 8                             | 45                        | 4                    |    | 4JJCR 020 0005 080     | 2 X R0.05   | 2                         | 8                             | 45                        | 4                    |    |
| 4JJCR 012 003 100      | 1.2 X R0.3  | 1.2                       | 10                            | 50                        | 4                    |    | 4JJCR 020 0005 100     | 2 X R0.05   | 2                         | 10                            | 50                        | 4                    |    |
| 4JJCR 012 003 120      | 1.2 X R0.3  | 1.2                       | 12                            | 50                        | 4                    |    | 4JJCR 020 0005 120     | 2 X R0.05   | 2                         | 12                            | 50                        | 4                    |    |
| 4JJCR 015 0002 060     | 1.5 X R0.02 | 1.5                       | 6                             | 45                        | 4                    |    | New 4JJCR 020 0005 140 | 2 X R0.05   | 2                         | 14                            | 50                        | 4                    |    |
| 4JJCR 015 0002 080     | 1.5 X R0.02 | 1.5                       | 8                             | 45                        | 4                    |    | 4JJCR 020 0005 160     | 2 X R0.05   | 2                         | 16                            | 50                        | 4                    |    |
| 4JJCR 015 0002 100     | 1.5 X R0.02 | 1.5                       | 10                            | 50                        | 4                    |    | 4JJCR 020 0005 200     | 2 X R0.05   | 2                         | 20                            | 50                        | 4                    |    |
| 4JJCR 015 0002 120     | 1.5 X R0.02 | 1.5                       | 12                            | 50                        | 4                    |    | 4JJCR 020 0005 250     | 2 X R0.05   | 2                         | 25                            | 60                        | 4                    |    |
| New 4JJCR 015 0002 140 | 1.5 X R0.02 | 1.5                       | 14                            | 50                        | 4                    |    | New 4JJCR 020 0005 300 | 2 X R0.05   | 2                         | 30                            | 70                        | 4                    |    |
| 4JJCR 015 0002 160     | 1.5 X R0.02 | 1.5                       | 16                            | 50                        | 4                    |    | 4JJCR 020 001 060      | 2 X R0.1    | 2                         | 6                             | 45                        | 4                    |    |
| New 4JJCR 015 0002 200 | 1.5 X R0.02 | 1.5                       | 20                            | 50                        | 4                    |    | 4JJCR 020 001 080      | 2 X R0.1    | 2                         | 8                             | 45                        | 4                    |    |
| New 4JJCR 015 0002 220 | 1.5 X R0.02 | 1.5                       | 22                            | 60                        | 4                    |    | 4JJCR 020 001 100      | 2 X R0.1    | 2                         | 10                            | 50                        | 4                    |    |
| 4JJCR 015 0005 060     | 1.5 X R0.05 | 1.5                       | 6                             | 45                        | 4                    |    | 4JJCR 020 001 120      | 2 X R0.1    | 2                         | 12                            | 50                        | 4                    |    |
| 4JJCR 015 0005 080     | 1.5 X R0.05 | 1.5                       | 8                             | 45                        | 4                    |    | New 4JJCR 020 001 140  | 2 X R0.1    | 2                         | 14                            | 50                        | 4                    |    |
| 4JJCR 015 0005 100     | 1.5 X R0.05 | 1.5                       | 10                            | 50                        | 4                    |    | 4JJCR 020 001 160      | 2 X R0.1    | 2                         | 16                            | 50                        | 4                    |    |
| 4JJCR 015 0005 120     | 1.5 X R0.05 | 1.5                       | 12                            | 50                        | 4                    |    | 4JJCR 020 001 200      | 2 X R0.1    | 2                         | 20                            | 50                        | 4                    |    |
| New 4JJCR 015 0005 140 | 1.5 X R0.05 | 1.5                       | 14                            | 50                        | 4                    |    | 4JJCR 020 001 250      | 2 X R0.1    | 2                         | 25                            | 60                        | 4                    |    |
| 4JJCR 015 0005 160     | 1.5 X R0.05 | 1.5                       | 16                            | 50                        | 4                    |    | New 4JJCR 020 001 300  | 2 X R0.1    | 2                         | 30                            | 70                        | 4                    |    |
| New 4JJCR 015 0005 200 | 1.5 X R0.05 | 1.5                       | 20                            | 50                        | 4                    |    | 4JJCR 020 002 060      | 2 X R0.2    | 2                         | 6                             | 45                        | 4                    |    |
| New 4JJCR 015 0005 220 | 1.5 X R0.05 | 1.5                       | 22                            | 60                        | 4                    |    | 4JJCR 020 002 080      | 2 X R0.2    | 2                         | 8                             | 45                        | 4                    |    |
| 4JJCR 015 001 060      | 1.5 X R0.1  | 1.5                       | 6                             | 45                        | 4                    |    | 4JJCR 020 002 100      | 2 X R0.2    | 2                         | 10                            | 50                        | 4                    |    |
| 4JJCR 015 001 080      | 1.5 X R0.1  | 1.5                       | 8                             | 45                        | 4                    |    | 4JJCR 020 002 120      | 2 X R0.2    | 2                         | 12                            | 50                        | 4                    |    |
| 4JJCR 015 001 100      | 1.5 X R0.1  | 1.5                       | 10                            | 50                        | 4                    |    | New 4JJCR 020 002 140  | 2 X R0.2    | 2                         | 14                            | 50                        | 4                    |    |
| 4JJCR 015 001 120      | 1.5 X R0.1  | 1.5                       | 12                            | 50                        | 4                    |    | 4JJCR 020 002 160      | 2 X R0.2    | 2                         | 16                            | 50                        | 4                    |    |
| New 4JJCR 015 001 140  | 1.5 X R0.1  | 1.5                       | 14                            | 50                        | 4                    |    | 4JJCR 020 002 200      | 2 X R0.2    | 2                         | 20                            | 50                        | 4                    |    |
| 4JJCR 015 001 160      | 1.5 X R0.1  | 1.5                       | 16                            | 50                        | 4                    |    | 4JJCR 020 002 250      | 2 X R0.2    | 2                         | 25                            | 60                        | 4                    |    |
| New 4JJCR 015 001 200  | 1.5 X R0.1  | 1.5                       | 20                            | 50                        | 4                    |    | New 4JJCR 020 002 300  | 2 X R0.2    | 2                         | 30                            | 70                        | 4                    |    |
| New 4JJCR 015 001 220  | 1.5 X R0.1  | 1.5                       | 22                            | 60                        | 4                    |    | 4JJCR 020 003 060      | 2 X R0.3    | 2                         | 6                             | 45                        | 4                    |    |
| 4JJCR 015 002 060      | 1.5 X R0.2  | 1.5                       | 6                             | 45                        | 4                    |    | 4JJCR 020 003 080      | 2 X R0.3    | 2                         | 8                             | 45                        | 4                    |    |
| 4JJCR 015 002 080      | 1.5 X R0.2  | 1.5                       | 8                             | 45                        | 4                    |    | 4JJCR 020 003 100      | 2 X R0.3    | 2                         | 10                            | 50                        | 4                    |    |
| 4JJCR 015 002 100      | 1.5 X R0.2  | 1.5                       | 10                            | 50                        | 4                    |    | 4JJCR 020 003 120      | 2 X R0.3    | 2                         | 12                            | 50                        | 4                    |    |
| 4JJCR 015 002 120      | 1.5 X R0.2  | 1.5                       | 12                            | 50                        | 4                    |    | New 4JJCR 020 003 140  | 2 X R0.3    | 2                         | 14                            | 50                        | 4                    |    |
| New 4JJCR 015 002 140  | 1.5 X R0.2  | 1.5                       | 14                            | 50                        | 4                    |    | 4JJCR 020 003 160      | 2 X R0.3    | 2                         | 16                            | 50                        | 4                    |    |
| 4JJCR 015 002 160      | 1.5 X R0.2  | 1.5                       | 16                            | 50                        | 4                    |    | 4JJCR 020 003 200      | 2 X R0.3    | 2                         | 20                            | 50                        | 4                    |    |
| New 4JJCR 015 002 200  | 1.5 X R0.2  | 1.5                       | 20                            | 50                        | 4                    |    | 4JJCR 020 003 250      | 2 X R0.3    | 2                         | 25                            | 60                        | 4                    |    |
| New 4JJCR 015 002 220  | 1.5 X R0.2  | 1.5                       | 22                            | 60                        | 4                    |    | New 4JJCR 020 003 300  | 2 X R0.3    | 2                         | 30                            | 70                        | 4                    |    |
| New 4JJCR 015 002 250  | 1.5 X R0.2  | 1.5                       | 25                            | 60                        | 4                    |    | 4JJCR 020 005 060      | 2 X R0.5    | 2                         | 6                             | 45                        | 4                    |    |
| 4JJCR 015 003 060      | 1.5 X R0.3  | 1.5                       | 6                             | 45                        | 4                    |    | 4JJCR 020 005 080      | 2 X R0.5    | 2                         | 8                             | 45                        | 4                    |    |
| 4JJCR 015 003 080      | 1.5 X R0.3  | 1.5                       | 8                             | 45                        | 4                    |    | 4JJCR 020 005 100      | 2 X R0.5    | 2                         | 10                            | 50                        | 4                    |    |
| 4JJCR 015 003 100      | 1.5 X R0.3  | 1.5                       | 10                            | 50                        | 4                    |    | 4JJCR 020 005 120      | 2 X R0.5    | 2                         | 12                            | 50                        | 4                    |    |
| 4JJCR 015 003 120      | 1.5 X R0.3  | 1.5                       | 12                            | 50                        | 4                    |    | New 4JJCR 020 005 140  | 2 X R0.5    | 2                         | 14                            | 50                        | 4                    |    |
| New 4JJCR 015 003 140  | 1.5 X R0.3  | 1.5                       | 14                            | 50                        | 4                    |    | 4JJCR 020 005 160      | 2 X R0.5    | 2                         | 16                            | 50                        | 4                    |    |
| 4JJCR 015 003 160      | 1.5 X R0.3  | 1.5                       | 16                            | 50                        | 4                    |    | 4JJCR 020 005 200      | 2 X R0.5    | 2                         | 20                            | 50                        | 4                    |    |
| New 4JJCR 015 003 200  | 1.5 X R0.3  | 1.5                       | 20                            | 50                        | 4                    |    | 4JJCR 020 005 250      | 2 X R0.5    | 2                         | 25                            | 60                        | 4                    |    |
| New 4JJCR 015 003 220  | 1.5 X R0.3  | 1.5                       | 22                            | 60                        | 4                    |    | New 4JJCR 020 005 300  | 2 X R0.5    | 2                         | 30                            | 70                        | 4                    |    |
| New 4JJCR 015 003 250  | 1.5 X R0.3  | 1.5                       | 25                            | 60                        | 4                    |    | 4JJCR 025 001 100      | 2.5 X R0.1  | 2.5                       | 10                            | 50                        | 4                    |    |
| 4JJCR 015 005 060      | 1.5 X R0.5  | 1.5                       | 6                             | 45                        | 4                    |    | 4JJCR 025 001 160      | 2.5 X R0.1  | 2.5                       | 16                            | 50                        | 4                    |    |
| 4JJCR 015 005 080      | 1.5 X R0.5  | 1.5                       | 8                             | 45                        | 4                    |    | 4JJCR 025 001 200      | 2.5 X R0.1  | 2.5                       | 20                            | 50                        | 4                    |    |
| 4JJCR 015 005 100      | 1.5 X R0.5  | 1.5                       | 10                            | 50                        | 4                    |    | 4JJCR 025 001 250      | 2.5 X R0.1  | 2.5                       | 25                            | 60                        | 4                    |    |

