

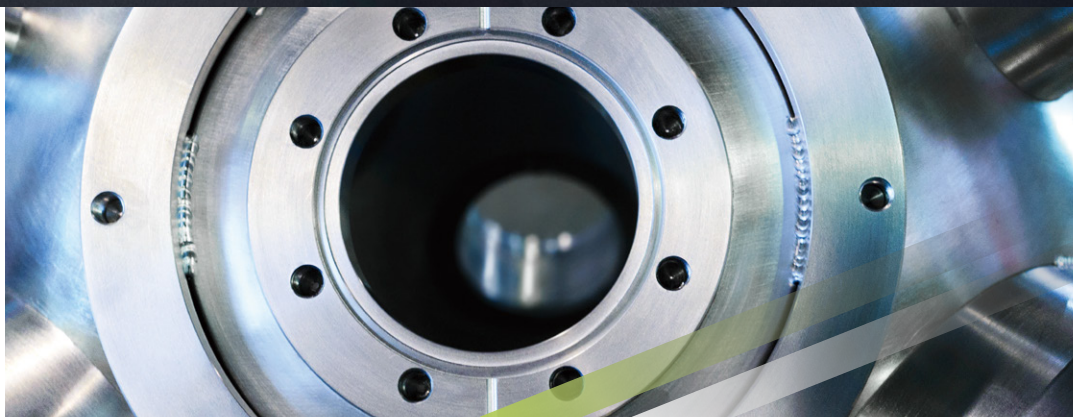
CARBIDE **DRILL** *SERIES*

Your specials are our standards.

Customized carbide drill to be
coated for various workpieces

Double Satisfaction !

두배의 만족 !

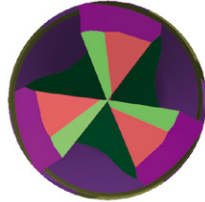


3Flutes Dube H Drill

3DUBEH

Powerful drill for Hardened steel(HRc52~65)

고경도강(HRc52~65), 열처리강 계열의 강력 드릴



Outstanding Edge Design !

탁월한 날 부 디자인!

Optimizing the point design for high-hardness drilling disperses cutting forces, enhances the rigidity of the cutting edge, and reduces tool damage during initial penetration

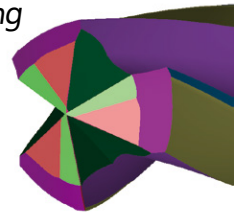
고경도 드릴링의 최적화 된 포인트 설계로 절삭력을 분산시키며, 선단부의 강성을 증대시켜 초기 진입 시 공구의 파손을 감소시켰습니다.

Optimal flute shape !

최적의 플루트 형상!

The excellent 3F flute design prevents chipping and damage while reducing cutting loads, improving heat dissipation.

뛰어난 3F 플루트 설계로 칩핑 및 파손 방지와 절삭부하를 감소시켜 열배출성을 향상시켰습니다.



Excellent chip evacuation !

우수한 칩배출!

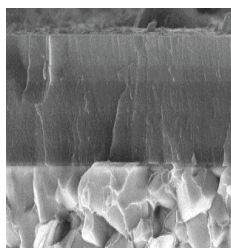
Implementing flute groove design, considering chip evacuation and drill rigidity achieves stable drilling.

칩 배출력과 드릴의 강성을 고려한 플루트 홈 설계를 적용하여 안정적인 드릴링을 구현합니다.

HR
coating

Applied TISIN + @ Base HR Coating

TISIN + @ Base HR Coating 적용



Minimizing stress on the cutting edge by applying HR coating with excellent wear resistance and chip resistance, maximizing the tool's lifespan.

우수한 내마모성과 내칩핑성의 HR코팅을 적용하여 인선부의 스트레스를 최소화하여 공구의 수명을 극대화 시켰습니다.

Coating layer hardness(HV 0.05) : 3600

Friction coefficient : 0.5

경도(HV 0.05) : 3600

마찰계수 : 0.5

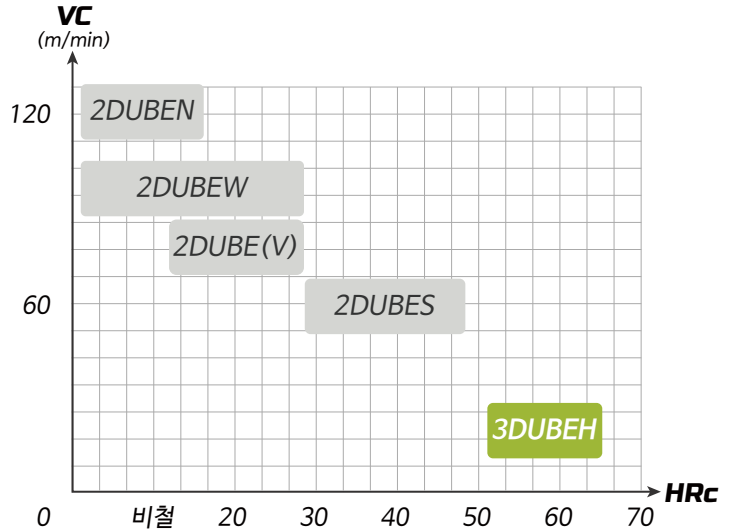
Powerful drill for Hardened steel(HRc52~65) and Heat-treated steel

고경도강(HRc52~65), 열처리강 계열의 강력 드릴

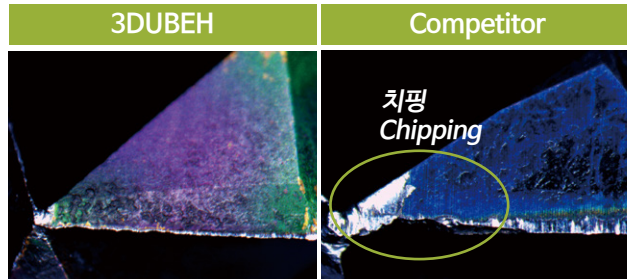
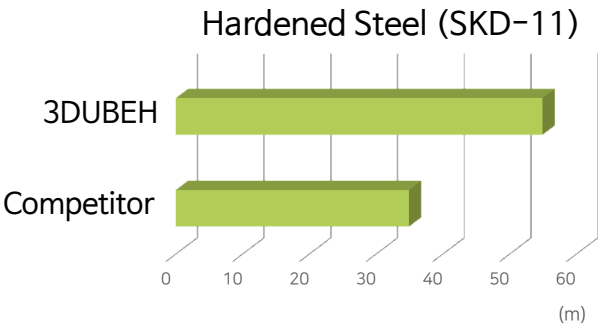
Cutting area 절삭영역

| | |
|-----------------------------------|---|
| Heat-treated steel 열처리강 | ★ |
| Hardened Steel(HRc52~65) 고경도강 | ★ |
| Heat Resistance Alloy 내열 합금강 | ◎ |
| Pre-Hardened Steel 프리하든강 | ○ |
| Alloy Steel/Tool Steel 합금강/공구강 | ○ |

★ 최적 Most Suitable / ◎ 적합 Suitable / ○ 가능 Available



Competitor Performance Comparison 경쟁사 성능비교



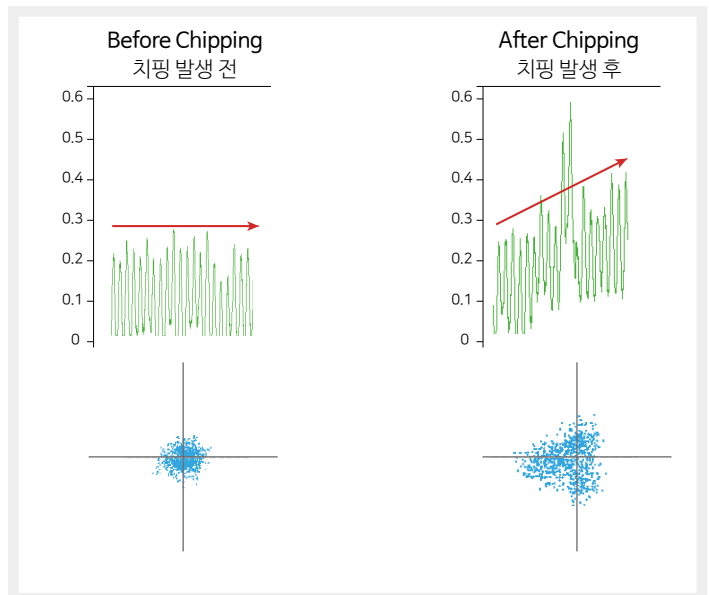
Order Number : 3DUBEH 060 270 S06 (∅6)

Working Condition : Vc : 20/min, fn : 0.06mm/rev, Depth : 3XD, Peck : X

Instant impact pattern 순간 충격패턴

The content describes a graph showing the variation in tool deflection values as the tool resists bending due to chip formation and wear, along with the points where the tool experiences impact. In the event of tool failure, the expansion of impact points and the confirmation of eccentricity towards one side from the tool center can be observed.

치핑 및 마모 발생에 따라 공구가 저항하는 힘의 값이 변화하는 그래프와 공구가 충격을 받는 포인트의 위치를 나타낸 내용입니다. 공구 파손시 충격 포인트의 확장과 공구 중심에서 한쪽으로 편심을 확인할 수 있습니다.

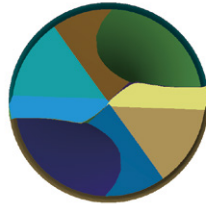


2Flutes Dube S Drill

2DUBES

Powerful drill for materials up to HRc48

HRc48이하, NAK, SCM, 열처리강용 강력 드릴



Outstanding Edge Design !

탁월한 날 부 디자인!

Applying optimal point thinning ensures machining stability, preventing chipping and tool damage with low cutting loads.

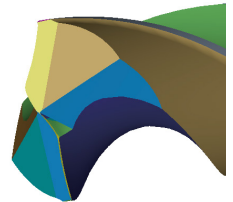
최적의 포인트 씨닝을 적용하여 가공 안정성을 확보하며, 낮은 절삭부하로 칩핑 및 공구의 파손을 방지합니다.

Optimal flute shape !

최적의 플루트 형상!

Maintaining a stable tool life is achieved by incorporating a special edge profile with low cutting resistance and optimized relief angle for heat dissipation

저 절삭 저항의 인선 형상과 열 배출의 최적화된 선단 여유각 및 형상을 적용하여 안정적인 공구의 수명을 유지합니다.



Excellent chip evacuation !

우수한 칩배출!

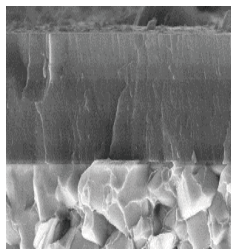
Implementing flute groove design, considering chip evacuation and drill rigidity, achieves stable drilling.

칩 배출력과 드릴의 강성을 고려한 플루트 홈 설계를 적용하여 안정적인 드릴링을 구현합니다.



Applied TISIN + @ Base HR Coating

TISIN + @ Base HR Coating 적용



Minimizing stress on the cutting edge by applying HR coating with excellent wear resistance and chip resistance, maximizing the tool's lifespan.

우수한 내마모성과 내칩핑성의 HR코팅을 적용하여 인선부의 스트레스를 최소화하여 공구의 수명을 극대화 시켰습니다.

Coating layer hardness(HV 0.05) : 3600

Friction coefficient : 0.5

경도(HV 0.05) : 3600

마찰계수 : 0.5

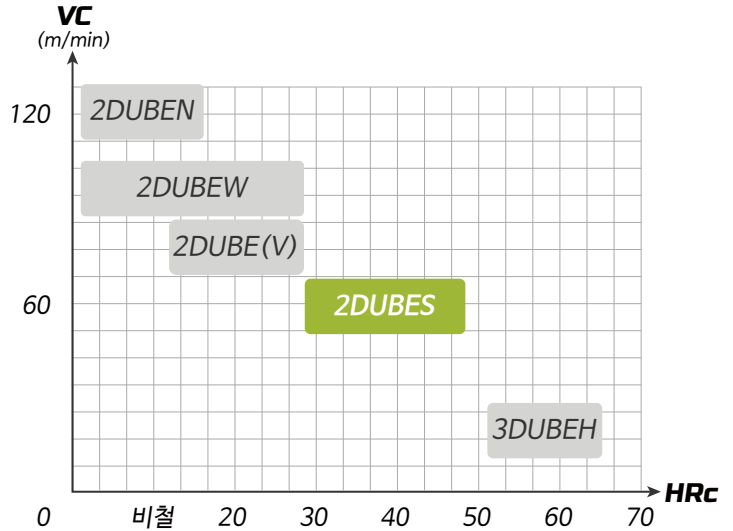
Powerful drill for materials up to HRc48, NAK, SCM, and Heat-treated steel

HRc48이하, NAK, SCM, 열처리강용 강력 드릴

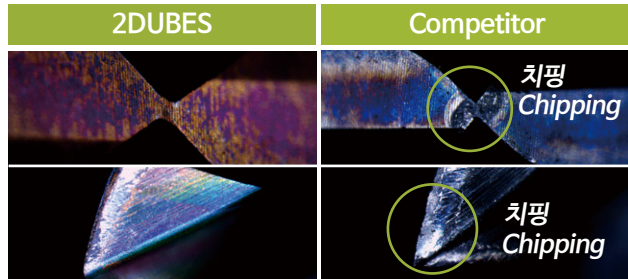
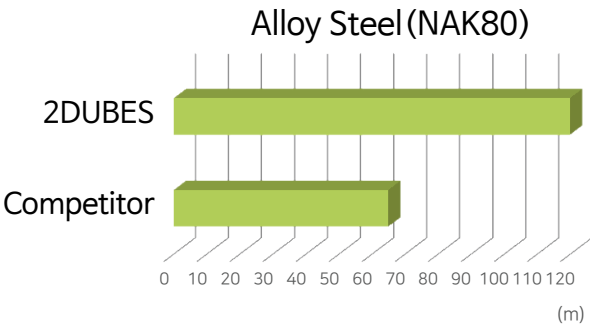
Cutting area 절삭영역

| | |
|-----------------------------------|---|
| Hardened Steel (~HRc48) 고경도강 | ◎ |
| Pre-Hardened Steel 프리하드강 | ★ |
| Alloy Steel/Tool Steel 합금강/공구강 | ★ |
| Heat Resistance Alloy 내열 합금강 | ○ |
| Carbon Steel 탄소강 | ○ |

★ 최적 Most Suitable / ◎ 적합 Suitable / ○ 가능 Available



Competitor Performance Comparison 경쟁사 성능비교



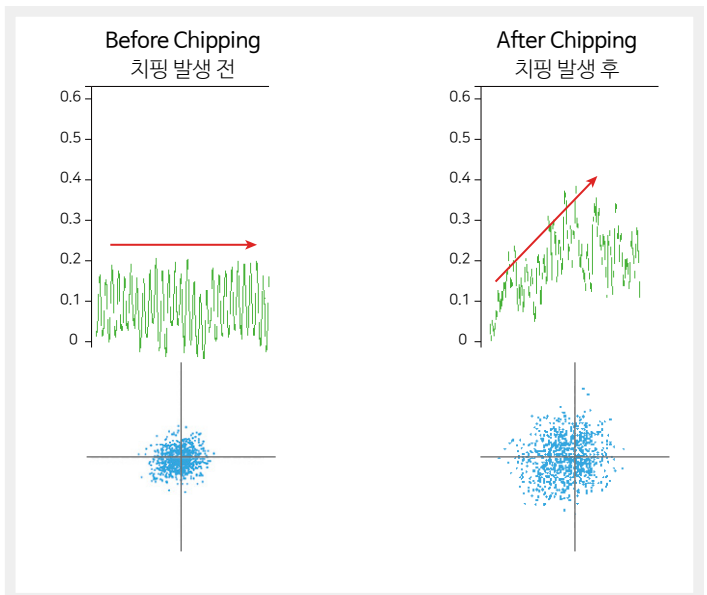
Order Number : 2DUBES 060 440 S06 (ø6)

Working Condition : Vc : 55/min, fn : 0.1mm/rev, Depth : 5XD, Peck : 1

Instant impact pattern 순간 충격패턴

The content describes a graph showing the variation in tool deflection values as the tool resists bending due to chip formation and wear, along with the points where the tool experiences impact. In the event of tool failure, the expansion of impact points and the confirmation of eccentricity towards one side from the tool center can be observed.

치핑 및 마모 발생에 따라 공구가 저항하는 힘의 값이 변화하는 그래프와 공구가 충격을 받는 포인트의 위치를 나타낸 내용입니다. 공구 파손시 충격 포인트의 확장과 공구 중심에서 한쪽으로 편심을 확인할 수 있습니다.

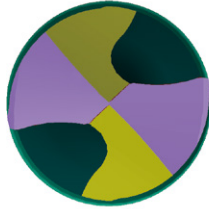


2Flutes Dube Drill

2DUBE(V)

High-speed drill for materials up to HRc28

HRc28이하, S45C, SCM, 주강, 주철용 전용 드릴



Outstanding Edge Design !

탁월한 날 부 디자인!

Prevents chipping and unexpected fractures with special edge treatment and optimal geometry.

특수 인선처리와 최적의 형상으로 치핑 및 돌발파손을 방지합니다.

Optimal flute shape !

최적의 플루트 형상!

Minimize chip adhesion during drilling by applying the optimal flute shape.

피삭재 맞춤형설계로 최적의 플루트 형상을 적용하여 드릴링 중 발생하는 칩의 용착을 최소화 시킵니다



Excellent chip evacuation !

우수한 칩배출!

Applies a design for superior rigidity and chip disposal, enhancing chip evacuation by minimizing friction.

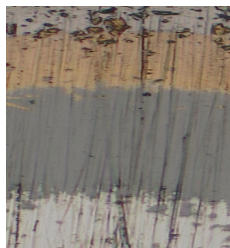
우수한 제품의 강성과 칩 배출의 설계를 적용 마찰을 최소화하여 칩 배출성을 향상시킵니다.



Applied with ALCRN

+ @ Base TCRO Coating

ALCRN + @ Base T-CRO Coating 적용



Utilizing the excellent T-CRO coating with low friction, superior adhesion resistance, and deformability to minimize chip adhesion during evacuation, enhancing chip ejection.

저 마찰과 내소착 및 이형성이 우수한 T-CRO 코팅을 적용하여 배출되는 칩 용착이 최소화로 칩 배출력을 향상시킵니다.

Coating layer hardness(HV 0.05) : 3000

Friction coefficient : ~0.2

경도(HV 0.05) : 3000

마찰계수 : ~0.2

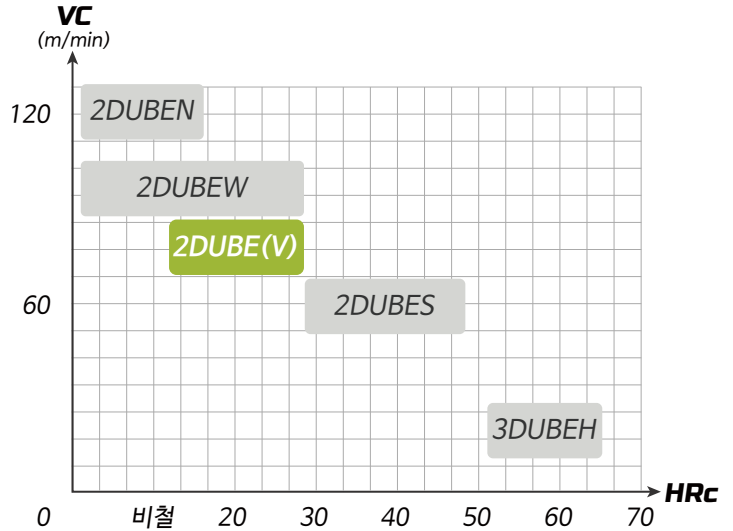
High-speed drill for materials up to HRc28, S45C, SCM, Cast steel, and Cast iron

HRc28이하, S45C, SCM, 주강, 주철용 전용 드릴

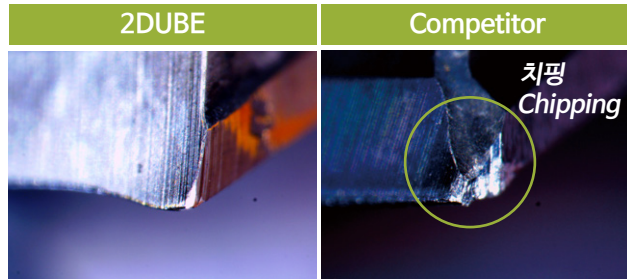
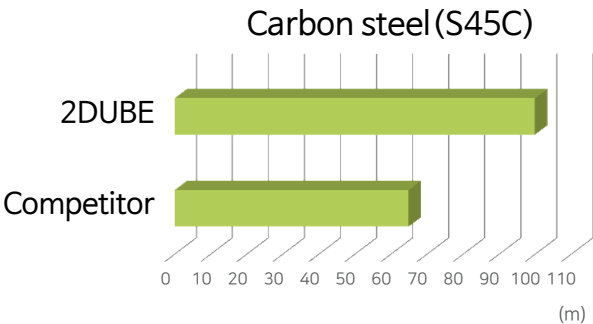
Cutting area 절삭영역

| | |
|--------------------------------------|---|
| Cast iron 주철 | ★ |
| Carbon steel 탄소강 | ★ |
| Steel for General Structure 일반구조강 | ★ |
| Free cutting steel 쾌삭강 | ★ |
| Alloy Steel/Tool Steel 합금강/공구강 | ◎ |

★ 최적 Most Suitable / ◎ 적합 Suitable / ○ 가능 Available



Competitor Performance Comparison 경쟁사 성능비교



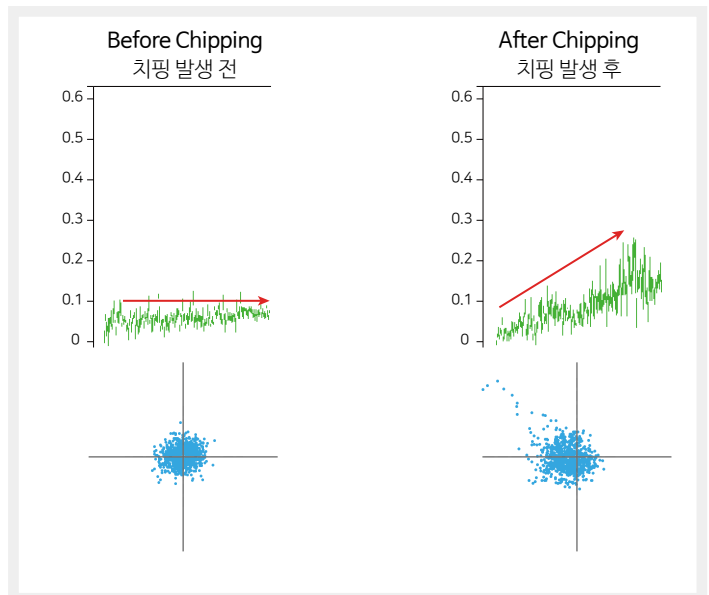
Order Number : 2DUBE 060 360 S06 (∅6)

Working Condition : Vc : 75/min, fn : 0.13mm/rev, Depth : 5XD, Peck : 3

Instant impact pattern 순간 충격패턴

The content describes a graph showing the variation in tool deflection values as the tool resists bending due to chip formation and wear, along with the points where the tool experiences impact. In the event of tool failure, the expansion of impact points and the confirmation of eccentricity towards one side from the tool center can be observed.

치핑 및 마모 발생에 따라 공구가 저항하는 힘의 값이 변화하는 그래프와 공구가 충격을 받는 포인트의 위치를 나타낸 내용입니다. 공구 파손시 충격 포인트의 확장 및 공구 중심에서 한쪽으로 편심을 확인할 수 있습니다.

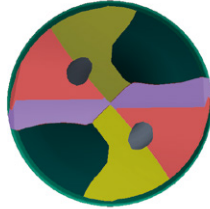
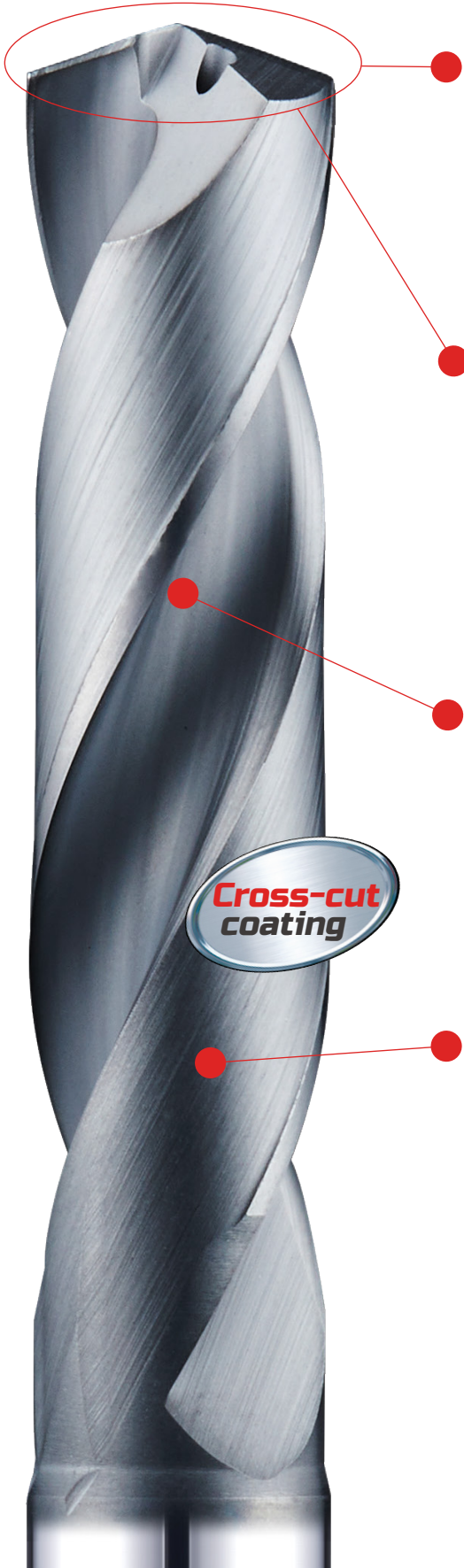


2Flutes Dube W Drill

2DUBEW

High-speed drill for SUS and Titanium

SUS, Titanium, HRc28이하 SCM등의 합금용 난삭재 가공 드릴



Outstanding Edge Design !

탁월한 날 부 디자인!

Applying point thinning to minimize cutting resistance reduces cutting loads and demonstrates outstanding wear resistance.

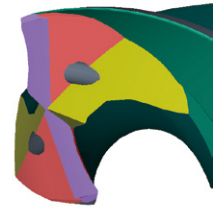
절삭저항을 최소화하는 포인트 씨닝을 적용하여 절삭부하를 감소시켜 뛰어난 내마모성을 발휘합니다.

Optimal flute shape !

최적의 플루트 형상!

Utilizing an efficient coolant hole type for chip evacuation provides excellent cooling effects, delaying wear and enhancing tool life.

효율적인 칩 배출의 오일 홀타입을 적용하여 우수한 냉각효과로 마모를 지연하며 공구의 수명을 향상시킵니다.



Excellent chip evacuation !

우수한 칩배출!

Incorporating the design for superior product rigidity and chip evacuation minimizes friction, improving chip evacuation.

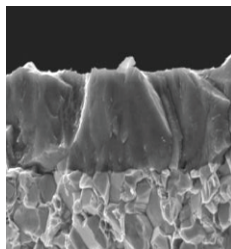
우수한 제품의 강성과 칩 배출의 설계를 적용 마찰을 최소화하여 칩 배출성을 향상시킵니다.

Cross-cut coating

Applied ALCRN

+ @ Base Cross-cut Coating

ALCRN + @ Base Cross-cut Coating 적용



Achieving excellent heat resistance and wear resistance by applying Cross-cut coating, characterized by a unique nanostructure with uniform wear properties.

독특한 나노구조의 균일마모가 특성인 CROSS CUT 코팅을 적용하여 우수한 내열성과 내마모성을 실현합니다.

Coating layer hardness(HV 0.05) : 3000

Friction coefficient : 0.4

경도(HV 0.05) : 3000

마찰계수 : 0.4

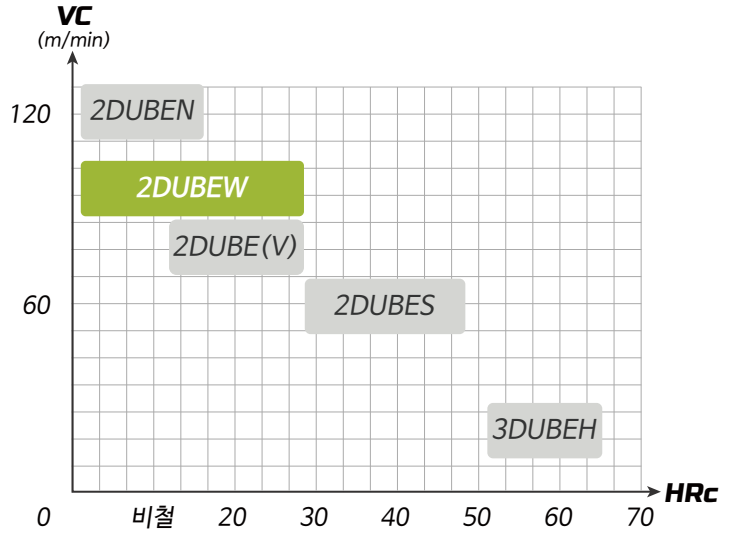
High-speed drill for SUS, alloy materials up to HRc28, SCM and Titanium

SUS, Titanium, HRc28이하 SCM등의 합금용 난삭재 가공 드릴

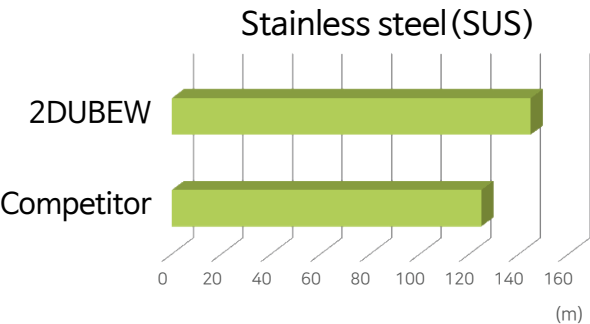
Cutting area 절삭영역

| | |
|-----------------------------------|---|
| Stainless steel 스테인레스강 | ★ |
| Heat Resistance Alloy 내열 합금강 | ◎ |
| Pre-Hardened Steel 프리하든강 | ○ |
| Alloy Steel/Tool Steel 합금강/공구강 | ◎ |

★ 최적 Most Suitable / ◎ 적합 Suitable / ○ 가능 Available



Competitor Performance Comparison 경쟁사 성능비교



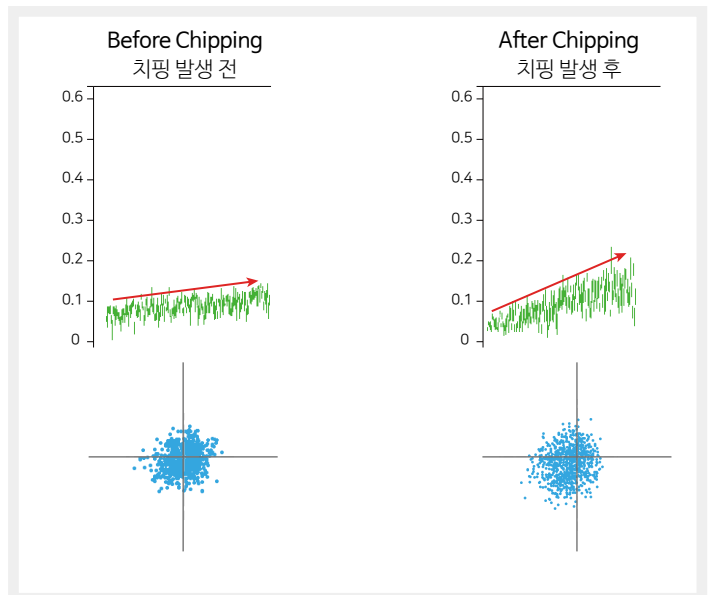
Order Number : 2DUBEW 060 440 S06 (∅6)

Working Condition : Vc : 75/min, fn : 0.12mm/rev, Depth : 5XD, Peck : 3

Instant impact pattern 순간 충격패턴

The content describes a graph showing the variation in tool deflection values as the tool resists bending due to chip formation and wear, along with the points where the tool experiences impact. In the event of tool failure, the expansion of impact points and the confirmation of eccentricity towards one side from the tool center can be observed.

치핑 및 마모 발생에 따라 공구가 저항하는 힘의 값이 변화하는 그래프와 공구가 충격을 받는 포인트의 위치를 나타낸 내용입니다. 공구 파손시 충격 포인트의 확장과 공구 중심에서 한쪽으로 편심을 확인할 수 있습니다.



2Flutes Flat Drill

2FDR

Flat Drill for materials up to HRc50

HRc50이하, 프리하든강, 합금강, 주철, 알루미늄 가공용 플랫 드릴



Designed 180° flat cutting edge !

180도 평면의 날부 설계 !

Enable surface machining to a variety of materials.

다양한 피삭재의 가공표면을 절삭 가능하게 합니다.

Uniform counter boring and drilling available !

균일한 카운터 보링 및 드릴링의 실현 !

Sharp gash designed for uniformity and short chip emission on the flat drill.

샤프트한 게쉬값을 flat 드릴에 설계하여, 짧고 균일한 절삭칩을 형성합니다.

Improved flute design to be used more effectively !

더욱 효율적으로 개선된 인선부 !

Designed shield edge on flat drill to minimizing dramatic cutting.

실드 엿지를 채택하여 flat 드릴 끝날의 급작 파손을 방지 하였습니다.

Wide chip pocket for excellent chip emission !

칩배출이 용이한 넓은 칩 포켓 !

Applied flute groove design with a wide chip pocket, demonstrating excellent chip evacuation.

넓은 칩 포켓의 플루트 홈 설계를 적용하여 우수한 칩 배출력을 발휘합니다.

Applied TISIN + @ Base HR Coating

Minimizing stress on the cutting edge by applying HR coating with excellent wear resistance and chip resistance, maximizing the tool's lifespan.

우수한 내마모성과 내치핑성의 HR코팅을 적용하여 인선부의 스트레스를 최소화하여 공구의 수명을 극대화 시켰습니다.

Applied high TRS fine WC grade !

항절력이 높은 초경소재 적용 !

Minimized sudden tool breakage when using the flat drill.

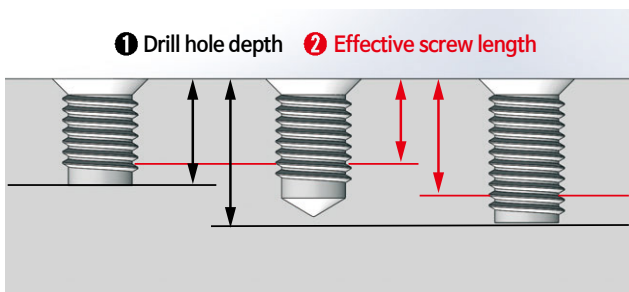
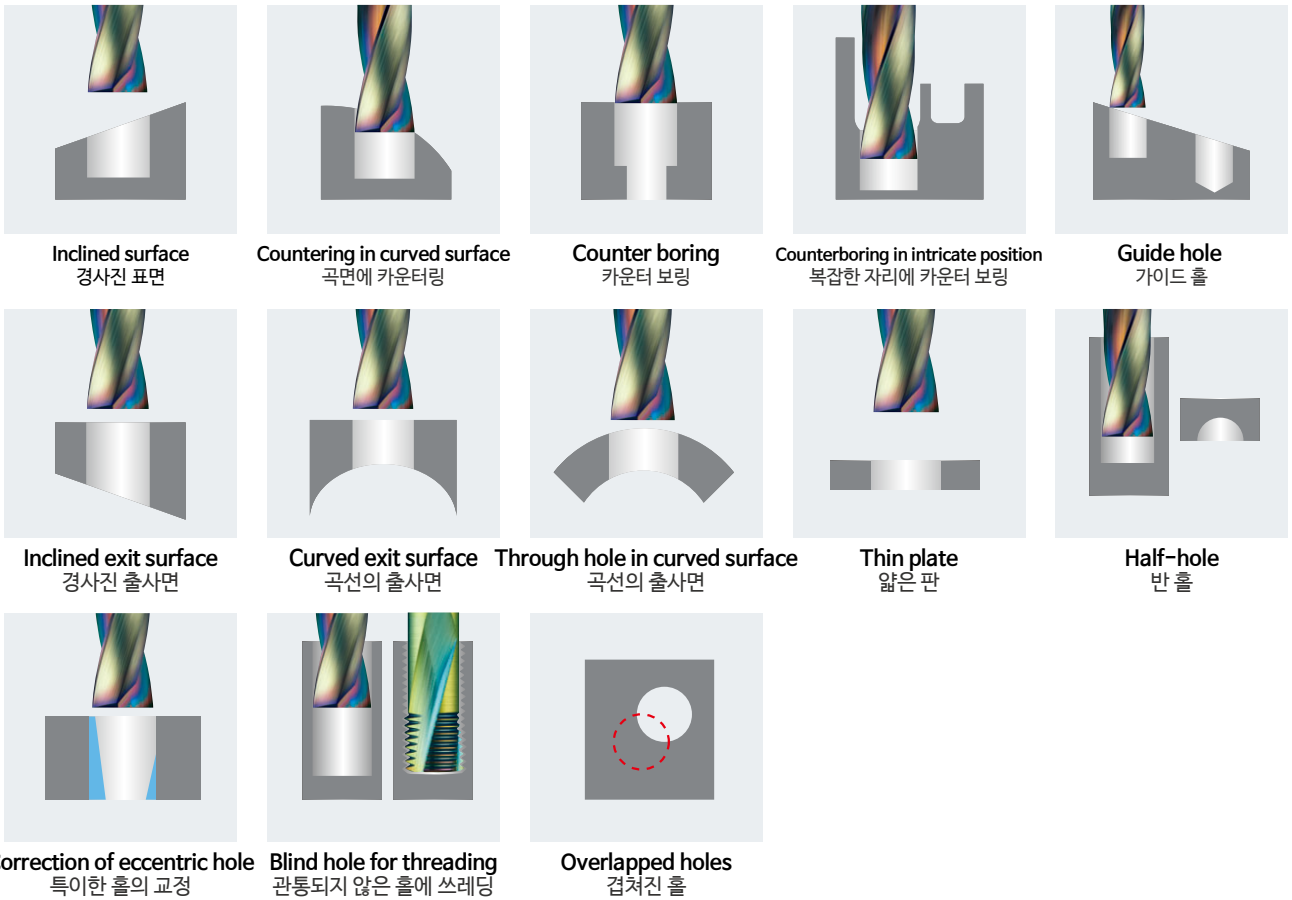
Flat 드릴의 사용시 초경공구의 부러짐 현상을 최소화 하였습니다.

Multiple processing is available with one drill !

하나의 드릴로 다양한 가공 가능 !

Compared to traditional way, which uses end mill and drill separately, Flat drill as one-step processing simplifies short machining time and tool management.

기존에는 엔드밀과 드릴을 같이 사용하여 번거로웠으나, 플랫드릴은 원스텝 가공으로 시간과 공구 관리를 단순화 시켰습니다.











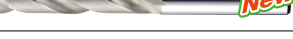
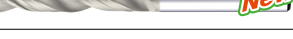







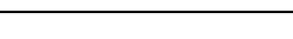


More effective drilling than angle drill
각도 드릴보다 효과적인 드릴링

Complete flat surface machining is available with one drilling
한번의 드릴링으로 완전한 평면 구현

- ❶ Drill hole depth can be shorter than the conventional drill hole depth.
드릴 홀의 깊이가 기존 드릴 홀의 깊이보다 짧게 위치합니다.
- ❷ Drill hole depth can be deeper than the conventional screw depth.
드릴 홀의 깊이가 기존 드릴 홀의 깊이에서 유효 나사길이가 길어집니다.

Carbide Drills INDEX

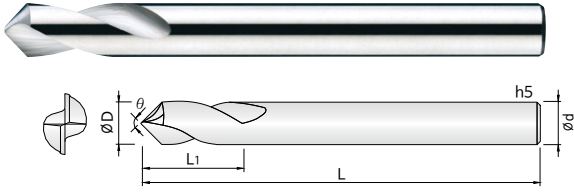
| 시리즈 SERIES | 제품 IMAGE | 품명 MODEL NO. | 크기 SIZE Ø (mm) | 페이지 PAGE | 분류 TYPE |
|---------------|--|-----------------|----------------------|-------------|---|
| DRILL 드릴 |  | 2SPO | 0.3 ~ 16 | 14 | NC Spotting Drill NC 스폿팅 드릴 |
| |  | 2STD | 3.4 ~ 10.3 | 15 | Step Drill 스텝 드릴 |
| |  | 2DED | 0.15 ~ 6 | 16 | Deburring Micro Drill 디버링 마이크로 드릴 |
| |  <i>New</i> | 2MID | 0.5 ~ 3 | 18 | Micro Drill 마이크로 드릴 |
| |  <i>New</i> | 3DUBEH | 1 ~ 16 | 19 | Dube H Drill for high hardened steel 두배 H 드릴 |
| |  <i>New</i> | 2DUBES | 1 ~ 20 | 21 | Dube S Drill (Strong) 두배 S 드릴 [3XD] |
| |  <i>New</i> | 2DUBES | 1 ~ 20 | 23 | Dube S Drill (Strong) 두배 S 드릴 [5XD] |
| |  <i>New</i> | 2DUBEV | 1 ~ 20 | 25 | Dube V Drill (Various) 두배 V 드릴 [3XD] |
| |  <i>New</i> | 2DUBEV | 1 ~ 20 | 27 | Dube V Drill (Various) 두배 V 드릴 [5XD] |
| |  <i>New</i> | 2DUBE | 1 ~ 12 | 29 | Dube Drill (Short length) 짧은 길이 두배 드릴 |
| |  <i>New</i> | 2DUBE | 1 ~ 20 | 31 | Dube Drill (Standard length) 두배 드릴 |
| |  <i>New</i> | 4DUBE | 6 ~ 12 | 33 | Dube Drill (Standard length) 두배 드릴 |
| |  <i>New</i> | 2DUBEW | 1 ~ 20 | 34 | Dube W Drill with Coolant hole [3XD] 두배 W 드릴 (내부 쿨런트) [3XD] |
| |  <i>New</i> | 2DUBEW | 1 ~ 20 | 36 | Dube W Drill with Coolant hole [5XD] 두배 W 드릴 (내부 쿨런트) [5XD] |
| |  <i>New</i> | 2DUBEN | 1 ~ 13 | 38 | Dube N Drill for Non-ferrous [3XD] 두배 N 드릴 [3XD] |
| |  <i>New</i> | 2DUBEN | 1 ~ 13 | 40 | Dube N Drill for Non-ferrous [5XD] 두배 N 드릴 [5XD] |
| |  | 2FDR | 0.2 ~ 20 | 42 | Multi-Processing Flat Drill 다기능 플랫 드릴 |
| |  | 2FDRL | 3 ~ 20 | 44 | Multi-Processing Flat Drill with Long Shank 롱샹크 다기능 플랫 드릴 |
| |  | 2FDRW | 3 ~ 16 | 45 | Multi-Processing Flat Drill with Coolant hole 다기능 플랫 드릴 (내부 쿨런트) |
| |  | 2FDRLW | 3 ~ 16 | 46 | Long Length Multi-Processing Flat Drill with Coolant hole 긴 길이 다기능 플랫 (내부 쿨런트) |

■ 상기 제품의 주문번호 및 사양은 품질개선으로 인해 예고없이 변경될 수 있습니다.

★ 최적 Most Suitable / ◎ 적합 Suitable / ○ 가능 Available

| 프리하든강 Pre-hardened Steel | 고경도강 Hardened Steel ~ HRC55 HRC55~65 | | 합금강/공구강 Alloy Steel Tool Steel | 내열 합금강 Heat Resistance Alloy | 티타늄 Titanium | 스테인레스강 Stainless Steel | 알루미늄 Aluminum | 구리 Copper | 탄소강 Carbon Steel | 흑연 Graphite | 복합소재 CFRP GFRP | A.B.S수지 Resin |
|-----------------------------|--|---|--------------------------------------|---------------------------------|-----------------|---------------------------|------------------|--------------|---------------------|----------------|----------------------|------------------|
| ★ | ◎ | | ★ | ○ | | ○ | ○ | ◎ | ★ | | | ◎ |
| ★ | | | ★ | | | | ○ | | ★ | | | ○ |
| | | | | | | | ★ | ◎ | | | | ★ |
| | | | ★ | | | | | | ★ | | | |
| ○ | ★ | ★ | ○ | ◎ | | | | | ○ | | | |
| ★ | ◎ | | ★ | ○ | | | | | ○ | | | |
| ★ | ◎ | | ★ | ○ | | | | | ○ | | | |
| | | | ◎ | | | | | | ★ | | | |
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| ○ | | | ◎ | ◎ | ◎ | ★ | | | ★ | | | |
| ○ | | | ◎ | ◎ | ◎ | ★ | | | ★ | | | |
| | | | | | | | ★ | ◎ | | | | ◎ |
| | | | | | | | ★ | ◎ | | | | ◎ |
| ★ | ◎ | | ★ | | | | | ○ | ◎ | | | |
| ★ | ◎ | | ★ | | | | | ○ | ◎ | | | |
| ★ | ◎ | | ★ | ○ | | ○ | | ○ | ◎ | | | |
| ★ | ◎ | | ★ | ○ | | ○ | | ○ | ◎ | | | |

■ EDP. Number and Specifications are can be changed without notification for quality improvement.



