

H-PRO 02



R-PRO

H-PRO

A-PRO

X-PRO

SUS MILL

S-PRO

D-PRO

A-PLUS

AL-PRO

AL MILL

ABS

MICRO
GRAIN

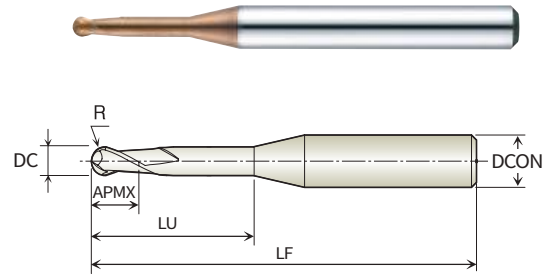
MULTI

Technical data

2HRB

2날 리브가공용 볼 엔드밀 2 Flutes Rib Ball End Mills

H

page
No.260

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	반경 RE	날장 APMX	유효장 LU	샙크경 DCON	전장 LF
2HRB-001-003-445	0.1	2	R0.05	0.1	0.3	4	45
2HRB-001-005-445	0.1	2	R0.05	0.1	0.3	4	45
2HRB-0015-005-445	0.15	2	R0.075	0.15	0.5	4	45
2HRB-0016-005-445	0.16	2	R0.08	0.16	0.5	4	45
2HRB-002-005-445	0.2	2	R0.1	0.2	0.5	4	45
2HRB-002-005-650	0.2	2	R0.1	0.2	0.5	6	50
2HRB-002-010-445	0.2	2	R0.1	0.2	1	4	45
2HRB-002-015-445	0.2	2	R0.1	0.2	1.5	4	45
2HRB-002-020-445	0.2	2	R0.1	0.2	2	4	45
2HRB-002-025-445	0.2	2	R0.1	0.2	2.5	4	45
2HRB-002-030-445	0.2	2	R0.1	0.2	3	4	45
2HRB-0025-008-445	0.25	2	R0.125	0.25	0.8	4	45
2HRB-003-005-445	0.3	2	R0.15	0.3	0.5	4	45
2HRB-003-010-445	0.3	2	R0.15	0.3	1	4	45
2HRB-003-015-445	0.3	2	R0.15	0.3	1.5	4	45
2HRB-003-020-445	0.3	2	R0.15	0.3	2	4	45
2HRB-003-025-445	0.3	2	R0.15	0.3	2.5	4	45
2HRB-003-030-445	0.3	2	R0.15	0.3	3	4	45
2HRB-003-035-445	0.3	2	R0.15	0.3	3.5	4	45
2HRB-003-040-445	0.3	2	R0.15	0.3	4	4	45
2HRB-003-050-445	0.3	2	R0.15	0.3	5	4	45
2HRB-004-010-445	0.4	2	R0.2	0.4	1	4	45
2HRB-004-010-650	0.4	2	R0.2	0.4	1	6	50
2HRB-004-015-445	0.4	2	R0.2	0.4	1.5	4	45
2HRB-004-020-445	0.4	2	R0.2	0.4	2	4	45

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF	R-PRO
2HRB-004-025-445	0.4	2	R0.2	0.4	2.5	4	45	H-PRO
2HRB-004-030-445	0.4	2	R0.2	0.4	3	4	45	
2HRB-004-035-445	0.4	2	R0.2	0.4	3.5	4	45	
2HRB-004-040-445	0.4	2	R0.2	0.4	4	4	45	
2HRB-004-045-445	0.4	2	R0.2	0.4	4.5	4	45	A-PRO
2HRB-004-050-445	0.4	2	R0.2	0.4	5	4	45	
2HRB-004-060-445	0.4	2	R0.2	0.4	6	4	45	X-PRO
2HRB-004-080-445	0.4	2	R0.2	0.4	8	4	45	
2HRB-004-100-445	0.4	2	R0.2	0.4	10	4	45	
2HRB-005-010-445	0.5	2	R0.25	0.5	1	4	45	SUS MILL
2HRB-005-015-445	0.5	2	R0.25	0.5	1.5	4	45	
2HRB-005-015-650	0.5	2	R0.25	0.5	1.5	6	50	S-PRO
2HRB-005-020-445	0.5	2	R0.25	0.5	2	4	45	
2HRB-005-025-445	0.5	2	R0.25	0.5	2.5	4	45	
2HRB-005-030-445	0.5	2	R0.25	0.5	3	4	45	D-PRO
2HRB-005-035-445	0.5	2	R0.25	0.5	3.5	4	45	
2HRB-005-040-445	0.5	2	R0.25	0.5	4	4	45	
2HRB-005-045-445	0.5	2	R0.25	0.5	4.5	4	45	
2HRB-005-050-445	0.5	2	R0.25	0.5	5	4	45	A-PLUS
2HRB-005-060-445	0.5	2	R0.25	0.5	6	4	45	
2HRB-005-080-445	0.5	2	R0.25	0.5	8	4	45	
2HRB-005-100-445	0.5	2	R0.25	0.5	10	4	45	AL-PRO
2HRB-005-120-445	0.5	2	R0.25	0.5	12	4	45	
2HRB-005-140-445	0.5	2	R0.25	0.5	14	4	45	AL MILL
2HRB-006-010-445	0.6	2	R0.3	0.6	1	4	45	
2HRB-006-015-650	0.6	2	R0.3	0.6	1.5	6	50	
2HRB-006-020-445	0.6	2	R0.3	0.6	2	4	45	ABS
2HRB-006-030-445	0.6	2	R0.3	0.6	3	4	45	
2HRB-006-040-445	0.6	2	R0.3	0.6	4	4	45	
2HRB-006-050-445	0.6	2	R0.3	0.6	5	4	45	MICRO GRAIN
2HRB-006-060-445	0.6	2	R0.3	0.6	6	4	45	
2HRB-006-080-445	0.6	2	R0.3	0.6	8	4	45	
2HRB-006-100-445	0.6	2	R0.3	0.6	10	4	45	MULTI
2HRB-006-120-445	0.6	2	R0.3	0.6	12	4	45	
2HRB-006-140-445	0.6	2	R0.3	0.6	14	4	45	
2HRB-006-160-445	0.6	2	R0.3	0.6	16	4	45	Technical data
2HRB-007-020-445	0.7	2	R0.35	0.7	2	4	45	
2HRB-007-040-445	0.7	2	R0.35	0.7	4	4	45	
2HRB-007-060-445	0.7	2	R0.35	0.7	6	4	45	

(Unit: mm)

	R-PRO	제품코드 Product Code	직경 DC	날수 ZEP	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF
		2HRB-007-080-445	0.7	2	R0.35	0.7	8	4	45
		2HRB-007-100-445	0.7	2	R0.35	0.7	10	4	45
		2HRB-007-120-445	0.7	2	R0.35	0.7	12	4	45
		2HRB-008-020-445	0.8	2	R0.4	0.8	2	4	45
		2HRB-008-020-650	0.8	2	R0.4	0.8	2	6	50
		2HRB-008-030-445	0.8	2	R0.4	0.8	3	4	45
		2HRB-008-040-445	0.8	2	R0.4	0.8	4	4	45
		2HRB-008-050-445	0.8	2	R0.4	0.8	5	4	45
		2HRB-008-060-445	0.8	2	R0.4	0.8	6	4	45
		2HRB-008-080-445	0.8	2	R0.4	0.8	8	4	45
		2HRB-008-100-445	0.8	2	R0.4	0.8	10	4	45
		2HRB-008-120-445	0.8	2	R0.4	0.8	12	4	45
		2HRB-008-140-445	0.8	2	R0.4	0.8	14	4	45
		2HRB-008-160-445	0.8	2	R0.4	0.8	16	4	45
		2HRB-009-040-445	0.9	2	R0.45	0.9	4	4	45
		2HRB-010-020-445	1	2	R0.5	1	2	4	45
		2HRB-010-025-650	1	2	R0.5	1	2.5	6	50
		2HRB-010-030-445	1	2	R0.5	1	3	4	45
		2HRB-010-040-445	1	2	R0.5	1	4	4	45
		2HRB-010-050-445	1	2	R0.5	1	5	4	45
		2HRB-010-060-445	1	2	R0.5	1	6	4	45
		2HRB-010-080-445	1	2	R0.5	1	8	4	45
		2HRB-010-100-445	1	2	R0.5	1	10	4	45
		2HRB-010-120-445	1	2	R0.5	1	12	4	45
		2HRB-010-140-450	1	2	R0.5	1	14	4	50
		2HRB-010-160-450	1	2	R0.5	1	16	4	50
		2HRB-010-180-450	1	2	R0.5	1	18	4	50
		2HRB-010-200-450	1	2	R0.5	1	20	4	50
		2HRB-010-220-460	1	2	R0.5	1	22	4	60
		2HRB-010-250-460	1	2	R0.5	1	25	4	60
		2HRB-010-300-470	1	2	R0.5	1	30	4	70
		2HRB-012-030-650	1.2	2	R0.6	1.2	3	6	50
		2HRB-012-040-445	1.2	2	R0.6	1.2	4	4	45
		2HRB-012-060-445	1.2	2	R0.6	1.2	6	4	45
		2HRB-012-080-445	1.2	2	R0.6	1.2	8	4	45
		2HRB-012-100-445	1.2	2	R0.6	1.2	10	4	45
		2HRB-012-120-445	1.2	2	R0.6	1.2	12	4	45
		2HRB-012-140-450	1.2	2	R0.6	1.2	14	4	50
		2HRB-012-160-450	1.2	2	R0.6	1.2	16	4	50

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF	R-PRO	
2HRB-012-200-450	1.2	2	R0.6	1.2	20	4	50		
2HRB-012-240-460	1.2	2	R0.6	1.2	24	4	60	H-PRO	
2HRB-014-060-445	1.4	2	R0.7	1.4	6	4	45		
2HRB-014-080-445	1.4	2	R0.7	1.4	8	4	45		
2HRB-014-120-445	1.4	2	R0.7	1.4	12	4	45	A-PRO	
2HRB-014-160-450	1.4	2	R0.7	1.4	16	4	50		
2HRB-015-030-445	1.5	2	R0.75	1.5	3	4	45		
2HRB-015-040-445	1.5	2	R0.75	1.5	4	4	45	X-PRO	
2HRB-015-040-650	1.5	2	R0.75	1.5	4	6	50		
2HRB-015-060-445	1.5	2	R0.75	1.5	6	4	45		
2HRB-015-080-445	1.5	2	R0.75	1.5	8	4	45	SUS MILL	
2HRB-015-100-445	1.5	2	R0.75	1.5	10	4	45		
2HRB-015-120-445	1.5	2	R0.75	1.5	12	4	45		
2HRB-015-140-450	1.5	2	R0.75	1.5	14	4	50	S-PRO	
2HRB-015-160-450	1.5	2	R0.75	1.5	16	4	50		
2HRB-015-180-450	1.5	2	R0.75	1.5	18	4	50		
2HRB-015-200-450	1.5	2	R0.75	1.5	20	4	50	D-PRO	
2HRB-015-220-460	1.5	2	R0.75	1.5	22	4	60		
2HRB-015-250-460	1.5	2	R0.75	1.5	25	4	60		
2HRB-015-300-470	1.5	2	R0.75	1.5	30	4	70	A-PLUS	
2HRB-015-350-470	1.5	2	R0.75	1.5	35	4	70		
2HRB-015-400-480	1.5	2	R0.75	1.5	40	4	80		
2HRB-016-060-445	1.6	2	R0.8	1.6	6	4	45	AL-PRO	
2HRB-016-080-445	1.6	2	R0.8	1.6	8	4	45		
2HRB-016-120-445	1.6	2	R0.8	1.6	12	4	45		
2HRB-016-160-450	1.6	2	R0.8	1.6	16	4	50	AL MILL	
2HRB-016-200-450	1.6	2	R0.8	1.6	20	4	50		
2HRB-018-060-445	1.8	2	R0.9	1.8	6	4	45		
2HRB-018-080-445	1.8	2	R0.9	1.8	8	4	45	ABS	
2HRB-018-120-445	1.8	2	R0.9	1.8	12	4	45		
2HRB-018-160-450	1.8	2	R0.9	1.8	16	4	50		
2HRB-018-200-450	1.8	2	R0.9	1.8	20	4	50	MICRO GRAIN	
2HRB-020-040-445	2	2	R1.0	2	4	4	45		
2HRB-020-060-445	2	2	R1.0	2	6	4	45		
2HRB-020-060-650	2	2	R1.0	2	6	6	50	MULTI	
2HRB-020-080-445	2	2	R1.0	2	8	4	45		
2HRB-020-100-445	2	2	R1.0	2	10	4	45		
2HRB-020-120-445	2	2	R1.0	2	12	4	45	Technical data	
2HRB-020-140-450	2	2	R1.0	2	14	4	50		

(Unit: mm)

	R-PRO	제품코드 Product Code	직경 DC	날수 ZEP	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF
		2HRB-020-160-450	2	2	R1.0	2	16	4	50
		2HRB-020-180-450	2	2	R1.0	2	18	4	50
		2HRB-020-200-450	2	2	R1.0	2	20	4	50
		2HRB-020-220-460	2	2	R1.0	2	22	4	60
		2HRB-020-250-460	2	2	R1.0	2	25	4	60
		2HRB-020-300-470	2	2	R1.0	2	30	4	70
		2HRB-020-350-470	2	2	R1.0	2	35	4	70
		2HRB-020-400-480	2	2	R1.0	2	40	4	80
		2HRB-020-450-480	2	2	R1.0	2	45	4	80
		2HRB-020-500-490	2	2	R1.0	2	50	4	90
		2HRB-025-060-650	2.5	2	R1.25	2.5	6	6	50
		2HRB-025-080-445	2.5	2	R1.25	2.5	8	4	45
		2HRB-025-100-445	2.5	2	R1.25	2.5	10	4	45
		2HRB-025-120-445	2.5	2	R1.25	2.5	12	4	45
		2HRB-025-160-450	2.5	2	R1.25	2.5	16	4	50
		2HRB-025-200-450	2.5	2	R1.25	2.5	20	4	50
		2HRB-025-250-460	2.5	2	R1.25	2.5	25	4	60
		2HRB-025-300-470	2.5	2	R1.25	2.5	30	4	70
		2HRB-025-350-470	2.5	2	R1.25	2.5	35	4	70
		2HRB-025-400-480	2.5	2	R1.25	2.5	40	4	80
		2HRB-030-060-360	3	2	R1.5	3	6	3	60
		2HRB-030-060-650	3	2	R1.5	3	6	6	50
		2HRB-030-080-650	3	2	R1.5	3	8	6	50
		2HRB-030-100-650	3	2	R1.5	3	10	6	50
		2HRB-030-120-650	3	2	R1.5	3	12	6	50
		2HRB-030-140-660	3	2	R1.5	3	14	6	60
		2HRB-030-160-660	3	2	R1.5	3	16	6	60
		2HRB-030-180-660	3	2	R1.5	3	18	6	60
		2HRB-030-200-660	3	2	R1.5	3	20	6	60
		2HRB-030-250-665	3	2	R1.5	3	25	6	65
		2HRB-030-300-670	3	2	R1.5	3	30	6	70
		2HRB-030-350-680	3	2	R1.5	3	35	6	80
		2HRB-030-400-680	3	2	R1.5	3	40	6	80
		2HRB-030-450-690	3	2	R1.5	3	45	6	90
		2HRB-030-500-6A0	3	2	R1.5	3	50	6	100
		2HRB-030-600-6B0	3	2	R1.5	3	60	6	110
		2HRB-030-650-6B0	3	2	R1.5	3	65	6	110
		2HRB-030-700-6B0	3	2	R1.5	3	70	6	110
		2HRB-040-080-470	4	2	R2.0	4	8	4	70

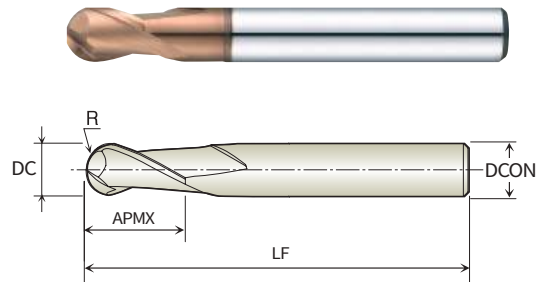
(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF	R-PRO	
2HRB-040-080-650	4	2	R2.0	4	8	6	50		
2HRB-040-100-650	4	2	R2.0	4	10	6	50	H-PRO	
2HRB-040-120-650	4	2	R2.0	4	12	6	50		
2HRB-040-140-660	4	2	R2.0	4	14	6	60		
2HRB-040-160-660	4	2	R2.0	4	16	6	60	A-PRO	
2HRB-040-200-660	4	2	R2.0	4	20	6	60		
2HRB-040-250-665	4	2	R2.0	4	25	6	65		
2HRB-040-300-670	4	2	R2.0	4	30	6	70	X-PRO	
2HRB-040-350-680	4	2	R2.0	4	35	6	80		
2HRB-040-400-680	4	2	R2.0	4	40	6	80		
2HRB-040-450-690	4	2	R2.0	4	45	6	90	SUS MILL	
2HRB-040-500-6A0	4	2	R2.0	4	50	6	100		
2HRB-040-550-6B0	4	2	R2.0	4	55	6	110		
2HRB-040-600-6B0	4	2	R2.0	4	60	6	110	S-PRO	
2HRB-040-650-6B0	4	2	R2.0	4	65	6	110		
2HRB-040-700-6B0	4	2	R2.0	4	70	6	110		
2HRB-050-120-650	5	2	R2.5	5	12	6	50	D-PRO	
2HRB-050-160-660	5	2	R2.5	5	16	6	60		
2HRB-050-200-660	5	2	R2.5	5	20	6	60		
2HRB-050-250-665	5	2	R2.5	5	25	6	65	A-PLUS	
2HRB-050-300-670	5	2	R2.5	5	30	6	70		
2HRB-050-400-680	5	2	R2.5	5	40	6	80		
2HRB-050-450-690	5	2	R2.5	5	45	6	90	AL-PRO	
2HRB-050-500-6A0	5	2	R2.5	5	50	6	100		
2HRB-050-600-6B0	5	2	R2.5	5	60	6	110		
2HRB-050-650-6B0	5	2	R2.5	5	65	6	110	AL MILL	
2HRB-050-700-6B0	5	2	R2.5	5	70	6	110		
2HRB-060-150-660	6	2	R3.0	7	15	6	60		
2HRB-060-300-670	6	2	R3.0	6	30	6	70	ABS	
2HRB-060-300-690	6	2	R3.0	6	30	6	90		
2HRB-080-200-860	8	2	R4.0	10	20	8	60		
2HRB-080-300-880	8	2	R4.0	8	30	8	80	MICRO GRAIN	
2HRB-100-250-A70	10	2	R5.0	12	25	10	70		
2HRB-100-350-AA0	10	2	R5.0	10	35	10	100		
2HRB-120-300-C80	12	2	R6.0	14	30	12	80	MULTI	
2HRB-120-400-CB0	12	2	R6.0	12	40	12	110	Technical data	

2HSB

2날 슷 볼 엔드밀 2 Flutes Short Ball End Mills

H

page
No.261

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEP	반경 RE	날장 APMX	생크경 DCON	전장 LF
2HSB-001-001-440	0.1	2	R0.05	0.1	4	40
2HSB-002-002-440	0.2	2	R0.1	0.2	4	40
2HSB-002-003-440	0.2	2	R0.1	0.3	4	40
2HSB-003-003-440	0.3	2	R0.15	0.3	4	40
2HSB-004-004-440	0.4	2	R0.2	0.4	4	40
2HSB-004-006-440	0.4	2	R0.2	0.6	4	40
2HSB-005-005-440	0.5	2	R0.25	0.5	4	40
2HSB-006-006-440	0.6	2	R0.3	0.6	4	40
2HSB-007-007-440	0.7	2	R0.35	0.7	4	40
2HSB-008-008-440	0.8	2	R0.4	0.8	4	40
2HSB-009-009-440	0.9	2	R0.45	0.9	4	40
2HSB-010-010-440	1	2	R0.5	1	4	40
2HSB-010-010-640	1	2	R0.5	1	6	40
2HSB-010-015-440	1	2	R0.5	1.5	4	40
2HSB-010-015-640	1	2	R0.5	1.5	6	40
2HSB-015-015-440	1.5	2	R0.75	1.5	4	40
2HSB-015-015-640	1.5	2	R0.75	1.5	6	40
2HSB-015-023-440	1.5	2	R0.75	2.3	4	40
2HSB-015-023-640	1.5	2	R0.75	2.3	6	40
2HSB-020-020-445	2	2	R1.0	2	4	45
2HSB-020-020-645	2	2	R1.0	2	6	45
2HSB-020-030-445	2	2	R1.0	3	4	45
2HSB-020-030-645	2	2	R1.0	3	6	45
2HSB-030-030-445	3	2	R1.5	3	4	45
2HSB-030-030-645	3	2	R1.5	3	6	45

(Unit: mm)

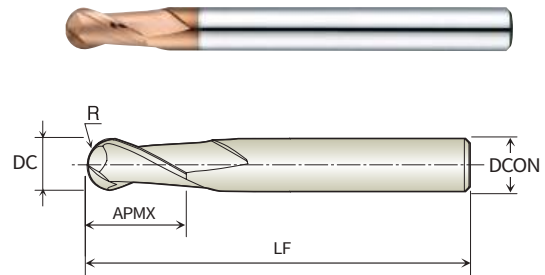
제품코드 Product Code	직경 DC	날수 ZEP	반경 RE	날장 APMX	생크경 DCON	전장 LF
2HSB-030-045-445	3	2	R1.5	4.5	4	45
2HSB-030-045-645	3	2	R1.5	4.5	6	45
2HSB-040-040-445	4	2	R2.0	4	4	45
2HSB-040-040-645	4	2	R2.0	4	6	45
2HSB-040-060-445	4	2	R2.0	6	4	45
2HSB-040-060-645	4	2	R2.0	6	6	45
2HSB-050-050-650	5	2	R2.5	5	6	50
2HSB-050-075-650	5	2	R2.5	7.5	6	50
2HSB-060-060-650	6	2	R3.0	6	6	50
2HSB-060-080-660	6	2	R3.0	8	6	60
2HSB-080-080-850	8	2	R4.0	8	8	50
2HSB-080-110-860	8	2	R4.0	11	8	60
2HSB-100-100-A60	10	2	R5.0	10	10	60
2HSB-100-130-A60	10	2	R5.0	13	10	60
2HSB-120-120-C60	12	2	R6.0	12	12	60
2HSB-120-150-C60	12	2	R6.0	15	12	60