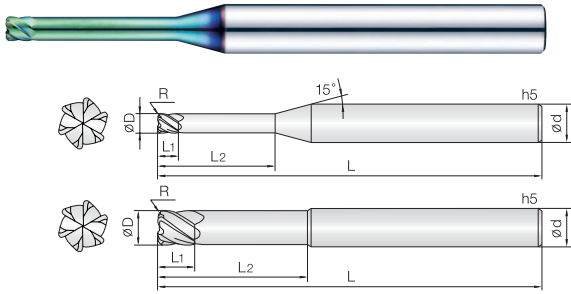
단위 : mm

| Order Number          | 날경<br>D × R | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 | Order Number          | 날경<br>D × R | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 |
|-----------------------|-------------|---------------------------|-------------------------------|---------------------------|----------------------|----|-----------------------|-------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| New 4JJCR 025 001 300 | 2.5 X R0.1  | 2.5                       | 30                            | 70                        | 4                    |    | 4JJCR 040 001 160     | 4 X R0.1    | 4                         | 16                            | 55                        | 6                    |    |
| 4JJCR 025 002 100     | 2.5 X R0.2  | 2.5                       | 10                            | 50                        | 4                    |    | 4JJCR 040 001 200     | 4 X R0.1    | 4                         | 20                            | 60                        | 6                    |    |
| 4JJCR 025 002 160     | 2.5 X R0.2  | 2.5                       | 16                            | 50                        | 4                    |    | 4JJCR 040 001 250     | 4 X R0.1    | 4                         | 25                            | 65                        | 6                    |    |
| 4JJCR 025 002 200     | 2.5 X R0.2  | 2.5                       | 20                            | 50                        | 4                    |    | 4JJCR 040 001 300     | 4 X R0.1    | 4                         | 30                            | 70                        | 6                    |    |
| 4JJCR 025 002 250     | 2.5 X R0.2  | 2.5                       | 25                            | 60                        | 4                    |    | 4JJCR 040 001 350     | 4 X R0.1    | 4                         | 35                            | 75                        | 6                    |    |
| New 4JJCR 025 002 300 | 2.5 X R0.2  | 2.5                       | 30                            | 70                        | 4                    |    | 4JJCR 040 001 400     | 4 X R0.1    | 4                         | 40                            | 80                        | 6                    |    |
| 4JJCR 025 003 100     | 2.5 X R0.3  | 2.5                       | 10                            | 50                        | 4                    |    | 4JJCR 040 002 130     | 4 X R0.2    | 4                         | 13                            | 55                        | 6                    |    |
| 4JJCR 025 003 160     | 2.5 X R0.3  | 2.5                       | 16                            | 50                        | 4                    |    | 4JJCR 040 002 160     | 4 X R0.2    | 4                         | 16                            | 55                        | 6                    |    |
| 4JJCR 025 003 200     | 2.5 X R0.3  | 2.5                       | 20                            | 50                        | 4                    |    | 4JJCR 040 002 200     | 4 X R0.2    | 4                         | 20                            | 60                        | 6                    |    |
| 4JJCR 025 003 250     | 2.5 X R0.3  | 2.5                       | 25                            | 60                        | 4                    |    | 4JJCR 040 002 250     | 4 X R0.2    | 4                         | 25                            | 65                        | 6                    |    |
| New 4JJCR 025 003 300 | 2.5 X R0.3  | 2.5                       | 30                            | 70                        | 4                    |    | 4JJCR 040 002 300     | 4 X R0.2    | 4                         | 30                            | 70                        | 6                    |    |
| 4JJCR 025 005 100     | 2.5 X R0.5  | 2.5                       | 10                            | 50                        | 4                    |    | 4JJCR 040 002 350     | 4 X R0.2    | 4                         | 35                            | 75                        | 6                    |    |
| 4JJCR 025 005 160     | 2.5 X R0.5  | 2.5                       | 16                            | 50                        | 4                    |    | 4JJCR 040 002 400     | 4 X R0.2    | 4                         | 40                            | 80                        | 6                    |    |
| 4JJCR 025 005 200     | 2.5 X R0.5  | 2.5                       | 20                            | 50                        | 4                    |    | 4JJCR 040 002 450     | 4 X R0.2    | 4                         | 45                            | 90                        | 6                    |    |
| 4JJCR 025 005 250     | 2.5 X R0.5  | 2.5                       | 25                            | 60                        | 4                    |    | 4JJCR 040 002 500     | 4 X R0.2    | 4                         | 50                            | 100                       | 6                    |    |
| New 4JJCR 025 005 300 | 2.5 X R0.5  | 2.5                       | 30                            | 70                        | 4                    |    | 4JJCR 040 003 130     | 4 X R0.3    | 4                         | 13                            | 55                        | 6                    |    |
| 4JJCR 030 001 100     | 3 X R0.1    | 3                         | 10                            | 50                        | 6                    |    | 4JJCR 040 003 160     | 4 X R0.3    | 4                         | 16                            | 55                        | 6                    |    |
| 4JJCR 030 001 120     | 3 X R0.1    | 3                         | 12                            | 50                        | 6                    |    | 4JJCR 040 003 200     | 4 X R0.3    | 4                         | 20                            | 60                        | 6                    |    |
| 4JJCR 030 001 160     | 3 X R0.1    | 3                         | 16                            | 55                        | 6                    |    | 4JJCR 040 003 250     | 4 X R0.3    | 4                         | 25                            | 65                        | 6                    |    |
| 4JJCR 030 001 200     | 3 X R0.1    | 3                         | 20                            | 60                        | 6                    |    | 4JJCR 040 003 300     | 4 X R0.3    | 4                         | 30                            | 70                        | 6                    |    |
| 4JJCR 030 001 250     | 3 X R0.1    | 3                         | 25                            | 65                        | 6                    |    | 4JJCR 040 003 350     | 4 X R0.3    | 4                         | 35                            | 75                        | 6                    |    |
| 4JJCR 030 001 300     | 3 X R0.1    | 3                         | 30                            | 70                        | 6                    |    | 4JJCR 040 003 400     | 4 X R0.3    | 4                         | 40                            | 80                        | 6                    |    |
| 4JJCR 030 001 350     | 3 X R0.1    | 3                         | 35                            | 75                        | 6                    |    | 4JJCR 040 003 450     | 4 X R0.3    | 4                         | 45                            | 90                        | 6                    |    |
| New 4JJCR 030 001 400 | 3 X R0.1    | 3                         | 40                            | 80                        | 6                    |    | 4JJCR 040 003 500     | 4 X R0.3    | 4                         | 50                            | 100                       | 6                    |    |
| New 4JJCR 030 001 450 | 3 X R0.1    | 3                         | 45                            | 90                        | 6                    |    | 4JJCR 040 005 130     | 4 X R0.5    | 4                         | 13                            | 55                        | 6                    |    |
| 4JJCR 030 002 100     | 3 X R0.2    | 3                         | 10                            | 50                        | 6                    |    | 4JJCR 040 005 160     | 4 X R0.5    | 4                         | 16                            | 55                        | 6                    |    |
| 4JJCR 030 002 120     | 3 X R0.2    | 3                         | 12                            | 50                        | 6                    |    | 4JJCR 040 005 200     | 4 X R0.5    | 4                         | 20                            | 60                        | 6                    |    |
| 4JJCR 030 002 160     | 3 X R0.2    | 3                         | 16                            | 55                        | 6                    |    | 4JJCR 040 005 250     | 4 X R0.5    | 4                         | 25                            | 65                        | 6                    |    |
| 4JJCR 030 002 200     | 3 X R0.2    | 3                         | 20                            | 60                        | 6                    |    | 4JJCR 040 005 300     | 4 X R0.5    | 4                         | 30                            | 70                        | 6                    |    |
| 4JJCR 030 002 250     | 3 X R0.2    | 3                         | 25                            | 65                        | 6                    |    | 4JJCR 040 005 350     | 4 X R0.5    | 4                         | 35                            | 75                        | 6                    |    |
| 4JJCR 030 002 300     | 3 X R0.2    | 3                         | 30                            | 70                        | 6                    |    | 4JJCR 040 005 400     | 4 X R0.5    | 4                         | 40                            | 80                        | 6                    |    |
| 4JJCR 030 002 350     | 3 X R0.2    | 3                         | 35                            | 75                        | 6                    |    | 4JJCR 040 005 450     | 4 X R0.5    | 4                         | 45                            | 90                        | 6                    |    |
| 4JJCR 030 002 400     | 3 X R0.2    | 3                         | 40                            | 80                        | 6                    |    | 4JJCR 040 005 500     | 4 X R0.5    | 4                         | 50                            | 100                       | 6                    |    |
| New 4JJCR 030 002 450 | 3 X R0.2    | 3                         | 45                            | 90                        | 6                    |    | New 4JJCR 040 005 550 | 4 X R0.5    | 4                         | 55                            | 100                       | 6                    |    |
| 4JJCR 030 003 100     | 3 X R0.3    | 3                         | 10                            | 50                        | 6                    |    | 4JJCR 040 010 130     | 4 X R1      | 4                         | 13                            | 55                        | 6                    |    |
| 4JJCR 030 003 120     | 3 X R0.3    | 3                         | 12                            | 50                        | 6                    |    | 4JJCR 040 010 160     | 4 X R1      | 4                         | 16                            | 55                        | 6                    |    |
| 4JJCR 030 003 160     | 3 X R0.3    | 3                         | 16                            | 55                        | 6                    |    | 4JJCR 040 010 200     | 4 X R1      | 4                         | 20                            | 60                        | 6                    |    |
| 4JJCR 030 003 200     | 3 X R0.3    | 3                         | 20                            | 60                        | 6                    |    | 4JJCR 040 010 250     | 4 X R1      | 4                         | 25                            | 65                        | 6                    |    |
| 4JJCR 030 003 250     | 3 X R0.3    | 3                         | 25                            | 65                        | 6                    |    | 4JJCR 040 010 300     | 4 X R1      | 4                         | 30                            | 70                        | 6                    |    |
| 4JJCR 030 003 300     | 3 X R0.3    | 3                         | 30                            | 70                        | 6                    |    | 4JJCR 040 010 350     | 4 X R1      | 4                         | 35                            | 75                        | 6                    |    |
| 4JJCR 030 003 350     | 3 X R0.3    | 3                         | 35                            | 75                        | 6                    |    | 4JJCR 040 010 400     | 4 X R1      | 4                         | 40                            | 80                        | 6                    |    |
| 4JJCR 030 003 400     | 3 X R0.3    | 3                         | 40                            | 80                        | 6                    |    | 4JJCR 040 010 450     | 4 X R1      | 4                         | 45                            | 90                        | 6                    |    |
| New 4JJCR 030 003 450 | 3 X R0.3    | 3                         | 45                            | 90                        | 6                    |    | 4JJCR 040 010 500     | 4 X R1      | 4                         | 50                            | 100                       | 6                    |    |
| 4JJCR 030 005 100     | 3 X R0.5    | 3                         | 10                            | 50                        | 6                    |    | New 4JJCR 040 010 550 | 4 X R1      | 4                         | 55                            | 100                       | 6                    |    |
| 4JJCR 030 005 120     | 3 X R0.5    | 3                         | 12                            | 50                        | 6                    |    | 4JJCR 050 001 160     | 5 X R0.1    | 5                         | 16                            | 60                        | 6                    |    |
| 4JJCR 030 005 160     | 3 X R0.5    | 3                         | 16                            | 55                        | 6                    |    | 4JJCR 050 001 300     | 5 X R0.1    | 5                         | 30                            | 70                        | 6                    |    |
| 4JJCR 030 005 200     | 3 X R0.5    | 3                         | 20                            | 60                        | 6                    |    | New 4JJCR 050 001 400 | 5 X R0.1    | 5                         | 40                            | 80                        | 6                    |    |
| 4JJCR 030 005 250     | 3 X R0.5    | 3                         | 25                            | 65                        | 6                    |    | 4JJCR 050 002 160     | 5 X R0.2    | 5                         | 16                            | 60                        | 6                    |    |
| 4JJCR 030 005 300     | 3 X R0.5    | 3                         | 30                            | 70                        | 6                    |    | 4JJCR 050 002 300     | 5 X R0.2    | 5                         | 30                            | 70                        | 6                    |    |
| 4JJCR 030 005 350     | 3 X R0.5    | 3                         | 35                            | 75                        | 6                    |    | New 4JJCR 050 002 400 | 5 X R0.2    | 5                         | 40                            | 80                        | 6                    |    |
| 4JJCR 030 005 400     | 3 X R0.5    | 3                         | 40                            | 80                        | 6                    |    | 4JJCR 050 003 160     | 5 X R0.3    | 5                         | 16                            | 60                        | 6                    |    |
| New 4JJCR 030 005 450 | 3 X R0.5    | 3                         | 45                            | 90                        | 6                    |    | 4JJCR 050 003 300     | 5 X R0.3    | 5                         | 30                            | 70                        | 6                    |    |
| New 4JJCR 030 005 500 | 3 X R0.5    | 3                         | 50                            | 100                       | 6                    |    | New 4JJCR 050 003 400 | 5 X R0.3    | 5                         | 40                            | 80                        | 6                    |    |
| 4JJCR 030 010 100     | 3 X R1      | 3                         | 10                            | 50                        | 6                    |    | 4JJCR 050 005 160     | 5 X R0.5    | 5                         | 16                            | 60                        | 6                    |    |
| 4JJCR 030 010 120     | 3 X R1      | 3                         | 12                            | 50                        | 6                    |    | 4JJCR 050 005 300     | 5 X R0.5    | 5                         | 30                            | 70                        | 6                    |    |
| 4JJCR 030 010 160     | 3 X R1      | 3                         | 16                            | 55                        | 6                    |    | 4JJCR 050 005 400     | 5 X R0.5    | 5                         | 40                            | 80                        | 6                    |    |
| 4JJCR 030 010 200     | 3 X R1      | 3                         | 20                            | 60                        | 6                    |    | 4JJCR 050 005 500     | 5 X R0.5    | 5                         | 50                            | 100                       | 6                    |    |
| 4JJCR 030 010 250     | 3 X R1      | 3                         | 25                            | 65                        | 6                    |    | New 4JJCR 050 005 600 | 5 X R0.5    | 5                         | 60                            | 110                       | 6                    |    |
| 4JJCR 030 010 300     | 3 X R1      | 3                         | 30                            | 70                        | 6                    |    | 4JJCR 050 010 160     | 5 X R1      | 5                         | 16                            | 60                        | 6                    |    |
| 4JJCR 030 010 350     | 3 X R1      | 3                         | 35                            | 75                        | 6                    |    | 4JJCR 050 010 300     | 5 X R1      | 5                         | 30                            | 70                        | 6                    |    |
| 4JJCR 030 010 400     | 3 X R1      | 3                         | 40                            | 80                        | 6                    |    | 4JJCR 050 010 400     | 5 X R1      | 5                         | 40                            | 80                        | 6                    |    |
| New 4JJCR 030 010 450 | 3 X R1      | 3                         | 45                            | 90                        | 6                    |    | 4JJCR 050 010 500     | 5 X R1      | 5                         | 50                            | 100                       | 6                    |    |
| New 4JJCR 030 010 500 | 3 X R1      | 3                         | 50                            | 100                       | 6                    |    | New 4JJCR 050 010 600 | 5 X R1      | 5                         | 60                            | 110                       | 6                    |    |
| 4JJCR 040 001 130     | 4 X R0.1    | 4                         | 13                            | 55                        | 6                    |    | 4JJCR 060 001 200     | 6 X R0.1    | 7                         | 20                            | 60                        | 6                    |    |



