

#### • 고경도강(HRc52~62), 프리하든강 계열의 고정밀 가공엔드밀

- 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(HRc52~62)

- Good wear resistance by 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       |
|--------------|-------------------|
| Ø 0.1 ~ 0.15 | +0 ~ -0.005mm     |
| Ø 0.2 ~ 5    | +0 ~ -0.01mm      |
| Ø 6 ~ 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 | 샙크<br>Shank Dia<br>d | 비고 |
|-----------------------|-------------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| 2HRB 001 003 S04      | 0.05R X 0.1             | 0.15                      | 0.3                           | 40                        | 4                    |    |
| 2HRB 001 005 S04      | 0.05R X 0.1             | 0.15                      | 0.5                           | 40                        | 4                    |    |
| New 2HRB 0015 003 S04 | 0.075R X 0.15           | 0.15                      | 0.3                           | 40                        | 4                    |    |
| New 2HRB 0015 005 S04 | 0.075R X 0.15           | 0.15                      | 0.5                           | 40                        | 4                    |    |
| New 2HRB 0015 010 S04 | 0.075R X 0.15           | 0.15                      | 1                             | 40                        | 4                    |    |
| 2HRB 002 005 S04      | 0.1R X 0.2              | 0.2                       | 0.5                           | 40                        | 4                    |    |
| 2HRB 002 010 S04      | 0.1R X 0.2              | 0.2                       | 1                             | 40                        | 4                    |    |
| 2HRB 002 015 S04      | 0.1R X 0.2              | 0.2                       | 1.5                           | 40                        | 4                    |    |
| 2HRB 002 020 S04      | 0.1R X 0.2              | 0.2                       | 2                             | 40                        | 4                    |    |
| 2HRB 002 025 S04      | 0.1R X 0.2              | 0.2                       | 2.5                           | 40                        | 4                    |    |
| 2HRB 002 030 S04      | 0.1R X 0.2              | 0.2                       | 3                             | 40                        | 4                    |    |
| New 2HRB 0025 005 S04 | 0.125R X 0.25           | 0.25                      | 0.5                           | 40                        | 4                    |    |
| New 2HRB 0025 010 S04 | 0.125R X 0.25           | 0.25                      | 1                             | 40                        | 4                    |    |
| New 2HRB 0025 015 S04 | 0.125R X 0.25           | 0.25                      | 1.5                           | 40                        | 4                    |    |
| New 2HRB 0025 020 S04 | 0.125R X 0.25           | 0.25                      | 2                             | 40                        | 4                    |    |
| New 2HRB 0025 025 S04 | 0.125R X 0.25           | 0.25                      | 2.5                           | 40                        | 4                    |    |
| New 2HRB 0025 030 S04 | 0.125R X 0.25           | 0.25                      | 3                             | 40                        | 4                    |    |
| 2HRB 003 010 S04      | 0.15R X 0.3             | 0.3                       | 1                             | 40                        | 4                    |    |
| 2HRB 003 015 S04      | 0.15R X 0.3             | 0.3                       | 1.5                           | 40                        | 4                    |    |
| 2HRB 003 020 S04      | 0.15R X 0.3             | 0.3                       | 2                             | 40                        | 4                    |    |
| 2HRB 003 025 S04      | 0.15R X 0.3             | 0.3                       | 2.5                           | 40                        | 4                    |    |
| 2HRB 003 030 S04      | 0.15R X 0.3             | 0.3                       | 3                             | 40                        | 4                    |    |
| 2HRB 003 035 S04      | 0.15R X 0.3             | 0.3                       | 3.5                           | 40                        | 4                    |    |
| 2HRB 003 040 S04      | 0.15R X 0.3             | 0.3                       | 4                             | 40                        | 4                    |    |
| 2HRB 003 050 S04      | 0.15R X 0.3             | 0.3                       | 5                             | 40                        | 4                    |    |
| 2HRB 004 010 S04      | 0.2R X 0.4              | 0.4                       | 1                             | 40                        | 4                    |    |
| 2HRB 004 015 S04      | 0.2R X 0.4              | 0.4                       | 1.5                           | 40                        | 4                    |    |
| 2HRB 004 020 S04      | 0.2R X 0.4              | 0.4                       | 2                             | 40                        | 4                    |    |
| 2HRB 004 025 S04      | 0.2R X 0.4              | 0.4                       | 2.5                           | 40                        | 4                    |    |
| 2HRB 004 030 S04      | 0.2R X 0.4              | 0.4                       | 3                             | 40                        | 4                    |    |
| 2HRB 004 035 S04      | 0.2R X 0.4              | 0.4                       | 3.5                           | 40                        | 4                    |    |
| 2HRB 004 040 S04      | 0.2R X 0.4              | 0.4                       | 4                             | 40                        | 4                    |    |
| 2HRB 004 045 S04      | 0.2R X 0.4              | 0.4                       | 4.5                           | 40                        | 4                    |    |
| 2HRB 004 050 S04      | 0.2R X 0.4              | 0.4                       | 5                             | 40                        | 4                    |    |
| 2HRB 004 060 S04      | 0.2R X 0.4              | 0.4                       | 6                             | 40                        | 4                    |    |
| 2HRB 004 080 S04      | 0.2R X 0.4              | 0.4                       | 8                             | 40                        | 4                    |    |
| 2HRB 004 100 S04      | 0.2R X 0.4              | 0.4                       | 10                            | 40                        | 4                    |    |
| 2HRB 005 010 S04      | 0.25R X 0.5             | 0.5                       | 1                             | 45                        | 4                    |    |
| 2HRB 005 015 S04      | 0.25R X 0.5             | 0.5                       | 1.5                           | 45                        | 4                    |    |
| 2HRB 005 020 S04      | 0.25R X 0.5             | 0.5                       | 2                             | 45                        | 4                    |    |
| 2HRB 005 025 S04      | 0.25R X 0.5             | 0.5                       | 2.5                           | 45                        | 4                    |    |
| 2HRB 005 030 S04      | 0.25R X 0.5             | 0.5                       | 3                             | 45                        | 4                    |    |
| 2HRB 005 035 S04      | 0.25R X 0.5             | 0.5                       | 3.5                           | 45                        | 4                    |    |
| 2HRB 005 040 S04      | 0.25R X 0.5             | 0.5                       | 4                             | 45                        | 4                    |    |
| 2HRB 005 045 S04      | 0.25R X 0.5             | 0.5                       | 4.5                           | 45                        | 4                    |    |
| 2HRB 005 050 S04      | 0.25R X 0.5             | 0.5                       | 5                             | 45                        | 4                    |    |
| 2HRB 005 060 S04      | 0.25R X 0.5             | 0.5                       | 6                             | 45                        | 4                    |    |
| 2HRB 005 080 S04      | 0.25R X 0.5             | 0.5                       | 8                             | 45                        | 4                    |    |
| 2HRB 005 100 S04      | 0.25R X 0.5             | 0.5                       | 10                            | 45                        | 4                    |    |
| 2HRB 005 120 S04      | 0.25R X 0.5             | 0.5                       | 12                            | 45                        | 4                    |    |

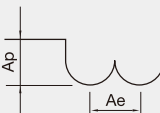
| Order Number     | 날경<br>Diameter<br>R × D | 날장<br>Length of cut<br>L1 | 유효장<br>Effective Length<br>L2 | 전장<br>Overall Length<br>L | 샙크<br>Shank Dia<br>d | 비고 |
|------------------|-------------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| 2HRB 005 140 S04 | 0.25R X 0.5             | 0.5                       | 14                            | 45                        | 4                    |    |
| 2HRB 006 010 S04 | 0.3R X 0.6              | 0.6                       | 1                             | 45                        | 4                    |    |
| 2HRB 006 020 S04 | 0.3R X 0.6              | 0.6                       | 2                             | 45                        | 4                    |    |
| 2HRB 006 030 S04 | 0.3R X 0.6              | 0.6                       | 3                             | 45                        | 4                    |    |