R-PRO	
H-PRO	
A-PRO	
X-PRO	
SUS MILL	
S-PRO	
D-PRO	
A-PLUS	
AL-PRO	
AL MILL	
ABS	
MICRO GRAIN	
MULTI	
Technical data	

2HPB

2날 볼 엔드밀 2 Flutes Ball End Mills

H

page
No.262

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEP	반경 RE	날장 APMX	샙크경 DCON	전장 LF
2HPB-001-002-445	0.1	2	R0.05	0.2	4	45
2HPB-0015-003-445	0.15	2	R0.075	0.3	4	45
2HPB-002-004-445	0.2	2	R0.1	0.4	4	45
2HPB-003-006-445	0.3	2	R0.15	0.6	4	45
2HPB-004-008-445	0.4	2	R0.2	0.8	4	45
2HPB-004-008-645	0.4	2	R0.2	0.8	6	45
2HPB-005-010-445	0.5	2	R0.25	1	4	45
2HPB-005-010-645	0.5	2	R0.25	1	6	45
2HPB-006-012-445	0.6	2	R0.3	1.2	4	45
2HPB-006-012-645	0.6	2	R0.3	1.2	6	45
2HPB-007-015-445	0.7	2	R0.35	1.5	4	45
2HPB-008-015-445	0.8	2	R0.4	1.5	4	45
2HPB-008-015-645	0.8	2	R0.4	1.5	6	45
2HPB-010-020-350	1	2	R0.5	2	3	50
2HPB-010-020-450	1	2	R0.5	2	4	50
2HPB-010-020-650	1	2	R0.5	2	6	50
2HPB-011-024-450	1.1	2	R0.55	2.4	4	50
2HPB-012-025-350	1.2	2	R0.6	2.5	3	50
2HPB-012-025-450	1.2	2	R0.6	2.5	4	50
2HPB-012-025-650	1.2	2	R0.6	2.5	6	50
2HPB-013-032-450	1.3	2	R0.65	3.2	4	50
2HPB-014-035-450	1.4	2	R0.7	3.5	4	50
2HPB-015-040-350	1.5	2	R0.75	4	3	50
2HPB-015-040-450	1.5	2	R0.75	4	4	50
2HPB-015-040-650	1.5	2	R0.75	4	6	50

(Unit: mm)

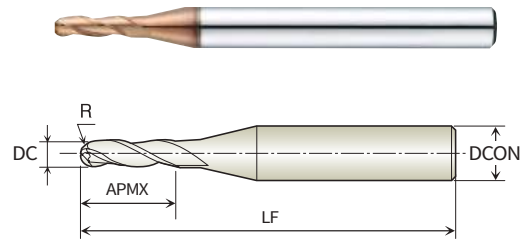
제품코드 Product Code	직경 DC	날수 ZEP	반경 RE	날장 APMX	생크경 DCON	전장 LF	R-PRO	
2HPB-015-040-670	1.5	2	R0.75	4	6	70		
2HPB-015-040-6A0	1.5	2	R0.75	4	6	100	H-PRO	
2HPB-016-040-450	1.6	2	R0.8	4	4	50		
2HPB-017-042-450	1.7	2	R0.85	4.2	4	50		
2HPB-018-045-450	1.8	2	R0.9	4.5	4	50	A-PRO	
2HPB-019-047-450	1.9	2	R0.95	4.7	4	50		
2HPB-020-050-350	2	2	R1.0	5	3	50		
2HPB-020-050-450	2	2	R1.0	5	4	50	X-PRO	
2HPB-020-050-660	2	2	R1.0	5	6	60		
2HPB-020-050-680	2	2	R1.0	5	6	80		
2HPB-020-050-6A0	2	2	R1.0	5	6	100	SUS MILL	
2HPB-022-055-450	2.2	2	R1.1	5.5	4	50		
2HPB-024-060-450	2.4	2	R1.2	6	4	50	S-PRO	
2HPB-025-060-350	2.5	2	R1.25	6	3	50		
2HPB-025-060-450	2.5	2	R1.25	6	4	50		
2HPB-025-060-660	2.5	2	R1.25	6	6	60		
2HPB-025-060-680	2.5	2	R1.25	6	6	80	D-PRO	
2HPB-025-060-6A0	2.5	2	R1.25	6	6	100		
2HPB-026-060-450	2.6	2	R1.3	6	4	50		
2HPB-028-070-450	2.8	2	R1.4	7	4	50	A-PLUS	
2HPB-030-080-360	3	2	R1.5	8	3	60		
2HPB-030-080-460	3	2	R1.5	8	4	60		
2HPB-030-080-660	3	2	R1.5	8	6	60	AL-PRO	
2HPB-030-080-680	3	2	R1.5	8	6	80		
2HPB-030-080-6A0	3	2	R1.5	8	6	100		
2HPB-032-080-460	3.2	2	R1.6	8	4	60	AL MILL	
2HPB-034-080-460	2.4	2	R1.7	8	4	60		
2HPB-035-080-660	3.5	2	R1.75	8	6	60		
2HPB-036-080-460	3.6	2	R1.8	8	4	60	ABS	
2HPB-038-080-460	3.8	2	R1.9	8	4	60		
2HPB-040-080-460	4	2	R2.0	8	4	60		
2HPB-040-080-480	4	2	R2.0	8	4	80	MICRO GRAIN	
2HPB-040-080-670	4	2	R2.0	8	6	70		
2HPB-040-080-690	4	2	R2.0	8	6	90		
2HPB-040-080-6C0	4	2	R2.0	8	6	120	MULTI	
2HPB-042-100-670	4.2	2	R2.1	10	6	70		
2HPB-044-100-670	4.4	2	R2.2	10	6	70		
2HPB-045-100-670	4.5	2	R2.25	10	6	70	Technical data	
2HPB-046-100-670	4.6	2	R2.3	10	6	70		

(Unit: mm)

	R-PRO	제품코드 Product Code	직경 DC	날수 ZEP	반경 RE	날장 APMX	생크경 DCON	전장 LF
		2HPB-047-100-670	4.7	2	R2.35	10	6	70
		2HPB-048-100-670	4.8	2	R2.4	10	6	70
		2HPB-050-100-680	5	2	R2.5	10	6	80
		2HPB-052-120-680	5.2	2	R2.6	12	6	80
		2HPB-054-120-680	5.4	2	R2.7	12	6	80
		2HPB-055-120-680	5.5	2	R2.75	12	6	80
		2HPB-056-120-680	5.6	2	R2.8	12	6	80
		2HPB-058-120-680	5.8	2	R2.9	12	6	80
		2HPB-060-120-675	6	2	R3.0	12	6	75
		2HPB-060-120-680	6	2	R3.0	12	6	80
		2HPB-060-120-690	6	2	R3.0	12	6	90
		2HPB-060-120-6C0	6	2	R3.0	12	6	120
		2HPB-060-120-6F0	6	2	R3.0	12	6	150
		2HPB-070-140-8A0	7	2	R3.5	14	8	100
		2HPB-080-140-875	8	2	R4.0	14	8	75
		2HPB-080-140-8A0	8	2	R4.0	14	8	100
		2HPB-080-140-8D0	8	2	R4.0	14	8	130
		2HPB-080-140-8F0	8	2	R4.0	14	8	150
		2HPB-090-180-AA0	9	2	R4.5	18	10	100
		2HPB-100-180-A75	10	2	R5.0	18	10	75
		2HPB-100-180-AA0	10	2	R5.0	18	10	100
		2HPB-100-180-AD0	10	2	R5.0	18	10	130
		2HPB-100-180-AF0	10	2	R5.0	18	10	150
		2HPB-100-180-AI0	10	2	R5.0	18	10	180
		2HPB-110-220-CB0	11	2	R5.5	22	12	110
		2HPB-120-220-CB0	12	2	R6.0	22	12	110
		2HPB-120-220-CD0	12	2	R6.0	22	12	130
		2HPB-120-220-CF0	12	2	R6.0	22	12	150
		2HPB-120-220-CK0	12	2	R6.0	22	12	200
		2HPB-130-240-EB0	13	2	R6.5	24	14	110
		2HPB-140-240-EB0	14	2	R7.0	24	14	110
		2HPB-160-300-GB0	16	2	R8.0	30	16	110
		2HPB-160-300-GF0	16	2	R8.0	30	16	150
		2HPB-200-380-KB0	20	2	R10.0	38	20	110
		2HPB-200-380-KF0	20	2	R10.0	38	20	150
	Technical data							

3HPB

3날 볼 엔드밀 3 Flutes Ball End Mills



(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZFP	반경 RE	날장 APMX	생크경 DCON	전장 LF
3HPB-010-020-650	1	3	R0.5	2	6	50
3HPB-020-050-660	2	3	R1.0	5	6	60
3HPB-030-080-660	3	3	R1.5	8	6	60
3HPB-040-080-460	4	3	R2.0	8	4	60
3HPB-040-080-670	4	3	R2.0	8	6	70
3HPB-050-100-680	5	3	R2.5	10	6	80
3HPB-060-120-690	6	3	R3.0	12	6	90
3HPB-080-140-8A0	8	3	R4.0	14	8	100
3HPB-100-180-AA0	10	3	R5.0	18	10	100
3HPB-120-220-CB0	12	3	R6.0	22	12	110

4HPB

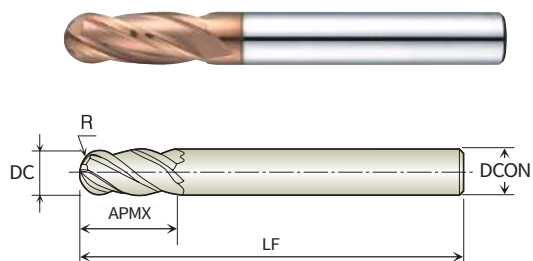
4날 볼 엔드밀 4 Flutes Ball End Mills

H

4

R

30°

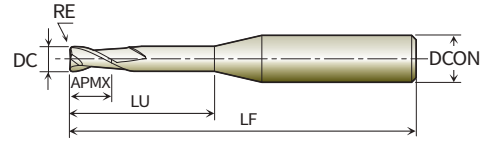
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No.264

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZFP	반경 RE	날장 APMX	샙크경 DCON	전장 LF
4HPB-010-020-650	1	4	R0.5	2	6	50
4HPB-015-040-650	1.5	4	R0.75	4	6	50
4HPB-020-050-660	2	4	R1.0	5	6	60
4HPB-030-080-660	3	4	R1.5	8	6	60
4HPB-040-080-460	4	4	R2.0	8	4	60
4HPB-040-080-670	4	4	R2.0	8	6	70
4HPB-050-100-680	5	4	R2.5	10	6	80
4HPB-060-120-690	6	4	R3.0	12	6	90
4HPB-080-140-8A0	8	4	R4.0	14	8	100
4HPB-100-180-AA0	10	4	R5.0	18	10	100
4HPB-120-220-CB0	12	4	R6.0	22	12	110
4HPB-160-300-GD0	16	4	R8.0	30	16	130
4HPB-200-380-KF0	20	4	R10.0	38	20	150

2HRR

2날 리브 코너 라디우스 엔드밀 2 Flutes Rib Corner Radius End Mills



(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEFP	반경 RE	날장 APMX	유효장 LU	샹크경 DCON	전장 LF
2HRR-002-R002-005-445	0.2	2	R0.02	0.3	0.5	4	45
2HRR-002-R002-010-445	0.2	2	R0.02	0.3	1	4	45
2HRR-002-R002-015-445	0.2	2	R0.02	0.3	1.5	4	45
2HRR-002-R005-010-445	0.2	2	R0.05	0.3	1	4	45
2HRR-002-R005-015-445	0.2	2	R0.05	0.3	1.5	4	45
2HRR-003-R005-010-445	0.3	2	R0.05	0.45	1	4	45
2HRR-003-R005-020-445	0.3	2	R0.05	0.45	2	4	45
2HRR-003-R005-030-445	0.3	2	R0.05	0.45	3	4	45
2HRR-004-R005-010-445	0.4	2	R0.05	0.6	1	4	45
2HRR-004-R005-020-445	0.4	2	R0.05	0.6	2	4	45
2HRR-004-R005-030-445	0.4	2	R0.05	0.6	3	4	45
2HRR-004-R005-040-445	0.4	2	R0.05	0.6	4	4	45
2HRR-004-R01-010-445	0.4	2	R0.1	0.6	1	4	45
2HRR-004-R01-015-445	0.4	2	R0.1	0.6	1.5	4	45
2HRR-004-R01-020-445	0.4	2	R0.1	0.6	2	4	45
2HRR-004-R01-030-445	0.4	2	R0.1	0.6	3	4	45
2HRR-004-R01-040-445	0.4	2	R0.1	0.6	4	4	45
2HRR-005-R002-010-445	0.5	2	R0.02	0.7	1	4	45
2HRR-005-R002-015-445	0.5	2	R0.02	0.7	1.5	4	45
2HRR-005-R002-020-445	0.5	2	R0.02	0.7	2	4	45
2HRR-005-R002-025-445	0.5	2	R0.02	0.7	2.5	4	45
2HRR-005-R002-030-445	0.5	2	R0.02	0.7	3	4	45
2HRR-005-R002-040-445	0.5	2	R0.02	0.7	4	4	45
2HRR-005-R002-050-445	0.5	2	R0.02	0.7	5	4	45
2HRR-005-R002-060-445	0.5	2	R0.02	0.7	6	4	45

(Unit: mm)

	R-PRO	제품코드 Product Code	직경 DC	날수 ZEFP	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF
		2HRR-005-R002-080-445	0.5	2	R0.02	0.7	8	4	45
		2HRR-005-R002-100-445	0.5	2	R0.02	0.7	10	4	45
		2HRR-005-R005-010-445	0.5	2	R0.05	0.7	1	4	45
		2HRR-005-R005-015-445	0.5	2	R0.05	0.7	1.5	4	45
		2HRR-005-R005-020-445	0.5	2	R0.05	0.7	2	4	45
		2HRR-005-R005-025-445	0.5	2	R0.05	0.7	2.5	4	45
		2HRR-005-R005-030-445	0.5	2	R0.05	0.7	3	4	45
		2HRR-005-R005-040-445	0.5	2	R0.05	0.7	4	4	45
		2HRR-005-R005-050-445	0.5	2	R0.05	0.7	5	4	45
		2HRR-005-R005-060-445	0.5	2	R0.05	0.7	6	4	45
		2HRR-005-R005-080-445	0.5	2	R0.05	0.7	8	4	45
		2HRR-005-R005-100-445	0.5	2	R0.05	0.7	10	4	45
		2HRR-005-R01-010-445	0.5	2	R0.1	0.7	1	4	45
		2HRR-005-R01-015-445	0.5	2	R0.1	0.7	1.5	4	45
		2HRR-005-R01-020-445	0.5	2	R0.1	0.7	2	4	45
		2HRR-005-R01-025-445	0.5	2	R0.1	0.7	2.5	4	45
		2HRR-005-R01-030-445	0.5	2	R0.1	0.7	3	4	45
		2HRR-005-R01-040-445	0.5	2	R0.1	0.7	4	4	45
		2HRR-005-R01-050-445	0.5	2	R0.1	0.7	5	4	45
		2HRR-005-R01-060-445	0.5	2	R0.1	0.7	6	4	45
		2HRR-005-R01-080-445	0.5	2	R0.1	0.7	8	4	45
		2HRR-005-R01-100-445	0.5	2	R0.1	0.7	10	4	45
		2HRR-006-R002-020-445	0.6	2	R0.02	0.9	2	4	45
		2HRR-006-R002-030-445	0.6	2	R0.02	0.9	3	4	45
		2HRR-006-R002-040-445	0.6	2	R0.02	0.9	4	4	45
		2HRR-006-R002-060-445	0.6	2	R0.02	0.9	6	4	45
		2HRR-006-R002-080-445	0.6	2	R0.02	0.9	8	4	45
		2HRR-006-R002-100-445	0.6	2	R0.02	0.9	10	4	45
		2HRR-006-R005-020-445	0.6	2	R0.05	0.9	2	4	45
		2HRR-006-R005-030-445	0.6	2	R0.05	0.9	3	4	45
		2HRR-006-R005-040-445	0.6	2	R0.05	0.9	4	4	45
		2HRR-006-R005-060-445	0.6	2	R0.05	0.9	6	4	45
		2HRR-006-R005-080-445	0.6	2	R0.05	0.9	8	4	45
		2HRR-006-R005-100-445	0.6	2	R0.05	0.9	10	4	45
		2HRR-006-R01-020-445	0.6	2	R0.1	0.9	2	4	45
		2HRR-006-R01-030-445	0.6	2	R0.1	0.9	3	4	45
		2HRR-006-R01-040-445	0.6	2	R0.1	0.9	4	4	45
		2HRR-006-R01-060-445	0.6	2	R0.1	0.9	6	4	45
		2HRR-006-R01-080-445	0.6	2	R0.1	0.9	8	4	45

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF	R-PRO	
2HRR-006-R01-100-445	0.6	2	R0.1	0.9	10	4	45		
2HRR-007-R01-020-445	0.7	2	R0.1	1	2	4	45	H-PRO	
2HRR-007-R01-040-445	0.7	2	R0.1	1	4	4	45		
2HRR-007-R01-060-445	0.7	2	R0.1	1	6	4	45		
2HRR-008-R002-020-445	0.8	2	R0.02	1.2	2	4	45	A-PRO	
2HRR-008-R002-040-445	0.8	2	R0.02	1.2	4	4	45		
2HRR-008-R002-060-445	0.8	2	R0.02	1.2	6	4	45		
2HRR-008-R002-080-445	0.8	2	R0.02	1.2	8	4	45	X-PRO	
2HRR-008-R002-100-445	0.8	2	R0.02	1.2	10	4	45		
2HRR-008-R005-020-445	0.8	2	R0.05	1.2	2	4	45		
2HRR-008-R005-040-445	0.8	2	R0.05	1.2	4	4	45	SUS MILL	
2HRR-008-R005-060-445	0.8	2	R0.05	1.2	6	4	45		
2HRR-008-R005-080-445	0.8	2	R0.05	1.2	8	4	45		
2HRR-008-R005-100-445	0.8	2	R0.05	1.2	10	4	45	S-PRO	
2HRR-008-R01-020-445	0.8	2	R0.1	1.2	2	4	45		
2HRR-008-R01-040-445	0.8	2	R0.1	1.2	4	4	45		
2HRR-008-R01-060-445	0.8	2	R0.1	1.2	6	4	45	D-PRO	
2HRR-008-R01-080-445	0.8	2	R0.1	1.2	8	4	45		
2HRR-008-R01-100-445	0.8	2	R0.1	1.2	10	4	45		
2HRR-008-R02-020-445	0.8	2	R0.2	1.2	2	4	45	A-PLUS	
2HRR-008-R02-040-445	0.8	2	R0.2	1.2	4	4	45		
2HRR-008-R02-060-445	0.8	2	R0.2	1.2	6	4	45		
2HRR-008-R02-080-445	0.8	2	R0.2	1.2	8	4	45	AL-PRO	
2HRR-008-R02-100-445	0.8	2	R0.2	1.2	10	4	45		
2HRR-010-R005-040-445	1	2	R0.05	1.5	4	4	45		
2HRR-010-R005-060-445	1	2	R0.05	1.5	6	4	45	AL MILL	
2HRR-010-R005-080-445	1	2	R0.05	1.5	8	4	45		
2HRR-010-R005-100-445	1	2	R0.05	1.5	10	4	45		
2HRR-010-R005-120-445	1	2	R0.05	1.5	12	4	45	ABS	
2HRR-010-R005-160-450	1	2	R0.05	1.5	16	4	50		
2HRR-010-R005-200-450	1	2	R0.05	1.5	20	4	50		
2HRR-010-R005-220-460	1	2	R0.05	1.5	22	4	60	MICRO GRAIN	
2HRR-010-R005-250-460	1	2	R0.05	1.5	25	4	60		
2HRR-010-R01-040-445	1	2	R0.1	1.5	4	4	45		
2HRR-010-R01-060-445	1	2	R0.1	1.5	6	4	45	MULTI	
2HRR-010-R01-080-445	1	2	R0.1	1.5	8	4	45		
2HRR-010-R01-100-445	1	2	R0.1	1.5	10	4	45		
2HRR-010-R01-120-445	1	2	R0.1	1.5	12	4	45	Technical data	
2HRR-010-R01-160-450	1	2	R0.1	1.5	16	4	50		

(Unit: mm)

	R-PRO	제품코드 Product Code	직경 DC	날수 ZEFP	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF
	H-PRO	2HRR-010-R01-200-450	1	2	R0.1	1.5	20	4	50
		2HRR-010-R01-220-460	1	2	R0.1	1.5	22	4	60
		2HRR-010-R01-250-460	1	2	R0.1	1.5	25	4	60
		2HRR-010-R02-040-445	1	2	R0.2	1.5	4	4	45
	A-PRO	2HRR-010-R02-060-445	1	2	R0.2	1.5	6	4	45
		2HRR-010-R02-080-445	1	2	R0.2	1.5	8	4	45
		2HRR-010-R02-100-445	1	2	R0.2	1.5	10	4	45
	X-PRO	2HRR-010-R02-120-445	1	2	R0.2	1.5	12	4	45
		2HRR-010-R02-160-450	1	2	R0.2	1.5	16	4	50
		2HRR-010-R02-200-450	1	2	R0.2	1.5	20	4	50
	SUS MILL	2HRR-010-R02-220-460	1	2	R0.2	1.5	22	4	60
		2HRR-010-R02-250-460	1	2	R0.2	1.5	25	4	60
		2HRR-010-R025-040-665	1	2	R0.25	1.5	4	4	65
	S-PRO	2HRR-010-R025-080-665	1	2	R0.25	1.5	8	4	65
		2HRR-010-R03-040-445	1	2	R0.3	1.5	4	4	45
		2HRR-010-R03-060-445	1	2	R0.3	1.5	6	4	45
	D-PRO	2HRR-010-R03-080-445	1	2	R0.3	1.5	8	4	45
		2HRR-010-R03-100-445	1	2	R0.3	1.5	10	4	45
		2HRR-010-R03-120-445	1	2	R0.3	1.5	12	4	45
	A-PLUS	2HRR-010-R03-160-450	1	2	R0.3	1.5	16	4	50
		2HRR-010-R03-200-450	1	2	R0.3	1.5	20	4	50
		2HRR-010-R03-220-460	1	2	R0.3	1.5	22	4	60
	AL-PRO	2HRR-010-R03-250-460	1	2	R0.3	1.5	25	4	60
		2HRR-012-R01-040-445	1.2	2	R0.1	1.8	4	4	45
		2HRR-012-R01-060-445	1.2	2	R0.1	1.8	6	4	45
	AL MILL	2HRR-012-R01-080-445	1.2	2	R0.1	1.8	8	4	45
		2HRR-012-R01-100-445	1.2	2	R0.1	1.8	10	4	45
		2HRR-012-R01-120-445	1.2	2	R0.1	1.8	12	4	45
	ABS	2HRR-012-R01-160-450	1.2	2	R0.1	1.8	16	4	50
		2HRR-012-R01-200-450	1.2	2	R0.1	1.8	20	4	50
		2HRR-012-R02-040-445	1.2	2	R0.2	1.8	4	4	45
	MICRO GRAIN	2HRR-012-R02-060-445	1.2	2	R0.2	1.8	6	4	45
		2HRR-012-R02-080-445	1.2	2	R0.2	1.8	8	4	45
		2HRR-012-R02-100-445	1.2	2	R0.2	1.8	10	4	45
	MULTI	2HRR-012-R02-120-445	1.2	2	R0.2	1.8	12	4	45
		2HRR-012-R02-160-450	1.2	2	R0.2	1.8	16	4	50
		2HRR-012-R02-200-450	1.2	2	R0.2	1.8	20	4	50
Technical data		2HRR-012-R03-040-445	1.2	2	R0.3	1.8	4	4	45
		2HRR-012-R03-060-445	1.2	2	R0.3	1.8	6	4	45