단위 : mm

| Order Number          | 날경<br>D x R | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 | Order Number      | 날경<br>D x R | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 |
|-----------------------|-------------|---------------------------|-------------------------------|---------------------------|----------------------|----|-------------------|-------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| 4JJCR 060 001 400     | 6 X R0.1    | 7                         | 40                            | 80                        | 6                    |    | 4JJCR 120 015 260 | 12 X R1.5   | 13                        | 26                            | 80                        | 12                   |    |
| New 4JJCR 060 001 500 | 6 X R0.1    | 7                         | 50                            | 100                       | 6                    |    | 4JJCR 120 020 260 | 12 X R2     | 13                        | 26                            | 80                        | 12                   |    |
| 4JJCR 060 002 200     | 6 X R0.2    | 7                         | 20                            | 60                        | 6                    |    | 4JJCR 120 020 400 | 12 X R2     | 13                        | 40                            | 110                       | 12                   |    |
| 4JJCR 060 002 400     | 6 X R0.2    | 7                         | 40                            | 80                        | 6                    |    | 4JJCR 120 030 260 | 12 X R3     | 13                        | 26                            | 80                        | 12                   |    |
| New 4JJCR 060 002 500 | 6 X R0.2    | 7                         | 50                            | 100                       | 6                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 060 003 200     | 6 X R0.3    | 7                         | 20                            | 60                        | 6                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 060 003 400     | 6 X R0.3    | 7                         | 40                            | 80                        | 6                    |    |                   |             |                           |                               |                           |                      |    |
| New 4JJCR 060 003 500 | 6 X R0.3    | 7                         | 50                            | 100                       | 6                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 060 005 200     | 6 X R0.5    | 7                         | 20                            | 60                        | 6                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 060 005 400     | 6 X R0.5    | 7                         | 40                            | 80                        | 6                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 060 005 500     | 6 X R0.5    | 7                         | 50                            | 100                       | 6                    |    |                   |             |                           |                               |                           |                      |    |
| New 4JJCR 060 005 600 | 6 X R0.5    | 7                         | 60                            | 110                       | 6                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 060 010 200     | 6 X R1      | 7                         | 20                            | 60                        | 6                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 060 010 400     | 6 X R1      | 7                         | 40                            | 80                        | 6                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 060 010 500     | 6 X R1      | 7                         | 50                            | 100                       | 6                    |    |                   |             |                           |                               |                           |                      |    |
| New 4JJCR 060 010 600 | 6 X R1      | 7                         | 60                            | 110                       | 6                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 060 015 200     | 6 X R1.5    | 7                         | 20                            | 60                        | 6                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 060 015 400     | 6 X R1.5    | 7                         | 40                            | 80                        | 6                    |    |                   |             |                           |                               |                           |                      |    |
| New 4JJCR 060 015 500 | 6 X R1.5    | 7                         | 50                            | 100                       | 6                    |    |                   |             |                           |                               |                           |                      |    |
| New 4JJCR 060 020 300 | 6 X R2      | 7                         | 30                            | 70                        | 6                    |    |                   |             |                           |                               |                           |                      |    |
| New 4JJCR 060 020 400 | 6 X R2      | 7                         | 40                            | 80                        | 6                    |    |                   |             |                           |                               |                           |                      |    |
| New 4JJCR 060 020 500 | 6 X R2      | 7                         | 50                            | 100                       | 6                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 080 002 220     | 8 X R0.2    | 9                         | 22                            | 65                        | 8                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 080 002 400     | 8 X R0.2    | 9                         | 40                            | 100                       | 8                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 080 003 220     | 8 X R0.3    | 9                         | 22                            | 65                        | 8                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 080 003 400     | 8 X R0.3    | 9                         | 40                            | 100                       | 8                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 080 005 220     | 8 X R0.5    | 9                         | 22                            | 65                        | 8                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 080 005 400     | 8 X R0.5    | 9                         | 40                            | 100                       | 8                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 080 005 500     | 8 X R0.5    | 9                         | 50                            | 120                       | 8                    |    |                   |             |                           |                               |                           |                      |    |
| New 4JJCR 080 005 600 | 8 X R0.5    | 9                         | 60                            | 120                       | 8                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 080 010 220     | 8 X R1      | 9                         | 22                            | 65                        | 8                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 080 010 400     | 8 X R1      | 9                         | 40                            | 100                       | 8                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 080 010 500     | 8 X R1      | 9                         | 50                            | 120                       | 8                    |    |                   |             |                           |                               |                           |                      |    |
| New 4JJCR 080 010 600 | 8 X R1      | 9                         | 60                            | 120                       | 8                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 080 015 220     | 8 X R1.5    | 9                         | 22                            | 65                        | 8                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 080 015 400     | 8 X R1.5    | 9                         | 40                            | 100                       | 8                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 080 020 220     | 8 X R2      | 9                         | 22                            | 65                        | 8                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 080 020 400     | 8 X R2      | 9                         | 40                            | 100                       | 8                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 080 020 500     | 8 X R2      | 9                         | 50                            | 120                       | 8                    |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 100 002 240     | 10 X R0.2   | 11                        | 24                            | 70                        | 10                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 100 002 400     | 10 X R0.2   | 11                        | 40                            | 100                       | 10                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 100 003 240     | 10 X R0.3   | 11                        | 24                            | 70                        | 10                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 100 003 400     | 10 X R0.3   | 11                        | 40                            | 100                       | 10                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 100 005 240     | 10 X R0.5   | 11                        | 24                            | 70                        | 10                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 100 005 400     | 10 X R0.5   | 11                        | 40                            | 100                       | 10                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 100 005 500     | 10 X R0.5   | 11                        | 50                            | 120                       | 10                   |    |                   |             |                           |                               |                           |                      |    |
| New 4JJCR 100 005 600 | 10 X R0.5   | 11                        | 60                            | 120                       | 10                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 100 010 240     | 10 X R1     | 11                        | 24                            | 70                        | 10                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 100 010 400     | 10 X R1     | 11                        | 40                            | 100                       | 10                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 100 010 500     | 10 X R1     | 11                        | 50                            | 120                       | 10                   |    |                   |             |                           |                               |                           |                      |    |
| New 4JJCR 100 010 600 | 10 X R1     | 11                        | 60                            | 120                       | 10                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 100 015 240     | 10 X R1.5   | 11                        | 24                            | 70                        | 10                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 100 015 400     | 10 X R1.5   | 11                        | 40                            | 100                       | 10                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 100 020 240     | 10 X R2     | 11                        | 24                            | 70                        | 10                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 100 020 400     | 10 X R2     | 11                        | 40                            | 100                       | 10                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 100 020 500     | 10 X R2     | 11                        | 50                            | 120                       | 10                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 100 025 240     | 10 X R2.5   | 11                        | 24                            | 70                        | 10                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 120 003 260     | 12 X R0.3   | 13                        | 26                            | 80                        | 12                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 120 005 260     | 12 X R0.5   | 13                        | 26                            | 80                        | 12                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 120 005 400     | 12 X R0.5   | 13                        | 40                            | 110                       | 12                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 120 005 600     | 12 X R0.5   | 13                        | 60                            | 130                       | 12                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 120 010 260     | 12 X R1     | 13                        | 26                            | 80                        | 12                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 120 010 400     | 12 X R1     | 13                        | 40                            | 110                       | 12                   |    |                   |             |                           |                               |                           |                      |    |
| 4JJCR 120 010 600     | 12 X R1     | 13                        | 60                            | 130                       | 12                   |    |                   |             |                           |                               |                           |                      |    |



- 고정도강(HRc52~70), 프리하든강 계열의 고정밀 가공 엔드밀
- 고품량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 코너R 형상을 날부치핑이 적도록 설계하였습니다.
- 다양한 코너R과 유효장으로 맞춤 가공이 가능합니다.
- 초미립자 초경합금(0.2 $\mu$ m)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.

#### Endmills for pre-hardened and hardened steel(HRc52~70)

- Good wear resistance by high quality Si-based PVD coating.
- High precise edge tolerance.
- Designed for minimizing edge chipping by corner R shape.
- Various corner R and flute length for wide range application.
- Outstanding performance at high speed machining by ultra fine (0.2 $\mu$ m) WC grade.

| D Size           | D Tolerance       |
|------------------|-------------------|
| $\phi 3 \sim 5$  | +0 ~ -0.01mm      |
| $\phi 6 \sim 12$ | -0.005 ~ -0.015mm |

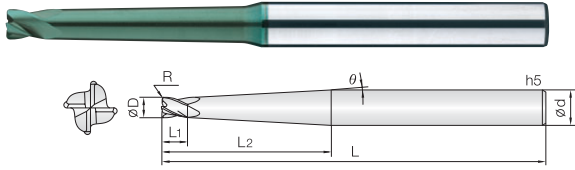
단위 : mm

| Order Number      | 날경<br>Diameter<br>D x R | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샹크<br>Shank Dia<br>d | 비고 |
|-------------------|-------------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| 6JJCR 030 001 120 | 3 X R0.1                | 3                         | 12                            | 55                        | 6                    |    |
| 6JJCR 030 001 160 | 3 X R0.1                | 3                         | 16                            | 60                        | 6                    |    |
| 6JJCR 030 001 200 | 3 X R0.1                | 3                         | 20                            | 65                        | 6                    |    |
| 6JJCR 030 001 250 | 3 X R0.1                | 3                         | 25                            | 70                        | 6                    |    |
| 6JJCR 030 001 300 | 3 X R0.1                | 3                         | 30                            | 75                        | 6                    |    |
| 6JJCR 030 002 120 | 3 X R0.2                | 3                         | 12                            | 55                        | 6                    |    |
| 6JJCR 030 002 160 | 3 X R0.2                | 3                         | 16                            | 60                        | 6                    |    |
| 6JJCR 030 002 200 | 3 X R0.2                | 3                         | 20                            | 65                        | 6                    |    |
| 6JJCR 030 002 250 | 3 X R0.2                | 3                         | 25                            | 70                        | 6                    |    |
| 6JJCR 030 002 300 | 3 X R0.2                | 3                         | 30                            | 75                        | 6                    |    |
| 6JJCR 030 003 120 | 3 X R0.3                | 3                         | 12                            | 55                        | 6                    |    |
| 6JJCR 030 003 160 | 3 X R0.3                | 3                         | 16                            | 60                        | 6                    |    |
| 6JJCR 030 003 200 | 3 X R0.3                | 3                         | 20                            | 65                        | 6                    |    |
| 6JJCR 030 003 250 | 3 X R0.3                | 3                         | 25                            | 70                        | 6                    |    |
| 6JJCR 030 003 300 | 3 X R0.3                | 3                         | 30                            | 75                        | 6                    |    |
| 6JJCR 030 005 120 | 3 X R0.5                | 3                         | 12                            | 55                        | 6                    |    |
| 6JJCR 030 005 160 | 3 X R0.5                | 3                         | 16                            | 60                        | 6                    |    |
| 6JJCR 030 005 200 | 3 X R0.5                | 3                         | 20                            | 65                        | 6                    |    |
| 6JJCR 030 005 250 | 3 X R0.5                | 3                         | 25                            | 70                        | 6                    |    |
| 6JJCR 030 005 300 | 3 X R0.5                | 3                         | 30                            | 75                        | 6                    |    |
| 6JJCR 030 010 120 | 3 X R1                  | 3                         | 12                            | 55                        | 6                    |    |
| 6JJCR 030 010 160 | 3 X R1                  | 3                         | 16                            | 60                        | 6                    |    |
| 6JJCR 030 010 200 | 3 X R1                  | 3                         | 20                            | 65                        | 6                    |    |
| 6JJCR 030 010 250 | 3 X R1                  | 3                         | 25                            | 70                        | 6                    |    |
| 6JJCR 030 010 300 | 3 X R1                  | 3                         | 30                            | 75                        | 6                    |    |
| 6JJCR 040 001 120 | 4 X R0.1                | 4                         | 12                            | 55                        | 6                    |    |
| 6JJCR 040 001 160 | 4 X R0.1                | 4                         | 16                            | 60                        | 6                    |    |
| 6JJCR 040 001 200 | 4 X R0.1                | 4                         | 20                            | 65                        | 6                    |    |
| 6JJCR 040 001 250 | 4 X R0.1                | 4                         | 25                            | 70                        | 6                    |    |
| 6JJCR 040 001 300 | 4 X R0.1                | 4                         | 30                            | 75                        | 6                    |    |
| 6JJCR 040 002 120 | 4 X R0.2                | 4                         | 12                            | 55                        | 6                    |    |
| 6JJCR 040 002 160 | 4 X R0.2                | 4                         | 16                            | 60                        | 6                    |    |
| 6JJCR 040 002 200 | 4 X R0.2                | 4                         | 20                            | 65                        | 6                    |    |
| 6JJCR 040 002 250 | 4 X R0.2                | 4                         | 25                            | 70                        | 6                    |    |
| 6JJCR 040 002 300 | 4 X R0.2                | 4                         | 30                            | 75                        | 6                    |    |
| 6JJCR 040 003 120 | 4 X R0.3                | 4                         | 12                            | 55                        | 6                    |    |
| 6JJCR 040 003 160 | 4 X R0.3                | 4                         | 16                            | 60                        | 6                    |    |
| 6JJCR 040 003 200 | 4 X R0.3                | 4                         | 20                            | 65                        | 6                    |    |
| 6JJCR 040 003 250 | 4 X R0.3                | 4                         | 25                            | 70                        | 6                    |    |
| 6JJCR 040 003 300 | 4 X R0.3                | 4                         | 30                            | 75                        | 6                    |    |
| 6JJCR 040 005 120 | 4 X R0.5                | 4                         | 12                            | 55                        | 6                    |    |
| 6JJCR 040 005 160 | 4 X R0.5                | 4                         | 16                            | 60                        | 6                    |    |
| 6JJCR 040 005 200 | 4 X R0.5                | 4                         | 20                            | 65                        | 6                    |    |
| 6JJCR 040 005 250 | 4 X R0.5                | 4                         | 25                            | 70                        | 6                    |    |
| 6JJCR 040 005 300 | 4 X R0.5                | 4                         | 30                            | 75                        | 6                    |    |
| 6JJCR 040 010 120 | 4 X R1                  | 4                         | 12                            | 55                        | 6                    |    |
| 6JJCR 040 010 160 | 4 X R1                  | 4                         | 16                            | 60                        | 6                    |    |
| 6JJCR 040 010 200 | 4 X R1                  | 4                         | 20                            | 65                        | 6                    |    |
| 6JJCR 040 010 250 | 4 X R1                  | 4                         | 25                            | 70                        | 6                    |    |
| 6JJCR 040 010 300 | 4 X R1                  | 4                         | 30                            | 75                        | 6                    |    |

