

C Cutting 478P

- 합금강, SUS계열, Ti/Ni계 합금, 인코넬 등 난삭재 가공 엔드밀
- J-CRO 코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며, 내마모성 또한 향상됩니다.
- 강력한 채터링방지 설계로 엔드밀의 진동을 최소화하였습니다.
- 4날 적용과 깊은 포켓으로 칩배출이 원활하며, 피삭재 면조도가 우수합니다.
- 항절력이 높은 미립자 초경합금을 채택, 고이송 작업시 엔드밀 파손을 최소화.

Endmills for alloy steels, SUS, Ti/Ni base alloys, Inconel and hard-to-cut materials

- JCRO coating provides wear resistance improvement as well as avoid edge stress in various applications.
- Strong design for protection against chattering.
- Excellent work surface finish by 4 flute and deep chip pocket.
- Minimize fracturing at high feed by high TRS fine WC grade.

Condition	D Size	D Tolerance
ØD ≠ Ød	Ø0.3 ~ 6	+0 ~ -0.01mm
	Ø7 ~ 20	+0 ~ -0.015mm

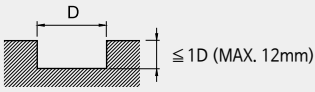
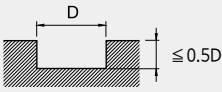
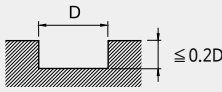
Condition	D Size	D Tolerance
ØD = Ød	Ø6	-0.005 ~ -0.015mm
	Ø8 ~ 12	-0.01 ~ -0.025mm
	Ø14 ~ 20	-0.015 ~ -0.03mm

단위 : mm

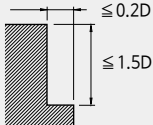
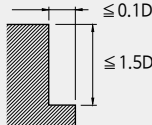
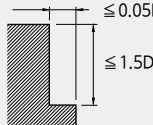
Order Number	날경 Diameter D	날장 Length of cut L1	면취량 Chamfer C	전장 Overall Length L	샙크 Dia d	비고
New 4SUE 003 006 S04	0.3	0.6	-	40	4	
New 4SUE 004 008 S04	0.4	0.8	-	40	4	
New 4SUE 005 008 S04	0.5	0.8	-	40	4	
New 4SUE 005 010 S04	0.5	1	-	40	4	
New 4SUE 006 009 S04	0.6	0.9	-	40	4	
New 4SUE 006 012 S04	0.6	1.2	-	40	4	
New 4SUE 008 012 S04	0.8	1.2	-	40	4	
New 4SUE 008 020 S04	0.8	2	-	40	4	
4SUE 010 015 S04	1	1.5	0.01	50	4	
4SUE 010 025 S04	1	2.5	0.01	50	4	
4SUE 010 035 S04	1	3.5	0.01	50	4	
4SUE 010 050 S04	1	5	0.01	50	4	
4SUE 010 060 S04	1	6	0.01	50	4	
4SUE 012 015 S04	1.2	1.5	0.012	50	4	
4SUE 012 030 S04	1.2	3	0.012	50	4	
4SUE 012 050 S04	1.2	5	0.012	50	4	
4SUE 012 070 S04	1.2	7	0.012	50	4	
4SUE 015 025 S04	1.5	2.5	0.015	50	4	
4SUE 015 040 S04	1.5	4	0.015	50	4	
4SUE 015 055 S04	1.5	5.5	0.015	50	4	
4SUE 015 070 S04	1.5	7	0.015	50	4	
4SUE 015 085 S04	1.5	8.5	0.015	50	4	
4SUE 020 030 S04	2	3	0.02	50	4	
4SUE 020 060 S04	2	6	0.02	50	4	
4SUE 020 080 S04	2	8	0.02	50	4	
4SUE 020 100 S04	2	10	0.02	50	4	
4SUE 020 120 S04	2	12	0.02	50	4	
4SUE 020 140 S04	2	14	0.02	50	4	
4SUE 025 035 S04	2.5	3.5	0.025	50	4	
4SUE 025 080 S04	2.5	8	0.025	50	4	
4SUE 025 100 S04	2.5	10	0.025	50	4	
4SUE 025 120 S04	2.5	12	0.025	50	4	
4SUE 025 140 S04	2.5	14	0.025	50	4	
4SUE 030 045 S06	3	4.5	0.03	60	6	
4SUE 030 100 S06	3	10	0.03	60	6	
4SUE 030 120 S06	3	12	0.03	60	6	
4SUE 030 150 S06	3	15	0.03	60	6	
4SUE 030 200 S06	3	20	0.03	70	6	
4SUE 030 250 S06	3	25	0.03	70	6	
4SUE 030 300 S06	3	30	0.03	75	6	
4SUE 035 055 S06	3.5	5.5	0.035	60	6	
4SUE 035 100 S06	3.5	10	0.035	60	6	
4SUE 035 150 S06	3.5	15	0.035	60	6	
4SUE 035 200 S06	3.5	20	0.035	60	6	
4SUE 040 060 S06	4	6	0.04	60	6	
4SUE 040 120 S06	4	12	0.04	60	6	
4SUE 040 160 S06	4	16	0.04	60	6	
4SUE 040 200 S06	4	20	0.04	70	6	
4SUE 040 250 S06	4	25	0.04	70	6	
4SUE 040 300 S06	4	30	0.04	75	6	

