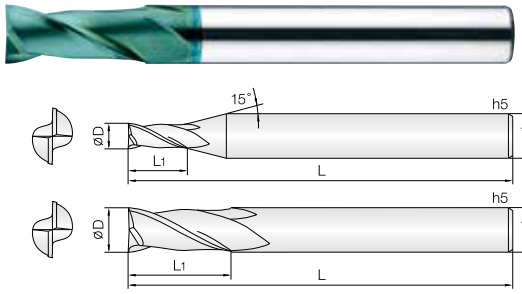
2JJE 2 Flutes JJ End Mills for Hardened Steels

2날 고경도재 가공용 제이제이 엔드밀



- 고경도강(HRc52~68), 프리하든강 계열의 고정밀 가공 엔드밀
- 고함량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 인선부 강성을 보강하여 날부치핑을 최소화 하였습니다.
- 국내최초 날경 0.03mm 제품부터 생산합니다.
- 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.
- High precise edge tolerance.
- Reinforced edge design for preventing edge chipping.
- Produce down to 0.03mm in diameter endmills at the first time in Korea.
- Outstanding performance at high speed machining by ultra fine (0.2㎛) WC grade.

2 | UWC 초미립자 | TISIN-S Coating | 30° Helix Angle | Shield Edge | CUTTING DATA 414P

Condition	D Size	D Tolerance
ØD ≠ Ød	Ø0.03 ~ 0.15	+0 ~ -0.005mm
	Ø0.2 ~ 6	+0 ~ -0.01mm
	Ø6.5 ~ 20	+0 ~ -0.015mm

Condition	D Size	D Tolerance
ØD = Ød	Ø3 ~ 6	-0.005 ~ -0.015mm
	Ø8 ~ 12	-0.01 ~ -0.025mm
	Ø14 ~ 20	-0.015 ~ -0.03mm

단위 : mm

Order Number	날경 Diameter D	날장 Length of cut L1	전장 Overall Length L	생크 Shank Dia d	비고
2JJE 0003 00045 S04	0.03	0.045	40	4	
2JJE 0004 0006 S04	0.04	0.06	40	4	
2JJE 0005 0008 S04	0.05	0.08	40	4	
2JJE 0006 001 S04	0.06	0.1	40	4	
2JJE 0007 0012 S04	0.07	0.12	40	4	
2JJE 0008 0015 S04	0.08	0.15	40	4	
2JJE 0009 0017 S04	0.09	0.17	40	4	
2JJE 001 002 S04	0.1	0.2	40	4	
2JJE 0015 003 S04	0.15	0.3	40	4	
2JJE 002 004 S04	0.2	0.4	40	4	
2JJE 0025 005 S04	0.25	0.5	40	4	
2JJE 003 006 S04	0.3	0.6	40	4	
2JJE 0035 007 S04	0.35	0.7	40	4	
2JJE 004 008 S04	0.4	0.8	40	4	
2JJE 0045 009 S04	0.45	0.9	40	4	
2JJE 005 010 S04	0.5	1	40	4	
2JJE 0055 011 S04	0.55	1.1	40	4	
2JJE 006 012 S04	0.6	1.2	40	4	
2JJE 0065 013 S04	0.65	1.3	40	4	
2JJE 007 014 S04	0.7	1.4	40	4	
2JJE 0075 015 S04	0.75	1.5	40	4	
2JJE 008 016 S04	0.8	1.6	40	4	
2JJE 0085 017 S04	0.85	1.7	40	4	
2JJE 009 020 S04	0.9	2	40	4	
2JJE 0095 020 S04	0.95	2	40	4	
2JJE 010 025 S03	1	2.5	40	3	
2JJE 010 025 S04	1	2.5	40	4	
2JJE 010 025 S06	1	2.5	40	6	
2JJE 011 027 S04	1.1	2.7	40	4	
2JJE 012 030 S03	1.2	3	40	3	
2JJE 012 030 S04	1.2	3	40	4	
2JJE 013 032 S04	1.3	3.2	40	4	
2JJE 014 035 S04	1.4	3.5	40	4	
2JJE 015 040 S03	1.5	4	40	3	
2JJE 015 040 S04	1.5	4	40	4	
2JJE 015 040 S06	1.5	4	40	6	
2JJE 016 040 S04	1.6	4	40	4	
2JJE 017 042 S04	1.7	4.2	40	4	
2JJE 018 045 S04	1.8	4.5	40	4	
2JJE 019 050 S04	1.9	5	40	4	
2JJE 020 060 S03	2	6	40	3	
2JJE 020 060 S04	2	6	40	4	
2JJE 020 060 S06	2	6	40	6	
2JJE 021 060 S04	2.1	6	40	4	
2JJE 022 060 S04	2.2	6	40	4	
2JJE 023 060 S04	2.3	6	40	4	
2JJE 024 080 S04	2.4	8	45	4	
2JJE 025 080 S03	2.5	8	45	3	
2JJE 025 080 S04	2.5	8	45	4	
2JJE 025 080 S06	2.5	8	45	6	

