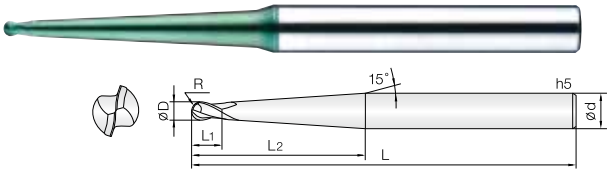
2JJTB

2 Flutes JJ Taper Neck Ball End Mill for Hardened Steels

2날 고경도재 가공용 제이제이 테이퍼 넥 볼 엔드밀



- 고경도강(HRc52~68), 프리하든강 계열의 고정밀 가공 엔드밀
- 고함량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 유효장을 테이퍼 설계하여 깊은 홈 작업시 목부 파손 및 떨림을 최소화 하였습니다
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 초미립자 초경합금(0.2㎛)을채택, 고속절삭시 뛰어난 성능을 발휘합니다.

- Endmills for pre-hardened and hardened steels(HRc52~68)
- Good wear resistance by high quality Si-based PVD coating.
- Minimize chattering and fracturing by taper designed flute.
- High precise edge tolerance.
- Outstanding performance at high speed machining by ultra fine (0.2㎛) WC grade.

2 | UWC 초미립자 | TISIN-S Coating | R ±0.005 (0.1 ~ 2.5R) | R ±0.01 (3 ~ 6R) | 30° Helix Angle | CUTTING DATA 407P

Condition	D Size	D Tolerance
ØD ≠ Ød	Ø0.2 ~ 12	+0 ~ -0.01mm

단위 : mm

Order Number	날경 Diameter R × D	각도 Angle θ	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	생크 Shank Dia d	비고
2JJTB 002 003 015	0.1R X 0.2	0°30	0.2	1.5	40	4	
2JJTB 002 003 020	0.1R X 0.2	0°30	0.2	2	40	4	
2JJTB 002 010 015	0.1R X 0.2	1°	0.2	1.5	40	4	
2JJTB 002 010 020	0.1R X 0.2	1°	0.2	2	40	4	
2JJTB 002 010 025	0.1R X 0.2	1°	0.2	2.5	40	4	
2JJTB 002 013 015	0.1R X 0.2	1°30	0.2	1.5	40	4	
2JJTB 002 013 020	0.1R X 0.2	1°30	0.2	2	40	4	
2JJTB 002 013 025	0.1R X 0.2	1°30	0.2	2.5	40	4	
2JJTB 002 020 015	0.1R X 0.2	2°	0.2	1.5	40	4	
2JJTB 002 020 020	0.1R X 0.2	2°	0.2	2	40	4	
2JJTB 002 020 025	0.1R X 0.2	2°	0.2	2.5	40	4	
2JJTB 002 030 015	0.1R X 0.2	3°	0.2	1.5	40	4	
2JJTB 002 030 020	0.1R X 0.2	3°	0.2	2	40	4	
2JJTB 002 030 025	0.1R X 0.2	3°	0.2	2.5	40	4	
2JJTB 002 030 030	0.1R X 0.2	3°	0.2	3	45	4	
2JJTB 002 050 020	0.1R X 0.2	5°	0.2	2	40	4	
2JJTB 002 050 030	0.1R X 0.2	5°	0.2	3	45	4	
2JJTB 003 003 030	0.15R X 0.3	0°30	0.3	3	40	4	
2JJTB 003 010 020	0.15R X 0.3	1°	0.3	2	40	4	
2JJTB 003 010 030	0.15R X 0.3	1°	0.3	3	40	4	
2JJTB 003 010 040	0.15R X 0.3	1°	0.3	4	40	4	
2JJTB 003 010 050	0.15R X 0.3	1°	0.3	5	40	4	
2JJTB 003 013 020	0.15R X 0.3	1°30	0.3	2	40	4	
2JJTB 003 013 030	0.15R X 0.3	1°30	0.3	3	40	4	
2JJTB 003 013 040	0.15R X 0.3	1°30	0.3	4	40	4	
2JJTB 003 013 050	0.15R X 0.3	1°30	0.3	5	40	4	
2JJTB 003 020 020	0.15R X 0.3	2°	0.3	2	40	4	
2JJTB 003 020 030	0.15R X 0.3	2°	0.3	3	40	4	
2JJTB 003 020 040	0.15R X 0.3	2°	0.3	4	40	4	
2JJTB 003 020 050	0.15R X 0.3	2°	0.3	5	40	4	
2JJTB 003 020 060	0.15R X 0.3	2°	0.3	6	45	4	
2JJTB 003 030 020	0.15R X 0.3	3°	0.3	2	40	4	
2JJTB 003 030 030	0.15R X 0.3	3°	0.3	3	40	4	
2JJTB 003 030 040	0.15R X 0.3	3°	0.3	4	40	4	
2JJTB 003 030 050	0.15R X 0.3	3°	0.3	5	40	4	
2JJTB 003 030 060	0.15R X 0.3	3°	0.3	6	45	4	
2JJTB 003 050 050	0.15R X 0.3	5°	0.3	5	40	4	
2JJTB 003 050 080	0.15R X 0.3	5°	0.3	8	45	4	
2JJTB 004 003 020	0.2R X 0.4	0°30	0.4	2	40	4	
2JJTB 004 003 030	0.2R X 0.4	0°30	0.4	3	40	4	
2JJTB 004 003 040	0.2R X 0.4	0°30	0.4	4	40	4	
2JJTB 004 003 050	0.2R X 0.4	0°30	0.4	5	40	4	
2JJTB 004 003 060	0.2R X 0.4	0°30	0.4	6	40	4	
2JJTB 004 010 020	0.2R X 0.4	1°	0.4	2	40	4	
2JJTB 004 010 030	0.2R X 0.4	1°	0.4	3	40	4	
2JJTB 004 010 040	0.2R X 0.4	1°	0.4	4	40	4	
2JJTB 004 010 050	0.2R X 0.4	1°	0.4	5	40	4	
2JJTB 004 010 060	0.2R X 0.4	1°	0.4	6	40	4	
2JJTB 004 010 080	0.2R X 0.4	1°	0.4	8	45	4	
2JJTB 004 013 020	0.2R X 0.4	1°30	0.4	2	40	4	