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF	R-PRO	
2HRR-012-R03-080-445	1.2	2	R0.3	1.8	8	4	45		
2HRR-012-R03-100-445	1.2	2	R0.3	1.8	10	4	45	H-PRO	
2HRR-012-R03-120-445	1.2	2	R0.3	1.8	12	4	45		
2HRR-012-R03-160-450	1.2	2	R0.3	1.8	16	4	50		
2HRR-012-R03-200-450	1.2	2	R0.3	1.8	20	4	50	A-PRO	
2HRR-015-R01-040-445	1.5	2	R0.1	2.3	4	4	45		
2HRR-015-R01-060-445	1.5	2	R0.1	2.3	6	4	45		
2HRR-015-R01-080-445	1.5	2	R0.1	2.3	8	4	45	X-PRO	
2HRR-015-R01-100-445	1.5	2	R0.1	2.3	10	4	45		
2HRR-015-R01-120-445	1.5	2	R0.1	2.3	12	4	45		
2HRR-015-R01-160-450	1.5	2	R0.1	2.3	16	4	50	SUS MILL	
2HRR-015-R01-200-450	1.5	2	R0.1	2.3	20	4	50		
2HRR-015-R01-220-460	1.5	2	R0.1	2.3	22	4	60		
2HRR-015-R01-250-460	1.5	2	R0.1	2.3	25	4	60	S-PRO	
2HRR-015-R02-040-445	1.5	2	R0.2	2.3	4	4	45		
2HRR-015-R02-060-445	1.5	2	R0.2	2.3	6	4	45		
2HRR-015-R02-080-445	1.5	2	R0.2	2.3	8	4	45	D-PRO	
2HRR-015-R02-100-445	1.5	2	R0.2	2.3	10	4	45		
2HRR-015-R02-120-445	1.5	2	R0.2	2.3	12	4	45		
2HRR-015-R02-160-450	1.5	2	R0.2	2.3	16	4	50	A-PLUS	
2HRR-015-R02-200-450	1.5	2	R0.2	2.3	20	4	50		
2HRR-015-R02-220-460	1.5	2	R0.2	2.3	22	4	60		
2HRR-015-R02-250-460	1.5	2	R0.2	2.3	25	4	60	AL-PRO	
2HRR-015-R03-040-445	1.5	2	R0.3	2.3	4	4	45		
2HRR-015-R03-060-445	1.5	2	R0.3	2.3	6	4	45		
2HRR-015-R03-060-670	1.5	2	R0.3	2.3	6	6	70	AL MILL	
2HRR-015-R03-080-445	1.5	2	R0.3	2.3	8	4	45		
2HRR-015-R03-080-670	1.5	2	R0.3	2.3	8	6	70		
2HRR-015-R03-100-445	1.5	2	R0.3	2.3	10	4	45	ABS	
2HRR-015-R03-100-670	1.5	2	R0.3	2.3	10	6	70		
2HRR-015-R03-120-445	1.5	2	R0.3	2.3	12	4	45		
2HRR-015-R03-160-450	1.5	2	R0.3	2.3	16	4	50	MICRO GRAIN	
2HRR-015-R03-200-450	1.5	2	R0.3	2.3	20	4	50		
2HRR-015-R03-220-460	1.5	2	R0.3	2.3	22	4	60		
2HRR-015-R03-250-460	1.5	2	R0.3	2.3	25	4	60	MULTI	
2HRR-015-R05-040-445	1.5	2	R0.5	2.3	4	4	45		
2HRR-015-R05-060-445	1.5	2	R0.5	2.3	6	4	45		
2HRR-015-R05-080-445	1.5	2	R0.5	2.3	8	4	45	Technical data	
2HRR-015-R05-100-445	1.5	2	R0.5	2.3	10	4	45		

(Unit: mm)

	R-PRO	제품코드 Product Code	직경 DC	날수 ZEFP	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF
		2HRR-015-R05-120-445	1.5	2	R0.5	2.3	12	4	45
		2HRR-015-R05-160-450	1.5	2	R0.5	2.3	16	4	50
		2HRR-015-R05-200-450	1.5	2	R0.5	2.3	20	4	50
		2HRR-015-R05-220-460	1.5	2	R0.5	2.3	22	4	60
		2HRR-015-R05-250-460	1.5	2	R0.5	2.3	25	4	60
		2HRR-020-R01-040-445	2	2	R0.1	3	4	4	45
		2HRR-020-R01-060-445	2	2	R0.1	3	6	4	45
		2HRR-020-R01-080-445	2	2	R0.1	3	8	4	45
		2HRR-020-R01-100-445	2	2	R0.1	3	10	4	45
		2HRR-020-R01-120-445	2	2	R0.1	3	12	4	45
		2HRR-020-R01-160-450	2	2	R0.1	3	16	4	50
		2HRR-020-R01-200-450	2	2	R0.1	3	20	4	50
		2HRR-020-R01-250-460	2	2	R0.1	3	25	4	60
		2HRR-020-R01-300-470	2	2	R0.1	3	30	4	70
		2HRR-020-R02-040-445	2	2	R0.2	3	4	4	45
		2HRR-020-R02-060-445	2	2	R0.2	3	6	4	45
		2HRR-020-R02-080-445	2	2	R0.2	3	8	4	45
		2HRR-020-R02-100-445	2	2	R0.2	3	10	4	45
		2HRR-020-R02-120-445	2	2	R0.2	3	12	4	45
		2HRR-020-R02-160-450	2	2	R0.2	3	16	4	50
		2HRR-020-R02-200-450	2	2	R0.2	3	20	4	50
		2HRR-020-R02-250-460	2	2	R0.2	3	25	4	60
		2HRR-020-R02-300-470	2	2	R0.2	3	30	4	70
		2HRR-020-R03-040-445	2	2	R0.3	3	4	4	45
		2HRR-020-R03-060-445	2	2	R0.3	3	6	4	45
		2HRR-020-R03-080-445	2	2	R0.3	3	8	4	45
		2HRR-020-R03-100-445	2	2	R0.3	3	10	4	45
		2HRR-020-R03-120-445	2	2	R0.3	3	12	4	45
		2HRR-020-R03-160-450	2	2	R0.3	3	16	4	50
		2HRR-020-R03-200-450	2	2	R0.3	3	20	4	50
		2HRR-020-R03-250-460	2	2	R0.3	3	25	4	60
		2HRR-020-R03-300-470	2	2	R0.3	3	30	4	70
		2HRR-020-R05-040-445	2	2	R0.5	3	4	4	45
		2HRR-020-R05-060-445	2	2	R0.5	3	6	4	45
		2HRR-020-R05-060-670	2	2	R0.5	3	6	6	70
		2HRR-020-R05-080-445	2	2	R0.5	3	8	4	45
		2HRR-020-R05-100-445	2	2	R0.5	3	10	4	45
		2HRR-020-R05-100-670	2	2	R0.5	3	10	6	70
		2HRR-020-R05-120-445	2	2	R0.5	3	12	4	45

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF	R-PRO
2HRR-020-R05-120-670	2	2	R0.5	3	12	6	70	H-PRO
2HRR-020-R05-160-450	2	2	R0.5	3	16	4	50	
2HRR-020-R05-160-670	2	2	R0.5	3	16	6	70	
2HRR-020-R05-180-450	2	2	R0.5	3	18	4	50	
2HRR-020-R05-200-450	2	2	R0.5	3	20	4	50	
2HRR-020-R05-250-460	2	2	R0.5	3	25	4	60	A-PRO
2HRR-020-R05-300-470	2	2	R0.5	3	30	4	70	X-PRO
2HRR-025-R01-100-445	2.5	2	R0.1	3.8	10	4	45	
2HRR-025-R01-160-450	2.5	2	R0.1	3.8	16	4	50	
2HRR-025-R01-200-450	2.5	2	R0.1	3.8	20	4	50	
2HRR-025-R01-250-460	2.5	2	R0.1	3.8	25	4	60	
2HRR-025-R01-300-470	2.5	2	R0.1	3.8	30	4	70	SUS MILL
2HRR-025-R02-100-445	2.5	2	R0.2	3.8	10	4	45	S-PRO
2HRR-025-R02-160-450	2.5	2	R0.2	3.8	16	4	50	
2HRR-025-R02-200-450	2.5	2	R0.2	3.8	20	4	50	
2HRR-025-R02-250-460	2.5	2	R0.2	3.8	25	4	60	
2HRR-025-R02-300-470	2.5	2	R0.2	3.8	30	4	70	
2HRR-025-R03-100-445	2.5	2	R0.3	3.8	10	4	45	D-PRO
2HRR-025-R03-160-450	2.5	2	R0.3	3.8	16	4	50	
2HRR-025-R03-200-450	2.5	2	R0.3	3.8	20	4	50	
2HRR-025-R03-250-460	2.5	2	R0.3	3.8	25	4	60	
2HRR-025-R03-300-470	2.5	2	R0.3	3.8	30	4	70	
2HRR-025-R05-100-445	2.5	2	R0.5	3.8	10	4	45	A-PLUS
2HRR-025-R05-140-450	2.5	2	R0.5	3.8	14	4	50	
2HRR-025-R05-160-450	2.5	2	R0.5	3.8	16	4	50	
2HRR-025-R05-180-450	2.5	2	R0.5	3.8	18	4	50	
2HRR-025-R05-200-450	2.5	2	R0.5	3.8	20	4	50	
2HRR-025-R05-250-460	2.5	2	R0.5	3.8	25	4	60	AL MILL
2HRR-025-R05-300-470	2.5	2	R0.5	3.8	30	4	70	
2HRR-025-R10-100-445	2.5	2	R1.0	3.8	10	4	45	
2HRR-030-R01-080-650	3	2	R0.1	4.5	8	6	50	
2HRR-030-R01-100-650	3	2	R0.1	4.5	10	6	50	
2HRR-030-R01-120-650	3	2	R0.1	4.5	12	6	50	MULTI
2HRR-030-R01-160-660	3	2	R0.1	4.5	16	6	60	
2HRR-030-R01-200-660	3	2	R0.1	4.5	20	6	60	
2HRR-030-R01-250-665	3	2	R0.1	4.5	25	6	65	
2HRR-030-R01-300-670	3	2	R0.1	4.5	30	6	70	
2HRR-030-R01-350-680	3	2	R0.1	4.5	35	6	80	Technical data
2HRR-030-R01-400-680	3	2	R0.1	4.5	40	6	80	

(Unit: mm)

		제품코드 Product Code	직경 DC	날수 ZEP	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF
	R-PRO	2HRR-030-R02-080-650	3	2	R0.2	4.5	8	6	50
	H-PRO	2HRR-030-R02-100-650	3	2	R0.2	4.5	10	6	50
		2HRR-030-R02-120-650	3	2	R0.2	4.5	12	6	50
		2HRR-030-R02-160-660	3	2	R0.2	4.5	16	6	60
	A-PRO	2HRR-030-R02-200-660	3	2	R0.2	4.5	20	6	60
		2HRR-030-R02-250-665	3	2	R0.2	4.5	25	6	65
	X-PRO	2HRR-030-R02-300-670	3	2	R0.2	4.5	30	6	70
		2HRR-030-R02-350-680	3	2	R0.2	4.5	35	6	80
		2HRR-030-R02-400-680	3	2	R0.2	4.5	40	6	80
		2HRR-030-R03-080-650	3	2	R0.3	4.5	8	6	50
	SUS MILL	2HRR-030-R03-100-650	3	2	R0.3	4.5	10	6	50
		2HRR-030-R03-120-650	3	2	R0.3	4.5	12	6	50
		2HRR-030-R03-160-660	3	2	R0.3	4.5	16	6	60
	S-PRO	2HRR-030-R03-200-660	3	2	R0.3	4.5	20	6	60
		2HRR-030-R03-250-665	3	2	R0.3	4.5	25	6	65
		2HRR-030-R03-300-670	3	2	R0.3	4.5	30	6	70
	D-PRO	2HRR-030-R03-350-680	3	2	R0.3	4.5	35	6	80
		2HRR-030-R03-400-680	3	2	R0.3	4.5	40	6	80
		2HRR-030-R05-080-650	3	2	R0.5	4.5	8	6	50
		2HRR-030-R05-080-675	3	2	R0.5	4.5	8	6	75
	A-PLUS	2HRR-030-R05-100-650	3	2	R0.5	4.5	10	6	50
		2HRR-030-R05-120-650	3	2	R0.5	4.5	12	6	50
		2HRR-030-R05-120-675	3	2	R0.5	4.5	12	6	75
	AL-PRO	2HRR-030-R05-160-660	3	2	R0.5	4.5	16	6	60
		2HRR-030-R05-200-660	3	2	R0.5	4.5	20	6	60
		2HRR-030-R05-200-675	3	2	R0.5	4.5	20	6	75
		2HRR-030-R05-250-665	3	2	R0.5	4.5	25	6	65
	ABS	2HRR-030-R05-300-670	3	2	R0.5	4.5	30	6	70
		2HRR-030-R05-350-680	3	2	R0.5	4.5	35	6	80
		2HRR-030-R05-400-680	3	2	R0.5	4.5	40	6	80
		2HRR-030-R10-080-650	3	2	R1.0	4.5	8	6	50
	MICRO GRAIN	2HRR-030-R10-100-650	3	2	R1.0	4.5	10	6	50
		2HRR-030-R10-120-650	3	2	R1.0	4.5	12	6	50
		2HRR-030-R10-160-660	3	2	R1.0	4.5	16	6	60
	MULTI	2HRR-030-R10-200-660	3	2	R1.0	4.5	20	6	60
		2HRR-030-R10-250-665	3	2	R1.0	4.5	25	6	65
		2HRR-030-R10-300-670	3	2	R1.0	4.5	30	6	70
	Technical data	2HRR-030-R10-350-680	3	2	R1.0	4.5	35	6	80
		2HRR-030-R10-400-680	3	2	R1.0	4.5	40	6	80

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF	R-PRO
2HRR-035-R05-100-650	3.5	2	R0.5	4.5	10	6	50	H-PRO
2HRR-035-R05-160-660	3.5	2	R0.5	4.5	16	6	60	
2HRR-040-R01-080-650	4	2	R0.1	6	8	6	50	
2HRR-040-R01-100-650	4	2	R0.1	6	10	6	50	A-PRO
2HRR-040-R01-120-650	4	2	R0.1	6	12	6	50	
2HRR-040-R01-160-660	4	2	R0.1	6	16	6	60	
2HRR-040-R01-200-660	4	2	R0.1	6	20	6	60	X-PRO
2HRR-040-R01-250-665	4	2	R0.1	6	25	6	65	
2HRR-040-R01-300-670	4	2	R0.1	6	30	6	70	
2HRR-040-R01-350-680	4	2	R0.1	6	35	6	80	SUS MILL
2HRR-040-R01-400-680	4	2	R0.1	6	40	6	80	
2HRR-040-R01-450-690	4	2	R0.1	6	45	6	90	
2HRR-040-R01-500-6A0	4	2	R0.1	6	50	6	100	S-PRO
2HRR-040-R02-080-650	4	2	R0.2	6	8	6	50	
2HRR-040-R02-100-650	4	2	R0.2	6	10	6	50	
2HRR-040-R02-120-650	4	2	R0.2	6	12	6	50	D-PRO
2HRR-040-R02-160-660	4	2	R0.2	6	16	6	60	
2HRR-040-R02-200-660	4	2	R0.2	6	20	6	60	
2HRR-040-R02-250-665	4	2	R0.2	6	25	6	65	A-PLUS
2HRR-040-R02-300-670	4	2	R0.2	6	30	6	70	
2HRR-040-R02-350-680	4	2	R0.2	6	35	6	80	
2HRR-040-R02-400-680	4	2	R0.2	6	40	6	80	AL-PRO
2HRR-040-R02-450-690	4	2	R0.2	6	45	6	90	
2HRR-040-R02-500-6A0	4	2	R0.2	6	50	6	100	
2HRR-040-R03-080-650	4	2	R0.3	6	8	6	50	AL MILL
2HRR-040-R03-100-650	4	2	R0.3	6	10	6	50	
2HRR-040-R03-120-650	4	2	R0.3	6	12	6	50	
2HRR-040-R03-160-660	4	2	R0.3	6	16	6	60	ABS
2HRR-040-R03-200-660	4	2	R0.3	6	20	6	60	
2HRR-040-R03-250-665	4	2	R0.3	6	25	6	65	
2HRR-040-R03-300-670	4	2	R0.3	6	30	6	70	MICRO GRAIN
2HRR-040-R03-350-680	4	2	R0.3	6	35	6	80	
2HRR-040-R03-400-680	4	2	R0.3	6	40	6	80	
2HRR-040-R03-450-690	4	2	R0.3	6	45	6	90	MULTI
2HRR-040-R03-500-6A0	4	2	R0.3	6	50	6	100	
2HRR-040-R05-080-650	4	2	R0.5	6	8	6	50	
2HRR-040-R05-100-650	4	2	R0.5	6	10	6	50	Technical data
2HRR-040-R05-120-650	4	2	R0.5	6	12	6	50	
2HRR-040-R05-120-675	4	2	R0.5	6	12	6	75	

(Unit: mm)

		제품코드 Product Code	직경 DC	날수 ZEP	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF
	R-PRO	2HRR-040-R05-160-660	4	2	R0.5	6	16	6	60
	H-PRO	2HRR-040-R05-200-660	4	2	R0.5	6	20	6	60
		2HRR-040-R05-200-675	4	2	R0.5	6	20	6	75
		2HRR-040-R05-250-665	4	2	R0.5	6	25	6	65
	A-PRO	2HRR-040-R05-250-675	4	2	R0.5	6	25	6	75
		2HRR-040-R05-300-670	4	2	R0.5	6	30	6	70
		2HRR-040-R05-350-680	4	2	R0.5	6	35	6	80
	X-PRO	2HRR-040-R05-400-680	4	2	R0.5	6	40	6	80
		2HRR-040-R05-450-690	4	2	R0.5	6	45	6	90
		2HRR-040-R05-500-6A0	4	2	R0.5	6	50	6	100
	SUS MILL	2HRR-040-R10-080-650	4	2	R1.0	6	8	6	50
		2HRR-040-R10-100-650	4	2	R1.0	6	10	6	50
		2HRR-040-R10-120-650	4	2	R1.0	6	12	6	50
	S-PRO	2HRR-040-R10-120-675	4	2	R1.0	6	12	6	75
		2HRR-040-R10-160-660	4	2	R1.0	6	16	6	60
		2HRR-040-R10-200-660	4	2	R1.0	6	20	6	60
	D-PRO	2HRR-040-R10-250-665	4	2	R1.0	6	25	6	65
		2HRR-040-R10-300-670	4	2	R1.0	6	30	6	70
		2HRR-040-R10-350-680	4	2	R1.0	6	35	6	80
	A-PLUS	2HRR-040-R10-400-680	4	2	R1.0	6	40	6	80
		2HRR-040-R10-450-690	4	2	R1.0	6	45	6	90
		2HRR-040-R10-500-6A0	4	2	R1.0	6	50	6	100
	AL-PRO	2HRR-050-R02-150-660	5	2	R0.2	7.5	15	6	60
		2HRR-050-R02-250-665	5	2	R0.2	7.5	25	6	65
		2HRR-050-R02-300-670	5	2	R0.2	7.5	30	6	70
	AL MILL	2HRR-050-R02-400-680	5	2	R0.2	7.5	40	6	80
		2HRR-050-R02-500-6A0	5	2	R0.2	7.5	50	6	100
	ABS	2HRR-050-R05-180-660	5	2	R0.5	7.5	18	6	60
		2HRR-050-R05-250-665	5	2	R0.5	7.5	25	6	65
		2HRR-050-R05-300-670	5	2	R0.5	7.5	30	6	70
	MICRO GRAIN	2HRR-050-R05-400-680	5	2	R0.5	7.5	40	6	80
		2HRR-050-R05-500-6A0	5	2	R0.5	7.5	50	6	100
		2HRR-050-R10-180-660	5	2	R1.0	7.5	18	6	60
	MULTI	2HRR-050-R10-250-665	5	2	R1.0	7.5	25	6	65
		2HRR-050-R10-300-670	5	2	R1.0	7.5	30	6	70
		2HRR-050-R10-400-680	5	2	R1.0	7.5	40	6	80
Technical data		2HRR-050-R10-500-6A0	5	2	R1.0	7.5	50	6	100
		2HRR-060-R01-200-660	6	2	R0.1	9	20	6	60
		2HRR-060-R01-400-690	6	2	R0.1	9	40	6	90

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF	R-PRO
2HRR-060-R02-200-660	6	2	R0.2	9	20	6	60	H-PRO
2HRR-060-R02-400-690	6	2	R0.2	9	40	6	90	
2HRR-060-R03-200-660	6	2	R0.3	9	20	6	60	A-PRO
2HRR-060-R03-400-690	6	2	R0.3	9	40	6	90	
2HRR-060-R05-200-660	6	2	R0.5	9	20	6	60	X-PRO
2HRR-060-R05-400-690	6	2	R0.5	9	40	6	90	
2HRR-060-R10-200-660	6	2	R1.0	9	20	6	60	SUS MILL
2HRR-060-R10-400-690	6	2	R1.0	9	40	6	90	
2HRR-060-R15-200-660	6	2	R1.5	9	20	6	60	S-PRO
2HRR-060-R15-400-690	6	2	R1.5	9	40	6	90	
2HRR-080-R02-240-865	8	2	R0.2	12	24	8	65	D-PRO
2HRR-080-R02-400-8A0	8	2	R0.2	12	40	8	100	
2HRR-080-R03-240-865	8	2	R0.3	12	24	8	65	A-PLUS
2HRR-080-R03-400-8A0	8	2	R0.3	12	40	8	100	
2HRR-080-R05-240-865	8	2	R0.5	12	24	8	65	AL-PRO
2HRR-080-R05-240-880	8	2	R0.5	12	24	8	80	
2HRR-080-R05-400-8A0	8	2	R0.5	12	40	8	100	AL MILL
2HRR-080-R10-240-865	8	2	R1.0	12	24	8	65	
2HRR-080-R10-240-880	8	2	R1.0	12	24	8	80	ABS
2HRR-080-R10-400-8A0	8	2	R1.0	12	40	8	100	
2HRR-080-R15-240-865	8	2	R1.5	12	24	8	65	MICRO GRAIN
2HRR-080-R15-400-8A0	8	2	R1.5	12	40	8	100	
2HRR-080-R20-240-865	8	2	R2.0	12	24	8	65	MULTI
2HRR-100-R02-300-A70	10	2	R0.2	15	30	10	70	
2HRR-100-R02-400-AA0	10	2	R0.2	15	40	10	100	Technical data
2HRR-100-R03-300-A70	10	2	R0.3	15	30	10	70	
2HRR-100-R03-400-AA0	10	2	R0.3	15	40	10	100	
2HRR-100-R05-300-A70	10	2	R0.5	15	30	10	70	
2HRR-100-R05-400-AA0	10	2	R0.5	15	40	10	100	
2HRR-100-R10-300-A70	10	2	R1.0	15	30	10	70	
2HRR-100-R10-400-AA0	10	2	R1.0	15	40	10	100	
2HRR-100-R15-300-A70	10	2	R1.5	15	30	10	70	
2HRR-100-R15-400-AA0	10	2	R1.5	15	40	10	100	
2HRR-100-R20-300-A70	10	2	R2.0	15	30	10	70	
2HRR-100-R20-400-AA0	10	2	R2.0	15	40	10	100	
2HRR-120-R02-300-C80	12	2	R0.2	18	30	12	80	
2HRR-120-R02-500-CB0	12	2	R0.2	18	50	12	110	
2HRR-120-R03-300-C80	12	2	R0.3	18	30	12	80	
2HRR-120-R03-500-CB0	12	2	R0.3	18	50	12	110	