| 2HRB 006 040 S04 | 0.3R X 0.6              | 0.6                       | 4                             | 45                        | 4                    |    |
| 2HRB 006 050 S04 | 0.3R X 0.6              | 0.6                       | 5                             | 45                        | 4                    |    |
| 2HRB 006 060 S04 | 0.3R X 0.6              | 0.6                       | 6                             | 45                        | 4                    |    |
| 2HRB 006 080 S04 | 0.3R X 0.6              | 0.6                       | 8                             | 45                        | 4                    |    |
| 2HRB 006 100 S04 | 0.3R X 0.6              | 0.6                       | 10                            | 45                        | 4                    |    |
| 2HRB 006 120 S04 | 0.3R X 0.6              | 0.6                       | 12                            | 45                        | 4                    |    |
| 2HRB 006 140 S04 | 0.3R X 0.6              | 0.6                       | 14                            | 45                        | 4                    |    |
| 2HRB 006 160 S04 | 0.3R X 0.6              | 0.6                       | 16                            | 45                        | 4                    |    |
| 2HRB 007 020 S04 | 0.35R X 0.7             | 0.7                       | 2                             | 45                        | 4                    |    |
| 2HRB 007 040 S04 | 0.35R X 0.7             | 0.7                       | 4                             | 45                        | 4                    |    |
| 2HRB 007 060 S04 | 0.35R X 0.7             | 0.7                       | 6                             | 45                        | 4                    |    |
| 2HRB 007 080 S04 | 0.35R X 0.7             | 0.7                       | 8                             | 45                        | 4                    |    |
| 2HRB 007 100 S04 | 0.35R X 0.7             | 0.7                       | 10                            | 45                        | 4                    |    |
| 2HRB 007 120 S04 | 0.35R X 0.7             | 0.7                       | 12                            | 45                        | 4                    |    |
| 2HRB 008 020 S04 | 0.4R X 0.8              | 0.8                       | 2                             | 45                        | 4                    |    |
| 2HRB 008 030 S04 | 0.4R X 0.8              | 0.8                       | 3                             | 45                        | 4                    |    |
| 2HRB 008 040 S04 | 0.4R X 0.8              | 0.8                       | 4                             | 45                        | 4                    |    |
| 2HRB 008 050 S04 | 0.4R X 0.8              | 0.8                       | 5                             | 45                        | 4                    |    |
| 2HRB 008 060 S04 | 0.4R X 0.8              | 0.8                       | 6                             | 45                        | 4                    |    |
| 2HRB 008 080 S04 | 0.4R X 0.8              | 0.8                       | 8                             | 45                        | 4                    |    |
| 2HRB 008 100 S04 | 0.4R X 0.8              | 0.8                       | 10                            | 45                        | 4                    |    |
| 2HRB 008 120 S04 | 0.4R X 0.8              | 0.8                       | 12                            | 45                        | 4                    |    |
| 2HRB 008 140 S04 | 0.4R X 0.8              | 0.8                       | 14                            | 45                        | 4                    |    |
| 2HRB 008 160 S04 | 0.4R X 0.8              | 0.8                       | 16                            | 45                        | 4                    |    |
| 2HRB 009 040 S04 | 0.45R X 0.9             | 0.9                       | 4                             | 45                        | 4                    |    |
| 2HRB 010 020 S04 | 0.5R X 1                | 1                         | 2                             | 45                        | 4                    |    |
| 2HRB 010 020 S06 | 0.5R X 1                | 1                         | 2                             | 50                        | 6                    |    |
| 2HRB 010 030 S04 | 0.5R X 1                | 1                         | 3                             | 45                        | 4                    |    |
| 2HRB 010 030 S06 | 0.5R X 1                | 1                         | 3                             | 50                        | 6                    |    |
| 2HRB 010 040 S04 | 0.5R X 1                | 1                         | 4                             | 45                        | 4                    |    |
| 2HRB 010 040 S06 | 0.5R X 1                | 1                         | 4                             | 50                        | 6                    |    |
| 2HRB 010 050 S04 | 0.5R X 1                | 1                         | 5                             | 45                        | 4                    |    |
| 2HRB 010 050 S06 | 0.5R X 1                | 1                         | 5                             | 50                        | 6                    |    |
| 2HRB 010 060 S04 | 0.5R X 1                | 1                         | 6                             | 45                        | 4                    |    |
| 2HRB 010 060 S06 | 0.5R X 1                | 1                         | 6                             | 50                        | 6                    |    |
| 2HRB 010 080 S04 | 0.5R X 1                | 1                         | 8                             | 45                        | 4                    |    |
| 2HRB 010 080 S06 | 0.5R X 1                | 1                         | 8                             | 50                        | 6                    |    |
| 2HRB 010 100 S04 | 0.5R X 1                | 1                         | 10                            | 50                        | 4                    |    |
| 2HRB 010 100 S06 | 0.5R X 1                | 1                         | 10                            | 50                        | 6                    |    |
| 2HRB 010 120 S04 | 0.5R X 1                | 1                         | 12                            | 50                        | 4                    |    |
| 2HRB 010 120 S06 | 0.5R X 1                | 1                         | 12                            | 50                        | 6                    |    |
| 2HRB 010 140 S04 | 0.5R X 1                | 1                         | 14                            | 50                        | 4                    |    |
| 2HRB 010 140 S06 | 0.5R X 1                | 1                         | 14                            | 50                        | 6                    |    |
| 2HRB 010 160 S04 | 0.5R X 1                | 1                         | 16                            | 50                        | 4                    |    |
| 2HRB 010 160 S06 | 0.5R X 1                | 1                         | 16                            | 60                        | 6                    |    |
| 2HRB 010 180 S04 | 0.5R X 1                | 1                         | 18                            | 50                        | 4                    |    |

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 | 샹크<br>Shank Dia<br>d | 비고 | 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 | 샹크<br>Shank Dia<br>d | 비고 |
|------------------|-------------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|------------------|-------------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| 2HRB 010 180 S06 | 0.5R X 1                | 1                         | 18                            | 60                        | 6                    |    | 2HRB 015 250 S06 | 0.75R X 1.5             | 1.5                       | 25                            | 65                        | 6                    |    |
| 2HRB 010 200 S04 | 0.5R X 1                | 1                         | 20                            | 50                        | 4                    |    | 2HRB 015 300 S04 | 0.75R X 1.5             | 1.5                       | 30                            | 70                        | 4                    |    |
| 2HRB 010 200 S06 | 0.5R X 1                | 1                         | 20                            | 60                        | 6                    |    | 2HRB 015 300 S06 | 0.75R X 1.5             | 1.5                       | 30                            | 70                        | 6                    |    |
| 2HRB 010 220 S04 | 0.5R X 1                | 1                         | 22                            | 60                        | 4                    |    | 2HRB 015 350 S04 | 0.75R X 1.5             | 1.5                       | 35                            | 70                        | 4                    |    |
| 2HRB 010 220 S06 | 0.5R X 1                | 1                         | 22                            | 65                        | 6                    |    | 2HRB 015 400 S04 | 0.75R X 1.5             | 1.5                       | 40                            | 80                        | 4                    |    |
| 2HRB 010 250 S04 | 0.5R X 1                | 1                         | 25                            | 60                        | 4                    |    | 2HRB 016 060 S04 | 0.8R X 1.6              | 1.6                       | 6                             | 45                        | 4                    |    |