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

단위 : mm

Order Number	날경 Diameter R × D	각도 Angle θ	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	생크 Shank Dia d	비고
2JJTB 006 013 040	0.3R X 0.6	1°30	0.6	4	45	4	
2JJTB 006 013 060	0.3R X 0.6	1°30	0.6	6	45	4	
2JJTB 006 013 080	0.3R X 0.6	1°30	0.6	8	45	4	
2JJTB 006 013 100	0.3R X 0.6	1°30	0.6	10	45	4	
2JJTB 006 013 120	0.3R X 0.6	1°30	0.6	12	50	4	
2JJTB 006 013 150	0.3R X 0.6	1°30	0.6	15	50	4	
2JJTB 006 013 200	0.3R X 0.6	1°30	0.6	20	60	4	
2JJTB 006 020 060	0.3R X 0.6	2°	0.6	6	45	4	
2JJTB 006 020 080	0.3R X 0.6	2°	0.6	8	45	4	
2JJTB 006 020 100	0.3R X 0.6	2°	0.6	10	45	4	
2JJTB 006 020 150	0.3R X 0.6	2°	0.6	15	50	4	
2JJTB 006 020 200	0.3R X 0.6	2°	0.6	20	60	4	
2JJTB 006 030 130	0.3R X 0.6	3°	0.6	13	50	4	
2JJTB 006 030 160	0.3R X 0.6	3°	0.6	16	60	4	
2JJTB 006 030 200	0.3R X 0.6	3°	0.6	20	60	4	
2JJTB 006 050 100	0.3R X 0.6	5°	0.6	10	50	4	
2JJTB 006 050 150	0.3R X 0.6	5°	0.6	15	60	4	
2JJTB 006 050 200	0.3R X 0.6	5°	0.6	20	60	4	
2JJTB 008 003 040	0.4R X 0.8	0°30	0.8	4	45	4	
2JJTB 008 003 060	0.4R X 0.8	0°30	0.8	6	45	4	
2JJTB 008 003 080	0.4R X 0.8	0°30	0.8	8	45	4	
2JJTB 008 003 100	0.4R X 0.8	0°30	0.8	10	45	4	
2JJTB 008 003 120	0.4R X 0.8	0°30	0.8	12	50	4	
2JJTB 008 003 150	0.4R X 0.8	0°30	0.8	15	50	4	
2JJTB 008 003 200	0.4R X 0.8	0°30	0.8	20	60	4	
2JJTB 008 003 250	0.4R X 0.8	0°30	0.8	25	70	4	
2JJTB 008 010 040	0.4R X 0.8	1°	0.8	4	45	4	
2JJTB 008 010 060	0.4R X 0.8	1°	0.8	6	45	4	
2JJTB 008 010 080	0.4R X 0.8	1°	0.8	8	45	4	
2JJTB 008 010 100	0.4R X 0.8	1°	0.8	10	45	4	
2JJTB 008 010 120	0.4R X 0.8	1°	0.8	12	50	4	
2JJTB 008 010 160	0.4R X 0.8	1°	0.8	16	50	4	
2JJTB 008 010 200	0.4R X 0.8	1°	0.8	20	60	4	
2JJTB 008 010 250	0.4R X 0.8	1°	0.8	25	70	4	
2JJTB 008 013 040	0.4R X 0.8	1°30	0.8	4	45	4	
2JJTB 008 013 060	0.4R X 0.8	1°30	0.8	6	45	4	
2JJTB 008 013 080	0.4R X 0.8	1°30	0.8	8	45	4	
2JJTB 008 013 100	0.4R X 0.8	1°30	0.8	10	45	4	
2JJTB 008 013 120	0.4R X 0.8	1°30	0.8	12	50	4	
2JJTB 008 013 160	0.4R X 0.8	1°30	0.8	16	50	4	
2JJTB 008 013 200	0.4R X 0.8	1°30	0.8	20	60	4	
2JJTB 008 013 250	0.4R X 0.8	1°30	0.8	25	70	4	
2JJTB 008 020 080	0.4R X 0.8	2°	0.8	8	50	4	
2JJTB 008 020 100	0.4R X 0.8	2°	0.8	10	50	4	
2JJTB 008 020 120	0.4R X 0.8	2°	0.8	12	50	4	
2JJTB 008 020 160	0.4R X 0.8	2°	0.8	16	50	4	
2JJTB 008 020 200	0.4R X 0.8	2°	0.8	20	60	4	
2JJTB 008 020 250	0.4R X 0.8	2°	0.8	25	70	4	
2JJTB 008 030 080	0.4R X 0.8	3°	0.8	8	50	4	
2JJTB 008 030 120	0.4R X 0.8	3°	0.8	12	50	4	
2JJTB 008 030 160	0.4R X 0.8	3°	0.8	16	50	4	
2JJTB 008 030 200	0.4R X 0.8	3°	0.8	20	60	4	
2JJTB 008 030 250	0.4R X 0.8	3°	0.8	25	70	4	
2JJTB 008 050 240	0.4R X 0.8	5°	0.8	24	60	6	
2JJTB 010 003 060	0.5R X 1	0°30	1	6	50	4	
2JJTB 010 003 080	0.5R X 1	0°30	1	8	50	4	
2JJTB 010 003 100	0.5R X 1	0°30	1	10	50	4	
2JJTB 010 003 150	0.5R X 1	0°30	1	15	50	4	
2JJTB 010 003 200	0.5R X 1	0°30	1	20	60	4	
2JJTB 010 003 250	0.5R X 1	0°30	1	25	60	4	
2JJTB 010 003 300	0.5R X 1	0°30	1	30	70	4	
2JJTB 010 010 060	0.5R X 1	1°	1	6	50	4	
2JJTB 010 010 080	0.5R X 1	1°	1	8	50	4	
2JJTB 010 010 100	0.5R X 1	1°	1	10	50	4	

