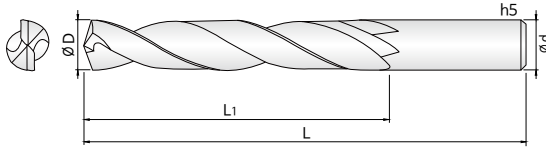


## 초경 2날 두배 V 드릴 [5XD]



- 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 drills for materials up to HRc28, S45C, SCM, cast steels, and cast irons
- 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.



514P

단위 : mm

Order Number	날경 Diameter D	홀길이 Flute Length L1	전장 Overall Length L	샹크 Shank Dia d	비고	Order Number	날경 Diameter D	홀길이 Flute Length L1	전장 Overall Length L	샹크 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							

## 2DUBEV(3XD) Cutting Condition

• RPM : rev./min • Feed : mm/min

피삭재 Material	일반구조강/쾌삭강 Mild Steels/Free cutting steels HP/SM		구조용강/탄소강/회주철 Structural steels / Carbon Steels /Gray cast irons SS/SC/FC		공구강/금형강 Tool steels / Mold steels SCM/HPM		덕타일 주철 Ductile cast irons 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 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.
- 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 Mild Steels/Free cutting steels HP/SM		구조용강/탄소강/회주철 Structural steels / Carbon Steels /Gray cast irons SS/SC/FC		공구강/금형강 Tool steels / Mold steels SCM/HPM		덕타일 주철 Ductile cast irons 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 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.
- 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.