| Order Number      | 날경<br>Diameter<br>D x R | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샹크<br>Shank Dia<br>d | 비고 |
|-------------------|-------------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| 6JJCR 050 001 160 | 5 X R0.1                | 5                         | 16                            | 60                        | 6                    |    |
| 6JJCR 050 001 200 | 5 X R0.1                | 5                         | 20                            | 65                        | 6                    |    |
| 6JJCR 050 001 300 | 5 X R0.1                | 5                         | 30                            | 75                        | 6                    |    |
| 6JJCR 050 002 160 | 5 X R0.2                | 5                         | 16                            | 60                        | 6                    |    |
| 6JJCR 050 002 200 | 5 X R0.2                | 5                         | 20                            | 65                        | 6                    |    |
| 6JJCR 050 002 300 | 5 X R0.2                | 5                         | 30                            | 75                        | 6                    |    |
| 6JJCR 050 003 160 | 5 X R0.3                | 5                         | 16                            | 60                        | 6                    |    |
| 6JJCR 050 003 200 | 5 X R0.3                | 5                         | 20                            | 65                        | 6                    |    |
| 6JJCR 050 003 300 | 5 X R0.3                | 5                         | 30                            | 75                        | 6                    |    |
| 6JJCR 050 005 160 | 5 X R0.5                | 5                         | 16                            | 60                        | 6                    |    |
| 6JJCR 050 005 200 | 5 X R0.5                | 5                         | 20                            | 65                        | 6                    |    |
| 6JJCR 050 005 300 | 5 X R0.5                | 5                         | 30                            | 75                        | 6                    |    |
| 6JJCR 050 010 160 | 5 X R1                  | 5                         | 16                            | 60                        | 6                    |    |
| 6JJCR 050 010 200 | 5 X R1                  | 5                         | 20                            | 65                        | 6                    |    |
| 6JJCR 050 010 300 | 5 X R1                  | 5                         | 30                            | 75                        | 6                    |    |
| 6JJCR 060 001 210 | 6 X R0.1                | 6                         | 21                            | 60                        | 6                    |    |
| 6JJCR 060 001 310 | 6 X R0.1                | 6                         | 31                            | 70                        | 6                    |    |
| 6JJCR 060 001 410 | 6 X R0.1                | 6                         | 41                            | 80                        | 6                    |    |
| 6JJCR 060 002 210 | 6 X R0.2                | 6                         | 21                            | 60                        | 6                    |    |
| 6JJCR 060 002 310 | 6 X R0.2                | 6                         | 31                            | 70                        | 6                    |    |
| 6JJCR 060 002 410 | 6 X R0.2                | 6                         | 41                            | 80                        | 6                    |    |
| 6JJCR 060 003 210 | 6 X R0.3                | 6                         | 21                            | 60                        | 6                    |    |
| 6JJCR 060 003 310 | 6 X R0.3                | 6                         | 31                            | 70                        | 6                    |    |
| 6JJCR 060 003 410 | 6 X R0.3                | 6                         | 41                            | 80                        | 6                    |    |
| 6JJCR 060 005 210 | 6 X R0.5                | 6                         | 21                            | 60                        | 6                    |    |
| 6JJCR 060 005 310 | 6 X R0.5                | 6                         | 31                            | 70                        | 6                    |    |
| 6JJCR 060 005 410 | 6 X R0.5                | 6                         | 41                            | 80                        | 6                    |    |
| 6JJCR 060 010 210 | 6 X R1                  | 6                         | 21                            | 60                        | 6                    |    |
| 6JJCR 060 010 310 | 6 X R1                  | 6                         | 31                            | 70                        | 6                    |    |
| 6JJCR 060 010 410 | 6 X R1                  | 6                         | 41                            | 80                        | 6                    |    |
| 6JJCR 080 003 260 | 8 X R0.3                | 8                         | 26                            | 70                        | 8                    |    |
| 6JJCR 080 003 360 | 8 X R0.3                | 8                         | 36                            | 80                        | 8                    |    |
| 6JJCR 080 003 460 | 8 X R0.3                | 8                         | 46                            | 90                        | 8                    |    |
| 6JJCR 080 005 260 | 8 X R0.5                | 8                         | 26                            | 70                        | 8                    |    |
| 6JJCR 080 005 360 | 8 X R0.5                | 8                         | 36                            | 80                        | 8                    |    |
| 6JJCR 080 005 460 | 8 X R0.5                | 8                         | 46                            | 90                        | 8                    |    |
| 6JJCR 080 010 260 | 8 X R1                  | 8                         | 26                            | 70                        | 8                    |    |
| 6JJCR 080 010 360 | 8 X R1                  | 8                         | 36                            | 80                        | 8                    |    |
| 6JJCR 080 010 460 | 8 X R1                  | 8                         | 46                            | 90                        | 8                    |    |
| 6JJCR 100 003 310 | 10 X R0.3               | 10                        | 31                            | 80                        | 10                   |    |
| 6JJCR 100 003 410 | 10 X R0.3               | 10                        | 41                            | 90                        | 10                   |    |
| 6JJCR 100 003 510 | 10 X R0.3               | 10                        | 51                            | 100                       | 10                   |    |
| 6JJCR 100 005 310 | 10 X R0.5               | 10                        | 31                            | 80                        | 10                   |    |
| 6JJCR 100 005 410 | 10 X R0.5               | 10                        | 41                            | 90                        | 10                   |    |
| 6JJCR 100 005 510 | 10 X R0.5               | 10                        | 51                            | 100                       | 10                   |    |
| 6JJCR 100 010 310 | 10 X R1                 | 10                        | 31                            | 80                        | 10                   |    |
| 6JJCR 100 010 410 | 10 X R1                 | 10                        | 41                            | 90                        | 10                   |    |
| 6JJCR 100 010 510 | 10 X R1                 | 10                        | 51                            | 100                       | 10                   |    |
| 6JJCR 120 003 360 | 12 X R0.3               | 12                        | 36                            | 90                        | 12                   |    |
| 6JJCR 120 003 460 | 12 X R0.3               | 12                        | 46                            | 100                       | 12                   |    |

단위 : mm

[illegible]

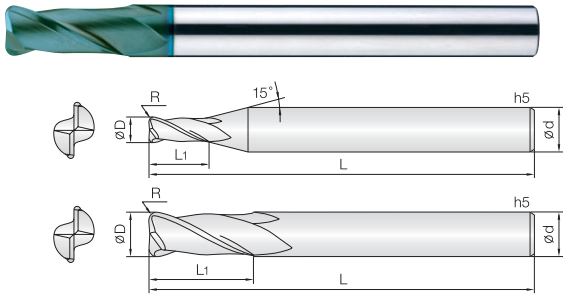


- 고정도강(HRc52~70), 프라하드강 계열의 고정밀 가공 엔드밀
- 고품질 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 유효장을 테이퍼 설계하여 깊은 홈 작업시 목부 파손 및 떨림을 최소화 하였습니다.
- 코너 R 형상을 날부처핑이 적도록 설계하였습니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 초미립자 초경합금(0.2 $\mu$ m)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.
- Endmills for pre-hardened and hardened steel(HRc52~70)
- Good wear resistance by high quality Si-based PVD coating.
- Minimize chattering and fracturing by taper designed flute.
- Designed for minimizing edge chipping by corner R shape.
- High precise edge tolerance.
- Outstanding performance at high speed machining by ultra fine (0.2 $\mu$ m) WC grade.



| D Size | D Tolerance  |
|--------|--------------|
| Ø1 ~ 4 | +0 ~ -0.01mm |

| R0.1 ~ 0.5         |             |                |                           |                               |                           |                       |    | 294P               |             |                |                           |                               |                           |                       |    | 단위 : mm      |             |                |                           |                               |                           |                       |    |
|--------------------|-------------|----------------|---------------------------|-------------------------------|---------------------------|-----------------------|----|--------------------|-------------|----------------|---------------------------|-------------------------------|---------------------------|-----------------------|----|--------------|-------------|----------------|---------------------------|-------------------------------|---------------------------|-----------------------|----|
| Order Number       | 날경<br>D x R | 각도<br>$\theta$ | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샤프크<br>Shank Dia<br>d | 비고 | Order Number       | 날경<br>D x R | 각도<br>$\theta$ | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샤프크<br>Shank Dia<br>d | 비고 | Order Number | 날경<br>D x R | 각도<br>$\theta$ | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샤프크<br>Shank Dia<br>d | 비고 |
| 4JJTC 010 001 0601 | 1 X R0.1    | 1°             | 1                         | 6                             | 50                        | 4                     |    | 4JJTC 020 005 4001 | 2 X R0.5    | 1°             | 2                         | 40                            | 80                        | 4                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 010 001 1001 | 1 X R0.1    | 1°             | 1                         | 10                            | 50                        | 4                     |    | 4JJTC 020 005 5001 | 2 X R0.5    | 1°             | 2                         | 50                            | 90                        | 4                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 010 001 1501 | 1 X R0.1    | 1°             | 1                         | 15                            | 50                        | 4                     |    | 4JJTC 030 002 2001 | 3 X R0.2    | 1°             | 3                         | 20                            | 60                        | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 010 001 2001 | 1 X R0.1    | 1°             | 1                         | 20                            | 60                        | 4                     |    | 4JJTC 030 002 3001 | 3 X R0.2    | 1°             | 3                         | 30                            | 70                        | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 010 001 2501 | 1 X R0.1    | 1°             | 1                         | 25                            | 60                        | 4                     |    | 4JJTC 030 002 4001 | 3 X R0.2    | 1°             | 3                         | 40                            | 80                        | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 010 001 3001 | 1 X R0.1    | 1°             | 1                         | 30                            | 70                        | 4                     |    | 4JJTC 030 002 5001 | 3 X R0.2    | 1°             | 3                         | 50                            | 90                        | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 010 001 3501 | 1 X R0.1    | 1°             | 1                         | 35                            | 75                        | 4                     |    | 4JJTC 030 002 6001 | 3 X R0.2    | 1°             | 3                         | 60                            | 100                       | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 010 002 0601 | 1 X R0.2    | 1°             | 1                         | 6                             | 50                        | 4                     |    | 4JJTC 030 003 4001 | 3 X R0.3    | 1°             | 3                         | 40                            | 80                        | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 010 002 1001 | 1 X R0.2    | 1°             | 1                         | 10                            | 50                        | 4                     |    | 4JJTC 030 003 5001 | 3 X R0.3    | 1°             | 3                         | 50                            | 90                        | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 010 002 1501 | 1 X R0.2    | 1°             | 1                         | 15                            | 50                        | 4                     |    | 4JJTC 030 003 6001 | 3 X R0.3    | 1°             | 3                         | 60                            | 100                       | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 010 002 2001 | 1 X R0.2    | 1°             | 1                         | 20                            | 60                        | 4                     |    | 4JJTC 030 005 2001 | 3 X R0.5    | 1°             | 3                         | 20                            | 60                        | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 010 002 2501 | 1 X R0.2    | 1°             | 1                         | 25                            | 60                        | 4                     |    | 4JJTC 030 005 3001 | 3 X R0.5    | 1°             | 3                         | 30                            | 70                        | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 010 002 3001 | 1 X R0.2    | 1°             | 1                         | 30                            | 70                        | 4                     |    | 4JJTC 030 005 4001 | 3 X R0.5    | 1°             | 3                         | 40                            | 80                        | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 010 002 3501 | 1 X R0.2    | 1°             | 1                         | 35                            | 75                        | 4                     |    | 4JJTC 030 005 5001 | 3 X R0.5    | 1°             | 3                         | 50                            | 90                        | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 010 003 1001 | 1 X R0.3    | 1°             | 1                         | 10                            | 50                        | 4                     |    | 4JJTC 030 005 6001 | 3 X R0.5    | 1°             | 3                         | 60                            | 100                       | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 010 003 1501 | 1 X R0.3    | 1°             | 1                         | 15                            | 50                        | 4                     |    | 4JJTC 040 002 2001 | 4 X R0.2    | 1°             | 4                         | 20                            | 60                        | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 010 003 2001 | 1 X R0.3    | 1°             | 1                         | 20                            | 60                        | 4                     |    | 4JJTC 040 002 3001 | 4 X R0.2    | 1°             | 4                         | 30                            | 70                        | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 010 003 2501 | 1 X R0.3    | 1°             | 1                         | 25                            | 60                        | 4                     |    | 4JJTC 040 002 4001 | 4 X R0.2    | 1°             | 4                         | 40                            | 80                        | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 015 002 1001 | 1.5 X R0.2  | 1°             | 1.5                       | 10                            | 50                        | 4                     |    | 4JJTC 040 002 5001 | 4 X R0.2    | 1°             | 4                         | 50                            | 90                        | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 015 002 1501 | 1.5 X R0.2  | 1°             | 1.5                       | 15                            | 50                        | 4                     |    | 4JJTC 040 002 6001 | 4 X R0.2    | 1°             | 4                         | 60                            | 100                       | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 015 002 2001 | 1.5 X R0.2  | 1°             | 1.5                       | 20                            | 60                        | 4                     |    | 4JJTC 040 003 4001 | 4 X R0.3    | 1°             | 4                         | 40                            | 80                        | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 015 002 2501 | 1.5 X R0.2  | 1°             | 1.5                       | 25                            | 60                        | 4                     |    | 4JJTC 040 003 5001 | 4 X R0.3    | 1°             | 4                         | 50                            | 90                        | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 015 002 3001 | 1.5 X R0.2  | 1°             | 1.5                       | 30                            | 70                        | 4                     |    | 4JJTC 040 003 6001 | 4 X R0.3    | 1°             | 4                         | 60                            | 100                       | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 015 002 3501 | 1.5 X R0.2  | 1°             | 1.5                       | 35                            | 75                        | 4                     |    | 4JJTC 040 005 2001 | 4 X R0.5    | 1°             | 4                         | 20                            | 60                        | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 015 003 1501 | 1.5 X R0.3  | 1°             | 1.5                       | 15                            | 50                        | 4                     |    | 4JJTC 040 005 3001 | 4 X R0.5    | 1°             | 4                         | 30                            | 70                        | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 015 003 2001 | 1.5 X R0.3  | 1°             | 1.5                       | 20                            | 60                        | 4                     |    | 4JJTC 040 005 4001 | 4 X R0.5    | 1°             | 4                         | 40                            | 80                        | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 015 003 2501 | 1.5 X R0.3  | 1°             | 1.5                       | 25                            | 60                        | 4                     |    | 4JJTC 040 005 5001 | 4 X R0.5    | 1°             | 4                         | 50                            | 90                        | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 015 005 1001 | 1.5 X R0.5  | 1°             | 1.5                       | 10                            | 50                        | 4                     |    | 4JJTC 040 005 6001 | 4 X R0.5    | 1°             | 4                         | 60                            | 100                       | 6                     |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 015 005 1501 | 1.5 X R0.5  | 1°             | 1.5                       | 15                            | 50                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 015 005 2001 | 1.5 X R0.5  | 1°             | 1.5                       | 20                            | 60                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 015 005 2501 | 1.5 X R0.5  | 1°             | 1.5                       | 25                            | 60                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 015 005 3001 | 1.5 X R0.5  | 1°             | 1.5                       | 30                            | 70                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 015 005 3501 | 1.5 X R0.5  | 1°             | 1.5                       | 35                            | 75                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 020 002 1201 | 2 X R0.2    | 1°             | 2                         | 12                            | 50                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 020 002 1601 | 2 X R0.2    | 1°             | 2                         | 16                            | 50                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 020 002 2001 | 2 X R0.2    | 1°             | 2                         | 20                            | 60                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 020 002 2501 | 2 X R0.2    | 1°             | 2                         | 25                            | 60                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 020 002 3001 | 2 X R0.2    | 1°             | 2                         | 30                            | 70                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 020 002 3501 | 2 X R0.2    | 1°             | 2                         | 35                            | 75                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 020 002 4001 | 2 X R0.2    | 1°             | 2                         | 40                            | 80                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 020 002 5001 | 2 X R0.2    | 1°             | 2                         | 50                            | 90                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 020 003 2001 | 2 X R0.3    | 1°             | 2                         | 20                            | 60                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 020 003 3001 | 2 X R0.3    | 1°             | 2                         | 30                            | 70                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 020 003 4001 | 2 X R0.3    | 1°             | 2                         | 40                            | 80                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 020 005 1201 | 2 X R0.5    | 1°             | 2                         | 12                            | 50                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 020 005 1601 | 2 X R0.5    | 1°             | 2                         | 16                            | 50                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 020 005 2001 | 2 X R0.5    | 1°             | 2                         | 20                            | 60                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 020 005 2501 | 2 X R0.5    | 1°             | 2                         | 25                            | 60                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 020 005 3001 | 2 X R0.5    | 1°             | 2                         | 30                            | 70                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |
| 4JJTC 020 005 3501 | 2 X R0.5    | 1°             | 2                         | 35                            | 75                        | 4                     |    |                    |             |                |                           |                               |                           |                       |    |              |             |                |                           |                               |                           |                       |    |