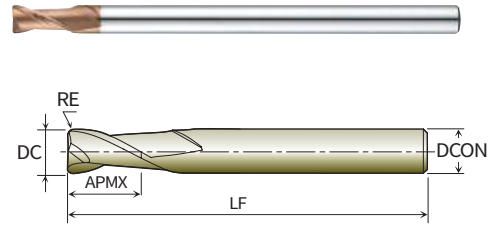
(Unit: mm)

(Unit: mm)

Technical data	MULTI	MICRO GRAIN	ABS	AL MILL	AL-PRO	A-PLUS	D-PRO	S-PRO	SUS MILL	X-PRO	A-PRO	H-PRO	R-PRO
제품코드 Product Code	직경 DC	날수 ZEFP	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF						
2HRR-120-R05-300-C80	12	2	R0.5	18	30	12	80						
2HRR-120-R05-500-CB0	12	2	R0.5	18	50	12	110						
2HRR-120-R10-300-C80	12	2	R1.0	18	30	12	80						
2HRR-120-R10-500-CB0	12	2	R1.0	18	50	12	110						
2HRR-120-R15-300-C80	12	2	R1.5	18	30	12	80						
2HRR-120-R15-500-CB0	12	2	R1.5	18	50	12	110						
2HRR-120-R20-300-C80	12	2	R2.0	18	30	12	80						
2HRR-120-R20-500-CB0	12	2	R2.0	18	50	12	110						
2HRR-120-R30-300-C80	12	2	R3.0	18	30	12	80						
2HRR-120-R30-500-CB0	12	2	R3.0	18	50	12	110						
2HRR-160-R05-400-GB0	16	2	R0.5	24	40	16	110						
2HRR-160-R05-400-GF0	16	2	R0.5	24	40	16	150						
2HRR-160-R10-400-GB0	16	2	R1.0	24	40	16	110						
2HRR-160-R10-400-GF0	16	2	R1.0	24	40	16	150						

2HCR

2날 코너 래디우스 엔드밀 2 Flutes Corner Radius End Mills



(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZFP	반경 RE	날장 APMX	생크경 DCON	전장 LF
2HCR-002-R002-004-445	0.2	2	R0.02	0.4	4	45
2HCR-002-R005-004-445	0.2	2	R0.05	0.4	4	45
2HCR-003-R002-006-445	0.3	2	R0.02	0.6	4	45
2HCR-003-R005-006-445	0.3	2	R0.05	0.6	4	45
2HCR-003-R01-006-445	0.3	2	R0.1	0.6	4	45
2HCR-004-R002-008-445	0.4	2	R0.02	0.8	4	45
2HCR-004-R005-008-445	0.4	2	R0.05	0.8	4	45
2HCR-004-R01-008-445	0.4	2	R0.1	0.8	4	45
2HCR-005-R002-010-445	0.5	2	R0.02	1	4	45
2HCR-005-R005-010-445	0.5	2	R0.05	1	4	45
2HCR-005-R01-010-445	0.5	2	R0.1	1	4	45
2HCR-006-R002-012-445	0.6	2	R0.02	1.2	4	45
2HCR-006-R005-012-445	0.6	2	R0.05	1.2	4	45
2HCR-006-R01-012-445	0.6	2	R0.1	1.2	4	45
2HCR-006-R02-012-445	0.6	2	R0.2	1.2	4	45
2HCR-007-R005-014-445	0.7	2	R0.05	1.4	4	45
2HCR-007-R01-014-445	0.7	2	R0.1	1.4	4	45
2HCR-007-R02-014-445	0.7	2	R0.2	1.4	4	45
2HCR-008-R002-016-445	0.8	2	R0.02	1.6	4	45
2HCR-008-R005-016-445	0.8	2	R0.05	1.6	4	45
2HCR-008-R01-016-445	0.8	2	R0.1	1.6	4	45
2HCR-008-R02-016-445	0.8	2	R0.2	1.6	4	45
2HCR-009-R005-018-445	0.9	2	R0.05	1.8	4	45
2HCR-009-R01-018-445	0.9	2	R0.1	1.8	4	45
2HCR-010-R002-025-445	1	2	R0.02	2.5	4	45

(Unit: mm)

	R-PRO	제품코드 Product Code	직경 DC	날수 ZEPF	반경 RE	날장 APMX	생크경 DCON	전장 LF
		2HCR-010-R005-025-445	1	2	R0.05	2.5	4	45
		2HCR-010-R01-025-445	1	2	R0.1	2.5	4	45
		2HCR-010-R02-025-445	1	2	R0.2	2.5	4	45
		2HCR-010-R03-025-445	1	2	R0.3	2.5	4	45
		2HCR-012-R002-032-445	1.2	2	R0.02	3.2	4	45
		2HCR-012-R005-032-445	1.2	2	R0.05	3.2	4	45
		2HCR-012-R01-032-445	1.2	2	R0.1	3.2	4	45
		2HCR-012-R02-032-445	1.2	2	R0.2	3.2	4	45
		2HCR-012-R03-032-445	1.2	2	R0.3	3.2	4	45
		2HCR-015-R002-040-445	1.5	2	R0.02	4	4	45
		2HCR-015-R005-040-445	1.5	2	R0.05	4	4	45
		2HCR-015-R01-040-445	1.5	2	R0.1	4	4	45
		2HCR-015-R02-040-445	1.5	2	R0.2	4	4	45
		2HCR-015-R03-040-445	1.5	2	R0.3	4	4	45
		2HCR-015-R05-040-445	1.5	2	R0.5	4	4	45
		2HCR-020-R002-060-445	2	2	R0.02	6	4	45
		2HCR-020-R005-060-445	2	2	R0.05	6	4	45
		2HCR-020-R01-060-445	2	2	R0.1	6	4	45
		2HCR-020-R02-060-445	2	2	R0.2	6	4	45
		2HCR-020-R03-060-445	2	2	R0.3	6	4	45
		2HCR-020-R05-060-445	2	2	R0.5	6	4	45
		2HCR-025-R005-060-450	2.5	2	R0.05	6	4	50
		2HCR-025-R01-060-450	2.5	2	R0.1	6	4	50
		2HCR-025-R02-060-450	2.5	2	R0.2	6	4	50
		2HCR-025-R03-060-450	2.5	2	R0.3	6	4	50
		2HCR-025-R05-060-450	2.5	2	R0.5	6	4	50
		2HCR-030-R005-080-660	3	2	R0.05	8	6	60
		2HCR-030-R01-080-660	3	2	R0.1	8	6	60
		2HCR-030-R02-080-660	3	2	R0.2	8	6	60
		2HCR-030-R03-080-660	3	2	R0.3	8	6	60
		2HCR-030-R05-080-660	3	2	R0.5	8	6	60
		2HCR-030-R10-080-660	3	2	R1.0	8	6	60
		2HCR-035-R01-090-670	3.5	2	R0.1	9	6	70
		2HCR-035-R02-090-670	3.5	2	R0.2	9	6	70
		2HCR-035-R03-090-670	3.5	2	R0.3	9	6	70
		2HCR-035-R05-090-670	3.5	2	R0.5	9	6	70
		2HCR-035-R10-090-670	3.5	2	R1.0	9	6	70
		2HCR-040-R005-100-460	4	2	R0.05	10	4	60
		2HCR-040-R005-100-670	4	2	R0.05	10	6	70

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZFP	반경 RE	날장 APMX	생크경 DCON	전장 LF	R-PRO	
2HCR-040-R01-100-460	4	2	R0.1	10	4	60	H-PRO	
2HCR-040-R01-100-670	4	2	R0.1	10	6	70		
2HCR-040-R02-100-460	4	2	R0.2	10	4	60		
2HCR-040-R02-100-670	4	2	R0.2	10	6	70		
2HCR-040-R03-100-460	4	2	R0.3	10	4	60	A-PRO	
2HCR-040-R03-100-670	4	2	R0.3	10	6	70		
2HCR-040-R05-100-460	4	2	R0.5	10	4	60	X-PRO	
2HCR-040-R05-100-670	4	2	R0.5	10	6	70		
2HCR-040-R10-100-460	4	2	R1.0	10	4	60		
2HCR-040-R10-100-670	4	2	R1.0	10	6	70		
2HCR-045-R01-110-675	4.5	2	R0.1	11	6	75	SUS MILL	
2HCR-045-R02-110-675	4.5	2	R0.2	11	6	75		
2HCR-045-R03-110-675	4.5	2	R0.3	11	6	75		
2HCR-045-R05-110-675	4.5	2	R0.5	11	6	75		
2HCR-050-R01-130-675	5	2	R0.1	13	6	75	S-PRO	
2HCR-050-R02-130-675	5	2	R0.2	13	6	75		
2HCR-050-R03-130-675	5	2	R0.3	13	6	75		
2HCR-050-R05-130-675	5	2	R0.5	13	6	75		
2HCR-050-R10-130-675	5	2	R1.0	13	6	75	D-PRO	
2HCR-060-R005-110-660	6	2	R0.05	11	6	60		
2HCR-060-R005-130-690	6	2	R0.05	13	6	90		
2HCR-060-R01-110-660	6	2	R0.1	11	6	60		
2HCR-060-R01-130-690	6	2	R0.1	13	6	90	A-PLUS	
2HCR-060-R02-110-660	6	2	R0.2	11	6	60		
2HCR-060-R02-130-690	6	2	R0.2	13	6	90		
2HCR-060-R03-110-660	6	2	R0.3	11	6	60		
2HCR-060-R03-130-690	6	2	R0.3	13	6	90	AL-PRO	
2HCR-060-R05-110-660	6	2	R0.5	11	6	60		
2HCR-060-R05-130-690	6	2	R0.5	13	6	90		
2HCR-060-R10-110-660	6	2	R1.0	11	6	60		
2HCR-060-R10-130-690	6	2	R1.0	13	6	90	AL MILL	
2HCR-060-R15-110-660	6	2	R1.5	11	6	60		
2HCR-060-R15-130-690	6	2	R1.5	13	6	90		
2HCR-060-R20-110-660	6	2	R2.0	11	6	60		
2HCR-060-R20-130-690	6	2	R2.0	13	6	90	ABS	
2HCR-060-R25-130-690	6	2	R2.5	13	6	90		
2HCR-080-R01-160-870	8	2	R0.1	16	8	70		
2HCR-080-R01-190-8A0	8	2	R0.1	19	8	100		
2HCR-080-R02-160-870	8	2	R0.2	16	8	70	MICRO GRAIN	
							MULTI	
							Technical data	

(Unit: mm)

	R-PRO	제품코드 Product Code	직경 DC	날수 ZEP	반경 RE	날장 APMX	생크경 DCON	전장 LF
		2HCR-080-R02-190-8A0	8	2	R0.2	19	8	100
		2HCR-080-R03-160-870	8	2	R0.3	16	8	70
		2HCR-080-R03-190-8A0	8	2	R0.3	19	8	100
		2HCR-080-R05-160-870	8	2	R0.5	16	8	70
		2HCR-080-R05-190-8A0	8	2	R0.5	19	8	100
		2HCR-080-R10-160-870	8	2	R1.0	16	8	70
		2HCR-080-R10-190-8A0	8	2	R1.0	19	8	100
		2HCR-080-R15-160-870	8	2	R1.5	16	8	70
		2HCR-080-R15-190-8A0	8	2	R1.5	19	8	100
		2HCR-080-R20-160-870	8	2	R2.0	16	8	70
		2HCR-080-R20-190-8A0	8	2	R2.0	19	8	100
		2HCR-080-R25-190-8A0	8	2	R2.5	19	8	100
		2HCR-080-R30-190-8A0	8	2	R3.0	19	8	100
		2HCR-080-R35-190-8A0	8	2	R3.5	19	8	100
		2HCR-100-R01-190-A75	10	2	R0.1	19	10	75
		2HCR-100-R01-220-AA0	10	2	R0.1	22	10	100
		2HCR-100-R02-190-A75	10	2	R0.2	19	10	75
		2HCR-100-R02-220-AA0	10	2	R0.2	22	10	100
		2HCR-100-R03-190-A75	10	2	R0.3	19	10	75
		2HCR-100-R03-220-AA0	10	2	R0.3	22	10	100
		2HCR-100-R05-190-A75	10	2	R0.5	19	10	75
		2HCR-100-R05-220-AA0	10	2	R0.5	22	10	100
		2HCR-100-R10-190-A75	10	2	R1.0	19	10	75
		2HCR-100-R10-220-AA0	10	2	R1.0	22	10	100
		2HCR-100-R15-190-A75	10	2	R1.5	19	10	75
		2HCR-100-R15-220-AA0	10	2	R1.5	22	10	100
		2HCR-100-R20-190-A75	10	2	R2.0	19	10	75
		2HCR-100-R20-220-AA0	10	2	R2.0	22	10	100
		2HCR-100-R25-220-AA0	10	2	R2.5	22	10	100
		2HCR-100-R30-220-AA0	10	2	R3.0	22	10	100
		2HCR-100-R40-220-AA0	10	2	R4.0	22	10	100
		2HCR-120-R01-220-C80	12	2	R0.1	22	12	80
		2HCR-120-R01-260-CB0	12	2	R0.1	26	12	110
		2HCR-120-R02-220-C80	12	2	R0.2	22	12	80
		2HCR-120-R02-260-CB0	12	2	R0.2	26	12	110
		2HCR-120-R03-220-C80	12	2	R0.3	22	12	80
		2HCR-120-R03-260-CB0	12	2	R0.3	26	12	110
		2HCR-120-R05-220-C80	12	2	R0.5	22	12	80

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEP	반경 RE	날장 APMX	생크경 DCON	전장 LF
2HCR-120-R05-260-CB0	12	2	R0.5	26	12	110
2HCR-120-R05-260-CD0	12	2	R0.5	26	12	130
2HCR-120-R10-220-CB0	12	2	R1.0	22	12	80
2HCR-120-R10-260-CB0	12	2	R1.0	26	12	110
2HCR-120-R10-260-CD0	12	2	R1.0	26	12	130
2HCR-120-R15-220-CB0	12	2	R1.5	22	12	80
2HCR-120-R15-260-CB0	12	2	R1.5	26	12	110
2HCR-120-R15-260-CD0	12	2	R1.5	26	12	130
2HCR-120-R20-220-CB0	12	2	R2.0	22	12	80
2HCR-120-R20-260-CB0	12	2	R2.0	26	12	110
2HCR-120-R20-260-CD0	12	2	R2.0	26	12	130
2HCR-120-R25-260-CB0	12	2	R2.5	26	12	110
2HCR-120-R30-260-CB0	12	2	R3.0	26	12	110
2HCR-120-R40-260-CB0	12	2	R4.0	26	12	110
2HCR-120-R50-260-CB0	12	2	R5.0	26	12	110
2HCR-160-R05-320-GB0	16	2	R0.5	32	16	110
2HCR-160-R05-320-GF0	16	2	R0.5	32	16	150
2HCR-160-R10-320-GB0	16	2	R1.0	32	16	110
2HCR-160-R10-320-GF0	16	2	R1.0	32	16	150
2HCR-160-R15-320-GB0	16	2	R1.5	32	16	110
2HCR-160-R20-320-GB0	16	2	R2.0	32	16	110
2HCR-160-R30-320-GB0	16	2	R3.0	32	16	110
2HCR-200-R05-380-KB0	20	2	R0.5	38	20	110
2HCR-200-R05-380-KF0	20	2	R0.5	38	20	150
2HCR-200-R10-380-KB0	20	2	R1.0	38	20	110
2HCR-200-R10-380-KF0	20	2	R1.0	38	20	150
2HCR-200-R15-380-KB0	20	2	R1.5	38	20	110
2HCR-200-R20-380-KB0	20	2	R2.0	38	20	110
2HCR-200-R30-380-KB0	20	2	R3.0	38	20	110

R-PRO

H-PRO

A-PRO

X-PRO

SUS MILL

S-PRO

D-PRO

A-PLUS

AL-PRO

AL MILL

ABS

MICRO
GRAIN

MULTI

Technical data

R-PRO

H-PRO

A-PRO

X-PRO

SUS MILL

S-PRO

D-PRO

A-PLUS

AL-PRO

AL MILL

ABS

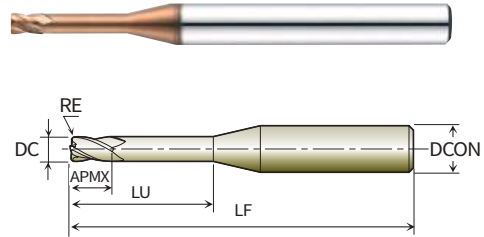
MICRO
GRAIN

MULTI

Technical data

4HRR

4날 리브 코너 래디우스 엔드밀 4 Flutes Rib Corner Radius End Mills



(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	반경 RE	날장 APMX	유효장 LU	샙크경 DCON	전장 LF
4HRR-008-R002-020-445	0.8	4	R0.02	1.2	2	4	45
4HRR-008-R002-040-445	0.8	4	R0.02	1.2	4	4	45
4HRR-008-R002-060-445	0.8	4	R0.02	1.2	6	4	45
4HRR-008-R002-080-445	0.8	4	R0.02	1.2	8	4	45
4HRR-008-R002-100-445	0.8	4	R0.02	1.2	10	4	45
4HRR-008-R005-020-445	0.8	4	R0.05	1.2	2	4	45
4HRR-008-R005-040-445	0.8	4	R0.05	1.2	4	4	45
4HRR-008-R005-060-445	0.8	4	R0.05	1.2	6	4	45
4HRR-008-R005-080-445	0.8	4	R0.05	1.2	8	4	45
4HRR-008-R005-100-445	0.8	4	R0.05	1.2	10	4	45
4HRR-008-R01-020-445	0.8	4	R0.1	1.2	2	4	45
4HRR-008-R01-040-445	0.8	4	R0.1	1.2	4	4	45
4HRR-008-R01-060-445	0.8	4	R0.1	1.2	6	4	45
4HRR-008-R01-080-445	0.8	4	R0.1	1.2	8	4	45
4HRR-008-R01-100-445	0.8	4	R0.1	1.2	10	4	45
4HRR-010-R002-040-445	1	4	R0.02	1.5	4	4	45
4HRR-010-R002-060-445	1	4	R0.02	1.5	6	4	45
4HRR-010-R002-080-445	1	4	R0.02	1.5	8	4	45
4HRR-010-R002-100-445	1	4	R0.02	1.5	10	4	45
4HRR-010-R002-120-445	1	4	R0.02	1.5	12	4	45
4HRR-010-R002-160-450	1	4	R0.02	1.5	16	4	50
4HRR-010-R002-200-450	1	4	R0.02	1.5	20	4	50
4HRR-010-R005-040-445	1	4	R0.05	1.5	4	4	45
4HRR-010-R005-060-445	1	4	R0.05	1.5	6	4	45
4HRR-010-R005-080-445	1	4	R0.05	1.5	8	4	45

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEP	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF	R-PRO
4HRR-010-R005-100-445	1	4	R0.05	1.5	10	4	45	H-PRO
4HRR-010-R005-120-445	1	4	R0.05	1.5	12	4	45	
4HRR-010-R005-160-450	1	4	R0.05	1.5	16	4	50	
4HRR-010-R005-200-450	1	4	R0.05	1.5	20	4	50	
4HRR-010-R01-040-445	1	4	R0.1	1.5	4	4	45	A-PRO
4HRR-010-R01-060-445	1	4	R0.1	1.5	6	4	45	
4HRR-010-R01-080-445	1	4	R0.1	1.5	8	4	45	
4HRR-010-R01-100-445	1	4	R0.1	1.5	10	4	45	
4HRR-010-R01-120-445	1	4	R0.1	1.5	12	4	45	X-PRO
4HRR-010-R01-160-450	1	4	R0.1	1.5	16	4	50	
4HRR-010-R01-200-450	1	4	R0.1	1.5	20	4	50	
4HRR-010-R02-040-445	1	4	R0.2	1.5	4	4	45	
4HRR-010-R02-060-445	1	4	R0.2	1.5	6	4	45	SUS MILL
4HRR-010-R02-080-445	1	4	R0.2	1.5	8	4	45	
4HRR-010-R02-100-445	1	4	R0.2	1.5	10	4	45	
4HRR-010-R02-120-445	1	4	R0.2	1.5	12	4	45	
4HRR-010-R02-160-450	1	4	R0.2	1.5	16	4	50	S-PRO
4HRR-010-R02-200-450	1	4	R0.2	1.5	20	4	50	
4HRR-010-R03-040-445	1	4	R0.3	1.5	4	4	50	
4HRR-010-R03-060-445	1	4	R0.3	1.5	6	4	50	
4HRR-010-R03-080-445	1	4	R0.3	1.5	8	4	50	D-PRO
4HRR-010-R03-100-445	1	4	R0.3	1.5	10	4	50	
4HRR-010-R03-120-445	1	4	R0.3	1.5	12	4	50	
4HRR-010-R03-160-450	1	4	R0.3	1.5	16	4	50	
4HRR-010-R03-200-450	1	4	R0.3	1.5	20	4	50	A-PLUS
4HRR-012-R002-040-445	1.2	4	R0.02	1.8	4	4	45	
4HRR-012-R002-060-445	1.2	4	R0.02	1.8	6	4	45	
4HRR-012-R002-080-445	1.2	4	R0.02	1.8	8	4	45	
4HRR-012-R002-100-445	1.2	4	R0.02	1.8	10	4	45	AL-PRO
4HRR-012-R002-120-445	1.2	4	R0.02	1.8	12	4	45	
4HRR-012-R002-160-450	1.2	4	R0.02	1.8	16	4	50	
4HRR-012-R002-200-450	1.2	4	R0.02	1.8	20	4	50	
4HRR-012-R005-040-445	1.2	4	R0.05	1.8	4	4	45	AL MILL
4HRR-012-R005-060-445	1.2	4	R0.05	1.8	6	4	45	
4HRR-012-R005-080-445	1.2	4	R0.05	1.8	8	4	45	
4HRR-012-R005-100-445	1.2	4	R0.05	1.8	10	4	45	
4HRR-012-R005-120-445	1.2	4	R0.05	1.8	12	4	45	ABS
4HRR-012-R005-160-450	1.2	4	R0.05	1.8	16	4	50	
4HRR-012-R005-200-450	1.2	4	R0.05	1.8	20	4	50	
4HRR-012-R005-040-445	1.2	4	R0.05	1.8	4	4	45	
4HRR-012-R005-060-445	1.2	4	R0.05	1.8	6	4	45	MICRO GRAIN
4HRR-012-R005-080-445	1.2	4	R0.05	1.8	8	4	45	
4HRR-012-R005-100-445	1.2	4	R0.05	1.8	10	4	45	
4HRR-012-R005-120-445	1.2	4	R0.05	1.8	12	4	45	
4HRR-012-R005-160-450	1.2	4	R0.05	1.8	16	4	50	MULTI
4HRR-012-R005-200-450	1.2	4	R0.05	1.8	20	4	50	
4HRR-012-R005-040-445	1.2	4	R0.05	1.8	4	4	45	Technical data
4HRR-012-R005-060-445	1.2	4	R0.05	1.8	6	4	45	
4HRR-012-R005-080-445	1.2	4	R0.05	1.8	8	4	45	
4HRR-012-R005-100-445	1.2	4	R0.05	1.8	10	4	45	
4HRR-012-R005-120-445	1.2	4	R0.05	1.8	12	4	45	
4HRR-012-R005-160-450	1.2	4	R0.05	1.8	16	4	50	
4HRR-012-R005-200-450	1.2	4	R0.05	1.8	20	4	50	
4HRR-012-R005-040-445	1.2	4	R0.05	1.8	4	4	45	