- HRC50이하 고경도강, 프리하든강, 공구강, 주철 등 피삭재 가공
- 실리콘계 코팅 (Si) 처리하여 내마모성이 우수합니다.
- 헬릭스 타입 2날을 적용하여 센터링 작업에 적합합니다.
- 코팅과 비코팅으로 구분하여 수지, 아크릴 등의 가공도 가능합니다.
- 미립자 초경합금을 채택하여 다양한 비철합금 및 목업의 피삭재 영역에 적용 가능합니다.

- **Drill for various work materials, hardened steel (~HRC50), pre-hardened steel, tool steel and cast iron.**
- Good wear resistance by Si-based PVD coating.
- Optimum for centering with helix 2flutes.
- Resin, plastic machining applicable with coated or non coated endmill.
- Applied fine WC grade optimized for various non-ferrous and non-metallic work materials.

2

WC
미립자

TISIN
Coating

|D|
+0 - 0.01

|D|
-0.01 - 0.025

|D|
-0.015 - 0.03

20°
Helix Angle

CUTTING
DATA

Ø0.3 ~ 4
Ø6 ~ 12
Ø16
47P

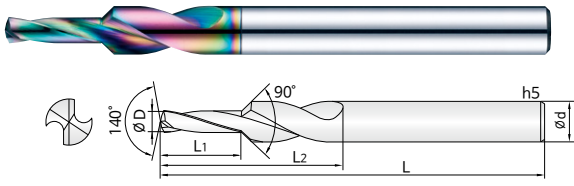
| D Size | D Tolerance |
|-----------|------------------|
| Ø 0.3 ~ 4 | +0 ~ -0.012mm |
| Ø 6 ~ 12 | -0.01 ~ -0.025mm |
| Ø 16 | -0.015 ~ -0.03mm |

단위 : mm

| Order Number | 날경 Diameter D | 각도 Angle θ | 홀길이 Flute Length L1 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 | |
|----------------------|---------------------|------------------|---------------------------|---------------------------|----------------------|------------------|--------------|
| | | | | | | 비코팅 Un coated | 코팅 Coated |
| 2SPO 003 090 040 | 2SPOC 003 090 040 | 0.3 | 90° | 0.9 | 40 | 3 | |
| 2SPO 005 090 040 | 2SPOC 005 090 040 | 0.5 | 90° | 1.5 | 40 | 3 | |
| 2SPO 008 090 040 | 2SPOC 008 090 040 | 0.8 | 90° | 2.4 | 40 | 3 | |
| 2SPO 010 090 050 | 2SPOC 010 090 050 | 1 | 90° | 3 | 50 | 3 | |
| | 2SPOC 010 090 080 | 1 | 90° | 3 | 80 | 3 | |
| 2SPO 010 120 050 | 2SPOC 010 120 050 | 1 | 120° | 3 | 50 | 3 | |
| 2SPO 015 090 050 | 2SPOC 015 090 050 | 1.5 | 90° | 4.5 | 50 | 3 | |
| 2SPO 020 090 050 | 2SPOC 020 090 050 | 2 | 90° | 6 | 50 | 3 | |
| | 2SPOC 020 090 080 | 2 | 90° | 6 | 80 | 3 | |
| 2SPO 020 120 050 | 2SPOC 020 120 050 | 2 | 120° | 6 | 50 | 3 | |
| 2SPO 030 090 050 | 2SPOC 030 090 050 | 3 | 90° | 10 | 50 | 3 | |
| 2SPO 030 120 050 | 2SPOC 030 120 050 | 3 | 120° | 10 | 50 | 3 | |
| 2SPO 030 090 100 | 2SPOC 030 090 100 | 3 | 90° | 10 | 100 | 3 | |
| 2SPO 030 120 100 | 2SPOC 030 120 100 | 3 | 120° | 10 | 100 | 3 | |
| 2SPO 040 090 050 | 2SPOC 040 090 050 | 4 | 90° | 12 | 50 | 4 | |
| 2SPO 040 120 050 | 2SPOC 040 120 050 | 4 | 120° | 12 | 50 | 4 | |
| 2SPO 040 090 100 | 2SPOC 040 090 100 | 4 | 90° | 12 | 100 | 4 | |
| 2SPO 040 120 100 | 2SPOC 040 120 100 | 4 | 120° | 12 | 100 | 4 | |
| New 2SPO 050 090 060 | 2SPOC 050 090 060 | 5 | 90 | 13 | 60 | 5 | |
| New 2SPO 050 120 060 | 2SPOC 050 120 060 | 5 | 120 | 13 | 60 | 5 | |
| New 2SPO 050 090 110 | 2SPOC 050 090 110 | 5 | 90 | 13 | 110 | 5 | |
| New 2SPO 050 120 110 | 2SPOC 050 120 110 | 5 | 120 | 13 | 110 | 5 | |
| 2SPO 060 090 070 | 2SPOC 060 090 070 | 6 | 90° | 15 | 70 | 6 | |
| 2SPO 060 120 070 | 2SPOC 060 120 070 | 6 | 120° | 15 | 70 | 6 | |
| 2SPO 060 090 110 | 2SPOC 060 090 110 | 6 | 90° | 15 | 110 | 6 | |
| | 2SPOC 060 090 150 | 6 | 90° | 15 | 150 | 6 | |
| 2SPO 060 120 110 | 2SPOC 060 120 110 | 6 | 120° | 15 | 110 | 6 | |
| 2SPO 080 090 080 | 2SPOC 080 090 080 | 8 | 90° | 25 | 80 | 8 | |
| | 2SPOC 080 090 150 | 8 | 90° | 25 | 150 | 8 | |
| 2SPO 080 120 080 | 2SPOC 080 120 080 | 8 | 120° | 25 | 80 | 8 | |
| 2SPO 100 090 090 | 2SPOC 100 090 090 | 10 | 90° | 25 | 90 | 10 | |
| 2SPO 100 120 090 | 2SPOC 100 120 090 | 10 | 120° | 25 | 90 | 10 | |
| 2SPO 100 090 150 | 2SPOC 100 090 150 | 10 | 90° | 25 | 150 | 10 | |
| 2SPO 100 120 150 | 2SPOC 100 120 150 | 10 | 120° | 25 | 150 | 10 | |
| 2SPO 120 090 090 | 2SPOC 120 090 090 | 12 | 90° | 30 | 90 | 12 | |
| 2SPO 120 120 090 | 2SPOC 120 120 090 | 12 | 120° | 30 | 90 | 12 | |
| 2SPO 120 090 150 | 2SPOC 120 090 150 | 12 | 90° | 30 | 150 | 12 | |
| 2SPO 120 120 150 | 2SPOC 120 120 150 | 12 | 120° | 30 | 150 | 12 | |
| 2SPO 160 090 110 | 2SPOC 160 090 110 | 16 | 90° | 35 | 110 | 16 | |
| 2SPO 160 120 110 | 2SPOC 160 120 110 | 16 | 120° | 35 | 110 | 16 | |
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2STD Carbide 2 Flutes Step Drill

초경 2날 스텝 드릴



- 프리하드강, 일반강, 주물, 비철합금 가공 드릴
- 드릴링과 면취, 카운터 작업을 동시에 가공할 수 있는 다기능 드릴입니다.
- HR 코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며 피삭재의 면조도가 향상됩니다
- 다양한 피삭재 영역에 적용이 가능합니다.

Drill for pre-hardened steel, mild steel, cast iron and non-ferrous alloy.

- A multifunctional drill capable of simultaneously processing drilling, chamfering, and counter operations.
- HR coating reduces stress on the edge and improves the surface of roughness of the workpiece.
- It can be applied to various of workpieces.



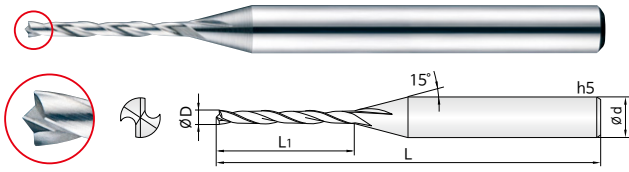
47P

| D Size | D Tolerance |
|--------------|---------------|
| Ø 3.4 ~ 5.1 | +0 ~ -0.02mm |
| Ø 6.9 ~ 10.3 | +0 ~ -0.025mm |

| Order Number | 날경 Diameter D | 탭 TAP | 날장 Length of cut L1 | 홈길이 Flute Length L2 | 전장 Overall Length L | 샹크 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 탭 TAP | 날장 Length of cut L1 | 홈길이 Flute Length L2 | 전장 Overall Length L | 샹크 Shank Dia d | 비고 |
|------------------|---------------|-------|---------------------|---------------------|---------------------|----------------|----|--------------|---------------|-------|---------------------|---------------------|---------------------|----------------|----|
| 2STD 034 080 S06 | 3.4 | M4 | 8 | 22 | 75 | 6 | | | | | | | | | |
| 2STD 034 120 S06 | 3.4 | M4 | 12 | 27 | 75 | 6 | | | | | | | | | |
| 2STD 043 100 S08 | 4.3 | M5 | 10 | 25 | 80 | 8 | | | | | | | | | |
| 2STD 043 150 S08 | 4.3 | M5 | 15 | 30 | 80 | 8 | | | | | | | | | |
| 2STD 051 120 S08 | 5.1 | M6 | 12 | 30 | 90 | 8 | | | | | | | | | |
| 2STD 051 180 S08 | 5.1 | M6 | 18 | 35 | 90 | 8 | | | | | | | | | |
| 2STD 069 160 S10 | 6.9 | M8 | 16 | 40 | 90 | 10 | | | | | | | | | |
| 2STD 069 240 S10 | 6.9 | M8 | 24 | 45 | 100 | 10 | | | | | | | | | |
| 2STD 086 200 S12 | 8.6 | M10 | 20 | 45 | 110 | 12 | | | | | | | | | |
| 2STD 086 300 S12 | 8.6 | M10 | 30 | 55 | 120 | 12 | | | | | | | | | |
| 2STD 103 240 S14 | 10.3 | M12 | 24 | 50 | 110 | 14 | | | | | | | | | |
| 2STD 103 360 S14 | 10.3 | M12 | 36 | 60 | 120 | 14 | | | | | | | | | |
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초경 2날 디버링 마이크로 드릴



- 알루미늄, 구리, 비철합금, A.B.S수지, 레진 가공 드릴
- 버를 최소화하기 위한 스페셜한 드릴 헤드 형상을 설계하였습니다.
- 드릴링 작업시 피삭재 센터의 드릴링 워킹 현상을 방지하여 정확한 드릴링 위치와 홀 크기를 제공합니다.
- 극소형 드릴링에 최적화 된 포인트 설계로 안정적인 드릴링을 구현 합니다.
- Drill for aluminium, copper, non-ferrous alloys, A.B.S and resin.
- Special drill head geometry designed to minimize burrs.
- The drill location and hole size are provided to prevent drill walking in the center of the workpiece during drilling.
- Implements stable drilling with a point design optimized for ultra-small drilling.



47P

| D Size | D Tolerance |
|--------------|---------------|
| Ø 0.15 ~ 0.2 | +0 ~ -0.005mm |
| Ø 0.21 ~ 3 | +0 ~ -0.01mm |
| Ø 3.5 ~ 6 | +0 ~ -0.015mm |

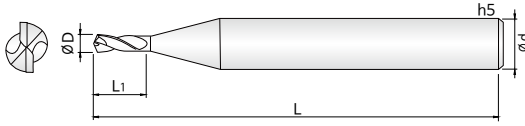
단위 : mm

| Order Number | 날경 Diameter D | 날장 Length of cut L1 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 날장 Length of cut L1 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 |
|--------------------|---------------|---------------------|---------------------|----------------|----|-------------------|---------------|---------------------|---------------------|----------------|----|
| 2DED 0015 009 S03 | 0.15 | 0.9 | 40 | 3 | | 2DED 008 040 S03 | 0.8 | 4 | 40 | 3 | |
| 2DED 0015 018 S03 | 0.15 | 1.8 | 40 | 3 | | 2DED 008 080 S03 | 0.8 | 8 | 40 | 3 | |
| 2DED 0016 009 S03 | 0.16 | 0.9 | 40 | 3 | | 2DED 0085 040 S03 | 0.85 | 4 | 40 | 3 | |
| 2DED 0016 018 S03 | 0.16 | 1.8 | 40 | 3 | | 2DED 0085 080 S03 | 0.85 | 8 | 40 | 3 | |
| 2DED 0017 009 S03 | 0.17 | 0.9 | 40 | 3 | | 2DED 009 040 S03 | 0.9 | 4 | 40 | 3 | |
| 2DED 0017 018 S03 | 0.17 | 1.8 | 40 | 3 | | 2DED 009 080 S03 | 0.9 | 8 | 40 | 3 | |
| 2DED 0018 0105 S03 | 0.18 | 1.05 | 40 | 3 | | 2DED 0095 040 S03 | 0.95 | 4 | 40 | 3 | |
| 2DED 0018 021 S03 | 0.18 | 2.1 | 40 | 3 | | 2DED 0095 080 S03 | 0.95 | 8 | 40 | 3 | |
| 2DED 0019 0105 S03 | 0.19 | 1.05 | 40 | 3 | | 2DED 010 050 S03 | 1 | 5 | 40 | 3 | |
| 2DED 0019 021 S03 | 0.19 | 2.1 | 40 | 3 | | 2DED 010 100 S03 | 1 | 10 | 40 | 3 | |
| 2DED 002 012 S03 | 0.2 | 1.2 | 40 | 3 | | 2DED 011 050 S03 | 1.1 | 5 | 40 | 3 | |
| 2DED 002 024 S03 | 0.2 | 2.4 | 40 | 3 | | 2DED 011 100 S03 | 1.1 | 10 | 40 | 3 | |
| 2DED 0021 012 S03 | 0.21 | 1.2 | 40 | 3 | | 2DED 012 050 S03 | 1.2 | 5 | 40 | 3 | |
| 2DED 0021 024 S03 | 0.21 | 2.4 | 40 | 3 | | 2DED 012 100 S03 | 1.2 | 10 | 40 | 3 | |
| 2DED 0022 013 S03 | 0.22 | 1.3 | 40 | 3 | | 2DED 013 050 S03 | 1.3 | 5 | 40 | 3 | |
| 2DED 0022 026 S03 | 0.22 | 2.6 | 40 | 3 | | 2DED 013 100 S03 | 1.3 | 10 | 40 | 3 | |
| 2DED 0023 013 S03 | 0.23 | 1.3 | 40 | 3 | | 2DED 014 050 S03 | 1.4 | 5 | 40 | 3 | |
| 2DED 0023 026 S03 | 0.23 | 2.6 | 40 | 3 | | 2DED 014 100 S03 | 1.4 | 10 | 40 | 3 | |
| 2DED 0024 013 S03 | 0.24 | 1.3 | 40 | 3 | | 2DED 015 075 S03 | 1.5 | 7.5 | 45 | 3 | |
| 2DED 0024 026 S03 | 0.24 | 2.6 | 40 | 3 | | 2DED 015 150 S03 | 1.5 | 15 | 45 | 3 | |
| 2DED 0025 015 S03 | 0.25 | 1.5 | 40 | 3 | | 2DED 016 075 S03 | 1.6 | 7.5 | 45 | 3 | |
| 2DED 0025 030 S03 | 0.25 | 3 | 40 | 3 | | 2DED 016 150 S03 | 1.6 | 15 | 45 | 3 | |
| 2DED 0026 015 S03 | 0.26 | 1.5 | 40 | 3 | | 2DED 017 075 S03 | 1.7 | 7.5 | 45 | 3 | |
| 2DED 0026 030 S03 | 0.26 | 3 | 40 | 3 | | 2DED 017 150 S03 | 1.7 | 15 | 45 | 3 | |
| 2DED 0027 015 S03 | 0.27 | 1.5 | 40 | 3 | | 2DED 018 075 S03 | 1.8 | 7.5 | 45 | 3 | |
| 2DED 0027 030 S03 | 0.27 | 3 | 40 | 3 | | 2DED 018 150 S03 | 1.8 | 15 | 45 | 3 | |
| 2DED 0028 0165 S03 | 0.28 | 1.65 | 40 | 3 | | 2DED 019 075 S03 | 1.9 | 7.5 | 45 | 3 | |
| 2DED 0028 033 S03 | 0.28 | 3.3 | 40 | 3 | | 2DED 019 150 S03 | 1.9 | 15 | 45 | 3 | |
| 2DED 0029 0165 S03 | 0.29 | 1.65 | 40 | 3 | | 2DED 020 110 S03 | 2 | 11 | 50 | 3 | |
| 2DED 0029 033 S03 | 0.29 | 3.3 | 40 | 3 | | 2DED 020 220 S03 | 2 | 22 | 50 | 3 | |
| 2DED 003 025 S03 | 0.3 | 2.5 | 40 | 3 | | 2DED 021 110 S03 | 2.1 | 11 | 50 | 3 | |
| 2DED 003 050 S03 | 0.3 | 5 | 40 | 3 | | 2DED 021 220 S03 | 2.1 | 22 | 50 | 3 | |
| 2DED 0035 025 S03 | 0.35 | 2.5 | 40 | 3 | | 2DED 022 110 S03 | 2.2 | 11 | 50 | 3 | |
| 2DED 0035 050 S03 | 0.35 | 5 | 40 | 3 | | 2DED 022 220 S03 | 2.2 | 22 | 50 | 3 | |
| 2DED 004 030 S03 | 0.4 | 3 | 40 | 3 | | 2DED 023 110 S03 | 2.3 | 11 | 50 | 3 | |
| 2DED 004 060 S03 | 0.4 | 6 | 40 | 3 | | 2DED 023 220 S03 | 2.3 | 22 | 50 | 3 | |
| 2DED 0045 030 S03 | 0.45 | 3 | 40 | 3 | | 2DED 024 110 S03 | 2.4 | 11 | 50 | 3 | |
| 2DED 0045 060 S03 | 0.45 | 6 | 40 | 3 | | 2DED 024 220 S03 | 2.4 | 22 | 50 | 3 | |
| 2DED 005 030 S03 | 0.5 | 3 | 40 | 3 | | 2DED 025 110 S03 | 2.5 | 11 | 50 | 3 | |
| 2DED 005 060 S03 | 0.5 | 6 | 40 | 3 | | 2DED 025 220 S03 | 2.5 | 22 | 50 | 3 | |
| 2DED 0055 030 S03 | 0.55 | 3 | 40 | 3 | | 2DED 026 110 S03 | 2.6 | 11 | 50 | 3 | |
| 2DED 0055 060 S03 | 0.55 | 6 | 40 | 3 | | 2DED 026 220 S03 | 2.6 | 22 | 50 | 3 | |
| 2DED 006 035 S03 | 0.6 | 3.5 | 40 | 3 | | 2DED 027 125 S03 | 2.7 | 12.5 | 50 | 3 | |
| 2DED 006 070 S03 | 0.6 | 7 | 40 | 3 | | 2DED 027 250 S03 | 2.7 | 25 | 50 | 3 | |
| 2DED 0065 035 S03 | 0.65 | 3.5 | 40 | 3 | | 2DED 028 125 S03 | 2.8 | 12.5 | 50 | 3 | |
| 2DED 0065 070 S03 | 0.65 | 7 | 40 | 3 | | 2DED 028 250 S03 | 2.8 | 25 | 50 | 3 | |
| 2DED 007 040 S03 | 0.7 | 4 | 40 | 3 | | 2DED 029 125 S03 | 2.9 | 12.5 | 50 | 3 | |
| 2DED 007 080 S03 | 0.7 | 8 | 40 | 3 | | 2DED 029 250 S03 | 2.9 | 25 | 50 | 3 | |
| 2DED 0075 040 S03 | 0.75 | 4 | 40 | 3 | | 2DED 030 125 S03 | 3 | 12.5 | 50 | 3 | |
| 2DED 0075 080 S03 | 0.75 | 8 | 40 | 3 | | 2DED 030 250 S03 | 3 | 25 | 50 | 3 | |



단위 : mm

| Order Number | 날경 Diameter D | 날장 Length of cut L1 | 전장 Overall Length L | 샙크 Dia d | 비고 | Order Number | 날경 Diameter D | 날장 Length of cut L1 | 전장 Overall Length L | 샙크 Dia d | 비고 |
|------------------|---------------------|------------------------------|------------------------------|----------------|----|--------------|---------------------|------------------------------|------------------------------|----------------|----|
| 2DED 035 175 S04 | 3.5 | 17.5 | 75 | 4 | | | | | | | |
| 2DED 035 350 S04 | 3.5 | 35 | 75 | 4 | | | | | | | |
| 2DED 040 200 S04 | 4 | 20 | 85 | 4 | | | | | | | |
| 2DED 040 400 S04 | 4 | 40 | 85 | 4 | | | | | | | |
| 2DED 045 210 S06 | 4.5 | 21 | 85 | 6 | | | | | | | |
| 2DED 045 420 S06 | 4.5 | 42 | 85 | 6 | | | | | | | |
| 2DED 050 225 S06 | 5 | 22.5 | 90 | 6 | | | | | | | |
| 2DED 050 450 S06 | 5 | 45 | 90 | 6 | | | | | | | |
| 2DED 055 225 S06 | 5.5 | 22.5 | 95 | 6 | | | | | | | |
| 2DED 055 450 S06 | 5.5 | 45 | 95 | 6 | | | | | | | |
| 2DED 060 250 S06 | 6 | 25 | 100 | 6 | | | | | | | |
| 2DED 060 500 S06 | 6 | 50 | 100 | 6 | | | | | | | |
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- 중저 탄소강, 동합금, 알루미늄용 고정도 드릴
- 다양한 규격으로 정밀 기계부품, IT부품 분야에 극소경 작업이 가능합니다.
- 특수한 인선처리로 뛰어난 고정도, 고능률 작업이 가능합니다.
- 저마찰과 내소착 및 이형성이 우수한 T-CRO코팅을 적용하여 내마모성이 뛰어납니다.

High-precision drill for low to medium carbon steel, non-ferrous alloys, and aluminum.

- Capable of ultra-precision work in the field of precision mechanical components and IT components with various specifications.
- Excellent precision and high-efficiency operations are possible with special edge treatment.
- Outstanding wear resistance with the application of T-CRO coating, which has low friction, superior adhesion resistance, and deformability.

2
미립자

WC
미립자

TCRO
COATING

h7
Diameter Tolerance

30°
Helix Angle

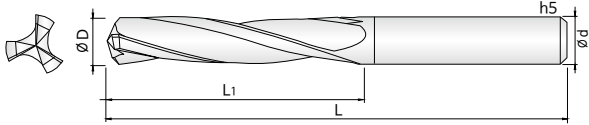
130°

CUTTING DATA

48P

단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 생크 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 생크 Shank Dia d | 비고 |
|-------------------|---------------------|---------------------------|---------------------------|----------------------|----|-------------------|---------------------|---------------------------|---------------------------|----------------------|----|
| 2MID 005 015 S03 | 0.5 | 1.5 | 40 | 3 | | 2MID 025 075 S03 | 2.5 | 7.5 | 40 | 3 | |
| 2MID 005 025 S03 | 0.5 | 2.5 | 40 | 3 | | 2MID 0255 078 S03 | 2.55 | 7.8 | 40 | 3 | |
| 2MID 0055 018 S03 | 0.55 | 1.8 | 40 | 3 | | 2MID 026 078 S03 | 2.6 | 7.8 | 40 | 3 | |
| 2MID 0055 030 S03 | 0.55 | 3 | 40 | 3 | | 2MID 0265 081 S03 | 2.65 | 8.1 | 40 | 3 | |
| 2MID 006 018 S03 | 0.6 | 1.8 | 40 | 3 | | 2MID 027 081 S03 | 2.7 | 8.1 | 40 | 3 | |
| 2MID 006 030 S03 | 0.6 | 3 | 40 | 3 | | 2MID 0275 084 S03 | 2.75 | 8.4 | 40 | 3 | |
| 2MID 0065 021 S03 | 0.65 | 2.1 | 40 | 3 | | 2MID 028 084 S03 | 2.8 | 8.4 | 40 | 3 | |
| 2MID 0065 035 S03 | 0.65 | 3.5 | 40 | 3 | | 2MID 0285 087 S03 | 2.85 | 8.7 | 40 | 3 | |
| 2MID 007 021 S03 | 0.7 | 2.1 | 40 | 3 | | 2MID 029 087 S03 | 2.9 | 8.7 | 40 | 3 | |
| 2MID 007 035 S03 | 0.7 | 3.5 | 40 | 3 | | 2MID 0295 090 S03 | 2.95 | 9 | 40 | 3 | |
| 2MID 0075 024 S03 | 0.75 | 2.4 | 40 | 3 | | 2MID 030 090 S03 | 3 | 9 | 40 | 3 | |
| 2MID 0075 040 S03 | 0.75 | 4 | 40 | 3 | | | | | | | |
| 2MID 008 024 S03 | 0.8 | 2.4 | 40 | 3 | | | | | | | |
| 2MID 008 040 S03 | 0.8 | 4 | 40 | 3 | | | | | | | |
| 2MID 0085 027 S03 | 0.85 | 2.7 | 40 | 3 | | | | | | | |
| 2MID 0085 045 S03 | 0.85 | 4.5 | 40 | 3 | | | | | | | |
| 2MID 009 027 S03 | 0.9 | 2.7 | 40 | 3 | | | | | | | |
| 2MID 009 045 S03 | 0.9 | 4.5 | 40 | 3 | | | | | | | |
| 2MID 0095 030 S03 | 0.95 | 3 | 40 | 3 | | | | | | | |
| 2MID 0095 050 S03 | 0.95 | 5 | 40 | 3 | | | | | | | |
| 2MID 010 030 S03 | 1 | 3 | 40 | 3 | | | | | | | |
| 2MID 0105 033 S03 | 1.05 | 3.3 | 40 | 3 | | | | | | | |
| 2MID 011 033 S03 | 1.1 | 3.3 | 40 | 3 | | | | | | | |
| 2MID 0115 036 S03 | 1.15 | 3.6 | 40 | 3 | | | | | | | |
| 2MID 012 036 S03 | 1.2 | 3.6 | 40 | 3 | | | | | | | |
| 2MID 0125 039 S03 | 1.25 | 3.9 | 40 | 3 | | | | | | | |
| 2MID 013 039 S03 | 1.3 | 3.9 | 40 | 3 | | | | | | | |
| 2MID 0135 042 S03 | 1.35 | 4.2 | 40 | 3 | | | | | | | |
| 2MID 014 042 S03 | 1.4 | 4.2 | 40 | 3 | | | | | | | |
| 2MID 0145 045 S03 | 1.45 | 4.5 | 40 | 3 | | | | | | | |
| 2MID 015 045 S03 | 1.5 | 4.5 | 40 | 3 | | | | | | | |
| 2MID 0155 048 S03 | 1.55 | 4.8 | 40 | 3 | | | | | | | |
| 2MID 016 048 S03 | 1.6 | 4.8 | 40 | 3 | | | | | | | |
| 2MID 0165 051 S03 | 1.65 | 5.1 | 40 | 3 | | | | | | | |
| 2MID 017 051 S03 | 1.7 | 5.1 | 40 | 3 | | | | | | | |
| 2MID 0175 054 S03 | 1.75 | 5.4 | 40 | 3 | | | | | | | |
| 2MID 018 054 S03 | 1.8 | 5.4 | 40 | 3 | | | | | | | |
| 2MID 0185 057 S03 | 1.85 | 5.7 | 40 | 3 | | | | | | | |
| 2MID 019 057 S03 | 1.9 | 5.7 | 40 | 3 | | | | | | | |
| 2MID 0195 060 S03 | 1.95 | 6 | 40 | 3 | | | | | | | |
| 2MID 020 060 S03 | 2 | 6 | 40 | 3 | | | | | | | |
| 2MID 0205 063 S03 | 2.05 | 6.3 | 40 | 3 | | | | | | | |
| 2MID 021 063 S03 | 2.1 | 6.3 | 40 | 3 | | | | | | | |
| 2MID 0215 066 S03 | 2.15 | 6.6 | 40 | 3 | | | | | | | |
| 2MID 022 066 S03 | 2.2 | 6.6 | 40 | 3 | | | | | | | |
| 2MID 0225 069 S03 | 2.25 | 6.9 | 40 | 3 | | | | | | | |
| 2MID 023 069 S03 | 2.3 | 6.9 | 40 | 3 | | | | | | | |
| 2MID 0235 072 S03 | 2.35 | 7.2 | 40 | 3 | | | | | | | |
| 2MID 024 072 S03 | 2.4 | 7.2 | 40 | 3 | | | | | | | |
| 2MID 0245 075 S03 | 2.45 | 7.5 | 40 | 3 | | | | | | | |



- 고경도강(HRc52~65), 열처리강 계열의 강력 드릴
- HR코팅으로 내열성과 내마모성이 우수, 긴 공구수명을 실현 하였습니다.
- 칩핑을 최소화 하는 Point thinning을 적용 하였습니다.
- 140도와 90도의 선단각과 최적의 플루트 형상 설계로 공구의 성능을 극대화하였습니다.
- 칩 배출력과 드릴의 강성을 고려한 플루트 홈 설계로 안정적인 드릴링을 구현합니다.

Powerful drill for hardened steel(HRc52~65) and heat-treated steel.

- Longer tool life HR coating which provides excellent heat resistance and wear resistance.
- Point thinning was applied to minimize chipping.
- With an optimal flute design and 90 and 140-degree point angle, the tool's performance is maximized.
- Implements stable drilling with a flute groove design considering chip evacuation and drill rigidity.



48P

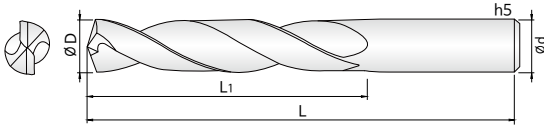
단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 |
|--------------------|---------------------|---------------------------|---------------------------|----------------------|----|--------------------|---------------------|---------------------------|---------------------------|----------------------|----|
| 3DUBEH 010 060 S03 | 1 | 6 | 40 | 3 | | 3DUBEH 060 270 S06 | 6 | 27 | 65 | 6 | |
| 3DUBEH 011 060 S03 | 1.1 | 6 | 40 | 3 | | 3DUBEH 061 310 S08 | 6.1 | 31 | 75 | 8 | |
| 3DUBEH 012 060 S03 | 1.2 | 6 | 40 | 3 | | 3DUBEH 062 310 S08 | 6.2 | 31 | 75 | 8 | |
| 3DUBEH 013 080 S03 | 1.3 | 8 | 40 | 3 | | 3DUBEH 063 310 S08 | 6.3 | 31 | 75 | 8 | |
| 3DUBEH 014 080 S03 | 1.4 | 8 | 40 | 3 | | 3DUBEH 064 310 S08 | 6.4 | 31 | 75 | 8 | |
| 3DUBEH 015 080 S03 | 1.5 | 8 | 40 | 3 | | 3DUBEH 065 310 S08 | 6.5 | 31 | 75 | 8 | |
| 3DUBEH 016 100 S03 | 1.6 | 10 | 40 | 3 | | 3DUBEH 066 330 S08 | 6.6 | 33 | 75 | 8 | |
| 3DUBEH 017 100 S03 | 1.7 | 10 | 40 | 3 | | 3DUBEH 067 330 S08 | 6.7 | 33 | 75 | 8 | |
| 3DUBEH 018 100 S03 | 1.8 | 10 | 40 | 3 | | 3DUBEH 068 330 S08 | 6.8 | 33 | 75 | 8 | |
| 3DUBEH 019 100 S03 | 1.9 | 10 | 40 | 3 | | 3DUBEH 069 330 S08 | 6.9 | 33 | 75 | 8 | |
| 3DUBEH 020 120 S03 | 2 | 12 | 45 | 3 | | 3DUBEH 070 330 S08 | 7 | 33 | 75 | 8 | |
| 3DUBEH 021 120 S03 | 2.1 | 12 | 45 | 3 | | 3DUBEH 071 330 S08 | 7.1 | 33 | 80 | 8 | |
| 3DUBEH 022 120 S03 | 2.2 | 12 | 45 | 3 | | 3DUBEH 072 330 S08 | 7.2 | 33 | 80 | 8 | |
| 3DUBEH 023 120 S03 | 2.3 | 12 | 45 | 3 | | 3DUBEH 073 330 S08 | 7.3 | 33 | 80 | 8 | |
| 3DUBEH 024 120 S03 | 2.4 | 12 | 45 | 3 | | 3DUBEH 074 330 S08 | 7.4 | 33 | 80 | 8 | |
| 3DUBEH 025 130 S03 | 2.5 | 13 | 45 | 3 | | 3DUBEH 075 330 S08 | 7.5 | 33 | 80 | 8 | |
| 3DUBEH 026 130 S03 | 2.6 | 13 | 45 | 3 | | 3DUBEH 076 360 S08 | 7.6 | 36 | 80 | 8 | |
| 3DUBEH 027 130 S03 | 2.7 | 13 | 45 | 3 | | 3DUBEH 077 360 S08 | 7.7 | 36 | 80 | 8 | |
| 3DUBEH 028 130 S03 | 2.8 | 13 | 45 | 3 | | 3DUBEH 078 360 S08 | 7.8 | 36 | 80 | 8 | |
| 3DUBEH 029 130 S03 | 2.9 | 13 | 45 | 3 | | 3DUBEH 079 360 S08 | 7.9 | 36 | 80 | 8 | |
| 3DUBEH 030 130 S03 | 3 | 13 | 45 | 3 | | 3DUBEH 080 360 S08 | 8 | 36 | 80 | 8 | |
| 3DUBEH 031 190 S04 | 3.1 | 19 | 55 | 4 | | 3DUBEH 081 360 S10 | 8.1 | 36 | 85 | 10 | |
| 3DUBEH 032 190 S04 | 3.2 | 19 | 55 | 4 | | 3DUBEH 082 360 S10 | 8.2 | 36 | 85 | 10 | |
| 3DUBEH 033 190 S04 | 3.3 | 19 | 55 | 4 | | 3DUBEH 083 360 S10 | 8.3 | 36 | 85 | 10 | |
| 3DUBEH 034 190 S04 | 3.4 | 19 | 55 | 4 | | 3DUBEH 084 360 S10 | 8.4 | 36 | 85 | 10 | |
| 3DUBEH 035 190 S04 | 3.5 | 19 | 55 | 4 | | 3DUBEH 085 360 S10 | 8.5 | 36 | 85 | 10 | |
| 3DUBEH 036 210 S04 | 3.6 | 21 | 55 | 4 | | 3DUBEH 086 380 S10 | 8.6 | 38 | 85 | 10 | |
| 3DUBEH 037 210 S04 | 3.7 | 21 | 55 | 4 | | 3DUBEH 087 380 S10 | 8.7 | 38 | 85 | 10 | |
| 3DUBEH 038 210 S04 | 3.8 | 21 | 55 | 4 | | 3DUBEH 088 380 S10 | 8.8 | 38 | 85 | 10 | |
| 3DUBEH 039 210 S04 | 3.9 | 21 | 55 | 4 | | 3DUBEH 089 380 S10 | 8.9 | 38 | 85 | 10 | |
| 3DUBEH 040 210 S04 | 4 | 21 | 55 | 4 | | 3DUBEH 090 380 S10 | 9 | 38 | 85 | 10 | |
| 3DUBEH 041 230 S06 | 4.1 | 23 | 60 | 6 | | 3DUBEH 091 380 S10 | 9.1 | 38 | 90 | 10 | |
| 3DUBEH 042 230 S06 | 4.2 | 23 | 60 | 6 | | 3DUBEH 092 380 S10 | 9.2 | 38 | 90 | 10 | |
| 3DUBEH 043 230 S06 | 4.3 | 23 | 60 | 6 | | 3DUBEH 093 380 S10 | 9.3 | 38 | 90 | 10 | |
| 3DUBEH 044 230 S06 | 4.4 | 23 | 60 | 6 | | 3DUBEH 094 380 S10 | 9.4 | 38 | 90 | 10 | |
| 3DUBEH 045 230 S06 | 4.5 | 23 | 60 | 6 | | 3DUBEH 095 380 S10 | 9.5 | 38 | 90 | 10 | |
| 3DUBEH 046 250 S06 | 4.6 | 25 | 60 | 6 | | 3DUBEH 096 410 S10 | 9.6 | 41 | 90 | 10 | |
| 3DUBEH 047 250 S06 | 4.7 | 25 | 60 | 6 | | 3DUBEH 097 410 S10 | 9.7 | 41 | 90 | 10 | |
| 3DUBEH 048 250 S06 | 4.8 | 25 | 60 | 6 | | 3DUBEH 098 410 S10 | 9.8 | 41 | 90 | 10 | |
| 3DUBEH 049 250 S06 | 4.9 | 25 | 60 | 6 | | 3DUBEH 099 410 S10 | 9.9 | 41 | 90 | 10 | |
| 3DUBEH 050 250 S06 | 5 | 25 | 60 | 6 | | 3DUBEH 100 410 S10 | 10 | 41 | 90 | 10 | |
| 3DUBEH 051 250 S06 | 5.1 | 25 | 65 | 6 | | 3DUBEH 101 410 S12 | 10.1 | 41 | 95 | 12 | |
| 3DUBEH 052 250 S06 | 5.2 | 25 | 65 | 6 | | 3DUBEH 102 410 S12 | 10.2 | 41 | 95 | 12 | |
| 3DUBEH 053 250 S06 | 5.3 | 25 | 65 | 6 | | 3DUBEH 103 410 S12 | 10.3 | 41 | 95 | 12 | |
| 3DUBEH 054 250 S06 | 5.4 | 25 | 65 | 6 | | 3DUBEH 104 410 S12 | 10.4 | 41 | 95 | 12 | |
| 3DUBEH 055 250 S06 | 5.5 | 25 | 65 | 6 | | 3DUBEH 105 410 S12 | 10.5 | 41 | 95 | 12 | |
| 3DUBEH 056 270 S06 | 5.6 | 27 | 65 | 6 | | 3DUBEH 106 450 S12 | 10.6 | 45 | 95 | 12 | |
| 3DUBEH 057 270 S06 | 5.7 | 27 | 65 | 6 | | 3DUBEH 107 450 S12 | 10.7 | 45 | 95 | 12 | |
| 3DUBEH 058 270 S06 | 5.8 | 27 | 65 | 6 | | 3DUBEH 108 450 S12 | 10.8 | 45 | 95 | 12 | |
| 3DUBEH 059 270 S06 | 5.9 | 27 | 65 | 6 | | 3DUBEH 109 450 S12 | 10.9 | 45 | 95 | 12 | |

단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 생크 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 생크 Shank Dia d | 비고 |
|--------------------|---------------------|---------------------------|---------------------------|----------------------|----|--------------|---------------------|---------------------------|---------------------------|----------------------|----|
| 3DUBEH 110 450 S12 | 11 | 45 | 95 | 12 | | | | | | | |
| 3DUBEH 111 450 S12 | 11.1 | 45 | 100 | 12 | | | | | | | |
| 3DUBEH 112 450 S12 | 11.2 | 45 | 100 | 12 | | | | | | | |
| 3DUBEH 113 450 S12 | 11.3 | 45 | 100 | 12 | | | | | | | |
| 3DUBEH 114 450 S12 | 11.4 | 45 | 100 | 12 | | | | | | | |
| 3DUBEH 115 450 S12 | 11.5 | 45 | 100 | 12 | | | | | | | |
| 3DUBEH 116 470 S12 | 11.6 | 47 | 100 | 12 | | | | | | | |
| 3DUBEH 117 470 S12 | 11.7 | 47 | 100 | 12 | | | | | | | |
| 3DUBEH 118 470 S12 | 11.8 | 47 | 100 | 12 | | | | | | | |
| 3DUBEH 119 470 S12 | 11.9 | 47 | 100 | 12 | | | | | | | |
| 3DUBEH 120 470 S12 | 12 | 47 | 100 | 12 | | | | | | | |
| 3DUBEH 130 490 S14 | 13 | 49 | 100 | 14 | | | | | | | |
| 3DUBEH 140 520 S14 | 14 | 52 | 110 | 14 | | | | | | | |
| 3DUBEH 150 530 S16 | 15 | 53 | 110 | 16 | | | | | | | |
| 3DUBEH 160 550 S16 | 16 | 55 | 120 | 16 | | | | | | | |
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초경 2날 두배 S 드릴 [3XD]



- HRc48이하, NAK, SCM, 열처리강용 강력 드릴
- 우수한 내마모성의 HR코팅을 적용하여 장시간 가공에 적합합니다.
- 절삭 저항을 최소화하는 Point thinning을 채택 하였습니다.
- 열 배출의 최적화 된 형상으로 안정적인 공구의 수명을 유지합니다.
- 칩 배출력과 드릴의 강성을 고려한 플루트 홈 설계를 적용하여 우수한 칩배출을 실현합니다.

- Powerful drill for materials up to HRc48, NAK, SCM, and heat-treated steel.
- Suitable for long-term machining with excellent wear resistance HR coating.
- Adopted Point thinning to minimize cutting resistance.
- Maintains the stable lifespan of the tool with an optimized shape for heat dissipation.
- Achieves excellent chip evacuation with flute groove design considering chip evacuation and drill rigidity.