- 고정도강(HRc52~70), 프라하튼강 계열의 고속 가공 엔드밀
- 고품량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 코너R 형상을 날부치평이 적도록 설계하였습니다.
- 다양한 코너R과 전장으로 맞춤 가공이 가능합니다.
- 초미립자 초경합금(0.2 $\mu$ m)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.
- Endmills for pre-hardened and hardened steel(HRc52~70)
- Good wear resistance by high quality Si-based PVD coating.
- High precise edge tolerance.
- Designed for minimizing edge chipping by corner R shape.
- Various corner R and overall length for wide range application.
- Outstanding performance at high speed machining by ultra fine (0.2 $\mu$ m) WC grade.



| D Size            | D Tolerance       |
|-------------------|-------------------|
| $\phi 0.2 \sim 5$ | +0 ~ -0.01mm      |
| $\phi 6 \sim 12$  | -0.005 ~ -0.015mm |
| $\phi 14$         | -0.01 ~ -0.02mm   |

단위 : mm

| Order Number      | 날경<br>Diameter<br>D X R | 날장<br>Length of cut<br>L1 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 |
|-------------------|-------------------------|---------------------------|---------------------------|----------------------|----|
| 2JJC 002 0002 S04 | 0.2 X R0.02             | 0.4                       | 45                        | 4                    |    |
| 2JJC 002 0005 S04 | 0.2 X R0.05             | 0.4                       | 45                        | 4                    |    |
| 2JJC 003 0002 S04 | 0.3 X R0.02             | 0.6                       | 45                        | 4                    |    |
| 2JJC 003 0005 S04 | 0.3 X R0.05             | 0.6                       | 45                        | 4                    |    |
| 2JJC 003 001 S04  | 0.3 X R0.1              | 0.6                       | 45                        | 4                    |    |
| 2JJC 004 0002 S04 | 0.4 X R0.02             | 0.8                       | 45                        | 4                    |    |
| 2JJC 004 0005 S04 | 0.4 X R0.05             | 0.8                       | 45                        | 4                    |    |
| 2JJC 004 001 S04  | 0.4 X R0.1              | 0.8                       | 45                        | 4                    |    |
| 2JJC 005 0002 S04 | 0.5 X R0.02             | 1                         | 45                        | 4                    |    |
| 2JJC 005 0005 S04 | 0.5 X R0.05             | 1                         | 45                        | 4                    |    |
| 2JJC 005 001 S04  | 0.5 X R0.1              | 1                         | 45                        | 4                    |    |
| 2JJC 006 0002 S04 | 0.6 X R0.02             | 1.2                       | 45                        | 4                    |    |
| 2JJC 006 0005 S04 | 0.6 X R0.05             | 1.2                       | 45                        | 4                    |    |
| 2JJC 006 001 S04  | 0.6 X R0.1              | 1.2                       | 45                        | 4                    |    |
| 2JJC 006 002 S04  | 0.6 X R0.2              | 1.2                       | 45                        | 4                    |    |
| 2JJC 007 0005 S04 | 0.7 X R0.05             | 1.4                       | 45                        | 4                    |    |
| 2JJC 007 001 S04  | 0.7 X R0.1              | 1.4                       | 45                        | 4                    |    |
| 2JJC 007 002 S04  | 0.7 X R0.2              | 1.4                       | 45                        | 4                    |    |
| 2JJC 008 0002 S04 | 0.8 X R0.02             | 1.6                       | 45                        | 4                    |    |
| 2JJC 008 0005 S04 | 0.8 X R0.05             | 1.6                       | 45                        | 4                    |    |
| 2JJC 008 001 S04  | 0.8 X R0.1              | 1.6                       | 45                        | 4                    |    |
| 2JJC 008 002 S04  | 0.8 X R0.2              | 1.6                       | 45                        | 4                    |    |
| 2JJC 009 0005 S04 | 0.9 X R0.05             | 1.8                       | 45                        | 4                    |    |
| 2JJC 009 001 S04  | 0.9 X R0.1              | 1.8                       | 45                        | 4                    |    |
| 2JJC 010 0002 S04 | 1 X R0.02               | 2.5                       | 45                        | 4                    |    |
| 2JJC 010 0005 S04 | 1 X R0.05               | 2.5                       | 45                        | 4                    |    |
| 2JJC 010 001 S04  | 1 X R0.1                | 2.5                       | 45                        | 4                    |    |
| 2JJC 010 002 S04  | 1 X R0.2                | 2.5                       | 45                        | 4                    |    |
| 2JJC 010 003 S04  | 1 X R0.3                | 2.5                       | 45                        | 4                    |    |
| 2JJC 012 0002 S04 | 1.2 X R0.02             | 3.2                       | 45                        | 4                    |    |
| 2JJC 012 0005 S04 | 1.2 X R0.05             | 3.2                       | 45                        | 4                    |    |
| 2JJC 012 001 S04  | 1.2 X R0.1              | 3.2                       | 45                        | 4                    |    |
| 2JJC 012 002 S04  | 1.2 X R0.2              | 3.2                       | 45                        | 4                    |    |
| 2JJC 012 003 S04  | 1.2 X R0.3              | 3.2                       | 45                        | 4                    |    |
| 2JJC 015 0002 S04 | 1.5 X R0.02             | 4                         | 45                        | 4                    |    |
| 2JJC 015 0005 S04 | 1.5 X R0.05             | 4                         | 45                        | 4                    |    |
| 2JJC 015 001 S04  | 1.5 X R0.1              | 4                         | 45                        | 4                    |    |
| 2JJC 015 002 S04  | 1.5 X R0.2              | 4                         | 45                        | 4                    |    |
| 2JJC 015 003 S04  | 1.5 X R0.3              | 4                         | 45                        | 4                    |    |
| 2JJC 015 005 S04  | 1.5 X R0.5              | 4                         | 45                        | 4                    |    |
| 2JJC 020 0002 S04 | 2 X R0.02               | 6                         | 45                        | 4                    |    |
| 2JJC 020 0005 S04 | 2 X R0.05               | 6                         | 45                        | 4                    |    |
| 2JJC 020 001 S04  | 2 X R0.1                | 6                         | 45                        | 4                    |    |
| 2JJC 020 002 S04  | 2 X R0.2                | 6                         | 45                        | 4                    |    |
| 2JJC 020 003 S04  | 2 X R0.3                | 6                         | 45                        | 4                    |    |
| 2JJC 020 005 S04  | 2 X R0.5                | 6                         | 45                        | 4                    |    |
| 2JJC 025 001 S04  | 2.5 X R0.1              | 6                         | 50                        | 4                    |    |
| 2JJC 025 002 S04  | 2.5 X R0.2              | 6                         | 50                        | 4                    |    |
| 2JJC 025 003 S04  | 2.5 X R0.3              | 6                         | 50                        | 4                    |    |
| 2JJC 025 005 S04  | 2.5 X R0.5              | 6                         | 50                        | 4                    |    |

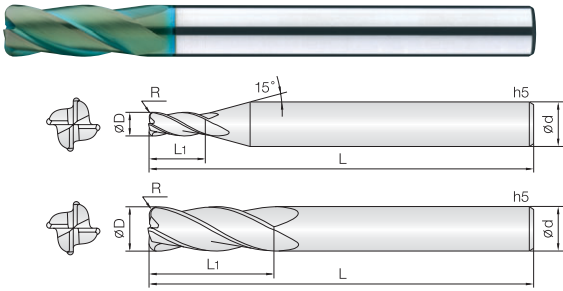
| Order Number     | 날경<br>Diameter<br>D X R | 날장<br>Length of cut<br>L1 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 |
|------------------|-------------------------|---------------------------|---------------------------|----------------------|----|
| 2JJC 030 001 S06 | 3 X R0.1                | 8                         | 60                        | 6                    |    |
| 2JJC 030 002 S06 | 3 X R0.2                | 8                         | 60                        | 6                    |    |
| 2JJC 030 003 S06 | 3 X R0.3                | 8                         | 60                        | 6                    |    |
| 2JJC 030 005 S06 | 3 X R0.5                | 8                         | 60                        | 6                    |    |
| 2JJC 030 010 S06 | 3 X R1                  | 8                         | 60                        | 6                    |    |
| 2JJC 040 001 S04 | 4 X R0.1                | 9                         | 60                        | 4                    |    |
| 2JJC 040 001 S06 | 4 X R0.1                | 10                        | 70                        | 6                    |    |
| 2JJC 040 002 S04 | 4 X R0.2                | 9                         | 60                        | 4                    |    |
| 2JJC 040 002 S06 | 4 X R0.2                | 10                        | 70                        | 6                    |    |
| 2JJC 040 003 S04 | 4 X R0.3                | 9                         | 60                        | 4                    |    |
| 2JJC 040 003 S06 | 4 X R0.3                | 10                        | 70                        | 6                    |    |
| 2JJC 040 005 S04 | 4 X R0.5                | 9                         | 60                        | 4                    |    |
| 2JJC 040 005 S06 | 4 X R0.5                | 10                        | 70                        | 6                    |    |
| 2JJC 040 010 S04 | 4 X R1                  | 9                         | 60                        | 4                    |    |
| 2JJC 040 010 S06 | 4 X R1                  | 10                        | 70                        | 6                    |    |
| 2JJC 050 001 S06 | 5 X R0.1                | 13                        | 75                        | 6                    |    |
| 2JJC 050 002 S06 | 5 X R0.2                | 13                        | 75                        | 6                    |    |
| 2JJC 050 003 S06 | 5 X R0.3                | 13                        | 75                        | 6                    |    |
| 2JJC 050 005 S06 | 5 X R0.5                | 13                        | 75                        | 6                    |    |
| 2JJC 050 010 S06 | 5 X R1                  | 13                        | 75                        | 6                    |    |
| 2JJC 060 001 060 | 6 X R0.1                | 11                        | 60                        | 6                    |    |
| 2JJC 060 001 090 | 6 X R0.1                | 13                        | 90                        | 6                    |    |
| 2JJC 060 002 060 | 6 X R0.2                | 11                        | 60                        | 6                    |    |
| 2JJC 060 002 090 | 6 X R0.2                | 13                        | 90                        | 6                    |    |
| 2JJC 060 003 060 | 6 X R0.3                | 11                        | 60                        | 6                    |    |
| 2JJC 060 003 090 | 6 X R0.3                | 13                        | 90                        | 6                    |    |
| 2JJC 060 005 060 | 6 X R0.5                | 11                        | 60                        | 6                    |    |
| 2JJC 060 005 090 | 6 X R0.5                | 13                        | 90                        | 6                    |    |
| 2JJC 060 005 110 | 6 X R0.5                | 13                        | 110                       | 6                    |    |
| 2JJC 060 010 060 | 6 X R1                  | 11                        | 60                        | 6                    |    |
| 2JJC 060 010 090 | 6 X R1                  | 13                        | 90                        | 6                    |    |
| 2JJC 060 010 110 | 6 X R1                  | 13                        | 110                       | 6                    |    |
| 2JJC 060 015 060 | 6 X R1.5                | 11                        | 60                        | 6                    |    |
| 2JJC 060 015 090 | 6 X R1.5                | 13                        | 90                        | 6                    |    |
| 2JJC 060 020 060 | 6 X R2                  | 11                        | 60                        | 6                    |    |
| 2JJC 060 020 090 | 6 X R2                  | 13                        | 90                        | 6                    |    |
| 2JJC 060 025 090 | 6 X R2.5                | 13                        | 90                        | 6                    |    |
| 2JJC 080 001 070 | 8 X R0.1                | 16                        | 70                        | 8                    |    |
| 2JJC 080 001 100 | 8 X R0.1                | 19                        | 100                       | 8                    |    |
| 2JJC 080 002 070 | 8 X R0.2                | 16                        | 70                        | 8                    |    |
| 2JJC 080 002 100 | 8 X R0.2                | 19                        | 100                       | 8                    |    |
| 2JJC 080 003 070 | 8 X R0.3                | 16                        | 70                        | 8                    |    |
| 2JJC 080 003 100 | 8 X R0.3                | 19                        | 100                       | 8                    |    |
| 2JJC 080 005 070 | 8 X R0.5                | 16                        | 70                        | 8                    |    |
| 2JJC 080 005 100 | 8 X R0.5                | 19                        | 100                       | 8                    |    |
| 2JJC 080 005 120 | 8 X R0.5                | 19                        | 120                       | 8                    |    |
| 2JJC 080 010 070 | 8 X R1                  | 16                        | 70                        | 8                    |    |
| 2JJC 080 010 100 | 8 X R1                  | 19                        | 100                       | 8                    |    |
| 2JJC 080 010 120 | 8 X R1                  | 19                        | 120                       | 8                    |    |
| 2JJC 080 015 070 | 8 X R1.5                | 16                        | 70                        | 8                    |    |