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

2JJTB

2 Flutes JJ Taper Neck Ball End Mills for Hardened Steels

2날 고경도재 가공용 제이제이 테이퍼 넥 볼 엔드밀

단위 : mm

Order Number	날경 Diameter R × D	각도 Angle θ	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	생크 Shank Dia d	비고
2JJTB 015 013 500	0.75R X 1.5	1°30	1.5	50	90	4	
2JJTB 015 020 100	0.75R X 1.5	2°	1.5	10	50	4	
2JJTB 015 020 150	0.75R X 1.5	2°	1.5	15	50	4	
2JJTB 015 020 200	0.75R X 1.5	2°	1.5	20	60	4	
2JJTB 015 020 300	0.75R X 1.5	2°	1.5	30	70	4	
2JJTB 015 020 400	0.75R X 1.5	2°	1.5	40	80	6	
2JJTB 015 020 500	0.75R X 1.5	2°	1.5	50	90	6	
2JJTB 015 030 420	0.75R X 1.5	3°	1.5	42	80	6	
2JJTB 015 050 250	0.75R X 1.5	5°	1.5	25	70	6	
2JJTB 020 003 080	1R X 2	0°30	2	8	50	4	
2JJTB 020 003 120	1R X 2	0°30	2	12	50	4	
2JJTB 020 003 160	1R X 2	0°30	2	16	50	4	
2JJTB 020 003 200	1R X 2	0°30	2	20	60	4	
2JJTB 020 003 300	1R X 2	0°30	2	30	70	4	
2JJTB 020 003 400	1R X 2	0°30	2	40	80	4	
2JJTB 020 003 500	1R X 2	0°30	2	50	90	4	
2JJTB 020 010 080	1R X 2	1°	2	8	50	4	
2JJTB 020 010 120	1R X 2	1°	2	12	50	4	
2JJTB 020 010 160	1R X 2	1°	2	16	50	4	
2JJTB 020 010 200	1R X 2	1°	2	20	60	4	
2JJTB 020 010 250	1R X 2	1°	2	25	60	4	
2JJTB 020 010 300	1R X 2	1°	2	30	70	4	
2JJTB 020 010 350	1R X 2	1°	2	35	75	4	
2JJTB 020 010 400	1R X 2	1°	2	40	80	4	
2JJTB 020 010 500	1R X 2	1°	2	50	90	4	
2JJTB 020 010 600	1R X 2	1°	2	60	100	6	
2JJTB 020 013 080	1R X 2	1°30	2	8	50	4	
2JJTB 020 013 120	1R X 2	1°30	2	12	50	4	
2JJTB 020 013 160	1R X 2	1°30	2	16	50	4	
2JJTB 020 013 200	1R X 2	1°30	2	20	60	4	
2JJTB 020 013 250	1R X 2	1°30	2	25	60	4	
2JJTB 020 013 300	1R X 2	1°30	2	30	70	4	
2JJTB 020 013 350	1R X 2	1°30	2	35	75	6	
2JJTB 020 013 400	1R X 2	1°30	2	40	80	6	
2JJTB 020 013 500	1R X 2	1°30	2	50	90	6	
2JJTB 020 013 600	1R X 2	1°30	2	60	100	6	
2JJTB 020 020 300	1R X 2	2°	2	30	70	6	
2JJTB 020 020 400	1R X 2	2°	2	40	80	6	
2JJTB 020 020 500	1R X 2	2°	2	50	90	6	
2JJTB 020 030 300	1R X 2	3°	2	30	70	6	
2JJTB 020 030 400	1R X 2	3°	2	40	80	6	
2JJTB 020 030 500	1R X 2	3°	2	50	90	8	
2JJTB 020 050 250	1R X 2	5°	2	25	60	6	
2JJTB 020 050 380	1R X 2	5°	2	38	80	8	
2JJTB 030 003 160	1.5R X 3	0°30	3	16	60	6	
2JJTB 030 003 200	1.5R X 3	0°30	3	20	65	6	
2JJTB 030 003 300	1.5R X 3	0°30	3	30	70	6	
2JJTB 030 003 400	1.5R X 3	0°30	3	40	80	6	
2JJTB 030 003 500	1.5R X 3	0°30	3	50	90	6	
2JJTB 030 003 600	1.5R X 3	0°30	3	60	100	6	
2JJTB 030 010 160	1.5R X 3	1°	3	16	60	6	
2JJTB 030 010 200	1.5R X 3	1°	3	20	65	6	
2JJTB 030 010 300	1.5R X 3	1°	3	30	70	6	
2JJTB 030 010 400	1.5R X 3	1°	3	40	80	6	
2JJTB 030 010 500	1.5R X 3	1°	3	50	90	6	
2JJTB 030 010 600	1.5R X 3	1°	3	60	100	6	
2JJTB 030 010 700	1.5R X 3	1°	3	70	110	6	
2JJTB 030 013 160	1.5R X 3	1°30	3	16	60	6	
2JJTB 030 013 200	1.5R X 3	1°30	3	20	65	6	
2JJTB 030 013 300	1.5R X 3	1°30	3	30	70	6	
2JJTB 030 013 400	1.5R X 3	1°30	3	40	80	6	
2JJTB 030 013 500	1.5R X 3	1°30	3	50	90	6	
2JJTB 030 013 600	1.5R X 3	1°30	3	60	100	6	
2JJTB 030 013 700	1.5R X 3	1°30	3	70	120	8	