Order Number	날경 Diameter D	날장 Length of cut L1	면취량 Chamfer C	전장 Overall Length L	샙크 Dia d	비고
4SUE 045 070 S06	4.5	7	0.045	60	6	
4SUE 045 130 S06	4.5	13	0.045	60	6	
4SUE 045 180 S06	4.5	18	0.045	60	6	
4SUE 050 075 S06	5	7.5	0.05	60	6	
4SUE 050 150 S06	5	15	0.05	60	6	
4SUE 050 200 S06	5	20	0.05	70	6	
4SUE 050 250 S06	5	25	0.05	70	6	
4SUE 050 300 S06	5	30	0.05	75	6	
4SUE 060 090 S06	6	9	0.06	60	6	
4SUE 060 150 S06	6	15	0.06	60	6	
4SUE 060 180 S06	6	18	0.06	65	6	
4SUE 060 250 S06	6	25	0.06	70	6	
4SUE 060 300 S06	6	30	0.06	70	6	
4SUE 060 400 S06	6	40	0.06	80	6	
4SUE 070 110 S08	7	11	0.07	70	8	
4SUE 070 180 S08	7	18	0.07	70	8	
4SUE 070 210 S08	7	21	0.07	70	8	
4SUE 080 120 S08	8	12	0.08	70	8	
4SUE 080 200 S08	8	20	0.08	70	8	
4SUE 080 240 S08	8	24	0.08	70	8	
4SUE 080 300 S08	8	30	0.08	80	8	
4SUE 080 400 S08	8	40	0.08	90	8	
4SUE 080 500 S08	8	50	0.08	100	8	
4SUE 090 140 S10	9	14	0.09	80	10	
4SUE 090 220 S10	9	22	0.09	80	10	
4SUE 090 270 S10	9	27	0.09	80	10	
4SUE 100 150 S10	10	15	0.1	80	10	
4SUE 100 250 S10	10	25	0.1	80	10	
4SUE 100 300 S10	10	30	0.1	80	10	
4SUE 100 400 S10	10	40	0.1	90	10	
4SUE 100 500 S10	10	50	0.1	100	10	
4SUE 100 600 S10	10	60	0.1	110	10	
4SUE 110 170 S12	11	17	0.11	90	12	
4SUE 110 220 S12	11	22	0.11	90	12	
4SUE 110 330 S12	11	33	0.11	90	12	
4SUE 120 180 S12	12	18	0.12	90	12	
4SUE 120 300 S12	12	30	0.12	90	12	
4SUE 120 360 S12	12	36	0.12	90	12	
New 4SUE 120 450 S12	12	45	0.12	100	12	
4SUE 120 500 S12	12	50	0.12	100	12	
4SUE 120 600 S12	12	60	0.12	110	12	
4SUE 120 700 S12	12	70	0.12	120	12	
New 4SUE 140 320 S14	14	32	0.14	100	14	
New 4SUE 140 450 S14	14	45	0.14	100	14	
New 4SUE 140 600 S14	14	60	0.14	110	14	
New 4SUE 140 700 S14	14	70	0.14	120	14	
4SUE 160 240 S16	16	24	0.16	100	16	
4SUE 160 350 S16	16	35	0.16	100	16	
4SUE 160 500 S16	16	50	0.16	110	16	
4SUE 160 700 S16	16	70	0.16	130	16	