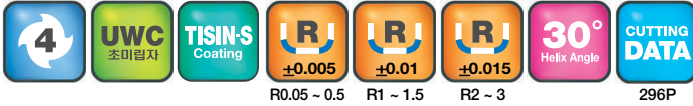


단위 : mm

| Order Number         | 날경<br>Diameter<br>D×R | 날장<br>Length<br>of cut<br>L1 | 전장<br>Overall<br>Length<br>L | 샙크<br>Dia<br>d | 비고 | Order Number | 날경<br>Diameter<br>D×R | 날장<br>Length<br>of cut<br>L1 | 전장<br>Overall<br>Length<br>L | 샙크<br>Dia<br>d | 비고 |
|----------------------|-----------------------|------------------------------|------------------------------|----------------|----|--------------|-----------------------|------------------------------|------------------------------|----------------|----|
| 2JJC 080 015 100     | 8 X R1.5              | 19                           | 100                          | 8              |    |              |                       |                              |                              |                |    |
| 2JJC 080 020 070     | 8 X R2                | 16                           | 70                           | 8              |    |              |                       |                              |                              |                |    |
| 2JJC 080 020 100     | 8 X R2                | 19                           | 100                          | 8              |    |              |                       |                              |                              |                |    |
| 2JJC 080 025 100     | 8 X R2.5              | 19                           | 100                          | 8              |    |              |                       |                              |                              |                |    |
| 2JJC 080 030 100     | 8 X R3                | 19                           | 100                          | 8              |    |              |                       |                              |                              |                |    |
| 2JJC 080 035 100     | 8 X R3.5              | 19                           | 100                          | 8              |    |              |                       |                              |                              |                |    |
| 2JJC 100 001 075     | 10 X R0.1             | 19                           | 75                           | 10             |    |              |                       |                              |                              |                |    |
| 2JJC 100 001 100     | 10 X R0.1             | 22                           | 100                          | 10             |    |              |                       |                              |                              |                |    |
| 2JJC 100 002 075     | 10 X R0.2             | 19                           | 75                           | 10             |    |              |                       |                              |                              |                |    |
| 2JJC 100 002 100     | 10 X R0.2             | 22                           | 100                          | 10             |    |              |                       |                              |                              |                |    |
| 2JJC 100 003 075     | 10 X R0.3             | 19                           | 75                           | 10             |    |              |                       |                              |                              |                |    |
| 2JJC 100 003 100     | 10 X R0.3             | 22                           | 100                          | 10             |    |              |                       |                              |                              |                |    |
| 2JJC 100 005 075     | 10 X R0.5             | 19                           | 75                           | 10             |    |              |                       |                              |                              |                |    |
| 2JJC 100 005 100     | 10 X R0.5             | 22                           | 100                          | 10             |    |              |                       |                              |                              |                |    |
| 2JJC 100 005 120     | 10 X R0.5             | 22                           | 120                          | 10             |    |              |                       |                              |                              |                |    |
| 2JJC 100 010 075     | 10 X R1               | 19                           | 75                           | 10             |    |              |                       |                              |                              |                |    |
| 2JJC 100 010 100     | 10 X R1               | 22                           | 100                          | 10             |    |              |                       |                              |                              |                |    |
| 2JJC 100 010 120     | 10 X R1               | 22                           | 120                          | 10             |    |              |                       |                              |                              |                |    |
| 2JJC 100 015 075     | 10 X R1.5             | 19                           | 75                           | 10             |    |              |                       |                              |                              |                |    |
| 2JJC 100 015 100     | 10 X R1.5             | 22                           | 100                          | 10             |    |              |                       |                              |                              |                |    |
| 2JJC 100 020 075     | 10 X R2               | 19                           | 75                           | 10             |    |              |                       |                              |                              |                |    |
| 2JJC 100 020 100     | 10 X R2               | 22                           | 100                          | 10             |    |              |                       |                              |                              |                |    |
| 2JJC 100 025 100     | 10 X R2.5             | 22                           | 100                          | 10             |    |              |                       |                              |                              |                |    |
| 2JJC 100 030 100     | 10 X R3               | 22                           | 100                          | 10             |    |              |                       |                              |                              |                |    |
| 2JJC 100 040 100     | 10 X R4               | 22                           | 100                          | 10             |    |              |                       |                              |                              |                |    |
| 2JJC 120 001 080     | 12 X R0.1             | 22                           | 80                           | 12             |    |              |                       |                              |                              |                |    |
| 2JJC 120 001 110     | 12 X R0.1             | 26                           | 110                          | 12             |    |              |                       |                              |                              |                |    |
| 2JJC 120 002 080     | 12 X R0.2             | 22                           | 80                           | 12             |    |              |                       |                              |                              |                |    |
| 2JJC 120 002 110     | 12 X R0.2             | 26                           | 110                          | 12             |    |              |                       |                              |                              |                |    |
| 2JJC 120 003 080     | 12 X R0.3             | 22                           | 80                           | 12             |    |              |                       |                              |                              |                |    |
| 2JJC 120 003 110     | 12 X R0.3             | 26                           | 110                          | 12             |    |              |                       |                              |                              |                |    |
| 2JJC 120 005 080     | 12 X R0.5             | 22                           | 80                           | 12             |    |              |                       |                              |                              |                |    |
| 2JJC 120 005 110     | 12 X R0.5             | 26                           | 110                          | 12             |    |              |                       |                              |                              |                |    |
| 2JJC 120 005 130     | 12 X R0.5             | 26                           | 130                          | 12             |    |              |                       |                              |                              |                |    |
| 2JJC 120 010 080     | 12 X R1               | 22                           | 80                           | 12             |    |              |                       |                              |                              |                |    |
| 2JJC 120 010 110     | 12 X R1               | 26                           | 110                          | 12             |    |              |                       |                              |                              |                |    |
| 2JJC 120 010 130     | 12 X R1               | 26                           | 130                          | 12             |    |              |                       |                              |                              |                |    |
| 2JJC 120 015 080     | 12 X R1.5             | 22                           | 80                           | 12             |    |              |                       |                              |                              |                |    |
| 2JJC 120 015 110     | 12 X R1.5             | 26                           | 110                          | 12             |    |              |                       |                              |                              |                |    |
| 2JJC 120 020 080     | 12 X R2               | 22                           | 80                           | 12             |    |              |                       |                              |                              |                |    |
| 2JJC 120 020 110     | 12 X R2               | 26                           | 110                          | 12             |    |              |                       |                              |                              |                |    |
| 2JJC 120 020 130     | 12 X R2               | 26                           | 130                          | 12             |    |              |                       |                              |                              |                |    |
| 2JJC 120 025 110     | 12 X R2.5             | 26                           | 110                          | 12             |    |              |                       |                              |                              |                |    |
| 2JJC 120 030 110     | 12 X R3               | 26                           | 110                          | 12             |    |              |                       |                              |                              |                |    |
| 2JJC 120 040 110     | 12 X R4               | 26                           | 110                          | 12             |    |              |                       |                              |                              |                |    |
| 2JJC 120 050 110     | 12 X R5               | 26                           | 110                          | 12             |    |              |                       |                              |                              |                |    |
| New 2JJC 140 005 110 | 14 X R0.5             | 30                           | 110                          | 14             |    |              |                       |                              |                              |                |    |
| New 2JJC 140 010 110 | 14 X R1               | 30                           | 110                          | 14             |    |              |                       |                              |                              |                |    |
| New 2JJC 140 020 110 | 14 X R2               | 30                           | 110                          | 14             |    |              |                       |                              |                              |                |    |



- 고정도강(HRc52~70), 프리하든강 계열의 고속 가공 엔드밀
- 고품질 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 코너R 형상을 날부치핑이 적도록 설계하였습니다.
- 다양한 코너R과 전장으로 맞춤 가공이 가능합니다.
- 초미립자 초경합금(0.2 $\mu$ m)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.
- Endmills for pre-hardened and hardened steel(HRc52~70)
- Good wear resistance by high quality Si-based PVD coating.
- High precise edge tolerance.
- Designed for minimizing edge chipping by corner R shape.
- Various corner R and overall length for wide range application.
- Outstanding performance at high speed machining by ultra fine (0.2 $\mu$ m) WC grade.



| D Size   | D Tolerance       |
|----------|-------------------|
| Ø0.5 ~ 5 | +0 ~ -0.01mm      |
| Ø6 ~ 12  | -0.005 ~ -0.015mm |
| Ø14 ~ 16 | -0.01 ~ -0.02mm   |

단위 : mm

| Order Number         | 날경<br>Diameter<br>D×R | 날장<br>Length of cut<br>L1 | 전장<br>Overall Length<br>L | 샹크<br>Shank Dia<br>d | 비고 |
|----------------------|-----------------------|---------------------------|---------------------------|----------------------|----|
| 4JJC 005 0005 S04    | 0.5 X R0.05           | 1                         | 45                        | 4                    |    |
| 4JJC 005 001 S04     | 0.5 X R0.1            | 1                         | 45                        | 4                    |    |
| 4JJC 006 0005 S04    | 0.6 X R0.05           | 1.2                       | 45                        | 4                    |    |
| 4JJC 006 001 S04     | 0.6 X R0.1            | 1.2                       | 45                        | 4                    |    |
| 4JJC 007 0005 S04    | 0.7 X R0.05           | 1.4                       | 45                        | 4                    |    |
| 4JJC 007 001 S04     | 0.7 X R0.1            | 1.4                       | 45                        | 4                    |    |
| 4JJC 008 0005 S04    | 0.8 X R0.05           | 1.6                       | 45                        | 4                    |    |
| 4JJC 008 001 S04     | 0.8 X R0.1            | 1.6                       | 45                        | 4                    |    |
| 4JJC 009 0005 S04    | 0.9 X R0.05           | 1.8                       | 45                        | 4                    |    |
| 4JJC 009 001 S04     | 0.9 X R0.1            | 1.8                       | 45                        | 4                    |    |
| 4JJC 010 0005 S04    | 1 X R0.05             | 2.5                       | 45                        | 4                    |    |
| 4JJC 010 001 S04     | 1 X R0.1              | 2.5                       | 45                        | 4                    |    |
| 4JJC 010 002 S04     | 1 X R0.2              | 2.5                       | 45                        | 4                    |    |
| 4JJC 010 003 S04     | 1 X R0.3              | 2.5                       | 45                        | 4                    |    |
| 4JJC 015 0005 S04    | 1.5 X R0.05           | 4                         | 45                        | 4                    |    |
| 4JJC 015 001 S04     | 1.5 X R0.1            | 4                         | 45                        | 4                    |    |
| 4JJC 015 002 S04     | 1.5 X R0.2            | 4                         | 45                        | 4                    |    |
| 4JJC 015 003 S04     | 1.5 X R0.3            | 4                         | 45                        | 4                    |    |
| 4JJC 015 005 S04     | 1.5 X R0.5            | 4                         | 45                        | 4                    |    |
| 4JJC 020 0005 S04    | 2 X R0.05             | 6                         | 45                        | 4                    |    |
| 4JJC 020 001 S04     | 2 X R0.1              | 6                         | 45                        | 4                    |    |
| 4JJC 020 002 S04     | 2 X R0.2              | 6                         | 45                        | 4                    |    |
| 4JJC 020 003 S04     | 2 X R0.3              | 6                         | 45                        | 4                    |    |
| 4JJC 020 005 S04     | 2 X R0.5              | 6                         | 45                        | 4                    |    |
| 4JJC 025 001 S04     | 2.5 X R0.1            | 6                         | 50                        | 4                    |    |
| 4JJC 025 002 S04     | 2.5 X R0.2            | 6                         | 50                        | 4                    |    |
| 4JJC 025 003 S04     | 2.5 X R0.3            | 6                         | 50                        | 4                    |    |
| 4JJC 025 005 S04     | 2.5 X R0.5            | 6                         | 50                        | 4                    |    |
| New 4JJC 030 001 S03 | 3 X R0.1              | 8                         | 60                        | 3                    |    |
| New 4JJC 030 002 S03 | 3 X R0.2              | 8                         | 60                        | 3                    |    |
| New 4JJC 030 003 S03 | 3 X R0.3              | 8                         | 60                        | 3                    |    |
| New 4JJC 030 005 S03 | 3 X R0.5              | 8                         | 60                        | 3                    |    |
| New 4JJC 030 010 S03 | 3 X R1                | 8                         | 60                        | 3                    |    |
| 4JJC 030 001 S06     | 3 X R0.1              | 8                         | 60                        | 6                    |    |
| 4JJC 030 002 S06     | 3 X R0.2              | 8                         | 60                        | 6                    |    |
| 4JJC 030 003 S06     | 3 X R0.3              | 8                         | 60                        | 6                    |    |
| 4JJC 030 005 S06     | 3 X R0.5              | 8                         | 60                        | 6                    |    |
| 4JJC 030 010 S06     | 3 X R1                | 8                         | 60                        | 6                    |    |
| 4JJC 035 001 S06     | 3.5 X R0.1            | 9                         | 70                        | 6                    |    |
| 4JJC 035 002 S06     | 3.5 X R0.2            | 9                         | 70                        | 6                    |    |
| 4JJC 035 003 S06     | 3.5 X R0.3            | 9                         | 70                        | 6                    |    |
| 4JJC 035 005 S06     | 3.5 X R0.5            | 9                         | 70                        | 6                    |    |
| New 4JJC 035 010 S06 | 3.5 X R1              | 9                         | 70                        | 6                    |    |
| 4JJC 040 001 S04     | 4 X R0.1              | 9                         | 60                        | 4                    |    |
| 4JJC 040 001 S06     | 4 X R0.1              | 10                        | 70                        | 6                    |    |
| 4JJC 040 002 S04     | 4 X R0.2              | 9                         | 60                        | 4                    |    |
| 4JJC 040 002 S06     | 4 X R0.2              | 10                        | 70                        | 6                    |    |
| 4JJC 040 003 S04     | 4 X R0.3              | 9                         | 60                        | 4                    |    |
| 4JJC 040 003 S06     | 4 X R0.3              | 10                        | 70                        | 6                    |    |
| 4JJC 040 005 S04     | 4 X R0.5              | 9                         | 60                        | 4                    |    |