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

2JJTB Cutting Condition

• RPM : rev./min • Feed : mm/min

피삭재 Material			합금강 / 프리하든강 Alloy Steels / Pre-hardened Steels NAK80 / KP4M			고경도강 Hardened Steels STAVAX / SKD11			열처리 / 고경도강 Heat-treated steels / Hardened Steels SKD11 / SKD61			열처리 / 고경도강 Heat-treated steels / Hardened Steels YXR7 / SKH51		
경도 Hardness			40 ~ 45HRc			45 ~ 55HRc			55 ~ 62HRc			62 ~ 70HRc		
반경 Radius	유효장 Effective Length	각도 Taper Angle	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth
R 0.1	1.5	0° 30	42,000	630	0.007	28,350	431	0.005	27,300	326	0.005	27,300	252	0.004
〃	2	0° 30	32,550	368	0.005	22,575	252	0.004	21,000	200	0.003	21,000	179	0.003
〃	1.5	1°	42,000	630	0.007	28,350	431	0.005	27,300	326	0.005	27,300	252	0.004
〃	2	1°	32,550	368	0.005	22,575	252	0.004	21,000	200	0.003	21,000	179	0.003
〃	2.5	1°	28,000	230	0.002	19,500	180	0.001	17,000	155	0.001	17,000	155	0.001
〃	1.5	1° 30	42,000	630	0.007	28,350	431	0.005	27,300	326	0.005	27,300	252	0.004
〃	2	1° 30	32,550	368	0.005	22,575	252	0.004	21,000	200	0.003	21,000	179	0.003
〃	2.5	1° 30	28,000	230	0.003	19,500	180	0.001	17,000	155	0.001	17,000	155	0.001
〃	1.5	2°	42,000	630	0.007	28,350	431	0.005	27,300	326	0.005	27,300	252	0.004
〃	2	2°	32,550	368	0.005	22,575	252	0.004	21,000	200	0.003	21,000	179	0.003
〃	2.5	2°	28,000	230	0.004	19,500	180	0.002	17,000	155	0.001	17,000	155	0.001
〃	1.5	3°	42,000	630	0.007	28,350	431	0.005	27,300	326	0.005	27,300	252	0.004
〃	2	3°	32,550	368	0.005	22,575	252	0.004	21,000	200	0.003	21,000	179	0.003
〃	2.5	3°	28,000	230	0.004	19,500	180	0.002	17,000	155	0.001	17,000	155	0.001
R 0.15	3	0° 30	34,650	641	0.008	23,310	399	0.006	21,525	336	0.005	21,525	294	0.004
〃	2	1°	34,650	641	0.008	23,310	399	0.006	21,525	336	0.005	21,525	294	0.004
〃	3	1°	34,650	641	0.008	23,310	399	0.006	21,525	336	0.005	21,525	294	0.004
〃	4	1°	32,550	494	0.005	22,050	326	0.004	19,950	242	0.003	19,950	189	0.001
〃	5	1°	32,550	494	0.003	22,050	326	0.002	19,950	242	0.002	19,950	189	0.001
〃	2	1° 30	34,650	641	0.008	23,310	399	0.006	21,525	336	0.005	21,525	294	0.004
〃	3	1° 30	34,650	641	0.008	23,310	399	0.006	21,525	336	0.005	21,525	294	0.004
〃	4	1° 30	32,550	494	0.003	22,050	326	0.002	19,950	242	0.002	19,950	189	0.002
〃	5	1° 30	32,550	494	0.003	22,050	326	0.002	19,950	242	0.002	19,950	189	0.002
〃	2	2°	34,650	641	0.008	23,310	399	0.006	21,525	336	0.005	21,525	294	0.004
〃	3	2°	34,650	641	0.008	23,310	399	0.006	21,525	336	0.005	21,525	294	0.004
〃	4	2°	32,550	494	0.003	22,050	326	0.002	19,950	242	0.002	19,950	189	0.002
〃	5	2°	32,550	494	0.003	22,050	326	0.002	19,950	242	0.002	19,950	189	0.002
〃	2	3°	34,650	641	0.008	23,310	399	0.006	21,525	336	0.005	21,525	294	0.004
〃	3	3°	34,650	641	0.008	23,310	399	0.006	21,525	336	0.005	21,525	294	0.004
〃	4	3°	32,550	494	0.004	22,050	326	0.003	19,950	242	0.002	19,950	189	0.003
〃	5	3°	32,550	494	0.004	22,050	326	0.003	19,950	242	0.002	19,950	189	0.003
R 0.2	2	0° 30	32,000	1,155	0.016	28,350	788	0.013	26,250	672	0.011	26,250	473	0.008
〃	3	0° 30	30,000	950	0.016	26,300	650	0.013	23,800	580	0.011	23,800	395	0.008
〃	4	0° 30	28,000	780	0.010	21,000	500	0.008	19,000	475	0.007	19,000	325	0.005
〃	5	0° 30	25,200	525	0.004	17,850	326	0.003	16,800	294	0.003	16,800	252	0.002
〃	6	0° 30	25,200	525	0.004	17,850	326	0.003	16,800	294	0.003	16,800	252	0.002
〃	2	1°	32,000	1,155	0.016	28,350	788	0.013	26,250	672	0.011	26,250	473	0.008
〃	3	1°	30,000	950	0.016	26,300	650	0.013	23,800	580	0.011	23,800	395	0.008
〃	4	1°	28,000	780	0.010	21,000	500	0.008	19,000	475	0.007	19,000	325	0.005
〃	5	1°	25,200	525	0.004	17,850	326	0.003	16,800	294	0.003	16,800	252	0.002
〃	6	1°	25,200	525	0.004	17,850	326	0.003	16,800	294	0.003	16,800	252	0.002
〃	2	2°	32,000	1,155	0.016	28,350	788	0.013	26,250	672	0.011	26,250	473	0.008
〃	3	2°	30,000	950	0.016	26,300	650	0.013	23,800	580	0.011	23,800	395	0.008
〃	4	2°	28,000	780	0.010	21,000	500	0.008	19,000	475	0.007	19,000	325	0.005
〃	5	2°	25,200	525	0.004	17,850	326	0.003	16,800	294	0.003	16,800	252	0.002
〃	6	2°	25,200	525	0.004	17,850	326	0.003	16,800	294	0.003	16,800	252	0.002
R 0.25	4	0° 30	34,650	1,187	0.019	28,350	861	0.015	24,675	630	0.013	24,675	609	0.011
〃	6	0° 30	21,525	609	0.006	17,850	431	0.005	15,750	368	0.004	15,750	326	0.003
〃	4	1°	34,650	1,187	0.019	28,350	861	0.015	24,675	630	0.013	24,675	609	0.011
〃	6	1°	21,525	609	0.006	17,850	431	0.005	15,750	368	0.004	15,750	326	0.003
〃	8	1°	21,525	609	0.005	17,850	431	0.004	15,750	368	0.003	15,750	326	0.003
〃	10	1°	21,525	609	0.004	17,850	431	0.003	15,750	368	0.003	15,750	326	0.003
〃	4	1° 30	34,650	1,187	0.019	28,350	861	0.015	24,675	630	0.013	24,675	609	0.011
〃	6	1° 30	21,525	609	0.008	17,850	431	0.005	15,750	368	0.006	15,750	326	0.005
〃	8	1° 30	21,525	609	0.007	17,850	431	0.005	15,750	368	0.005	15,750	326	0.004
〃	10	1° 30	21,525	609	0.006	17,850	431	0.005	15,750	368	0.004	15,750	326	0.003
〃	4	2°	34,650	1,187	0.019	28,350	861	0.015	24,675	630	0.013	24,675	609	0.011
〃	6	2°	21,525	609	0.006	17,850	431	0.005	15,750	368	0.004	15,750	326	0.003
〃	8	2°	21,525	609	0.006	17,850	431	0.005	15,750	368	0.004	15,750	326	0.003
〃	10	2°	21,525	609	0.006	17,850	431	0.005	15,750	368	0.004	15,750	326	0.003
R 0.3	4	0° 30	43,050	2,142	0.032	31,500	1,418	0.022	23,625	788	0.021	23,625	704	0.016
〃	8	0° 30	26,775	998	0.016	22,050	735	0.013	16,800	515	0.011	16,800	410	0.008
〃	12	0° 30	26,250	893	0.008	22,575	714	0.006	14,700	399	0.005	13,650	336	0.004
〃	4	1°	43,050	2,142	0.032	31,500	1,418	0.022	23,625	788	0.021	23,625	704	0.016
〃	8	1°	26,775	998	0.020	22,050	735	0.015	16,800	515	0.013	16,800	410	0.009
〃	12	1°	26,250	893	0.010	22,575	714	0.012	14,700	399	0.008	13,650	336	0.005