| 2HRB 010 300 S04 | 0.5R X 1                | 1                         | 30                            | 70                        | 4                    |    | 2HRB 016 080 S04 | 0.8R X 1.6              | 1.6                       | 8                             | 45                        | 4                    |    |
| 2HRB 012 040 S04 | 0.6R X 1.2              | 1.2                       | 4                             | 45                        | 4                    |    | 2HRB 016 120 S04 | 0.8R X 1.6              | 1.6                       | 12                            | 50                        | 4                    |    |
| 2HRB 012 040 S06 | 0.6R X 1.2              | 1.2                       | 4                             | 50                        | 6                    |    | 2HRB 016 160 S04 | 0.8R X 1.6              | 1.6                       | 16                            | 50                        | 4                    |    |
| 2HRB 012 060 S04 | 0.6R X 1.2              | 1.2                       | 6                             | 45                        | 4                    |    | 2HRB 016 200 S04 | 0.8R X 1.6              | 1.6                       | 20                            | 50                        | 4                    |    |
| 2HRB 012 060 S06 | 0.6R X 1.2              | 1.2                       | 6                             | 50                        | 6                    |    | 2HRB 018 060 S04 | 0.9R X 1.8              | 1.8                       | 6                             | 45                        | 4                    |    |
| 2HRB 012 080 S04 | 0.6R X 1.2              | 1.2                       | 8                             | 45                        | 4                    |    | 2HRB 018 080 S04 | 0.9R X 1.8              | 1.8                       | 8                             | 45                        | 4                    |    |
| 2HRB 012 080 S06 | 0.6R X 1.2              | 1.2                       | 8                             | 50                        | 6                    |    | 2HRB 018 120 S04 | 0.9R X 1.8              | 1.8                       | 12                            | 50                        | 4                    |    |
| 2HRB 012 100 S04 | 0.6R X 1.2              | 1.2                       | 10                            | 50                        | 4                    |    | 2HRB 018 160 S04 | 0.9R X 1.8              | 1.8                       | 16                            | 50                        | 4                    |    |
| 2HRB 012 100 S06 | 0.6R X 1.2              | 1.2                       | 10                            | 50                        | 6                    |    | 2HRB 018 200 S04 | 0.9R X 1.8              | 1.8                       | 20                            | 50                        | 4                    |    |
| 2HRB 012 120 S04 | 0.6R X 1.2              | 1.2                       | 12                            | 50                        | 4                    |    | 2HRB 020 040 S04 | 1R X 2                  | 2                         | 4                             | 45                        | 4                    |    |
| 2HRB 012 120 S06 | 0.6R X 1.2              | 1.2                       | 12                            | 50                        | 6                    |    | 2HRB 020 040 S06 | 1R X 2                  | 2                         | 4                             | 50                        | 6                    |    |
| 2HRB 012 160 S04 | 0.6R X 1.2              | 1.2                       | 16                            | 50                        | 4                    |    | 2HRB 020 060 S04 | 1R X 2                  | 2                         | 6                             | 45                        | 4                    |    |
| 2HRB 012 160 S06 | 0.6R X 1.2              | 1.2                       | 16                            | 60                        | 6                    |    | 2HRB 020 060 S06 | 1R X 2                  | 2                         | 6                             | 50                        | 6                    |    |
| 2HRB 012 200 S04 | 0.6R X 1.2              | 1.2                       | 20                            | 50                        | 4                    |    | 2HRB 020 080 S04 | 1R X 2                  | 2                         | 8                             | 45                        | 4                    |    |
| 2HRB 012 200 S06 | 0.6R X 1.2              | 1.2                       | 20                            | 60                        | 6                    |    | 2HRB 020 080 S06 | 1R X 2                  | 2                         | 8                             | 50                        | 6                    |    |
| 2HRB 012 240 S04 | 0.6R X 1.2              | 1.2                       | 24                            | 60                        | 4                    |    | 2HRB 020 100 S04 | 1R X 2                  | 2                         | 10                            | 50                        | 4                    |    |
| 2HRB 012 240 S06 | 0.6R X 1.2              | 1.2                       | 24                            | 65                        | 6                    |    | 2HRB 020 100 S06 | 1R X 2                  | 2                         | 10                            | 50                        | 6                    |    |
| 2HRB 014 060 S04 | 0.7R X 1.4              | 1.4                       | 6                             | 45                        | 4                    |    | 2HRB 020 120 S04 | 1R X 2                  | 2                         | 12                            | 50                        | 4                    |    |
| 2HRB 014 080 S04 | 0.7R X 1.4              | 1.4                       | 8                             | 45                        | 4                    |    | 2HRB 020 120 S06 | 1R X 2                  | 2                         | 12                            | 50                        | 6                    |    |
| 2HRB 014 120 S04 | 0.7R X 1.4              | 1.4                       | 12                            | 50                        | 4                    |    | 2HRB 020 140 S04 | 1R X 2                  | 2                         | 14                            | 50                        | 4                    |    |
| 2HRB 014 160 S04 | 0.7R X 1.4              | 1.4                       | 16                            | 50                        | 4                    |    | 2HRB 020 140 S06 | 1R X 2                  | 2                         | 14                            | 50                        | 6                    |    |
| 2HRB 015 030 S04 | 0.75R X 1.5             | 1.5                       | 3                             | 45                        | 4                    |    | 2HRB 020 160 S04 | 1R X 2                  | 2                         | 16                            | 50                        | 4                    |    |
| 2HRB 015 030 S06 | 0.75R X 1.5             | 1.5                       | 3                             | 50                        | 6                    |    | 2HRB 020 160 S06 | 1R X 2                  | 2                         | 16                            | 60                        | 6                    |    |
| 2HRB 015 040 S04 | 0.75R X 1.5             | 1.5                       | 4                             | 45                        | 4                    |    | 2HRB 020 180 S04 | 1R X 2                  | 2                         | 18                            | 50                        | 4                    |    |
| 2HRB 015 040 S06 | 0.75R X 1.5             | 1.5                       | 4                             | 50                        | 6                    |    | 2HRB 020 180 S06 | 1R X 2                  | 2                         | 18                            | 60                        | 6                    |    |
| 2HRB 015 060 S04 | 0.75R X 1.5             | 1.5                       | 6                             | 45                        | 4                    |    | 2HRB 020 200 S04 | 1R X 2                  | 2                         | 20                            | 50                        | 4                    |    |
| 2HRB 015 060 S06 | 0.75R X 1.5             | 1.5                       | 6                             | 50                        | 6                    |    | 2HRB 020 200 S06 | 1R X 2                  | 2                         | 20                            | 60                        | 6                    |    |
| 2HRB 015 080 S04 | 0.75R X 1.5             | 1.5                       | 8                             | 45                        | 4                    |    | 2HRB 020 220 S04 | 1R X 2                  | 2                         | 22                            | 60                        | 4                    |    |
| 2HRB 015 080 S06 | 0.75R X 1.5             | 1.5                       | 8                             | 50                        | 6                    |    | 2HRB 020 220 S06 | 1R X 2                  | 2                         | 22                            | 65                        | 6                    |    |
| 2HRB 015 100 S04 | 0.75R X 1.5             | 1.5                       | 10                            | 50                        | 4                    |    | 2HRB 020 250 S04 | 1R X 2                  | 2                         | 25                            | 60                        | 4                    |    |
| 2HRB 015 100 S06 | 0.75R X 1.5             | 1.5                       | 10                            | 50                        | 6                    |    | 2HRB 020 250 S06 | 1R X 2                  | 2                         | 25                            | 65                        | 6                    |    |