| Order Number         | 날경<br>Diameter<br>D×R | 날장<br>Length of cut<br>L1 | 전장<br>Overall Length<br>L | 샹크<br>Shank Dia<br>d | 비고 |
|----------------------|-----------------------|---------------------------|---------------------------|----------------------|----|
| 4JJC 040 005 S06     | 4 X R0.5              | 10                        | 70                        | 6                    |    |
| 4JJC 040 010 S04     | 4 X R1                | 9                         | 60                        | 4                    |    |
| 4JJC 040 010 S06     | 4 X R1                | 10                        | 70                        | 6                    |    |
| 4JJC 045 002 S06     | 4.5 X R0.2            | 11                        | 75                        | 6                    |    |
| New 4JJC 045 003 S06 | 4.5 X R0.3            | 11                        | 75                        | 6                    |    |
| 4JJC 045 005 S06     | 4.5 X R0.5            | 11                        | 75                        | 6                    |    |
| New 4JJC 045 010 S06 | 4.5 X R1              | 11                        | 75                        | 6                    |    |
| 4JJC 050 001 S06     | 5 X R0.1              | 13                        | 75                        | 6                    |    |
| 4JJC 050 002 S06     | 5 X R0.2              | 13                        | 75                        | 6                    |    |
| 4JJC 050 003 S06     | 5 X R0.3              | 13                        | 75                        | 6                    |    |
| 4JJC 050 005 S06     | 5 X R0.5              | 13                        | 75                        | 6                    |    |
| 4JJC 050 010 S06     | 5 X R1                | 13                        | 75                        | 6                    |    |
| 4JJC 060 0005 055    | 6 X R0.05             | 11                        | 55                        | 6                    |    |
| 4JJC 060 0005 080    | 6 X R0.05             | 13                        | 80                        | 6                    |    |
| 4JJC 060 001 055     | 6 X R0.1              | 11                        | 55                        | 6                    |    |
| 4JJC 060 001 080     | 6 X R0.1              | 13                        | 80                        | 6                    |    |
| 4JJC 060 002 055     | 6 X R0.2              | 11                        | 55                        | 6                    |    |
| 4JJC 060 002 080     | 6 X R0.2              | 13                        | 80                        | 6                    |    |
| 4JJC 060 002 100     | 6 X R0.2              | 13                        | 100                       | 6                    |    |
| 4JJC 060 002 120     | 6 X R0.2              | 13                        | 120                       | 6                    |    |
| 4JJC 060 003 055     | 6 X R0.3              | 11                        | 55                        | 6                    |    |
| 4JJC 060 003 080     | 6 X R0.3              | 13                        | 80                        | 6                    |    |
| 4JJC 060 003 100     | 6 X R0.3              | 13                        | 100                       | 6                    |    |
| 4JJC 060 003 120     | 6 X R0.3              | 13                        | 120                       | 6                    |    |
| 4JJC 060 005 055     | 6 X R0.5              | 11                        | 55                        | 6                    |    |
| 4JJC 060 005 080     | 6 X R0.5              | 13                        | 80                        | 6                    |    |
| 4JJC 060 005 100     | 6 X R0.5              | 13                        | 100                       | 6                    |    |
| 4JJC 060 005 120     | 6 X R0.5              | 13                        | 120                       | 6                    |    |
| 4JJC 060 010 055     | 6 X R1                | 11                        | 55                        | 6                    |    |
| 4JJC 060 010 080     | 6 X R1                | 13                        | 80                        | 6                    |    |
| 4JJC 060 010 100     | 6 X R1                | 13                        | 100                       | 6                    |    |
| 4JJC 060 010 120     | 6 X R1                | 13                        | 120                       | 6                    |    |
| 4JJC 060 015 055     | 6 X R1.5              | 11                        | 55                        | 6                    |    |
| 4JJC 060 015 080     | 6 X R1.5              | 13                        | 80                        | 6                    |    |
| 4JJC 060 020 055     | 6 X R2                | 11                        | 55                        | 6                    |    |
| 4JJC 060 020 080     | 6 X R2                | 13                        | 80                        | 6                    |    |
| New 4JJC 070 002 S08 | 7 X R0.2              | 16                        | 80                        | 8                    |    |
| New 4JJC 070 003 S08 | 7 X R0.3              | 16                        | 80                        | 8                    |    |
| New 4JJC 070 005 S08 | 7 X R0.5              | 16                        | 80                        | 8                    |    |
| New 4JJC 070 010 S08 | 7 X R1                | 16                        | 80                        | 8                    |    |
| New 4JJC 080 001 060 | 8 X R0.1              | 16                        | 60                        | 8                    |    |
| New 4JJC 080 001 090 | 8 X R0.1              | 19                        | 90                        | 8                    |    |
| 4JJC 080 002 060     | 8 X R0.2              | 16                        | 60                        | 8                    |    |
| 4JJC 080 002 090     | 8 X R0.2              | 19                        | 90                        | 8                    |    |
| 4JJC 080 003 060     | 8 X R0.3              | 16                        | 60                        | 8                    |    |
| 4JJC 080 003 090     | 8 X R0.3              | 19                        | 90                        | 8                    |    |
| 4JJC 080 005 060     | 8 X R0.5              | 16                        | 60                        | 8                    |    |
| 4JJC 080 005 090     | 8 X R0.5              | 19                        | 90                        | 8                    |    |
| 4JJC 080 005 110     | 8 X R0.5              | 19                        | 110                       | 8                    |    |
| 4JJC 080 005 150     | 8 X R0.5              | 19                        | 150                       | 8                    |    |

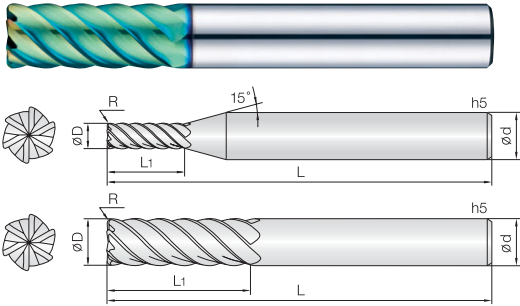


단위 : mm

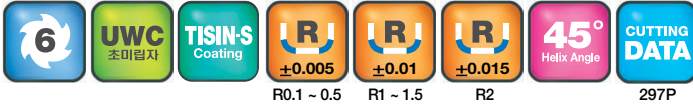
| Order Number         | 날경<br>D×R | 날장<br>Length of cut<br>L1 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 | Order Number         | 날경<br>D×R | 날장<br>Length of cut<br>L1 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 |
|----------------------|-----------|---------------------------|---------------------------|----------------------|----|----------------------|-----------|---------------------------|---------------------------|----------------------|----|
| 4JJC 080 010 060     | 8 X R1    | 16                        | 60                        | 8                    |    | 4JJC 120 010 160     | 12 X R1   | 26                        | 160                       | 12                   |    |
| 4JJC 080 010 090     | 8 X R1    | 19                        | 90                        | 8                    |    | 4JJC 120 015 075     | 12 X R1.5 | 22                        | 75                        | 12                   |    |
| 4JJC 080 010 110     | 8 X R1    | 19                        | 110                       | 8                    |    | 4JJC 120 015 110     | 12 X R1.5 | 26                        | 110                       | 12                   |    |
| 4JJC 080 010 150     | 8 X R1    | 19                        | 150                       | 8                    |    | 4JJC 120 020 075     | 12 X R2   | 22                        | 75                        | 12                   |    |
| 4JJC 080 015 060     | 8 X R1.5  | 16                        | 60                        | 8                    |    | 4JJC 120 020 110     | 12 X R2   | 26                        | 110                       | 12                   |    |
| 4JJC 080 015 090     | 8 X R1.5  | 19                        | 90                        | 8                    |    | 4JJC 120 020 130     | 12 X R2   | 26                        | 130                       | 12                   |    |
| 4JJC 080 020 060     | 8 X R2    | 16                        | 60                        | 8                    |    | 4JJC 120 020 160     | 12 X R2   | 26                        | 160                       | 12                   |    |
| 4JJC 080 020 090     | 8 X R2    | 19                        | 90                        | 8                    |    | 4JJC 120 025 075     | 12 X R2.5 | 22                        | 75                        | 12                   |    |
| New 4JJC 090 002 S10 | 9 X R0.2  | 20                        | 90                        | 10                   |    | 4JJC 120 025 110     | 12 X R2.5 | 26                        | 110                       | 12                   |    |
| New 4JJC 090 003 S10 | 9 X R0.3  | 20                        | 90                        | 10                   |    | 4JJC 120 030 075     | 12 X R3   | 22                        | 75                        | 12                   |    |
| New 4JJC 090 005 S10 | 9 X R0.5  | 20                        | 90                        | 10                   |    | 4JJC 120 030 110     | 12 X R3   | 26                        | 110                       | 12                   |    |
| New 4JJC 090 010 S10 | 9 X R1    | 20                        | 90                        | 10                   |    | New 4JJC 140 005 110 | 14 X R0.5 | 30                        | 110                       | 14                   |    |
| New 4JJC 100 001 070 | 10 X R0.1 | 19                        | 70                        | 10                   |    | New 4JJC 140 010 110 | 14 X R1   | 30                        | 110                       | 14                   |    |
| New 4JJC 100 001 100 | 10 X R0.1 | 22                        | 100                       | 10                   |    | New 4JJC 140 020 110 | 14 X R2   | 30                        | 110                       | 14                   |    |
| 4JJC 100 002 070     | 10 X R0.2 | 19                        | 70                        | 10                   |    | 4JJC 160 005 110     | 16 X R0.5 | 32                        | 110                       | 16                   |    |
| 4JJC 100 002 100     | 10 X R0.2 | 22                        | 100                       | 10                   |    | New 4JJC 160 005 160 | 16 X R0.5 | 32                        | 160                       | 16                   |    |
| 4JJC 100 003 070     | 10 X R0.3 | 19                        | 70                        | 10                   |    | 4JJC 160 010 110     | 16 X R1   | 32                        | 110                       | 16                   |    |
| 4JJC 100 003 100     | 10 X R0.3 | 22                        | 100                       | 10                   |    | New 4JJC 160 010 160 | 16 X R1   | 32                        | 160                       | 16                   |    |
| 4JJC 100 005 070     | 10 X R0.5 | 19                        | 70                        | 10                   |    |                      |           |                           |                           |                      |    |
| 4JJC 100 005 100     | 10 X R0.5 | 22                        | 100                       | 10                   |    |                      |           |                           |                           |                      |    |
| 4JJC 100 005 120     | 10 X R0.5 | 22                        | 120                       | 10                   |    |                      |           |                           |                           |                      |    |
| 4JJC 100 005 150     | 10 X R0.5 | 22                        | 150                       | 10                   |    |                      |           |                           |                           |                      |    |
| 4JJC 100 010 070     | 10 X R1   | 19                        | 70                        | 10                   |    |                      |           |                           |                           |                      |    |
| 4JJC 100 010 100     | 10 X R1   | 22                        | 100                       | 10                   |    |                      |           |                           |                           |                      |    |
| 4JJC 100 010 120     | 10 X R1   | 22                        | 120                       | 10                   |    |                      |           |                           |                           |                      |    |
| 4JJC 100 010 150     | 10 X R1   | 22                        | 150                       | 10                   |    |                      |           |                           |                           |                      |    |
| 4JJC 100 015 070     | 10 X R1.5 | 19                        | 70                        | 10                   |    |                      |           |                           |                           |                      |    |
| 4JJC 100 015 100     | 10 X R1.5 | 22                        | 100                       | 10                   |    |                      |           |                           |                           |                      |    |
| 4JJC 100 020 070     | 10 X R2   | 19                        | 70                        | 10                   |    |                      |           |                           |                           |                      |    |
| 4JJC 100 020 100     | 10 X R2   | 22                        | 100                       | 10                   |    |                      |           |                           |                           |                      |    |
| 4JJC 100 020 120     | 10 X R2   | 22                        | 120                       | 10                   |    |                      |           |                           |                           |                      |    |
| 4JJC 100 020 150     | 10 X R2   | 22                        | 150                       | 10                   |    |                      |           |                           |                           |                      |    |
| 4JJC 100 025 070     | 10 X R2.5 | 19                        | 70                        | 10                   |    |                      |           |                           |                           |                      |    |
| 4JJC 100 025 100     | 10 X R2.5 | 22                        | 100                       | 10                   |    |                      |           |                           |                           |                      |    |
| New 4JJC 110 003 S12 | 11 X R0.3 | 24                        | 100                       | 12                   |    |                      |           |                           |                           |                      |    |
| New 4JJC 110 005 S12 | 11 X R0.5 | 24                        | 100                       | 12                   |    |                      |           |                           |                           |                      |    |
| New 4JJC 110 010 S12 | 11 X R1   | 24                        | 100                       | 12                   |    |                      |           |                           |                           |                      |    |
| New 4JJC 120 001 075 | 12 X R0.1 | 22                        | 75                        | 12                   |    |                      |           |                           |                           |                      |    |
| New 4JJC 120 001 110 | 12 X R0.1 | 26                        | 110                       | 12                   |    |                      |           |                           |                           |                      |    |
| 4JJC 120 002 075     | 12 X R0.2 | 22                        | 75                        | 12                   |    |                      |           |                           |                           |                      |    |
| 4JJC 120 002 110     | 12 X R0.2 | 26                        | 110                       | 12                   |    |                      |           |                           |                           |                      |    |
| 4JJC 120 003 075     | 12 X R0.3 | 22                        | 75                        | 12                   |    |                      |           |                           |                           |                      |    |
| 4JJC 120 003 110     | 12 X R0.3 | 26                        | 110                       | 12                   |    |                      |           |                           |                           |                      |    |
| 4JJC 120 005 075     | 12 X R0.5 | 22                        | 75                        | 12                   |    |                      |           |                           |                           |                      |    |
| 4JJC 120 005 110     | 12 X R0.5 | 26                        | 110                       | 12                   |    |                      |           |                           |                           |                      |    |
| 4JJC 120 005 130     | 12 X R0.5 | 26                        | 130                       | 12                   |    |                      |           |                           |                           |                      |    |
| 4JJC 120 005 160     | 12 X R0.5 | 26                        | 160                       | 12                   |    |                      |           |                           |                           |                      |    |
| 4JJC 120 010 075     | 12 X R1   | 22                        | 75                        | 12                   |    |                      |           |                           |                           |                      |    |
| 4JJC 120 010 110     | 12 X R1   | 26                        | 110                       | 12                   |    |                      |           |                           |                           |                      |    |
| 4JJC 120 010 130     | 12 X R1   | 26                        | 130                       | 12                   |    |                      |           |                           |                           |                      |    |

### 6날 45° 헬릭스 고정도재 가공용 제이제이 코너 레디우스 엔드밀

JJ series



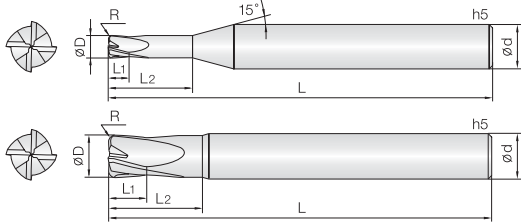
- 고정도강(HRc52~70), 프리하든강 계열의 고속 가공 엔드밀
- 고품질 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 45° 헬릭스 형상으로 설계하여 고속, 고이송 가공에 적합합니다.
- 측벽 가공, 코너부, 무구배면 가공시 가공물의 표면조도가 뛰어나며, 인선날 길이 증가로 내마모성이 더욱 좋아집니다.
- 초미립자 초경합금(0.2μm)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.
- Endmills for pre-hardened and hardened steel(HRc52~70)
- Good wear resistance by high quality Si-based PVD coating.
- 45° degree helix design for high speed, feed condition.
- Excellent surface roughness for side, corner, shoulder milling and improved wear resistance due to increased edge length.
- Outstanding performance at high speed machining by ultra fine (0.2μm) WC grade.



| D Size  | D Tolerance       |
|---------|-------------------|
| ø3 ~ 5  | +0 ~ -0.01mm      |
| ø6 ~ 12 | -0.005 ~ -0.015mm |
| ø16     | -0.01 ~ -0.02mm   |