(Unit: mm)

	R-PRO	제품코드 Product Code	직경 DC	날수 ZEFP	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF
		4HRR-012-R01-040-445	1.2	4	R0.1	1.8	4	4	45
		4HRR-012-R01-060-445	1.2	4	R0.1	1.8	6	4	45
		4HRR-012-R01-080-445	1.2	4	R0.1	1.8	8	4	45
		4HRR-012-R01-100-445	1.2	4	R0.1	1.8	10	4	45
		4HRR-012-R01-120-445	1.2	4	R0.1	1.8	12	4	45
		4HRR-012-R01-160-450	1.2	4	R0.1	1.8	16	4	50
		4HRR-012-R01-200-450	1.2	4	R0.1	1.8	20	4	50
		4HRR-012-R02-040-445	1.2	4	R0.2	1.8	4	4	45
		4HRR-012-R02-060-445	1.2	4	R0.2	1.8	6	4	45
		4HRR-012-R02-080-445	1.2	4	R0.2	1.8	8	4	45
		4HRR-012-R02-100-445	1.2	4	R0.2	1.8	10	4	45
		4HRR-012-R02-120-445	1.2	4	R0.2	1.8	12	4	45
		4HRR-012-R02-160-450	1.2	4	R0.2	1.8	16	4	50
		4HRR-012-R02-200-450	1.2	4	R0.2	1.8	20	4	50
		4HRR-012-R03-040-445	1.2	4	R0.3	1.8	4	4	45
		4HRR-012-R03-060-445	1.2	4	R0.3	1.8	6	4	45
		4HRR-012-R03-080-445	1.2	4	R0.3	1.8	8	4	45
		4HRR-012-R03-100-445	1.2	4	R0.3	1.8	10	4	45
		4HRR-012-R03-120-445	1.2	4	R0.3	1.8	12	4	45
		4HRR-012-R03-160-450	1.2	4	R0.3	1.8	16	4	50
		4HRR-012-R03-200-450	1.2	4	R0.3	1.8	20	4	50
		4HRR-015-R002-040-445	1.5	4	R0.02	2.3	4	4	45
		4HRR-015-R002-060-445	1.5	4	R0.02	2.3	6	4	45
		4HRR-015-R002-080-445	1.5	4	R0.02	2.3	8	4	45
		4HRR-015-R002-100-445	1.5	4	R0.02	2.3	10	4	45
		4HRR-015-R002-120-445	1.5	4	R0.02	2.3	12	4	45
		4HRR-015-R002-160-450	1.5	4	R0.02	2.3	16	4	50
		4HRR-015-R002-200-450	1.5	4	R0.02	2.3	20	4	50
		4HRR-015-R002-220-460	1.5	4	R0.02	2.3	22	4	60
		4HRR-015-R002-250-460	1.5	4	R0.02	2.3	25	4	60
		4HRR-015-R005-040-445	1.5	4	R0.05	2.3	4	4	45
		4HRR-015-R005-060-445	1.5	4	R0.05	2.3	6	4	45
		4HRR-015-R005-080-445	1.5	4	R0.05	2.3	8	4	45
		4HRR-015-R005-100-445	1.5	4	R0.05	2.3	10	4	45
		4HRR-015-R005-120-445	1.5	4	R0.05	2.3	12	4	45
		4HRR-015-R005-160-450	1.5	4	R0.05	2.3	16	4	50
		4HRR-015-R005-200-450	1.5	4	R0.05	2.3	20	4	50
		4HRR-015-R005-220-460	1.5	4	R0.05	2.3	22	4	60
		4HRR-015-R005-250-460	1.5	4	R0.05	2.3	25	4	60

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF	R-PRO
4HRR-015-R01-040-445	1.5	4	R0.1	2.3	4	4	45	H-PRO
4HRR-015-R01-060-445	1.5	4	R0.1	2.3	6	4	45	
4HRR-015-R01-080-445	1.5	4	R0.1	2.3	8	4	45	
4HRR-015-R01-100-445	1.5	4	R0.1	2.3	10	4	45	
4HRR-015-R01-120-445	1.5	4	R0.1	2.3	12	4	45	A-PRO
4HRR-015-R01-160-450	1.5	4	R0.1	2.3	16	4	50	
4HRR-015-R01-200-450	1.5	4	R0.1	2.3	20	4	50	X-PRO
4HRR-015-R01-220-460	1.5	4	R0.1	2.3	22	4	60	
4HRR-015-R01-250-460	1.5	4	R0.1	2.3	25	4	60	
4HRR-015-R02-040-445	1.5	4	R0.2	2.3	4	4	45	SUS MILL
4HRR-015-R02-060-445	1.5	4	R0.2	2.3	6	4	45	
4HRR-015-R02-080-445	1.5	4	R0.2	2.3	8	4	45	
4HRR-015-R02-100-445	1.5	4	R0.2	2.3	10	4	45	S-PRO
4HRR-015-R02-120-445	1.5	4	R0.2	2.3	12	4	45	
4HRR-015-R02-160-450	1.5	4	R0.2	2.3	16	4	50	
4HRR-015-R02-200-450	1.5	4	R0.2	2.3	20	4	50	D-PRO
4HRR-015-R02-220-460	1.5	4	R0.2	2.3	22	4	60	
4HRR-015-R02-250-460	1.5	4	R0.2	2.3	25	4	60	
4HRR-015-R03-040-445	1.5	4	R0.3	2.3	4	4	45	A-PLUS
4HRR-015-R03-060-445	1.5	4	R0.3	2.3	6	4	45	
4HRR-015-R03-080-445	1.5	4	R0.3	2.3	8	4	45	
4HRR-015-R03-100-445	1.5	4	R0.3	2.3	10	4	45	AL-PRO
4HRR-015-R03-120-445	1.5	4	R0.3	2.3	12	4	45	
4HRR-015-R03-160-450	1.5	4	R0.3	2.3	16	4	50	
4HRR-015-R03-200-450	1.5	4	R0.3	2.3	20	4	50	AL MILL
4HRR-015-R03-220-460	1.5	4	R0.3	2.3	22	4	60	
4HRR-015-R03-250-460	1.5	4	R0.3	2.3	25	4	60	
4HRR-015-R05-040-445	1.5	4	R0.5	2.3	4	4	45	ABS
4HRR-015-R05-060-445	1.5	4	R0.5	2.3	6	4	45	
4HRR-015-R05-080-445	1.5	4	R0.5	2.3	8	4	45	
4HRR-015-R05-100-445	1.5	4	R0.5	2.3	10	4	45	MICRO GRAIN
4HRR-015-R05-120-445	1.5	4	R0.5	2.3	12	4	45	
4HRR-015-R05-160-450	1.5	4	R0.5	2.3	16	4	50	
4HRR-015-R05-200-450	1.5	4	R0.5	2.3	20	4	50	MULTI
4HRR-015-R05-220-460	1.5	4	R0.5	2.3	22	4	60	
4HRR-015-R05-250-460	1.5	4	R0.5	2.3	25	4	60	
4HRR-020-R002-040-445	2	4	R0.02	3	4	4	45	Technical data
4HRR-020-R002-060-445	2	4	R0.02	3	6	4	45	
4HRR-020-R002-080-445	2	4	R0.02	3	8	4	45	

(Unit: mm)

										(Unit: mm)
	R-PRO	제품코드 Product Code	직경 DC	날수 ZEFP	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF	
	H-PRO	4HRR-020-R002-100-445	2	4	R0.02	3	10	4	45	
		4HRR-020-R002-120-445	2	4	R0.02	3	12	4	45	
		4HRR-020-R002-140-450	2	4	R0.02	3	14	4	50	
		4HRR-020-R002-160-450	2	4	R0.02	3	16	4	50	
	A-PRO	4HRR-020-R002-180-450	2	4	R0.02	3	18	4	50	
		4HRR-020-R002-200-450	2	4	R0.02	3	20	4	50	
	X-PRO	4HRR-020-R002-220-460	2	4	R0.02	3	22	4	60	
		4HRR-020-R002-250-460	2	4	R0.02	3	25	4	60	
		4HRR-020-R002-300-470	2	4	R0.02	3	30	4	70	
		4HRR-020-R002-350-470	2	4	R0.02	3	35	4	70	
	SUS MILL	4HRR-020-R005-040-445	2	4	R0.05	3	4	4	45	
		4HRR-020-R005-060-445	2	4	R0.05	3	6	4	45	
		4HRR-020-R005-080-445	2	4	R0.05	3	8	4	45	
		4HRR-020-R005-100-445	2	4	R0.05	3	10	4	45	
	S-PRO	4HRR-020-R005-120-445	2	4	R0.05	3	12	4	45	
		4HRR-020-R005-140-450	2	4	R0.05	3	14	4	50	
		4HRR-020-R005-160-450	2	4	R0.05	3	16	4	50	
		4HRR-020-R005-180-450	2	4	R0.05	3	18	4	50	
	D-PRO	4HRR-020-R005-200-450	2	4	R0.05	3	20	4	50	
		4HRR-020-R005-220-460	2	4	R0.05	3	22	4	60	
		4HRR-020-R005-250-460	2	4	R0.05	3	25	4	60	
		4HRR-020-R005-300-470	2	4	R0.05	3	30	4	70	
	AL-PRO	4HRR-020-R005-350-470	2	4	R0.05	3	35	4	70	
		4HRR-020-R01-040-445	2	4	R0.1	3	4	4	45	
		4HRR-020-R01-060-445	2	4	R0.1	3	6	4	45	
		4HRR-020-R01-080-445	2	4	R0.1	3	8	4	45	
	AL MILL	4HRR-020-R01-100-445	2	4	R0.1	3	10	4	45	
		4HRR-020-R01-120-445	2	4	R0.1	3	12	4	45	
		4HRR-020-R01-140-450	2	4	R0.1	3	14	4	50	
		4HRR-020-R01-160-450	2	4	R0.1	3	16	4	50	
	ABS	4HRR-020-R01-180-450	2	4	R0.1	3	18	4	50	
		4HRR-020-R01-200-450	2	4	R0.1	3	20	4	50	
		4HRR-020-R01-220-460	2	4	R0.1	3	22	4	60	
		4HRR-020-R01-250-460	2	4	R0.1	3	25	4	60	
	MICRO GRAIN	4HRR-020-R01-300-470	2	4	R0.1	3	30	4	70	
		4HRR-020-R01-350-470	2	4	R0.1	3	35	4	70	
		4HRR-020-R02-040-445	2	4	R0.2	3	4	4	45	
		4HRR-020-R02-060-445	2	4	R0.2	3	6	4	45	
	MULTI	4HRR-020-R02-080-445	2	4	R0.2	3	8	4	45	

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEP	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF	R-PRO
4HRR-020-R02-100-445	2	4	R0.2	3	10	4	45	H-PRO
4HRR-020-R02-120-445	2	4	R0.2	3	12	4	45	
4HRR-020-R02-140-450	2	4	R0.2	3	14	4	50	
4HRR-020-R02-160-450	2	4	R0.2	3	16	4	50	
4HRR-020-R02-180-450	2	4	R0.2	3	18	4	50	A-PRO
4HRR-020-R02-200-450	2	4	R0.2	3	20	4	50	
4HRR-020-R02-220-460	2	4	R0.2	3	22	4	60	X-PRO
4HRR-020-R02-250-460	2	4	R0.2	3	25	4	60	
4HRR-020-R02-300-470	2	4	R0.2	3	30	4	70	
4HRR-020-R02-350-470	2	4	R0.2	3	35	4	70	
4HRR-020-R03-040-445	2	4	R0.3	3	4	4	45	SUS MILL
4HRR-020-R03-060-445	2	4	R0.3	3	6	4	45	
4HRR-020-R03-080-445	2	4	R0.3	3	8	4	45	
4HRR-020-R03-100-445	2	4	R0.3	3	10	4	45	
4HRR-020-R03-120-445	2	4	R0.3	3	12	4	45	S-PRO
4HRR-020-R03-140-450	2	4	R0.3	3	14	4	50	
4HRR-020-R03-160-450	2	4	R0.3	3	16	4	50	
4HRR-020-R03-180-450	2	4	R0.3	3	18	4	50	
4HRR-020-R03-200-450	2	4	R0.3	3	20	4	50	D-PRO
4HRR-020-R03-220-460	2	4	R0.3	3	22	4	60	
4HRR-020-R03-250-460	2	4	R0.3	3	25	4	60	
4HRR-020-R03-300-470	2	4	R0.3	3	30	4	70	
4HRR-020-R03-350-470	2	4	R0.3	3	35	4	70	A-PLUS
4HRR-020-R05-040-445	2	4	R0.5	3	4	4	45	
4HRR-020-R05-060-445	2	4	R0.5	3	6	4	45	
4HRR-020-R05-080-445	2	4	R0.5	3	8	4	45	
4HRR-020-R05-100-445	2	4	R0.5	3	10	4	45	AL MILL
4HRR-020-R05-120-445	2	4	R0.5	3	12	4	45	
4HRR-020-R05-140-450	2	4	R0.5	3	14	4	50	
4HRR-020-R05-160-450	2	4	R0.5	3	16	4	50	
4HRR-020-R05-180-450	2	4	R0.5	3	18	4	50	ABS
4HRR-020-R05-200-450	2	4	R0.5	3	20	4	50	
4HRR-020-R05-220-460	2	4	R0.5	3	22	4	60	
4HRR-020-R05-250-460	2	4	R0.5	3	25	4	60	
4HRR-020-R05-300-470	2	4	R0.5	3	30	4	70	MICRO GRAIN
4HRR-020-R05-350-470	2	4	R0.5	3	35	4	70	
4HRR-025-R01-060-445	2.5	4	R0.1	3.8	6	4	45	
4HRR-025-R01-080-445	2.5	4	R0.1	3.8	8	4	45	
4HRR-025-R01-100-445	2.5	4	R0.1	3.8	10	4	45	Technical data

(Unit: mm)

	R-PRO	제품코드 Product Code	직경 DC	날수 ZEFP	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF
		4HRR-025-R01-120-445	2.5	4	R0.1	3.8	12	4	45
		4HRR-025-R01-160-450	2.5	4	R0.1	3.8	16	4	50
		4HRR-025-R01-200-450	2.5	4	R0.1	3.8	20	4	50
		4HRR-025-R01-250-460	2.5	4	R0.1	3.8	25	4	60
		4HRR-025-R01-300-470	2.5	4	R0.1	3.8	30	4	70
		4HRR-025-R02-060-445	2.5	4	R0.2	3.8	6	4	45
		4HRR-025-R02-080-445	2.5	4	R0.2	3.8	8	4	45
		4HRR-025-R02-100-445	2.5	4	R0.2	3.8	10	4	45
		4HRR-025-R02-120-445	2.5	4	R0.2	3.8	12	4	45
		4HRR-025-R02-160-450	2.5	4	R0.2	3.8	16	4	50
		4HRR-025-R02-200-450	2.5	4	R0.2	3.8	20	4	50
		4HRR-025-R02-250-460	2.5	4	R0.2	3.8	25	4	60
		4HRR-025-R02-300-470	2.5	4	R0.2	3.8	30	4	70
		4HRR-025-R03-060-445	2.5	4	R0.3	3.8	6	4	45
		4HRR-025-R03-080-445	2.5	4	R0.3	3.8	8	4	45
		4HRR-025-R03-100-445	2.5	4	R0.3	3.8	10	4	45
		4HRR-025-R03-120-445	2.5	4	R0.3	3.8	12	4	45
		4HRR-025-R03-160-450	2.5	4	R0.3	3.8	16	4	50
		4HRR-025-R03-200-450	2.5	4	R0.3	3.8	20	4	50
		4HRR-025-R03-250-460	2.5	4	R0.3	3.8	25	4	60
		4HRR-025-R03-300-470	2.5	4	R0.3	3.8	30	4	70
		4HRR-025-R05-060-445	2.5	4	R0.5	3.8	6	4	45
		4HRR-025-R05-080-445	2.5	4	R0.5	3.8	8	4	45
		4HRR-025-R05-100-445	2.5	4	R0.5	3.8	10	4	45
		4HRR-025-R05-120-445	2.5	4	R0.5	3.8	12	4	45
		4HRR-025-R05-160-450	2.5	4	R0.5	3.8	16	4	50
		4HRR-025-R05-200-450	2.5	4	R0.5	3.8	20	4	50
		4HRR-025-R05-250-460	2.5	4	R0.5	3.8	25	4	60
		4HRR-025-R05-300-470	2.5	4	R0.5	3.8	30	4	70
		4HRR-030-R01-080-650	3	4	R0.1	4.5	8	6	50
		4HRR-030-R01-100-450	3	4	R0.1	4.5	10	4	50
		4HRR-030-R01-100-650	3	4	R0.1	4.5	10	6	50
		4HRR-030-R01-120-650	3	4	R0.1	4.5	12	6	50
		4HRR-030-R01-160-660	3	4	R0.1	4.5	16	6	60
		4HRR-030-R01-200-660	3	4	R0.1	4.5	20	6	60
		4HRR-030-R01-250-665	3	4	R0.1	4.5	25	6	65
		4HRR-030-R01-300-670	3	4	R0.1	4.5	30	6	70
		4HRR-030-R01-350-680	3	4	R0.1	4.5	35	6	80
		4HRR-030-R01-400-680	3	4	R0.1	4.5	40	6	80

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF	R-PRO
4HRR-030-R01-500-6A0	3	4	R0.1	4.5	50	6	100	H-PRO
4HRR-030-R02-100-350	3	4	R0.2	4.5	10	3	50	
4HRR-030-R02-100-450	3	4	R0.2	4.5	10	4	50	
4HRR-030-R02-080-650	3	4	R0.2	4.5	8	6	50	A-PRO
4HRR-030-R02-100-650	3	4	R0.2	4.5	10	6	50	
4HRR-030-R02-120-650	3	4	R0.2	4.5	12	6	50	
4HRR-030-R02-160-660	3	4	R0.2	4.5	16	6	60	X-PRO
4HRR-030-R02-200-660	3	4	R0.2	4.5	20	6	60	
4HRR-030-R02-250-665	3	4	R0.2	4.5	25	6	65	
4HRR-030-R02-300-670	3	4	R0.2	4.5	30	6	70	SUS MILL
4HRR-030-R02-350-680	3	4	R0.2	4.5	35	6	80	
4HRR-030-R02-400-680	3	4	R0.2	4.5	40	6	80	
4HRR-030-R02-500-6A0	3	4	R0.2	4.5	50	6	100	S-PRO
4HRR-030-R03-080-650	3	4	R0.3	4.5	8	6	50	
4HRR-030-R03-100-350	3	4	R0.3	4.5	10	3	50	
4HRR-030-R03-100-450	3	4	R0.3	4.5	10	4	50	D-PRO
4HRR-030-R03-100-650	3	4	R0.3	4.5	10	6	50	
4HRR-030-R03-120-650	3	4	R0.3	4.5	12	6	50	
4HRR-030-R03-160-660	3	4	R0.3	4.5	16	6	60	A-PLUS
4HRR-030-R03-200-660	3	4	R0.3	4.5	20	6	60	
4HRR-030-R03-250-665	3	4	R0.3	4.5	25	6	65	
4HRR-030-R03-300-670	3	4	R0.3	4.5	30	6	70	AL-PRO
4HRR-030-R03-350-680	3	4	R0.3	4.5	35	6	80	
4HRR-030-R03-400-680	3	4	R0.3	4.5	40	6	80	
4HRR-030-R03-500-6A0	3	4	R0.3	4.5	50	6	100	AL MILL
4HRR-030-R05-080-650	3	4	R0.5	4.5	8	6	50	
4HRR-030-R05-100-350	3	4	R0.5	4.5	10	3	50	
4HRR-030-R05-100-450	3	4	R0.5	4.5	10	4	50	ABS
4HRR-030-R05-100-650	3	4	R0.5	4.5	10	6	50	
4HRR-030-R05-120-650	3	4	R0.5	4.5	12	6	50	
4HRR-030-R05-160-660	3	4	R0.5	4.5	16	6	60	MICRO GRAIN
4HRR-030-R05-200-660	3	4	R0.5	4.5	20	6	60	
4HRR-030-R05-250-665	3	4	R0.5	4.5	25	6	65	
4HRR-030-R05-300-670	3	4	R0.5	4.5	30	6	70	MULTI
4HRR-030-R05-350-675	3	4	R0.5	4.5	35	6	75	
4HRR-030-R05-400-680	3	4	R0.5	4.5	40	6	80	
4HRR-030-R05-500-6A0	3	4	R0.5	4.5	50	6	100	Technical data
4HRR-030-R10-080-650	3	4	R1.0	4.5	8	6	50	
4HRR-030-R10-100-350	3	4	R1.0	4.5	10	3	50	

(Unit: mm)