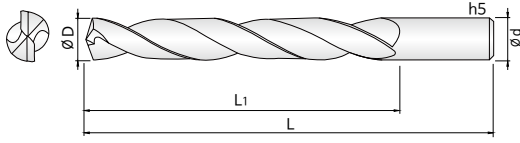
49P

단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 |
|--------------------|---------------------|---------------------------|---------------------------|----------------------|----|--------------------|---------------------|---------------------------|---------------------------|----------------------|----|
| 2DUBES 010 080 S03 | 1 | 8 | 40 | 3 | | 2DUBES 060 280 S06 | 6 | 28 | 65 | 6 | |
| 2DUBES 011 080 S03 | 1.1 | 8 | 40 | 3 | | 2DUBES 061 340 S08 | 6.1 | 34 | 80 | 8 | |
| 2DUBES 012 080 S03 | 1.2 | 8 | 40 | 3 | | 2DUBES 062 340 S08 | 6.2 | 34 | 80 | 8 | |
| 2DUBES 013 080 S03 | 1.3 | 8 | 40 | 3 | | 2DUBES 063 340 S08 | 6.3 | 34 | 80 | 8 | |
| 2DUBES 014 080 S03 | 1.4 | 8 | 40 | 3 | | 2DUBES 064 340 S08 | 6.4 | 34 | 80 | 8 | |
| 2DUBES 015 080 S03 | 1.5 | 8 | 50 | 3 | | 2DUBES 065 340 S08 | 6.5 | 34 | 80 | 8 | |
| 2DUBES 016 080 S03 | 1.6 | 8 | 50 | 3 | | 2DUBES 066 340 S08 | 6.6 | 34 | 80 | 8 | |
| 2DUBES 017 100 S03 | 1.7 | 10 | 50 | 3 | | 2DUBES 067 340 S08 | 6.7 | 34 | 80 | 8 | |
| 2DUBES 018 100 S03 | 1.8 | 10 | 50 | 3 | | 2DUBES 068 340 S08 | 6.8 | 34 | 80 | 8 | |
| 2DUBES 019 100 S03 | 1.9 | 10 | 50 | 3 | | 2DUBES 069 340 S08 | 6.9 | 34 | 80 | 8 | |
| 2DUBES 020 160 S04 | 2 | 16 | 50 | 4 | | 2DUBES 070 340 S08 | 7 | 34 | 80 | 8 | |
| 2DUBES 021 160 S04 | 2.1 | 16 | 50 | 4 | | 2DUBES 071 410 S08 | 7.1 | 41 | 80 | 8 | |
| 2DUBES 022 160 S04 | 2.2 | 16 | 50 | 4 | | 2DUBES 072 410 S08 | 7.2 | 41 | 80 | 8 | |
| 2DUBES 023 160 S04 | 2.3 | 16 | 50 | 4 | | 2DUBES 073 410 S08 | 7.3 | 41 | 80 | 8 | |
| 2DUBES 024 160 S04 | 2.4 | 16 | 50 | 4 | | 2DUBES 074 410 S08 | 7.4 | 41 | 80 | 8 | |
| 2DUBES 025 200 S04 | 2.5 | 20 | 50 | 4 | | 2DUBES 075 410 S08 | 7.5 | 41 | 80 | 8 | |
| 2DUBES 026 200 S04 | 2.6 | 20 | 50 | 4 | | 2DUBES 076 410 S08 | 7.6 | 41 | 80 | 8 | |
| 2DUBES 027 200 S04 | 2.7 | 20 | 50 | 4 | | 2DUBES 077 410 S08 | 7.7 | 41 | 80 | 8 | |
| 2DUBES 028 200 S04 | 2.8 | 20 | 50 | 4 | | 2DUBES 078 410 S08 | 7.8 | 41 | 80 | 8 | |
| 2DUBES 029 200 S04 | 2.9 | 20 | 50 | 4 | | 2DUBES 079 410 S08 | 7.9 | 41 | 80 | 8 | |
| 2DUBES 030 200 S06 | 3 | 20 | 60 | 6 | | 2DUBES 080 410 S08 | 8 | 41 | 80 | 8 | |
| 2DUBES 031 200 S06 | 3.1 | 20 | 60 | 6 | | 2DUBES 081 470 S10 | 8.1 | 47 | 90 | 10 | |
| 2DUBES 032 200 S06 | 3.2 | 20 | 60 | 6 | | 2DUBES 082 470 S10 | 8.2 | 47 | 90 | 10 | |
| 2DUBES 033 200 S06 | 3.3 | 20 | 60 | 6 | | 2DUBES 083 470 S10 | 8.3 | 47 | 90 | 10 | |
| 2DUBES 034 200 S06 | 3.4 | 20 | 60 | 6 | | 2DUBES 084 470 S10 | 8.4 | 47 | 90 | 10 | |
| 2DUBES 035 200 S06 | 3.5 | 20 | 60 | 6 | | 2DUBES 085 470 S10 | 8.5 | 47 | 90 | 10 | |
| 2DUBES 036 200 S06 | 3.6 | 20 | 60 | 6 | | 2DUBES 086 470 S10 | 8.6 | 47 | 90 | 10 | |
| 2DUBES 037 200 S06 | 3.7 | 20 | 60 | 6 | | 2DUBES 087 470 S10 | 8.7 | 47 | 90 | 10 | |
| 2DUBES 038 240 S06 | 3.8 | 24 | 65 | 6 | | 2DUBES 088 470 S10 | 8.8 | 47 | 90 | 10 | |
| 2DUBES 039 240 S06 | 3.9 | 24 | 65 | 6 | | 2DUBES 089 470 S10 | 8.9 | 47 | 90 | 10 | |
| 2DUBES 040 240 S06 | 4 | 24 | 65 | 6 | | 2DUBES 090 470 S10 | 9 | 47 | 90 | 10 | |
| 2DUBES 041 240 S06 | 4.1 | 24 | 65 | 6 | | 2DUBES 091 470 S10 | 9.1 | 47 | 90 | 10 | |
| 2DUBES 042 240 S06 | 4.2 | 24 | 65 | 6 | | 2DUBES 092 470 S10 | 9.2 | 47 | 90 | 10 | |
| 2DUBES 043 240 S06 | 4.3 | 24 | 65 | 6 | | 2DUBES 093 470 S10 | 9.3 | 47 | 90 | 10 | |
| 2DUBES 044 240 S06 | 4.4 | 24 | 65 | 6 | | 2DUBES 094 470 S10 | 9.4 | 47 | 90 | 10 | |
| 2DUBES 045 240 S06 | 4.5 | 24 | 65 | 6 | | 2DUBES 095 470 S10 | 9.5 | 47 | 90 | 10 | |
| 2DUBES 046 240 S06 | 4.6 | 24 | 65 | 6 | | 2DUBES 096 470 S10 | 9.6 | 47 | 90 | 10 | |
| 2DUBES 047 240 S06 | 4.7 | 24 | 65 | 6 | | 2DUBES 097 470 S10 | 9.7 | 47 | 90 | 10 | |
| 2DUBES 048 280 S06 | 4.8 | 28 | 65 | 6 | | 2DUBES 098 470 S10 | 9.8 | 47 | 90 | 10 | |
| 2DUBES 049 280 S06 | 4.9 | 28 | 65 | 6 | | 2DUBES 099 470 S10 | 9.9 | 47 | 90 | 10 | |
| 2DUBES 050 280 S06 | 5 | 28 | 65 | 6 | | 2DUBES 100 470 S10 | 10 | 47 | 90 | 10 | |
| 2DUBES 051 280 S06 | 5.1 | 28 | 65 | 6 | | 2DUBES 101 550 S12 | 10.1 | 55 | 100 | 12 | |
| 2DUBES 052 280 S06 | 5.2 | 28 | 65 | 6 | | 2DUBES 102 550 S12 | 10.2 | 55 | 100 | 12 | |
| 2DUBES 053 280 S06 | 5.3 | 28 | 65 | 6 | | 2DUBES 103 550 S12 | 10.3 | 55 | 100 | 12 | |
| 2DUBES 054 280 S06 | 5.4 | 28 | 65 | 6 | | 2DUBES 104 550 S12 | 10.4 | 55 | 100 | 12 | |
| 2DUBES 055 280 S06 | 5.5 | 28 | 65 | 6 | | 2DUBES 105 550 S12 | 10.5 | 55 | 100 | 12 | |
| 2DUBES 056 280 S06 | 5.6 | 28 | 65 | 6 | | 2DUBES 106 550 S12 | 10.6 | 55 | 100 | 12 | |
| 2DUBES 057 280 S06 | 5.7 | 28 | 65 | 6 | | 2DUBES 107 550 S12 | 10.7 | 55 | 100 | 12 | |
| 2DUBES 058 280 S06 | 5.8 | 28 | 65 | 6 | | 2DUBES 108 550 S12 | 10.8 | 55 | 100 | 12 | |
| 2DUBES 059 280 S06 | 5.9 | 28 | 65 | 6 | | 2DUBES 109 550 S12 | 10.9 | 55 | 100 | 12 | |

단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Dia d | 비고 |
|--------------------|---------------------|------------------------------|------------------------------|----------------|----|--------------------|---------------------|------------------------------|------------------------------|----------------|----|
| 2DUBES 110 550 S12 | 11 | 55 | 100 | 12 | | 2DUBES 160 650 S16 | 16 | 65 | 115 | 16 | |
| 2DUBES 111 550 S12 | 11.1 | 55 | 100 | 12 | | 2DUBES 161 730 S18 | 16.1 | 73 | 125 | 18 | |
| 2DUBES 112 550 S12 | 11.2 | 55 | 100 | 12 | | 2DUBES 162 730 S18 | 16.2 | 73 | 125 | 18 | |
| 2DUBES 113 550 S12 | 11.3 | 55 | 100 | 12 | | 2DUBES 163 730 S18 | 16.3 | 73 | 125 | 18 | |
| 2DUBES 114 550 S12 | 11.4 | 55 | 100 | 12 | | 2DUBES 164 730 S18 | 16.4 | 73 | 125 | 18 | |
| 2DUBES 115 550 S12 | 11.5 | 55 | 100 | 12 | | 2DUBES 165 730 S18 | 16.5 | 73 | 125 | 18 | |
| 2DUBES 116 550 S12 | 11.6 | 55 | 100 | 12 | | 2DUBES 166 730 S18 | 16.6 | 73 | 125 | 18 | |
| 2DUBES 117 550 S12 | 11.7 | 55 | 100 | 12 | | 2DUBES 167 730 S18 | 16.7 | 73 | 125 | 18 | |
| 2DUBES 118 550 S12 | 11.8 | 55 | 100 | 12 | | 2DUBES 168 730 S18 | 16.8 | 73 | 125 | 18 | |
| 2DUBES 119 550 S12 | 11.9 | 55 | 100 | 12 | | 2DUBES 169 730 S18 | 16.9 | 73 | 125 | 18 | |
| 2DUBES 120 550 S12 | 12 | 55 | 100 | 12 | | 2DUBES 170 730 S18 | 17 | 73 | 125 | 18 | |
| 2DUBES 121 600 S14 | 12.1 | 60 | 100 | 14 | | 2DUBES 171 730 S18 | 17.1 | 73 | 125 | 18 | |
| 2DUBES 122 600 S14 | 12.2 | 60 | 100 | 14 | | 2DUBES 172 730 S18 | 17.2 | 73 | 125 | 18 | |
| 2DUBES 123 600 S14 | 12.3 | 60 | 100 | 14 | | 2DUBES 173 730 S18 | 17.3 | 73 | 125 | 18 | |
| 2DUBES 124 600 S14 | 12.4 | 60 | 100 | 14 | | 2DUBES 174 730 S18 | 17.4 | 73 | 125 | 18 | |
| 2DUBES 125 600 S14 | 12.5 | 60 | 100 | 14 | | 2DUBES 175 730 S18 | 17.5 | 73 | 125 | 18 | |
| 2DUBES 126 600 S14 | 12.6 | 60 | 100 | 14 | | 2DUBES 176 730 S18 | 17.6 | 73 | 125 | 18 | |
| 2DUBES 127 600 S14 | 12.7 | 60 | 100 | 14 | | 2DUBES 177 730 S18 | 17.7 | 73 | 125 | 18 | |
| 2DUBES 128 600 S14 | 12.8 | 60 | 100 | 14 | | 2DUBES 178 730 S18 | 17.8 | 73 | 125 | 18 | |
| 2DUBES 129 600 S14 | 12.9 | 60 | 100 | 14 | | 2DUBES 179 730 S18 | 17.9 | 73 | 125 | 18 | |
| 2DUBES 130 600 S14 | 13 | 60 | 100 | 14 | | 2DUBES 180 730 S18 | 18 | 73 | 125 | 18 | |
| 2DUBES 131 600 S14 | 13.1 | 60 | 100 | 14 | | 2DUBES 181 790 S20 | 18.1 | 79 | 130 | 20 | |
| 2DUBES 132 600 S14 | 13.2 | 60 | 105 | 14 | | 2DUBES 182 790 S20 | 18.2 | 79 | 130 | 20 | |
| 2DUBES 133 600 S14 | 13.3 | 60 | 105 | 14 | | 2DUBES 183 790 S20 | 18.3 | 79 | 130 | 20 | |
| 2DUBES 134 600 S14 | 13.4 | 60 | 105 | 14 | | 2DUBES 184 790 S20 | 18.4 | 79 | 130 | 20 | |
| 2DUBES 135 600 S14 | 13.5 | 60 | 105 | 14 | | 2DUBES 185 790 S20 | 18.5 | 79 | 130 | 20 | |
| 2DUBES 136 600 S14 | 13.6 | 60 | 105 | 14 | | 2DUBES 186 790 S20 | 18.6 | 79 | 130 | 20 | |
| 2DUBES 137 600 S14 | 13.7 | 60 | 105 | 14 | | 2DUBES 187 790 S20 | 18.7 | 79 | 130 | 20 | |
| 2DUBES 138 600 S14 | 13.8 | 60 | 105 | 14 | | 2DUBES 188 790 S20 | 18.8 | 79 | 130 | 20 | |
| 2DUBES 139 600 S14 | 13.9 | 60 | 105 | 14 | | 2DUBES 189 790 S20 | 18.9 | 79 | 130 | 20 | |
| 2DUBES 140 600 S14 | 14 | 60 | 105 | 14 | | 2DUBES 190 790 S20 | 19 | 79 | 130 | 20 | |
| 2DUBES 141 650 S16 | 14.1 | 65 | 110 | 16 | | 2DUBES 191 790 S20 | 19.1 | 79 | 130 | 20 | |
| 2DUBES 142 650 S16 | 14.2 | 65 | 110 | 16 | | 2DUBES 192 790 S20 | 19.2 | 79 | 130 | 20 | |
| 2DUBES 143 650 S16 | 14.3 | 65 | 110 | 16 | | 2DUBES 193 790 S20 | 19.3 | 79 | 130 | 20 | |
| 2DUBES 144 650 S16 | 14.4 | 65 | 110 | 16 | | 2DUBES 194 790 S20 | 19.4 | 79 | 130 | 20 | |
| 2DUBES 145 650 S16 | 14.5 | 65 | 110 | 16 | | 2DUBES 195 790 S20 | 19.5 | 79 | 130 | 20 | |
| 2DUBES 146 650 S16 | 14.6 | 65 | 110 | 16 | | 2DUBES 196 790 S20 | 19.6 | 79 | 130 | 20 | |
| 2DUBES 147 650 S16 | 14.7 | 65 | 110 | 16 | | 2DUBES 197 790 S20 | 19.7 | 79 | 130 | 20 | |
| 2DUBES 148 650 S16 | 14.8 | 65 | 110 | 16 | | 2DUBES 198 790 S20 | 19.8 | 79 | 130 | 20 | |
| 2DUBES 149 650 S16 | 14.9 | 65 | 110 | 16 | | 2DUBES 199 790 S20 | 19.9 | 79 | 130 | 20 | |
| 2DUBES 150 650 S16 | 15 | 65 | 110 | 16 | | 2DUBES 200 790 S20 | 20 | 79 | 130 | 20 | |
| 2DUBES 151 650 S16 | 15.1 | 65 | 110 | 16 | | | | | | | |
| 2DUBES 152 650 S16 | 15.2 | 65 | 115 | 16 | | | | | | | |
| 2DUBES 153 650 S16 | 15.3 | 65 | 115 | 16 | | | | | | | |
| 2DUBES 154 650 S16 | 15.4 | 65 | 115 | 16 | | | | | | | |
| 2DUBES 155 650 S16 | 15.5 | 65 | 115 | 16 | | | | | | | |
| 2DUBES 156 650 S16 | 15.6 | 65 | 115 | 16 | | | | | | | |
| 2DUBES 157 650 S16 | 15.7 | 65 | 115 | 16 | | | | | | | |
| 2DUBES 158 650 S16 | 15.8 | 65 | 115 | 16 | | | | | | | |
| 2DUBES 159 650 S16 | 15.9 | 65 | 115 | 16 | | | | | | | |



- HRc48이하, NAK, SCM, 열처리강용 강력 드릴
- 우수한 내마모성의 HR코팅을 적용하여 장시간 가공에 적합합니다.
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- Powerful drill for materials up to HRc48, NAK, SCM, and heat-treated steel.
- Suitable for long-term machining with excellent wear resistance HR coating.
- Adopted Point thinning to minimize cutting resistance.
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- Achieves excellent chip evacuation with flute groove design considering chip evacuation and drill rigidity.



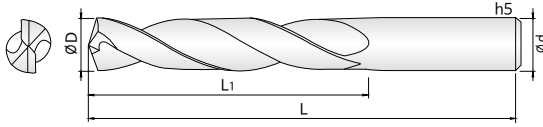
49P

단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 |
|--------------------|---------------------|---------------------------|---------------------------|----------------------|----|--------------------|---------------------|---------------------------|---------------------------|----------------------|----|
| 2DUBES 010 100 S03 | 1 | 10 | 55 | 3 | | 2DUBES 060 440 S06 | 6 | 44 | 80 | 6 | |
| 2DUBES 011 120 S03 | 1.1 | 12 | 55 | 3 | | 2DUBES 061 530 S08 | 6.1 | 53 | 90 | 8 | |
| 2DUBES 012 120 S03 | 1.2 | 12 | 55 | 3 | | 2DUBES 062 530 S08 | 6.2 | 53 | 90 | 8 | |
| 2DUBES 013 120 S03 | 1.3 | 12 | 55 | 3 | | 2DUBES 063 530 S08 | 6.3 | 53 | 90 | 8 | |
| 2DUBES 014 120 S03 | 1.4 | 12 | 55 | 3 | | 2DUBES 064 530 S08 | 6.4 | 53 | 90 | 8 | |
| 2DUBES 015 120 S03 | 1.5 | 12 | 55 | 3 | | 2DUBES 065 530 S08 | 6.5 | 53 | 90 | 8 | |
| 2DUBES 016 160 S03 | 1.6 | 16 | 55 | 3 | | 2DUBES 066 530 S08 | 6.6 | 53 | 90 | 8 | |
| 2DUBES 017 160 S03 | 1.7 | 16 | 55 | 3 | | 2DUBES 067 530 S08 | 6.7 | 53 | 90 | 8 | |
| 2DUBES 018 160 S03 | 1.8 | 16 | 55 | 3 | | 2DUBES 068 530 S08 | 6.8 | 53 | 90 | 8 | |
| 2DUBES 019 160 S03 | 1.9 | 16 | 55 | 3 | | 2DUBES 069 530 S08 | 6.9 | 53 | 90 | 8 | |
| 2DUBES 020 210 S04 | 2 | 21 | 55 | 4 | | 2DUBES 070 530 S08 | 7 | 53 | 90 | 8 | |
| 2DUBES 021 210 S04 | 2.1 | 21 | 55 | 4 | | 2DUBES 071 530 S08 | 7.1 | 53 | 90 | 8 | |
| 2DUBES 022 210 S04 | 2.2 | 21 | 55 | 4 | | 2DUBES 072 530 S08 | 7.2 | 53 | 90 | 8 | |
| 2DUBES 023 210 S04 | 2.3 | 21 | 55 | 4 | | 2DUBES 073 530 S08 | 7.3 | 53 | 90 | 8 | |
| 2DUBES 024 210 S04 | 2.4 | 21 | 55 | 4 | | 2DUBES 074 530 S08 | 7.4 | 53 | 90 | 8 | |
| 2DUBES 025 210 S04 | 2.5 | 21 | 55 | 4 | | 2DUBES 075 530 S08 | 7.5 | 53 | 90 | 8 | |
| 2DUBES 026 210 S04 | 2.6 | 21 | 55 | 4 | | 2DUBES 076 530 S08 | 7.6 | 53 | 90 | 8 | |
| 2DUBES 027 210 S04 | 2.7 | 21 | 55 | 4 | | 2DUBES 077 530 S08 | 7.7 | 53 | 90 | 8 | |
| 2DUBES 028 210 S04 | 2.8 | 21 | 55 | 4 | | 2DUBES 078 530 S08 | 7.8 | 53 | 90 | 8 | |
| 2DUBES 029 210 S04 | 2.9 | 21 | 55 | 4 | | 2DUBES 079 530 S08 | 7.9 | 53 | 90 | 8 | |
| 2DUBES 030 280 S06 | 3 | 28 | 65 | 6 | | 2DUBES 080 530 S08 | 8 | 53 | 90 | 8 | |
| 2DUBES 031 280 S06 | 3.1 | 28 | 65 | 6 | | 2DUBES 081 610 S10 | 8.1 | 61 | 105 | 10 | |
| 2DUBES 032 280 S06 | 3.2 | 28 | 65 | 6 | | 2DUBES 082 610 S10 | 8.2 | 61 | 105 | 10 | |
| 2DUBES 033 280 S06 | 3.3 | 28 | 65 | 6 | | 2DUBES 083 610 S10 | 8.3 | 61 | 105 | 10 | |
| 2DUBES 034 280 S06 | 3.4 | 28 | 65 | 6 | | 2DUBES 084 610 S10 | 8.4 | 61 | 105 | 10 | |
| 2DUBES 035 280 S06 | 3.5 | 28 | 65 | 6 | | 2DUBES 085 610 S10 | 8.5 | 61 | 105 | 10 | |
| 2DUBES 036 280 S06 | 3.6 | 28 | 65 | 6 | | 2DUBES 086 610 S10 | 8.6 | 61 | 105 | 10 | |
| 2DUBES 037 280 S06 | 3.7 | 28 | 65 | 6 | | 2DUBES 087 610 S10 | 8.7 | 61 | 105 | 10 | |
| 2DUBES 038 360 S06 | 3.8 | 36 | 75 | 6 | | 2DUBES 088 610 S10 | 8.8 | 61 | 105 | 10 | |
| 2DUBES 039 360 S06 | 3.9 | 36 | 75 | 6 | | 2DUBES 089 610 S10 | 8.9 | 61 | 105 | 10 | |
| 2DUBES 040 360 S06 | 4 | 36 | 75 | 6 | | 2DUBES 090 610 S10 | 9 | 61 | 105 | 10 | |
| 2DUBES 041 360 S06 | 4.1 | 36 | 75 | 6 | | 2DUBES 091 610 S10 | 9.1 | 61 | 105 | 10 | |
| 2DUBES 042 360 S06 | 4.2 | 36 | 75 | 6 | | 2DUBES 092 610 S10 | 9.2 | 61 | 105 | 10 | |
| 2DUBES 043 360 S06 | 4.3 | 36 | 75 | 6 | | 2DUBES 093 610 S10 | 9.3 | 61 | 105 | 10 | |
| 2DUBES 044 360 S06 | 4.4 | 36 | 75 | 6 | | 2DUBES 094 610 S10 | 9.4 | 61 | 105 | 10 | |
| 2DUBES 045 360 S06 | 4.5 | 36 | 75 | 6 | | 2DUBES 095 610 S10 | 9.5 | 61 | 105 | 10 | |
| 2DUBES 046 360 S06 | 4.6 | 36 | 75 | 6 | | 2DUBES 096 610 S10 | 9.6 | 61 | 105 | 10 | |
| 2DUBES 047 360 S06 | 4.7 | 36 | 75 | 6 | | 2DUBES 097 610 S10 | 9.7 | 61 | 105 | 10 | |
| 2DUBES 048 440 S06 | 4.8 | 44 | 80 | 6 | | 2DUBES 098 610 S10 | 9.8 | 61 | 105 | 10 | |
| 2DUBES 049 440 S06 | 4.9 | 44 | 80 | 6 | | 2DUBES 099 610 S10 | 9.9 | 61 | 105 | 10 | |
| 2DUBES 050 440 S06 | 5 | 44 | 80 | 6 | | 2DUBES 100 610 S10 | 10 | 61 | 105 | 10 | |
| 2DUBES 051 440 S06 | 5.1 | 44 | 80 | 6 | | 2DUBES 101 710 S12 | 10.1 | 71 | 120 | 12 | |
| 2DUBES 052 440 S06 | 5.2 | 44 | 80 | 6 | | 2DUBES 102 710 S12 | 10.2 | 71 | 120 | 12 | |
| 2DUBES 053 440 S06 | 5.3 | 44 | 80 | 6 | | 2DUBES 103 710 S12 | 10.3 | 71 | 120 | 12 | |
| 2DUBES 054 440 S06 | 5.4 | 44 | 80 | 6 | | 2DUBES 104 710 S12 | 10.4 | 71 | 120 | 12 | |
| 2DUBES 055 440 S06 | 5.5 | 44 | 80 | 6 | | 2DUBES 105 710 S12 | 10.5 | 71 | 120 | 12 | |
| 2DUBES 056 440 S06 | 5.6 | 44 | 80 | 6 | | 2DUBES 106 710 S12 | 10.6 | 71 | 120 | 12 | |
| 2DUBES 057 440 S06 | 5.7 | 44 | 80 | 6 | | 2DUBES 107 710 S12 | 10.7 | 71 | 120 | 12 | |
| 2DUBES 058 440 S06 | 5.8 | 44 | 80 | 6 | | 2DUBES 108 710 S12 | 10.8 | 71 | 120 | 12 | |
| 2DUBES 059 440 S06 | 5.9 | 44 | 80 | 6 | | 2DUBES 109 710 S12 | 10.9 | 71 | 120 | 12 | |

단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Dia d | 비고 |
|--------------------|---------------------|------------------------------|------------------------------|----------------|----|---------------------|---------------------|------------------------------|------------------------------|----------------|----|
| 2DUBES 110 710 S12 | 11 | 71 | 120 | 12 | | 2DUBES 160 830 S16 | 16 | 83 | 135 | 16 | |
| 2DUBES 111 710 S12 | 11.1 | 71 | 120 | 12 | | 2DUBES 161 930 S18 | 16.1 | 93 | 145 | 18 | |
| 2DUBES 112 710 S12 | 11.2 | 71 | 120 | 12 | | 2DUBES 162 930 S18 | 16.2 | 93 | 145 | 18 | |
| 2DUBES 113 710 S12 | 11.3 | 71 | 120 | 12 | | 2DUBES 163 930 S18 | 16.3 | 93 | 145 | 18 | |
| 2DUBES 114 710 S12 | 11.4 | 71 | 120 | 12 | | 2DUBES 164 930 S18 | 16.4 | 93 | 145 | 18 | |
| 2DUBES 115 710 S12 | 11.5 | 71 | 120 | 12 | | 2DUBES 165 930 S18 | 16.5 | 93 | 145 | 18 | |
| 2DUBES 116 710 S12 | 11.6 | 71 | 120 | 12 | | 2DUBES 166 930 S18 | 16.6 | 93 | 145 | 18 | |
| 2DUBES 117 710 S12 | 11.7 | 71 | 120 | 12 | | 2DUBES 167 930 S18 | 16.7 | 93 | 145 | 18 | |
| 2DUBES 118 710 S12 | 11.8 | 71 | 120 | 12 | | 2DUBES 168 930 S18 | 16.8 | 93 | 145 | 18 | |
| 2DUBES 119 710 S12 | 11.9 | 71 | 120 | 12 | | 2DUBES 169 930 S18 | 16.9 | 93 | 145 | 18 | |
| 2DUBES 120 710 S12 | 12 | 71 | 120 | 12 | | 2DUBES 170 930 S18 | 17 | 93 | 145 | 18 | |
| 2DUBES 121 770 S14 | 12.1 | 77 | 125 | 14 | | 2DUBES 171 930 S18 | 17.1 | 93 | 145 | 18 | |
| 2DUBES 122 770 S14 | 12.2 | 77 | 125 | 14 | | 2DUBES 172 930 S18 | 17.2 | 93 | 145 | 18 | |
| 2DUBES 123 770 S14 | 12.3 | 77 | 125 | 14 | | 2DUBES 173 930 S18 | 17.3 | 93 | 145 | 18 | |
| 2DUBES 124 770 S14 | 12.4 | 77 | 125 | 14 | | 2DUBES 174 930 S18 | 17.4 | 93 | 145 | 18 | |
| 2DUBES 125 770 S14 | 12.5 | 77 | 125 | 14 | | 2DUBES 175 930 S18 | 17.5 | 93 | 145 | 18 | |
| 2DUBES 126 770 S14 | 12.6 | 77 | 125 | 14 | | 2DUBES 176 930 S18 | 17.6 | 93 | 145 | 18 | |
| 2DUBES 127 770 S14 | 12.7 | 77 | 125 | 14 | | 2DUBES 177 930 S18 | 17.7 | 93 | 145 | 18 | |
| 2DUBES 128 770 S14 | 12.8 | 77 | 125 | 14 | | 2DUBES 178 930 S18 | 17.8 | 93 | 145 | 18 | |
| 2DUBES 129 770 S14 | 12.9 | 77 | 125 | 14 | | 2DUBES 179 930 S18 | 17.9 | 93 | 145 | 18 | |
| 2DUBES 130 770 S14 | 13 | 77 | 125 | 14 | | 2DUBES 180 930 S18 | 18 | 93 | 145 | 18 | |
| 2DUBES 131 770 S14 | 13.1 | 77 | 125 | 14 | | 2DUBES 181 1010 S20 | 18.1 | 101 | 155 | 20 | |
| 2DUBES 132 770 S14 | 13.2 | 77 | 125 | 14 | | 2DUBES 182 1010 S20 | 18.2 | 101 | 155 | 20 | |
| 2DUBES 133 770 S14 | 13.3 | 77 | 125 | 14 | | 2DUBES 183 1010 S20 | 18.3 | 101 | 155 | 20 | |
| 2DUBES 134 770 S14 | 13.4 | 77 | 125 | 14 | | 2DUBES 184 1010 S20 | 18.4 | 101 | 155 | 20 | |
| 2DUBES 135 770 S14 | 13.5 | 77 | 125 | 14 | | 2DUBES 185 1010 S20 | 18.5 | 101 | 155 | 20 | |
| 2DUBES 136 770 S14 | 13.6 | 77 | 125 | 14 | | 2DUBES 186 1010 S20 | 18.6 | 101 | 155 | 20 | |
| 2DUBES 137 770 S14 | 13.7 | 77 | 125 | 14 | | 2DUBES 187 1010 S20 | 18.7 | 101 | 155 | 20 | |
| 2DUBES 138 770 S14 | 13.8 | 77 | 125 | 14 | | 2DUBES 188 1010 S20 | 18.8 | 101 | 155 | 20 | |
| 2DUBES 139 770 S14 | 13.9 | 77 | 125 | 14 | | 2DUBES 189 1010 S20 | 18.9 | 101 | 155 | 20 | |
| 2DUBES 140 770 S14 | 14 | 77 | 125 | 14 | | 2DUBES 190 1010 S20 | 19 | 101 | 155 | 20 | |
| 2DUBES 141 830 S16 | 14.1 | 83 | 135 | 16 | | 2DUBES 191 1010 S20 | 19.1 | 101 | 155 | 20 | |
| 2DUBES 142 830 S16 | 14.2 | 83 | 135 | 16 | | 2DUBES 192 1010 S20 | 19.2 | 101 | 155 | 20 | |
| 2DUBES 143 830 S16 | 14.3 | 83 | 135 | 16 | | 2DUBES 193 1010 S20 | 19.3 | 101 | 155 | 20 | |
| 2DUBES 144 830 S16 | 14.4 | 83 | 135 | 16 | | 2DUBES 194 1010 S20 | 19.4 | 101 | 155 | 20 | |
| 2DUBES 145 830 S16 | 14.5 | 83 | 135 | 16 | | 2DUBES 195 1010 S20 | 19.5 | 101 | 155 | 20 | |
| 2DUBES 146 830 S16 | 14.6 | 83 | 135 | 16 | | 2DUBES 196 1010 S20 | 19.6 | 101 | 155 | 20 | |
| 2DUBES 147 830 S16 | 14.7 | 83 | 135 | 16 | | 2DUBES 197 1010 S20 | 19.7 | 101 | 155 | 20 | |
| 2DUBES 148 830 S16 | 14.8 | 83 | 135 | 16 | | 2DUBES 198 1010 S20 | 19.8 | 101 | 155 | 20 | |
| 2DUBES 149 830 S16 | 14.9 | 83 | 135 | 16 | | 2DUBES 199 1010 S20 | 19.9 | 101 | 155 | 20 | |
| 2DUBES 150 830 S16 | 15 | 83 | 135 | 16 | | 2DUBES 200 1010 S20 | 20 | 101 | 155 | 20 | |
| 2DUBES 151 830 S16 | 15.1 | 83 | 135 | 16 | | | | | | | |
| 2DUBES 152 830 S16 | 15.2 | 83 | 135 | 16 | | | | | | | |
| 2DUBES 153 830 S16 | 15.3 | 83 | 135 | 16 | | | | | | | |
| 2DUBES 154 830 S16 | 15.4 | 83 | 135 | 16 | | | | | | | |
| 2DUBES 155 830 S16 | 15.5 | 83 | 135 | 16 | | | | | | | |
| 2DUBES 156 830 S16 | 15.6 | 83 | 135 | 16 | | | | | | | |
| 2DUBES 157 830 S16 | 15.7 | 83 | 135 | 16 | | | | | | | |
| 2DUBES 158 830 S16 | 15.8 | 83 | 135 | 16 | | | | | | | |
| 2DUBES 159 830 S16 | 15.9 | 83 | 135 | 16 | | | | | | | |



- HRc28이하, S45C, SCM, 주강, 주철용 고정밀 드릴
- T-CRO 코팅을 적용하여 드릴 가공 시 발생하는 윤착 현상을 최소화 하였습니다.
- 절삭 저항을 최소화하는 Point thinning을 채택 하였습니다.
- 특수 인선처리와 최적의 형상으로 치핑 및 돌발파손을 방지합니다.
- 우수한 공구의 강성과 칩 배출의 설계를 적용하여 칩 배출성을 향상시켰습니다.

- High-speed drill for materials up to HRc28, S45C, SCM, cast steel, and cast iron.
- Minimized adhesion during drilling operations by applying T-CRO coating.
- Adopted point thinning to minimize cutting resistance.
- Prevents chipping and unexpected fractures with special edge treatment and optimal shape.
- Enhanced chip evacuation with the application of a design for superior tool rigidity and chip evacuation.

2

WC
미립자

TCRO
COATING

h7
Diameter
Tolerance

30°
Helix Angle

140°

CUTTING
DATA

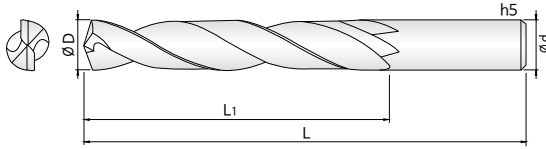
50P

단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샹크 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샹크 Shank Dia d | 비고 |
|--------------------|---------------------|---------------------------|---------------------------|----------------------|----|--------------------|---------------------|---------------------------|---------------------------|----------------------|----|
| 2DUBEV 010 080 S03 | 1 | 8 | 40 | 3 | | 2DUBEV 060 280 S06 | 6 | 28 | 65 | 6 | |
| 2DUBEV 011 080 S03 | 1.1 | 8 | 40 | 3 | | 2DUBEV 061 340 S08 | 6.1 | 34 | 80 | 8 | |
| 2DUBEV 012 080 S03 | 1.2 | 8 | 40 | 3 | | 2DUBEV 062 340 S08 | 6.2 | 34 | 80 | 8 | |
| 2DUBEV 013 080 S03 | 1.3 | 8 | 40 | 3 | | 2DUBEV 063 340 S08 | 6.3 | 34 | 80 | 8 | |
| 2DUBEV 014 080 S03 | 1.4 | 8 | 40 | 3 | | 2DUBEV 064 340 S08 | 6.4 | 34 | 80 | 8 | |
| 2DUBEV 015 080 S03 | 1.5 | 8 | 50 | 3 | | 2DUBEV 065 340 S08 | 6.5 | 34 | 80 | 8 | |
| 2DUBEV 016 080 S03 | 1.6 | 8 | 50 | 3 | | 2DUBEV 066 340 S08 | 6.6 | 34 | 80 | 8 | |
| 2DUBEV 017 100 S03 | 1.7 | 10 | 50 | 3 | | 2DUBEV 067 340 S08 | 6.7 | 34 | 80 | 8 | |
| 2DUBEV 018 100 S03 | 1.8 | 10 | 50 | 3 | | 2DUBEV 068 340 S08 | 6.8 | 34 | 80 | 8 | |
| 2DUBEV 019 100 S03 | 1.9 | 10 | 50 | 3 | | 2DUBEV 069 340 S08 | 6.9 | 34 | 80 | 8 | |
| 2DUBEV 020 160 S04 | 2 | 16 | 50 | 4 | | 2DUBEV 070 340 S08 | 7 | 34 | 80 | 8 | |
| 2DUBEV 021 160 S04 | 2.1 | 16 | 50 | 4 | | 2DUBEV 071 410 S08 | 7.1 | 41 | 80 | 8 | |
| 2DUBEV 022 160 S04 | 2.2 | 16 | 50 | 4 | | 2DUBEV 072 410 S08 | 7.2 | 41 | 80 | 8 | |
| 2DUBEV 023 160 S04 | 2.3 | 16 | 50 | 4 | | 2DUBEV 073 410 S08 | 7.3 | 41 | 80 | 8 | |
| 2DUBEV 024 160 S04 | 2.4 | 16 | 50 | 4 | | 2DUBEV 074 410 S08 | 7.4 | 41 | 80 | 8 | |
| 2DUBEV 025 200 S04 | 2.5 | 20 | 50 | 4 | | 2DUBEV 075 410 S08 | 7.5 | 41 | 80 | 8 | |
| 2DUBEV 026 200 S04 | 2.6 | 20 | 50 | 4 | | 2DUBEV 076 410 S08 | 7.6 | 41 | 80 | 8 | |
| 2DUBEV 027 200 S04 | 2.7 | 20 | 50 | 4 | | 2DUBEV 077 410 S08 | 7.7 | 41 | 80 | 8 | |
| 2DUBEV 028 200 S04 | 2.8 | 20 | 50 | 4 | | 2DUBEV 078 410 S08 | 7.8 | 41 | 80 | 8 | |
| 2DUBEV 029 200 S04 | 2.9 | 20 | 50 | 4 | | 2DUBEV 079 410 S08 | 7.9 | 41 | 80 | 8 | |
| 2DUBEV 030 200 S06 | 3 | 20 | 60 | 6 | | 2DUBEV 080 410 S08 | 8 | 41 | 80 | 8 | |
| 2DUBEV 031 200 S06 | 3.1 | 20 | 60 | 6 | | 2DUBEV 081 470 S10 | 8.1 | 47 | 90 | 10 | |
| 2DUBEV 032 200 S06 | 3.2 | 20 | 60 | 6 | | 2DUBEV 082 470 S10 | 8.2 | 47 | 90 | 10 | |
| 2DUBEV 033 200 S06 | 3.3 | 20 | 60 | 6 | | 2DUBEV 083 470 S10 | 8.3 | 47 | 90 | 10 | |
| 2DUBEV 034 200 S06 | 3.4 | 20 | 60 | 6 | | 2DUBEV 084 470 S10 | 8.4 | 47 | 90 | 10 | |
| 2DUBEV 035 200 S06 | 3.5 | 20 | 60 | 6 | | 2DUBEV 085 470 S10 | 8.5 | 47 | 90 | 10 | |
| 2DUBEV 036 200 S06 | 3.6 | 20 | 60 | 6 | | 2DUBEV 086 470 S10 | 8.6 | 47 | 90 | 10 | |
| 2DUBEV 037 200 S06 | 3.7 | 20 | 60 | 6 | | 2DUBEV 087 470 S10 | 8.7 | 47 | 90 | 10 | |
| 2DUBEV 038 240 S06 | 3.8 | 24 | 65 | 6 | | 2DUBEV 088 470 S10 | 8.8 | 47 | 90 | 10 | |
| 2DUBEV 039 240 S06 | 3.9 | 24 | 65 | 6 | | 2DUBEV 089 470 S10 | 8.9 | 47 | 90 | 10 | |
| 2DUBEV 040 240 S06 | 4 | 24 | 65 | 6 | | 2DUBEV 090 470 S10 | 9 | 47 | 90 | 10 | |
| 2DUBEV 041 240 S06 | 4.1 | 24 | 65 | 6 | | 2DUBEV 091 470 S10 | 9.1 | 47 | 90 | 10 | |
| 2DUBEV 042 240 S06 | 4.2 | 24 | 65 | 6 | | 2DUBEV 092 470 S10 | 9.2 | 47 | 90 | 10 | |
| 2DUBEV 043 240 S06 | 4.3 | 24 | 65 | 6 | | 2DUBEV 093 470 S10 | 9.3 | 47 | 90 | 10 | |
| 2DUBEV 044 240 S06 | 4.4 | 24 | 65 | 6 | | 2DUBEV 094 470 S10 | 9.4 | 47 | 90 | 10 | |
| 2DUBEV 045 240 S06 | 4.5 | 24 | 65 | 6 | | 2DUBEV 095 470 S10 | 9.5 | 47 | 90 | 10 | |
| 2DUBEV 046 240 S06 | 4.6 | 24 | 65 | 6 | | 2DUBEV 096 470 S10 | 9.6 | 47 | 90 | 10 | |
| 2DUBEV 047 240 S06 | 4.7 | 24 | 65 | 6 | | 2DUBEV 097 470 S10 | 9.7 | 47 | 90 | 10 | |
| 2DUBEV 048 280 S06 | 4.8 | 28 | 65 | 6 | | 2DUBEV 098 470 S10 | 9.8 | 47 | 90 | 10 | |
| 2DUBEV 049 280 S06 | 4.9 | 28 | 65 | 6 | | 2DUBEV 099 470 S10 | 9.9 | 47 | 90 | 10 | |
| 2DUBEV 050 280 S06 | 5 | 28 | 65 | 6 | | 2DUBEV 100 470 S10 | 10 | 47 | 90 | 10 | |
| 2DUBEV 051 280 S06 | 5.1 | 28 | 65 | 6 | | 2DUBEV 101 550 S12 | 10.1 | 55 | 100 | 12 | |
| 2DUBEV 052 280 S06 | 5.2 | 28 | 65 | 6 | | 2DUBEV 102 550 S12 | 10.2 | 55 | 100 | 12 | |
| 2DUBEV 053 280 S06 | 5.3 | 28 | 65 | 6 | | 2DUBEV 103 550 S12 | 10.3 | 55 | 100 | 12 | |
| 2DUBEV 054 280 S06 | 5.4 | 28 | 65 | 6 | | 2DUBEV 104 550 S12 | 10.4 | 55 | 100 | 12 | |
| 2DUBEV 055 280 S06 | 5.5 | 28 | 65 | 6 | | 2DUBEV 105 550 S12 | 10.5 | 55 | 100 | 12 | |
| 2DUBEV 056 280 S06 | 5.6 | 28 | 65 | 6 | | 2DUBEV 106 550 S12 | 10.6 | 55 | 100 | 12 | |
| 2DUBEV 057 280 S06 | 5.7 | 28 | 65 | 6 | | 2DUBEV 107 550 S12 | 10.7 | 55 | 100 | 12 | |
| 2DUBEV 058 280 S06 | 5.8 | 28 | 65 | 6 | | 2DUBEV 108 550 S12 | 10.8 | 55 | 100 | 12 | |
| 2DUBEV 059 280 S06 | 5.9 | 28 | 65 | 6 | | 2DUBEV 109 550 S12 | 10.9 | 55 | 100 | 12 | |

단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Dia d | 비고 |
|--------------------|---------------------|------------------------------|------------------------------|----------------|----|--------------------|---------------------|------------------------------|------------------------------|----------------|----|
| 2DUBEV 110 550 S12 | 11 | 55 | 100 | 12 | | 2DUBEV 160 650 S16 | 16 | 65 | 115 | 16 | |
| 2DUBEV 111 550 S12 | 11.1 | 55 | 100 | 12 | | 2DUBEV 161 730 S18 | 16.1 | 73 | 125 | 18 | |
| 2DUBEV 112 550 S12 | 11.2 | 55 | 100 | 12 | | 2DUBEV 162 730 S18 | 16.2 | 73 | 125 | 18 | |
| 2DUBEV 113 550 S12 | 11.3 | 55 | 100 | 12 | | 2DUBEV 163 730 S18 | 16.3 | 73 | 125 | 18 | |
| 2DUBEV 114 550 S12 | 11.4 | 55 | 100 | 12 | | 2DUBEV 164 730 S18 | 16.4 | 73 | 125 | 18 | |
| 2DUBEV 115 550 S12 | 11.5 | 55 | 100 | 12 | | 2DUBEV 165 730 S18 | 16.5 | 73 | 125 | 18 | |
| 2DUBEV 116 550 S12 | 11.6 | 55 | 100 | 12 | | 2DUBEV 166 730 S18 | 16.6 | 73 | 125 | 18 | |
| 2DUBEV 117 550 S12 | 11.7 | 55 | 100 | 12 | | 2DUBEV 167 730 S18 | 16.7 | 73 | 125 | 18 | |
| 2DUBEV 118 550 S12 | 11.8 | 55 | 100 | 12 | | 2DUBEV 168 730 S18 | 16.8 | 73 | 125 | 18 | |
| 2DUBEV 119 550 S12 | 11.9 | 55 | 100 | 12 | | 2DUBEV 169 730 S18 | 16.9 | 73 | 125 | 18 | |
| 2DUBEV 120 550 S12 | 12 | 55 | 100 | 12 | | 2DUBEV 170 730 S18 | 17 | 73 | 125 | 18 | |
| 2DUBEV 121 600 S14 | 12.1 | 60 | 100 | 14 | | 2DUBEV 171 730 S18 | 17.1 | 73 | 125 | 18 | |
| 2DUBEV 122 600 S14 | 12.2 | 60 | 100 | 14 | | 2DUBEV 172 730 S18 | 17.2 | 73 | 125 | 18 | |
| 2DUBEV 123 600 S14 | 12.3 | 60 | 100 | 14 | | 2DUBEV 173 730 S18 | 17.3 | 73 | 125 | 18 | |
| 2DUBEV 124 600 S14 | 12.4 | 60 | 100 | 14 | | 2DUBEV 174 730 S18 | 17.4 | 73 | 125 | 18 | |
| 2DUBEV 125 600 S14 | 12.5 | 60 | 100 | 14 | | 2DUBEV 175 730 S18 | 17.5 | 73 | 125 | 18 | |
| 2DUBEV 126 600 S14 | 12.6 | 60 | 100 | 14 | | 2DUBEV 176 730 S18 | 17.6 | 73 | 125 | 18 | |
| 2DUBEV 127 600 S14 | 12.7 | 60 | 100 | 14 | | 2DUBEV 177 730 S18 | 17.7 | 73 | 125 | 18 | |
| 2DUBEV 128 600 S14 | 12.8 | 60 | 100 | 14 | | 2DUBEV 178 730 S18 | 17.8 | 73 | 125 | 18 | |
| 2DUBEV 129 600 S14 | 12.9 | 60 | 100 | 14 | | 2DUBEV 179 730 S18 | 17.9 | 73 | 125 | 18 | |
| 2DUBEV 130 600 S14 | 13 | 60 | 100 | 14 | | 2DUBEV 180 730 S18 | 18 | 73 | 125 | 18 | |
| 2DUBEV 131 600 S14 | 13.1 | 60 | 100 | 14 | | 2DUBEV 181 790 S20 | 18.1 | 79 | 130 | 20 | |
| 2DUBEV 132 600 S14 | 13.2 | 60 | 105 | 14 | | 2DUBEV 182 790 S20 | 18.2 | 79 | 130 | 20 | |
| 2DUBEV 133 600 S14 | 13.3 | 60 | 105 | 14 | | 2DUBEV 183 790 S20 | 18.3 | 79 | 130 | 20 | |
| 2DUBEV 134 600 S14 | 13.4 | 60 | 105 | 14 | | 2DUBEV 184 790 S20 | 18.4 | 79 | 130 | 20 | |
| 2DUBEV 135 600 S14 | 13.5 | 60 | 105 | 14 | | 2DUBEV 185 790 S20 | 18.5 | 79 | 130 | 20 | |
| 2DUBEV 136 600 S14 | 13.6 | 60 | 105 | 14 | | 2DUBEV 186 790 S20 | 18.6 | 79 | 130 | 20 | |
| 2DUBEV 137 600 S14 | 13.7 | 60 | 105 | 14 | | 2DUBEV 187 790 S20 | 18.7 | 79 | 130 | 20 | |
| 2DUBEV 138 600 S14 | 13.8 | 60 | 105 | 14 | | 2DUBEV 188 790 S20 | 18.8 | 79 | 130 | 20 | |
| 2DUBEV 139 600 S14 | 13.9 | 60 | 105 | 14 | | 2DUBEV 189 790 S20 | 18.9 | 79 | 130 | 20 | |
| 2DUBEV 140 600 S14 | 14 | 60 | 105 | 14 | | 2DUBEV 190 790 S20 | 19 | 79 | 130 | 20 | |
| 2DUBEV 141 650 S16 | 14.1 | 65 | 110 | 16 | | 2DUBEV 191 790 S20 | 19.1 | 79 | 130 | 20 | |
| 2DUBEV 142 650 S16 | 14.2 | 65 | 110 | 16 | | 2DUBEV 192 790 S20 | 19.2 | 79 | 130 | 20 | |
| 2DUBEV 143 650 S16 | 14.3 | 65 | 110 | 16 | | 2DUBEV 193 790 S20 | 19.3 | 79 | 130 | 20 | |
| 2DUBEV 144 650 S16 | 14.4 | 65 | 110 | 16 | | 2DUBEV 194 790 S20 | 19.4 | 79 | 130 | 20 | |
| 2DUBEV 145 650 S16 | 14.5 | 65 | 110 | 16 | | 2DUBEV 195 790 S20 | 19.5 | 79 | 130 | 20 | |
| 2DUBEV 146 650 S16 | 14.6 | 65 | 110 | 16 | | 2DUBEV 196 790 S20 | 19.6 | 79 | 130 | 20 | |
| 2DUBEV 147 650 S16 | 14.7 | 65 | 110 | 16 | | 2DUBEV 197 790 S20 | 19.7 | 79 | 130 | 20 | |
| 2DUBEV 148 650 S16 | 14.8 | 65 | 110 | 16 | | 2DUBEV 198 790 S20 | 19.8 | 79 | 130 | 20 | |
| 2DUBEV 149 650 S16 | 14.9 | 65 | 110 | 16 | | 2DUBEV 199 790 S20 | 19.9 | 79 | 130 | 20 | |
| 2DUBEV 150 650 S16 | 15 | 65 | 110 | 16 | | 2DUBEV 200 790 S20 | 20 | 79 | 130 | 20 | |
| 2DUBEV 151 650 S16 | 15.1 | 65 | 110 | 16 | | | | | | | |
| 2DUBEV 152 650 S16 | 15.2 | 65 | 115 | 16 | | | | | | | |
| 2DUBEV 153 650 S16 | 15.3 | 65 | 115 | 16 | | | | | | | |
| 2DUBEV 154 650 S16 | 15.4 | 65 | 115 | 16 | | | | | | | |
| 2DUBEV 155 650 S16 | 15.5 | 65 | 115 | 16 | | | | | | | |
| 2DUBEV 156 650 S16 | 15.6 | 65 | 115 | 16 | | | | | | | |
| 2DUBEV 157 650 S16 | 15.7 | 65 | 115 | 16 | | | | | | | |
| 2DUBEV 158 650 S16 | 15.8 | 65 | 115 | 16 | | | | | | | |
| 2DUBEV 159 650 S16 | 15.9 | 65 | 115 | 16 | | | | | | | |



- HRc28이하, S45C, SCM, 주강, 주철용 고정밀 드릴
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- Prevents chipping and unexpected fractures with special edge treatment and optimal shape.
- Enhanced chip evacuation with the application of a design for superior tool rigidity and chip evacuation.

