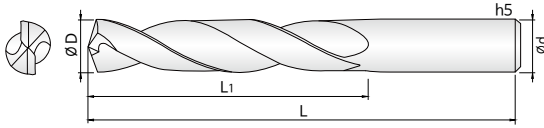


초경 2날 두배 S 드릴 [3XD]



- 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 drills for materials up to HRC48, NAK, SCM, and heat-treated steels
- 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.



512P

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							

2DUBES(3XD) Cutting Condition

• RPM : rev./min • Feed : mm/min

피삭재 Material	구조용강/탄소강/회주철 Structural steels / Carbon Steels / Gray cast irons SS / SC / FC		공구강/금형강 Tool Steels / Pre-hardened Steels SCM / HPM		합금강/프리하든강 Alloy Steels / Pre-hardened Steels NAK80 / KP4M		고경도강 Hardened Steels STAVX / 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 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.
- 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.

2DUBES(5XD) Cutting Condition

• RPM : rev./min • Feed : mm/min

피삭재 Material	구조용강/탄소강/회주철 Structural steels / Carbon Steels / Gray cast irons SS / SC / FC		공구강/금형강 Tool Steels / Pre-hardened Steels SCM / HPM		합금강/프리하든강 Alloy Steels / Pre-hardened Steels NAK80 / KP4M		고경도강 Hardened Steels STAVX / 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
1mm	15,900	400	11,000	330	9,450	280	8,900	180
2mm	7,900	470	6,000	350	5,000	200	4,500	180
3mm	6,900	700	5,900	410	4,300	230	4,000	210
4mm	5,170	770	4,500	410	3,200	250	3,000	230
5mm	4,140	745	3,450	520	3,000	330	2,450	280
6mm	3,450	760	3,000	520	3,000	300	2,010	280
8mm	2,580	780	2,100	400	1,700	250	1,520	240
10mm	2,070	620	1,700	360	1,300	200	1,210	200
12mm	1,730	510	1,400	320	1,050	180	1,000	180
16mm	1,300	400	1,150	310	800	150	750	150
20mm	1,030	350	950	310	650	150	600	150

- 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.
- 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.