2JJTB Cutting Condition

• RPM : rev./min • Feed : mm/min

피삭재 Material			합금강 / 프리하든강 Alloy Steels / Pre-hardened Steels NAK80 / KP4M			고경도강 Hardened Steels STAVAX / SKD11			열처리 / 고경도강 Heat-treated steels / Hardened Steels SKD11 / SKD61			열처리 / 고경도강 Heat-treated steels / Hardened Steels YXR7 / SKH51		
경도 Hardness			40 ~ 45HRc			45 ~ 55HRc			55 ~ 62HRc			62 ~ 70HRc		
반경 Radius	유효장 Effective Length	각도 Taper Angle	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth
R 0.3	4	1° 30	43,050	2,142	0.032	31,500	1,418	0.022	23,625	788	0.021	23,625	704	0.016
〃	8	1° 30	26,775	998	0.020	22,050	735	0.015	16,800	515	0.015	16,800	410	0.010
〃	12	1° 30	26,250	893	0.010	22,575	714	0.012	14,700	399	0.010	13,650	336	0.007
〃	4	2°	43,050	2,142	0.032	31,500	1,418	0.022	23,625	788	0.021	23,625	704	0.016
〃	8	2°	26,775	998	0.022	22,050	735	0.017	16,800	515	0.016	16,800	410	0.010
〃	12	2°	26,250	893	0.012	22,575	714	0.014	14,700	399	0.012	13,650	336	0.007
R 0.4	4	0° 30	43,050	2,310	0.037	29,400	1,470	0.028	24,150	861	0.026	24,150	714	0.016
〃	8	0° 30	26,775	1,365	0.021	18,900	945	0.016	15,750	630	0.016	15,750	578	0.011
〃	12	0° 30	26,775	1,050	0.016	16,275	525	0.013	12,600	462	0.011	12,600	420	0.007
〃	4	1°	43,050	2,310	0.037	29,400	1,470	0.028	24,150	861	0.026	24,150	714	0.016
〃	8	1°	26,775	1,365	0.021	18,900	945	0.016	15,750	630	0.016	15,750	578	0.011
〃	12	1°	26,775	1,050	0.016	16,275	525	0.013	12,600	462	0.011	12,600	420	0.007
〃	4	1° 30	43,050	2,310	0.037	29,400	1,470	0.028	24,150	861	0.026	24,150	714	0.016
〃	8	1° 30	26,775	1,365	0.021	18,900	945	0.016	15,750	630	0.016	15,750	578	0.011
〃	12	1° 30	26,775	1,050	0.016	16,275	525	0.013	12,600	462	0.011	12,600	420	0.007
〃	4	2°	43,050	2,310	0.037	29,400	1,470	0.028	24,150	861	0.026	24,150	714	0.016
〃	8	2°	26,775	1,365	0.021	18,900	945	0.016	15,750	630	0.016	15,750	578	0.011
〃	12	2°	26,775	1,050	0.016	16,275	525	0.013	12,600	462	0.011	12,600	420	0.007