2

WC
미립자

TCRO
COATING

h7
Diameter
Tolerance

30°
Helix Angle

140°

CUTTING
DATA

50P

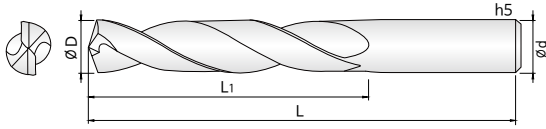
단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 |
|--------------------|---------------------|------------------------------|------------------------------|-------------------------|----|--------------------|---------------------|------------------------------|------------------------------|-------------------------|----|
| 2DUBEV 010 100 S03 | 1 | 10 | 55 | 3 | | 2DUBEV 060 440 S06 | 6 | 44 | 80 | 6 | |
| 2DUBEV 011 120 S03 | 1.1 | 12 | 55 | 3 | | 2DUBEV 061 530 S08 | 6.1 | 53 | 90 | 8 | |
| 2DUBEV 012 120 S03 | 1.2 | 12 | 55 | 3 | | 2DUBEV 062 530 S08 | 6.2 | 53 | 90 | 8 | |
| 2DUBEV 013 120 S03 | 1.3 | 12 | 55 | 3 | | 2DUBEV 063 530 S08 | 6.3 | 53 | 90 | 8 | |
| 2DUBEV 014 120 S03 | 1.4 | 12 | 55 | 3 | | 2DUBEV 064 530 S08 | 6.4 | 53 | 90 | 8 | |
| 2DUBEV 015 120 S03 | 1.5 | 12 | 55 | 3 | | 2DUBEV 065 530 S08 | 6.5 | 53 | 90 | 8 | |
| 2DUBEV 016 160 S03 | 1.6 | 16 | 55 | 3 | | 2DUBEV 066 530 S08 | 6.6 | 53 | 90 | 8 | |
| 2DUBEV 017 160 S03 | 1.7 | 16 | 55 | 3 | | 2DUBEV 067 530 S08 | 6.7 | 53 | 90 | 8 | |
| 2DUBEV 018 160 S03 | 1.8 | 16 | 55 | 3 | | 2DUBEV 068 530 S08 | 6.8 | 53 | 90 | 8 | |
| 2DUBEV 019 160 S03 | 1.9 | 16 | 55 | 3 | | 2DUBEV 069 530 S08 | 6.9 | 53 | 90 | 8 | |
| 2DUBEV 020 210 S04 | 2 | 21 | 55 | 4 | | 2DUBEV 070 530 S08 | 7 | 53 | 90 | 8 | |
| 2DUBEV 021 210 S04 | 2.1 | 21 | 55 | 4 | | 2DUBEV 071 530 S08 | 7.1 | 53 | 90 | 8 | |
| 2DUBEV 022 210 S04 | 2.2 | 21 | 55 | 4 | | 2DUBEV 072 530 S08 | 7.2 | 53 | 90 | 8 | |
| 2DUBEV 023 210 S04 | 2.3 | 21 | 55 | 4 | | 2DUBEV 073 530 S08 | 7.3 | 53 | 90 | 8 | |
| 2DUBEV 024 210 S04 | 2.4 | 21 | 55 | 4 | | 2DUBEV 074 530 S08 | 7.4 | 53 | 90 | 8 | |
| 2DUBEV 025 210 S04 | 2.5 | 21 | 55 | 4 | | 2DUBEV 075 530 S08 | 7.5 | 53 | 90 | 8 | |
| 2DUBEV 026 210 S04 | 2.6 | 21 | 55 | 4 | | 2DUBEV 076 530 S08 | 7.6 | 53 | 90 | 8 | |
| 2DUBEV 027 210 S04 | 2.7 | 21 | 55 | 4 | | 2DUBEV 077 530 S08 | 7.7 | 53 | 90 | 8 | |
| 2DUBEV 028 210 S04 | 2.8 | 21 | 55 | 4 | | 2DUBEV 078 530 S08 | 7.8 | 53 | 90 | 8 | |
| 2DUBEV 029 210 S04 | 2.9 | 21 | 55 | 4 | | 2DUBEV 079 530 S08 | 7.9 | 53 | 90 | 8 | |
| 2DUBEV 030 280 S06 | 3 | 28 | 65 | 6 | | 2DUBEV 080 530 S08 | 8 | 53 | 90 | 8 | |
| 2DUBEV 031 280 S06 | 3.1 | 28 | 65 | 6 | | 2DUBEV 081 610 S10 | 8.1 | 61 | 105 | 10 | |
| 2DUBEV 032 280 S06 | 3.2 | 28 | 65 | 6 | | 2DUBEV 082 610 S10 | 8.2 | 61 | 105 | 10 | |
| 2DUBEV 033 280 S06 | 3.3 | 28 | 65 | 6 | | 2DUBEV 083 610 S10 | 8.3 | 61 | 105 | 10 | |
| 2DUBEV 034 280 S06 | 3.4 | 28 | 65 | 6 | | 2DUBEV 084 610 S10 | 8.4 | 61 | 105 | 10 | |
| 2DUBEV 035 280 S06 | 3.5 | 28 | 65 | 6 | | 2DUBEV 085 610 S10 | 8.5 | 61 | 105 | 10 | |
| 2DUBEV 036 280 S06 | 3.6 | 28 | 65 | 6 | | 2DUBEV 086 610 S10 | 8.6 | 61 | 105 | 10 | |
| 2DUBEV 037 280 S06 | 3.7 | 28 | 65 | 6 | | 2DUBEV 087 610 S10 | 8.7 | 61 | 105 | 10 | |
| 2DUBEV 038 360 S06 | 3.8 | 36 | 75 | 6 | | 2DUBEV 088 610 S10 | 8.8 | 61 | 105 | 10 | |
| 2DUBEV 039 360 S06 | 3.9 | 36 | 75 | 6 | | 2DUBEV 089 610 S10 | 8.9 | 61 | 105 | 10 | |
| 2DUBEV 040 360 S06 | 4 | 36 | 75 | 6 | | 2DUBEV 090 610 S10 | 9 | 61 | 105 | 10 | |
| 2DUBEV 041 360 S06 | 4.1 | 36 | 75 | 6 | | 2DUBEV 091 610 S10 | 9.1 | 61 | 105 | 10 | |
| 2DUBEV 042 360 S06 | 4.2 | 36 | 75 | 6 | | 2DUBEV 092 610 S10 | 9.2 | 61 | 105 | 10 | |
| 2DUBEV 043 360 S06 | 4.3 | 36 | 75 | 6 | | 2DUBEV 093 610 S10 | 9.3 | 61 | 105 | 10 | |
| 2DUBEV 044 360 S06 | 4.4 | 36 | 75 | 6 | | 2DUBEV 094 610 S10 | 9.4 | 61 | 105 | 10 | |
| 2DUBEV 045 360 S06 | 4.5 | 36 | 75 | 6 | | 2DUBEV 095 610 S10 | 9.5 | 61 | 105 | 10 | |
| 2DUBEV 046 360 S06 | 4.6 | 36 | 75 | 6 | | 2DUBEV 096 610 S10 | 9.6 | 61 | 105 | 10 | |
| 2DUBEV 047 360 S06 | 4.7 | 36 | 75 | 6 | | 2DUBEV 097 610 S10 | 9.7 | 61 | 105 | 10 | |
| 2DUBEV 048 440 S06 | 4.8 | 44 | 80 | 6 | | 2DUBEV 098 610 S10 | 9.8 | 61 | 105 | 10 | |
| 2DUBEV 049 440 S06 | 4.9 | 44 | 80 | 6 | | 2DUBEV 099 610 S10 | 9.9 | 61 | 105 | 10 | |
| 2DUBEV 050 440 S06 | 5 | 44 | 80 | 6 | | 2DUBEV 100 610 S10 | 10 | 61 | 105 | 10 | |
| 2DUBEV 051 440 S06 | 5.1 | 44 | 80 | 6 | | 2DUBEV 101 710 S12 | 10.1 | 71 | 120 | 12 | |
| 2DUBEV 052 440 S06 | 5.2 | 44 | 80 | 6 | | 2DUBEV 102 710 S12 | 10.2 | 71 | 120 | 12 | |
| 2DUBEV 053 440 S06 | 5.3 | 44 | 80 | 6 | | 2DUBEV 103 710 S12 | 10.3 | 71 | 120 | 12 | |
| 2DUBEV 054 440 S06 | 5.4 | 44 | 80 | 6 | | 2DUBEV 104 710 S12 | 10.4 | 71 | 120 | 12 | |
| 2DUBEV 055 440 S06 | 5.5 | 44 | 80 | 6 | | 2DUBEV 105 710 S12 | 10.5 | 71 | 120 | 12 | |
| 2DUBEV 056 440 S06 | 5.6 | 44 | 80 | 6 | | 2DUBEV 106 710 S12 | 10.6 | 71 | 120 | 12 | |
| 2DUBEV 057 440 S06 | 5.7 | 44 | 80 | 6 | | 2DUBEV 107 710 S12 | 10.7 | 71 | 120 | 12 | |
| 2DUBEV 058 440 S06 | 5.8 | 44 | 80 | 6 | | 2DUBEV 108 710 S12 | 10.8 | 71 | 120 | 12 | |
| 2DUBEV 059 440 S06 | 5.9 | 44 | 80 | 6 | | 2DUBEV 109 710 S12 | 10.9 | 71 | 120 | 12 | |

단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Dia d | 비고 |
|--------------------|---------------------|------------------------------|------------------------------|----------------|----|---------------------|---------------------|------------------------------|------------------------------|----------------|----|
| 2DUBEV 110 710 S12 | 11 | 71 | 120 | 12 | | 2DUBEV 160 830 S16 | 16 | 83 | 135 | 16 | |
| 2DUBEV 111 710 S12 | 11.1 | 71 | 120 | 12 | | 2DUBEV 161 930 S18 | 16.1 | 93 | 145 | 18 | |
| 2DUBEV 112 710 S12 | 11.2 | 71 | 120 | 12 | | 2DUBEV 162 930 S18 | 16.2 | 93 | 145 | 18 | |
| 2DUBEV 113 710 S12 | 11.3 | 71 | 120 | 12 | | 2DUBEV 163 930 S18 | 16.3 | 93 | 145 | 18 | |
| 2DUBEV 114 710 S12 | 11.4 | 71 | 120 | 12 | | 2DUBEV 164 930 S18 | 16.4 | 93 | 145 | 18 | |
| 2DUBEV 115 710 S12 | 11.5 | 71 | 120 | 12 | | 2DUBEV 165 930 S18 | 16.5 | 93 | 145 | 18 | |
| 2DUBEV 116 710 S12 | 11.6 | 71 | 120 | 12 | | 2DUBEV 166 930 S18 | 16.6 | 93 | 145 | 18 | |
| 2DUBEV 117 710 S12 | 11.7 | 71 | 120 | 12 | | 2DUBEV 167 930 S18 | 16.7 | 93 | 145 | 18 | |
| 2DUBEV 118 710 S12 | 11.8 | 71 | 120 | 12 | | 2DUBEV 168 930 S18 | 16.8 | 93 | 145 | 18 | |
| 2DUBEV 119 710 S12 | 11.9 | 71 | 120 | 12 | | 2DUBEV 169 930 S18 | 16.9 | 93 | 145 | 18 | |
| 2DUBEV 120 710 S12 | 12 | 71 | 120 | 12 | | 2DUBEV 170 930 S18 | 17 | 93 | 145 | 18 | |
| 2DUBEV 121 770 S14 | 12.1 | 77 | 125 | 14 | | 2DUBEV 171 930 S18 | 17.1 | 93 | 145 | 18 | |
| 2DUBEV 122 770 S14 | 12.2 | 77 | 125 | 14 | | 2DUBEV 172 930 S18 | 17.2 | 93 | 145 | 18 | |
| 2DUBEV 123 770 S14 | 12.3 | 77 | 125 | 14 | | 2DUBEV 173 930 S18 | 17.3 | 93 | 145 | 18 | |
| 2DUBEV 124 770 S14 | 12.4 | 77 | 125 | 14 | | 2DUBEV 174 930 S18 | 17.4 | 93 | 145 | 18 | |
| 2DUBEV 125 770 S14 | 12.5 | 77 | 125 | 14 | | 2DUBEV 175 930 S18 | 17.5 | 93 | 145 | 18 | |
| 2DUBEV 126 770 S14 | 12.6 | 77 | 125 | 14 | | 2DUBEV 176 930 S18 | 17.6 | 93 | 145 | 18 | |
| 2DUBEV 127 770 S14 | 12.7 | 77 | 125 | 14 | | 2DUBEV 177 930 S18 | 17.7 | 93 | 145 | 18 | |
| 2DUBEV 128 770 S14 | 12.8 | 77 | 125 | 14 | | 2DUBEV 178 930 S18 | 17.8 | 93 | 145 | 18 | |
| 2DUBEV 129 770 S14 | 12.9 | 77 | 125 | 14 | | 2DUBEV 179 930 S18 | 17.9 | 93 | 145 | 18 | |
| 2DUBEV 130 770 S14 | 13 | 77 | 125 | 14 | | 2DUBEV 180 930 S18 | 18 | 93 | 145 | 18 | |
| 2DUBEV 131 770 S14 | 13.1 | 77 | 125 | 14 | | 2DUBEV 181 1010 S20 | 18.1 | 101 | 155 | 20 | |
| 2DUBEV 132 770 S14 | 13.2 | 77 | 125 | 14 | | 2DUBEV 182 1010 S20 | 18.2 | 101 | 155 | 20 | |
| 2DUBEV 133 770 S14 | 13.3 | 77 | 125 | 14 | | 2DUBEV 183 1010 S20 | 18.3 | 101 | 155 | 20 | |
| 2DUBEV 134 770 S14 | 13.4 | 77 | 125 | 14 | | 2DUBEV 184 1010 S20 | 18.4 | 101 | 155 | 20 | |
| 2DUBEV 135 770 S14 | 13.5 | 77 | 125 | 14 | | 2DUBEV 185 1010 S20 | 18.5 | 101 | 155 | 20 | |
| 2DUBEV 136 770 S14 | 13.6 | 77 | 125 | 14 | | 2DUBEV 186 1010 S20 | 18.6 | 101 | 155 | 20 | |
| 2DUBEV 137 770 S14 | 13.7 | 77 | 125 | 14 | | 2DUBEV 187 1010 S20 | 18.7 | 101 | 155 | 20 | |
| 2DUBEV 138 770 S14 | 13.8 | 77 | 125 | 14 | | 2DUBEV 188 1010 S20 | 18.8 | 101 | 155 | 20 | |
| 2DUBEV 139 770 S14 | 13.9 | 77 | 125 | 14 | | 2DUBEV 189 1010 S20 | 18.9 | 101 | 155 | 20 | |
| 2DUBEV 140 770 S14 | 14 | 77 | 125 | 14 | | 2DUBEV 190 1010 S20 | 19 | 101 | 155 | 20 | |
| 2DUBEV 141 830 S16 | 14.1 | 83 | 135 | 16 | | 2DUBEV 191 1010 S20 | 19.1 | 101 | 155 | 20 | |
| 2DUBEV 142 830 S16 | 14.2 | 83 | 135 | 16 | | 2DUBEV 192 1010 S20 | 19.2 | 101 | 155 | 20 | |
| 2DUBEV 143 830 S16 | 14.3 | 83 | 135 | 16 | | 2DUBEV 193 1010 S20 | 19.3 | 101 | 155 | 20 | |
| 2DUBEV 144 830 S16 | 14.4 | 83 | 135 | 16 | | 2DUBEV 194 1010 S20 | 19.4 | 101 | 155 | 20 | |
| 2DUBEV 145 830 S16 | 14.5 | 83 | 135 | 16 | | 2DUBEV 195 1010 S20 | 19.5 | 101 | 155 | 20 | |
| 2DUBEV 146 830 S16 | 14.6 | 83 | 135 | 16 | | 2DUBEV 196 1010 S20 | 19.6 | 101 | 155 | 20 | |
| 2DUBEV 147 830 S16 | 14.7 | 83 | 135 | 16 | | 2DUBEV 197 1010 S20 | 19.7 | 101 | 155 | 20 | |
| 2DUBEV 148 830 S16 | 14.8 | 83 | 135 | 16 | | 2DUBEV 198 1010 S20 | 19.8 | 101 | 155 | 20 | |
| 2DUBEV 149 830 S16 | 14.9 | 83 | 135 | 16 | | 2DUBEV 199 1010 S20 | 19.9 | 101 | 155 | 20 | |
| 2DUBEV 150 830 S16 | 15 | 83 | 135 | 16 | | 2DUBEV 200 1010 S20 | 20 | 101 | 155 | 20 | |
| 2DUBEV 151 830 S16 | 15.1 | 83 | 135 | 16 | | | | | | | |
| 2DUBEV 152 830 S16 | 15.2 | 83 | 135 | 16 | | | | | | | |
| 2DUBEV 153 830 S16 | 15.3 | 83 | 135 | 16 | | | | | | | |
| 2DUBEV 154 830 S16 | 15.4 | 83 | 135 | 16 | | | | | | | |
| 2DUBEV 155 830 S16 | 15.5 | 83 | 135 | 16 | | | | | | | |
| 2DUBEV 156 830 S16 | 15.6 | 83 | 135 | 16 | | | | | | | |
| 2DUBEV 157 830 S16 | 15.7 | 83 | 135 | 16 | | | | | | | |
| 2DUBEV 158 830 S16 | 15.8 | 83 | 135 | 16 | | | | | | | |
| 2DUBEV 159 830 S16 | 15.9 | 83 | 135 | 16 | | | | | | | |

초경 2날 짧은 길이 두배 드릴



- HRC28이하, S45C, SCM, 주강, 주철용 고정밀 드릴
- T-CRO 코팅을 적용하여 드릴 가공 시 발생하는 윤착 현상을 최소화 하였습니다.
- 절삭 저항을 최소화하는 Point thinning을 채택 하였습니다.
- 특수 인선처리와 최적의 형상으로 치핑 및 돌발파손을 방지합니다.
- 우수한 공구의 강성과 칩 배출의 설계를 적용하여 칩 배출성을 향상시켰습니다.

• High-speed drill for materials up to HRC28, S45C, SCM, cast steel, and cast iron.

- Minimized adhesion during drilling operations by applying T-CRO coating.
- Adopted point thinning to minimize cutting resistance.
- Prevents chipping and unexpected fractures with special edge treatment and optimal shape.
- Enhanced chip evacuation with the application of a design for superior tool rigidity and chip evacuation.



51P

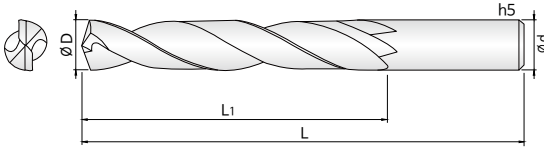
단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 |
|--------------------|---------------|---------------------|---------------------|----------------|----|--------------------|---------------|---------------------|---------------------|----------------|----|
| 2DUBE 010 050 S03 | 1 | 5 | 40 | 3 | | 2DUBE 035 160 S04 | 3.5 | 16 | 55 | 4 | |
| 2DUBE 0105 050 S03 | 1.05 | 5 | 40 | 3 | | 2DUBE 0355 160 S04 | 3.55 | 16 | 55 | 4 | |
| 2DUBE 011 060 S03 | 1.1 | 6 | 40 | 3 | | 2DUBE 036 180 S04 | 3.6 | 18 | 55 | 4 | |
| 2DUBE 0115 060 S03 | 1.15 | 6 | 40 | 3 | | 2DUBE 0365 180 S04 | 3.65 | 18 | 55 | 4 | |
| 2DUBE 012 060 S03 | 1.2 | 6 | 40 | 3 | | 2DUBE 037 180 S04 | 3.7 | 18 | 55 | 4 | |
| 2DUBE 0125 060 S03 | 1.25 | 6 | 40 | 3 | | 2DUBE 0375 180 S04 | 3.75 | 18 | 55 | 4 | |
| 2DUBE 013 060 S03 | 1.3 | 6 | 40 | 3 | | 2DUBE 038 200 S04 | 3.8 | 20 | 55 | 4 | |
| 2DUBE 0135 070 S03 | 1.35 | 7 | 40 | 3 | | 2DUBE 0385 200 S04 | 3.85 | 20 | 55 | 4 | |
| 2DUBE 014 070 S03 | 1.4 | 7 | 40 | 3 | | 2DUBE 039 200 S04 | 3.9 | 20 | 55 | 4 | |
| 2DUBE 0145 070 S03 | 1.45 | 7 | 40 | 3 | | 2DUBE 0395 200 S04 | 3.95 | 20 | 55 | 4 | |
| 2DUBE 015 070 S03 | 1.5 | 7 | 40 | 3 | | 2DUBE 040 200 S04 | 4 | 20 | 55 | 4 | |
| 2DUBE 0155 080 S03 | 1.55 | 8 | 40 | 3 | | 2DUBE 0405 200 S05 | 4.05 | 20 | 60 | 5 | |
| 2DUBE 016 080 S03 | 1.6 | 8 | 40 | 3 | | 2DUBE 041 200 S05 | 4.1 | 20 | 60 | 5 | |
| 2DUBE 0165 080 S03 | 1.65 | 8 | 40 | 3 | | 2DUBE 0415 200 S05 | 4.15 | 20 | 60 | 5 | |
| 2DUBE 017 080 S03 | 1.7 | 8 | 40 | 3 | | 2DUBE 042 200 S05 | 4.2 | 20 | 60 | 5 | |
| 2DUBE 0175 090 S03 | 1.75 | 9 | 40 | 3 | | 2DUBE 0425 200 S05 | 4.25 | 20 | 60 | 5 | |
| 2DUBE 018 090 S03 | 1.8 | 9 | 40 | 3 | | 2DUBE 043 220 S05 | 4.3 | 22 | 60 | 5 | |
| 2DUBE 0185 090 S03 | 1.85 | 9 | 40 | 3 | | 2DUBE 0435 220 S05 | 4.35 | 22 | 60 | 5 | |
| 2DUBE 019 090 S03 | 1.9 | 9 | 40 | 3 | | 2DUBE 044 220 S05 | 4.4 | 22 | 60 | 5 | |
| 2DUBE 0195 100 S03 | 1.95 | 10 | 50 | 3 | | 2DUBE 0445 220 S05 | 4.45 | 22 | 60 | 5 | |
| 2DUBE 020 100 S03 | 2 | 10 | 50 | 3 | | 2DUBE 045 220 S05 | 4.5 | 22 | 60 | 5 | |
| 2DUBE 0205 100 S03 | 2.05 | 10 | 50 | 3 | | 2DUBE 0455 220 S05 | 4.55 | 22 | 60 | 5 | |
| 2DUBE 021 100 S03 | 2.1 | 10 | 50 | 3 | | 2DUBE 046 220 S05 | 4.6 | 22 | 60 | 5 | |
| 2DUBE 0215 110 S03 | 2.15 | 11 | 50 | 3 | | 2DUBE 0465 220 S05 | 4.65 | 22 | 60 | 5 | |
| 2DUBE 022 110 S03 | 2.2 | 11 | 50 | 3 | | 2DUBE 047 220 S05 | 4.7 | 22 | 60 | 5 | |
| 2DUBE 0225 110 S03 | 2.25 | 11 | 50 | 3 | | 2DUBE 0475 220 S05 | 4.75 | 22 | 60 | 5 | |
| 2DUBE 023 110 S03 | 2.3 | 11 | 50 | 3 | | 2DUBE 048 240 S05 | 4.8 | 24 | 60 | 5 | |
| 2DUBE 0235 110 S03 | 2.35 | 11 | 50 | 3 | | 2DUBE 0485 240 S05 | 4.85 | 24 | 60 | 5 | |
| 2DUBE 024 120 S03 | 2.4 | 12 | 50 | 3 | | 2DUBE 049 240 S05 | 4.9 | 24 | 60 | 5 | |
| 2DUBE 0245 120 S03 | 2.45 | 12 | 50 | 3 | | 2DUBE 0495 240 S05 | 4.95 | 24 | 60 | 5 | |
| 2DUBE 025 120 S03 | 2.5 | 12 | 50 | 3 | | 2DUBE 050 240 S05 | 5 | 24 | 60 | 5 | |
| 2DUBE 0255 120 S03 | 2.55 | 12 | 50 | 3 | | 2DUBE 051 240 S06 | 5.1 | 24 | 60 | 6 | |
| 2DUBE 026 120 S03 | 2.6 | 12 | 50 | 3 | | 2DUBE 052 240 S06 | 5.2 | 24 | 60 | 6 | |
| 2DUBE 0265 120 S03 | 2.65 | 12 | 50 | 3 | | 2DUBE 053 240 S06 | 5.3 | 24 | 60 | 6 | |
| 2DUBE 027 140 S03 | 2.7 | 14 | 50 | 3 | | 2DUBE 054 240 S06 | 5.4 | 24 | 60 | 6 | |
| 2DUBE 0275 140 S03 | 2.75 | 14 | 50 | 3 | | 2DUBE 055 280 S06 | 5.5 | 28 | 65 | 6 | |
| 2DUBE 028 140 S03 | 2.8 | 14 | 50 | 3 | | 2DUBE 056 280 S06 | 5.6 | 28 | 65 | 6 | |
| 2DUBE 0285 140 S03 | 2.85 | 14 | 50 | 3 | | 2DUBE 057 280 S06 | 5.7 | 28 | 65 | 6 | |
| 2DUBE 029 140 S03 | 2.9 | 14 | 50 | 3 | | 2DUBE 058 280 S06 | 5.8 | 28 | 65 | 6 | |
| 2DUBE 0295 140 S03 | 2.95 | 14 | 50 | 3 | | 2DUBE 059 280 S06 | 5.9 | 28 | 65 | 6 | |
| 2DUBE 030 140 S03 | 3 | 14 | 50 | 3 | | 2DUBE 060 280 S06 | 6 | 28 | 65 | 6 | |
| 2DUBE 0305 160 S04 | 3.05 | 16 | 55 | 4 | | 2DUBE 061 280 S06 | 6.1 | 28 | 65 | 6 | |
| 2DUBE 031 160 S04 | 3.1 | 16 | 55 | 4 | | 2DUBE 062 320 S07 | 6.2 | 32 | 65 | 7 | |
| 2DUBE 0315 160 S04 | 3.15 | 16 | 55 | 4 | | 2DUBE 063 320 S07 | 6.3 | 32 | 65 | 7 | |
| 2DUBE 032 160 S04 | 3.2 | 16 | 55 | 4 | | 2DUBE 064 320 S07 | 6.4 | 32 | 65 | 7 | |
| 2DUBE 0325 160 S04 | 3.25 | 16 | 55 | 4 | | 2DUBE 065 320 S07 | 6.5 | 32 | 65 | 7 | |
| 2DUBE 033 160 S04 | 3.3 | 16 | 55 | 4 | | 2DUBE 066 320 S07 | 6.6 | 32 | 65 | 7 | |
| 2DUBE 0335 160 S04 | 3.35 | 16 | 55 | 4 | | 2DUBE 067 320 S07 | 6.7 | 32 | 65 | 7 | |
| 2DUBE 034 160 S04 | 3.4 | 16 | 55 | 4 | | 2DUBE 068 320 S07 | 6.8 | 32 | 65 | 7 | |
| 2DUBE 0345 160 S04 | 3.45 | 16 | 55 | 4 | | 2DUBE 069 320 S07 | 6.9 | 32 | 65 | 7 | |

단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 생크 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 생크 Shank Dia d | 비고 |
|-------------------|---------------------|---------------------------|---------------------------|----------------------|----|-------------------|---------------------|---------------------------|---------------------------|----------------------|----|
| 2DUBE 070 320 S07 | 7 | 32 | 65 | 7 | | 2DUBE 120 520 S12 | 12 | 52 | 90 | 12 | |
| 2DUBE 071 320 S07 | 7.1 | 32 | 65 | 7 | | | | | | | |
| 2DUBE 072 360 S08 | 7.2 | 36 | 70 | 8 | | | | | | | |
| 2DUBE 073 360 S08 | 7.3 | 36 | 70 | 8 | | | | | | | |
| 2DUBE 074 360 S08 | 7.4 | 36 | 70 | 8 | | | | | | | |
| 2DUBE 075 360 S08 | 7.5 | 36 | 70 | 8 | | | | | | | |
| 2DUBE 076 360 S08 | 7.6 | 36 | 70 | 8 | | | | | | | |
| 2DUBE 077 360 S08 | 7.7 | 36 | 70 | 8 | | | | | | | |
| 2DUBE 078 360 S08 | 7.8 | 36 | 70 | 8 | | | | | | | |
| 2DUBE 079 360 S08 | 7.9 | 36 | 70 | 8 | | | | | | | |
| 2DUBE 080 360 S08 | 8 | 36 | 70 | 8 | | | | | | | |
| 2DUBE 081 360 S08 | 8.1 | 36 | 70 | 8 | | | | | | | |
| 2DUBE 082 400 S09 | 8.2 | 40 | 75 | 9 | | | | | | | |
| 2DUBE 083 400 S09 | 8.3 | 40 | 75 | 9 | | | | | | | |
| 2DUBE 084 400 S09 | 8.4 | 40 | 75 | 9 | | | | | | | |
| 2DUBE 085 400 S09 | 8.5 | 40 | 75 | 9 | | | | | | | |
| 2DUBE 086 400 S09 | 8.6 | 40 | 75 | 9 | | | | | | | |
| 2DUBE 087 400 S09 | 8.7 | 40 | 75 | 9 | | | | | | | |
| 2DUBE 088 400 S09 | 8.8 | 40 | 75 | 9 | | | | | | | |
| 2DUBE 089 400 S09 | 8.9 | 40 | 75 | 9 | | | | | | | |
| 2DUBE 090 400 S09 | 9 | 40 | 75 | 9 | | | | | | | |
| 2DUBE 091 400 S09 | 9.1 | 40 | 75 | 9 | | | | | | | |
| 2DUBE 092 430 S10 | 9.2 | 43 | 80 | 10 | | | | | | | |
| 2DUBE 093 430 S10 | 9.3 | 43 | 80 | 10 | | | | | | | |
| 2DUBE 094 430 S10 | 9.4 | 43 | 80 | 10 | | | | | | | |
| 2DUBE 095 430 S10 | 9.5 | 43 | 80 | 10 | | | | | | | |
| 2DUBE 096 430 S10 | 9.6 | 43 | 80 | 10 | | | | | | | |
| 2DUBE 097 430 S10 | 9.7 | 43 | 80 | 10 | | | | | | | |
| 2DUBE 098 430 S10 | 9.8 | 43 | 80 | 10 | | | | | | | |
| 2DUBE 099 430 S10 | 9.9 | 43 | 80 | 10 | | | | | | | |
| 2DUBE 100 430 S10 | 10 | 43 | 80 | 10 | | | | | | | |
| 2DUBE 101 430 S10 | 10.1 | 43 | 80 | 10 | | | | | | | |
| 2DUBE 102 450 S11 | 10.2 | 45 | 85 | 11 | | | | | | | |
| 2DUBE 103 450 S11 | 10.3 | 45 | 85 | 11 | | | | | | | |
| 2DUBE 104 450 S11 | 10.4 | 45 | 85 | 11 | | | | | | | |
| 2DUBE 105 450 S11 | 10.5 | 45 | 85 | 11 | | | | | | | |
| 2DUBE 106 450 S11 | 10.6 | 45 | 85 | 11 | | | | | | | |
| 2DUBE 107 450 S11 | 10.7 | 45 | 85 | 11 | | | | | | | |
| 2DUBE 108 450 S11 | 10.8 | 45 | 85 | 11 | | | | | | | |
| 2DUBE 109 450 S11 | 10.9 | 45 | 85 | 11 | | | | | | | |
| 2DUBE 110 450 S11 | 11 | 45 | 85 | 11 | | | | | | | |
| 2DUBE 111 450 S11 | 11.1 | 45 | 85 | 11 | | | | | | | |
| 2DUBE 112 520 S12 | 11.2 | 52 | 90 | 12 | | | | | | | |
| 2DUBE 113 520 S12 | 11.3 | 52 | 90 | 12 | | | | | | | |
| 2DUBE 114 520 S12 | 11.4 | 52 | 90 | 12 | | | | | | | |
| 2DUBE 115 520 S12 | 11.5 | 52 | 90 | 12 | | | | | | | |
| 2DUBE 116 520 S12 | 11.6 | 52 | 90 | 12 | | | | | | | |
| 2DUBE 117 520 S12 | 11.7 | 52 | 90 | 12 | | | | | | | |
| 2DUBE 118 520 S12 | 11.8 | 52 | 90 | 12 | | | | | | | |
| 2DUBE 119 520 S12 | 11.9 | 52 | 90 | 12 | | | | | | | |

초경 2날 두베 드릴



- HRC28이하, S45C, SCM, 주강, 주철용 고정밀 드릴
- T-CRO 코팅을 적용하여 드릴 가공 시 발생하는 윤착 현상을 최소화 하였습니다.
- 절삭 저항을 최소화하는 Point thinning을 채택 하였습니다.
- 특수 인선처리와 최적의 형상으로 치핑 및 돌발파손을 방지합니다.
- 우수한 공구의 강성과 칩 배출의 설계를 적용하여 칩 배출성을 향상시켰습니다.

- High-speed drill for materials up to HRC28, S45C, SCM, cast steel, and cast iron.
- Minimized adhesion during drilling operations by applying T-CRO coating.
- Adopted point thinning to minimize cutting resistance.
- Prevents chipping and unexpected fractures with special edge treatment and optimal shape.
- Enhanced chip evacuation with the application of a design for superior tool rigidity and chip evacuation.

2

WC
미립자

TCRO
COATING

h7
Diameter
Tolerance

30°
Helix Angle

140°

CUTTING
DATA

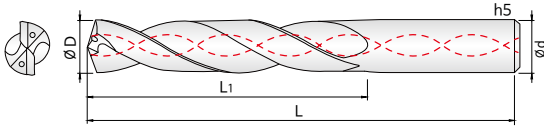
51P

단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샤프트 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샤프트 Shank Dia d | 비고 |
|-------------------|---------------------|------------------------------|------------------------------|--------------------------|----|-------------------|---------------------|------------------------------|------------------------------|--------------------------|----|
| 2DUBE 010 080 S03 | 1 | 8 | 40 | 3 | | 2DUBE 060 360 S06 | 6 | 36 | 65 | 6 | |
| 2DUBE 011 090 S03 | 1.1 | 9 | 40 | 3 | | 2DUBE 061 360 S06 | 6.1 | 36 | 65 | 6 | |
| 2DUBE 012 100 S03 | 1.2 | 10 | 40 | 3 | | 2DUBE 062 420 S07 | 6.2 | 42 | 75 | 7 | |
| 2DUBE 013 100 S03 | 1.3 | 10 | 40 | 3 | | 2DUBE 063 420 S07 | 6.3 | 42 | 75 | 7 | |
| 2DUBE 014 110 S03 | 1.4 | 11 | 40 | 3 | | 2DUBE 064 420 S07 | 6.4 | 42 | 75 | 7 | |
| 2DUBE 015 110 S03 | 1.5 | 11 | 40 | 3 | | 2DUBE 065 420 S07 | 6.5 | 42 | 75 | 7 | |
| 2DUBE 016 120 S03 | 1.6 | 12 | 40 | 3 | | 2DUBE 066 420 S07 | 6.6 | 42 | 75 | 7 | |
| 2DUBE 017 120 S03 | 1.7 | 12 | 40 | 3 | | 2DUBE 067 420 S07 | 6.7 | 42 | 75 | 7 | |
| 2DUBE 018 130 S03 | 1.8 | 13 | 40 | 3 | | 2DUBE 068 420 S07 | 6.8 | 42 | 75 | 7 | |
| 2DUBE 019 130 S03 | 1.9 | 13 | 40 | 3 | | 2DUBE 069 420 S07 | 6.9 | 42 | 75 | 7 | |
| 2DUBE 020 170 S03 | 2 | 17 | 50 | 3 | | 2DUBE 070 420 S07 | 7 | 42 | 75 | 7 | |
| 2DUBE 021 170 S03 | 2.1 | 17 | 50 | 3 | | 2DUBE 071 420 S07 | 7.1 | 42 | 75 | 7 | |
| 2DUBE 022 170 S03 | 2.2 | 17 | 50 | 3 | | 2DUBE 072 460 S08 | 7.2 | 46 | 80 | 8 | |
| 2DUBE 023 170 S03 | 2.3 | 17 | 50 | 3 | | 2DUBE 073 460 S08 | 7.3 | 46 | 80 | 8 | |
| 2DUBE 024 170 S03 | 2.4 | 17 | 50 | 3 | | 2DUBE 074 460 S08 | 7.4 | 46 | 80 | 8 | |
| 2DUBE 025 170 S03 | 2.5 | 17 | 50 | 3 | | 2DUBE 075 460 S08 | 7.5 | 46 | 80 | 8 | |
| 2DUBE 026 170 S03 | 2.6 | 17 | 50 | 3 | | 2DUBE 076 460 S08 | 7.6 | 46 | 80 | 8 | |
| 2DUBE 027 170 S03 | 2.7 | 17 | 50 | 3 | | 2DUBE 077 460 S08 | 7.7 | 46 | 80 | 8 | |
| 2DUBE 028 170 S03 | 2.8 | 17 | 50 | 3 | | 2DUBE 078 460 S08 | 7.8 | 46 | 80 | 8 | |
| 2DUBE 029 170 S03 | 2.9 | 17 | 50 | 3 | | 2DUBE 079 460 S08 | 7.9 | 46 | 80 | 8 | |
| 2DUBE 030 200 S04 | 3 | 20 | 55 | 4 | | 2DUBE 080 460 S08 | 8 | 46 | 80 | 8 | |
| 2DUBE 031 200 S04 | 3.1 | 20 | 55 | 4 | | 2DUBE 081 460 S08 | 8.1 | 46 | 80 | 8 | |
| 2DUBE 032 200 S04 | 3.2 | 20 | 55 | 4 | | 2DUBE 082 500 S09 | 8.2 | 50 | 85 | 9 | |
| 2DUBE 033 200 S04 | 3.3 | 20 | 55 | 4 | | 2DUBE 083 500 S09 | 8.3 | 50 | 85 | 9 | |
| 2DUBE 034 200 S04 | 3.4 | 20 | 55 | 4 | | 2DUBE 084 500 S09 | 8.4 | 50 | 85 | 9 | |
| 2DUBE 035 200 S04 | 3.5 | 20 | 55 | 4 | | 2DUBE 085 500 S09 | 8.5 | 50 | 85 | 9 | |
| 2DUBE 036 250 S04 | 3.6 | 25 | 55 | 4 | | 2DUBE 086 500 S09 | 8.6 | 50 | 85 | 9 | |
| 2DUBE 037 250 S04 | 3.7 | 25 | 55 | 4 | | 2DUBE 087 500 S09 | 8.7 | 50 | 85 | 9 | |
| 2DUBE 038 250 S04 | 3.8 | 25 | 55 | 4 | | 2DUBE 088 500 S09 | 8.8 | 50 | 85 | 9 | |
| 2DUBE 039 250 S04 | 3.9 | 25 | 55 | 4 | | 2DUBE 089 500 S09 | 8.9 | 50 | 85 | 9 | |
| 2DUBE 040 250 S04 | 4 | 25 | 55 | 4 | | 2DUBE 090 500 S09 | 9 | 50 | 85 | 9 | |
| 2DUBE 041 250 S04 | 4.1 | 25 | 55 | 4 | | 2DUBE 091 500 S09 | 9.1 | 50 | 85 | 9 | |
| 2DUBE 042 320 S05 | 4.2 | 32 | 60 | 5 | | 2DUBE 092 530 S10 | 9.2 | 53 | 90 | 10 | |
| 2DUBE 043 320 S05 | 4.3 | 32 | 60 | 5 | | 2DUBE 093 530 S10 | 9.3 | 53 | 90 | 10 | |
| 2DUBE 044 320 S05 | 4.4 | 32 | 60 | 5 | | 2DUBE 094 530 S10 | 9.4 | 53 | 90 | 10 | |
| 2DUBE 045 320 S05 | 4.5 | 32 | 60 | 5 | | 2DUBE 095 530 S10 | 9.5 | 53 | 90 | 10 | |
| 2DUBE 046 320 S05 | 4.6 | 32 | 60 | 5 | | 2DUBE 096 530 S10 | 9.6 | 53 | 90 | 10 | |
| 2DUBE 047 320 S05 | 4.7 | 32 | 60 | 5 | | 2DUBE 097 530 S10 | 9.7 | 53 | 90 | 10 | |
| 2DUBE 048 320 S05 | 4.8 | 32 | 60 | 5 | | 2DUBE 098 530 S10 | 9.8 | 53 | 90 | 10 | |
| 2DUBE 049 320 S05 | 4.9 | 32 | 60 | 5 | | 2DUBE 099 530 S10 | 9.9 | 53 | 90 | 10 | |
| 2DUBE 050 320 S05 | 5 | 32 | 60 | 5 | | 2DUBE 100 530 S10 | 10 | 53 | 90 | 10 | |
| 2DUBE 051 320 S05 | 5.1 | 32 | 60 | 5 | | 2DUBE 101 530 S10 | 10.1 | 53 | 90 | 10 | |
| 2DUBE 052 360 S06 | 5.2 | 36 | 65 | 6 | | 2DUBE 102 550 S11 | 10.2 | 55 | 95 | 11 | |
| 2DUBE 053 360 S06 | 5.3 | 36 | 65 | 6 | | 2DUBE 103 550 S11 | 10.3 | 55 | 95 | 11 | |
| 2DUBE 054 360 S06 | 5.4 | 36 | 65 | 6 | | 2DUBE 104 550 S11 | 10.4 | 55 | 95 | 11 | |
| 2DUBE 055 360 S06 | 5.5 | 36 | 65 | 6 | | 2DUBE 105 550 S11 | 10.5 | 55 | 95 | 11 | |
| 2DUBE 056 360 S06 | 5.6 | 36 | 65 | 6 | | 2DUBE 106 550 S11 | 10.6 | 55 | 95 | 11 | |
| 2DUBE 057 360 S06 | 5.7 | 36 | 65 | 6 | | 2DUBE 107 550 S11 | 10.7 | 55 | 95 | 11 | |
| 2DUBE 058 360 S06 | 5.8 | 36 | 65 | 6 | | 2DUBE 108 550 S11 | 10.8 | 55 | 95 | 11 | |
| 2DUBE 059 360 S06 | 5.9 | 36 | 65 | 6 | | 2DUBE 109 550 S11 | 10.9 | 55 | 95 | 11 | |