	R-PRO	제품코드 Product Code	직경 DC	날수 ZEFP	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF
		4HRR-030-R10-100-450	3	4	R1.0	4.5	10	4	50
		4HRR-030-R10-100-650	3	4	R1.0	4.5	10	6	50
		4HRR-030-R10-120-650	3	4	R1.0	4.5	12	6	50
		4HRR-030-R10-160-660	3	4	R1.0	4.5	16	6	60
		4HRR-030-R10-200-660	3	4	R1.0	4.5	20	6	60
		4HRR-030-R10-250-665	3	4	R1.0	4.5	25	6	65
		4HRR-030-R10-300-670	3	4	R1.0	4.5	30	6	70
		4HRR-030-R10-350-680	3	4	R1.0	4.5	35	6	80
		4HRR-030-R10-400-680	3	4	R1.0	4.5	40	6	80
		4HRR-030-R10-500-6A0	3	4	R1.0	4.5	50	6	100
		4HRR-040-R01-080-650	4	4	R0.1	6	8	6	50
		4HRR-040-R01-100-650	4	4	R0.1	6	10	6	50
		4HRR-040-R01-120-450	4	4	R0.1	6	12	4	50
		4HRR-040-R01-120-650	4	4	R0.1	6	12	6	50
		4HRR-040-R01-160-660	4	4	R0.1	6	16	6	60
		4HRR-040-R01-200-660	4	4	R0.1	6	20	6	60
		4HRR-040-R01-250-665	4	4	R0.1	6	25	6	65
		4HRR-040-R01-300-670	4	4	R0.1	6	30	6	70
		4HRR-040-R01-350-680	4	4	R0.1	6	35	6	80
		4HRR-040-R01-400-680	4	4	R0.1	6	40	6	80
		4HRR-040-R01-450-690	4	4	R0.1	6	45	6	90
		4HRR-040-R01-500-6A0	4	4	R0.1	6	50	6	100
		4HRR-040-R02-080-650	4	4	R0.2	6	8	6	50
		4HRR-040-R02-100-650	4	4	R0.2	6	10	6	50
		4HRR-040-R02-120-450	4	4	R0.2	6	12	4	50
		4HRR-040-R02-120-650	4	4	R0.2	6	12	6	50
		4HRR-040-R02-160-660	4	4	R0.2	6	16	6	60
		4HRR-040-R02-200-660	4	4	R0.2	6	20	6	60
		4HRR-040-R02-250-665	4	4	R0.2	6	25	6	65
		4HRR-040-R02-300-670	4	4	R0.2	6	30	6	70
		4HRR-040-R02-350-680	4	4	R0.2	6	35	6	80
		4HRR-040-R02-400-680	4	4	R0.2	6	40	6	80
		4HRR-040-R02-450-690	4	4	R0.2	6	45	6	90
		4HRR-040-R02-500-6A0	4	4	R0.2	6	50	6	100
		4HRR-040-R03-080-650	4	4	R0.3	6	8	6	50
		4HRR-040-R03-100-650	4	4	R0.3	6	10	6	50
		4HRR-040-R03-120-450	4	4	R0.3	6	12	4	50
		4HRR-040-R03-120-650	4	4	R0.3	6	12	6	50
		4HRR-040-R03-160-660	4	4	R0.3	6	16	6	60

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF	R-PRO
4HRR-040-R03-200-660	4	4	R0.3	6	20	6	60	H-PRO
4HRR-040-R03-250-665	4	4	R0.3	6	25	6	65	
4HRR-040-R03-300-670	4	4	R0.3	6	30	6	70	
4HRR-040-R03-350-680	4	4	R0.3	6	35	6	80	
4HRR-040-R03-400-680	4	4	R0.3	6	40	6	80	A-PRO
4HRR-040-R03-450-690	4	4	R0.3	6	45	6	90	
4HRR-040-R03-500-6A0	4	4	R0.3	6	50	6	100	
4HRR-040-R05-080-650	4	4	R0.5	6	8	6	50	
4HRR-040-R05-100-650	4	4	R0.5	6	10	6	50	X-PRO
4HRR-040-R05-120-450	4	4	R0.5	6	12	4	50	
4HRR-040-R05-120-650	4	4	R0.5	6	12	6	50	
4HRR-040-R05-160-450	4	4	R0.5	6	16	4	50	
4HRR-040-R05-160-4A0	4	4	R0.5	6	16	4	100	SUS MILL
4HRR-040-R05-160-660	4	4	R0.5	6	16	6	60	
4HRR-040-R05-200-660	4	4	R0.5	6	20	6	60	
4HRR-040-R05-250-665	4	4	R0.5	6	25	6	65	
4HRR-040-R05-300-670	4	4	R0.5	6	30	6	70	D-PRO
4HRR-040-R05-350-680	4	4	R0.5	6	35	6	80	
4HRR-040-R05-400-680	4	4	R0.5	6	40	6	80	
4HRR-040-R05-450-690	4	4	R0.5	6	45	6	90	
4HRR-040-R05-500-6A0	4	4	R0.5	6	50	6	100	A-PLUS
4HRR-040-R10-080-650	4	4	R1.0	6	8	6	50	
4HRR-040-R10-100-650	4	4	R1.0	6	10	6	50	
4HRR-040-R10-120-450	4	4	R1.0	6	12	4	50	
4HRR-040-R10-120-650	4	4	R1.0	6	12	6	50	AL MILL
4HRR-040-R10-160-450	4	4	R1.0	6	16	4	50	
4HRR-040-R10-160-660	4	4	R1.0	6	16	6	60	
4HRR-040-R10-200-660	4	4	R1.0	6	20	6	60	
4HRR-040-R10-250-665	4	4	R1.0	6	25	6	65	ABS
4HRR-040-R10-300-670	4	4	R1.0	6	30	6	70	
4HRR-040-R10-350-680	4	4	R1.0	6	35	6	80	
4HRR-040-R10-400-680	4	4	R1.0	6	40	6	80	
4HRR-040-R10-450-690	4	4	R1.0	6	45	6	90	MICRO GRAIN
4HRR-040-R10-500-6A0	4	4	R1.0	6	50	6	100	
4HRR-050-R01-180-660	5	4	R0.1	7.5	18	6	60	
4HRR-050-R01-300-670	5	4	R0.1	7.5	30	6	70	
4HRR-050-R01-400-680	5	4	R0.1	7.5	40	6	80	MULTI
4HRR-050-R01-500-6A0	5	4	R0.1	7.5	50	6	100	
4HRR-050-R02-180-660	5	4	R0.2	7.5	18	6	60	
								Technical data

(Unit: mm)

	R-PRO	제품코드 Product Code	직경 DC	날수 ZEFP	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF
		4HRR-050-R02-300-670	5	4	R0.2	7.5	30	6	70
		4HRR-050-R02-400-680	5	4	R0.2	7.5	40	6	80
		4HRR-050-R02-500-6A0	5	4	R0.2	7.5	50	6	100
		4HRR-050-R03-180-660	5	4	R0.3	7.5	18	6	60
		4HRR-050-R03-300-670	5	4	R0.3	7.5	30	6	70
		4HRR-050-R03-400-680	5	4	R0.3	7.5	40	6	80
		4HRR-050-R03-500-6A0	5	4	R0.3	7.5	50	6	100
		4HRR-050-R05-180-660	5	4	R0.5	7.5	18	6	60
		4HRR-050-R05-300-670	5	4	R0.5	7.5	30	6	70
		4HRR-050-R05-400-680	5	4	R0.5	7.5	40	6	80
		4HRR-050-R05-500-6A0	5	4	R0.5	7.5	50	6	100
		4HRR-050-R10-180-660	5	4	R1.0	7.5	18	6	60
		4HRR-050-R10-300-670	5	4	R1.0	7.5	30	6	70
		4HRR-050-R10-400-680	5	4	R1.0	7.5	40	6	80
		4HRR-050-R10-500-6A0	5	4	R1.0	7.5	50	6	100
		4HRR-060-R01-200-660	6	4	R0.1	9	20	6	60
		4HRR-060-R01-400-690	6	4	R0.1	9	40	6	90
		4HRR-060-R01-500-6A0	6	4	R0.1	9	50	6	100
		4HRR-060-R02-200-660	6	4	R0.2	9	20	6	60
		4HRR-060-R02-200-675	6	4	R0.2	9	20	6	75
		4HRR-060-R02-200-6A0	6	4	R0.2	9	20	6	100
		4HRR-060-R02-300-680	6	4	R0.2	9	30	6	80
		4HRR-060-R02-400-690	6	4	R0.2	9	40	6	90
		4HRR-060-R02-500-6A0	6	4	R0.2	9	50	6	100
		4HRR-060-R03-200-660	6	4	R0.3	9	20	6	60
		4HRR-060-R03-200-675	6	4	R0.3	9	20	6	75
		4HRR-060-R03-200-6A0	6	4	R0.3	9	20	6	100
		4HRR-060-R03-300-680	6	4	R0.3	9	30	6	80
		4HRR-060-R03-400-690	6	4	R0.3	9	40	6	90
		4HRR-060-R03-500-6A0	6	4	R0.3	9	50	6	100
		4HRR-060-R05-200-660	6	4	R0.5	9	20	6	60
		4HRR-060-R05-200-675	6	4	R0.5	9	20	6	75
		4HRR-060-R05-200-6A0	6	4	R0.5	9	20	6	100
		4HRR-060-R05-300-680	6	4	R0.5	9	30	6	80
		4HRR-060-R05-400-690	6	4	R0.5	9	40	6	90
		4HRR-060-R05-500-6A0	6	4	R0.5	9	50	6	100
		4HRR-060-R10-200-660	6	4	R1.0	9	20	6	60
		4HRR-060-R10-200-675	6	4	R1.0	9	20	6	75
		4HRR-060-R10-200-6A0	6	4	R1.0	9	20	6	100

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF	R-PRO
4HRR-060-R10-300-680	6	4	R1.0	9	30	6	80	H-PRO
4HRR-060-R10-400-690	6	4	R1.0	9	40	6	90	
4HRR-060-R10-500-6A0	6	4	R1.0	9	50	6	100	
4HRR-060-R15-200-660	6	4	R1.5	9	20	6	60	A-PRO
4HRR-060-R15-200-675	6	4	R1.5	9	20	6	75	
4HRR-060-R15-200-6A0	6	4	R1.5	9	20	6	100	
4HRR-060-R15-300-680	6	4	R1.5	9	30	6	80	X-PRO
4HRR-060-R15-400-690	6	4	R1.5	9	40	6	90	
4HRR-060-R15-500-6A0	6	4	R1.5	9	50	6	100	
4HRR-060-R20-200-660	6	4	R2.0	9	20	6	60	SUS MILL
4HRR-060-R20-200-675	6	4	R2.0	9	20	6	75	
4HRR-060-R20-200-6A0	6	4	R2.0	9	20	6	100	
4HRR-060-R20-400-690	6	4	R2.0	9	40	6	90	S-PRO
4HRR-080-R01-240-865	8	4	R0.1	12	24	8	65	
4HRR-080-R02-240-865	8	4	R0.2	12	24	8	65	
4HRR-080-R02-240-875	8	4	R0.2	12	24	8	75	D-PRO
4HRR-080-R02-240-8A0	8	4	R0.2	12	24	8	100	
4HRR-080-R03-240-865	8	4	R0.3	12	24	8	65	
4HRR-080-R03-240-875	8	4	R0.3	12	24	8	75	A-PLUS
4HRR-080-R03-240-8A0	8	4	R0.3	12	24	8	100	
4HRR-080-R05-240-865	8	4	R0.5	12	24	8	65	
4HRR-080-R05-240-875	8	4	R0.5	12	24	8	75	AL-PRO
4HRR-080-R05-240-8A0	8	4	R0.5	12	24	8	100	
4HRR-080-R05-300-890	8	4	R0.5	12	30	8	90	
4HRR-080-R05-400-8A0	8	4	R0.5	12	40	8	100	AL MILL
4HRR-080-R10-240-865	8	4	R1.0	12	24	8	65	
4HRR-080-R10-240-875	8	4	R1.0	12	24	8	75	
4HRR-080-R10-240-8A0	8	4	R1.0	12	24	8	100	ABS
4HRR-080-R10-240-8C5	8	4	R1.0	12	24	8	125	
4HRR-080-R10-300-890	8	4	R1.0	12	30	8	90	
4HRR-080-R10-400-8A0	8	4	R1.0	12	40	8	100	MICRO GRAIN
4HRR-080-R15-240-865	8	4	R1.5	12	24	8	65	
4HRR-080-R15-240-875	8	4	R1.5	12	24	8	75	
4HRR-080-R15-240-8A0	8	4	R1.5	12	24	8	100	MULTI
4HRR-080-R15-400-8A0	8	4	R1.5	12	40	8	100	
4HRR-080-R20-240-865	8	4	R2.0	12	24	8	65	
4HRR-080-R20-240-875	8	4	R2.0	12	24	8	75	Technical data
4HRR-080-R20-300-890	8	4	R2.0	12	30	8	90	
4HRR-100-R02-300-A70	10	4	R0.2	15	30	10	70	

(Unit: mm)

	R-PRO	제품코드 Product Code	직경 DC	날수 ZEFP	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF
		4HRR-100-R02-300-A75	10	4	R0.2	15	30	10	75
		4HRR-100-R02-300-AA0	10	4	R0.2	15	30	10	100
		4HRR-100-R03-300-A70	10	4	R0.3	15	30	10	70
		4HRR-100-R03-300-A75	10	4	R0.3	15	30	10	75
		4HRR-100-R03-300-AA0	10	4	R0.3	15	30	10	100
		4HRR-100-R05-300-A70	10	4	R0.5	15	30	10	70
		4HRR-100-R05-300-A75	10	4	R0.5	15	30	10	75
		4HRR-100-R05-300-AA0	10	4	R0.5	15	30	10	100
		4HRR-100-R05-400-AA0	10	4	R0.5	15	40	10	100
		4HRR-100-R10-300-A70	10	4	R1.0	15	30	10	70
		4HRR-100-R10-300-A75	10	4	R1.0	15	30	10	75
		4HRR-100-R10-300-AA0	10	4	R1.0	15	30	10	100
		4HRR-100-R10-300-AF0	10	4	R1.0	15	30	10	150
		4HRR-100-R10-400-AA0	10	4	R1.0	15	40	10	100
		4HRR-100-R15-300-A70	10	4	R1.5	15	30	10	70
		4HRR-100-R15-300-A75	10	4	R1.5	15	30	10	75
		4HRR-100-R15-300-AA0	10	4	R1.5	15	30	10	100
		4HRR-100-R15-400-AA0	10	4	R1.5	15	30	10	100
		4HRR-100-R20-300-A70	10	4	R2.0	15	30	10	70
		4HRR-100-R20-300-A75	10	4	R2.0	15	30	10	75
		4HRR-100-R20-300-AA0	10	4	R2.0	15	30	10	100
		4HRR-100-R20-400-AA0	10	4	R2.0	15	40	10	100
		4HRR-100-R25-300-A70	10	4	R2.5	15	30	10	70
		4HRR-120-R03-300-C80	12	4	R0.3	18	30	12	80
		4HRR-120-R03-300-CB0	12	4	R0.3	18	30	12	110
		4HRR-120-R05-300-C80	12	4	R0.5	18	30	12	80
		4HRR-120-R05-300-CB0	12	4	R0.5	18	30	12	110
		4HRR-120-R05-300-CF0	12	4	R0.5	18	30	12	150
		4HRR-120-R05-400-CB0	12	4	R0.5	18	40	12	110
		4HRR-120-R10-300-C80	12	4	R1.0	18	30	12	80
		4HRR-120-R10-300-CB0	12	4	R1.0	18	30	12	110
		4HRR-120-R10-300-CF0	12	4	R1.0	18	30	12	150
		4HRR-120-R10-400-CB0	12	4	R1.0	18	40	12	110
		4HRR-120-R15-300-C80	12	4	R1.5	18	30	12	80
		4HRR-120-R15-300-CB0	12	4	R1.5	18	30	12	110
		4HRR-120-R15-400-CB0	12	4	R1.5	18	40	12	110
		4HRR-120-R20-300-C80	12	4	R2.0	18	30	12	80
		4HRR-120-R20-300-CB0	12	4	R2.0	18	30	12	110
		4HRR-120-R20-300-CF0	12	4	R2.0	18	30	12	150

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEFP	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF
4HRR-120-R20-300-CK0	12	4	R2.0	18	30	12	200
4HRR-120-R20-400-CB0	12	4	R2.0	18	40	12	110
4HRR-120-R30-300-C80	12	4	R3.0	18	30	12	80
4HRR-120-R30-300-CB0	12	4	R3.0	18	30	12	110

R-PRO

H-PRO

A-PRO

X-PRO

SUS MILL

S-PRO

D-PRO

A-PLUS

AL-PRO

AL MILL

ABS

MICRO
GRAIN

MULTI

Technical data

R-PRO

H-PRO

A-PRO

X-PRO

SUS MILL

S-PRO

D-PRO

A-PLUS

AL-PRO

AL MILL

ABS

MICRO
GRAIN

MULTI

Technical data

4HCR

4날 코너 래디우스 엔드밀

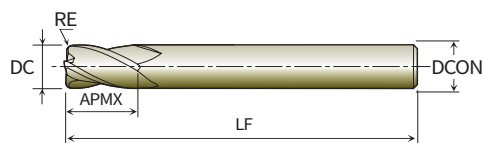
4 Flutes Corner Radius End Mills

H

4

CR

30°

page
No.266

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	반경 RE	날장 APMX	샙크경 DCON	전장 LF
4HCR-010-R002-025-445	1	4	R0.02	2.5	4	45
4HCR-010-R005-025-445	1	4	R0.05	2.5	4	45
4HCR-010-R01-025-445	1	4	R0.1	2.5	4	45
4HCR-010-R02-025-445	1	4	R0.2	2.5	4	45
4HCR-010-R03-025-445	1	4	R0.3	2.5	4	45
4HCR-012-R002-032-445	1.2	4	R0.02	3.2	4	45
4HCR-012-R005-032-445	1.2	4	R0.05	3.2	4	45
4HCR-012-R01-032-445	1.2	4	R0.1	3.2	4	45
4HCR-012-R02-032-445	1.2	4	R0.2	3.2	4	45
4HCR-012-R03-032-445	1.2	4	R0.3	3.2	4	45
4HCR-015-R002-040-445	1.5	4	R0.02	4	4	45
4HCR-015-R005-040-445	1.5	4	R0.05	4	4	45
4HCR-015-R01-040-445	1.5	4	R0.1	4	4	45
4HCR-015-R02-040-445	1.5	4	R0.2	4	4	45
4HCR-015-R03-040-445	1.5	4	R0.3	4	4	45
4HCR-015-R05-040-445	1.5	4	R0.5	4	4	45
4HCR-020-R002-060-445	2	4	R0.02	6	4	45
4HCR-020-R005-060-445	2	4	R0.05	6	4	45
4HCR-020-R01-060-445	2	4	R0.1	6	4	45
4HCR-020-R02-060-445	2	4	R0.2	6	4	45
4HCR-020-R03-060-445	2	4	R0.3	6	4	45
4HCR-020-R05-060-445	2	4	R0.5	6	4	45
4HCR-025-R005-060-450	2.5	4	R0.05	6	4	50
4HCR-025-R01-060-450	2.5	4	R0.1	6	4	50
4HCR-025-R02-060-450	2.5	4	R0.2	6	4	50

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	반경 RE	날장 APMX	생크경 DCON	전장 LF	R-PRO	
4HCR-025-R03-060-450	2.5	4	R0.3	6	4	50		
4HCR-025-R05-060-450	2.5	4	R0.5	6	4	50	H-PRO	
4HCR-030-R005-080-660	3	4	R0.05	8	6	60		
4HCR-030-R01-080-660	3	4	R0.1	8	6	60		
4HCR-030-R02-080-660	3	4	R0.2	8	6	60	A-PRO	
4HCR-030-R03-080-660	3	4	R0.3	8	6	60		
4HCR-030-R05-080-660	3	4	R0.5	8	6	60		
4HCR-030-R10-080-660	3	4	R1.0	8	6	60	X-PRO	
4HCR-035-R01-090-670	3.5	4	R0.1	9	6	70		
4HCR-035-R02-090-670	3.5	4	R0.2	9	6	70		
4HCR-035-R03-090-670	3.5	4	R0.3	9	6	70	SUS MILL	
4HCR-035-R05-090-670	3.5	4	R0.5	9	6	70		
4HCR-035-R10-090-670	3.5	4	R1.0	9	6	70		
4HCR-040-R005-100-460	4	4	R0.05	10	4	60	S-PRO	
4HCR-040-R005-100-670	4	4	R0.05	10	6	70		
4HCR-040-R01-100-460	4	4	R0.1	10	4	60		
4HCR-040-R01-100-670	4	4	R0.1	10	6	70	D-PRO	
4HCR-040-R02-100-460	4	4	R0.2	10	4	60		
4HCR-040-R02-100-670	4	4	R0.2	10	6	70		
4HCR-040-R03-100-460	4	4	R0.3	10	4	60	A-PLUS	
4HCR-040-R03-100-670	4	4	R0.3	10	6	70		
4HCR-040-R05-100-460	4	4	R0.5	10	4	60		
4HCR-040-R05-100-670	4	4	R0.5	10	6	70	AL-PRO	
4HCR-040-R10-100-460	4	4	R1.0	10	4	60		
4HCR-040-R10-100-670	4	4	R1.0	10	6	70		
4HCR-045-R01-110-675	4.5	4	R0.1	11	6	75	AL MILL	
4HCR-045-R02-110-675	4.5	4	R0.2	11	6	75		
4HCR-045-R03-110-675	4.5	4	R0.3	11	6	75		
4HCR-045-R05-110-675	4.5	4	R0.5	11	6	75	ABS	
4HCR-050-R01-130-675	5	4	R0.1	13	6	75		
4HCR-050-R02-130-675	5	4	R0.2	13	6	75		
4HCR-050-R03-130-675	5	4	R0.3	13	6	75	MICRO GRAIN	
4HCR-050-R05-130-675	5	4	R0.5	13	6	75		
4HCR-050-R10-130-675	5	4	R1.0	13	6	75		
4HCR-060-R005-110-660	6	4	R0.05	11	6	60	MULTI	
4HCR-060-R005-130-690	6	4	R0.05	13	6	90		
4HCR-060-R01-110-660	6	4	R0.1	11	6	60		
4HCR-060-R01-130-690	6	4	R0.1	13	6	90	Technical data	
4HCR-060-R02-110-660	6	4	R0.2	11	6	60		

(Unit: mm)

	R-PRO	제품코드 Product Code	직경 DC	날수 ZEFP	반경 RE	날장 APMX	생크경 DCON	전장 LF
		4HCR-060-R02-130-690	6	4	R0.2	13	6	90
		4HCR-060-R03-110-660	6	4	R0.3	11	6	60
		4HCR-060-R03-130-690	6	4	R0.3	13	6	90
		4HCR-060-R05-110-660	6	4	R0.5	11	6	60
		4HCR-060-R05-130-690	6	4	R0.5	13	6	90
		4HCR-060-R10-110-660	6	4	R1.0	11	6	60
		4HCR-060-R10-130-690	6	4	R1.0	13	6	90
		4HCR-060-R15-110-660	6	4	R1.5	11	6	60
		4HCR-060-R15-130-690	6	4	R1.5	13	6	90
		4HCR-060-R20-110-660	6	4	R2.0	11	6	60
		4HCR-060-R20-130-690	6	4	R2.0	13	6	90
		4HCR-060-R25-130-690	6	4	R2.5	13	6	90
		4HCR-080-R01-160-870	8	4	R0.1	16	8	70
		4HCR-080-R01-190-8A0	8	4	R0.1	19	8	100
		4HCR-080-R02-160-870	8	4	R0.2	16	8	70
		4HCR-080-R02-190-8A0	8	4	R0.2	19	8	100
		4HCR-080-R03-160-870	8	4	R0.3	16	8	70
		4HCR-080-R03-190-8A0	8	4	R0.3	19	8	100
		4HCR-080-R05-160-870	8	4	R0.5	16	8	70
		4HCR-080-R05-190-8A0	8	4	R0.5	19	8	100
		4HCR-080-R10-160-870	8	4	R1.0	16	8	70
		4HCR-080-R10-190-8A0	8	4	R1.0	19	8	100
		4HCR-080-R15-160-870	8	4	R1.5	16	8	70
		4HCR-080-R15-190-8A0	8	4	R1.5	19	8	100
		4HCR-080-R20-160-870	8	4	R2.0	16	8	70
		4HCR-080-R20-190-8A0	8	4	R2.0	19	8	100
		4HCR-080-R25-190-8A0	8	4	R2.5	19	8	100
		4HCR-080-R30-190-8A0	8	4	R3	19	8	100
		4HCR-080-R35-190-8A0	8	4	R3.5	19	8	100
		4HCR-100-R01-190-A75	10	4	R0.1	19	10	75
		4HCR-100-R01-220-AA0	10	4	R0.1	22	10	100
		4HCR-100-R02-190-A75	10	4	R0.2	19	10	75
		4HCR-100-R02-220-AA0	10	4	R0.2	22	10	100
		4HCR-100-R03-190-A75	10	4	R0.3	19	10	75
		4HCR-100-R03-220-AA0	10	4	R0.3	22	10	100
		4HCR-100-R05-190-A75	10	4	R0.5	19	10	75
		4HCR-100-R05-220-AA0	10	4	R0.5	22	10	100
		4HCR-100-R10-190-A75	10	4	R1.0	19	10	75
		4HCR-100-R10-220-AA0	10	4	R1.0	22	10	100