2JJTB/3JJTBS Cutting Condition

• RPM : rev./min • Feed : mm/min

피삭재 Material			합금강 / 프리하든강 Alloy Steels / Pre-hardened Steels NAK80 / KPM4M			고경도강 Hardened Steels STAVAX / SKD11			열처리 / 고경도강 Heat-treated steels / Hardened Steels SKD11 / SKD61			열처리 / 고경도강 Heat-treated steels / Hardened Steels YXR7 / SKH51		
경도 Hardness			40 ~ 45HRc			45 ~ 55HRc			55 ~ 62HRc			62 ~ 70HRc		
반경 Radius	유효장 Effective Length	각도 Taper Angle	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth
R 0.5	6	0° 30	26,250	2,100	0.047	17,850	1,365	0.037	17,850	1,050	0.032	16,800	861	0.026
〃	10	0° 30	17,850	1,103	0.023	12,600	767	0.019	11,550	683	0.017	11,550	525	0.013
〃	20	0° 30	15,750	945	0.014	10,500	683	0.011	9,450	567	0.008	9,450	462	0.008
〃	6	1°	26,250	2,100	0.047	17,850	1,365	0.037	17,850	1,050	0.032	16,800	861	0.026
〃	10	1°	17,850	1,103	0.023	12,600	767	0.019	11,550	683	0.017	11,550	525	0.013
〃	20	1°	15,750	945	0.014	10,500	683	0.011	9,450	567	0.008	9,450	462	0.008
〃	30	1°	15,750	750	0.007	10,500	540	0.005	9,450	430	0.004	9,450	360	0.004
〃	6	1° 30	26,250	2,100	0.047	17,850	1,365	0.037	17,850	1,050	0.032	16,800	861	0.026
〃	10	1° 30	17,850	1,103	0.023	12,600	767	0.019	11,550	683	0.017	11,550	525	0.013
〃	20	1° 30	15,750	945	0.014	10,500	683	0.011	9,450	567	0.008	9,450	462	0.008
〃	30	1° 30	15,750	750	0.007	10,500	540	0.005	9,450	430	0.004	9,450	360	0.004
〃	20	2°	15,750	945	0.014	10,500	683	0.011	9,450	567	0.008	9,450	462	0.008
〃	30	2°	15,750	750	0.007	10,500	540	0.005	9,450	430	0.004	9,450	360	0.004
〃	20	3°	15,750	945	0.014	10,500	683	0.011	9,450	567	0.008	9,450	462	0.008
〃	30	3°	15,750	750	0.007	10,500	540	0.005	9,450	430	0.004	9,450	360	0.004
〃	40	3°	12,250	550	0.004	8,550	420	0.002	7,800	365	0.002	7,800	285	0.002
R 0.75	10	0° 30	18,900	2,205	0.063	12,600	1,470	0.042	12,600	1,155	0.037	12,600	893	0.032
〃	20	0° 30	13,650	1,260	0.032	9,450	945	0.021	9,450	735	0.016	9,450	630	0.014
〃	30	0° 30	9,450	893	0.016	7,350	651	0.013	7,350	546	0.011	7,350	504	0.011
〃	10	1°	18,900	2,205	0.063	12,600	1,470	0.042	12,600	1,155	0.037	12,600	893	0.032
〃	20	1°	13,650	1,260	0.032	9,450	945	0.021	9,450	735	0.016	9,450	630	0.014
〃	30	1°	9,450	893	0.016	7,350	651	0.013	7,350	546	0.011	7,350	504	0.011
〃	10	1° 30	18,900	2,205	0.063	12,600	1,470	0.042	12,600	1,155	0.037	12,600	893	0.032
〃	20	1° 30	13,650	1,260	0.036	9,450	945	0.024	9,450	735	0.018	9,450	630	0.016
〃	30	1° 30	9,450	893	0.017	7,350	651	0.014	7,350	546	0.012	7,350	504	0.011
〃	40	1° 30	8,400	675	0.010	6,300	510	0.008	6,300	420	0.007	6,300	400	0.006
〃	10	2°	18,900	2,205	0.063	12,600	1,470	0.042	12,600	1,155	0.037	12,600	893	0.032
〃	20	2°	13,650	1,260	0.036	9,450	945	0.024	9,450	735	0.018	9,450	630	0.016
〃	30	2°	9,450	893	0.017	7,350	651	0.014	7,350	546	0.012	7,350	504	0.011
〃	40	2°	8,400	675	0.010	6,300	510	0.008	6,300	420	0.007	6,300	400	0.006
R 1	12	0° 30	15,750	2,468	0.084	11,550	1,785	0.068	11,025	1,428	0.059	11,025	1,124	0.048
〃	20	0° 30	10,500	1,470	0.063	8,400	1,050	0.053	9,450	1,050	0.047	9,450	924	0.037
〃	30	0° 30	9,450	1,260	0.047	7,350	840	0.037	7,350	819	0.032	7,350	672	0.026
〃	40	0° 30	9,450	1,260	0.037	7,035	819	0.032	6,300	735	0.026	6,300	609	0.021
〃	12	1°	15,750	2,468	0.084	11,550	1,785	0.068	11,025	1,428	0.059	11,025	1,124	0.048
〃	20	1°	10,500	1,470	0.063	8,400	1,050	0.053	9,450	1,050	0.047	9,450	924	0.037