단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Dia d | 비고 |
|-------------------|---------------------|---------------------------|---------------------------|----------------|----|-------------------|---------------------|---------------------------|---------------------------|----------------|----|
| 2DUBE 110 550 S11 | 11 | 55 | 100 | 11 | | 2DUBE 160 690 S16 | 16 | 69 | 115 | 16 | |
| 2DUBE 111 550 S11 | 11.1 | 55 | 100 | 11 | | 2DUBE 161 690 S16 | 16.1 | 69 | 115 | 16 | |
| 2DUBE 112 620 S12 | 11.2 | 62 | 100 | 12 | | 2DUBE 162 710 S17 | 16.2 | 71 | 120 | 17 | |
| 2DUBE 113 620 S12 | 11.3 | 62 | 100 | 12 | | 2DUBE 163 710 S17 | 16.3 | 71 | 120 | 17 | |
| 2DUBE 114 620 S12 | 11.4 | 62 | 100 | 12 | | 2DUBE 164 710 S17 | 16.4 | 71 | 120 | 17 | |
| 2DUBE 115 620 S12 | 11.5 | 62 | 100 | 12 | | 2DUBE 165 710 S17 | 16.5 | 71 | 120 | 17 | |
| 2DUBE 116 620 S12 | 11.6 | 62 | 100 | 12 | | 2DUBE 166 710 S17 | 16.6 | 71 | 120 | 17 | |
| 2DUBE 117 620 S12 | 11.7 | 62 | 100 | 12 | | 2DUBE 167 710 S17 | 16.7 | 71 | 120 | 17 | |
| 2DUBE 118 620 S12 | 11.8 | 62 | 100 | 12 | | 2DUBE 168 710 S17 | 16.8 | 71 | 120 | 17 | |
| 2DUBE 119 620 S12 | 11.9 | 62 | 100 | 12 | | 2DUBE 169 710 S17 | 16.9 | 71 | 120 | 17 | |
| 2DUBE 120 620 S12 | 12 | 62 | 100 | 12 | | 2DUBE 170 710 S17 | 17 | 71 | 120 | 17 | |
| 2DUBE 121 620 S12 | 12.1 | 62 | 100 | 12 | | 2DUBE 171 710 S17 | 17.1 | 71 | 120 | 17 | |
| 2DUBE 122 620 S13 | 12.2 | 62 | 100 | 13 | | 2DUBE 172 740 S18 | 17.2 | 74 | 125 | 18 | |
| 2DUBE 123 620 S13 | 12.3 | 62 | 100 | 13 | | 2DUBE 173 740 S18 | 17.3 | 74 | 125 | 18 | |
| 2DUBE 124 620 S13 | 12.4 | 62 | 100 | 13 | | 2DUBE 174 740 S18 | 17.4 | 74 | 125 | 18 | |
| 2DUBE 125 620 S13 | 12.5 | 62 | 100 | 13 | | 2DUBE 175 740 S18 | 17.5 | 74 | 125 | 18 | |
| 2DUBE 126 620 S13 | 12.6 | 62 | 100 | 13 | | 2DUBE 176 740 S18 | 17.6 | 74 | 125 | 18 | |
| 2DUBE 127 620 S13 | 12.7 | 62 | 100 | 13 | | 2DUBE 177 740 S18 | 17.7 | 74 | 125 | 18 | |
| 2DUBE 128 620 S13 | 12.8 | 62 | 100 | 13 | | 2DUBE 178 740 S18 | 17.8 | 74 | 125 | 18 | |
| 2DUBE 129 620 S13 | 12.9 | 62 | 100 | 13 | | 2DUBE 179 740 S18 | 17.9 | 74 | 125 | 18 | |
| 2DUBE 130 620 S13 | 13 | 62 | 100 | 13 | | 2DUBE 180 740 S18 | 18 | 74 | 125 | 18 | |
| 2DUBE 131 620 S13 | 13.1 | 62 | 100 | 13 | | 2DUBE 181 740 S18 | 18.1 | 74 | 125 | 18 | |
| 2DUBE 132 640 S14 | 13.2 | 64 | 105 | 14 | | 2DUBE 182 760 S19 | 18.2 | 76 | 130 | 19 | |
| 2DUBE 133 640 S14 | 13.3 | 64 | 105 | 14 | | 2DUBE 183 760 S19 | 18.3 | 76 | 130 | 19 | |
| 2DUBE 134 640 S14 | 13.4 | 64 | 105 | 14 | | 2DUBE 184 760 S19 | 18.4 | 76 | 130 | 19 | |
| 2DUBE 135 640 S14 | 13.5 | 64 | 105 | 14 | | 2DUBE 185 760 S19 | 18.5 | 76 | 130 | 19 | |
| 2DUBE 136 640 S14 | 13.6 | 64 | 105 | 14 | | 2DUBE 186 760 S19 | 18.6 | 76 | 130 | 19 | |
| 2DUBE 137 640 S14 | 13.7 | 64 | 105 | 14 | | 2DUBE 187 760 S19 | 18.7 | 76 | 130 | 19 | |
| 2DUBE 138 640 S14 | 13.8 | 64 | 105 | 14 | | 2DUBE 188 760 S19 | 18.8 | 76 | 130 | 19 | |
| 2DUBE 139 640 S14 | 13.9 | 64 | 105 | 14 | | 2DUBE 189 760 S19 | 18.9 | 76 | 130 | 19 | |
| 2DUBE 140 640 S14 | 14 | 64 | 105 | 14 | | 2DUBE 190 760 S19 | 19 | 76 | 130 | 19 | |
| 2DUBE 141 640 S14 | 14.1 | 64 | 105 | 14 | | 2DUBE 191 760 S19 | 19.1 | 76 | 130 | 19 | |
| 2DUBE 142 670 S15 | 14.2 | 67 | 110 | 15 | | 2DUBE 192 800 S20 | 19.2 | 80 | 130 | 20 | |
| 2DUBE 143 670 S15 | 14.3 | 67 | 110 | 15 | | 2DUBE 193 800 S20 | 19.3 | 80 | 130 | 20 | |
| 2DUBE 144 670 S15 | 14.4 | 67 | 110 | 15 | | 2DUBE 194 800 S20 | 19.4 | 80 | 130 | 20 | |
| 2DUBE 145 670 S15 | 14.5 | 67 | 110 | 15 | | 2DUBE 195 800 S20 | 19.5 | 80 | 130 | 20 | |
| 2DUBE 146 670 S15 | 14.6 | 67 | 110 | 15 | | 2DUBE 196 800 S20 | 19.6 | 80 | 130 | 20 | |
| 2DUBE 147 670 S15 | 14.7 | 67 | 110 | 15 | | 2DUBE 197 800 S20 | 19.7 | 80 | 130 | 20 | |
| 2DUBE 148 670 S15 | 14.8 | 67 | 110 | 15 | | 2DUBE 198 800 S20 | 19.8 | 80 | 130 | 20 | |
| 2DUBE 149 670 S15 | 14.9 | 67 | 110 | 15 | | 2DUBE 199 800 S20 | 19.9 | 80 | 130 | 20 | |
| 2DUBE 150 670 S15 | 15 | 67 | 110 | 15 | | 2DUBE 200 800 S20 | 20 | 80 | 130 | 20 | |
| 2DUBE 151 670 S15 | 15.1 | 67 | 110 | 15 | | | | | | | |
| 2DUBE 152 690 S16 | 15.2 | 69 | 115 | 16 | | | | | | | |
| 2DUBE 153 690 S16 | 15.3 | 69 | 115 | 16 | | | | | | | |
| 2DUBE 154 690 S16 | 15.4 | 69 | 115 | 16 | | | | | | | |
| 2DUBE 155 690 S16 | 15.5 | 69 | 115 | 16 | | | | | | | |
| 2DUBE 156 690 S16 | 15.6 | 69 | 115 | 16 | | | | | | | |
| 2DUBE 157 690 S16 | 15.7 | 69 | 115 | 16 | | | | | | | |
| 2DUBE 158 690 S16 | 15.8 | 69 | 115 | 16 | | | | | | | |
| 2DUBE 159 690 S16 | 15.9 | 69 | 115 | 16 | | | | | | | |



- SUS, Titanium, HRC28이하 SCM등의 합금용 난삭재 가공 드릴
- Cross cut 코팅을 적용하여 우수한 내열성과 내마모성으로 절삭영역을 확대하였습니다.
- 절삭 저항을 최소화하는 Point thinning을 채택 하였습니다.
- 최적에 플루트 형상 설계와 내부급유 방식을 적용하여 칩배출 성능이 매우 우수합니다.
- 140도 선단각 설계하여 높은 고정밀, 고속 드릴링 작업에 탁월한 성능을 발휘합니다.

High-speed drill for SUS, alloy materials up to HRC28, SCM and Titanium.

- Minimized adhesion during drilling operations by applying cross-cut coating.
- Adopted point thinning to minimize cutting resistance.
- Excellent chip evacuation performance achieved by applying an optimal flute design and internal coolant system.
- Design with a 140-degree point angle for outstanding performance in high highprecision, high-speed drilling operations.



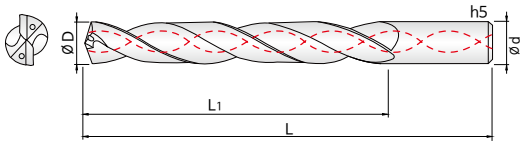
52P

단위 : mm

| Order Number | 날경 Diameter D | 홀길이 Flute Length L1 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 홀길이 Flute Length L1 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 |
|--------------------|---------------------|---------------------------|---------------------------|----------------------|----|--------------------|---------------------|---------------------------|---------------------------|----------------------|----|
| 2DUBEW 010 080 S03 | 1 | 8 | 40 | 3 | | 2DUBEW 060 280 S06 | 6 | 28 | 65 | 6 | |
| 2DUBEW 011 080 S03 | 1.1 | 8 | 40 | 3 | | 2DUBEW 061 340 S08 | 6.1 | 34 | 80 | 8 | |
| 2DUBEW 012 080 S03 | 1.2 | 8 | 40 | 3 | | 2DUBEW 062 340 S08 | 6.2 | 34 | 80 | 8 | |
| 2DUBEW 013 080 S03 | 1.3 | 8 | 40 | 3 | | 2DUBEW 063 340 S08 | 6.3 | 34 | 80 | 8 | |
| 2DUBEW 014 080 S03 | 1.4 | 8 | 40 | 3 | | 2DUBEW 064 340 S08 | 6.4 | 34 | 80 | 8 | |
| 2DUBEW 015 080 S03 | 1.5 | 8 | 50 | 3 | | 2DUBEW 065 340 S08 | 6.5 | 34 | 80 | 8 | |
| 2DUBEW 016 080 S03 | 1.6 | 8 | 50 | 3 | | 2DUBEW 066 340 S08 | 6.6 | 34 | 80 | 8 | |
| 2DUBEW 017 100 S03 | 1.7 | 10 | 50 | 3 | | 2DUBEW 067 340 S08 | 6.7 | 34 | 80 | 8 | |
| 2DUBEW 018 100 S03 | 1.8 | 10 | 50 | 3 | | 2DUBEW 068 340 S08 | 6.8 | 34 | 80 | 8 | |
| 2DUBEW 019 100 S03 | 1.9 | 10 | 50 | 3 | | 2DUBEW 069 340 S08 | 6.9 | 34 | 80 | 8 | |
| 2DUBEW 020 160 S04 | 2 | 16 | 50 | 4 | | 2DUBEW 070 340 S08 | 7 | 34 | 80 | 8 | |
| 2DUBEW 021 160 S04 | 2.1 | 16 | 50 | 4 | | 2DUBEW 071 410 S08 | 7.1 | 41 | 80 | 8 | |
| 2DUBEW 022 160 S04 | 2.2 | 16 | 50 | 4 | | 2DUBEW 072 410 S08 | 7.2 | 41 | 80 | 8 | |
| 2DUBEW 023 160 S04 | 2.3 | 16 | 50 | 4 | | 2DUBEW 073 410 S08 | 7.3 | 41 | 80 | 8 | |
| 2DUBEW 024 160 S04 | 2.4 | 16 | 50 | 4 | | 2DUBEW 074 410 S08 | 7.4 | 41 | 80 | 8 | |
| 2DUBEW 025 200 S04 | 2.5 | 20 | 50 | 4 | | 2DUBEW 075 410 S08 | 7.5 | 41 | 80 | 8 | |
| 2DUBEW 026 200 S04 | 2.6 | 20 | 50 | 4 | | 2DUBEW 076 410 S08 | 7.6 | 41 | 80 | 8 | |
| 2DUBEW 027 200 S04 | 2.7 | 20 | 50 | 4 | | 2DUBEW 077 410 S08 | 7.7 | 41 | 80 | 8 | |
| 2DUBEW 028 200 S04 | 2.8 | 20 | 50 | 4 | | 2DUBEW 078 410 S08 | 7.8 | 41 | 80 | 8 | |
| 2DUBEW 029 200 S04 | 2.9 | 20 | 50 | 4 | | 2DUBEW 079 410 S08 | 7.9 | 41 | 80 | 8 | |
| 2DUBEW 030 200 S06 | 3 | 20 | 60 | 6 | | 2DUBEW 080 410 S08 | 8 | 41 | 80 | 8 | |
| 2DUBEW 031 200 S06 | 3.1 | 20 | 60 | 6 | | 2DUBEW 081 470 S10 | 8.1 | 47 | 90 | 10 | |
| 2DUBEW 032 200 S06 | 3.2 | 20 | 60 | 6 | | 2DUBEW 082 470 S10 | 8.2 | 47 | 90 | 10 | |
| 2DUBEW 033 200 S06 | 3.3 | 20 | 60 | 6 | | 2DUBEW 083 470 S10 | 8.3 | 47 | 90 | 10 | |
| 2DUBEW 034 200 S06 | 3.4 | 20 | 60 | 6 | | 2DUBEW 084 470 S10 | 8.4 | 47 | 90 | 10 | |
| 2DUBEW 035 200 S06 | 3.5 | 20 | 60 | 6 | | 2DUBEW 085 470 S10 | 8.5 | 47 | 90 | 10 | |
| 2DUBEW 036 200 S06 | 3.6 | 20 | 60 | 6 | | 2DUBEW 086 470 S10 | 8.6 | 47 | 90 | 10 | |
| 2DUBEW 037 200 S06 | 3.7 | 20 | 60 | 6 | | 2DUBEW 087 470 S10 | 8.7 | 47 | 90 | 10 | |
| 2DUBEW 038 240 S06 | 3.8 | 24 | 65 | 6 | | 2DUBEW 088 470 S10 | 8.8 | 47 | 90 | 10 | |
| 2DUBEW 039 240 S06 | 3.9 | 24 | 65 | 6 | | 2DUBEW 089 470 S10 | 8.9 | 47 | 90 | 10 | |
| 2DUBEW 040 240 S06 | 4 | 24 | 65 | 6 | | 2DUBEW 090 470 S10 | 9 | 47 | 90 | 10 | |
| 2DUBEW 041 240 S06 | 4.1 | 24 | 65 | 6 | | 2DUBEW 091 470 S10 | 9.1 | 47 | 90 | 10 | |
| 2DUBEW 042 240 S06 | 4.2 | 24 | 65 | 6 | | 2DUBEW 092 470 S10 | 9.2 | 47 | 90 | 10 | |
| 2DUBEW 043 240 S06 | 4.3 | 24 | 65 | 6 | | 2DUBEW 093 470 S10 | 9.3 | 47 | 90 | 10 | |
| 2DUBEW 044 240 S06 | 4.4 | 24 | 65 | 6 | | 2DUBEW 094 470 S10 | 9.4 | 47 | 90 | 10 | |
| 2DUBEW 045 240 S06 | 4.5 | 24 | 65 | 6 | | 2DUBEW 095 470 S10 | 9.5 | 47 | 90 | 10 | |
| 2DUBEW 046 240 S06 | 4.6 | 24 | 65 | 6 | | 2DUBEW 096 470 S10 | 9.6 | 47 | 90 | 10 | |
| 2DUBEW 047 240 S06 | 4.7 | 24 | 65 | 6 | | 2DUBEW 097 470 S10 | 9.7 | 47 | 90 | 10 | |
| 2DUBEW 048 280 S06 | 4.8 | 28 | 65 | 6 | | 2DUBEW 098 470 S10 | 9.8 | 47 | 90 | 10 | |
| 2DUBEW 049 280 S06 | 4.9 | 28 | 65 | 6 | | 2DUBEW 099 470 S10 | 9.9 | 47 | 90 | 10 | |
| 2DUBEW 050 280 S06 | 5 | 28 | 65 | 6 | | 2DUBEW 100 470 S10 | 10 | 47 | 90 | 10 | |
| 2DUBEW 051 280 S06 | 5.1 | 28 | 65 | 6 | | 2DUBEW 101 550 S12 | 10.1 | 55 | 100 | 12 | |
| 2DUBEW 052 280 S06 | 5.2 | 28 | 65 | 6 | | 2DUBEW 102 550 S12 | 10.2 | 55 | 100 | 12 | |
| 2DUBEW 053 280 S06 | 5.3 | 28 | 65 | 6 | | 2DUBEW 103 550 S12 | 10.3 | 55 | 100 | 12 | |
| 2DUBEW 054 280 S06 | 5.4 | 28 | 65 | 6 | | 2DUBEW 104 550 S12 | 10.4 | 55 | 100 | 12 | |
| 2DUBEW 055 280 S06 | 5.5 | 28 | 65 | 6 | | 2DUBEW 105 550 S12 | 10.5 | 55 | 100 | 12 | |
| 2DUBEW 056 280 S06 | 5.6 | 28 | 65 | 6 | | 2DUBEW 106 550 S12 | 10.6 | 55 | 100 | 12 | |
| 2DUBEW 057 280 S06 | 5.7 | 28 | 65 | 6 | | 2DUBEW 107 550 S12 | 10.7 | 55 | 100 | 12 | |
| 2DUBEW 058 280 S06 | 5.8 | 28 | 65 | 6 | | 2DUBEW 108 550 S12 | 10.8 | 55 | 100 | 12 | |
| 2DUBEW 059 280 S06 | 5.9 | 28 | 65 | 6 | | 2DUBEW 109 550 S12 | 10.9 | 55 | 100 | 12 | |

단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Dia d | 비고 |
|--------------------|---------------------|------------------------------|------------------------------|----------------|----|--------------------|---------------------|------------------------------|------------------------------|----------------|----|
| 2DUBEW 110 550 S12 | 11 | 55 | 100 | 12 | | 2DUBEW 160 650 S16 | 16 | 65 | 115 | 16 | |
| 2DUBEW 111 550 S12 | 11.1 | 55 | 100 | 12 | | 2DUBEW 161 730 S18 | 16.1 | 73 | 125 | 18 | |
| 2DUBEW 112 550 S12 | 11.2 | 55 | 100 | 12 | | 2DUBEW 162 730 S18 | 16.2 | 73 | 125 | 18 | |
| 2DUBEW 113 550 S12 | 11.3 | 55 | 100 | 12 | | 2DUBEW 163 730 S18 | 16.3 | 73 | 125 | 18 | |
| 2DUBEW 114 550 S12 | 11.4 | 55 | 100 | 12 | | 2DUBEW 164 730 S18 | 16.4 | 73 | 125 | 18 | |
| 2DUBEW 115 550 S12 | 11.5 | 55 | 100 | 12 | | 2DUBEW 165 730 S18 | 16.5 | 73 | 125 | 18 | |
| 2DUBEW 116 550 S12 | 11.6 | 55 | 100 | 12 | | 2DUBEW 166 730 S18 | 16.6 | 73 | 125 | 18 | |
| 2DUBEW 117 550 S12 | 11.7 | 55 | 100 | 12 | | 2DUBEW 167 730 S18 | 16.7 | 73 | 125 | 18 | |
| 2DUBEW 118 550 S12 | 11.8 | 55 | 100 | 12 | | 2DUBEW 168 730 S18 | 16.8 | 73 | 125 | 18 | |
| 2DUBEW 119 550 S12 | 11.9 | 55 | 100 | 12 | | 2DUBEW 169 730 S18 | 16.9 | 73 | 125 | 18 | |
| 2DUBEW 120 550 S12 | 12 | 55 | 100 | 12 | | 2DUBEW 170 730 S18 | 17 | 73 | 125 | 18 | |
| 2DUBEW 121 600 S14 | 12.1 | 60 | 100 | 14 | | 2DUBEW 171 730 S18 | 17.1 | 73 | 125 | 18 | |
| 2DUBEW 122 600 S14 | 12.2 | 60 | 100 | 14 | | 2DUBEW 172 730 S18 | 17.2 | 73 | 125 | 18 | |
| 2DUBEW 123 600 S14 | 12.3 | 60 | 100 | 14 | | 2DUBEW 173 730 S18 | 17.3 | 73 | 125 | 18 | |
| 2DUBEW 124 600 S14 | 12.4 | 60 | 100 | 14 | | 2DUBEW 174 730 S18 | 17.4 | 73 | 125 | 18 | |
| 2DUBEW 125 600 S14 | 12.5 | 60 | 100 | 14 | | 2DUBEW 175 730 S18 | 17.5 | 73 | 125 | 18 | |
| 2DUBEW 126 600 S14 | 12.6 | 60 | 100 | 14 | | 2DUBEW 176 730 S18 | 17.6 | 73 | 125 | 18 | |
| 2DUBEW 127 600 S14 | 12.7 | 60 | 100 | 14 | | 2DUBEW 177 730 S18 | 17.7 | 73 | 125 | 18 | |
| 2DUBEW 128 600 S14 | 12.8 | 60 | 100 | 14 | | 2DUBEW 178 730 S18 | 17.8 | 73 | 125 | 18 | |
| 2DUBEW 129 600 S14 | 12.9 | 60 | 100 | 14 | | 2DUBEW 179 730 S18 | 17.9 | 73 | 125 | 18 | |
| 2DUBEW 130 600 S14 | 13 | 60 | 100 | 14 | | 2DUBEW 180 730 S18 | 18 | 73 | 125 | 18 | |
| 2DUBEW 131 600 S14 | 13.1 | 60 | 100 | 14 | | 2DUBEW 181 790 S20 | 18.1 | 79 | 130 | 20 | |
| 2DUBEW 132 600 S14 | 13.2 | 60 | 105 | 14 | | 2DUBEW 182 790 S20 | 18.2 | 79 | 130 | 20 | |
| 2DUBEW 133 600 S14 | 13.3 | 60 | 105 | 14 | | 2DUBEW 183 790 S20 | 18.3 | 79 | 130 | 20 | |
| 2DUBEW 134 600 S14 | 13.4 | 60 | 105 | 14 | | 2DUBEW 184 790 S20 | 18.4 | 79 | 130 | 20 | |
| 2DUBEW 135 600 S14 | 13.5 | 60 | 105 | 14 | | 2DUBEW 185 790 S20 | 18.5 | 79 | 130 | 20 | |
| 2DUBEW 136 600 S14 | 13.6 | 60 | 105 | 14 | | 2DUBEW 186 790 S20 | 18.6 | 79 | 130 | 20 | |
| 2DUBEW 137 600 S14 | 13.7 | 60 | 105 | 14 | | 2DUBEW 187 790 S20 | 18.7 | 79 | 130 | 20 | |
| 2DUBEW 138 600 S14 | 13.8 | 60 | 105 | 14 | | 2DUBEW 188 790 S20 | 18.8 | 79 | 130 | 20 | |
| 2DUBEW 139 600 S14 | 13.9 | 60 | 105 | 14 | | 2DUBEW 189 790 S20 | 18.9 | 79 | 130 | 20 | |
| 2DUBEW 140 600 S14 | 14 | 60 | 105 | 14 | | 2DUBEW 190 790 S20 | 19 | 79 | 130 | 20 | |
| 2DUBEW 141 650 S16 | 14.1 | 65 | 110 | 16 | | 2DUBEW 191 790 S20 | 19.1 | 79 | 130 | 20 | |
| 2DUBEW 142 650 S16 | 14.2 | 65 | 110 | 16 | | 2DUBEW 192 790 S20 | 19.2 | 79 | 130 | 20 | |
| 2DUBEW 143 650 S16 | 14.3 | 65 | 110 | 16 | | 2DUBEW 193 790 S20 | 19.3 | 79 | 130 | 20 | |
| 2DUBEW 144 650 S16 | 14.4 | 65 | 110 | 16 | | 2DUBEW 194 790 S20 | 19.4 | 79 | 130 | 20 | |
| 2DUBEW 145 650 S16 | 14.5 | 65 | 110 | 16 | | 2DUBEW 195 790 S20 | 19.5 | 79 | 130 | 20 | |
| 2DUBEW 146 650 S16 | 14.6 | 65 | 110 | 16 | | 2DUBEW 196 790 S20 | 19.6 | 79 | 130 | 20 | |
| 2DUBEW 147 650 S16 | 14.7 | 65 | 110 | 16 | | 2DUBEW 197 790 S20 | 19.7 | 79 | 130 | 20 | |
| 2DUBEW 148 650 S16 | 14.8 | 65 | 110 | 16 | | 2DUBEW 198 790 S20 | 19.8 | 79 | 130 | 20 | |
| 2DUBEW 149 650 S16 | 14.9 | 65 | 110 | 16 | | 2DUBEW 199 790 S20 | 19.9 | 79 | 130 | 20 | |
| 2DUBEW 150 650 S16 | 15 | 65 | 110 | 16 | | 2DUBEW 200 790 S20 | 20 | 79 | 130 | 20 | |
| 2DUBEW 151 650 S16 | 15.1 | 65 | 110 | 16 | | | | | | | |
| 2DUBEW 152 650 S16 | 15.2 | 65 | 115 | 16 | | | | | | | |
| 2DUBEW 153 650 S16 | 15.3 | 65 | 115 | 16 | | | | | | | |
| 2DUBEW 154 650 S16 | 15.4 | 65 | 115 | 16 | | | | | | | |
| 2DUBEW 155 650 S16 | 15.5 | 65 | 115 | 16 | | | | | | | |
| 2DUBEW 156 650 S16 | 15.6 | 65 | 115 | 16 | | | | | | | |
| 2DUBEW 157 650 S16 | 15.7 | 65 | 115 | 16 | | | | | | | |
| 2DUBEW 158 650 S16 | 15.8 | 65 | 115 | 16 | | | | | | | |
| 2DUBEW 159 650 S16 | 15.9 | 65 | 115 | 16 | | | | | | | |



- SUS, Titanium, HRC28이하 SCM등의 합금용 난삭재 가공 드릴
- Cross cut 코팅을 적용하여 우수한 내열성과 내마모성으로 절삭영역을 확대하였습니다.
- 절삭 저항을 최소화하는 Point thinning을 채택 하였습니다.
- 최적에 플루트 형성 설계와 내부급유 방식을 적용하여 칩배출 성능이 매우 우수합니다.
- 140도 선단각 설계하여 높은 고정밀, 고속 드릴링 작업에 탁월한 성능을 발휘합니다.

High-speed drill for SUS, alloy materials up to HRC28, SCM and Titanium.

- Minimized adhesion during drilling operations by applying cross-cut coating.
- Adopted point thinning to minimize cutting resistance.
- Excellent chip evacuation performance achieved by applying an optimal flute design and internal coolant system.
- Design with a 140-degree point angle for outstanding performance in high highprecision, high-speed drilling operations.



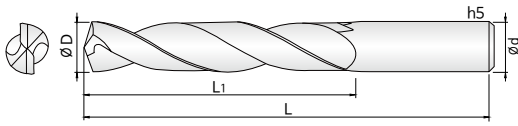
52P

단위 : mm

| Order Number | 날경 Diameter D | 홀길이 Flute Length L1 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 홀길이 Flute Length L1 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 |
|--------------------|---------------------|---------------------------|---------------------------|----------------------|----|--------------------|---------------------|---------------------------|---------------------------|----------------------|----|
| 2DUBEW 010 100 S03 | 1 | 10 | 55 | 3 | | 2DUBEW 060 440 S06 | 6 | 44 | 80 | 6 | |
| 2DUBEW 011 120 S03 | 1.1 | 12 | 55 | 3 | | 2DUBEW 061 530 S08 | 6.1 | 53 | 90 | 8 | |
| 2DUBEW 012 120 S03 | 1.2 | 12 | 55 | 3 | | 2DUBEW 062 530 S08 | 6.2 | 53 | 90 | 8 | |
| 2DUBEW 013 120 S03 | 1.3 | 12 | 55 | 3 | | 2DUBEW 063 530 S08 | 6.3 | 53 | 90 | 8 | |
| 2DUBEW 014 120 S03 | 1.4 | 12 | 55 | 3 | | 2DUBEW 064 530 S08 | 6.4 | 53 | 90 | 8 | |
| 2DUBEW 015 120 S03 | 1.5 | 12 | 55 | 3 | | 2DUBEW 065 530 S08 | 6.5 | 53 | 90 | 8 | |
| 2DUBEW 016 160 S03 | 1.6 | 16 | 55 | 3 | | 2DUBEW 066 530 S08 | 6.6 | 53 | 90 | 8 | |
| 2DUBEW 017 160 S03 | 1.7 | 16 | 55 | 3 | | 2DUBEW 067 530 S08 | 6.7 | 53 | 90 | 8 | |
| 2DUBEW 018 160 S03 | 1.8 | 16 | 55 | 3 | | 2DUBEW 068 530 S08 | 6.8 | 53 | 90 | 8 | |
| 2DUBEW 019 160 S03 | 1.9 | 16 | 55 | 3 | | 2DUBEW 069 530 S08 | 6.9 | 53 | 90 | 8 | |
| 2DUBEW 020 210 S04 | 2 | 21 | 55 | 4 | | 2DUBEW 070 530 S08 | 7 | 53 | 90 | 8 | |
| 2DUBEW 021 210 S04 | 2.1 | 21 | 55 | 4 | | 2DUBEW 071 530 S08 | 7.1 | 53 | 90 | 8 | |
| 2DUBEW 022 210 S04 | 2.2 | 21 | 55 | 4 | | 2DUBEW 072 530 S08 | 7.2 | 53 | 90 | 8 | |
| 2DUBEW 023 210 S04 | 2.3 | 21 | 55 | 4 | | 2DUBEW 073 530 S08 | 7.3 | 53 | 90 | 8 | |
| 2DUBEW 024 210 S04 | 2.4 | 21 | 55 | 4 | | 2DUBEW 074 530 S08 | 7.4 | 53 | 90 | 8 | |
| 2DUBEW 025 210 S04 | 2.5 | 21 | 55 | 4 | | 2DUBEW 075 530 S08 | 7.5 | 53 | 90 | 8 | |
| 2DUBEW 026 210 S04 | 2.6 | 21 | 55 | 4 | | 2DUBEW 076 530 S08 | 7.6 | 53 | 90 | 8 | |
| 2DUBEW 027 210 S04 | 2.7 | 21 | 55 | 4 | | 2DUBEW 077 530 S08 | 7.7 | 53 | 90 | 8 | |
| 2DUBEW 028 210 S04 | 2.8 | 21 | 55 | 4 | | 2DUBEW 078 530 S08 | 7.8 | 53 | 90 | 8 | |
| 2DUBEW 029 210 S04 | 2.9 | 21 | 55 | 4 | | 2DUBEW 079 530 S08 | 7.9 | 53 | 90 | 8 | |
| 2DUBEW 030 280 S06 | 3 | 28 | 65 | 6 | | 2DUBEW 080 530 S08 | 8 | 53 | 90 | 8 | |
| 2DUBEW 031 280 S06 | 3.1 | 28 | 65 | 6 | | 2DUBEW 081 610 S10 | 8.1 | 61 | 105 | 10 | |
| 2DUBEW 032 280 S06 | 3.2 | 28 | 65 | 6 | | 2DUBEW 082 610 S10 | 8.2 | 61 | 105 | 10 | |
| 2DUBEW 033 280 S06 | 3.3 | 28 | 65 | 6 | | 2DUBEW 083 610 S10 | 8.3 | 61 | 105 | 10 | |
| 2DUBEW 034 280 S06 | 3.4 | 28 | 65 | 6 | | 2DUBEW 084 610 S10 | 8.4 | 61 | 105 | 10 | |
| 2DUBEW 035 280 S06 | 3.5 | 28 | 65 | 6 | | 2DUBEW 085 610 S10 | 8.5 | 61 | 105 | 10 | |
| 2DUBEW 036 280 S06 | 3.6 | 28 | 65 | 6 | | 2DUBEW 086 610 S10 | 8.6 | 61 | 105 | 10 | |
| 2DUBEW 037 280 S06 | 3.7 | 28 | 65 | 6 | | 2DUBEW 087 610 S10 | 8.7 | 61 | 105 | 10 | |
| 2DUBEW 038 360 S06 | 3.8 | 36 | 75 | 6 | | 2DUBEW 088 610 S10 | 8.8 | 61 | 105 | 10 | |
| 2DUBEW 039 360 S06 | 3.9 | 36 | 75 | 6 | | 2DUBEW 089 610 S10 | 8.9 | 61 | 105 | 10 | |
| 2DUBEW 040 360 S06 | 4 | 36 | 75 | 6 | | 2DUBEW 090 610 S10 | 9 | 61 | 105 | 10 | |
| 2DUBEW 041 360 S06 | 4.1 | 36 | 75 | 6 | | 2DUBEW 091 610 S10 | 9.1 | 61 | 105 | 10 | |
| 2DUBEW 042 360 S06 | 4.2 | 36 | 75 | 6 | | 2DUBEW 092 610 S10 | 9.2 | 61 | 105 | 10 | |
| 2DUBEW 043 360 S06 | 4.3 | 36 | 75 | 6 | | 2DUBEW 093 610 S10 | 9.3 | 61 | 105 | 10 | |
| 2DUBEW 044 360 S06 | 4.4 | 36 | 75 | 6 | | 2DUBEW 094 610 S10 | 9.4 | 61 | 105 | 10 | |
| 2DUBEW 045 360 S06 | 4.5 | 36 | 75 | 6 | | 2DUBEW 095 610 S10 | 9.5 | 61 | 105 | 10 | |
| 2DUBEW 046 360 S06 | 4.6 | 36 | 75 | 6 | | 2DUBEW 096 610 S10 | 9.6 | 61 | 105 | 10 | |
| 2DUBEW 047 360 S06 | 4.7 | 36 | 75 | 6 | | 2DUBEW 097 610 S10 | 9.7 | 61 | 105 | 10 | |
| 2DUBEW 048 440 S06 | 4.8 | 44 | 80 | 6 | | 2DUBEW 098 610 S10 | 9.8 | 61 | 105 | 10 | |
| 2DUBEW 049 440 S06 | 4.9 | 44 | 80 | 6 | | 2DUBEW 099 610 S10 | 9.9 | 61 | 105 | 10 | |
| 2DUBEW 050 440 S06 | 5 | 44 | 80 | 6 | | 2DUBEW 100 610 S10 | 10 | 61 | 105 | 10 | |
| 2DUBEW 051 440 S06 | 5.1 | 44 | 80 | 6 | | 2DUBEW 101 710 S12 | 10.1 | 71 | 120 | 12 | |
| 2DUBEW 052 440 S06 | 5.2 | 44 | 80 | 6 | | 2DUBEW 102 710 S12 | 10.2 | 71 | 120 | 12 | |
| 2DUBEW 053 440 S06 | 5.3 | 44 | 80 | 6 | | 2DUBEW 103 710 S12 | 10.3 | 71 | 120 | 12 | |
| 2DUBEW 054 440 S06 | 5.4 | 44 | 80 | 6 | | 2DUBEW 104 710 S12 | 10.4 | 71 | 120 | 12 | |
| 2DUBEW 055 440 S06 | 5.5 | 44 | 80 | 6 | | 2DUBEW 105 710 S12 | 10.5 | 71 | 120 | 12 | |
| 2DUBEW 056 440 S06 | 5.6 | 44 | 80 | 6 | | 2DUBEW 106 710 S12 | 10.6 | 71 | 120 | 12 | |
| 2DUBEW 057 440 S06 | 5.7 | 44 | 80 | 6 | | 2DUBEW 107 710 S12 | 10.7 | 71 | 120 | 12 | |
| 2DUBEW 058 440 S06 | 5.8 | 44 | 80 | 6 | | 2DUBEW 108 710 S12 | 10.8 | 71 | 120 | 12 | |
| 2DUBEW 059 440 S06 | 5.9 | 44 | 80 | 6 | | 2DUBEW 109 710 S12 | 10.9 | 71 | 120 | 12 | |

단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Dia d | 비고 |
|--------------------|---------------------|------------------------------|------------------------------|----------------|----|---------------------|---------------------|------------------------------|------------------------------|----------------|----|
| 2DUBEW 110 710 S12 | 11 | 71 | 120 | 12 | | 2DUBEW 160 830 S16 | 16 | 83 | 135 | 16 | |
| 2DUBEW 111 710 S12 | 11.1 | 71 | 120 | 12 | | 2DUBEW 161 930 S18 | 16.1 | 93 | 145 | 18 | |
| 2DUBEW 112 710 S12 | 11.2 | 71 | 120 | 12 | | 2DUBEW 162 930 S18 | 16.2 | 93 | 145 | 18 | |
| 2DUBEW 113 710 S12 | 11.3 | 71 | 120 | 12 | | 2DUBEW 163 930 S18 | 16.3 | 93 | 145 | 18 | |
| 2DUBEW 114 710 S12 | 11.4 | 71 | 120 | 12 | | 2DUBEW 164 930 S18 | 16.4 | 93 | 145 | 18 | |
| 2DUBEW 115 710 S12 | 11.5 | 71 | 120 | 12 | | 2DUBEW 165 930 S18 | 16.5 | 93 | 145 | 18 | |
| 2DUBEW 116 710 S12 | 11.6 | 71 | 120 | 12 | | 2DUBEW 166 930 S18 | 16.6 | 93 | 145 | 18 | |
| 2DUBEW 117 710 S12 | 11.7 | 71 | 120 | 12 | | 2DUBEW 167 930 S18 | 16.7 | 93 | 145 | 18 | |
| 2DUBEW 118 710 S12 | 11.8 | 71 | 120 | 12 | | 2DUBEW 168 930 S18 | 16.8 | 93 | 145 | 18 | |
| 2DUBEW 119 710 S12 | 11.9 | 71 | 120 | 12 | | 2DUBEW 169 930 S18 | 16.9 | 93 | 145 | 18 | |
| 2DUBEW 120 710 S12 | 12 | 71 | 120 | 12 | | 2DUBEW 170 930 S18 | 17 | 93 | 145 | 18 | |
| 2DUBEW 121 770 S14 | 12.1 | 77 | 125 | 14 | | 2DUBEW 171 930 S18 | 17.1 | 93 | 145 | 18 | |
| 2DUBEW 122 770 S14 | 12.2 | 77 | 125 | 14 | | 2DUBEW 172 930 S18 | 17.2 | 93 | 145 | 18 | |
| 2DUBEW 123 770 S14 | 12.3 | 77 | 125 | 14 | | 2DUBEW 173 930 S18 | 17.3 | 93 | 145 | 18 | |
| 2DUBEW 124 770 S14 | 12.4 | 77 | 125 | 14 | | 2DUBEW 174 930 S18 | 17.4 | 93 | 145 | 18 | |
| 2DUBEW 125 770 S14 | 12.5 | 77 | 125 | 14 | | 2DUBEW 175 930 S18 | 17.5 | 93 | 145 | 18 | |
| 2DUBEW 126 770 S14 | 12.6 | 77 | 125 | 14 | | 2DUBEW 176 930 S18 | 17.6 | 93 | 145 | 18 | |
| 2DUBEW 127 770 S14 | 12.7 | 77 | 125 | 14 | | 2DUBEW 177 930 S18 | 17.7 | 93 | 145 | 18 | |
| 2DUBEW 128 770 S14 | 12.8 | 77 | 125 | 14 | | 2DUBEW 178 930 S18 | 17.8 | 93 | 145 | 18 | |
| 2DUBEW 129 770 S14 | 12.9 | 77 | 125 | 14 | | 2DUBEW 179 930 S18 | 17.9 | 93 | 145 | 18 | |
| 2DUBEW 130 770 S14 | 13 | 77 | 125 | 14 | | 2DUBEW 180 930 S18 | 18 | 93 | 145 | 18 | |
| 2DUBEW 131 770 S14 | 13.1 | 77 | 125 | 14 | | 2DUBEW 181 1010 S20 | 18.1 | 101 | 155 | 20 | |
| 2DUBEW 132 770 S14 | 13.2 | 77 | 125 | 14 | | 2DUBEW 182 1010 S20 | 18.2 | 101 | 155 | 20 | |
| 2DUBEW 133 770 S14 | 13.3 | 77 | 125 | 14 | | 2DUBEW 183 1010 S20 | 18.3 | 101 | 155 | 20 | |
| 2DUBEW 134 770 S14 | 13.4 | 77 | 125 | 14 | | 2DUBEW 184 1010 S20 | 18.4 | 101 | 155 | 20 | |
| 2DUBEW 135 770 S14 | 13.5 | 77 | 125 | 14 | | 2DUBEW 185 1010 S20 | 18.5 | 101 | 155 | 20 | |
| 2DUBEW 136 770 S14 | 13.6 | 77 | 125 | 14 | | 2DUBEW 186 1010 S20 | 18.6 | 101 | 155 | 20 | |
| 2DUBEW 137 770 S14 | 13.7 | 77 | 125 | 14 | | 2DUBEW 187 1010 S20 | 18.7 | 101 | 155 | 20 | |
| 2DUBEW 138 770 S14 | 13.8 | 77 | 125 | 14 | | 2DUBEW 188 1010 S20 | 18.8 | 101 | 155 | 20 | |
| 2DUBEW 139 770 S14 | 13.9 | 77 | 125 | 14 | | 2DUBEW 189 1010 S20 | 18.9 | 101 | 155 | 20 | |
| 2DUBEW 140 770 S14 | 14 | 77 | 125 | 14 | | 2DUBEW 190 1010 S20 | 19 | 101 | 155 | 20 | |
| 2DUBEW 141 830 S16 | 14.1 | 83 | 135 | 16 | | 2DUBEW 191 1010 S20 | 19.1 | 101 | 155 | 20 | |
| 2DUBEW 142 830 S16 | 14.2 | 83 | 135 | 16 | | 2DUBEW 192 1010 S20 | 19.2 | 101 | 155 | 20 | |
| 2DUBEW 143 830 S16 | 14.3 | 83 | 135 | 16 | | 2DUBEW 193 1010 S20 | 19.3 | 101 | 155 | 20 | |
| 2DUBEW 144 830 S16 | 14.4 | 83 | 135 | 16 | | 2DUBEW 194 1010 S20 | 19.4 | 101 | 155 | 20 | |
| 2DUBEW 145 830 S16 | 14.5 | 83 | 135 | 16 | | 2DUBEW 195 1010 S20 | 19.5 | 101 | 155 | 20 | |
| 2DUBEW 146 830 S16 | 14.6 | 83 | 135 | 16 | | 2DUBEW 196 1010 S20 | 19.6 | 101 | 155 | 20 | |
| 2DUBEW 147 830 S16 | 14.7 | 83 | 135 | 16 | | 2DUBEW 197 1010 S20 | 19.7 | 101 | 155 | 20 | |
| 2DUBEW 148 830 S16 | 14.8 | 83 | 135 | 16 | | 2DUBEW 198 1010 S20 | 19.8 | 101 | 155 | 20 | |
| 2DUBEW 149 830 S16 | 14.9 | 83 | 135 | 16 | | 2DUBEW 199 1010 S20 | 19.9 | 101 | 155 | 20 | |
| 2DUBEW 150 830 S16 | 15 | 83 | 135 | 16 | | 2DUBEW 200 1010 S20 | 20 | 101 | 155 | 20 | |
| 2DUBEW 151 830 S16 | 15.1 | 83 | 135 | 16 | | | | | | | |
| 2DUBEW 152 830 S16 | 15.2 | 83 | 135 | 16 | | | | | | | |
| 2DUBEW 153 830 S16 | 15.3 | 83 | 135 | 16 | | | | | | | |
| 2DUBEW 154 830 S16 | 15.4 | 83 | 135 | 16 | | | | | | | |
| 2DUBEW 155 830 S16 | 15.5 | 83 | 135 | 16 | | | | | | | |
| 2DUBEW 156 830 S16 | 15.6 | 83 | 135 | 16 | | | | | | | |
| 2DUBEW 157 830 S16 | 15.7 | 83 | 135 | 16 | | | | | | | |
| 2DUBEW 158 830 S16 | 15.8 | 83 | 135 | 16 | | | | | | | |
| 2DUBEW 159 830 S16 | 15.9 | 83 | 135 | 16 | | | | | | | |



- 알루미늄 주물, 알루미늄 다이캐스팅, 비철금속, 플라스틱 등 비철 비금속 계열 전용 드릴
- 비철금속 드릴링의 최적화 된 설계로 칩 용착을 최소화 하였습니다.
- 최적의 플루트 형상을 적용하여 안정적인 칩 배출과 절삭성이 우수합니다.
- 폭넓은 비철금속 피삭재에 적용 가능합니다.
- 우수한 제품의 강성과 칩 배출을 고려한 플루트 홈 설계를 적용하였습니다.

Drill for aluminum casting, aluminum die casting, non-ferrous metal, plastic and etc.