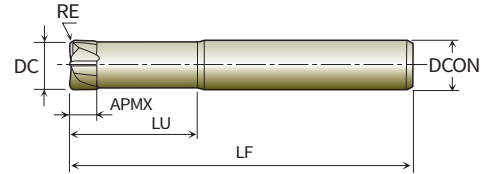
(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	반경 RE	날장 APMX	생크경 DCON	전장 LF	R-PRO
4HCR-100-R15-190-A75	10	4	R1.5	19	10	75	H-PRO
4HCR-100-R15-220-AA0	10	4	R1.5	22	10	100	
4HCR-100-R20-190-A75	10	4	R2.0	19	10	75	
4HCR-100-R20-220-AA0	10	4	R2.0	22	10	100	
4HCR-100-R25-220-AA0	10	4	R2.5	22	10	100	A-PRO
4HCR-100-R30-220-AA0	10	4	R3.0	22	10	100	
4HCR-100-R40-220-AA0	10	4	R4.0	22	10	100	X-PRO
4HCR-120-R01-220-C80	12	4	R0.1	22	12	80	
4HCR-120-R01-260-CB0	12	4	R0.1	26	12	110	
4HCR-120-R02-220-C80	12	4	R0.2	22	12	80	SUS MILL
4HCR-120-R02-260-CB0	12	4	R0.2	26	12	110	
4HCR-120-R03-220-C80	12	4	R0.3	22	12	80	S-PRO
4HCR-120-R03-260-CB0	12	4	R0.3	26	12	110	
4HCR-120-R05-220-C80	12	4	R0.5	22	12	80	D-PRO
4HCR-120-R05-260-CB0	12	4	R0.5	26	12	110	
4HCR-120-R05-260-CD0	12	4	R0.5	26	12	130	A-PLUS
4HCR-120-R10-220-C80	12	4	R1.0	22	12	80	
4HCR-120-R10-260-CB0	12	4	R1.0	26	12	110	
4HCR-120-R10-260-CD0	12	4	R1.0	26	12	130	AL-PRO
4HCR-120-R15-220-C80	12	4	R1.5	22	12	80	
4HCR-120-R15-260-CB0	12	4	R1.5	26	12	110	
4HCR-120-R15-260-CD0	12	4	R1.5	26	12	130	AL MILL
4HCR-120-R20-220-C80	12	4	R2.0	22	12	80	
4HCR-120-R20-260-CB0	12	4	R2.0	26	12	110	
4HCR-120-R20-260-CD0	12	4	R2.0	26	12	130	ABS
4HCR-120-R25-260-CB0	12	4	R2.5	26	12	110	
4HCR-120-R30-260-CB0	12	4	R3.0	26	12	110	
4HCR-120-R40-260-CB0	12	4	R4.0	26	12	110	MICRO GRAIN
4HCR-120-R50-260-CB0	12	4	R5.0	26	12	110	
4HCR-160-R05-320-GB0	16	4	R0.5	32	16	110	
4HCR-160-R05-320-GF0	16	4	R0.5	32	16	150	MULTI
4HCR-160-R10-320-GB0	16	4	R1.0	32	16	110	
4HCR-160-R10-320-GF0	16	4	R1.0	32	16	150	
4HCR-160-R15-320-GB0	16	4	R1.5	32	16	110	Technical data
4HCR-160-R20-320-GB0	16	4	R2.0	32	16	110	
4HCR-160-R30-320-GB0	16	4	R3.0	32	16	110	
4HCR-200-R05-380-KB0	20	4	R0.5	38	20	110	
4HCR-200-R05-380-KF0	20	4	R0.5	38	20	150	
4HCR-200-R10-380-KB0	20	4	R1.0	38	20	110	

4HIT

4날 HIT 엔드밀 (고속고이송)

4 Flutes HIT End Mills for High Speed & Feedrate



(Unit: mm)

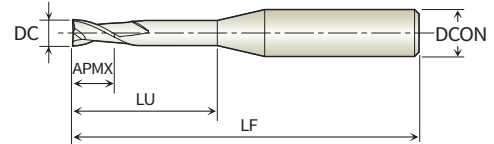
제품코드 Product Code	직경 DC	날수 ZEFP	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF
4HIT-015-R03-040-645	1.5	4	R0.3	0.8	4	6	45
4HIT-020-R05-060-650	2	4	R0.5	1	6	6	50
4HIT-020-R05-060-670	2	4	R0.5	1	6	6	70
4HIT-030-R05-080-650	3	4	R0.5	1.5	8	6	50
4HIT-030-R05-080-670	3	4	R0.5	1.5	8	6	70
4HIT-030-R10-080-650	3	4	R1.0	1.5	8	6	50
4HIT-030-R10-200-660	3	4	R1.0	1.5	20	6	60
4HIT-040-R05-120-660	4	4	R0.5	2	12	6	60
4HIT-040-R05-120-670	4	4	R0.5	2	12	14	70
4HIT-040-R05-160-660	4	4	R0.5	2	16	6	60
4HIT-040-R05-160-670	4	4	R0.5	2	16	14	70
4HIT-040-R10-120-660	4	4	R1.0	2	12	6	60
4HIT-040-R10-120-670	4	4	R1.0	2	12	14	70
4HIT-040-R10-160-660	4	4	R1.0	2	16	6	60
4HIT-040-R10-160-670	4	4	R1.0	2	16	14	70
4HIT-050-R10-150-660	5	4	R1.0	2.5	15	6	60
4HIT-060-R05-120-660	6	4	R0.5	3	12	6	60
4HIT-060-R05-150-660	6	4	R0.5	3	15	6	60
4HIT-060-R05-150-680	6	4	R0.5	3	15	16	80
4HIT-060-R05-200-680	6	4	R0.5	3	20	6	80
4HIT-060-R05-300-680	6	4	R0.5	3	30	6	80
4HIT-060-R10-150-660	6	4	R1.0	3	15	6	60
4HIT-060-R10-150-680	6	4	R1.0	3	15	16	80
4HIT-060-R10-200-680	6	4	R1.0	3	20	6	80
4HIT-060-R10-300-680	6	4	R1.0	3	30	6	80

(Unit: mm)

		(Unit: mm)							
	R-PRO	제품코드 Product Code	직경 DC	날수 ZEFP	반경 RE	날장 APMX	유효장 LU	생크경 DCON	전장 LF
		4HIT-060-R15-150-660	6	4	R1.5	3	15	6	60
	H-PRO	4HIT-080-R05-200-865	8	4	R0.5	4	20	8	65
		4HIT-080-R05-200-890	8	4	R0.5	4	20	18	90
		4HIT-080-R05-200-8A0	8	4	R0.5	4	20	18	100
	A-PRO	4HIT-080-R05-400-890	8	4	R0.5	4	40	8	90
		4HIT-080-R10-200-865	8	4	R1.0	4	20	8	65
		4HIT-080-R10-200-890	8	4	R1.0	4	20	18	90
	X-PRO	4HIT-080-R10-200-8A0	8	4	R1.0	4	20	18	100
		4HIT-080-R10-300-890	8	4	R1.0	4	30	8	90
		4HIT-080-R10-400-890	8	4	R1.0	4	40	8	90
	SUS MILL	4HIT-080-R20-200-865	8	4	R2.0	4	20	8	65
		4HIT-080-R20-200-8A0	8	4	R2.0	4	20	18	100
		4HIT-100-R05-250-A70	10	4	R0.5	5	25	10	70
	S-PRO	4HIT-100-R05-250-AA0	10	4	R0.5	5	25	10	100
		4HIT-100-R10-250-A70	10	4	R1.0	5	25	10	70
		4HIT-100-R10-250-AA0	10	4	R1.0	5	25	10	100
	D-PRO	4HIT-100-R10-250-AB0	10	4	R1.0	5	25	10	110
		4HIT-100-R10-400-AA0	10	4	R1.0	5	40	10	100
		4HIT-100-R20-200-A70	10	4	R2.0	5	20	10	70
	A-PLUS	4HIT-100-R20-250-A70	10	4	R2.0	5	25	10	70
		4HIT-100-R20-250-AB0	10	4	R2.0	5	25	10	110
		4HIT-120-R10-300-C80	12	4	R1.0	6	30	12	80
	AL-PRO	4HIT-120-R10-300-CB0	12	4	R1.0	6	30	12	110
		4HIT-120-R10-400-CB0	12	4	R1.0	6	40	12	110
		4HIT-120-R20-300-C80	12	4	R2.0	6	30	12	80
	AL MILL	4HIT-120-R20-300-CB0	12	4	R2.0	6	30	12	110
		4HIT-120-R20-400-CB0	12	4	R2.0	6	40	12	110
	ABS								
	MICRO GRAIN								
	MULTI								
Technical data									

2HRE

2날 리브가공용 플랫 엔드밀 2 Flutes Rib Flat End Mills



(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEFP	날장 APMX	유효장 LU	생크경 DCON	전장 LF
2HRE-001-003-445	0.1	2	0.15	0.3	4	45
2HRE-001-005-445	0.1	2	0.15	0.5	4	45
2HRE-002-005-445	0.2	2	0.3	0.5	4	45
2HRE-002-010-445	0.2	2	0.3	1	4	45
2HRE-002-015-445	0.2	2	0.3	1.5	4	45
2HRE-002-020-445	0.2	2	0.3	2	4	45
2HRE-002-025-445	0.2	2	0.3	2.5	4	45
2HRE-002-030-445	0.2	2	0.3	3	4	45
2HRE-003-005-445	0.3	2	0.45	0.5	4	45
2HRE-003-010-445	0.3	2	0.45	1	4	45
2HRE-003-015-445	0.3	2	0.45	1.5	4	45
2HRE-003-020-445	0.3	2	0.45	2	4	45
2HRE-003-025-445	0.3	2	0.45	2.5	4	45
2HRE-003-030-445	0.3	2	0.45	3	4	45
2HRE-003-035-445	0.3	2	0.45	3.5	4	45
2HRE-003-040-445	0.3	2	0.45	4	4	45
2HRE-003-050-445	0.3	2	0.45	5	4	45
2HRE-004-010-445	0.4	2	0.6	1	4	45
2HRE-004-015-445	0.4	2	0.6	1.5	4	45
2HRE-004-020-445	0.4	2	0.6	2	4	45
2HRE-004-025-445	0.4	2	0.6	2.5	4	45
2HRE-004-030-445	0.4	2	0.6	3	4	45
2HRE-004-035-445	0.4	2	0.6	3.5	4	45
2HRE-004-040-445	0.4	2	0.6	4	4	45
2HRE-004-050-445	0.4	2	0.6	5	4	45

(Unit: mm)

	R-PRO	제품코드 Product Code	직경 DC	날수 ZEPF	날장 APMX	유효장 LU	생크경 DCON	전장 LF
		2HRE-004-060-445	0.4	2	0.6	6	4	45
	H-PRO	2HRE-004-080-445	0.4	2	0.6	8	4	45
		2HRE-004-100-445	0.4	2	0.6	10	4	45
		2HRE-005-010-445	0.5	2	0.7	1	4	45
	A-PRO	2HRE-005-020-445	0.5	2	0.7	2	4	45
		2HRE-005-030-445	0.5	2	0.7	3	4	45
		2HRE-005-040-445	0.5	2	0.7	4	4	45
	X-PRO	2HRE-005-050-445	0.5	2	0.7	5	4	45
		2HRE-005-060-445	0.5	2	0.7	6	4	45
		2HRE-005-080-445	0.5	2	0.7	8	4	45
	SUS MILL	2HRE-005-100-445	0.5	2	0.7	10	4	45
		2HRE-005-120-445	0.5	2	0.7	12	4	45
		2HRE-005-140-445	0.5	2	0.7	14	4	45
	S-PRO	2HRE-006-020-445	0.6	2	0.9	2	4	45
		2HRE-006-030-445	0.6	2	0.9	3	4	45
		2HRE-006-040-445	0.6	2	0.9	4	4	45
	D-PRO	2HRE-006-050-445	0.6	2	0.9	5	4	45
		2HRE-006-060-445	0.6	2	0.9	6	4	45
		2HRE-006-080-445	0.6	2	0.9	8	4	45
	A-PLUS	2HRE-006-100-445	0.6	2	0.9	10	4	45
		2HRE-006-120-445	0.6	2	0.9	12	4	45
		2HRE-006-140-445	0.6	2	0.9	14	4	45
	AL-PRO	2HRE-006-160-445	0.6	2	0.9	16	4	45
		2HRE-007-020-445	0.7	2	1	2	4	45
		2HRE-007-040-445	0.7	2	1	4	4	45
	AL MILL	2HRE-007-060-445	0.7	2	1	6	4	45
		2HRE-007-080-445	0.7	2	1	8	4	45
		2HRE-007-100-445	0.7	2	1	10	4	45
	ABS	2HRE-007-120-445	0.7	2	1	12	4	45
		2HRE-008-020-445	0.8	2	1.2	2	4	45
		2HRE-008-030-445	0.8	2	1.2	3	4	45
	MICRO GRAIN	2HRE-008-040-445	0.8	2	1.2	4	4	45
		2HRE-008-050-445	0.8	2	1.2	5	4	45
		2HRE-008-060-445	0.8	2	1.2	6	4	45
	MULTI	2HRE-008-080-445	0.8	2	1.2	8	4	45
		2HRE-008-100-445	0.8	2	1.2	10	4	45
		2HRE-008-120-445	0.8	2	1.2	12	4	45
Technical data		2HRE-008-140-445	0.8	2	1.2	14	4	45
		2HRE-009-060-445	0.9	2	1.3	6	4	45

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	날장 APMX	유효장 LU	생크경 DCON	전장 LF	R-PRO	
2HRE-009-080-445	0.9	2	1.3	8	4	45		
2HRE-009-100-445	0.9	2	1.3	10	4	45	H-PRO	
2HRE-010-020-445	1	2	1.5	2	4	45		
2HRE-010-030-445	1	2	1.5	3	4	45		
2HRE-010-040-445	1	2	1.5	4	4	45	A-PRO	
2HRE-010-050-445	1	2	1.5	5	4	45		
2HRE-010-060-445	1	2	1.5	6	4	45		
2HRE-010-080-445	1	2	1.5	8	4	45	X-PRO	
2HRE-010-100-445	1	2	1.5	10	4	45		
2HRE-010-120-445	1	2	1.5	12	4	45		
2HRE-010-140-450	1	2	1.5	14	4	50	SUS MILL	
2HRE-010-160-450	1	2	1.5	16	4	50		
2HRE-010-180-450	1	2	1.5	18	4	50		
2HRE-010-200-450	1	2	1.5	20	4	50	S-PRO	
2HRE-010-250-460	1	2	1.5	25	4	60		
2HRE-010-300-470	1	2	1.5	30	4	70		
2HRE-012-040-445	1.2	2	1.8	4	4	45	D-PRO	
2HRE-012-060-445	1.2	2	1.8	6	4	45		
2HRE-012-080-445	1.2	2	1.8	8	4	45		
2HRE-012-100-445	1.2	2	1.8	10	4	45	A-PLUS	
2HRE-012-120-445	1.2	2	1.8	12	4	45		
2HRE-012-160-450	1.2	2	1.8	16	4	50		
2HRE-012-200-450	1.2	2	1.8	20	4	50	AL-PRO	
2HRE-012-250-460	1.2	2	1.8	25	4	60		
2HRE-012-300-470	1.2	2	1.8	30	4	70		
2HRE-014-060-445	1.4	2	2.1	6	4	45	AL MILL	
2HRE-014-080-445	1.4	2	2.1	8	4	45		
2HRE-014-100-445	1.4	2	2.1	10	4	45		
2HRE-014-120-445	1.4	2	2.1	12	4	45	ABS	
2HRE-014-140-450	1.4	2	2.1	14	4	50		
2HRE-014-160-450	1.4	2	2.1	16	4	50		
2HRE-014-200-450	1.4	2	2.1	20	4	50	MICRO GRAIN	
2HRE-015-040-445	1.5	2	2.3	4	4	45		
2HRE-015-060-445	1.5	2	2.3	6	4	45		
2HRE-015-080-445	1.5	2	2.3	8	4	45	MULTI	
2HRE-015-100-445	1.5	2	2.3	10	4	45		
2HRE-015-120-445	1.5	2	2.3	12	4	45		
2HRE-015-140-450	1.5	2	2.3	14	4	50	Technical data	
2HRE-015-160-450	1.5	2	2.3	16	4	50		

(Unit: mm)

	R-PRO	제품코드 Product Code	직경 DC	날수 ZEP	날장 APMX	유효장 LU	생크경 DCON	전장 LF
		2HRE-015-180-450	1.5	2	2.3	18	4	50
		2HRE-015-200-450	1.5	2	2.3	20	4	50
		2HRE-015-250-460	1.5	2	2.3	25	4	60
		2HRE-015-300-470	1.5	2	2.3	30	4	70
		2HRE-016-100-445	1.6	2	2.4	10	4	45
		2HRE-016-120-445	1.6	2	2.4	12	4	45
		2HRE-016-140-450	1.6	2	2.4	14	4	50
		2HRE-016-180-450	1.6	2	2.4	18	4	50
		2HRE-018-100-445	1.8	2	2.7	10	4	45
		2HRE-018-140-450	1.8	2	2.7	14	4	50
		2HRE-018-180-450	1.8	2	2.7	18	4	50
		2HRE-020-040-445	2	2	3	4	4	45
		2HRE-020-060-445	2	2	3	6	4	45
		2HRE-020-080-445	2	2	3	8	4	45
		2HRE-020-100-445	2	2	3	10	4	45
		2HRE-020-120-445	2	2	3	12	4	45
		2HRE-020-140-450	2	2	3	14	4	50
		2HRE-020-160-450	2	2	3	16	4	50
		2HRE-020-180-450	2	2	3	18	4	50
		2HRE-020-200-450	2	2	3	20	4	50
		2HRE-020-220-460	2	2	3	22	4	60
		2HRE-020-250-460	2	2	3	25	4	60
		2HRE-020-300-470	2	2	3	30	4	70
		2HRE-020-350-470	2	2	3	35	4	70
		2HRE-020-400-480	2	2	3	40	4	80
		2HRE-020-450-480	2	2	3	45	4	80
		2HRE-020-500-490	2	2	3	50	4	90
		2HRE-025-080-445	2.5	2	3.8	8	4	45
		2HRE-025-100-445	2.5	2	3.8	10	4	45
		2HRE-025-120-445	2.5	2	3.8	12	4	45
		2HRE-025-160-450	2.5	2	3.8	16	4	50
		2HRE-025-200-450	2.5	2	3.8	20	4	50
		2HRE-025-250-460	2.5	2	3.8	25	4	60
		2HRE-025-300-470	2.5	2	3.8	30	4	70
		2HRE-025-350-470	2.5	2	3.8	35	4	70
		2HRE-025-400-480	2.5	2	3.8	40	4	80
		2HRE-025-500-490	2.5	2	3.8	50	4	90
		2HRE-030-080-650	3	2	4.5	8	6	50
		2HRE-030-100-650	3	2	4.5	10	6	50

(Unit: mm)

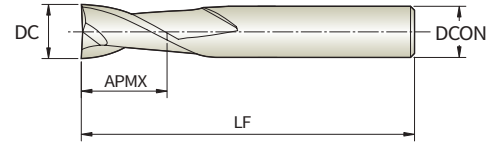
제품코드 Product Code	직경 DC	날수 ZEFP	날장 APMX	유효장 LU	생크경 DCON	전장 LF	R-PRO	
2HRE-030-120-650	3	2	4.5	12	6	50	H-PRO	
2HRE-030-140-660	3	2	4.5	14	6	60		
2HRE-030-160-660	3	2	4.5	16	6	60		
2HRE-030-180-660	3	2	4.5	18	6	60		
2HRE-030-200-660	3	2	4.5	20	6	60		
2HRE-030-250-665	3	2	4.5	25	6	65	A-PRO	
2HRE-030-300-670	3	2	4.5	30	6	70	X-PRO	
2HRE-030-350-680	3	2	4.5	35	6	80		
2HRE-030-400-680	3	2	4.5	40	6	80		
2HRE-030-450-690	3	2	4.5	45	6	90		
2HRE-030-500-6A0	3	2	4.5	50	6	100		
2HRE-030-600-6B0	3	2	4.5	60	6	110	SUS MILL	
2HRE-040-080-650	4	2	6	8	6	50	S-PRO	
2HRE-040-100-650	4	2	6	10	6	50		
2HRE-040-120-650	4	2	6	12	6	50		
2HRE-040-160-660	4	2	6	16	6	60		
2HRE-040-200-660	4	2	6	20	6	60		
2HRE-040-250-665	4	2	6	25	6	65	D-PRO	
2HRE-040-300-670	4	2	6	30	6	70		
2HRE-040-350-680	4	2	6	35	6	80		
2HRE-040-400-680	4	2	6	40	6	80		
2HRE-040-450-690	4	2	6	45	6	90		
2HRE-040-500-6A0	4	2	6	50	6	100	A-PLUS	
2HRE-040-550-6B0	4	2	6	55	6	110		
2HRE-040-600-6B0	4	2	6	60	6	110		
2HRE-050-160-660	5	2	8	16	6	60		
2HRE-050-200-660	5	2	8	20	6	60		
2HRE-050-250-665	5	2	8	25	6	65	AL-PRO	
2HRE-050-300-670	5	2	8	30	6	70		
2HRE-050-350-680	5	2	8	35	6	80		
2HRE-050-400-680	5	2	8	40	6	80		
2HRE-050-500-6A0	5	2	8	50	6	100		
2HRE-050-600-6B0	5	2	8	60	6	110	AL MILL	
2HRE-060-200-660	6	2	9	20	6	60	ABS	
2HRE-060-300-670	6	2	9	30	6	70		
2HRE-060-400-690	6	2	9	40	6	90		
2HRE-060-500-6A0	6	2	9	50	6	100		
2HRE-060-600-6B0	6	2	9	60	6	110		
2HRE-080-200-865	8	2	12	20	8	65	MICRO GRAIN	
							MULTI	
							Technical data	

(Unit: mm)