| 2HRB 015 120 S04 | 0.75R X 1.5             | 1.5                       | 12                            | 50                        | 4                    |    | 2HRB 020 300 S04 | 1R X 2                  | 2                         | 30                            | 70                        | 4                    |    |
| 2HRB 015 120 S06 | 0.75R X 1.5             | 1.5                       | 12                            | 50                        | 6                    |    | 2HRB 020 300 S06 | 1R X 2                  | 2                         | 30                            | 70                        | 6                    |    |
| 2HRB 015 140 S04 | 0.75R X 1.5             | 1.5                       | 14                            | 50                        | 4                    |    | 2HRB 020 350 S04 | 1R X 2                  | 2                         | 35                            | 70                        | 4                    |    |
| 2HRB 015 140 S06 | 0.75R X 1.5             | 1.5                       | 14                            | 50                        | 6                    |    | 2HRB 020 350 S06 | 1R X 2                  | 2                         | 35                            | 75                        | 6                    |    |
| 2HRB 015 160 S04 | 0.75R X 1.5             | 1.5                       | 16                            | 50                        | 4                    |    | 2HRB 020 400 S04 | 1R X 2                  | 2                         | 40                            | 80                        | 4                    |    |
| 2HRB 015 160 S06 | 0.75R X 1.5             | 1.5                       | 16                            | 60                        | 6                    |    | 2HRB 020 400 S06 | 1R X 2                  | 2                         | 40                            | 80                        | 6                    |    |
| 2HRB 015 180 S04 | 0.75R X 1.5             | 1.5                       | 18                            | 50                        | 4                    |    | 2HRB 020 450 S04 | 1R X 2                  | 2                         | 45                            | 80                        | 4                    |    |
| 2HRB 015 180 S06 | 0.75R X 1.5             | 1.5                       | 18                            | 60                        | 6                    |    | 2HRB 020 500 S04 | 1R X 2                  | 2                         | 50                            | 90                        | 4                    |    |
| 2HRB 015 200 S04 | 0.75R X 1.5             | 1.5                       | 20                            | 50                        | 4                    |    | 2HRB 025 080 S04 | 1.25R X 2.5             | 2.5                       | 8                             | 45                        | 4                    |    |
| 2HRB 015 200 S06 | 0.75R X 1.5             | 1.5                       | 20                            | 60                        | 6                    |    | 2HRB 025 080 S06 | 1.25R X 2.5             | 2.5                       | 8                             | 50                        | 6                    |    |
| 2HRB 015 220 S04 | 0.75R X 1.5             | 1.5                       | 22                            | 60                        | 4                    |    | 2HRB 025 100 S04 | 1.25R X 2.5             | 2.5                       | 10                            | 50                        | 4                    |    |
| 2HRB 015 220 S06 | 0.75R X 1.5             | 1.5                       | 22                            | 65                        | 6                    |    | 2HRB 025 100 S06 | 1.25R X 2.5             | 2.5                       | 10                            | 50                        | 6                    |    |
| 2HRB 015 250 S04 | 0.75R X 1.5             | 1.5                       | 25                            | 60                        | 4                    |    | 2HRB 025 120 S04 | 1.25R X 2.5             | 2.5                       | 12                            | 50                        | 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 | 샹크<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 | 샹크<br>Dia<br>d | 비고 |
|------------------|-------------------------|------------------------------|----------------------------------|------------------------------|----------------|----|------------------|-------------------------|------------------------------|----------------------------------|------------------------------|----------------|----|
| 2HRB 025 120 S06 | 1.25R X 2.5             | 2.5                          | 12                               | 50                           | 6              |    | 2HRB 080 250 060 | 4R X 8                  | 12                           | 25                               | 60                           | 8              |    |
| 2HRB 025 160 S04 | 1.25R X 2.5             | 2.5                          | 16                               | 50                           | 4              |    | 2HRB 080 300 100 | 4R X 8                  | 12                           | 30                               | 100                          | 8              |    |
| 2HRB 025 160 S06 | 1.25R X 2.5             | 2.5                          | 16                               | 60                           | 6              |    | 2HRB 100 300 070 | 5R X 10                 | 16                           | 30                               | 70                           | 10             |    |
| 2HRB 025 200 S04 | 1.25R X 2.5             | 2.5                          | 20                               | 60                           | 4              |    | 2HRB 100 350 100 | 5R X 10                 | 16                           | 35                               | 100                          | 10             |    |
| 2HRB 025 250 S04 | 1.25R X 2.5             | 2.5                          | 25                               | 60                           | 4              |    | 2HRB 120 300 075 | 6R X 12                 | 18                           | 30                               | 75                           | 12             |    |
| 2HRB 025 300 S04 | 1.25R X 2.5             | 2.5                          | 30                               | 70                           | 4              |    | 2HRB 120 400 110 | 6R X 12                 | 18                           | 40                               | 110                          | 12             |    |
| 2HRB 025 350 S04 | 1.25R X 2.5             | 2.5                          | 35                               | 70                           | 4              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 025 400 S04 | 1.25R X 2.5             | 2.5                          | 40                               | 80                           | 4              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 030 060 S06 | 1.5R X 3                | 3                            | 6                                | 50                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 030 080 S06 | 1.5R X 3                | 3                            | 8                                | 50                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 030 100 S06 | 1.5R X 3                | 3                            | 10                               | 50                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 030 120 S06 | 1.5R X 3                | 3                            | 12                               | 50                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 030 160 S06 | 1.5R X 3                | 3                            | 16                               | 60                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 030 200 S06 | 1.5R X 3                | 3                            | 20                               | 60                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 030 250 S06 | 1.5R X 3                | 3                            | 25                               | 65                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 030 300 S06 | 1.5R X 3                | 3                            | 30                               | 70                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 030 350 S06 | 1.5R X 3                | 3                            | 35                               | 75                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 030 400 S06 | 1.5R X 3                | 3                            | 40                               | 80                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 030 450 S06 | 1.5R X 3                | 3                            | 45                               | 90                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 030 500 S06 | 1.5R X 3                | 3                            | 50                               | 100                          | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 030 600 S06 | 1.5R X 3                | 3                            | 60                               | 100                          | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 030 650 S06 | 1.5R X 3                | 3                            | 65                               | 110                          | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 030 700 S06 | 1.5R X 3                | 3                            | 70                               | 110                          | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 040 080 S06 | 2R X 4                  | 4                            | 8                                | 50                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 040 100 S06 | 2R X 4                  | 4                            | 10                               | 50                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 040 120 S06 | 2R X 4                  | 4                            | 12                               | 50                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 040 160 S06 | 2R X 4                  | 4                            | 16                               | 60                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 040 200 S06 | 2R X 4                  | 4                            | 20                               | 60                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 040 250 S06 | 2R X 4                  | 4                            | 25                               | 65                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 040 300 S06 | 2R X 4                  | 4                            | 30                               | 70                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 040 350 S06 | 2R X 4                  | 4                            | 35                               | 75                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 040 400 S06 | 2R X 4                  | 4                            | 40                               | 80                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 040 450 S06 | 2R X 4                  | 4                            | 45                               | 90                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 040 500 S06 | 2R X 4                  | 4                            | 50                               | 100                          | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 040 550 S06 | 2R X 4                  | 4                            | 55                               | 100                          | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 040 600 S06 | 2R X 4                  | 4                            | 60                               | 100                          | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 040 650 S06 | 2R X 4                  | 4                            | 65                               | 110                          | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 040 700 S06 | 2R X 4                  | 4                            | 70                               | 110                          | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 050 160 S06 | 2.5R X 5                | 6                            | 16                               | 60                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 050 200 S06 | 2.5R X 5                | 6                            | 20                               | 60                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 050 250 S06 | 2.5R X 5                | 6                            | 25                               | 70                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 050 300 S06 | 2.5R X 5                | 6                            | 30                               | 75                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 050 400 S06 | 2.5R X 5                | 6                            | 40                               | 80                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 050 450 S06 | 2.5R X 5                | 6                            | 45                               | 90                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 050 500 S06 | 2.5R X 5                | 6                            | 50                               | 100                          | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 050 600 S06 | 2.5R X 5                | 6                            | 60                               | 100                          | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 050 650 S06 | 2.5R X 5                | 6                            | 65                               | 110                          | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 050 700 S06 | 2.5R X 5                | 6                            | 70                               | 110                          | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 060 150 S06 | 3R X 6                  | 10                           | 15                               | 55                           | 6              |    |                  |                         |                              |                                  |                              |                |    |
| 2HRB 060 300 S06 | 3R X 6                  | 10                           | 30                               | 110                          | 6              |    |                  |                         |                              |                                  |                              |                |    |

| 피삭재<br>Material     |                         | 동<br>Copper                                                                                                                                                                                                                                                  |       |                   |                    | 프리하든강/고경도강<br>Prehardened Steel / Hardened Steel |       |                   |                    | 고경도강<br>Hardened Steels |       |                   |                    | 고경도강<br>Hardened Steels |       |                   |                    |
|---------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------|--------------------|--------------------------------------------------|-------|-------------------|--------------------|-------------------------|-------|-------------------|--------------------|-------------------------|-------|-------------------|--------------------|
| 경도 Hardness         |                         |                                                                                                                                                                                                                                                              |       |                   |                    | 30 ~ 45HRC                                       |       |                   |                    | 45 ~ 55HRC              |       |                   |                    | 55 ~ 62HRC              |       |                   |                    |
| 반경<br>Radius        | 유효장<br>Effective Length | RPM                                                                                                                                                                                                                                                          | FEED  | Ap<br>Axial Depth | Ae<br>Radial Depth | RPM                                              | FEED  | Ap<br>Axial Depth | Ae<br>Radial Depth | RPM                     | FEED  | Ap<br>Axial Depth | Ae<br>Radial Depth | RPM                     | FEED  | Ap<br>Axial Depth | Ae<br>Radial Depth |
| R0.05               | 0.3                     | 50,000                                                                                                                                                                                                                                                       | 85    | 0.004             | 0.004              | 45,000                                           | 70    | 0.004             | 0.004              | 45,000                  | 50    | 0.002             | 0.002              | 45,000                  | 40    | 0.002             | 0.002              |
| "                   | 0.5                     | 50,000                                                                                                                                                                                                                                                       | 75    | 0.004             | 0.004              | 45,000                                           | 60    | 0.002             | 0.002              | 45,000                  | 30    | 0.002             | 0.002              | 45,000                  | 30    | 0.002             | 0.002              |
| R0.1                | 0.5                     | 50,000                                                                                                                                                                                                                                                       | 492   | 0.010             | 0.010              | 45,000                                           | 396   | 0.006             | 0.007              | 45,000                  | 260   | 0.006             | 0.006              | 45,000                  | 220   | 0.005             | 0.006              |
| "                   | 1                       | 50,000                                                                                                                                                                                                                                                       | 432   | 0.007             | 0.008              | 45,000                                           | 372   | 0.004             | 0.005              | 45,000                  | 276   | 0.004             | 0.004              | 45,000                  | 200   | 0.004             | 0.004              |