- Chip fusion is minimized with an optimized design for non-ferrous metal drilling.
- Provides stable chip evacuation and excellent cutting performance by optimized flute design.
- Applicable for various kinds of non-ferrous metals.
- Applied flute groove design considering the excellent rigidity of the product and chip evacuation.



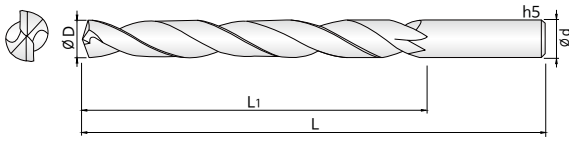
53P

단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 |
|--------------------|---------------------|---------------------------|---------------------------|----------------------|----|--------------------|---------------------|---------------------------|---------------------------|----------------------|----|
| 2DUBEN 010 060 S03 | 1 | 6 | 26 | 3 | | 2DUBEN 060 280 S06 | 6 | 28 | 65 | 6 | |
| 2DUBEN 011 070 S03 | 1.1 | 7 | 28 | 3 | | 2DUBEN 061 310 S07 | 6.1 | 31 | 70 | 7 | |
| 2DUBEN 012 080 S03 | 1.2 | 8 | 30 | 3 | | 2DUBEN 062 310 S07 | 6.2 | 31 | 70 | 7 | |
| 2DUBEN 013 080 S03 | 1.3 | 8 | 30 | 3 | | 2DUBEN 063 310 S07 | 6.3 | 31 | 70 | 7 | |
| 2DUBEN 014 090 S03 | 1.4 | 9 | 32 | 3 | | 2DUBEN 064 310 S07 | 6.4 | 31 | 70 | 7 | |
| 2DUBEN 015 090 S03 | 1.5 | 9 | 32 | 3 | | 2DUBEN 065 310 S07 | 6.5 | 31 | 70 | 7 | |
| 2DUBEN 016 100 S03 | 1.6 | 10 | 34 | 3 | | 2DUBEN 066 310 S07 | 6.6 | 31 | 70 | 7 | |
| 2DUBEN 017 100 S03 | 1.7 | 10 | 34 | 3 | | 2DUBEN 067 310 S07 | 6.7 | 31 | 70 | 7 | |
| 2DUBEN 018 110 S03 | 1.8 | 11 | 36 | 3 | | 2DUBEN 068 340 S07 | 6.8 | 34 | 75 | 7 | |
| 2DUBEN 019 110 S03 | 1.9 | 11 | 36 | 3 | | 2DUBEN 069 340 S07 | 6.9 | 34 | 75 | 7 | |
| 2DUBEN 020 120 S03 | 2 | 12 | 38 | 3 | | 2DUBEN 070 340 S07 | 7 | 34 | 75 | 7 | |
| 2DUBEN 021 120 S03 | 2.1 | 12 | 40 | 3 | | 2DUBEN 071 340 S08 | 7.1 | 34 | 75 | 8 | |
| 2DUBEN 022 130 S03 | 2.2 | 13 | 40 | 3 | | 2DUBEN 072 340 S08 | 7.2 | 34 | 75 | 8 | |
| 2DUBEN 023 130 S03 | 2.3 | 13 | 40 | 3 | | 2DUBEN 073 340 S08 | 7.3 | 34 | 75 | 8 | |
| 2DUBEN 024 140 S03 | 2.4 | 14 | 45 | 3 | | 2DUBEN 074 340 S08 | 7.4 | 34 | 75 | 8 | |
| 2DUBEN 025 140 S03 | 2.5 | 14 | 45 | 3 | | 2DUBEN 075 340 S08 | 7.5 | 34 | 75 | 8 | |
| 2DUBEN 026 140 S03 | 2.6 | 14 | 45 | 3 | | 2DUBEN 076 370 S08 | 7.6 | 37 | 80 | 8 | |
| 2DUBEN 027 160 S03 | 2.7 | 16 | 45 | 3 | | 2DUBEN 077 370 S08 | 7.7 | 37 | 80 | 8 | |
| 2DUBEN 028 160 S03 | 2.8 | 16 | 45 | 3 | | 2DUBEN 078 370 S08 | 7.8 | 37 | 80 | 8 | |
| 2DUBEN 029 160 S03 | 2.9 | 16 | 45 | 3 | | 2DUBEN 079 370 S08 | 7.9 | 37 | 80 | 8 | |
| 2DUBEN 030 160 S03 | 3 | 16 | 45 | 3 | | 2DUBEN 080 370 S08 | 8 | 37 | 80 | 8 | |
| 2DUBEN 031 180 S04 | 3.1 | 18 | 50 | 4 | | 2DUBEN 081 370 S09 | 8.1 | 37 | 80 | 9 | |
| 2DUBEN 032 180 S04 | 3.2 | 18 | 50 | 4 | | 2DUBEN 082 370 S09 | 8.2 | 37 | 80 | 9 | |
| 2DUBEN 033 180 S04 | 3.3 | 18 | 50 | 4 | | 2DUBEN 083 370 S09 | 8.3 | 37 | 80 | 9 | |
| 2DUBEN 034 200 S04 | 3.4 | 20 | 55 | 4 | | 2DUBEN 084 370 S09 | 8.4 | 37 | 80 | 9 | |
| 2DUBEN 035 200 S04 | 3.5 | 20 | 55 | 4 | | 2DUBEN 085 370 S09 | 8.5 | 37 | 80 | 9 | |
| 2DUBEN 036 200 S04 | 3.6 | 20 | 55 | 4 | | 2DUBEN 086 400 S09 | 8.6 | 40 | 85 | 9 | |
| 2DUBEN 037 200 S04 | 3.7 | 20 | 55 | 4 | | 2DUBEN 087 400 S09 | 8.7 | 40 | 85 | 9 | |
| 2DUBEN 038 220 S04 | 3.8 | 22 | 55 | 4 | | 2DUBEN 088 400 S09 | 8.8 | 40 | 85 | 9 | |
| 2DUBEN 039 220 S04 | 3.9 | 22 | 55 | 4 | | 2DUBEN 089 400 S09 | 8.9 | 40 | 85 | 9 | |
| 2DUBEN 040 220 S04 | 4 | 22 | 55 | 4 | | 2DUBEN 090 400 S09 | 9 | 40 | 85 | 9 | |
| 2DUBEN 041 220 S05 | 4.1 | 22 | 55 | 5 | | 2DUBEN 091 400 S10 | 9.1 | 40 | 85 | 10 | |
| 2DUBEN 042 220 S05 | 4.2 | 22 | 55 | 5 | | 2DUBEN 092 400 S10 | 9.2 | 40 | 85 | 10 | |
| 2DUBEN 043 240 S05 | 4.3 | 24 | 60 | 5 | | 2DUBEN 093 400 S10 | 9.3 | 40 | 85 | 10 | |
| 2DUBEN 044 240 S05 | 4.4 | 24 | 60 | 5 | | 2DUBEN 094 400 S10 | 9.4 | 40 | 85 | 10 | |
| 2DUBEN 045 240 S05 | 4.5 | 24 | 60 | 5 | | 2DUBEN 095 400 S10 | 9.5 | 40 | 85 | 10 | |
| 2DUBEN 046 240 S05 | 4.6 | 24 | 60 | 5 | | 2DUBEN 096 400 S10 | 9.6 | 40 | 90 | 10 | |
| 2DUBEN 047 240 S05 | 4.7 | 24 | 60 | 5 | | 2DUBEN 097 430 S10 | 9.7 | 43 | 90 | 10 | |
| 2DUBEN 048 260 S05 | 4.8 | 26 | 65 | 5 | | 2DUBEN 098 430 S10 | 9.8 | 43 | 90 | 10 | |
| 2DUBEN 049 260 S05 | 4.9 | 26 | 65 | 5 | | 2DUBEN 099 430 S10 | 9.9 | 43 | 90 | 10 | |
| 2DUBEN 050 260 S05 | 5 | 26 | 65 | 5 | | 2DUBEN 100 430 S10 | 10 | 43 | 90 | 10 | |
| 2DUBEN 051 260 S06 | 5.1 | 26 | 65 | 6 | | 2DUBEN 101 430 S11 | 10.1 | 43 | 90 | 11 | |
| 2DUBEN 052 260 S06 | 5.2 | 26 | 65 | 6 | | 2DUBEN 102 430 S11 | 10.2 | 43 | 90 | 11 | |
| 2DUBEN 053 260 S06 | 5.3 | 26 | 65 | 6 | | 2DUBEN 103 430 S11 | 10.3 | 43 | 90 | 11 | |
| 2DUBEN 054 280 S06 | 5.4 | 28 | 65 | 6 | | 2DUBEN 104 430 S11 | 10.4 | 43 | 90 | 11 | |
| 2DUBEN 055 280 S06 | 5.5 | 28 | 65 | 6 | | 2DUBEN 105 430 S11 | 10.5 | 43 | 90 | 11 | |
| 2DUBEN 056 280 S06 | 5.6 | 28 | 65 | 6 | | 2DUBEN 106 430 S11 | 10.6 | 43 | 90 | 11 | |
| 2DUBEN 057 280 S06 | 5.7 | 28 | 65 | 6 | | 2DUBEN 107 470 S11 | 10.7 | 47 | 95 | 11 | |
| 2DUBEN 058 280 S06 | 5.8 | 28 | 65 | 6 | | 2DUBEN 108 470 S11 | 10.8 | 47 | 95 | 11 | |
| 2DUBEN 059 280 S06 | 5.9 | 28 | 65 | 6 | | 2DUBEN 109 470 S11 | 10.9 | 47 | 95 | 11 | |

단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 생크 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 생크 Shank Dia d | 비고 |
|--------------------|---------------------|---------------------------|---------------------------|----------------------|----|--------------|---------------------|---------------------------|---------------------------|----------------------|----|
| 2DUBEN 110 470 S11 | 11 | 47 | 95 | 11 | | | | | | | |
| 2DUBEN 111 470 S12 | 11.1 | 47 | 95 | 12 | | | | | | | |
| 2DUBEN 112 470 S12 | 11.2 | 47 | 95 | 12 | | | | | | | |
| 2DUBEN 113 470 S12 | 11.3 | 47 | 95 | 12 | | | | | | | |
| 2DUBEN 114 470 S12 | 11.4 | 47 | 95 | 12 | | | | | | | |
| 2DUBEN 115 470 S12 | 11.5 | 47 | 95 | 12 | | | | | | | |
| 2DUBEN 116 470 S12 | 11.6 | 47 | 95 | 12 | | | | | | | |
| 2DUBEN 117 470 S12 | 11.7 | 47 | 95 | 12 | | | | | | | |
| 2DUBEN 118 470 S12 | 11.8 | 47 | 95 | 12 | | | | | | | |
| 2DUBEN 119 510 S12 | 11.9 | 51 | 100 | 12 | | | | | | | |
| 2DUBEN 120 510 S12 | 12 | 51 | 100 | 12 | | | | | | | |
| 2DUBEN 121 510 S13 | 12.1 | 51 | 100 | 13 | | | | | | | |
| 2DUBEN 122 510 S13 | 12.2 | 51 | 100 | 13 | | | | | | | |
| 2DUBEN 123 510 S13 | 12.3 | 51 | 100 | 13 | | | | | | | |
| 2DUBEN 124 510 S13 | 12.4 | 51 | 100 | 13 | | | | | | | |
| 2DUBEN 125 510 S13 | 12.5 | 51 | 100 | 13 | | | | | | | |
| 2DUBEN 126 510 S13 | 12.6 | 51 | 100 | 13 | | | | | | | |
| 2DUBEN 127 510 S13 | 12.7 | 51 | 100 | 13 | | | | | | | |
| 2DUBEN 128 510 S13 | 12.8 | 51 | 100 | 13 | | | | | | | |
| 2DUBEN 129 510 S13 | 12.9 | 51 | 100 | 13 | | | | | | | |
| 2DUBEN 130 510 S13 | 13 | 51 | 100 | 13 | | | | | | | |
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- 알루미늄 주물, 알루미늄 다이캐스팅, 비철금속, 플라스틱 등 비철 비금속 계열 전용 드릴
- 비철금속 드릴링의 최적화 된 설계로 칩 배출을 최소화 하였습니다.
- 최적의 플루트 형상을 적용하여 안정적인 칩 배출과 절삭성이 우수합니다.
- 폭넓은 비철금속 피삭재에 적용 가능합니다.
- 우수한 제품의 강성과 칩 배출을 고려한 플루트 홈 설계를 적용하였습니다.

- Drill for aluminum casting, aluminum die casting, non-ferrous metal, plastic and etc.
- Chip fusion is minimized with an optimized design for non-ferrous metal drilling.
- Provides stable chip evacuation and excellent cutting performance by optimized flute design.
- Applicable for various kinds of non-ferrous metals.
- Applied flute groove design considering the excellent rigidity of the product and chip evacuation.



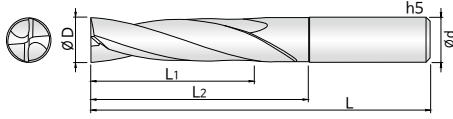
53P

단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 샙크 Dia d | 비고 |
|--------------------|---------------------|---------------------------|---------------------------|----------------|----|--------------------|---------------------|---------------------------|---------------------------|----------------|----|
| 2DUBEN 010 120 S03 | 1 | 12 | 34 | 3 | | 2DUBEN 060 570 S06 | 6 | 57 | 95 | 6 | |
| 2DUBEN 011 140 S03 | 1.1 | 14 | 36 | 3 | | 2DUBEN 061 630 S07 | 6.1 | 63 | 100 | 7 | |
| 2DUBEN 012 160 S03 | 1.2 | 16 | 38 | 3 | | 2DUBEN 062 630 S07 | 6.2 | 63 | 100 | 7 | |
| 2DUBEN 013 160 S03 | 1.3 | 16 | 38 | 3 | | 2DUBEN 063 630 S07 | 6.3 | 63 | 100 | 7 | |
| 2DUBEN 014 180 S03 | 1.4 | 18 | 40 | 3 | | 2DUBEN 064 630 S07 | 6.4 | 63 | 100 | 7 | |
| 2DUBEN 015 180 S03 | 1.5 | 18 | 40 | 3 | | 2DUBEN 065 630 S07 | 6.5 | 63 | 100 | 7 | |
| 2DUBEN 016 200 S03 | 1.6 | 20 | 43 | 3 | | 2DUBEN 066 630 S07 | 6.6 | 63 | 100 | 7 | |
| 2DUBEN 017 200 S03 | 1.7 | 20 | 46 | 3 | | 2DUBEN 067 630 S07 | 6.7 | 63 | 100 | 7 | |
| 2DUBEN 018 220 S03 | 1.8 | 22 | 46 | 3 | | 2DUBEN 068 690 S07 | 6.8 | 69 | 110 | 7 | |
| 2DUBEN 019 220 S03 | 1.9 | 22 | 49 | 3 | | 2DUBEN 069 690 S07 | 6.9 | 69 | 110 | 7 | |
| 2DUBEN 020 240 S03 | 2 | 24 | 55 | 3 | | 2DUBEN 070 690 S07 | 7 | 69 | 110 | 7 | |
| 2DUBEN 021 240 S03 | 2.1 | 24 | 55 | 3 | | 2DUBEN 071 690 S08 | 7.1 | 69 | 110 | 8 | |
| 2DUBEN 022 270 S03 | 2.2 | 27 | 60 | 3 | | 2DUBEN 072 690 S08 | 7.2 | 69 | 110 | 8 | |
| 2DUBEN 023 270 S03 | 2.3 | 27 | 60 | 3 | | 2DUBEN 073 690 S08 | 7.3 | 69 | 110 | 8 | |
| 2DUBEN 024 300 S03 | 2.4 | 30 | 60 | 3 | | 2DUBEN 074 690 S08 | 7.4 | 69 | 110 | 8 | |
| 2DUBEN 025 300 S03 | 2.5 | 30 | 60 | 3 | | 2DUBEN 075 690 S08 | 7.5 | 69 | 110 | 8 | |
| 2DUBEN 026 300 S03 | 2.6 | 30 | 60 | 3 | | 2DUBEN 076 750 S08 | 7.6 | 75 | 120 | 8 | |
| 2DUBEN 027 330 S03 | 2.7 | 33 | 65 | 3 | | 2DUBEN 077 750 S08 | 7.7 | 75 | 120 | 8 | |
| 2DUBEN 028 330 S03 | 2.8 | 33 | 65 | 3 | | 2DUBEN 078 750 S08 | 7.8 | 75 | 120 | 8 | |
| 2DUBEN 029 330 S03 | 2.9 | 33 | 65 | 3 | | 2DUBEN 079 750 S08 | 7.9 | 75 | 120 | 8 | |
| 2DUBEN 030 330 S03 | 3 | 33 | 65 | 3 | | 2DUBEN 080 750 S08 | 8 | 75 | 120 | 8 | |
| 2DUBEN 031 360 S04 | 3.1 | 36 | 65 | 4 | | 2DUBEN 081 750 S09 | 8.1 | 75 | 120 | 9 | |
| 2DUBEN 032 360 S04 | 3.2 | 36 | 65 | 4 | | 2DUBEN 082 750 S09 | 8.2 | 75 | 120 | 9 | |
| 2DUBEN 033 360 S04 | 3.3 | 36 | 65 | 4 | | 2DUBEN 083 750 S09 | 8.3 | 75 | 120 | 9 | |
| 2DUBEN 034 390 S04 | 3.4 | 39 | 70 | 4 | | 2DUBEN 084 750 S09 | 8.4 | 75 | 120 | 9 | |
| 2DUBEN 035 390 S04 | 3.5 | 39 | 70 | 4 | | 2DUBEN 085 750 S09 | 8.5 | 75 | 120 | 9 | |
| 2DUBEN 036 390 S04 | 3.6 | 39 | 70 | 4 | | 2DUBEN 086 810 S09 | 8.6 | 81 | 125 | 9 | |
| 2DUBEN 037 390 S04 | 3.7 | 39 | 70 | 4 | | 2DUBEN 087 810 S09 | 8.7 | 81 | 125 | 9 | |
| 2DUBEN 038 430 S04 | 3.8 | 43 | 70 | 4 | | 2DUBEN 088 810 S09 | 8.8 | 81 | 125 | 9 | |
| 2DUBEN 039 430 S04 | 3.9 | 43 | 75 | 4 | | 2DUBEN 089 810 S09 | 8.9 | 81 | 125 | 9 | |
| 2DUBEN 040 430 S04 | 4 | 43 | 75 | 4 | | 2DUBEN 090 810 S09 | 9 | 81 | 125 | 9 | |
| 2DUBEN 041 430 S05 | 4.1 | 43 | 75 | 5 | | 2DUBEN 091 810 S10 | 9.1 | 81 | 125 | 10 | |
| 2DUBEN 042 430 S05 | 4.2 | 43 | 75 | 5 | | 2DUBEN 092 810 S10 | 9.2 | 81 | 125 | 10 | |
| 2DUBEN 043 470 S05 | 4.3 | 47 | 80 | 5 | | 2DUBEN 093 810 S10 | 9.3 | 81 | 125 | 10 | |
| 2DUBEN 044 470 S05 | 4.4 | 47 | 80 | 5 | | 2DUBEN 094 810 S10 | 9.4 | 81 | 125 | 10 | |
| 2DUBEN 045 470 S05 | 4.5 | 47 | 80 | 5 | | 2DUBEN 095 810 S10 | 9.5 | 81 | 125 | 10 | |
| 2DUBEN 046 470 S05 | 4.6 | 47 | 80 | 5 | | 2DUBEN 096 870 S10 | 9.6 | 87 | 135 | 10 | |
| 2DUBEN 047 470 S05 | 4.7 | 47 | 80 | 5 | | 2DUBEN 097 870 S10 | 9.7 | 87 | 135 | 10 | |
| 2DUBEN 048 520 S05 | 4.8 | 52 | 85 | 5 | | 2DUBEN 098 870 S10 | 9.8 | 87 | 135 | 10 | |
| 2DUBEN 049 520 S05 | 4.9 | 52 | 85 | 5 | | 2DUBEN 099 870 S10 | 9.9 | 87 | 135 | 10 | |
| 2DUBEN 050 520 S05 | 5 | 52 | 85 | 5 | | 2DUBEN 100 870 S10 | 10 | 87 | 135 | 10 | |
| 2DUBEN 051 520 S06 | 5.1 | 52 | 85 | 6 | | 2DUBEN 101 870 S11 | 10.1 | 87 | 135 | 11 | |
| 2DUBEN 052 520 S06 | 5.2 | 52 | 85 | 6 | | 2DUBEN 102 870 S11 | 10.2 | 87 | 135 | 11 | |
| 2DUBEN 053 520 S06 | 5.3 | 52 | 85 | 6 | | 2DUBEN 103 870 S11 | 10.3 | 87 | 135 | 11 | |
| 2DUBEN 054 570 S06 | 5.4 | 57 | 95 | 6 | | 2DUBEN 104 870 S11 | 10.4 | 87 | 135 | 11 | |
| 2DUBEN 055 570 S06 | 5.5 | 57 | 95 | 6 | | 2DUBEN 105 870 S11 | 10.5 | 87 | 135 | 11 | |
| 2DUBEN 056 570 S06 | 5.6 | 57 | 95 | 6 | | 2DUBEN 106 870 S11 | 10.6 | 87 | 135 | 11 | |
| 2DUBEN 057 570 S06 | 5.7 | 57 | 95 | 6 | | 2DUBEN 107 940 S11 | 10.7 | 94 | 145 | 11 | |
| 2DUBEN 058 570 S06 | 5.8 | 57 | 95 | 6 | | 2DUBEN 108 940 S11 | 10.8 | 94 | 145 | 11 | |
| 2DUBEN 059 570 S06 | 5.9 | 57 | 95 | 6 | | 2DUBEN 109 940 S11 | 10.9 | 94 | 145 | 11 | |

단위 : mm

| Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 생크 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 홈길이 Flute Length L1 | 전장 Overall Length L | 생크 Shank Dia d | 비고 |
|---------------------|---------------------|------------------------------|------------------------------|-------------------------|----|--------------|---------------------|------------------------------|------------------------------|-------------------------|----|
| 2DUBEN 110 940 S11 | 11 | 94 | 145 | 11 | | | | | | | |
| 2DUBEN 111 940 S12 | 11.1 | 94 | 145 | 12 | | | | | | | |
| 2DUBEN 112 940 S12 | 11.2 | 94 | 145 | 12 | | | | | | | |
| 2DUBEN 113 940 S12 | 11.3 | 94 | 145 | 12 | | | | | | | |
| 2DUBEN 114 940 S12 | 11.4 | 94 | 145 | 12 | | | | | | | |
| 2DUBEN 115 940 S12 | 11.5 | 94 | 145 | 12 | | | | | | | |
| 2DUBEN 116 940 S12 | 11.6 | 94 | 145 | 12 | | | | | | | |
| 2DUBEN 117 940 S12 | 11.7 | 94 | 145 | 12 | | | | | | | |
| 2DUBEN 118 940 S12 | 11.8 | 94 | 145 | 12 | | | | | | | |
| 2DUBEN 119 1010 S12 | 11.9 | 101 | 150 | 12 | | | | | | | |
| 2DUBEN 120 1010 S12 | 12 | 101 | 150 | 12 | | | | | | | |
| 2DUBEN 121 1010 S13 | 12.1 | 101 | 150 | 13 | | | | | | | |
| 2DUBEN 122 1010 S13 | 12.2 | 101 | 150 | 13 | | | | | | | |
| 2DUBEN 123 1010 S13 | 12.3 | 101 | 150 | 13 | | | | | | | |
| 2DUBEN 124 1010 S13 | 12.4 | 101 | 150 | 13 | | | | | | | |
| 2DUBEN 125 1010 S13 | 12.5 | 101 | 150 | 13 | | | | | | | |
| 2DUBEN 126 1010 S13 | 12.6 | 101 | 150 | 13 | | | | | | | |
| 2DUBEN 127 1010 S13 | 12.7 | 101 | 150 | 13 | | | | | | | |
| 2DUBEN 128 1010 S13 | 12.8 | 101 | 150 | 13 | | | | | | | |
| 2DUBEN 129 1010 S13 | 12.9 | 101 | 150 | 13 | | | | | | | |
| 2DUBEN 130 1010 S13 | 13 | 101 | 150 | 13 | | | | | | | |
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- HRC50이하, 프리하든강, 합금강, 주철 가공용 플랫 드릴
- 밑날 플랫타입으로 다양한 경사면과 곡면 드릴가공에 탁월한 성능을 발휘합니다.
- 20도 헬릭스를 채택하여 칩배출 성능이 매우 우수합니다.
- 관통 드릴 작업시 버 발생을 최소화 합니다.
- HR 코팅으로 내열성과 내마모성이 우수, 긴 공구수명을 실현 하였습니다.
- Flat drill for materials up to HRC50, pre-hardened steel, alloy steel, cast iron.
- With flat type of end face, excellent performance drilling is available to a variety of inclined and curved surfaces.
- Chip emission is great and stable drilling is available with 20 degree helix design.
- Minimize burrs during penetration drilling.
- Increased tool life by applying HR coating with great heat and wear resistance.



54P

단위 : mm

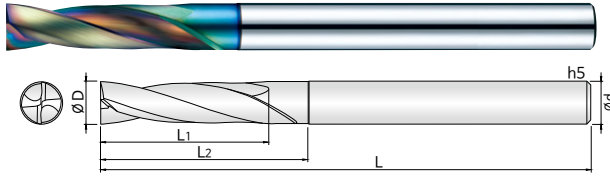
| Order Number | 날경 Diameter D | 홀길이 Flute Length L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 홀길이 Flute Length L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 |
|-------------------|---------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|------------------|---------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| 2FDR 002 009 S03 | 0.2 | 0.8 | 0.9 | 50 | 3 | | 2FDR 044 189 S06 | 4.4 | 17.6 | 18.9 | 60 | 6 | |
| 2FDR 0025 011 S03 | 0.25 | 1 | 1.1 | 50 | 3 | | 2FDR 045 194 S06 | 4.5 | 18 | 19.4 | 60 | 6 | |
| 2FDR 003 013 S03 | 0.3 | 1.2 | 1.3 | 50 | 3 | | 2FDR 046 198 S06 | 4.6 | 18.4 | 19.8 | 60 | 6 | |
| 2FDR 0035 015 S03 | 0.35 | 1.4 | 1.5 | 50 | 3 | | 2FDR 047 202 S06 | 4.7 | 18.8 | 20.2 | 60 | 6 | |
| 2FDR 004 017 S03 | 0.4 | 1.6 | 1.7 | 50 | 3 | | 2FDR 048 206 S06 | 4.8 | 19.2 | 20.6 | 60 | 6 | |
| 2FDR 0045 019 S03 | 0.45 | 1.8 | 1.9 | 50 | 3 | | 2FDR 049 211 S06 | 4.9 | 19.6 | 21.1 | 60 | 6 | |
| 2FDR 005 022 S03 | 0.5 | 2 | 2.2 | 50 | 3 | | 2FDR 050 215 S06 | 5 | 20 | 21.5 | 60 | 6 | |
| 2FDR 0055 024 S03 | 0.55 | 2.2 | 2.4 | 50 | 3 | | 2FDR 051 219 S06 | 5.1 | 20.4 | 21.9 | 60 | 6 | |
| 2FDR 006 026 S03 | 0.6 | 2.4 | 2.6 | 50 | 3 | | 2FDR 052 224 S06 | 5.2 | 20.8 | 22.4 | 60 | 6 | |
| 2FDR 0065 028 S03 | 0.65 | 2.6 | 2.8 | 50 | 3 | | 2FDR 053 228 S06 | 5.3 | 21.2 | 22.8 | 60 | 6 | |
| 2FDR 007 030 S03 | 0.7 | 2.8 | 3 | 50 | 3 | | 2FDR 054 232 S06 | 5.4 | 21.6 | 23.2 | 60 | 6 | |
| 2FDR 0075 032 S03 | 0.75 | 3 | 3.2 | 50 | 3 | | 2FDR 055 237 S06 | 5.5 | 22 | 23.7 | 60 | 6 | |
| 2FDR 008 034 S03 | 0.8 | 3.2 | 3.4 | 50 | 3 | | 2FDR 056 241 S06 | 5.6 | 22.4 | 24.1 | 60 | 6 | |
| 2FDR 0085 037 S03 | 0.85 | 3.4 | 3.7 | 50 | 3 | | 2FDR 057 245 S06 | 5.7 | 22.8 | 24.5 | 60 | 6 | |
| 2FDR 009 039 S03 | 0.9 | 3.6 | 3.9 | 50 | 3 | | 2FDR 058 249 S06 | 5.8 | 23.2 | 24.9 | 60 | 6 | |
| 2FDR 0095 041 S03 | 0.95 | 3.8 | 4.1 | 50 | 3 | | 2FDR 059 254 S06 | 5.9 | 23.6 | 25.4 | 60 | 6 | |
| 2FDR 010 043 S03 | 1 | 4 | 4.3 | 50 | 3 | | 2FDR 060 258 S06 | 6 | 24 | 25.8 | 60 | 6 | |
| 2FDR 011 047 S03 | 1.1 | 4.4 | 4.7 | 50 | 3 | | 2FDR 061 262 S08 | 6.1 | 24.4 | 26.2 | 70 | 8 | |
| 2FDR 012 052 S03 | 1.2 | 4.8 | 5.2 | 50 | 3 | | 2FDR 062 267 S08 | 6.2 | 24.8 | 26.7 | 70 | 8 | |
| 2FDR 013 056 S03 | 1.3 | 5.2 | 5.6 | 50 | 3 | | 2FDR 063 271 S08 | 6.3 | 25.2 | 27.1 | 70 | 8 | |
| 2FDR 014 060 S03 | 1.4 | 5.6 | 6 | 50 | 3 | | 2FDR 064 275 S08 | 6.4 | 25.6 | 27.5 | 70 | 8 | |
| 2FDR 015 065 S03 | 1.5 | 6 | 6.5 | 50 | 3 | | 2FDR 065 280 S08 | 6.5 | 26 | 28 | 70 | 8 | |
| 2FDR 016 069 S03 | 1.6 | 6.4 | 6.9 | 50 | 3 | | 2FDR 066 284 S08 | 6.6 | 26.4 | 28.4 | 70 | 8 | |
| 2FDR 017 073 S03 | 1.7 | 6.8 | 7.3 | 50 | 3 | | 2FDR 067 288 S08 | 6.7 | 26.8 | 28.8 | 70 | 8 | |
| 2FDR 018 077 S03 | 1.8 | 7.2 | 7.7 | 50 | 3 | | 2FDR 068 292 S08 | 6.8 | 27.2 | 29.2 | 70 | 8 | |
| 2FDR 019 082 S03 | 1.9 | 7.6 | 8.2 | 50 | 3 | | 2FDR 069 297 S08 | 6.9 | 27.6 | 29.7 | 70 | 8 | |
| 2FDR 020 086 S04 | 2 | 8 | 8.6 | 50 | 4 | | 2FDR 070 301 S08 | 7 | 28 | 30.1 | 70 | 8 | |
| 2FDR 021 090 S04 | 2.1 | 8.4 | 9 | 50 | 4 | | 2FDR 071 305 S08 | 7.1 | 28.4 | 30.5 | 70 | 8 | |
| 2FDR 022 095 S04 | 2.2 | 8.8 | 9.5 | 50 | 4 | | 2FDR 072 310 S08 | 7.2 | 28.8 | 31 | 70 | 8 | |
| 2FDR 023 099 S04 | 2.3 | 9.2 | 9.9 | 50 | 4 | | 2FDR 073 314 S08 | 7.3 | 29.2 | 31.4 | 70 | 8 | |
| 2FDR 024 103 S04 | 2.4 | 9.6 | 10.3 | 50 | 4 | | 2FDR 074 318 S08 | 7.4 | 29.6 | 31.8 | 70 | 8 | |
| 2FDR 025 108 S04 | 2.5 | 10 | 10.8 | 50 | 4 | | 2FDR 075 323 S08 | 7.5 | 30 | 32.3 | 70 | 8 | |
| 2FDR 026 112 S04 | 2.6 | 10.4 | 11.2 | 50 | 4 | | 2FDR 076 327 S08 | 7.6 | 30.4 | 32.7 | 70 | 8 | |
| 2FDR 027 116 S04 | 2.7 | 10.8 | 11.6 | 50 | 4 | | 2FDR 077 331 S08 | 7.7 | 30.8 | 33.1 | 70 | 8 | |
| 2FDR 028 120 S04 | 2.8 | 11.2 | 12 | 50 | 4 | | 2FDR 078 335 S08 | 7.8 | 31.2 | 33.5 | 70 | 8 | |
| 2FDR 029 125 S04 | 2.9 | 11.6 | 12.5 | 50 | 4 | | 2FDR 079 340 S08 | 7.9 | 31.6 | 34 | 70 | 8 | |
| 2FDR 030 129 S06 | 3 | 12 | 12.9 | 50 | 6 | | 2FDR 080 344 S08 | 8 | 32 | 34.4 | 70 | 8 | |
| 2FDR 031 133 S06 | 3.1 | 12.4 | 13.3 | 50 | 6 | | 2FDR 081 348 S10 | 8.1 | 32.4 | 34.8 | 80 | 10 | |
| 2FDR 032 138 S06 | 3.2 | 12.8 | 13.8 | 50 | 6 | | 2FDR 082 353 S10 | 8.2 | 32.8 | 35.3 | 80 | 10 | |
| 2FDR 033 142 S06 | 3.3 | 13.2 | 14.2 | 50 | 6 | | 2FDR 083 357 S10 | 8.3 | 33.2 | 35.7 | 80 | 10 | |
| 2FDR 034 146 S06 | 3.4 | 13.6 | 14.6 | 50 | 6 | | 2FDR 084 361 S10 | 8.4 | 33.6 | 36.1 | 80 | 10 | |
| 2FDR 035 151 S06 | 3.5 | 14 | 15.1 | 50 | 6 | | 2FDR 085 366 S10 | 8.5 | 34 | 36.6 | 80 | 10 | |
| 2FDR 036 155 S06 | 3.6 | 14.4 | 15.5 | 50 | 6 | | 2FDR 086 370 S10 | 8.6 | 34.4 | 37 | 80 | 10 | |
| 2FDR 037 159 S06 | 3.7 | 14.8 | 15.9 | 50 | 6 | | 2FDR 087 374 S10 | 8.7 | 34.8 | 37.4 | 80 | 10 | |
| 2FDR 038 163 S06 | 3.8 | 15.2 | 16.3 | 50 | 6 | | 2FDR 088 378 S10 | 8.8 | 35.2 | 37.8 | 80 | 10 | |
| 2FDR 039 168 S06 | 3.9 | 15.6 | 16.8 | 50 | 6 | | 2FDR 089 383 S10 | 8.9 | 35.6 | 38.3 | 80 | 10 | |
| 2FDR 040 172 S06 | 4 | 16 | 17.2 | 50 | 6 | | 2FDR 090 387 S10 | 9 | 36 | 38.7 | 80 | 10 | |
| 2FDR 041 176 S06 | 4.1 | 16.4 | 17.6 | 60 | 6 | | 2FDR 091 391 S10 | 9.1 | 36.4 | 39.1 | 80 | 10 | |
| 2FDR 042 181 S06 | 4.2 | 16.8 | 18.1 | 60 | 6 | | 2FDR 092 396 S10 | 9.2 | 36.8 | 39.6 | 80 | 10 | |
| 2FDR 043 185 S06 | 4.3 | 17.2 | 18.5 | 60 | 6 | | 2FDR 093 400 S10 | 9.3 | 37.2 | 40 | 80 | 10 | |



단위 : mm

| Order Number | 날경 Diameter D | 홀길이 Flute Length L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 홀길이 Flute Length L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 |
|------------------|---------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|------------------|---------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| 2FDR 094 404 S10 | 9.4 | 37.6 | 40.4 | 80 | 10 | | 2FDR 144 619 S16 | 14.4 | 57.6 | 61.9 | 105 | 16 | |
| 2FDR 095 409 S10 | 9.5 | 38 | 40.9 | 80 | 10 | | 2FDR 145 624 S16 | 14.5 | 58 | 62.4 | 105 | 16 | |
| 2FDR 096 413 S10 | 9.6 | 38.4 | 41.3 | 80 | 10 | | 2FDR 146 628 S16 | 14.6 | 58.4 | 62.8 | 105 | 16 | |
| 2FDR 097 417 S10 | 9.7 | 38.8 | 41.7 | 80 | 10 | | 2FDR 147 632 S16 | 14.7 | 58.8 | 63.2 | 105 | 16 | |
| 2FDR 098 421 S10 | 9.8 | 39.2 | 42.1 | 80 | 10 | | 2FDR 148 636 S16 | 14.8 | 59.2 | 63.6 | 105 | 16 | |
| 2FDR 099 426 S10 | 9.9 | 39.6 | 42.6 | 80 | 10 | | 2FDR 149 641 S16 | 14.9 | 59.6 | 64.1 | 105 | 16 | |
| 2FDR 100 430 S10 | 10 | 40 | 43 | 80 | 10 | | 2FDR 150 645 S16 | 15 | 60 | 64.5 | 105 | 16 | |
| 2FDR 101 434 S12 | 10.1 | 40.4 | 43.4 | 90 | 12 | | 2FDR 151 649 S16 | 15.1 | 60.4 | 64.9 | 115 | 16 | |
| 2FDR 102 439 S12 | 10.2 | 40.8 | 43.9 | 90 | 12 | | 2FDR 152 654 S16 | 15.2 | 60.8 | 65.4 | 115 | 16 | |
| 2FDR 103 443 S12 | 10.3 | 41.2 | 44.3 | 90 | 12 | | 2FDR 153 658 S16 | 15.3 | 61.2 | 65.8 | 115 | 16 | |
| 2FDR 104 447 S12 | 10.4 | 41.6 | 44.7 | 90 | 12 | | 2FDR 154 662 S16 | 15.4 | 61.6 | 66.2 | 115 | 16 | |
| 2FDR 105 452 S12 | 10.5 | 42 | 45.2 | 90 | 12 | | 2FDR 155 667 S16 | 15.5 | 62 | 66.7 | 115 | 16 | |
| 2FDR 106 456 S12 | 10.6 | 42.4 | 45.6 | 90 | 12 | | 2FDR 156 671 S16 | 15.6 | 62.4 | 67.1 | 115 | 16 | |
| 2FDR 107 460 S12 | 10.7 | 42.8 | 46 | 90 | 12 | | 2FDR 157 675 S16 | 15.7 | 62.8 | 67.5 | 115 | 16 | |
| 2FDR 108 464 S12 | 10.8 | 43.2 | 46.4 | 90 | 12 | | 2FDR 158 679 S16 | 15.8 | 63.2 | 67.9 | 115 | 16 | |
| 2FDR 109 469 S12 | 10.9 | 43.6 | 46.9 | 90 | 12 | | 2FDR 159 684 S16 | 15.9 | 63.6 | 68.4 | 115 | 16 | |
| 2FDR 110 473 S12 | 11 | 44 | 47.3 | 90 | 12 | | 2FDR 160 688 S16 | 16 | 64 | 68.8 | 115 | 16 | |
| 2FDR 111 477 S12 | 11.1 | 44.4 | 47.7 | 90 | 12 | | 2FDR 165 710 S18 | 16.5 | 66 | 71 | 125 | 18 | |
| 2FDR 112 482 S12 | 11.2 | 44.8 | 48.2 | 90 | 12 | | 2FDR 170 731 S18 | 17 | 68 | 73.1 | 125 | 18 | |
| 2FDR 113 486 S12 | 11.3 | 45.2 | 48.6 | 90 | 12 | | 2FDR 175 753 S18 | 17.5 | 70 | 75.3 | 125 | 18 | |
| 2FDR 114 490 S12 | 11.4 | 45.6 | 49 | 90 | 12 | | 2FDR 180 774 S18 | 18 | 72 | 77.4 | 125 | 18 | |
| 2FDR 115 495 S12 | 11.5 | 46 | 49.5 | 90 | 12 | | 2FDR 185 796 S20 | 18.5 | 74 | 79.6 | 135 | 20 | |
| 2FDR 116 499 S12 | 11.6 | 46.4 | 49.9 | 90 | 12 | | 2FDR 190 817 S20 | 19 | 76 | 81.7 | 135 | 20 | |
| 2FDR 117 503 S12 | 11.7 | 46.8 | 50.3 | 90 | 12 | | 2FDR 195 839 S20 | 19.5 | 78 | 83.9 | 145 | 20 | |
| 2FDR 118 507 S12 | 11.8 | 47.2 | 50.7 | 90 | 12 | | 2FDR 200 860 S20 | 20 | 80 | 86 | 145 | 20 | |
| 2FDR 119 512 S12 | 11.9 | 47.6 | 51.2 | 90 | 12 | | | | | | | | |
| 2FDR 120 516 S12 | 12 | 48 | 51.6 | 90 | 12 | | | | | | | | |
| 2FDR 121 520 S14 | 12.1 | 48.4 | 52 | 100 | 14 | | | | | | | | |
| 2FDR 122 525 S14 | 12.2 | 48.8 | 52.5 | 100 | 14 | | | | | | | | |
| 2FDR 123 529 S14 | 12.3 | 49.2 | 52.9 | 100 | 14 | | | | | | | | |
| 2FDR 124 533 S14 | 12.4 | 49.6 | 53.3 | 100 | 14 | | | | | | | | |
| 2FDR 125 538 S14 | 12.5 | 50 | 53.8 | 100 | 14 | | | | | | | | |
| 2FDR 126 542 S14 | 12.6 | 50.4 | 54.2 | 100 | 14 | | | | | | | | |
| 2FDR 127 546 S14 | 12.7 | 50.8 | 54.6 | 100 | 14 | | | | | | | | |
| 2FDR 128 550 S14 | 12.8 | 51.2 | 55 | 100 | 14 | | | | | | | | |
| 2FDR 129 555 S14 | 12.9 | 51.6 | 55.5 | 100 | 14 | | | | | | | | |
| 2FDR 130 559 S14 | 13 | 52 | 55.9 | 100 | 14 | | | | | | | | |
| 2FDR 131 563 S14 | 13.1 | 52.4 | 56.3 | 100 | 14 | | | | | | | | |
| 2FDR 132 568 S14 | 13.2 | 52.8 | 56.8 | 100 | 14 | | | | | | | | |
| 2FDR 133 572 S14 | 13.3 | 53.2 | 57.2 | 100 | 14 | | | | | | | | |
| 2FDR 134 576 S14 | 13.4 | 53.6 | 57.6 | 100 | 14 | | | | | | | | |
| 2FDR 135 581 S14 | 13.5 | 54 | 58.1 | 100 | 14 | | | | | | | | |
| 2FDR 136 585 S14 | 13.6 | 54.4 | 58.5 | 100 | 14 | | | | | | | | |
| 2FDR 137 589 S14 | 13.7 | 54.8 | 58.9 | 100 | 14 | | | | | | | | |
| 2FDR 138 593 S14 | 13.8 | 55.2 | 59.3 | 100 | 14 | | | | | | | | |
| 2FDR 139 598 S14 | 13.9 | 55.6 | 59.8 | 100 | 14 | | | | | | | | |
| 2FDR 140 602 S14 | 14 | 56 | 60.2 | 100 | 14 | | | | | | | | |
| 2FDR 141 606 S16 | 14.1 | 56.4 | 60.6 | 105 | 16 | | | | | | | | |
| 2FDR 142 611 S16 | 14.2 | 56.8 | 61.1 | 105 | 16 | | | | | | | | |
| 2FDR 143 615 S16 | 14.3 | 57.2 | 61.5 | 105 | 16 | | | | | | | | |

초경 2날/ 롱샹크 다기능 플랫 드릴



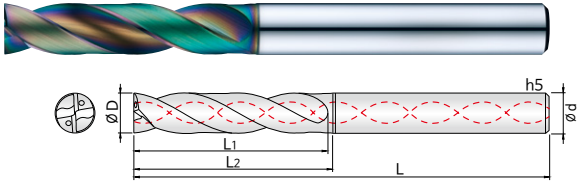
- HRC50이하, 프리하드강, 합금강, 주철 가공용 플랫 드릴
- 밑날 플랫타입으로 다양한 경사면과 곡면 드릴가공에 탁월한 성능을 발휘합니다.
- 20도 헬릭스를 채택하여 칩배출 성능이 매우 우수합니다.
- 관통 드릴 작업시 버 발생을 최소화 합니다.
- HR 코팅으로 내열성과 내마모성이 우수, 긴 공구수명을 실현 하였습니다.
- Flat drill for materials up to HRC50, pre-hardened steel, alloy steel, cast iron.
- With flat type of end face, excellent performance drilling is available to a variety of inclined and curved surfaces.
- Chip emission is great and stable drilling is available with 20 degree helix design.
- Minimize burrs during penetration drilling.
- Increased tool life by applying HR coating with great heat and wear resistance.