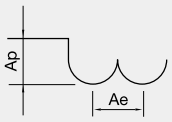
2JJTB/3JJTBS Cutting Condition

• RPM : rev./min • Feed : mm/min

피삭재 Material			합금강 / 프리하든강 Alloy Steels / Pre-hardened Steels NAK80 / KP4M			고경도강 Hardened Steels STAVAX / SKD11			열처리 / 고경도강 Heat-treated steels / Hardened Steels SKD11 / SKD61			열처리 / 고경도강 Heat-treated steels / Hardened Steels YXR7 / SKH51		
경도 Hardness			40 ~ 45HRc			45 ~ 55HRc			55 ~ 62HRc			62 ~ 70HRc		
반경 Radius	유효장 Effective Length	각도 Taper Angle	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth
R 1	30	1°	9,450	1,260	0.047	7,350	840	0.037	7,350	819	0.032	7,350	672	0.026
〃	40	1°	9,450	1,260	0.037	7,035	819	0.032	6,300	735	0.026	6,300	609	0.021
〃	50	1°	7,900	990	0.027	6,650	770	0.025	5,600	655	0.022	5,600	525	0.015
〃	12	1° 30	15,750	2,468	0.090	11,550	1,785	0.068	11,025	1,428	0.065	11,025	1,124	0.052
〃	20	1° 30	10,500	1,470	0.074	8,400	1,050	0.060	9,450	1,050	0.054	9,450	924	0.042
〃	30	1° 30	9,450	1,260	0.055	7,350	840	0.043	7,350	819	0.038	7,350	672	0.031
〃	40	1° 30	9,450	1,260	0.043	7,035	819	0.037	6,300	735	0.033	6,300	609	0.026
〃	50	1° 30	7,900	990	0.030	6,650	770	0.028	5,600	655	0.029	5,600	525	0.021
〃	30	2°	9,450	1,260	0.055	7,350	840	0.043	7,350	819	0.038	7,350	672	0.031
〃	40	2°	9,450	1,260	0.043	7,035	819	0.037	6,300	735	0.033	6,300	609	0.026
〃	50	2°	7,900	990	0.030	6,650	770	0.028	5,600	655	0.029	5,600	525	0.021
〃	30	3°	9,450	1,260	0.055	7,350	840	0.043	7,350	819	0.038	7,350	672	0.031
〃	40	3°	9,450	1,260	0.043	7,035	819	0.037	6,300	735	0.033	6,300	609	0.026
〃	50	3°	7,900	990	0.030	6,650	770	0.028	5,600	655	0.029	5,600	525	0.021
R 1.5	20	0° 30	10,500	2,310	0.095	8,400	1,365	0.074	7,350	1,260	0.063	7,350	1,155	0.053
〃	30	0° 30	9,450	1,890	0.079	7,350	1,103	0.063	6,300	1,050	0.053	6,300	924	0.044
〃	40	0° 30	7,875	1,470	0.063	5,250	924	0.053	5,355	840	0.042	5,355	735	0.037
〃	50	0° 30	7,875	1,365	0.042	5,250	840	0.032	5,355	788	0.026	5,355	683	0.024
〃	20	1°	10,500	2,310	0.095	8,400	1,365	0.074	7,350	1,260	0.063	7,350	1,155	0.053
〃	30	1°	9,450	1,890	0.079	7,350	1,103	0.063	6,300	1,050	0.053	6,300	924	0.044
〃	40	1°	7,875	1,470	0.063	5,250	924	0.053	5,155	840	0.042	5,155	735	0.037
〃	50	1°	7,875	1,365	0.042	5,250	840	0.032	5,155	788	0.026	5,155	683	0.024
〃	60	1°	6,400	1,225	0.028	4,325	710	0.021	4,300	670	0.018	4,300	540	0.016
〃	20	1° 30	10,500	2,310	0.095	8,400	1,365	0.074	7,350	1,260	0.063	7,350	1,155	0.053
〃	30	1° 30	9,450	1,890	0.079	7,350	1,103	0.063	6,300	1,050	0.053	6,300	924	0.044
〃	40	1° 30	7,875	1,470	0.063	5,250	924	0.053	5,355	840	0.042	5,355	735	0.037
〃	50	1° 30	7,875	1,365	0.042	5,250	840	0.032	5,355	788	0.026	5,355	683	0.024
〃	60	1° 30	6,400	1,225	0.028	4,325	710	0.021	4,300	670	0.018	4,300	540	0.016
〃	20	2°	10,500	2,310	0.095	8,400	1,365	0.074	7,350	1,260	0.063	7,350	1,155	0.053
〃	30	2°	9,450	1,890	0.079	7,350	1,103	0.063	6,300	1,050	0.053	6,300	924	0.044
〃	48	2°	7,875	1,365	0.042	5,250	840	0.032	5,355	788	0.026	5,355	683	0.024
〃	60	2°	6,400	1,225	0.028	4,325	710	0.021	4,300	670	0.018	4,300	540	0.016
〃	30	3°	9,450	1,890	0.079	7,350	1,103	0.063	6,300	1,050	0.053	6,300	924	0.044
〃	50	3°	7,875	1,365	0.042	5,250	840	0.032	5,355	788	0.026	5,355	683	0.024
R 2	40	0° 30	6,300	1,260	0.085	3,675	630	0.068	3,360	557	0.053	3,360	525	0.045
〃	60	0° 30	4,200	767	0.063	3,150	473	0.047	2,940	420	0.042	2,940	368	0.033
〃	50	1°	5,250	1,010	0.074	3,450	550	0.058	3,120	480	0.048	3,110	445	0.038
〃	60	1°	4,200	767	0.063	3,150	473	0.047	2,940	420	0.042	2,940	368	0.033
〃	70	1°	3,200	540	0.048	2,760	320	0.036	2,770	360	0.036	2,770	300	0.028
〃	45	1° 30	5,250	1,010	0.074	3,450	550	0.058	3,120	480	0.048	3,110	445	0.038
〃	60	1° 30	4,200	767	0.063	3,150	473	0.047	2,940	420	0.042	2,940	368	0.033
〃	70	1° 30	3,200	540	0.048	2,760	320	0.036	2,770	360	0.036	2,770	300	0.028
〃	25	3°	9,450	1,890	0.079	7,350	1,103	0.063	6,300	1,050	0.053	6,300	924	0.044
〃	42	3°	7,875	1,365	0.042	5,250	840	0.032	5,355	788	0.026	5,355	683	0.024
R 2.5	40	1°	6,300	1,260	0.085	3,675	630	0.068	3,360	557	0.053	3,360	525	0.045
〃	60	1°	4,200	767	0.063	3,150	473	0.047	2,940	420	0.042	2,940	368	0.033
〃	90	1°	2,200	480	0.041	2,450	280	0.030	2,470	250	0.028	2,200	237	0.023
〃	40	1° 30	6,300	1,260	0.085	3,675	630	0.068	3,360	557	0.053	3,360	525	0.045
〃	60	1° 30	4,200	767	0.063	3,150	473	0.047	2,940	420	0.042	2,940	368	0.033
〃	90	1° 30	2,200	480	0.041	2,450	280	0.030	2,470	250	0.028	2,200	237	0.023
R 3	40	1°	9,450	2,205	0.147	7,350	1,103	0.105	6,300	998	0.084	6,300	893	0.061
〃	50	1°	7,800	1,910	0.122	5,980	980	0.088	5,000	845	0.070	5,300	760	0.055
〃	60	1°	6,100	1,670	0.105	5,285	820	0.070	4,180	760	0.062	4,300	620	0.048
〃	70	1°	4,725	1,470	0.074	4,095	735	0.063	3,570	683	0.053	3,570	578	0.042
〃	80	1°	3,540	1,320	0.061	3,400	640	0.046	2,100	510	0.040	2,100	468	0.033
〃	49	1° 30	7,800	1,910	0.122	5,980	980	0.088	5,000	845	0.070	5,300	760	0.055
〃	85	1° 30	3,360	1,220	0.055	3,100	580	0.040	1,880	460	0.035	1,880	448	0.028
〃	60	2°	6,100	1,670	0.105	5,285	820	0.070	4,180	760	0.062	4,300	620	0.048
〃	90	2°	3,000	1,050	0.055	2,870	520	0.040	1,720	410	0.035	1,720	400	0.028
R 4	50	1°	9,345	2,310	0.189	7,350	1,155	0.147	6,300	1,050	0.105	6,300	840	0.086
〃	60	1°	7,150	1,846	0.138	5,330	916	0.114	4,550	820	0.080	4,550	655	0.064
〃	80	1°	4,515	1,365	0.095	3,360	683	0.084	3,045	578	0.068	3,045	473	0.042
〃	52	1° 30	9,345	2,310	0.197	7,350	1,155	0.154	6,300	1,050	0.113	6,300	840	0.094
〃	89	1° 30	3,400	1,090	0.073	2,970	578	0.046	1,890	454	0.041	1,860	443	0.033