| "                   | 1.5                     | 50,000                                                                                                                                                                                                                                                       | 360   | 0.006             | 0.006              | 42,000                                           | 276   | 0.003             | 0.004              | 42,000                  | 216   | 0.003             | 0.004              | 42,000                  | 180   | 0.003             | 0.003              |
| R0.15               | 1                       | 50,000                                                                                                                                                                                                                                                       | 744   | 0.012             | 0.013              | 45,000                                           | 552   | 0.010             | 0.010              | 38,000                  | 420   | 0.090             | 0.010              | 38,000                  | 348   | 0.007             | 0.009              |
| "                   | 3                       | 48,000                                                                                                                                                                                                                                                       | 528   | 0.008             | 0.009              | 40,800                                           | 360   | 0.006             | 0.007              | 33,600                  | 264   | 0.005             | 0.005              | 33,600                  | 216   | 0.004             | 0.005              |
| "                   | 5                       | 39,600                                                                                                                                                                                                                                                       | 336   | 0.004             | 0.005              | 28,800                                           | 216   | 0.003             | 0.003              | 24,000                  | 168   | 0.003             | 0.003              | 21,600                  | 120   | 0.002             | 0.002              |
| R0.2                | 1                       | 61,200                                                                                                                                                                                                                                                       | 1,020 | 0.021             | 0.034              | 54,000                                           | 768   | 0.016             | 0.022              | 39,600                  | 516   | 0.013             | 0.022              | 39,600                  | 432   | 0.011             | 0.021              |
| "                   | 3                       | 55,200                                                                                                                                                                                                                                                       | 768   | 0.015             | 0.016              | 44,400                                           | 480   | 0.010             | 0.010              | 32,400                  | 312   | 0.009             | 0.010              | 32,400                  | 264   | 0.008             | 0.010              |
| "                   | 5                       | 39,600                                                                                                                                                                                                                                                       | 468   | 0.008             | 0.016              | 30,000                                           | 372   | 0.008             | 0.010              | 26,400                  | 288   | 0.006             | 0.010              | 26,400                  | 228   | 0.004             | 0.005              |
| R0.25               | 1                       | 63,600                                                                                                                                                                                                                                                       | 1,560 | 0.026             | 0.047              | 45,600                                           | 960   | 0.020             | 0.033              | 33,600                  | 636   | 0.014             | 0.032              | 33,600                  | 312   | 0.007             | 0.020              |
| "                   | 5                       | 52,800                                                                                                                                                                                                                                                       | 1,032 | 0.012             | 0.014              | 34,800                                           | 552   | 0.008             | 0.008              | 31,200                  | 444   | 0.007             | 0.010              | 31,200                  | 216   | 0.006             | 0.009              |
| "                   | 10                      | 38,400                                                                                                                                                                                                                                                       | 528   | 0.008             | 0.016              | 28,800                                           | 456   | 0.007             | 0.010              | 28,800                  | 372   | 0.005             | 0.010              | 27,600                  | 216   | 0.005             | 0.009              |
| R0.3                | 1                       | 63,600                                                                                                                                                                                                                                                       | 1,956 | 0.030             | 0.140              | 39,600                                           | 960   | 0.022             | 0.091              | 27,600                  | 600   | 0.019             | 0.091              | 26,400                  | 516   | 0.014             | 0.091              |
| "                   | 5                       | 50,400                                                                                                                                                                                                                                                       | 1,104 | 0.014             | 0.068              | 28,800                                           | 504   | 0.012             | 0.043              | 26,400                  | 396   | 0.008             | 0.042              | 26,400                  | 336   | 0.007             | 0.040              |
| "                   | 10                      | 31,200                                                                                                                                                                                                                                                       | 540   | 0.006             | 0.032              | 24,000                                           | 360   | 0.005             | 0.020              | 22,800                  | 312   | 0.004             | 0.020              | 22,800                  | 240   | 0.003             | 0.018              |
| R0.4                | 2                       | 61,200                                                                                                                                                                                                                                                       | 2,280 | 0.054             | 0.160              | 34,800                                           | 816   | 0.045             | 0.100              | 27,600                  | 552   | 0.038             | 0.100              | 26,400                  | 456   | 0.030             | 0.010              |
| "                   | 6                       | 51,600                                                                                                                                                                                                                                                       | 1,452 | 0.035             | 0.100              | 28,800                                           | 636   | 0.028             | 0.068              | 21,600                  | 420   | 0.020             | 0.068              | 21,600                  | 348   | 0.015             | 0.065              |
| "                   | 10                      | 31,000                                                                                                                                                                                                                                                       | 630   | 0.022             | 0.080              | 23,400                                           | 468   | 0.020             | 0.050              | 17,300                  | 408   | 0.015             | 0.050              | 16,800                  | 336   | 0.010             | 0.050              |
| R0.5                | 2                       | 50,400                                                                                                                                                                                                                                                       | 2,160 | 0.068             | 0.320              | 33,600                                           | 900   | 0.052             | 0.220              | 21,600                  | 540   | 0.040             | 0.220              | 18,000                  | 540   | 0.008             | 0.140              |