홈절삭 Slotting

피삭재 Material	합금강 / 프리하드강 Alloy Steels / Pre-hardened Steels NAK80 / KP4M				스테인레스강 / 티타늄 합금강 Stainless Steel / Titanium alloy steels SUS304 / SUS316 / Ti6A				내열합금강 Heat Resistance Alloys			
	40 ~ 45HRc											
외경 Outside Diameter	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
ø 2	10,000	400	2	2	9,600	310	1	2	3,200	80	0.4	2
ø 3	6,900	410	3	3	7,400	380	1.5	3	2,700	110	0.6	3
ø 4	5,600	490	4	4	5,600	400	2	4	2,000	120	0.8	4
ø 5	4,500	630	5	5	4,500	410	2.5	5	1,600	130	1	5
ø 6	3,700	740	6	6	3,700	440	3	6	1,300	160	1.2	6
ø 7	3,200	700	7	7	3,200	410	3.5	7	1,100	140	1.4	7
ø 8	2,800	670	8	8	2,800	390	4	8	1,000	130	1.6	8
ø 9	2,500	600	9	9	2,500	350	4.5	9	900	130	1.8	9
ø 10	2,200	530	10	10	2,200	350	5	10	800	130	2	10
ø 11	2,000	530	11	11	2,000	320	5.5	11	720	120	2.2	11
ø 12	1,900	530	12	12	1,900	300	6	12	660	110	2.4	12
ø 16	1,400	390	16	16	1,400	280	8	16	500	80	3.2	16
ø 20	1,100	350	20	20	1,100	260	10	20	400	60	4	20
절입량 Depth of Cut												

측면절삭 Side Cutting

피삭재 Material	합금강 / 프리하드강 Alloy Steels / Pre-hardened Steels NAK80 / KP4M				스테인레스강 / 티타늄 합금강 Stainless Steel / Titanium alloy steels SUS304 / SUS316 / Ti6A				내열합금강 Heat Resistance Alloys			
	40 ~ 45HRc											
외경 Outside Diameter	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
ø 2	21,000	825	3	0.4	14,000	420	3	0.2	4,800	130	3	0.1
ø 3	15,000	938	4.5	0.6	10,600	638	4.5	0.3	4,200	200	4.5	0.15
ø 4	11,000	1,050	6	0.8	8,000	720	6	0.4	3,200	220	6	0.2
ø 5	9,600	1,425	7.5	1	6,400	750	7.5	0.5	2,500	250	7.5	0.25
ø 6	8,000	1,650	9	1.2	5,300	750	9	0.6	2,100	250	9	0.3
ø 7	6,800	1,425	10.5	1.4	4,500	750	10.5	0.7	1,800	260	10.5	0.35
ø 8	6,000	1,200	12	1.6	4,000	720	12	0.8	1,600	260	12	0.4
ø 9	5,300	1,110	13.5	1.8	3,500	630	13.5	0.9	1,400	220	13.5	0.45
ø 10	4,800	1,080	15	2	3,200	578	15	1	1,300	210	15	0.5
ø 11	4,400	1,013	16.5	2.2	2,900	570	16.5	1.1	1,200	190	16.5	0.55
ø 12	4,000	938	18	2.4	2,700	570	18	1.2	1,100	180	18	0.6
ø 16	3,000	855	24	3.2	2,000	420	24	1.6	800	130	24	0.8
ø 20	2,400	645	30	4	1,600	383	30	2	600	100	30	1
절입량 Depth of Cut												

- 유효장 길이가 긴 경우, RPM과 FEED를 동일 비율로 낮춰주세요.
- 가공 진입시 가능한 피삭재 밖에서 진입 하십시오.
- 절삭 조건이 없는 직경 및 유효장은 비슷한 직경 및 유효장에 비례하여 UP&DOWN 하여 설정 하십시오.
- 날 끝이 정밀하게 연삭되어 있습니다. 파손을 피하기 위해 가능하면 비접촉 방식으로 측정 하십시오.
- 상기 절삭조건은 참고 수치이므로 실 가공시 가공 형상, 가공 목적, 적용 기계에 따라 조건변경 요망 합니다.
- 조건표가 기계의 최대 스피들 속도를 초과하거나 버 및 적열 현상이 발생할 때 스피들 속도와 이송 속도를 비례하여 조정 하십시오.
- 에어브로, 절삭유, 오일 미스트 쿨런트를 추천하며, 칩을 잘 제거하고 가공시 발열과 발화에 주의하십시오

- If the effective length is long, reduce the RPM and feed in the same proportion.
- When entering the tool to the workpiece, enter the tool from outside to the workpiece.
- If the diameter or effective length of your tool are not on the table, adjust it compared similarity value on the table.
- The edge of the flute precisely grinded. If you want to measure the tool, and to avoid damaging on the flutes, use non-contact measuring method.
- 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.
- Air blow or mist coolants are recommended and note for chip emission, heat, or ignition.