2JJTB/3JJTBS Cutting Condition

• RPM : rev./min • Feed : mm/min

피삭재 Material			합금강 / 프리하든강 Alloy Steels / Pre-hardened Steels NAK80 / KP4M			고경도강 Hardened Steels STAVAX / SKD11			열처리 / 고경도강 Heat-treated steels / Hardened Steels SKD11 / SKD61			열처리 / 고경도강 Heat-treated steels / Hardened Steels YXR7 / SKH51		
경도 Hardness			40 ~ 45HRc			45 ~ 55HRc			55 ~ 62HRc			62 ~ 70HRc		
반경 Radius	유효장 Effective Length	각도 Taper Angle	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth
R 5	60	1°	5,775	1,785	0.194	3,675	893	0.168	3,570	735	0.126	3,570	630	0.084
〃	75	1°	4,200	998	0.093	3,150	504	0.068	2,940	420	0.053	2,940	336	0.034
〃	54	1°30	6,175	1,850	0.220	3,935	923	0.185	3,760	768	0.146	3,760	678	0.097
R 6	85	1°30	2,940	336	0.063	1,995	168	0.032	1,575	158	0.016	1,575	105	0.011
〃	63	3°	3,990	735	0.126	2,940	368	0.086	2,625	326	0.063	2,625	231	0.047
절입량 Depth of Cut														

Ap : Axial Depth 축방향의절입깊이(mm)
Ae : Radial Depth 반경방향의절입깊이(mm)
D : Outside Diameter 외경(mm)
n : Speed 회전속도 (min^{-1})
Vf : Feed 이송속도 (mm/min)

- 절삭조건에 없는 각도는 같은 직경에 이전 각도와 비례하여 사용하십시오.
- 이송속도 및 축방향의 절입깊이는 리브창과 테이퍼각에 따라 고려하시고, 절삭상황에 맞추어 조정하십시오.
- 에어브로 혹은 미스트 쿨런트를 추천하며, 동 가공 시 습식 쿨런트 추천합니다.
- 상기 절삭조건은 참고 수치이므로 실 가공시 가공 형상, 가공 목적, 적용 기계에 따라 조건 변경 요망합니다.
- 적용 기계의 회전속도가 부족한 경우에는 회전속도와 이송속도를 같은 비율로 줄여서 적용합니다.
- 칩 제거 주의 및 가공시 발열, 발화에 주의하십시오.

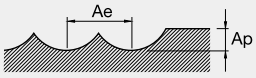
- If there is no same taper angle of your endmill on the table, refer to the previous taper angle of diameter and apply the same proportion.
- Adjust the value of the feed and Ap based on the effective length and taper angle, and adjust the milling condition.
- Air blow or mist coolant is recommended, and wet coolants are recommended for copper milling.
- Use this table for your reference. Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- Where the parameters exceed the machine's maximum spindle speed, the RPM and feedrate should be reduced proportionally.
- Note for chip emission, heat or ignition.

2JJSP Cutting Condition

• RPM : rev./min • Feed : mm/min

피삭재 Material	공구강 / 금형강 Tool Steels / Alloy Steels SCM/HPM		합금강 / 프리하든강 Alloy Steels / Prehardened Steels NAK80/KP4M		스테인레스강 Stainless Steels SUS304/SUS316		고경도강 Hardened Steels STAVAX/SKD11		열처리 / 고경도강 Heat-treated steels / Hardened Steels SKD11/ SKD61/ YXR7/ R7 / SKH51		열처리 / 고경도강 Heat-treated steels / Hardened Steels SKD11/ SKD61/ YXR7/ R7 / SKH51	
경도 Hardness	30 ~ 40HRc		40 ~ 45HRc		-		45 ~ 55HRc		55 ~ 60HRc		60 ~ 70HRc	
반경 Radius	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
R 0.5	25,600	680	25,600	680	25,600	680	25,600	680	25,600	610	25,600	610
R 0.75	22,000	850	22,000	850	22,000	850	22,000	850	22,000	750	22,000	750
R 1	19,200	1,080	19,200	1,080	19,200	1,080	19,200	1,080	19,200	960	17,600	960
R 2	12,400	1,440	11,200	1,240	10,800	1,160	10,000	1,080	10,000	920	8,800	920
R 3	8,400	1,480	7,600	1,360	7,200	1,280	6,800	1,200	6,800	1,040	5,900	1,040
R 4	6,400	1,120	5,700	1,000	5,500	960	5,100	880	5,100	790	4,400	790
R 5	5,100	880	4,600	800	4,400	784	4,000	720	4,000	640	3,600	640
R 6	4,800	840	3,800	670	3,640	640	3,400	600	3,400	540	3,000	540

절입량 Depth of Cut



Ap	Ae
0.05D	0.05D

~ 55HRC

Ap	Ae
0.02D	0.05D

~ 70HRC

- 절삭조건의 ap, ae 수치는 황삭 및 황중삭의 수치 이므로, 견고한 조도의 가공을 원하시면 황삭 값의 50%를 적용 하십시오.
- 상기 절삭조건은 참고 수치이므로 실 가공시 가공 형상, 가공 목적, 적용 기계에 따라 조건 변경 요망합니다.
- 조건 표가 기계의 최대스핀들 속도를 초과 하거나 버 및 적열 현상이 발생할때 스핀들 속도와 이송 속도를 비례하여 조정 하십시오.

- The values of ap and ae on the table are for roughing or semi-roughing. If you need a great surface roughness, apply 50% of the value.
- 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.