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 |
|-------------------|-------------------------|---------------------------|---------------------------|----------------------|----|--------------|-------------------------|---------------------------|---------------------------|----------------------|----|
| 6JJCR 030 001 060 | 3 X R0.1                | 7.5                       | 60                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 030 002 060 | 3 X R0.2                | 7.5                       | 60                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 030 003 060 | 3 X R0.3                | 7.5                       | 60                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 030 005 060 | 3 X R0.5                | 7.5                       | 60                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 030 010 060 | 3 X R1                  | 7.5                       | 60                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 040 001 060 | 4 X R0.1                | 10                        | 60                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 040 002 060 | 4 X R0.2                | 10                        | 60                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 040 003 060 | 4 X R0.3                | 10                        | 60                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 040 005 060 | 4 X R0.5                | 10                        | 60                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 040 010 060 | 4 X R1                  | 10                        | 60                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 050 002 060 | 5 X R0.2                | 13                        | 60                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 050 003 060 | 5 X R0.3                | 13                        | 60                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 050 005 060 | 5 X R0.5                | 13                        | 60                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 050 010 060 | 5 X R1                  | 13                        | 60                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 060 001 060 | 6 X R0.1                | 15                        | 60                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 060 002 060 | 6 X R0.2                | 15                        | 60                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 060 002 080 | 6 X R0.2                | 15                        | 80                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 060 003 060 | 6 X R0.3                | 15                        | 60                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 060 003 080 | 6 X R0.3                | 15                        | 80                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 060 005 060 | 6 X R0.5                | 15                        | 60                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 060 005 080 | 6 X R0.5                | 15                        | 80                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 060 010 060 | 6 X R1                  | 15                        | 60                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 060 010 080 | 6 X R1                  | 15                        | 80                        | 6                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 080 002 070 | 8 X R0.2                | 20                        | 70                        | 8                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 080 003 070 | 8 X R0.3                | 20                        | 70                        | 8                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 080 003 090 | 8 X R0.3                | 20                        | 90                        | 8                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 080 005 070 | 8 X R0.5                | 20                        | 70                        | 8                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 080 005 090 | 8 X R0.5                | 20                        | 90                        | 8                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 080 010 070 | 8 X R1                  | 20                        | 70                        | 8                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 080 010 090 | 8 X R1                  | 20                        | 90                        | 8                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 080 015 070 | 8 X R1.5                | 20                        | 70                        | 8                    |    |              |                         |                           |                           |                      |    |
| 6JJCR 100 002 075 | 10 X R0.2               | 25                        | 75                        | 10                   |    |              |                         |                           |                           |                      |    |
| 6JJCR 100 003 075 | 10 X R0.3               | 25                        | 75                        | 10                   |    |              |                         |                           |                           |                      |    |
| 6JJCR 100 003 100 | 10 X R0.3               | 25                        | 100                       | 10                   |    |              |                         |                           |                           |                      |    |
| 6JJCR 100 005 075 | 10 X R0.5               | 25                        | 75                        | 10                   |    |              |                         |                           |                           |                      |    |
| 6JJCR 100 005 100 | 10 X R0.5               | 25                        | 100                       | 10                   |    |              |                         |                           |                           |                      |    |
| 6JJCR 100 010 075 | 10 X R1                 | 25                        | 75                        | 10                   |    |              |                         |                           |                           |                      |    |
| 6JJCR 100 010 100 | 10 X R1                 | 25                        | 100                       | 10                   |    |              |                         |                           |                           |                      |    |
| 6JJCR 100 020 075 | 10 X R2                 | 25                        | 75                        | 10                   |    |              |                         |                           |                           |                      |    |
| 6JJCR 120 002 080 | 12 X R0.2               | 30                        | 80                        | 12                   |    |              |                         |                           |                           |                      |    |
| 6JJCR 120 003 080 | 12 X R0.3               | 30                        | 80                        | 12                   |    |              |                         |                           |                           |                      |    |
| 6JJCR 120 003 110 | 12 X R0.3               | 30                        | 110                       | 12                   |    |              |                         |                           |                           |                      |    |
| 6JJCR 120 005 080 | 12 X R0.5               | 30                        | 80                        | 12                   |    |              |                         |                           |                           |                      |    |
| 6JJCR 120 005 110 | 12 X R0.5               | 30                        | 110                       | 12                   |    |              |                         |                           |                           |                      |    |
| 6JJCR 120 010 080 | 12 X R1                 | 30                        | 80                        | 12                   |    |              |                         |                           |                           |                      |    |
| 6JJCR 120 010 110 | 12 X R1                 | 30                        | 110                       | 12                   |    |              |                         |                           |                           |                      |    |
| 6JJCR 120 020 080 | 12 X R2                 | 30                        | 80                        | 12                   |    |              |                         |                           |                           |                      |    |
| 6JJCR 160 005 110 | 16 X R0.5               | 50                        | 110                       | 16                   |    |              |                         |                           |                           |                      |    |
| 6JJCR 160 010 110 | 16 X R1                 | 50                        | 110                       | 16                   |    |              |                         |                           |                           |                      |    |
| 6JJCR 160 020 110 | 16 X R2                 | 50                        | 110                       | 16                   |    |              |                         |                           |                           |                      |    |



- 고경도강(HRc52~70), 프리하든강 계열의 고이송 가공 엔드밀
- 고풍량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 저속 RPM에서 고이송 작업이 가능하도록 설계하였습니다.
- 중삭 및 황삭 가공시 작업 효율이 극대화 됩니다.
- 항절력이 높은 초미립자 초경합금을 채택하여, 고이송 작업시 엔드밀의 파손을 최소화 하였습니다.

#### Endmills for pre-hardened and hardened steel(HRc52~70)

- Good wear resistance by high quality Si-based PVD coating.
- Designed for low speed with high feed condition.
- Suitable for heavy duty and roughing application.
- Minimize fracturing at high feed by high TRS ultra fine WC grade.

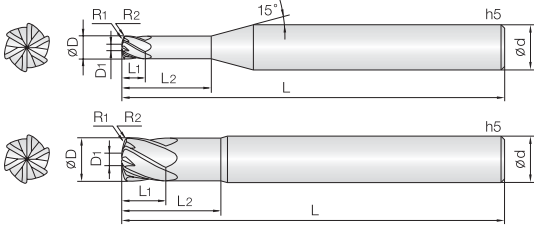


| D Size  | D Tolerance       |
|---------|-------------------|
| ø1 ~ 5  | +0 ~ -0.01mm      |
| ø6 ~ 12 | -0.005 ~ -0.015mm |
| ø16     | -0.01 ~ -0.02mm   |

단위 : mm

| Order Number      | 날경<br>Diameter<br>D×R | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 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 |
|-------------------|-----------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|-----------------------|-----------------------|---------------------------|---------------------------|----------------------|----|
| 4JJRC 010 002 025 | 1 X R0.2              | 1                         | 2.5                           | 50                        | 4                    |    | 6JJRC 060 005 060     | 6 X R0.5              | 12                        | 60                        | 6                    |    |
| 4JJRC 015 005 040 | 1.5 X R0.5            | 1.5                       | 4                             | 50                        | 4                    |    | 6JJRC 060 010 060     | 6 X R1                | 12                        | 60                        | 6                    |    |
| 4JJRC 020 005 060 | 2 X R0.5              | 2                         | 6                             | 50                        | 6                    |    | 6JJRC 080 005 060     | 8 X R0.5              | 16                        | 60                        | 8                    |    |
| 4JJRC 030 005 080 | 3 X R0.5              | 3                         | 8                             | 50                        | 6                    |    | 6JJRC 080 010 060     | 8 X R1                | 16                        | 60                        | 8                    |    |
| 4JJRC 040 005 120 | 4 X R0.5              | 4                         | 12                            | 60                        | 6                    |    | 6JJRC 080 020 060     | 8 X R2                | 16                        | 60                        | 8                    |    |
| 4JJRC 040 005 160 | 4 X R0.5              | 4                         | 16                            | 60                        | 6                    |    | 6JJRC 100 005 070     | 10 X R0.5             | 20                        | 70                        | 10                   |    |
| 4JJRC 040 010 120 | 4 X R1                | 4                         | 12                            | 60                        | 6                    |    | 6JJRC 100 010 070     | 10 X R1               | 20                        | 70                        | 10                   |    |
| 4JJRC 040 010 160 | 4 X R1                | 4                         | 16                            | 60                        | 6                    |    | 6JJRC 100 020 070     | 10 X R2               | 20                        | 70                        | 10                   |    |
| 4JJRC 050 005 150 | 5 X R0.5              | 5                         | 15                            | 60                        | 6                    |    | 6JJRC 120 005 080     | 12 X R0.5             | 25                        | 80                        | 12                   |    |
| 4JJRC 050 010 150 | 5 X R1                | 5                         | 15                            | 60                        | 6                    |    | 6JJRC 120 010 080     | 12 X R1               | 25                        | 80                        | 12                   |    |
| 4JJRC 060 003 150 | 6 X R0.3              | 6                         | 15                            | 60                        | 6                    |    | 6JJRC 120 020 080     | 12 X R2               | 25                        | 80                        | 12                   |    |
| 4JJRC 060 005 150 | 6 X R0.5              | 6                         | 15                            | 60                        | 6                    |    | 6JJRC 160 005 100     | 16 X R0.5             | 30                        | 100                       | 16                   |    |
| 4JJRC 060 010 150 | 6 X R1                | 6                         | 15                            | 60                        | 6                    |    | New 6JJRC 160 005 160 | 16 X R0.5             | 30                        | 160                       | 16                   |    |
| 4JJRC 060 015 150 | 6 X R1.5              | 6                         | 15                            | 60                        | 6                    |    | 6JJRC 160 010 100     | 16 X R1               | 30                        | 100                       | 16                   |    |
| 4JJRC 080 003 160 | 8 X R0.3              | 8                         | 16                            | 60                        | 8                    |    | New 6JJRC 160 010 160 | 16 X R1               | 30                        | 160                       | 16                   |    |
| 4JJRC 080 005 160 | 8 X R0.5              | 8                         | 16                            | 60                        | 8                    |    |                       |                       |                           |                           |                      |    |
| 4JJRC 080 005 200 | 8 X R0.5              | 8                         | 20                            | 80                        | 8                    |    |                       |                       |                           |                           |                      |    |
| 4JJRC 080 005 300 | 8 X R0.5              | 8                         | 30                            | 110                       | 8                    |    |                       |                       |                           |                           |                      |    |
| 4JJRC 080 010 160 | 8 X R1                | 8                         | 16                            | 60                        | 8                    |    |                       |                       |                           |                           |                      |    |
| 4JJRC 080 010 200 | 8 X R1                | 8                         | 20                            | 80                        | 8                    |    |                       |                       |                           |                           |                      |    |
| 4JJRC 080 010 300 | 8 X R1                | 8                         | 30                            | 110                       | 8                    |    |                       |                       |                           |                           |                      |    |
| 4JJRC 080 020 160 | 8 X R2                | 8                         | 16                            | 60                        | 8                    |    |                       |                       |                           |                           |                      |    |
| 4JJRC 080 020 200 | 8 X R2                | 8                         | 20                            | 80                        | 8                    |    |                       |                       |                           |                           |                      |    |
| 4JJRC 080 020 300 | 8 X R2                | 8                         | 30                            | 110                       | 8                    |    |                       |                       |                           |                           |                      |    |
| 4JJRC 100 003 200 | 10 X R0.3             | 10                        | 20                            | 70                        | 10                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 100 005 200 | 10 X R0.5             | 10                        | 20                            | 70                        | 10                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 100 005 250 | 10 X R0.5             | 10                        | 25                            | 90                        | 10                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 100 005 300 | 10 X R0.5             | 10                        | 30                            | 120                       | 10                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 100 010 200 | 10 X R1               | 10                        | 20                            | 70                        | 10                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 100 010 250 | 10 X R1               | 10                        | 25                            | 90                        | 10                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 100 010 300 | 10 X R1               | 10                        | 30                            | 120                       | 10                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 100 020 200 | 10 X R2               | 10                        | 20                            | 70                        | 10                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 100 020 250 | 10 X R2               | 10                        | 25                            | 90                        | 10                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 100 020 300 | 10 X R2               | 10                        | 30                            | 120                       | 10                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 120 005 250 | 12 X R0.5             | 12                        | 25                            | 80                        | 12                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 120 005 300 | 12 X R0.5             | 12                        | 30                            | 100                       | 12                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 120 005 350 | 12 X R0.5             | 12                        | 35                            | 130                       | 12                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 120 010 250 | 12 X R1               | 12                        | 25                            | 80                        | 12                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 120 010 300 | 12 X R1               | 12                        | 30                            | 100                       | 12                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 120 010 350 | 12 X R1               | 12                        | 35                            | 130                       | 12                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 120 020 250 | 12 X R2               | 12                        | 25                            | 80                        | 12                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 120 020 300 | 12 X R2               | 12                        | 30                            | 100                       | 12                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 120 020 350 | 12 X R2               | 12                        | 35                            | 130                       | 12                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 120 030 250 | 12 X R3               | 12                        | 25                            | 80                        | 12                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 160 010 300 | 16 X R1               | 16                        | 30                            | 110                       | 16                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 160 010 400 | 16 X R1               | 16                        | 40                            | 160                       | 16                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 160 020 300 | 16 X R2               | 16                        | 30                            | 110                       | 16                   |    |                       |                       |                           |                           |                      |    |
| 4JJRC 160 020 400 | 16 X R2               | 16                        | 40                            | 160                       | 16                   |    |                       |                       |                           |                           |                      |    |





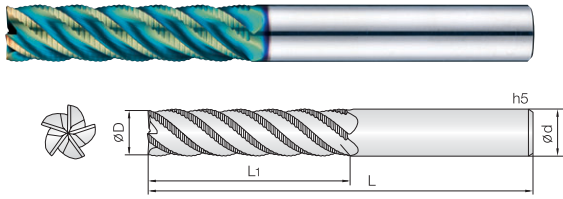
297P

- **고경도강(HRC52~70), 프리하드 강 계열의 고이송 가공 엔드밀**
- 고풍량 살리 크게 코팅(Si) 처리하여 내마모성이 우수합니다.
- 저속 RPM에서 고이송 작업이 가능하도록 설계하였습니다.
- 중삭 및 황삭 가공시 작업 효율이 극대화 됩니다.
- 비단 인선부의 형상에 복합R 설계를 적용하여 절삭칩이 작게 배출되며, 절삭 부하를 줄였습니다.
- **Endmills for pre-hardened and hardened steel (HRC52~70)**
- Good wear resistance by high quality Si-based PVD coating.
- Designed for low speed with high feed condition.
- Suitable for heavy duty and roughing application.
- Applied multi-radius design on the endface of the tool, reduced cutting stress by splitting small chip emission.

| D Size  | D Tolerance       |
|---------|-------------------|
| ø1 ~ 5  | +0 ~ -0.01mm      |
| ø6 ~ 12 | -0.005 ~ -0.015mm |
| ø16     | -0.01 ~ -0.02mm   |

단위 : mm

[illegible]



- **합금강·SUS계열·인코넬·일반구조강 등 다양한 난삭재 황삭가공**
- TISIN/S 코팅 처리하여 내마모성이 향상됩니다.
- 가변 헬릭스 적용으로 절삭 저항이 감소되어 장시간 가공에 적합합니다.
- 항절력이 높은 미립자 조경합금( $0.5\mu\text{m}$ )을 채택, 엔드밀의 파손을 최소화 하였습니다.
- **Roughing Endmills for hard to cut materials, alloy steel, SUS, Inconel and structural steel.**
- TISIN-S coating provides wear resistance improvement.
- Long machining time is available with variable helix application.
- Minimize fracturing by high TRS fine( $0.5\mu\text{m}$ ) WC grade.



| D Size   | D Tolerance    |
|----------|----------------|
| ø6 ~ 8   | -0.02~ -0.04mm |
| ø10 ~ 20 | -0.02~ -0.05mm |

단위 : mm

[illegible]