| "                   | 5                       | 50,400                                                                                                                                                                                                                                                       | 2,160 | 0.068             | 0.320              | 33,600                                           | 900   | 0.052             | 0.220              | 21,600                  | 540   | 0.040             | 0.220              | 18,000                  | 540   | 0.008             | 0.014              |
| "                   | 10                      | 30,000                                                                                                                                                                                                                                                       | 1,164 | 0.024             | 0.086              | 16,320                                           | 600   | 0.020             | 0.056              | 15,000                  | 456   | 0.014             | 0.056              | 13,680                  | 312   | 0.008             | 0.050              |
| "                   | 16                      | 17,640                                                                                                                                                                                                                                                       | 720   | 0.018             | 0.086              | 13,680                                           | 480   | 0.016             | 0.056              | 12,360                  | 384   | 0.012             | 0.056              | 11,520                  | 252   | 0.005             | 0.030              |
| R0.75               | 3                       | 31,200                                                                                                                                                                                                                                                       | 2,400 | 0.167             | 0.320              | 21,600                                           | 1,152 | 0.120             | 0.210              | 12,960                  | 672   | 0.100             | 0.210              | 12,000                  | 600   | 0.090             | 0.210              |
| "                   | 10                      | 26,400                                                                                                                                                                                                                                                       | 1,680 | 0.100             | 0.220              | 14,760                                           | 780   | 0.080             | 0.170              | 9,720                   | 480   | 0.062             | 0.170              | 9,720                   | 456   | 0.050             | 0.160              |
| "                   | 18                      | 12,120                                                                                                                                                                                                                                                       | 624   | 0.030             | 0.160              | 12,120                                           | 504   | 0.022             | 0.110              | 9,600                   | 432   | 0.020             | 0.110              | 9,600                   | 408   | 0.012             | 0.110              |
| "                   | 30                      | 9,840                                                                                                                                                                                                                                                        | 516   | 0.014             | 0.080              | 9,840                                            | 456   | 0.012             | 0.050              | 9,480                   | 420   | 0.010             | 0.050              | 9,480                   | 396   | 0.010             | 0.050              |
| R1                  | 4                       | 26,400                                                                                                                                                                                                                                                       | 2,448 | 0.220             | 0.520              | 21,000                                           | 1,392 | 0.180             | 0.350              | 14,640                  | 1,080 | 0.140             | 0.350              | 14,640                  | 900   | 0.120             | 0.350              |
| "                   | 10                      | 26,400                                                                                                                                                                                                                                                       | 2,256 | 0.180             | 0.350              | 21,000                                           | 1,224 | 0.140             | 0.230              | 14,640                  | 972   | 0.110             | 0.230              | 14,640                  | 792   | 0.090             | 0.230              |
| "                   | 20                      | 15,960                                                                                                                                                                                                                                                       | 1,164 | 0.090             | 0.165              | 15,960                                           | 600   | 0.060             | 0.110              | 12,720                  | 600   | 0.055             | 0.110              | 12,720                  | 492   | 0.035             | 0.110              |
| "                   | 30                      | 10,200                                                                                                                                                                                                                                                       | 636   | 0.025             | 0.070              | 10,200                                           | 480   | 0.020             | 0.050              | 10,200                  | 480   | 0.015             | 0.050              | 10,200                  | 384   | 0.015             | 0.045              |
| R1.5                | 6                       | 16,800                                                                                                                                                                                                                                                       | 3,240 | 0.250             | 0.500              | 14,400                                           | 1,824 | 0.200             | 0.340              | 9,840                   | 1,320 | 0.160             | 0.320              | 6,480                   | 732   | 0.160             | 0.320              |
| "                   | 10                      | 16,800                                                                                                                                                                                                                                                       | 3,240 | 0.250             | 0.500              | 14,400                                           | 1,824 | 0.200             | 0.340              | 9,840                   | 1,320 | 0.160             | 0.320              | 6,480                   | 732   | 0.160             | 0.300              |
| "                   | 20                      | 14,040                                                                                                                                                                                                                                                       | 2,244 | 0.200             | 0.450              | 12,360                                           | 1,476 | 0.145             | 0.320              | 8,520                   | 1,128 | 0.120             | 0.310              | 5,760                   | 660   | 0.080             | 0.300              |
| "                   | 30                      | 10,920                                                                                                                                                                                                                                                       | 1,620 | 0.120             | 0.220              | 9,360                                            | 816   | 0.100             | 0.150              | 8,520                   | 816   | 0.080             | 0.150              | 5,760                   | 384   | 0.070             | 0.300              |
| R2                  | 8                       | 12,600                                                                                                                                                                                                                                                       | 3,012 | 0.350             | 0.850              | 10,440                                           | 1,752 | 0.290             | 0.550              | 7,200                   | 1,332 | 0.220             | 0.500              | 7,200                   | 1,056 | 0.150             | 0.500              |