54P

단위 : mm

| Order Number | Diameter D | Flute Length L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 샹크 Shank Dia d | 비고 | Order Number | Diameter D | Flute Length L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 샹크 Shank Dia d | 비고 |
|-------------------|------------|-----------------|-------------------------|---------------------|----------------|----|--------------------|------------|-----------------|-------------------------|---------------------|----------------|----|
| 2FDRL 030 300 S06 | 3 | 12 | 30 | 100 | 6 | | 2FDRL 084 672 S10 | 8.4 | 33.6 | 67.2 | 130 | 10 | |
| 2FDRL 031 310 S06 | 3.1 | 12.4 | 31 | 100 | 6 | | 2FDRL 085 680 S10 | 8.5 | 34 | 68 | 130 | 10 | |
| 2FDRL 032 320 S06 | 3.2 | 12.8 | 32 | 100 | 6 | | 2FDRL 086 688 S10 | 8.6 | 34.4 | 68.8 | 130 | 10 | |
| 2FDRL 033 330 S06 | 3.3 | 13.2 | 33 | 100 | 6 | | 2FDRL 087 696 S10 | 8.7 | 34.8 | 69.6 | 130 | 10 | |
| 2FDRL 034 340 S06 | 3.4 | 13.6 | 34 | 100 | 6 | | 2FDRL 088 704 S10 | 8.8 | 35.2 | 70.4 | 130 | 10 | |
| 2FDRL 035 350 S06 | 3.5 | 14 | 35 | 100 | 6 | | 2FDRL 089 712 S10 | 8.9 | 35.6 | 71.2 | 130 | 10 | |
| 2FDRL 036 360 S06 | 3.6 | 14.4 | 36 | 100 | 6 | | 2FDRL 090 720 S10 | 9 | 36 | 72 | 130 | 10 | |
| 2FDRL 037 370 S06 | 3.7 | 14.8 | 37 | 100 | 6 | | 2FDRL 091 728 S10 | 9.1 | 36.4 | 72.8 | 130 | 10 | |
| 2FDRL 038 380 S06 | 3.8 | 15.2 | 38 | 100 | 6 | | 2FDRL 092 736 S10 | 9.2 | 36.8 | 73.6 | 130 | 10 | |
| 2FDRL 039 390 S06 | 3.9 | 15.6 | 39 | 100 | 6 | | 2FDRL 093 744 S10 | 9.3 | 37.2 | 74.4 | 130 | 10 | |
| 2FDRL 040 400 S06 | 4 | 16 | 40 | 100 | 6 | | 2FDRL 094 752 S10 | 9.4 | 37.6 | 75.2 | 130 | 10 | |
| 2FDRL 041 410 S06 | 4.1 | 16.4 | 41 | 100 | 6 | | 2FDRL 095 760 S10 | 9.5 | 38 | 76 | 130 | 10 | |
| 2FDRL 042 420 S06 | 4.2 | 16.8 | 42 | 100 | 6 | | 2FDRL 096 768 S10 | 9.6 | 38.4 | 76.8 | 130 | 10 | |
| 2FDRL 043 430 S06 | 4.3 | 17.2 | 43 | 100 | 6 | | 2FDRL 097 776 S10 | 9.7 | 38.8 | 77.6 | 130 | 10 | |
| 2FDRL 044 440 S06 | 4.4 | 17.6 | 44 | 100 | 6 | | 2FDRL 098 784 S10 | 9.8 | 39.2 | 78.4 | 130 | 10 | |
| 2FDRL 045 450 S06 | 4.5 | 18 | 45 | 100 | 6 | | 2FDRL 099 792 S10 | 9.9 | 39.6 | 79.2 | 130 | 10 | |
| 2FDRL 046 460 S06 | 4.6 | 18.4 | 46 | 100 | 6 | | 2FDRL 100 800 S10 | 10 | 40 | 80 | 130 | 10 | |
| 2FDRL 047 470 S06 | 4.7 | 18.8 | 47 | 100 | 6 | | 2FDRL 101 808 S12 | 10.1 | 40.4 | 80.8 | 150 | 12 | |
| 2FDRL 048 480 S06 | 4.8 | 19.2 | 48 | 100 | 6 | | 2FDRL 102 816 S12 | 10.2 | 40.8 | 81.6 | 150 | 12 | |
| 2FDRL 049 490 S06 | 4.9 | 19.6 | 49 | 100 | 6 | | 2FDRL 103 824 S12 | 10.3 | 41.2 | 82.4 | 150 | 12 | |
| 2FDRL 050 500 S06 | 5 | 20 | 50 | 100 | 6 | | 2FDRL 104 832 S12 | 10.4 | 41.6 | 83.2 | 150 | 12 | |
| 2FDRL 051 510 S06 | 5.1 | 20.4 | 51 | 110 | 6 | | 2FDRL 105 840 S12 | 10.5 | 42 | 84 | 150 | 12 | |
| 2FDRL 052 520 S06 | 5.2 | 20.8 | 52 | 110 | 6 | | 2FDRL 106 848 S12 | 10.6 | 42.4 | 84.8 | 150 | 12 | |
| 2FDRL 053 530 S06 | 5.3 | 21.2 | 53 | 110 | 6 | | 2FDRL 107 856 S12 | 10.7 | 42.8 | 85.6 | 150 | 12 | |
| 2FDRL 054 540 S06 | 5.4 | 21.6 | 54 | 110 | 6 | | 2FDRL 108 864 S12 | 10.8 | 43.2 | 86.4 | 150 | 12 | |
| 2FDRL 055 550 S06 | 5.5 | 22 | 55 | 110 | 6 | | 2FDRL 109 872 S12 | 10.9 | 43.6 | 87.2 | 150 | 12 | |
| 2FDRL 056 560 S06 | 5.6 | 22.4 | 56 | 110 | 6 | | 2FDRL 110 880 S12 | 11 | 44 | 88 | 150 | 12 | |
| 2FDRL 057 570 S06 | 5.7 | 22.8 | 57 | 110 | 6 | | 2FDRL 111 888 S12 | 11.1 | 44.4 | 88.8 | 150 | 12 | |
| 2FDRL 058 580 S06 | 5.8 | 23.2 | 58 | 110 | 6 | | 2FDRL 112 896 S12 | 11.2 | 44.8 | 89.6 | 150 | 12 | |
| 2FDRL 059 590 S06 | 5.9 | 23.6 | 59 | 110 | 6 | | 2FDRL 113 904 S12 | 11.3 | 45.2 | 90.4 | 150 | 12 | |
| 2FDRL 060 480 S06 | 6 | 24 | 48 | 110 | 6 | | 2FDRL 114 912 S12 | 11.4 | 45.6 | 91.2 | 150 | 12 | |
| 2FDRL 061 488 S08 | 6.1 | 24.4 | 48.8 | 120 | 8 | | 2FDRL 115 920 S12 | 11.5 | 46 | 92 | 150 | 12 | |
| 2FDRL 062 496 S08 | 6.2 | 24.8 | 49.6 | 120 | 8 | | 2FDRL 116 928 S12 | 11.6 | 46.4 | 92.8 | 150 | 12 | |
| 2FDRL 063 504 S08 | 6.3 | 25.2 | 50.4 | 120 | 8 | | 2FDRL 117 936 S12 | 11.7 | 46.8 | 93.6 | 150 | 12 | |
| 2FDRL 064 512 S08 | 6.4 | 25.6 | 51.2 | 120 | 8 | | 2FDRL 118 944 S12 | 11.8 | 47.2 | 94.4 | 150 | 12 | |
| 2FDRL 065 520 S08 | 6.5 | 26 | 52 | 120 | 8 | | 2FDRL 119 952 S12 | 11.9 | 47.6 | 95.2 | 150 | 12 | |
| 2FDRL 066 528 S08 | 6.6 | 26.4 | 52.8 | 120 | 8 | | 2FDRL 120 960 S12 | 12 | 48 | 96 | 150 | 12 | |
| 2FDRL 067 536 S08 | 6.7 | 26.8 | 53.6 | 120 | 8 | | 2FDRL 125 1000 S14 | 12.5 | 50 | 100 | 180 | 14 | |
| 2FDRL 068 544 S08 | 6.8 | 27.2 | 54.4 | 120 | 8 | | 2FDRL 130 1040 S14 | 13 | 52 | 104 | 180 | 14 | |
| 2FDRL 069 552 S08 | 6.9 | 27.6 | 55.2 | 120 | 8 | | 2FDRL 135 1080 S14 | 13.5 | 54 | 108 | 180 | 14 | |
| 2FDRL 070 560 S08 | 7 | 28 | 56 | 120 | 8 | | 2FDRL 140 1120 S14 | 14 | 56 | 112 | 180 | 14 | |
| 2FDRL 071 568 S08 | 7.1 | 28.4 | 56.8 | 120 | 8 | | 2FDRL 145 1160 S16 | 14.5 | 58 | 116 | 200 | 16 | |
| 2FDRL 072 576 S08 | 7.2 | 28.8 | 57.6 | 120 | 8 | | 2FDRL 150 1200 S16 | 15 | 60 | 120 | 200 | 16 | |
| 2FDRL 073 584 S08 | 7.3 | 29.2 | 58.4 | 120 | 8 | | 2FDRL 155 1240 S16 | 15.5 | 62 | 124 | 200 | 16 | |
| 2FDRL 074 592 S08 | 7.4 | 29.6 | 59.2 | 120 | 8 | | 2FDRL 160 1280 S16 | 16 | 64 | 128 | 200 | 16 | |
| 2FDRL 075 600 S08 | 7.5 | 30 | 60 | 120 | 8 | | 2FDRL 165 1320 S18 | 16.5 | 66 | 132 | 220 | 18 | |
| 2FDRL 076 608 S08 | 7.6 | 30.4 | 60.8 | 120 | 8 | | 2FDRL 170 1360 S18 | 17 | 68 | 136 | 220 | 18 | |
| 2FDRL 077 616 S08 | 7.7 | 30.8 | 61.6 | 120 | 8 | | 2FDRL 175 1400 S18 | 17.5 | 70 | 140 | 220 | 18 | |
| 2FDRL 078 624 S08 | 7.8 | 31.2 | 62.4 | 120 | 8 | | 2FDRL 180 1440 S18 | 18 | 72 | 144 | 220 | 18 | |
| 2FDRL 079 632 S08 | 7.9 | 31.6 | 63.2 | 120 | 8 | | 2FDRL 185 1480 S20 | 18.5 | 74 | 148 | 250 | 20 | |
| 2FDRL 080 640 S08 | 8 | 32 | 64 | 120 | 8 | | 2FDRL 190 1520 S20 | 19 | 76 | 152 | 250 | 20 | |
| 2FDRL 081 648 S10 | 8.1 | 32.4 | 64.8 | 130 | 10 | | 2FDRL 195 1560 S20 | 19.5 | 78 | 156 | 250 | 20 | |
| 2FDRL 082 656 S10 | 8.2 | 32.8 | 65.6 | 130 | 10 | | 2FDRL 200 1600 S20 | 20 | 80 | 160 | 250 | 20 | |
| 2FDRL 083 664 S10 | 8.3 | 33.2 | 66.4 | 130 | 10 | | | | | | | | |



- HRC50이하, 프리하드강, 합금강, 주철 가공용 플랫 드릴
- 더블 마진 옆날과 절삭유 홀을 적용하여, 다양한 경사면과 곡면 드릴가공에 빠른 가공 속도를 실현합니다.
- 24~30도 헬릭스를 채택하여 칩배출 성능이 매우 우수합니다.
- 관통 드릴 작업시 버 발생을 최소화합니다.
- HR 코팅으로 내열성과 내마모성이 우수, 긴 공구수명을 실현 하였습니다.

Flat drill for materials up to HRC50, pre-hardened steel, alloy steel, cast iron.

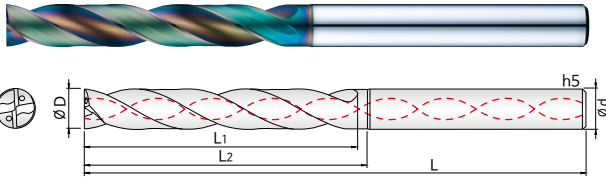
- With double margin of side flute and coolant hole, high speed drilling is available to a variety of inclined and curved surfaces.
- Chip emission is great and stable drilling is available with between 24 to 30 degree helix design.
- Minimize burrs during penetration drilling.
- Increased tool life by applying HR coating with great heat and wear resistance.



5SP

단위 : mm

| Order Number | 날경 Diameter D | 홀길이 Flute Length L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 홀길이 Flute Length L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 샙크 Shank Dia d | 비고 |
|-------------------|---------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|-------------------|---------------------|---------------------------|-------------------------------|---------------------------|----------------------|----|
| 2FDRW 030 165 S04 | 3 | 13.5 | 16.5 | 60 | 4 | | 2FDRW 080 390 S08 | 8 | 36 | 39 | 80 | 8 | |
| 2FDRW 031 170 S04 | 3.1 | 14 | 17 | 60 | 4 | | 2FDRW 081 395 S10 | 8.1 | 36.5 | 39.5 | 90 | 10 | |
| 2FDRW 032 174 S04 | 3.2 | 14.4 | 17.4 | 60 | 4 | | 2FDRW 082 399 S10 | 8.2 | 36.9 | 39.9 | 90 | 10 | |
| 2FDRW 033 179 S04 | 3.3 | 14.9 | 17.9 | 60 | 4 | | 2FDRW 083 404 S10 | 8.3 | 37.4 | 40.4 | 90 | 10 | |
| 2FDRW 034 183 S04 | 3.4 | 15.3 | 18.3 | 60 | 4 | | 2FDRW 084 408 S10 | 8.4 | 37.8 | 40.8 | 90 | 10 | |
| 2FDRW 035 188 S04 | 3.5 | 15.8 | 18.8 | 60 | 4 | | 2FDRW 085 413 S10 | 8.5 | 38.3 | 41.3 | 90 | 10 | |
| 2FDRW 036 192 S04 | 3.6 | 16.2 | 19.2 | 60 | 4 | | 2FDRW 086 417 S10 | 8.6 | 38.7 | 41.7 | 90 | 10 | |
| 2FDRW 037 197 S04 | 3.7 | 16.7 | 19.7 | 60 | 4 | | 2FDRW 087 422 S10 | 8.7 | 39.2 | 42.2 | 90 | 10 | |
| 2FDRW 038 201 S04 | 3.8 | 17.1 | 20.1 | 60 | 4 | | 2FDRW 088 426 S10 | 8.8 | 39.6 | 42.6 | 90 | 10 | |
| 2FDRW 039 206 S04 | 3.9 | 17.6 | 20.6 | 60 | 4 | | 2FDRW 089 431 S10 | 8.9 | 40.1 | 43.1 | 90 | 10 | |
| 2FDRW 040 210 S06 | 4 | 18 | 21 | 60 | 6 | | 2FDRW 090 435 S10 | 9 | 40.5 | 43.5 | 90 | 10 | |
| 2FDRW 041 215 S06 | 4.1 | 18.5 | 21.5 | 70 | 6 | | 2FDRW 091 440 S10 | 9.1 | 41 | 44 | 90 | 10 | |
| 2FDRW 042 219 S06 | 4.2 | 18.9 | 21.9 | 70 | 6 | | 2FDRW 092 444 S10 | 9.2 | 41.4 | 44.4 | 90 | 10 | |
| 2FDRW 043 224 S06 | 4.3 | 19.4 | 22.4 | 70 | 6 | | 2FDRW 093 449 S10 | 9.3 | 41.9 | 44.9 | 90 | 10 | |
| 2FDRW 044 228 S06 | 4.4 | 19.8 | 22.8 | 70 | 6 | | 2FDRW 094 453 S10 | 9.4 | 42.3 | 45.3 | 90 | 10 | |
| 2FDRW 045 233 S06 | 4.5 | 20.3 | 23.3 | 70 | 6 | | 2FDRW 095 458 S10 | 9.5 | 42.8 | 45.8 | 90 | 10 | |
| 2FDRW 046 237 S06 | 4.6 | 20.7 | 23.7 | 70 | 6 | | 2FDRW 096 462 S10 | 9.6 | 43.2 | 46.2 | 90 | 10 | |
| 2FDRW 047 242 S06 | 4.7 | 21.2 | 24.2 | 70 | 6 | | 2FDRW 097 467 S10 | 9.7 | 43.7 | 46.7 | 90 | 10 | |
| 2FDRW 048 246 S06 | 4.8 | 21.6 | 24.6 | 70 | 6 | | 2FDRW 098 471 S10 | 9.8 | 44.1 | 47.1 | 90 | 10 | |
| 2FDRW 049 251 S06 | 4.9 | 22.1 | 25.1 | 70 | 6 | | 2FDRW 099 476 S10 | 9.9 | 44.6 | 47.6 | 90 | 10 | |
| 2FDRW 050 255 S06 | 5 | 22.5 | 25.5 | 70 | 6 | | 2FDRW 100 480 S10 | 10 | 45 | 48 | 90 | 10 | |
| 2FDRW 051 260 S06 | 5.1 | 23 | 26 | 70 | 6 | | 2FDRW 101 485 S12 | 10.1 | 45.5 | 48.5 | 100 | 12 | |
| 2FDRW 052 264 S06 | 5.2 | 23.4 | 26.4 | 70 | 6 | | 2FDRW 102 489 S12 | 10.2 | 45.9 | 48.9 | 100 | 12 | |
| 2FDRW 053 269 S06 | 5.3 | 23.9 | 26.9 | 70 | 6 | | 2FDRW 103 494 S12 | 10.3 | 46.4 | 49.4 | 100 | 12 | |
| 2FDRW 054 273 S06 | 5.4 | 24.3 | 27.3 | 70 | 6 | | 2FDRW 104 498 S12 | 10.4 | 46.8 | 49.8 | 100 | 12 | |
| 2FDRW 055 278 S06 | 5.5 | 24.8 | 27.8 | 70 | 6 | | 2FDRW 105 503 S12 | 10.5 | 47.3 | 50.3 | 100 | 12 | |
| 2FDRW 056 282 S06 | 5.6 | 25.2 | 28.2 | 70 | 6 | | 2FDRW 106 507 S12 | 10.6 | 47.7 | 50.7 | 100 | 12 | |
| 2FDRW 057 287 S06 | 5.7 | 25.7 | 28.7 | 70 | 6 | | 2FDRW 107 512 S12 | 10.7 | 48.2 | 51.2 | 100 | 12 | |
| 2FDRW 058 291 S06 | 5.8 | 26.1 | 29.1 | 70 | 6 | | 2FDRW 108 516 S12 | 10.8 | 48.6 | 51.6 | 100 | 12 | |
| 2FDRW 059 296 S06 | 5.9 | 26.6 | 29.6 | 70 | 6 | | 2FDRW 109 521 S12 | 10.9 | 49.1 | 52.1 | 100 | 12 | |
| 2FDRW 060 300 S06 | 6 | 27 | 30 | 70 | 6 | | 2FDRW 110 525 S12 | 11 | 49.5 | 52.5 | 100 | 12 | |
| 2FDRW 061 305 S08 | 6.1 | 27.5 | 30.5 | 80 | 8 | | 2FDRW 111 530 S12 | 11.1 | 50 | 53 | 110 | 12 | |
| 2FDRW 062 309 S08 | 6.2 | 27.9 | 30.9 | 80 | 8 | | 2FDRW 112 534 S12 | 11.2 | 50.4 | 53.4 | 110 | 12 | |
| 2FDRW 063 314 S08 | 6.3 | 28.4 | 31.4 | 80 | 8 | | 2FDRW 113 539 S12 | 11.3 | 50.9 | 53.9 | 110 | 12 | |
| 2FDRW 064 318 S08 | 6.4 | 28.8 | 31.8 | 80 | 8 | | 2FDRW 114 543 S12 | 11.4 | 51.3 | 54.3 | 110 | 12 | |
| 2FDRW 065 323 S08 | 6.5 | 29.3 | 32.3 | 80 | 8 | | 2FDRW 115 548 S12 | 11.5 | 51.8 | 54.8 | 110 | 12 | |
| 2FDRW 066 327 S08 | 6.6 | 29.7 | 32.7 | 80 | 8 | | 2FDRW 116 552 S12 | 11.6 | 52.2 | 55.2 | 110 | 12 | |
| 2FDRW 067 332 S08 | 6.7 | 30.2 | 33.2 | 80 | 8 | | 2FDRW 117 557 S12 | 11.7 | 52.7 | 55.7 | 110 | 12 | |
| 2FDRW 068 336 S08 | 6.8 | 30.6 | 33.6 | 80 | 8 | | 2FDRW 118 561 S12 | 11.8 | 53.1 | 56.1 | 110 | 12 | |
| 2FDRW 069 341 S08 | 6.9 | 31.1 | 34.1 | 80 | 8 | | 2FDRW 119 566 S12 | 11.9 | 53.6 | 56.6 | 110 | 12 | |
| 2FDRW 070 345 S08 | 7 | 31.5 | 34.5 | 80 | 8 | | 2FDRW 120 570 S12 | 12 | 54 | 57 | 110 | 12 | |
| 2FDRW 071 350 S08 | 7.1 | 32 | 35 | 80 | 8 | | 2FDRW 125 593 S14 | 12.5 | 56.3 | 59.3 | 120 | 14 | |
| 2FDRW 072 354 S08 | 7.2 | 32.4 | 35.4 | 80 | 8 | | 2FDRW 130 615 S14 | 13 | 58.5 | 61.5 | 120 | 14 | |
| 2FDRW 073 359 S08 | 7.3 | 32.9 | 35.9 | 80 | 8 | | 2FDRW 135 638 S14 | 13.5 | 60.8 | 63.8 | 120 | 14 | |
| 2FDRW 074 363 S08 | 7.4 | 33.3 | 36.3 | 80 | 8 | | 2FDRW 140 660 S14 | 14 | 63 | 66 | 120 | 14 | |
| 2FDRW 075 368 S08 | 7.5 | 33.8 | 36.8 | 80 | 8 | | 2FDRW 145 683 S16 | 14.5 | 65.3 | 68.3 | 130 | 16 | |
| 2FDRW 076 372 S08 | 7.6 | 34.2 | 37.2 | 80 | 8 | | 2FDRW 150 705 S16 | 15 | 67.5 | 70.5 | 130 | 16 | |
| 2FDRW 077 377 S08 | 7.7 | 34.7 | 37.7 | 80 | 8 | | 2FDRW 155 728 S16 | 15.5 | 69.8 | 72.8 | 130 | 16 | |
| 2FDRW 078 381 S08 | 7.8 | 35.1 | 38.1 | 80 | 8 | | 2FDRW 160 750 S16 | 16 | 72 | 75 | 130 | 16 | |
| 2FDRW 079 386 S08 | 7.9 | 35.6 | 38.6 | 80 | 8 | | | | | | | | |



- HRC50이하, 프리하든강, 합금강, 주철 가공용 플랫 드릴
- 더블 마진 옆날과 절삭유 홀을 적용하여, 다양한 경사면과 곡면 드릴가공에 빠른 가공 속도를 실현합니다.
- 24~30도 헬릭스를 채택하여 칩배출 성능이 매우 우수합니다.
- 관통 드릴 작업시 버 발생을 최소화 합니다.
- HR 코팅으로 내열성과 내마모성이 우수, 긴 공구수명을 실현 하였습니다.
- Flat drill for materials up to HRC50, pre-hardened steel, alloy steel, cast iron.
- With double margin of side flute and coolant hole, high speed drilling is available to a variety of inclined and curved surfaces.
- Chip emission is great and stable drilling is available with between 24 to 30 degree helix design.
- Minimize burrs during penetration drilling.
- Increased tool life by applying HR coating with great heat and wear resistance.



5SP

단위 : mm

| Order Number | 날경 Diameter D | 홀길이 Flute Length L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 샹크 Shank Dia d | 비고 | Order Number | 날경 Diameter D | 홀길이 Flute Length L1 | 유효장 Effective Length L2 | 전장 Overall Length L | 샹크 Shank Dia d | 비고 |
|--------------------|---------------|---------------------|-------------------------|---------------------|----------------|----|---------------------|---------------|---------------------|-------------------------|---------------------|----------------|----|
| 2FDRLW 030 231 S04 | 3 | 20.1 | 23.1 | 70 | 4 | | 2FDRLW 080 566 S08 | 8 | 53.6 | 56.6 | 100 | 8 | |
| 2FDRLW 031 238 S04 | 3.1 | 20.8 | 23.8 | 70 | 4 | | 2FDRLW 081 573 S10 | 8.1 | 54.3 | 57.3 | 110 | 10 | |
| 2FDRLW 032 244 S04 | 3.2 | 21.4 | 24.4 | 70 | 4 | | 2FDRLW 082 579 S10 | 8.2 | 54.9 | 57.9 | 110 | 10 | |
| 2FDRLW 033 251 S04 | 3.3 | 22.1 | 25.1 | 70 | 4 | | 2FDRLW 083 586 S10 | 8.3 | 55.6 | 58.6 | 110 | 10 | |
| 2FDRLW 034 258 S04 | 3.4 | 22.8 | 25.8 | 70 | 4 | | 2FDRLW 084 593 S10 | 8.4 | 56.3 | 59.3 | 110 | 10 | |
| 2FDRLW 035 265 S04 | 3.5 | 23.5 | 26.5 | 70 | 4 | | 2FDRLW 085 600 S10 | 8.5 | 57 | 60 | 110 | 10 | |
| 2FDRLW 036 271 S04 | 3.6 | 24.1 | 27.1 | 70 | 4 | | 2FDRLW 086 606 S10 | 8.6 | 57.6 | 60.6 | 110 | 10 | |
| 2FDRLW 037 278 S04 | 3.7 | 24.8 | 27.8 | 70 | 4 | | 2FDRLW 087 613 S10 | 8.7 | 58.3 | 61.3 | 110 | 10 | |
| 2FDRLW 038 285 S04 | 3.8 | 25.5 | 28.5 | 70 | 4 | | 2FDRLW 088 620 S10 | 8.8 | 59 | 62 | 110 | 10 | |
| 2FDRLW 039 291 S04 | 3.9 | 26.1 | 29.1 | 70 | 4 | | 2FDRLW 089 626 S10 | 8.9 | 59.6 | 62.6 | 110 | 10 | |
| 2FDRLW 040 298 S06 | 4 | 26.8 | 29.8 | 70 | 6 | | 2FDRLW 090 633 S10 | 9 | 60.3 | 63.3 | 110 | 10 | |
| 2FDRLW 041 305 S06 | 4.1 | 27.5 | 30.5 | 85 | 6 | | 2FDRLW 091 640 S10 | 9.1 | 61 | 64 | 110 | 10 | |
| 2FDRLW 042 311 S06 | 4.2 | 28.1 | 31.1 | 85 | 6 | | 2FDRLW 092 646 S10 | 9.2 | 61.6 | 64.6 | 110 | 10 | |
| 2FDRLW 043 318 S06 | 4.3 | 28.8 | 31.8 | 85 | 6 | | 2FDRLW 093 653 S10 | 9.3 | 62.3 | 65.3 | 110 | 10 | |
| 2FDRLW 044 325 S06 | 4.4 | 29.5 | 32.5 | 85 | 6 | | 2FDRLW 094 660 S10 | 9.4 | 63 | 66 | 110 | 10 | |
| 2FDRLW 045 332 S06 | 4.5 | 30.2 | 33.2 | 85 | 6 | | 2FDRLW 095 667 S10 | 9.5 | 63.7 | 66.7 | 110 | 10 | |
| 2FDRLW 046 338 S06 | 4.6 | 30.8 | 33.8 | 85 | 6 | | 2FDRLW 096 673 S10 | 9.6 | 64.3 | 67.3 | 110 | 10 | |
| 2FDRLW 047 345 S06 | 4.7 | 31.5 | 34.5 | 85 | 6 | | 2FDRLW 097 680 S10 | 9.7 | 65 | 68 | 110 | 10 | |
| 2FDRLW 048 352 S06 | 4.8 | 32.2 | 35.2 | 85 | 6 | | 2FDRLW 098 687 S10 | 9.8 | 65.7 | 68.7 | 110 | 10 | |
| 2FDRLW 049 358 S06 | 4.9 | 32.8 | 35.8 | 85 | 6 | | 2FDRLW 099 693 S10 | 9.9 | 66.3 | 69.3 | 110 | 10 | |
| 2FDRLW 050 365 S06 | 5 | 33.5 | 36.5 | 85 | 6 | | 2FDRLW 100 700 S10 | 10 | 67 | 70 | 110 | 10 | |
| 2FDRLW 051 372 S06 | 5.1 | 34.2 | 37.2 | 85 | 6 | | 2FDRLW 101 707 S12 | 10.1 | 67.7 | 70.7 | 125 | 12 | |
| 2FDRLW 052 378 S06 | 5.2 | 34.8 | 37.8 | 85 | 6 | | 2FDRLW 102 713 S12 | 10.2 | 68.3 | 71.3 | 125 | 12 | |
| 2FDRLW 053 385 S06 | 5.3 | 35.5 | 38.5 | 85 | 6 | | 2FDRLW 103 720 S12 | 10.3 | 69 | 72 | 125 | 12 | |
| 2FDRLW 054 392 S06 | 5.4 | 36.2 | 39.2 | 85 | 6 | | 2FDRLW 104 727 S12 | 10.4 | 69.7 | 72.7 | 125 | 12 | |
| 2FDRLW 055 399 S06 | 5.5 | 36.9 | 39.9 | 85 | 6 | | 2FDRLW 105 734 S12 | 10.5 | 70.4 | 73.4 | 125 | 12 | |
| 2FDRLW 056 405 S06 | 5.6 | 37.5 | 40.5 | 85 | 6 | | 2FDRLW 106 740 S12 | 10.6 | 71 | 74 | 125 | 12 | |
| 2FDRLW 057 412 S06 | 5.7 | 38.2 | 41.2 | 85 | 6 | | 2FDRLW 107 747 S12 | 10.7 | 71.7 | 74.7 | 125 | 12 | |
| 2FDRLW 058 419 S06 | 5.8 | 38.9 | 41.9 | 85 | 6 | | 2FDRLW 108 754 S12 | 10.8 | 72.4 | 75.4 | 125 | 12 | |
| 2FDRLW 059 425 S06 | 5.9 | 39.5 | 42.5 | 85 | 6 | | 2FDRLW 109 760 S12 | 10.9 | 73 | 76 | 125 | 12 | |
| 2FDRLW 060 432 S06 | 6 | 40.2 | 43.2 | 85 | 6 | | 2FDRLW 110 767 S12 | 11 | 73.7 | 76.7 | 125 | 12 | |
| 2FDRLW 061 439 S08 | 6.1 | 40.9 | 43.9 | 100 | 8 | | 2FDRLW 111 774 S12 | 11.1 | 74.4 | 77.4 | 135 | 12 | |
| 2FDRLW 062 445 S08 | 6.2 | 41.5 | 44.5 | 100 | 8 | | 2FDRLW 112 780 S12 | 11.2 | 75 | 78 | 135 | 12 | |
| 2FDRLW 063 452 S08 | 6.3 | 42.2 | 45.2 | 100 | 8 | | 2FDRLW 113 787 S12 | 11.3 | 75.7 | 78.7 | 135 | 12 | |
| 2FDRLW 064 459 S08 | 6.4 | 42.9 | 45.9 | 100 | 8 | | 2FDRLW 114 794 S12 | 11.4 | 76.4 | 79.4 | 135 | 12 | |
| 2FDRLW 065 466 S08 | 6.5 | 43.6 | 46.6 | 100 | 8 | | 2FDRLW 115 801 S12 | 11.5 | 77.1 | 80.1 | 135 | 12 | |
| 2FDRLW 066 472 S08 | 6.6 | 44.2 | 47.2 | 100 | 8 | | 2FDRLW 116 807 S12 | 11.6 | 77.7 | 80.7 | 135 | 12 | |
| 2FDRLW 067 479 S08 | 6.7 | 44.9 | 47.9 | 100 | 8 | | 2FDRLW 117 814 S12 | 11.7 | 78.4 | 81.4 | 135 | 12 | |
| 2FDRLW 068 486 S08 | 6.8 | 45.6 | 48.6 | 100 | 8 | | 2FDRLW 118 821 S12 | 11.8 | 79.1 | 82.1 | 135 | 12 | |
| 2FDRLW 069 492 S08 | 6.9 | 46.2 | 49.2 | 100 | 8 | | 2FDRLW 119 827 S12 | 11.9 | 79.7 | 82.7 | 135 | 12 | |
| 2FDRLW 070 499 S08 | 7 | 46.9 | 49.9 | 100 | 8 | | 2FDRLW 120 834 S12 | 12 | 80.4 | 83.4 | 135 | 12 | |
| 2FDRLW 071 506 S08 | 7.1 | 47.6 | 50.6 | 100 | 8 | | 2FDRLW 125 868 S14 | 12.5 | 83.8 | 86.8 | 140 | 14 | |
| 2FDRLW 072 512 S08 | 7.2 | 48.2 | 51.2 | 100 | 8 | | 2FDRLW 130 901 S14 | 13 | 87.1 | 90.1 | 140 | 14 | |
| 2FDRLW 073 519 S08 | 7.3 | 48.9 | 51.9 | 100 | 8 | | 2FDRLW 135 935 S14 | 13.5 | 90.5 | 93.5 | 140 | 14 | |
| 2FDRLW 074 526 S08 | 7.4 | 49.6 | 52.6 | 100 | 8 | | 2FDRLW 140 968 S14 | 14 | 93.8 | 96.8 | 140 | 14 | |
| 2FDRLW 075 533 S08 | 7.5 | 50.3 | 53.3 | 100 | 8 | | 2FDRLW 145 1002 S16 | 14.5 | 97.2 | 100.2 | 160 | 16 | |
| 2FDRLW 076 539 S08 | 7.6 | 50.9 | 53.9 | 100 | 8 | | 2FDRLW 150 1035 S16 | 15 | 100.5 | 103.5 | 160 | 16 | |
| 2FDRLW 077 546 S08 | 7.7 | 51.6 | 54.6 | 100 | 8 | | 2FDRLW 155 1069 S16 | 15.5 | 103.9 | 106.9 | 160 | 16 | |
| 2FDRLW 078 553 S08 | 7.8 | 52.3 | 55.3 | 100 | 8 | | 2FDRLW 160 1102 S16 | 16 | 107.2 | 110.2 | 160 | 16 | |
| 2FDRLW 079 559 S08 | 7.9 | 52.9 | 55.9 | 100 | 8 | | | | | | | | |

2SPO Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | 일반구조강/쾌삭강 HP/SM | | 구조용강/탄소강/회주철 SS/SC/FC | | 공구강/금형강 SCM/HPM | |
|---------------------|-----------------|---------|-----------------------|---------|-----------------|---------|
| 경도 Hardness | ~200HB | | ~30HRc | | 30~40HRc | |
| 외경 Outside Diameter | 절삭속도 (V/C) | 이송량 (f) | 절삭속도 (V/C) | 이송량 (f) | 절삭속도 (V/C) | 이송량 (f) |
| ∅1 | 23,800 | 500 | 20,000 | 400 | 19,100 | 380 |
| ∅2 | 12,000 | 700 | 10,350 | 400 | 9,550 | 380 |
| ∅3 | 8,000 | 800 | 6,900 | 550 | 6,400 | 510 |
| ∅4 | 5,900 | 800 | 5,200 | 620 | 4,800 | 570 |
| ∅6 | 3,980 | 700 | 3,450 | 550 | 3,180 | 510 |
| ∅8 | 3,000 | 600 | 2,600 | 520 | 2,400 | 480 |
| ∅10 | 2,400 | 580 | 2,070 | 500 | 2,000 | 460 |
| ∅12 | 2,000 | 560 | 1,720 | 480 | 1,600 | 450 |
| ∅16 | 1,500 | 500 | 1,300 | 400 | 1,200 | 380 |

- 진동이 적고 강성이 좋은 공작기계 사용요망합니다 (∅1 이하 사용시 진동 허용 관리 3 μ m 이내 일것.)
- 가급적 열박음 척을 추천합니다.
- 상기 절삭 조건은 참고 수치이므로 실 가공시 가공 형상, 가공 목적, 적용 기계에 따라 조건 변경 요망합니다.
- 조건표가 기계의 최대 스피들 속도를 초과하거나 버 및 적열 현상이 발생할 때 스피들 속도와 이송 속도를 비례하여 조정하십시오.
- Use a machine with low vibration and good rigidity ($\varnothing 1$ or less, the vibration tolerance management should be within 3 μ m).
- Using shrink-fit chuck is recommended.
- 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, or found red heat on the material, adjust RPM and feed in the same proportion.

2STD Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | 일반구조강/쾌삭강 HP/SM ~200HB | | 구조용강/탄소강/회주철 SS/SC/FC ~30HRc | | 공구강/금형강 SCM/HPM 30~40HRc | | 덕타일 주철 FCD | | 스텐레스강 SUS304/SUS316 | | 알루미늄 합금 A7075 | | 인코넬 inconel | |
|--------------|------------------------|----------|------------------------------|----------|--------------------------|----------|------------|----------|---------------------|----------|---------------|----------|-------------|-----------|
| | 직경 Diameter | 절삭속도 V/C | 이송량 f | 절삭속도 V/C | 이송량 f | 절삭속도 V/C | 이송량 f | 절삭속도 V/C | 이송량 f | 절삭속도 V/C | 이송량 f | 절삭속도 V/C | 이송량 f | |
| ∅3.4 | 60~100 | 0.1~0.2 | 60~100 | 0.1~0.2 | 20~60 | 0.05~0.1 | 40~70 | 0.07~0.2 | 20~60 | 0.05~0.2 | 80~120 | 0.1~0.2 | 10~30 | 0.05~0.15 |
| ∅4.3 | 60~100 | 0.1~0.2 | 60~100 | 0.1~0.2 | 20~60 | 0.05~0.1 | 40~70 | 0.07~0.2 | 20~60 | 0.05~0.2 | 80~120 | 0.1~0.2 | 10~30 | 0.05~0.15 |
| ∅5.1 | 60~100 | 0.1~0.2 | 60~100 | 0.1~0.2 | 20~60 | 0.05~0.1 | 40~70 | 0.07~0.2 | 20~60 | 0.05~0.2 | 80~120 | 0.1~0.2 | 10~30 | 0.05~0.15 |
| ∅6.9 | 60~100 | 0.15~0.3 | 60~100 | 0.15~0.3 | 20~60 | 0.08~0.2 | 40~70 | 0.1~0.2 | 20~60 | 0.1~0.2 | 80~120 | 0.15~0.2 | 10~30 | 0.05~0.15 |
| ∅8.6 | 60~100 | 0.15~0.3 | 60~100 | 0.15~0.3 | 20~60 | 0.08~0.2 | 40~70 | 0.1~0.2 | 20~60 | 0.1~0.2 | 80~120 | 0.15~0.2 | 10~30 | 0.05~0.15 |
| ∅10.3 | 60~100 | 0.2~0.4 | 60~100 | 0.2~0.4 | 20~60 | 0.1~0.2 | 40~70 | 0.2~0.4 | 20~60 | 0.15~0.3 | 80~120 | 0.2~0.4 | 10~30 | 0.1~0.2 |

- 상기 알루미늄 절삭조건은 A7075 계열의 기준으로 작성된 절삭조건으로 그 외에 알루미늄 계열의 드릴링 시 당사 연구소에 문의 바랍니다. (대표번호 02)808-2745 - 연구소)
- 진동이 적고 강성이 좋은 공작기계 사용요망합니다 (∅1 이하 사용시 진동 허용 관리 3 μ m 이내 일것.)
- 가급적 열박음 척을 추천합니다.
- 상기 절삭 조건은 참고 수치이므로 실 가공시 가공 형상, 가공 목적, 적용 기계에 따라 조건 변경 요망합니다.
- 조건표가 기계의 최대 스피들 속도를 초과하거나 버 및 적열 현상이 발생할 때 스피들 속도와 이송 속도를 비례하여 조정하십시오.
- The above aluminum cutting conditions are based on the A7075 series, so please inquire with our staff for drilling conditions for other aluminum series.
- Use a machine with low vibration and good rigidity ($\varnothing 1$ or less, the vibration tolerance management should be within 3 μ m).
- Using shrink-fit chuck is recommended.
- 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, or found red heat on the material, adjust RPM and feed in the same proportion.

2DED Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | 알루미늄 합금 AL7075 | | ABS수지/아크릴 ABS resin / Acrylic | |
|--------------|----------------|---------------|-------------------------------|---------------|
| 직경 Diameter | RPM | 이송량 (f) | RPM | 이송량 (f) |
| ∅0.1 ~ 0.3 | 25,000 | 0.001 ~ 0.003 | 22,000 | 0.001 ~ 0.003 |
| ∅0.3 ~ 0.5 | 20,000 | 0.005 ~ 0.02 | 22,000 | 0.005 ~ 0.01 |
| ∅0.5 ~ 0.8 | 18,000 | 0.01 ~ 0.03 | 15,000 | 0.01 ~ 0.03 |
| ∅0.8 ~ 1 | 15,000 | 0.02 ~ 0.04 | 13,000 | 0.02 ~ 0.05 |
| ∅1 ~ 1.5 | 12,000 | 0.03 ~ 0.05 | 8,000 | 0.02 ~ 0.05 |
| ∅1.5 ~ 2 | 9,000 | 0.03 ~ 0.05 | 6,000 | 0.02 ~ 0.05 |
| ∅2 ~ 3 | 7,000 | 0.03 ~ 0.05 | 4,500 | 0.05 |
| ∅3 ~ 4 | 3,500 | 0.03 ~ 0.05 | 3,200 | 0.05 |
| ∅4 ~ 5 | 2,800 | 0.03 ~ 0.05 | 2,500 | 0.05 |
| ∅5 ~ 6 | 2,200 | 0.03 ~ 0.05 | 2,000 | 0.05 |

- 상기 알루미늄 절삭조건은 A7075 계열의 기준으로 작성된 절삭조건으로 그 외에 알루미늄 계열의 드릴링 시 당사 연구소에 문의 바랍니다. (대표번호 02)808-2745 - 연구소)
- 진동이 적고 강성이 좋은 공작기계 사용요망합니다 (∅1 이하 사용시 진동 허용 관리 3 μ m 이내 일것.)
- 가급적 열박음 척을 추천합니다.
- 상기 절삭 조건은 참고 수치이므로 실 가공시 가공 형상, 가공 목적, 적용 기계에 따라 조건 변경 요망합니다.
- 조건표가 기계의 최대 스피들 속도를 초과하거나 버 및 적열 현상이 발생할 때 스피들 속도와 이송 속도를 비례하여 조정하십시오.
- The above aluminum cutting conditions are based on the A7075 series, so please inquire with our staff for drilling conditions for other aluminum series.
- Use a machine with low vibration and good rigidity ($\varnothing 1$ or less, the vibration tolerance management should be within 3 μ m).
- Using shrink-fit chuck is recommended.
- 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, or found red heat on the material, adjust RPM and feed in the same proportion.

2MID Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | 일반구조강/폐삭강 HP/SM | | 구조용강/탄소강/회주철 SS / SC / FC | | 알루미늄 합금 AL7075 | | 동 C1100 | |
|------------------------|--------------------|---------------|------------------------------|---------------|-------------------|---------------|------------|---------------|
| 경도 Hardness | ~ 200HB | | ~30HRc | | - | | - | |
| 외경 Outside Diameter | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED |
| ∅0.5 | 25,500 | 510 | 19,100 | 380 | 35,000 | 700 | 28,000 | 350 |
| ∅1 | 191,00 | 840 | 13,000 | 360 | 28,600 | 1,720 | 22,880 | 860 |
| ∅1.5 | 138,00 | 760 | 7,430 | 330 | 21,200 | 1,520 | 16,960 | 760 |
| ∅2 | 9,500 | 630 | 6,000 | 330 | 19,400 | 1,160 | 15,520 | 580 |
| ∅2.5 | 8,900 | 780 | 5,730 | 370 | 15,300 | 1,840 | 12,240 | 920 |
| ∅3 | 8,500 | 840 | 5,900 | 450 | 13,000 | 1,250 | 10,400 | 625 |

- 피삭재의 고정 불안정 할 시 내구성이 떨어지므로, 확실한 클램핑을 하십시오.
- 원활한 칩 배출을 위해 절삭유 사용을 권장하며, 수용성 절삭유가 효과적입니다.
- 상기 절삭 조건은 참고 수치이므로, 실 가공 시 가공 형상, 가공 목적, 적용 기계에 따라 조건 변경 요망합니다.
- 진동이 적고 강성이 좋은 공작기계 사용 요망합니다. (∅1 이하 사용 시 진동 허용 관리 3 μ m 이내일 것)
- 조건표가 기계의 최대 스피indle 속도를 초과하거나 버 및 적열 현상이 발생할 때 스피indle 속도와 이송 속도를 비례하여 조정하십시오.
- Ensure a stable clamping when fixing the cutting tool, as durability may be compromised if the clamping is unstable.
- For smooth chip evacuation, we recommend using cutting oil, and a soluble cutting fluid is effective as well.
- Use this table for your reference. Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- Please use a machine with low vibration and good rigidity (for $\varnothing 1$ or below, keep vibration tolerance within 3 μ m).
- If the cutting conditions exceed the maximum spindle speed of the machine or if chattering and thermal phenomena occur, adjust the spindle speed and feed rate proportionally.