Order Number	날경 Diameter D	날장 Length of cut L1	전장 Overall Length L	생크 Shank Dia d	비고
2JJE 026 080 S04	2.6	8	45	4	
2JJE 027 080 S04	2.7	8	45	4	
2JJE 028 080 S04	2.8	8	45	4	
2JJE 029 080 S04	2.9	8	45	4	
2JJE 030 080 S03	3	8	50	3	
2JJE 030 080 S04	3	8	45	4	
2JJE 030 080 S06	3	8	45	6	
2JJE 035 100 S06	3.5	10	45	6	
2JJE 040 100 S04	4	10	45	4	
2JJE 040 110 S06	4	11	45	6	
2JJE 045 110 S06	4.5	11	45	6	
2JJE 050 130 S06	5	13	50	6	
2JJE 055 130 S06	5.5	13	50	6	
2JJE 060 130 S06	6	13	50	6	
2JJE 065 160 S08	6.5	16	60	8	
2JJE 070 160 S08	7	16	60	8	
2JJE 075 160 S08	7.5	16	60	8	
2JJE 080 190 S08	8	19	60	8	
2JJE 085 190 S10	8.5	19	70	10	
2JJE 090 190 S10	9	19	70	10	
2JJE 095 190 S10	9.5	19	70	10	
2JJE 100 220 S10	10	22	70	10	
2JJE 105 220 S12	10.5	22	75	12	
2JJE 110 220 S12	11	22	75	12	
2JJE 115 220 S12	11.5	22	75	12	
2JJE 120 260 S12	12	26	75	12	
2JJE 140 260 S14	14	26	80	14	
2JJE 140 260 S16	14	26	90	16	
2JJE 160 350 S16	16	35	100	16	
2JJE 180 350 S18	18	35	100	18	
2JJE 200 400 S20	20	40	100	20	

2JJE Cutting Condition

• RPM : rev./min • Feed : mm/min

피삭재 Material	홈 절삭 Slotting						측면절삭 Side Cutting					
	고경도강 Hardened Steels STAVAX/SKD11		열처리 / 고경도강 Heat-treated steels / Hardened Steels SKD11 / SKD61		열처리 / 고경도강 Heat-treated steels / Hardened Steels YXR7 / SKH51		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	45 ~ 55HRc		55 ~ 65HRc		62 ~ 70HRc		45 ~ 55HRc		55 ~ 62HRc		62 ~ 70HRc	
외경 Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
ø 0.1	33,000	50	33,000	40	26,400	30	• 측면절삭불가 • Side cutting is not possible.					
ø 0.2	33,000	60	33,000	45	20,000	35						
ø 0.3	33,000	70	25,000	50	20,000	40						
ø 0.4	33,000	90	25,000	55	20,000	60						
ø 0.5	33,000	140	25,000	85	20,000	75						
ø 0.6	30,000	160	25,000	105	15,200	80						
ø 0.8	25,000	185	19,000	110	14,000	90						
ø 0.9	22,700	205	17,500	125	12,500	85						
ø 1	20,500	670	16,000	340	12,500	160	20,500	775	16,000	340	12,500	323
ø 2	14,500	800	11,000	400	9,500	210	14,500	925	11,000	415	9,500	394
ø 3	9,500	800	7,500	400	6,400	210	9,500	925	7,500	415	6,400	394
ø 4	7,200	840	5,600	425	4,750	220	7,200	960	5,600	430	4,750	409
ø 5	6,400	885	5,100	450	4,450	245	6,400	1,020	5,100	470	4,450	447
ø 6	5,300	870	4,200	450	3,700	240	5,300	1,000	4,200	460	3,700	437
ø 8	4,000	800	3,200	400	2,800	220	4,000	910	3,200	425	2,800	404
ø 10	3,200	750	2,550	390	2,200	210	3,200	850	2,550	400	2,200	380
ø 12	2,650	750	2,100	390	1,860	210	2,650	850	2,100	400	1,860	380
ø 16	1,840	560	1,800	250	1,460	185	1,840	750	1,800	340	1,800	323
ø 18	1,840	560	1,800	250	1,460	185	1,840	750	1,800	340	1,800	323
ø 20	1,460	560	1,400	250	1,100	185	1,460	750	1,400	325	1,400	309
절입량 Depth of Cut	0.8D, 0.05D ~ 60HRC 0.5D, 0.02D 60HRC ~						~ 60HRC: 0.03D, 1.0D 60HRC ~: 0.02D, 0.5D					

- HRC55 이하 피삭재(합금강, 공구강) 가공시 같은 파이에 대비 상기 절삭조건의 20% UP 해주십시오.
- 상기 절삭조건은 참고 수치이므로 실가 공시 가공 형상, 가공 목적, 적용 기계에 따라 조건 변경 요망합니다.
- 조건표가 기계의 최대스핀들 속도를 초과 하거나 버 및 적열 현상이 발생할때 스핀들 속도와 이송 속도를 비례하여 조정 하십시오.
- 소재 및 가공 형상에 적합한 절삭유를 사용하십시오.

- When milling workpiece, HRC below 55 (Alloy steel, tool steel), Raise up 20% RPM and feed compared to the same diameter.
- 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.
- Use suitable cutting oil for material and machining geometry.