| "                   | 20                      | 12,600                                                                                                                                                                                                                                                       | 3,012 | 0.350             | 0.850              | 10,440                                           | 1,752 | 0.290             | 0.550              | 7,200                   | 1,332 | 0.220             | 0.500              | 7,200                   | 1,056 | 0.150             | 0.500              |
| "                   | 30                      | 11,160                                                                                                                                                                                                                                                       | 2,040 | 0.250             | 0.500              | 8,880                                            | 1,380 | 0.200             | 0.320              | 6,600                   | 1,056 | 0.150             | 0.300              | 6,600                   | 816   | 0.130             | 0.300              |
| "                   | 40                      | 8,160                                                                                                                                                                                                                                                        | 1,464 | 0.150             | 0.500              | 7,200                                            | 1,056 | 0.132             | 0.320              | 6,600                   | 1,056 | 0.100             | 0.300              | 6,600                   | 816   | 0.090             | 0.300              |
| R2.5                | 15                      | 10,800                                                                                                                                                                                                                                                       | 2,880 | 0.380             | 0.800              | 8,400                                            | 1,500 | 0.300             | 0.700              | 6,000                   | 1,140 | 0.220             | 0.700              | 6,000                   | 900   | 0.200             | 0.650              |
| "                   | 25                      | 10,800                                                                                                                                                                                                                                                       | 2,400 | 0.380             | 0.800              | 8,400                                            | 1,380 | 0.300             | 0.550              | 6,000                   | 1,080 | 0.220             | 0.550              | 6,000                   | 816   | 0.200             | 0.500              |
| "                   | 40                      | 9,360                                                                                                                                                                                                                                                        | 1,320 | 0.250             | 0.800              | 6,720                                            | 840   | 0.200             | 0.550              | 4,920                   | 660   | 0.150             | 0.550              | 4,920                   | 504   | 0.130             | 0.500              |
| R3                  | 15                      | 8,400                                                                                                                                                                                                                                                        | 2,676 | 0.500             | 1.000              | 8,160                                            | 1,764 | 0.420             | 0.800              | 5,760                   | 1,320 | 0.300             | 0.800              | 4,440                   | 864   | 0.300             | 0.800              |
| "                   | 30                      | 8,400                                                                                                                                                                                                                                                        | 1,812 | 0.380             | 0.900              | 7,200                                            | 1,680 | 0.300             | 0.650              | 5,040                   | 1,176 | 0.220             | 0.650              | 4,440                   | 792   | 0.220             | 0.600              |
| R4                  | 25                      | 8,160                                                                                                                                                                                                                                                        | 1,764 | 0.410             | 1.000              | 7,200                                            | 1,176 | 0.350             | 0.750              | 4,920                   | 912   | 0.180             | 0.600              | 4,560                   | 732   | 0.200             | 0.630              |
| "                   | 30                      | 7,680                                                                                                                                                                                                                                                        | 1,680 | 0.380             | 1.000              | 6,960                                            | 1,128 | 0.300             | 0.750              | 4,800                   | 864   | 0.160             | 0.600              | 4,320                   | 720   | 0.200             | 0.600              |
| R5                  | 30                      | 6,240                                                                                                                                                                                                                                                        | 1,344 | 0.560             | 1.200              | 5,880                                            | 1,128 | 0.370             | 0.900              | 4,800                   | 852   | 0.200             | 0.670              | 4,200                   | 708   | 0.200             | 0.650              |
| "                   | 35                      | 6,000                                                                                                                                                                                                                                                        | 1,296 | 0.500             | 1.000              | 5,400                                            | 1,080 | 0.350             | 0.850              | 4,560                   | 816   | 0.150             | 0.600              | 3,840                   | 648   | 0.200             | 0.600              |
| R6                  | 30                      | 5,160                                                                                                                                                                                                                                                        | 1,104 | 0.650             | 1.400              | 4,800                                            | 984   | 0.420             | 0.900              | 4,320                   | 828   | 0.250             | 0.600              | 3,600                   | 600   | 0.250             | 0.600              |
| "                   | 40                      | 4,920                                                                                                                                                                                                                                                        | 1,080 | 0.600             | 1.200              | 4,560                                            | 9,600 | 0.400             | 0.850              | 4,080                   | 780   | 0.200             | 0.600              | 3,600                   | 600   | 0.200             | 0.600              |
| 절입량<br>Depth of Cut |                         | <div><div><div>• Ap : Axial Depth</div><div>• Ae : Radial Depth</div><div>• D : Outside Diameter</div><div>• n : Speed</div><div>• Vf : Feed</div></div><div></div></div> |       |                   |                    |                                                  |       |                   |                    |                         |       |                   |                    |                         |       |                   |                    |

- 유효장 길이가 긴 경우, RPM과 FEED를 동일 비율로 낮춰 주세요.
- 이 절삭 조건표는 절삭조건의 참고 수치입니다. 실 가공시 가공 형상, 가공 목적, 적용 기계에 따라 조건 변경 요망합니다.
- 적용 기계의 회전 속도가 부족한 경우에는 회전 속도와 이송 속도를 같은 비율로 줄여서 적용 합니다.
- 진동이 적고 강성이 좋은 공작기계 사용 요망 합니다(Ø1이하 사용시 진동 허용 관리 5μm이내 일것.)
- 원활한 칩배출을 위하여 에어브로 혹은 미스트 콜러트 사용을 추천하며, 동 가공시 습식 콜러트를 추천 합니다.
- If the effective length is long, reduce the RPM and feed in the same proportion.
- Use this table for your reference. Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- If the table over the maximum RPM and feed of your machine, adjust RPM and feed in the same proportion.
- Use a machine with low vibration and good rigidity (Ø1 or less, the vibration tolerance management should be within 5μm).
- Air blow or oil mist is recommended for smooth chip emission, and dry milling is recommended for copper material.

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For Composite Materials



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