3DUBEH Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | 합금강/프리하든강 NAK80/KP4M | | 고경도강 STAVAX/SKD11 | | 열처리/고경도강 SKD11/SKD61 | | 열처리/고경도강 YXR7/SKH51 | |
|------------------------|-------------------------|---------------|----------------------|---------------|-------------------------|---------------|------------------------|---------------|
| 경도 Hardness | 40~45HRc | | 45~55HRc | | 55~62HRc | | 62~70HRc | |
| 외경 Outside Diameter | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED |
| ∅1 | 9550 | 239 | 6370 | 191 | 4140 | 83 | 3200 | 48 |
| ∅2 | 5250 | 236 | 3500 | 123 | 2400 | 72 | 1750 | 44 |
| ∅3 | 3,820 | 232 | 2,636 | 127 | 1,910 | 86 | 1452 | 67 |
| ∅4 | 2,900 | 235 | 1,943 | 130 | 1,450 | 72 | 1088 | 55 |
| ∅5 | 2,400 | 211 | 1,584 | 119 | 1,200 | 66 | 900 | 46 |
| ∅6 | 1,910 | 195 | 1,320 | 108 | 1,000 | 60 | 730 | 36 |
| ∅8 | 1,440 | 150 | 965 | 90 | 720 | 45 | 540 | 27 |
| ∅10 | 1,177 | 120 | 783 | 72 | 580 | 36 | 435 | 22 |
| ∅12 | 998 | 105 | 653 | 60 | 480 | 30 | 360 | 18 |
| ∅16 | 720 | 75 | 486 | 45 | 360 | 23 | 270 | 14 |

- 피삭재의 고정 불안정 할 시 내구성이 떨어지므로, 확실한 클램핑을 하십시오.
- 원활한 칩 배출을 위해 절삭유 사용을 권장하며, 수용성 절삭유가 효과적입니다.
- 상기 절삭 조건은 참고 수치이므로, 실 가공 시 가공 형상, 가공 목적, 적용 기계에 따라 조건 변경 요망합니다.
- 상기 절삭 조건은 3Dc 이하 조건입니다.
- 3Dc 초과로 절삭 시 스텝 가공을 실시 하십시오. 하지만 절삭 조건에 따라 칩 배출이 나빠질 수 있습니다.
- 조건표가 기계의 최대 스피indle 속도를 초과하거나 버 및 적열 현상이 발생할 때 스피indle 속도와 이송 속도를 비례하여 조정하십시오.
- Ensure a stable clamping when fixing the cutting tool, as durability may be compromised if the clamping is unstable.
- For smooth chip evacuation, we recommend using cutting oil, and a soluble cutting fluid is effective as well.
- The cutting conditions above are 3Dc or less.
- When cutting more than 3Dc, perform step processing. However, depending on the cutting conditions, chip emissions can get worse.
- Please adjust the peck (Q) feed rate when drilling with a cutting tool that has a depth of cut (Dc) exceeding 5 times the diameter.
- If the cutting conditions exceed the maximum spindle speed of the machine or if chattering and thermal phenomena occur, adjust the spindle speed and feed rate proportionally.

2DUBES(3XD) Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | 구조용강/탄소강/회주철 SS/SC/FC | | 공구강/금형강 SCM/HPM | | 합금강/프리하든강 NAK80/KP4M | | 고경도강 STAVAX/SKD11 | |
|------------------------|--------------------------|---------------|--------------------|---------------|-------------------------|---------------|----------------------|---------------|
| 경도 Hardness | ~30HRc | | 30~40HRc | | 40~45HRc | | 45~55HRc | |
| 외경 Outside Diameter | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED |
| ø1 | 15,900 | 440 | 11,000 | 360 | 9,450 | 310 | 8,900 | 200 |
| ø2 | 7,900 | 520 | 6,000 | 390 | 5,000 | 220 | 4,500 | 200 |
| ø3 | 6,900 | 770 | 5,900 | 450 | 4,300 | 250 | 4,000 | 230 |
| ø4 | 5,170 | 850 | 4,500 | 450 | 3,200 | 280 | 3,000 | 250 |
| ø5 | 4,140 | 820 | 3,450 | 570 | 3,000 | 360 | 2,450 | 310 |
| ø6 | 3,450 | 840 | 3,000 | 570 | 3,000 | 330 | 2,010 | 310 |
| ø8 | 2,580 | 860 | 2,100 | 440 | 1,700 | 280 | 1,520 | 260 |
| ø10 | 2,070 | 680 | 1,700 | 400 | 1,300 | 220 | 1,210 | 220 |
| ø12 | 1,730 | 560 | 1,400 | 350 | 1,050 | 200 | 1,000 | 200 |
| ø16 | 1,300 | 440 | 1,150 | 340 | 800 | 170 | 750 | 170 |
| ø20 | 1,030 | 390 | 950 | 340 | 650 | 170 | 600 | 170 |

- 피삭재의 고정기 불안정 할 시 내구성이 떨어지므로, 확실한 클램핑을 하십시오.
- 원활한 칩 배출을 위해 절삭유 사용을 권장하며, 수용성 절삭유가 효과적입니다.
- 상기 절삭 조건은 참고 수치이므로, 실 가공 시 가공 형상, 가공 목적, 적용 기계에 따라 조건 변경 요망합니다.
- 조건표가 기계의 최대 스피indle 속도를 초과하거나 버 및 적열 현상이 발생할 때 스피indle 속도와 이송 속도를 비례하여 조정하십시오.
- Ensure a stable clamping when fixing the cutting tool, as durability may be compromised if the clamping is unstable.
- For smooth chip evacuation, we recommend using cutting oil, and a soluble cutting fluid is effective as well.
- Use this table for your reference. Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- If the cutting conditions exceed the maximum spindle speed of the machine or if chattering and thermal phenomena occur, adjust the spindle speed and feed rate proportionally.

2DUBES(5XD) Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | 구조용강/탄소강/회주철 SS/SC/FC | | 공구강/금형강 SCM/HPM | | 합금강/프리하든강 NAK80/KP4M | | 고경도강 STAVAX/SKD11 | |
|------------------------|--------------------------|---------------|--------------------|---------------|-------------------------|---------------|----------------------|---------------|
| 경도 Hardness | ~ 30HRc | | 30 ~ 40HRc | | 40 ~ 45HRc | | 45~55HRc | |
| 외경 Outside Diameter | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED |
| ø1mm | 15,900 | 400 | 11,000 | 330 | 9,450 | 280 | 8,900 | 180 |
| ø2mm | 7,900 | 470 | 6,000 | 350 | 5,000 | 200 | 4,500 | 180 |
| ø3mm | 6,900 | 700 | 5,900 | 410 | 4,300 | 230 | 4,000 | 210 |
| ø4mm | 5,170 | 770 | 4,500 | 410 | 3,200 | 250 | 3,000 | 230 |
| ø5mm | 4,140 | 745 | 3,450 | 520 | 3,000 | 330 | 2,450 | 280 |
| ø6mm | 3,450 | 760 | 3,000 | 520 | 3,000 | 300 | 2,010 | 280 |
| ø8mm | 2,580 | 780 | 2,100 | 400 | 1,700 | 250 | 1,520 | 240 |
| ø10mm | 2,070 | 620 | 1,700 | 360 | 1,300 | 200 | 1,210 | 200 |
| ø12mm | 1,730 | 510 | 1,400 | 320 | 1,050 | 180 | 1,000 | 180 |
| ø16mm | 1,300 | 400 | 1,150 | 310 | 800 | 150 | 750 | 150 |
| ø20mm | 1,030 | 350 | 950 | 310 | 650 | 150 | 600 | 150 |

- 피삭재의 고정기 불안정 할 시 내구성이 떨어지므로, 확실한 클램핑을 하십시오.
- 원활한 칩 배출을 위해 절삭유 사용을 권장하며, 수용성 절삭유가 효과적입니다.
- 상기 절삭 조건은 참고 수치이므로, 실 가공 시 가공 형상, 가공 목적, 적용 기계에 따라 조건 변경 요망합니다.
- 절삭하는 피삭재의 따라 구멍깊이 최대 5xDc 이상의 드릴링 시 peck(Q) 절입량을 변경하십시오.
- 조건표가 기계의 최대 스피indle 속도를 초과하거나 버 및 적열 현상이 발생할 때 스피indle 속도와 이송 속도를 비례하여 조정하십시오.
- Ensure a stable clamping when fixing the cutting tool, as durability may be compromised if the clamping is unstable.
- For smooth chip evacuation, we recommend using cutting oil, and a soluble cutting fluid is effective as well.
- Use this table for your reference. Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- Please adjust the peck (Q) feed rate when drilling with a cutting tool that has a depth of cut (Dc) exceeding 5 times the diameter.
- If the cutting conditions exceed the maximum spindle speed of the machine or if chattering and thermal phenomena occur, adjust the spindle speed and feed rate proportionally.

2DUBEV(3XD) Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | 일반구조강/쾌삭강 HP/SM | | 구조용강/탄소강/회주철 SS/SC/FC | | 공구강/금형강 SCM/HPM | | 덕타일 주철 FCD | |
|------------------------|--------------------|---------------|--------------------------|---------------|--------------------|---------------|---------------|---------------|
| 경도 Hardness | ~ 200HB | | ~ 30HRc | | 30~40HRc | | - | |
| 외경 Outside Diameter | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED |
| ø1 | 19,100 | 840 | 19,200 | 430 | 13,000 | 360 | 11,500 | 385 |
| ø2 | 9,500 | 630 | 9,700 | 430 | 6,000 | 330 | 6,100 | 330 |
| ø3 | 8,500 | 840 | 8,200 | 360 | 5,900 | 450 | 5,950 | 460 |
| ø4 | 6,400 | 770 | 6,500 | 430 | 4,500 | 450 | 4,400 | 440 |
| ø5 | 5,000 | 940 | 5,200 | 680 | 3,450 | 550 | 3,500 | 560 |
| ø6 | 4,250 | 880 | 4,500 | 600 | 4,000 | 550 | 3,000 | 560 |
| ø8 | 3,200 | 740 | 3,300 | 580 | 2,100 | 440 | 2,200 | 460 |
| ø10 | 2,550 | 640 | 2,500 | 580 | 1,700 | 400 | 1,800 | 420 |
| ø12 | 2,200 | 600 | 2,100 | 530 | 1,400 | 350 | 1,500 | 390 |
| ø16 | 1,600 | 580 | 1,600 | 470 | 1,150 | 340 | 1,100 | 330 |
| ø20 | 1,300 | 500 | 1,300 | 470 | 950 | 340 | 900 | 330 |

- 피삭재의 고정 불안정 할 시 내구성이 떨어지므로, 확실한 클램핑을 하십시오.
- 원활한 칩 배출을 위해 절삭유 사용을 권장하며, 수용성 절삭유가 효과적입니다.
- 상기 절삭 조건은 참고 수치이므로, 실 가공 시 가공 형상, 가공 목적, 적용 기계에 따라 조건 변경 요망합니다.
- 조건표가 기계의 최대 스피들 속도를 초과하거나 버 및 적열 현상이 발생할 때 스피들 속도와 이송 속도를 비례하여 조정하십시오.
- Ensure a stable clamping when fixing the cutting tool, as durability may be compromised if the clamping is unstable.
- For smooth chip evacuation, we recommend using cutting oil, and a soluble cutting fluid is effective as well.
- Use this table for your reference. Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- If the cutting conditions exceed the maximum spindle speed of the machine or if chattering and thermal phenomena occur, adjust the spindle speed and feed rate proportionally.

2DUBEV(5XD) Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | 일반구조강/쾌삭강 HP/SM | | 구조용강/탄소강/회주철 SS/SC/FC | | 공구강/금형강 SCM/HPM | | 덕타일 주철 FCD | |
|------------------------|--------------------|---------------|--------------------------|---------------|--------------------|---------------|---------------|---------------|
| 경도 Hardness | ~ 200HB | | ~ 30HRc | | 30~40HRc | | - | |
| 외경 Outside Diameter | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED |
| ø1 | 19,100 | 760 | 19,200 | 390 | 13,000 | 330 | 11,500 | 350 |
| ø2 | 9,500 | 570 | 9,700 | 390 | 6,000 | 300 | 6,100 | 300 |
| ø3 | 8,500 | 760 | 8,200 | 330 | 5,900 | 410 | 5,950 | 420 |
| ø4 | 6,400 | 700 | 6,500 | 390 | 4,500 | 410 | 4,400 | 400 |
| ø5 | 5,000 | 850 | 5,200 | 620 | 3,450 | 500 | 3,500 | 510 |
| ø6 | 4,250 | 800 | 4,500 | 550 | 4,000 | 500 | 3,000 | 510 |
| ø8 | 3,200 | 670 | 3,300 | 530 | 2,100 | 400 | 2,200 | 420 |
| ø10 | 2,550 | 580 | 2,500 | 530 | 1,700 | 360 | 1,800 | 380 |
| ø12 | 2,200 | 550 | 2,100 | 480 | 1,400 | 320 | 1,500 | 350 |
| ø16 | 1,600 | 430 | 1,600 | 530 | 1,150 | 310 | 1,100 | 300 |
| ø20 | 1,300 | 450 | 1,300 | 430 | 950 | 310 | 900 | 300 |

- 피삭재의 고정 불안정 할 시 내구성이 떨어지므로, 확실한 클램핑을 하십시오.
- 원활한 칩 배출을 위해 절삭유 사용을 권장하며, 수용성 절삭유가 효과적입니다.
- 상기 절삭 조건은 참고 수치이므로, 실 가공 시 가공 형상, 가공 목적, 적용 기계에 따라 조건 변경 요망합니다.
- 절삭하는 피삭재의 따라 구멍깊이 최대 5xDc 이상의 드릴링 시 peck(Q) 절입량을 변경하십시오.
- 조건표가 기계의 최대 스피들 속도를 초과하거나 버 및 적열 현상이 발생할 때 스피들 속도와 이송 속도를 비례하여 조정하십시오.
- Ensure a stable clamping when fixing the cutting tool, as durability may be compromised if the clamping is unstable.
- For smooth chip evacuation, we recommend using cutting oil, and a soluble cutting fluid is effective as well.
- Use this table for your reference. Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- Please adjust the peck (Q) feed rate when drilling with a cutting tool that has a depth of cut (Dc) exceeding 5 times the diameter.
- If the cutting conditions exceed the maximum spindle speed of the machine or if chattering and thermal phenomena occur, adjust the spindle speed and feed rate proportionally.

2DUBE(Short length) Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | 일반구조강/쾌삭강 HP/SM | | 구조용강/탄소강/회주철 SS/SC/FC | | 공구강/금형강 SCM/HPM | | 덕타일 주철 FCD | |
|------------------------|--------------------|---------------|--------------------------|---------------|--------------------|---------------|---------------|---------------|
| 경도 Hardness | ~ 200HB | | ~ 30 HRc | | 30~40HRc | | - | |
| 외경 Outside Diameter | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED |
| ø1 | 19,100 | 840 | 19,200 | 430 | 13,000 | 360 | 11,500 | 385 |
| ø2 | 9,500 | 630 | 9,700 | 430 | 6,000 | 330 | 6,100 | 330 |
| ø3 | 8,500 | 840 | 8,200 | 360 | 5,900 | 450 | 5,950 | 460 |
| ø4 | 6,400 | 770 | 6,500 | 430 | 4,500 | 450 | 4,400 | 440 |
| ø5 | 5,000 | 940 | 5,200 | 680 | 3,450 | 550 | 3,500 | 560 |
| ø6 | 4,250 | 880 | 4,500 | 600 | 4,000 | 550 | 3,000 | 560 |
| ø8 | 3,200 | 740 | 3,300 | 580 | 2,100 | 440 | 2,200 | 460 |
| ø10 | 2,550 | 640 | 2,500 | 580 | 1,700 | 400 | 1,800 | 420 |
| ø12 | 2,200 | 600 | 2,100 | 530 | 1,400 | 350 | 1,500 | 390 |

2DUBE(Standard length) Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | 일반구조강/쾌삭강 HP/SM | | 구조용강/탄소강/회주철 SS/SC/FC | | 공구강/금형강 SCM/HPM | | 덕타일 주철 FCD | |
|------------------------|--------------------|---------------|--------------------------|---------------|--------------------|---------------|---------------|---------------|
| 경도 Hardness | ~ 200HB | | ~ 30 HRc | | 30~40HRc | | - | |
| 외경 Outside Diameter | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED |
| ø1 | 19,100 | 760 | 19,200 | 390 | 13,000 | 330 | 11,500 | 350 |
| ø2 | 9,500 | 570 | 9,700 | 390 | 6,000 | 300 | 6,100 | 300 |
| ø3 | 8,500 | 760 | 8,200 | 330 | 5,900 | 410 | 5,950 | 420 |
| ø4 | 6,400 | 700 | 6,500 | 390 | 4,500 | 410 | 4,400 | 400 |
| ø5 | 5,000 | 850 | 5,200 | 620 | 3,450 | 520 | 3,500 | 510 |
| ø6 | 4,250 | 800 | 4,500 | 550 | 4,000 | 500 | 3,000 | 510 |
| ø8 | 3,200 | 670 | 3,300 | 530 | 2,100 | 400 | 2,200 | 420 |
| ø10 | 2,550 | 850 | 2,500 | 530 | 1,700 | 360 | 1,800 | 380 |
| ø12 | 2,200 | 550 | 2,100 | 480 | 1,400 | 320 | 1,500 | 350 |
| ø16 | 1,600 | 530 | 1,600 | 430 | 1,150 | 310 | 1,100 | 300 |
| ø20 | 1,300 | 450 | 1,300 | 430 | 950 | 310 | 900 | 300 |

4DUBE(Standard length) Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | 일반구조강/쾌삭강 HP/SM | | 구조용강/탄소강/회주철 SS/SC/FC | | 공구강/금형강 SCM/HPM | | 덕타일 주철 FCD | |
|------------------------|--------------------|---------------|--------------------------|---------------|--------------------|---------------|---------------|---------------|
| 경도 Hardness | ~ 200HB | | ~ 30 HRc | | 30~40HRc | | - | |
| 외경 Outside Diameter | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED |
| ø6 | 3,600 | 920 | 3,400 | 575 | 2,550 | 600 | 2,550 | 580 |
| ø8 | 2,720 | 770 | 2,800 | 610 | 1,780 | 460 | 1,870 | 485 |
| ø10 | 2,150 | 660 | 2,120 | 610 | 1,440 | 415 | 1,530 | 435 |
| ø12 | 1,870 | 630 | 1,780 | 550 | 1,190 | 370 | 1,275 | 400 |

- 피삭재의 고정 불안정 할 시 내구성이 떨어지므로, 확실한 클램핑을 하십시오.
- 원활한 칩 배출을 위해 절삭유 사용을 권장하며, 수용성 절삭유가 효과적입니다.
- 상기 절삭 조건은 참고 수치이므로, 실 가공 시 가공 형상, 가공 목적, 적용 기계에 따라 조건 변경 요망합니다.
- 절삭하는 피삭재의 따라 구멍길이 최대 5xDc 이상의 드릴링 시 peck(Q) 절입량을 변경하십시오.
- 조건표가 기계의 최대 스피indle 속도를 초과하거나 버 및 적열 현상이 발생할 때 스피indle 속도와 이송 속도를 비례하여 조정하십시오.
- Ensure a stable clamping when fixing the cutting tool, as durability may be compromised if the clamping is unstable.
- For smooth chip evacuation, we recommend using cutting oil, and a soluble cutting fluid is effective as well.
- Use this table for your reference. Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- Please adjust the peck (Q) feed rate when drilling with a cutting tool that has a depth of cut (Dc) exceeding 5 times the diameter.
- If the cutting conditions exceed the maximum spindle speed of the machine or if chattering and thermal phenomena occur, adjust the spindle speed and feed rate proportionally.

2DUBEW(3XD) Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | 일반구조강/폐삭강 HP/SM | | 구조용강/탄소강/회주철 SS/SC/FC | | 덕타일 주철 FCD | | 스테인레스강 SUS304 / SUS316 | |
|------------------------|--------------------|---------------|--------------------------|---------------|---------------|---------------|---------------------------|---------------|
| 경도 Hardness | ~200HB | | ~30HRc | | - | | - | |
| 외경 Outside Diameter | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED |
| ø1 | 19,000 | 530 | 13,200 | 430 | 13,200 | 460 | 19,150 | 830 |
| ø2 | 9,480 | 620 | 7,200 | 460 | 7,010 | 400 | 9,550 | 630 |
| ø3 | 8,280 | 920 | 7,080 | 540 | 6,840 | 550 | 8,400 | 830 |
| ø4 | 6,200 | 1010 | 5,400 | 540 | 5,060 | 550 | 6,350 | 770 |
| ø5 | 4,970 | 980 | 4,140 | 690 | 4,025 | 670 | 5,100 | 715 |
| ø6 | 4,140 | 1000 | 3,600 | 690 | 3,450 | 670 | 4,200 | 660 |
| ø8 | 3,100 | 1030 | 2,520 | 530 | 2,530 | 550 | 3,200 | 740 |
| ø10 | 2,500 | 830 | 2,040 | 470 | 2,070 | 500 | 2,550 | 700 |
| ø12 | 2,100 | 670 | 1,680 | 420 | 1,725 | 460 | 2,100 | 580 |
| ø16 | 1,560 | 530 | 1,380 | 410 | 1,265 | 400 | 1,600 | 510 |
| ø20 | 1,240 | 460 | 1,140 | 410 | 1,035 | 400 | 1,250 | 480 |

- 피삭재의 고정미 불안정 할 시 내구성이 떨어지므로, 확실한 클램핑을 하십시오.
- 원활한 칩 배출을 위해 절삭유 사용을 권장하며, 수용성 절삭유가 효과적입니다.
- 상기 절삭 조건은 참고 수치이므로, 실 가공 시 가공 형상, 가공 목적, 적용 기계에 따라 조건 변경 요망합니다.
- Peck(Q) drilling 간격은 외부 쿨런트 타입 0.2Dc~0.5Dc, 내부 쿨런트 타입 0.2Dc~1.5Dc를 권장합니다.
- 조건표가 기계의 최대 스피들 속도를 초과하거나 버 및 적열 현상이 발생할 때 스피들 속도와 이송 속도를 비례하여 조정하십시오.
- Ensure a stable clamping when fixing the cutting tool, as durability may be compromised if the clamping is unstable.
- For smooth chip evacuation, we recommend using cutting oil, and a soluble cutting fluid is effective as well.
- Use this table for your reference. Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- For peck (Q) drilling, we recommend intervals of 0.2Dc to 0.5Dc for external coolant types and 0.2Dc to 1.5Dc for internal coolant types.
- If the cutting conditions exceed the maximum spindle speed of the machine or if chattering and thermal phenomena occur, adjust the spindle speed and feed rate proportionally.

2DUBEW(5XD) Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | 일반구조강/폐삭강 HP/SM | | 구조용강/탄소강/회주철 SS/SC/FC | | 덕타일 주철 FCD | | 스테인레스강 SUS304 / SUS316 | |
|------------------------|--------------------|---------------|--------------------------|---------------|---------------|---------------|---------------------------|---------------|
| 경도 Hardness | ~200HB | | ~30HRc | | - | | - | |
| 외경 Outside Diameter | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED |
| ø1 | 19,000 | 480 | 13,200 | 390 | 13,200 | 420 | 19,150 | 750 |
| ø2 | 9,480 | 560 | 7,200 | 420 | 7,010 | 360 | 9,550 | 570 |
| ø3 | 8,280 | 840 | 7,080 | 490 | 6,840 | 500 | 8,400 | 750 |
| ø4 | 6,200 | 920 | 5,400 | 490 | 5,060 | 500 | 6,350 | 700 |
| ø5 | 4,970 | 890 | 4,140 | 625 | 4,025 | 610 | 5,100 | 650 |
| ø6 | 4,140 | 910 | 3,600 | 625 | 3,450 | 610 | 4,200 | 600 |
| ø8 | 3,100 | 940 | 2,520 | 480 | 2,530 | 500 | 3,200 | 670 |
| ø10 | 2,500 | 750 | 2,040 | 430 | 2,070 | 455 | 2,550 | 640 |
| ø12 | 2,100 | 610 | 1,680 | 380 | 1,725 | 420 | 2,100 | 525 |
| ø16 | 1,560 | 480 | 1,380 | 370 | 1,265 | 360 | 1,600 | 460 |
| ø20 | 1,240 | 420 | 1,140 | 370 | 1,035 | 360 | 1,250 | 440 |

- 피삭재의 고정미 불안정 할 시 내구성이 떨어지므로, 확실한 클램핑을 하십시오.
- 원활한 칩 배출을 위해 절삭유 사용을 권장하며, 수용성 절삭유가 효과적입니다.
- 상기 절삭 조건은 참고 수치이므로, 실 가공 시 가공 형상, 가공 목적, 적용 기계에 따라 조건 변경 요망합니다.
- 절삭하는 피삭재의 따라 구멍깊이 최대 5xDc 이상의 드릴링 시 peck(Q) 절입량을 변경하십시오.
- Peck(Q) drilling 간격은 외부 쿨런트 타입 0.2Dc~0.5Dc, 내부 쿨런트 타입 0.2Dc~1.5Dc를 권장합니다.
- 조건표가 기계의 최대 스피들 속도를 초과하거나 버 및 적열 현상이 발생할 때 스피들 속도와 이송 속도를 비례하여 조정하십시오.
- Ensure a stable clamping when fixing the cutting tool, as durability may be compromised if the clamping is unstable.
- For smooth chip evacuation, we recommend using cutting oil, and a soluble cutting fluid is effective as well.
- Use this table for your reference. Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- Please adjust the peck (Q) feed rate when drilling with a cutting tool that has a depth of cut (Dc) exceeding 5 times the diameter.
- For peck (Q) drilling, we recommend intervals of 0.2Dc to 0.5Dc for external coolant types and 0.2Dc to 1.5Dc for internal coolant types.
- If the cutting conditions exceed the maximum spindle speed of the machine or if chattering and thermal phenomena occur, adjust the spindle speed and feed rate proportionally.

2DUBEN(3XD) Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | 알루미늄 합금 주물 AC4B | | 알루미늄 합금 AL7075 | | ABS수지/아크릴 ABS resin/Acrylic | |
|------------------------|--------------------|---------------|-------------------|---------------|--------------------------------|---------------|
| 외경 Outside Diameter | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED |
| ∅1 | 28,600 | 1,720 | 25,740 | 1,540 | 10,500 | 210 |
| ∅2 | 19,400 | 1,160 | 17,460 | 1,050 | 7,000 | 210 |
| ∅3 | 13,000 | 1,250 | 11,700 | 1,120 | 5,250 | 260 |
| ∅4 | 9,650 | 1,160 | 8,685 | 1,040 | 3,850 | 190 |
| ∅5 | 7,800 | 1,120 | 7,020 | 1,010 | 2,850 | 140 |
| ∅6 | 6,500 | 840 | 5,850 | 760 | 2,250 | 110 |
| ∅8 | 4,850 | 870 | 4,365 | 790 | 1,800 | 90 |
| ∅10 | 3,900 | 800 | 3,510 | 720 | 1,450 | 70 |
| ∅12 | 3,200 | 770 | 2,880 | 700 | 1,200 | 60 |
| ∅13 | 3,000 | 800 | 2,700 | 710 | 1,100 | 55 |

- 피삭재의 고정시 불안정 할 시 내구성이 떨어지므로, 확실한 클램핑을 하십시오.
- 원활한 칩 배출을 위해 절삭유 사용을 권장하며, 수용성 절삭유가 효과적입니다.
- 상기 절삭 조건은 참고 수치이므로, 실 가공 시 가공 형상, 가공 목적, 적용 기계에 따라 조건 변경 요망합니다.
- 절삭하는 피삭재의 따라 구멍깊이 최대 5xDc 이상의 드릴링 시 peck(Q) 절입량을 변경하십시오.
- 진동이 적고 강성이 좋은 공작기계 사용 요망합니다. (∅1 이하 사용 시 진동 허용 관리 3 μ m 이내일것)
- 조건표가 기계의 최대 스피들 속도를 초과하거나 버 및 적열 현상이 발생할 때 스피들 속도와 이송 속도를 비례하여 조정하십시오.
- Ensure a stable clamping when fixing the cutting tool, as durability may be compromised if the clamping is unstable.
- For smooth chip evacuation, we recommend using cutting oil, and a soluble cutting fluid is effective as well.
- Use this table for your reference. Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- Please adjust the peck (Q) feed rate when drilling with a cutting tool that has a depth of cut (Dc) exceeding 5 times the diameter.
- Please use a machine with low vibration and good rigidity (for ∅1 or below, keep vibration tolerance within 3 μ m).
- If the cutting conditions exceed the maximum spindle speed of the machine or if chattering and thermal phenomena occur, adjust the spindle speed and feed rate proportionally.

2DUBEN(5XD) Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | 알루미늄 합금 주물 AC4B | | 알루미늄 합금 AL7075 | | ABS수지/아크릴 ABS resin/Acrylic | |
|------------------------|--------------------|---------------|-------------------|---------------|--------------------------------|---------------|
| 외경 Outside Diameter | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED |
| ∅1 | 28,600 | 1,430 | 25,740 | 1,290 | 10,500 | 168 |
| ∅2 | 19,400 | 970 | 17,460 | 870 | 7,000 | 168 |
| ∅3 | 13,000 | 1,040 | 11,700 | 940 | 5,250 | 208 |
| ∅4 | 9,650 | 970 | 8,685 | 870 | 3,850 | 152 |
| ∅5 | 7,800 | 940 | 7,020 | 850 | 2,850 | 112 |
| ∅6 | 6,500 | 700 | 5,850 | 630 | 2,250 | 88 |
| ∅8 | 4,850 | 730 | 4,365 | 660 | 1,800 | 72 |
| ∅10 | 3,900 | 660 | 3,510 | 600 | 1,450 | 56 |
| ∅12 | 3,200 | 640 | 2,880 | 580 | 1,200 | 48 |
| ∅13 | 3,000 | 660 | 2,700 | 600 | 1,100 | 44 |

- 피삭재의 고정시 불안정 할 시 내구성이 떨어지므로, 확실한 클램핑을 하십시오.
- 원활한 칩 배출을 위해 절삭유 사용을 권장하며, 수용성 절삭유가 효과적입니다.
- 상기 절삭 조건은 참고 수치이므로, 실 가공 시 가공 형상, 가공 목적, 적용 기계에 따라 조건 변경 요망합니다.
- 절삭하는 피삭재의 따라 구멍깊이 최대 5xDc 이상의 드릴링 시 peck(Q) 절입량을 변경하십시오.
- 진동이 적고 강성이 좋은 공작기계 사용 요망합니다. (∅1 이하 사용 시 진동 허용 관리 3 μ m 이내일것)
- 조건표가 기계의 최대 스피들 속도를 초과하거나 버 및 적열 현상이 발생할 때 스피들 속도와 이송 속도를 비례하여 조정하십시오.
- Ensure a stable clamping when fixing the cutting tool, as durability may be compromised if the clamping is unstable.
- For smooth chip evacuation, we recommend using cutting oil, and a soluble cutting fluid is effective as well.
- Use this table for your reference. Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- Please adjust the peck (Q) feed rate when drilling with a cutting tool that has a depth of cut (Dc) exceeding 5 times the diameter.
- Please use a machine with low vibration and good rigidity (for ∅1 or below, keep vibration tolerance within 3 μ m).
- If the cutting conditions exceed the maximum spindle speed of the machine or if chattering and thermal phenomena occur, adjust the spindle speed and feed rate proportionally.

2FDR Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | 일반구조강/쾌삭강 HP/SM ~200HB | | 구조용강/탄소강/회주철 SS/SC/FC ~30HRc | | 공구강/금형강 SCM/HPM 30 ~ 40HRC | | 합금강/프리하든강 NAK80/KP4M 40 ~ 50HRC | | 덕타일주철 FCD | | 스텐레스강 SUS304/SUS316 | |
|-----------------|------------------------------|------------|------------------------------------|------------|----------------------------------|------------|---------------------------------------|------------|--------------|------------|------------------------|------------|
| | 외경 Diameter | 회전수 RPM | 이송속도 FEED | 회전수 RPM | 이송속도 FEED | 회전수 RPM | 이송속도 FEED | 회전수 RPM | 이송속도 FEED | 회전수 RPM | 이송속도 FEED | 회전수 RPM |
| ∅0.2 | 33000 | 35 | 29500 | 40 | 16500 | 25 | 14000 | 15 | 29500 | 30 | 16200 | 15 |
| ∅0.3 | 31500 | 55 | 25000 | 40 | 15500 | 30 | 12500 | 15 | 26500 | 35 | 15300 | 15 |
| ∅0.4 | 27500 | 75 | 23800 | 50 | 14500 | 35 | 11500 | 20 | 23200 | 40 | 14500 | 20 |
| ∅0.5 | 25800 | 85 | 22000 | 60 | 13200 | 40 | 11000 | 25 | 21500 | 45 | 13200 | 20 |
| ∅0.6 | 24600 | 115 | 20500 | 85 | 12000 | 55 | 10000 | 25 | 20000 | 60 | 12000 | 25 |
| ∅0.7 | 22500 | 135 | 19500 | 115 | 11000 | 70 | 9000 | 30 | 18500 | 90 | 11500 | 30 |
| ∅0.8 | 21000 | 180 | 18000 | 150 | 10500 | 80 | 8000 | 35 | 17000 | 120 | 10000 | 35 |
| ∅0.9 | 20500 | 240 | 16800 | 190 | 9500 | 95 | 7500 | 35 | 16000 | 145 | 9850 | 40 |
| ∅1 | 19500 | 300 | 16000 | 230 | 9450 | 110 | 6800 | 35 | 15700 | 180 | 9600 | 50 |
| ∅2 | 12000 | 340 | 10000 | 290 | 5800 | 150 | 4100 | 60 | 10000 | 230 | - | - |
| ∅3 | 8000 | 410 | 7100 | 330 | 3800 | 165 | 2700 | 70 | 7100 | 280 | - | - |
| ∅4 | 6100 | 425 | 5200 | 380 | 2700 | 170 | 2100 | 80 | 5250 | 300 | - | - |
| ∅5 | 4900 | 425 | 4200 | 280 | 2350 | 175 | 1650 | 80 | 4250 | 300 | - | - |
| ∅6 | 4150 | 425 | 3550 | 330 | 1800 | 175 | 1350 | 80 | 3550 | 300 | - | - |
| ∅8 | 3100 | 430 | 2700 | 350 | 1500 | 175 | 1000 | 80 | 2700 | 300 | - | - |
| ∅10 | 2600 | 430 | 2200 | 360 | 1100 | 175 | 850 | 80 | 2000 | 300 | - | - |
| ∅12 | 2100 | 430 | 1750 | 360 | 950 | 175 | 630 | 80 | 1800 | 310 | - | - |
| ∅18 | 1600 | 430 | 1400 | 360 | 750 | 175 | 520 | 80 | 1350 | 310 | - | - |
| ∅20 | 1250 | 430 | 1100 | 360 | 600 | 175 | 430 | 80 | 1000 | 310 | - | - |

- 절삭 조건표 참조는 수용성 절삭유 사용이 전제입니다. 절삭유를 사용하지 않을 시, 회전과 속도를 20% 줄여 사용하십시오.
- 드릴링의 깊이가 직경의 2배나 그 이하일 때, 드릴링을 직경의 2배 이상 가공하는 것을 권장하지 않습니다.
- 경사 드릴 가공 시, 경사진 각도에 따라(절삭 조건을) 조절하십시오. 경사각이 30도 이하일 때, 피드를 50% 낮추십시오. 경사각이 30도 이상일 때, 회전을 70% 이하, 피드를 30% 이하로 줄이십시오.
- 측면 가공용으로는 사용하지 마십시오.
- 절삭 조건을 기계 강성이나 클램프 상태에 따라 조절하십시오.
- Use the water soluble cutting oil. In case if you do not use water soluble cutting oil, reduce the RPM and the feed by 20%.
- Drilling for the depth of 2 x Dc or Less than 2 x Dc is recommended.
- For stainless drilling, we recommend that the tool diameter is 1.9mm or less.
- If you use for inclined angle as slope drilling, reduce the feed by 50% for inclined angle less than 30°, and reduce below 70% of the RPM and 30% of the feed for inclined angle over 30°.
- Do not use for side milling.
- Change cutting conditions depending on work variables: rigidity of machine, work clamp or material shape.

2FDR Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | 일반구조강/쾌삭강 HP/SM ~200HB | | 구조용강/탄소강/회주철 SS/SC/FC ~30HRc | | 공구강/금형강 SCM/HPM 30 ~ 40HRC | | 합금강/프리하든강 NAK80/KP4M 40 ~ 50HRC | | 덕타일 주철 FCD | |
|-----------------|------------------------------|------------|------------------------------------|------------|----------------------------------|------------|---------------------------------------|------------|---------------|------------|
| | 외경 Diameter | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송속도 FEED | 회전수 RPM |
| ∅3 | 11000 | 800 | 9500 | 580 | 7500 | 320 | 5000 | 220 | 9300 | 400 |
| ∅4 | 8000 | 800 | 7200 | 580 | 5600 | 320 | 4100 | 220 | 7300 | 400 |
| ∅5 | 6500 | 800 | 5550 | 580 | 4500 | 320 | 3300 | 220 | 6000 | 400 |
| ∅6 | 5500 | 810 | 4800 | 590 | 3550 | 320 | 2700 | 220 | 5000 | 400 |
| ∅8 | 4100 | 810 | 3600 | 590 | 2850 | 320 | 2000 | 220 | 3800 | 400 |
| ∅10 | 3300 | 810 | 3000 | 590 | 2350 | 320 | 1650 | 220 | 3000 | 410 |
| ∅12 | 2750 | 820 | 2450 | 600 | 2000 | 320 | 1480 | 220 | 2480 | 410 |
| ∅16 | 2100 | 820 | 1800 | 600 | 1550 | 330 | 1000 | 220 | 1850 | 410 |
| ∅20 | 1650 | 820 | 1550 | 600 | 1250 | 330 | 850 | 220 | 1550 | 410 |

- 절삭 조건표 참조는 수용성 절삭유 사용이 전제입니다. 절삭유를 사용하지 않을 시, 회전과 이송속도를 20% 줄여 사용하십시오.
- 드릴링 깊이가 직경의 2배 이하가 되게 절삭조건표를 사용하십시오.
- 측면 가공용으로는 사용하지 마십시오.
- 절삭 조건을 기계 강성이나 클램프 상태에 따라 조절하십시오.
- Use the water soluble cutting oil. In case if you do not use water soluble cutting oil, reduce the RPM and the feed by 20%.
- Use the cutting parameters for the depth of 2 x Dc or less.
- Do not use for stainless material. We recommend using 2FDRW or 2FDRW for stainless material.
- Do not use for side milling.
- Change cutting conditions depending on work variables: rigidity of machine, work clamp or material shape.

2FDRW Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | 일반구조강/쾌삭강 HP/SM ~200HB | | 구조용강/탄소강/회주철 SS/SC/FC ~30HRc | | 공구강/금형강 SCM/HPM 30 ~ 40HRc | | 고경도강 NAK80/KP4M 40 ~ 45HRc | | 덕타일 주철 FCD | | 스텐레스강 SUS304/SUS316 | |
|-----------------|------------------------------|------------|------------------------------------|------------|----------------------------------|------------|----------------------------------|------------|---------------|------------|------------------------|------------|
| | 외경 Diameter | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM |
| ∅3 | 12500 | 900 | 10000 | 600 | 7500 | 300 | 6500 | 270 | 10000 | 450 | 10000 | 600 |
| ∅4 | 9500 | 930 | 8000 | 620 | 5500 | 300 | 4800 | 270 | 8000 | 450 | 8000 | 600 |
| ∅5 | 7500 | 930 | 6500 | 620 | 4500 | 300 | 3800 | 270 | 6300 | 460 | 6300 | 620 |
| ∅6 | 6500 | 950 | 5400 | 630 | 3700 | 330 | 3200 | 280 | 5400 | 470 | 5500 | 620 |
| ∅8 | 4800 | 950 | 4000 | 630 | 2900 | 330 | 2500 | 280 | 4000 | 470 | 4000 | 620 |
| ∅10 | 3800 | 950 | 3300 | 630 | 2450 | 330 | 2000 | 280 | 3200 | 470 | 3300 | 620 |
| ∅12 | 3300 | 950 | 2800 | 630 | 2000 | 330 | 1600 | 280 | 2800 | 470 | 2900 | 620 |
| ∅16 | 2500 | 950 | 2000 | 630 | 1500 | 330 | 1300 | 280 | 2000 | 470 | 2000 | 620 |

- 절삭 조건표 참조는 수용성 절삭유 사용이 전제입니다. 절삭유를 사용하지 않을 시, 회전과 속도를 20% 줄여 사용하십시오.
- 드릴 깊이는 3xDc를 넘기지 마십시오. 칩 배출 상태가 좋지 않을 경우, 펙드릴링 방식을 사용하십시오.
- 펙드릴 간격은 0.1Dc ~ 0.5Dc 사이를 권장합니다.
- 측면 가공용으로는 사용하지 마십시오.
- 절삭 조건을 기계 강성이나 클램프 상태에 따라 조절하십시오.
- Use the water soluble cutting oil. In case if you do not use water soluble cutting oil, reduce the RPM and the feed by 20%.
- Do not over the drilling depth of 3 x Dc. If the state of chip emission is not good enough, use peck drilling method.
- For the stainless material, use peck drilling method.
- Peck drill interval is recommended between 0.1 Dc to 0.5 Dc.
- Side milling is not possible.
- Change cutting conditions depending on work variables: rigidity of machine, work clamp or material shape.

2FDRWL Cutting Condition

• RPM : rev./min • Feed : mm/min

| 피삭재 Material | 일반구조강/쾌삭강 HP/SM ~200HB | | 구조용강/탄소강/회주철 SS/SC/FC ~30HRc | | 공구강/금형강 SCM/HPM 30 ~ 40HRc | | 고경도강 NAK80/KP4M 40 ~ 45HRc | | 덕타일 주철 FCD | | 스텐레스강 SUS304/SUS316 | |
|-----------------|------------------------------|------------|------------------------------------|------------|----------------------------------|------------|----------------------------------|------------|---------------|------------|------------------------|------------|
| | 외경 Diameter | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM | 이송 속도 FEED | 회전수 RPM |
| ∅3 | 15000 | 1250 | 10000 | 600 | 7300 | 300 | 6500 | 270 | 10000 | 460 | 10000 | 600 |
| ∅4 | 11000 | 1300 | 8000 | 600 | 5500 | 300 | 4800 | 270 | 8000 | 460 | 8000 | 620 |
| ∅5 | 9000 | 1300 | 6400 | 600 | 4500 | 300 | 3800 | 270 | 6500 | 460 | 6500 | 620 |
| ∅6 | 7500 | 1350 | 5300 | 630 | 3700 | 320 | 3200 | 280 | 5300 | 480 | 5300 | 630 |
| ∅8 | 5600 | 1350 | 4000 | 630 | 2800 | 320 | 2500 | 280 | 4000 | 480 | 4000 | 630 |
| ∅10 | 4500 | 1350 | 3200 | 630 | 2300 | 320 | 2000 | 280 | 3200 | 480 | 3300 | 630 |
| ∅12 | 3700 | 1350 | 2800 | 630 | 2000 | 320 | 1700 | 280 | 2900 | 480 | 2800 | 630 |
| ∅16 | 2850 | 1350 | 2100 | 630 | 1500 | 320 | 1300 | 280 | 2100 | 480 | 2100 | 630 |

- 절삭 조건표 참조는 수용성 절삭유 사용이 전제입니다. 절삭유를 사용하지 않을 시, 회전과 속도를 20% 줄여 사용하십시오.
- 드릴 깊이는 5xDc를 넘기지 마십시오. 칩 배출 상태가 좋지 않을 경우, 펙드릴링 방식을 사용하십시오.
- 펙드릴 간격은 0.1Dc ~ 0.5Dc 사이를 권장합니다.
- 측면 가공용으로는 사용하지 마십시오.
- 절삭 조건을 기계 강성이나 클램프 상태에 따라 조절하십시오.
- Use the water soluble cutting oil. In case if you do not use water soluble cutting oil, reduce the RPM and the feed by 20%.
- Do not over the drilling depth of 5 x Dc. If the state of chip emission is not good enough, use peck drilling method.
- For the stainless material, use peck drilling method.
- Peck drill interval is recommended between 0.1 Dc to 0.5 Dc.
- Side milling is not possible.
- Change cutting conditions depending on work variables: rigidity of machine, work clamp or material shape.



Your specials are our standards. 당신의 스페셜은 우리의 표준품입니다.

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공구 사용시 주의사항

- 공구가 사용중 파손되어 상해의 위험이 있으므로 보호안경 등 안전장비를 착용하고 사용해 주십시오
- 공구의 목적 외에 다른 용도로 사용하거나 전용장비가 아닌 장비에 장착하지 마시고 임의로 연삭, 변경하지 마십시오
- 제품 날부분의 손상을 방지하기 위해 가능한 비접촉 측정을 권고합니다.
- 공구의 체결이 정확히 되었는지 확인한 후 사용해 주십시오.
- 사용시 고열로 인한 스파크가 발생할 수 있습니다.
- 화재나 폭발 등 위험 인자를 제거하고 사용하십시오
- 제품 사용 전과 후에도 공구와 가공물의 치수를 반드시 확인해 주십시오
- 공구가 마모되거나 손상된 경우 사용을 중지해 주십시오
- 비정상적인 진동, 소음이 발생할 경우 시스템을 중지하고 진동, 소음의 원인을 확인하여 제거 하십시오.

Precautions When Using Tools

- Wear safety equipment such as protective eyewear to prevent the risk of injury in case the tool breaks during use.
- Do not use the tool for purposes other than its intended use, or install it on equipment that is not designed for it. Do not grind or modify it arbitrarily.
- To prevent damage to the cutting edge, it is recommended to use non-contact measurements whenever possible.
- Ensure proper attachment of the tool before use.
- Sparks may be generated due to high heat during use.
- Eliminate potential fire or explosion hazards before using.
- Before and after use, always check the dimensions of the tool and the workpiece.
- Discontinue use if the tool is worn or damaged.
- If abnormal vibration or noise occurs, stop the system and identify and eliminate the cause of the vibration or noise.



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