	R-PRO	제품코드 Product Code	직경 DC	날수 ZEFP	날장 APMX	유효장 LU	생크경 DCON	전장 LF
	H-PRO	2HRE-080-300-880	8	2	12	30	8	80
		2HRE-080-400-8A0	8	2	12	40	8	100
		2HRE-100-250-A70	10	2	15	25	10	70
		2HRE-100-350-AA0	10	2	15	35	10	100
	A-PRO	2HRE-100-450-AA0	10	2	15	45	10	100
		2HRE-120-300-C80	12	2	18	30	12	80
		2HRE-120-400-CB0	12	2	18	40	12	110
		2HRE-120-500-CB0	12	2	18	50	12	110
	X-PRO							
	SUS MILL							
	S-PRO							
	D-PRO							
	A-PLUS							
	AL-PRO							
	AL MILL							
	ABS							
	MICRO GRAIN							
	MULTI							
	Technical data							

2HPE

2날 플랫 엔드밀 2 Flutes Flat End Mills



(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEP	날장 APMX	생크경 DCON	전장 LF
2HPE-001-002-445	0.1	2	0.2	4	45
2HPE-0015-003-445	0.15	2	0.3	4	45
2HPE-002-004-445	0.2	2	0.4	4	45
2HPE-0025-005-445	0.25	2	0.5	4	45
2HPE-003-006-445	0.3	2	0.6	4	45
2HPE-0035-007-445	0.35	2	0.7	4	45
2HPE-004-008-445	0.4	2	0.8	4	45
2HPE-0045-009-445	0.45	2	0.9	4	45
2HPE-005-010-345	0.5	2	1	3	45
2HPE-005-010-445	0.5	2	1	4	45
2HPE-0055-011-445	0.55	2	1.1	4	45
2HPE-006-012-345	0.6	2	1.2	3	45
2HPE-006-012-445	0.6	2	1.2	4	45
2HPE-0065-013-445	0.65	2	1.3	4	45
2HPE-007-014-445	0.7	2	1.4	4	45
2HPE-0075-015-445	0.75	2	1.5	4	45
2HPE-008-016-345	0.8	2	1.6	3	45
2HPE-008-016-445	0.8	2	1.6	4	45
2HPE-0085-017-445	0.85	2	1.7	4	45
2HPE-009-018-445	0.9	2	1.8	4	45
2HPE-0095-019-445	0.95	2	1.9	4	45
2HPE-010-025-345	1	2	2.5	3	45
2HPE-010-025-445	1	2	2.5	4	45
2HPE-010-025-645	1	2	2.5	6	45
2HPE-0105-025-645	1.05	2	2.5	6	45

(Unit: mm)

	R-PRO	제품코드 Product Code	직경 DC	날수 ZEFP	날장 APMX	생크경 DCON	전장 LF
		2HPE-011-025-645	1.1	2	2.5	6	45
		2HPE-012-040-345	1.2	2	4	3	45
		2HPE-012-040-445	1.2	2	4	4	45
		2HPE-012-040-645	1.2	2	4	6	45
		2HPE-0125-040-645	1.25	2	4	6	45
		2HPE-013-040-645	1.3	2	4	6	45
		2HPE-0135-040-645	1.35	2	4	6	45
		2HPE-014-040-645	1.4	2	4	6	45
		2HPE-0145-040-645	1.45	2	4	6	45
		2HPE-015-040-345	1.5	2	4	3	45
		2HPE-015-040-445	1.5	2	4	4	45
		2HPE-015-040-645	1.5	2	4	6	45
		2HPE-0155-040-645	1.55	2	4	6	45
		2HPE-016-040-645	1.6	2	4	6	45
		2HPE-0165-040-645	1.65	2	4	6	45
		2HPE-017-042-645	1.7	2	4.2	6	45
		2HPE-0175-042-645	1.75	2	4.2	6	45
		2HPE-018-045-645	1.8	2	4.5	6	45
		2HPE-0185-045-645	1.85	2	4.5	6	45
		2HPE-019-050-645	1.9	2	5	6	45
		2HPE-020-060-345	2	2	6	3	45
		2HPE-020-060-445	2	2	6	4	45
		2HPE-020-060-645	2	2	6	6	45
		2HPE-021-060-645	2.1	2	6	6	45
		2HPE-022-060-645	2.2	2	6	6	45
		2HPE-023-060-645	2.3	2	6	6	45
		2HPE-024-080-650	2.4	2	8	6	50
		2HPE-025-080-350	2.5	2	8	3	50
		2HPE-025-080-450	2.5	2	8	4	50
		2HPE-025-080-650	2.5	2	8	6	50
		2HPE-026-080-650	2.6	2	8	6	50
		2HPE-027-080-650	2.7	2	8	6	50
		2HPE-028-080-650	2.8	2	8	6	50
		2HPE-029-080-650	2.9	2	8	6	50
		2HPE-030-080-450	3	2	8	4	50
		2HPE-030-100-350	3	2	10	3	50
		2HPE-030-100-650	3	2	10	6	50
		2HPE-031-100-650	3.1	2	10	6	50
		2HPE-032-100-650	3.2	2	10	6	50

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	날장 APMX	생크경 DCON	전장 LF	R-PRO	
2HPE-033-100-650	3.3	2	10	6	50	H-PRO	
2HPE-034-100-650	3.4	2	10	6	50		
2HPE-035-100-650	3.5	2	10	6	50		
2HPE-036-100-650	3.6	2	10	6	50		
2HPE-037-100-650	3.7	2	10	6	50	A-PRO	
2HPE-038-100-650	3.8	2	10	6	50		
2HPE-039-100-650	3.9	2	10	6	50		
2HPE-040-120-450	4	2	12	4	50		
2HPE-040-120-650	4	2	12	6	50	X-PRO	
2HPE-041-120-650	4.1	2	12	6	50		
2HPE-042-120-650	4.2	2	12	6	50		
2HPE-043-120-650	4.3	2	12	6	50		
2HPE-044-120-650	4.4	2	12	6	50	SUS MILL	
2HPE-045-120-650	4.5	2	12	6	50		
2HPE-046-130-650	4.6	2	13	6	50		
2HPE-047-130-650	4.7	2	13	6	50		
2HPE-048-130-650	4.8	2	13	6	50	S-PRO	
2HPE-049-130-650	4.9	2	13	6	50		
2HPE-050-150-650	5	2	15	6	50		
2HPE-051-150-650	5.1	2	15	6	50		
2HPE-052-150-650	5.2	2	15	6	50	D-PRO	
2HPE-053-150-650	5.3	2	15	6	50		
2HPE-054-150-650	5.4	2	15	6	50		
2HPE-055-150-650	5.5	2	15	6	50		
2HPE-056-150-650	5.6	2	15	6	50	A-PLUS	
2HPE-057-150-650	5.7	2	15	6	50		
2HPE-058-150-650	5.8	2	15	6	50		
2HPE-059-150-650	5.9	2	15	6	50		
2HPE-060-150-650	6	2	15	6	50	AL-PRO	
2HPE-061-160-860	6.1	2	16	8	60		
2HPE-062-160-860	6.2	2	16	8	60		
2HPE-063-160-860	6.3	2	16	8	60		
2HPE-064-160-860	6.4	2	16	8	60	AL MILL	
2HPE-065-160-860	6.5	2	16	8	60		
2HPE-070-200-865	7	2	20	8	65		
2HPE-075-200-865	7.5	2	20	8	65		
2HPE-080-200-865	8	2	20	8	65	ABS	
2HPE-085-200-A65	8.5	2	20	10	65		
2HPE-090-250-A70	9	2	25	10	70		
						MICRO GRAIN	
						MULTI	
						Technical data	

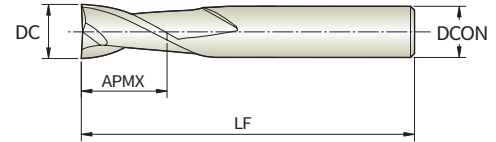
Technical data	MULTI	MICRO GRAIN	ABS	AL MILL	AL-PRO	A-PLUS	D-PRO	S-PRO	SUS MILL	X-PRO	A-PRO	H-PRO	R-PRO
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Technical data	MULTI	MICRO GRAIN	ABS	AL MILL	AL-PRO	A-PLUS	D-PRO	S-PRO	SUS MILL	X-PRO	A-PRO	H-PRO	R-PRO
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2HLE

2날 롱 플랫 엔드밀

2 Flutes Long Length Flat End Mills



(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEP	날장 APMX	생크경 DCON	전장 LF
2HLE-010-030-660	1	2	3	6	60
2HLE-010-050-660	1	2	5	6	60
2HLE-010-070-660	1	2	7	6	60
2HLE-010-100-660	1	2	10	6	60
2HLE-010-120-660	1	2	12	6	60
2HLE-010-150-660	1	2	15	6	60
2HLE-015-060-660	1.5	2	6	6	60
2HLE-015-080-660	1.5	2	8	6	60
2HLE-015-100-660	1.5	2	10	6	60
2HLE-015-150-660	1.5	2	15	6	60
2HLE-015-200-660	1.5	2	20	6	60
2HLE-020-100-660	2	2	10	6	60
2HLE-020-120-660	2	2	12	6	60
2HLE-020-150-660	2	2	15	6	60
2HLE-020-200-660	2	2	20	6	60
2HLE-030-120-670	3	2	12	6	70
2HLE-030-150-670	3	2	15	6	70
2HLE-030-200-670	3	2	20	6	70
2HLE-030-250-670	3	2	25	6	70
2HLE-030-300-670	3	2	30	6	70
2HLE-040-150-670	4	2	15	6	70
2HLE-040-200-670	4	2	20	6	70
2HLE-040-300-675	4	2	30	6	75
2HLE-040-350-675	4	2	35	6	75
2HLE-040-400-680	4	2	40	6	80

(Unit: mm)

	R-PRO	제품코드 Product Code	직경 DC	날수 ZEFP	날장 APMX	생크경 DCON	전장 LF
		2HLE-050-200-670	5	2	20	6	70
		2HLE-050-250-670	5	2	25	6	70
		2HLE-050-300-675	5	2	30	6	75
		2HLE-050-400-680	5	2	40	6	80
		2HLE-060-200-670	6	2	20	6	70
		2HLE-060-200-6A0	6	2	20	6	100
		2HLE-060-250-675	6	2	25	6	75
		2HLE-060-300-680	6	2	30	6	80
		2HLE-060-350-680	6	2	35	6	80
		2HLE-060-400-690	6	2	40	6	90
		2HLE-080-250-875	8	2	25	8	75
		2HLE-080-250-8A0	8	2	25	8	100
		2HLE-080-300-880	8	2	30	8	80
		2HLE-080-350-880	8	2	35	8	80
		2HLE-080-400-890	8	2	40	8	90
		2HLE-080-450-8A0	8	2	45	8	100
		2HLE-080-500-8A0	8	2	50	8	100
		2HLE-080-550-8A0	8	2	55	8	100
		2HLE-100-300-A80	10	2	30	10	80
		2HLE-100-350-AA0	10	2	35	10	100
		2HLE-100-400-AA0	10	2	40	10	100
		2HLE-100-450-AA0	10	2	45	10	100
		2HLE-100-500-AA0	10	2	50	10	100
		2HLE-100-550-AB0	10	2	55	10	110
		2HLE-100-600-AB0	10	2	60	10	110
		2HLE-100-650-AC0	10	2	65	10	120
		2HLE-100-700-AC0	10	2	70	10	120
		2HLE-120-300-CA0	12	2	30	12	100
		2HLE-120-350-CA0	12	2	35	12	100
		2HLE-120-400-CA0	12	2	40	12	100
		2HLE-120-450-CA0	12	2	45	12	100
		2HLE-120-500-CA0	12	2	50	12	100
		2HLE-120-550-CB0	12	2	55	12	110
		2HLE-120-600-CB0	12	2	60	12	110
		2HLE-120-700-CD0	12	2	70	12	130
		2HLE-140-500-EB0	14	2	50	14	110
		2HLE-160-400-GF0	16	2	40	16	150
		2HLE-160-550-GC0	16	2	55	16	120
		2HLE-160-700-GD0	16	2	70	16	130

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEP	날장 APMX	생크경 DCON	전장 LF
2HLE-200-500-KF0	20	2	50	20	150
2HLE-200-600-KD0	20	2	60	20	130
2HLE-250-750-PF0	25	2	75	25	150

R-PRO	
H-PRO	
A-PRO	
X-PRO	
SUS MILL	
S-PRO	
D-PRO	
A-PLUS	
AL-PRO	
AL MILL	
ABS	
MICRO GRAIN	
MULTI	
Technical data	

R-PRO

H-PRO

A-PRO

X-PRO

SUS MILL

S-PRO

D-PRO

A-PLUS

AL-PRO

AL MILL

ABS

MICRO
GRAIN

MULTI

Technical data

4HRE

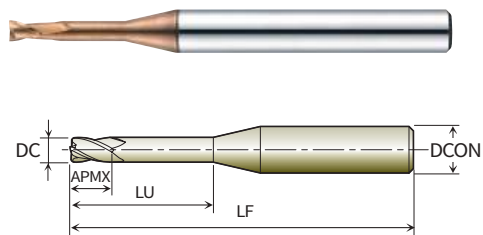
4날 리브가공용 플랫 엔드밀 4 Flutes Rib Flat End Mills

H

4

OD

30°

page
No.271

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZFP	날장 APMX	유효장 LU	생크경 DCON	전장 LF
4HRE-008-020-445	0.8	4	1.2	2	4	45
4HRE-008-040-445	0.8	4	1.2	4	4	45
4HRE-008-060-445	0.8	4	1.2	6	4	45
4HRE-008-080-445	0.8	4	1.2	8	4	45
4HRE-008-100-445	0.8	4	1.2	10	4	45
4HRE-008-120-445	0.8	4	1.2	12	4	45
4HRE-008-160-445	0.8	4	1.2	16	4	45
4HRE-009-020-445	0.9	4	1.4	2	4	45
4HRE-009-060-445	0.9	4	1.4	6	4	45
4HRE-009-080-445	0.9	4	1.4	8	4	45
4HRE-009-100-445	0.9	4	1.4	10	4	45
4HRE-010-020-445	1	4	1.5	2	4	45
4HRE-010-030-445	1	4	1.5	3	4	45
4HRE-010-040-445	1	4	1.5	4	4	45
4HRE-010-060-445	1	4	1.5	6	4	45
4HRE-010-080-445	1	4	1.5	8	4	45
4HRE-010-100-445	1	4	1.5	10	4	45
4HRE-010-120-445	1	4	1.5	12	4	45
4HRE-010-140-450	1	4	1.5	14	4	50
4HRE-010-160-450	1	4	1.5	16	4	50
4HRE-010-200-450	1	4	1.5	20	4	50
4HRE-010-250-460	1	4	1.5	25	4	60
4HRE-012-040-445	1.2	4	1.8	4	4	45
4HRE-012-060-445	1.2	4	1.8	6	4	45
4HRE-012-080-445	1.2	4	1.8	8	4	45

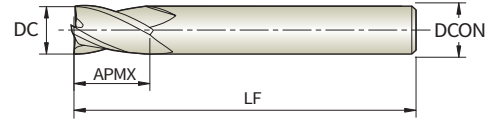
(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	날장 APMX	유효장 LU	생크경 DCON	전장 LF	R-PRO	
4HRE-012-100-445	1.2	4	1.8	10	4	45		
4HRE-012-120-445	1.2	4	1.8	12	4	45	H-PRO	
4HRE-012-160-450	1.2	4	1.8	16	4	50		
4HRE-015-040-445	1.5	4	2.3	4	4	45		
4HRE-015-060-445	1.5	4	2.3	6	4	45	A-PRO	
4HRE-015-080-445	1.5	4	2.3	8	4	45		
4HRE-015-100-445	1.5	4	2.3	10	4	45		
4HRE-015-120-445	1.5	4	2.3	12	4	45	X-PRO	
4HRE-015-160-450	1.5	4	2.3	16	4	50		
4HRE-015-200-450	1.5	4	2.3	20	4	50		
4HRE-015-250-460	1.5	4	2.3	25	4	60	SUS MILL	
4HRE-020-040-445	2	4	3	4	4	45		
4HRE-020-060-445	2	4	3	6	4	45	S-PRO	
4HRE-020-080-445	2	4	3	8	4	45		
4HRE-020-100-445	2	4	3	10	4	45		
4HRE-020-120-445	2	4	3	12	4	45	D-PRO	
4HRE-020-140-450	2	4	3	14	4	50		
4HRE-020-160-450	2	4	3	16	4	50		
4HRE-020-180-450	2	4	3	18	4	50	A-PLUS	
4HRE-020-200-450	2	4	3	20	4	50		
4HRE-020-250-460	2	4	3	25	4	60		
4HRE-020-300-470	2	4	3	30	4	70	AL-PRO	
4HRE-025-100-445	2.5	4	3.8	10	4	45		
4HRE-025-120-445	2.5	4	3.8	12	4	45		
4HRE-025-160-450	2.5	4	3.8	16	4	50	AL MILL	
4HRE-025-200-450	2.5	4	3.8	20	4	50		
4HRE-025-250-460	2.5	4	3.8	25	4	60		
4HRE-025-300-470	2.5	4	3.8	30	4	70	ABS	
4HRE-030-060-645	3	4	4.5	6	6	45		
4HRE-030-080-650	3	4	4.5	8	6	50		
4HRE-030-100-650	3	4	4.5	10	6	50		
4HRE-030-120-650	3	4	4.5	12	6	50	MICRO GRAIN	
4HRE-030-160-660	3	4	4.5	16	6	60		
4HRE-030-200-660	3	4	4.5	20	6	60		
4HRE-030-250-665	3	4	4.5	25	6	65	MULTI	
4HRE-030-300-670	3	4	4.5	30	6	70		
4HRE-030-350-680	3	4	4.5	35	6	80	Technical data	
4HRE-030-400-680	3	4	4.5	40	6	80		
4HRE-040-080-650	4	4	6	8	6	50		

		(Unit: mm)						
	R-PRO	제품코드 Product Code	직경 DC	날수 ZEFP	날장 APMX	유효장 LU	생크경 DCON	전장 LF
		4HRE-040-100-650	4	4	6	10	6	50
	H-PRO	4HRE-040-120-650	4	4	6	12	6	50
		4HRE-040-160-660	4	4	6	16	6	60
		4HRE-040-200-660	4	4	6	20	6	60
		4HRE-040-250-665	4	4	6	25	6	65
	A-PRO	4HRE-040-300-670	4	4	6	30	6	70
		4HRE-040-400-680	4	4	6	40	6	80
		4HRE-040-450-690	4	4	6	45	6	90
	X-PRO	4HRE-040-500-6A0	4	4	6	50	6	100
		4HRE-050-160-660	5	4	8	16	6	60
	SUS MILL	4HRE-050-200-660	5	4	8	20	6	60
		4HRE-050-250-665	5	4	8	25	6	65
		4HRE-050-300-670	5	4	8	30	6	70
	S-PRO	4HRE-050-400-680	5	4	8	40	6	80
		4HRE-050-500-6A0	5	4	8	50	6	100
		4HRE-060-200-660	6	4	9	20	6	60
	D-PRO	4HRE-060-300-670	6	4	9	30	6	70
		4HRE-060-400-690	6	4	9	40	6	90
		4HRE-060-500-6A0	6	4	9	50	6	100
	A-PLUS	4HRE-080-200-865	8	4	12	20	8	65
		4HRE-080-300-880	8	4	12	30	8	80
		4HRE-080-400-8A0	8	4	12	40	8	100
	AL-PRO	4HRE-100-250-A70	10	4	15	25	10	70
		4HRE-100-350-AA0	10	4	15	35	10	100
		4HRE-100-450-AA0	10	4	15	45	10	100
	AL MILL	4HRE-120-300-C80	12	4	18	30	12	80
		4HRE-120-400-CB0	12	4	18	40	12	110
		4HRE-120-500-CB0	12	4	18	50	12	110
	ABS							
	MICRO GRAIN							
	MULTI							
Technical data								

4HPE

4날 플랫 엔드밀 4 Flutes Flat End Mills



(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZFP	날장 APMX	생크경 DCON	전장 LF
4HPE-008-016-445	0.8	4	1.6	4	45
4HPE-010-025-445	1	4	2.5	4	45
4HPE-010-025-645	1	4	2.5	6	45
4HPE-012-040-445	1.2	4	4	4	45
4HPE-015-040-445	1.5	4	4	4	45
4HPE-015-040-645	1.5	4	4	6	45
4HPE-020-060-445	2	4	6	4	45
4HPE-020-060-645	2	4	6	6	45
4HPE-025-080-445	2.5	4	8	4	45
4HPE-025-080-645	2.5	4	8	6	45
4HPE-030-100-350	3	4	10	3	50
4HPE-030-100-450	3	4	10	4	50
4HPE-030-100-650	3	4	10	6	50
4HPE-035-100-650	3.5	4	10	6	50
4HPE-040-120-450	4	4	12	4	50
4HPE-040-120-650	4	4	12	6	50
4HPE-045-120-650	4.5	4	12	6	50
4HPE-050-150-650	5	4	15	6	50
4HPE-055-150-650	5.5	4	15	6	50
4HPE-060-150-650	6	4	15	6	50
4HPE-060-150-675	6	4	15	6	75
4HPE-060-150-6A0	6	4	15	6	100
4HPE-070-200-865	7	4	20	8	65
4HPE-080-200-865	8	4	20	8	65
4HPE-080-200-875	8	4	20	8	75

(Unit: mm)

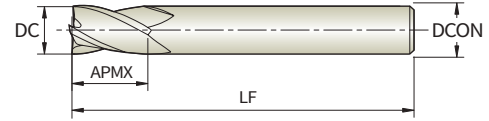
	R-PRO		(Unit: mm)
	H-PRO		
	A-PRO		
	X-PRO		
	SUS MILL		
	S-PRO		
	D-PRO		
	A-PLUS		
	AL-PRO		
	AL MILL		
	ABS		
	MICRO GRAIN		
	MULTI		
Technical data			

제품코드 Product Code	직경 DC	날수 ZEFP	날장 APMX	생크경 DCON	전장 LF
4HPE-080-200-8A0	8	4	20	8	100
4HPE-100-250-A70	10	4	25	10	70
4HPE-100-250-A75	10	4	25	10	75
4HPE-100-250-AA0	10	4	25	10	100
4HPE-120-300-C80	12	4	30	12	80
4HPE-120-300-CA0	12	4	30	12	100
4HPE-140-350-E90	14	4	35	14	90
4HPE-160-400-GA0	16	4	40	16	100
4HPE-180-450-IA0	18	4	45	18	100
4HPE-200-450-KA0	20	4	45	20	100

4HLE

4날 롱 플랫 엔드밀

4 Flutes Long Length Flat End Mills



(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZFP	날장 APMX	생크경 DCON	전장 LF
4HLE-010-030-660	1	4	3	6	60
4HLE-010-050-660	1	4	5	6	60
4HLE-010-070-660	1	4	7	6	60
4HLE-015-060-660	1.5	4	6	6	60
4HLE-015-080-660	1.5	4	8	6	60
4HLE-015-100-660	1.5	4	10	6	60
4HLE-020-080-660	2	4	8	6	60
4HLE-020-100-660	2	4	10	6	60
4HLE-020-120-660	2	4	12	6	60
4HLE-020-150-660	2	4	15	6	60
4HLE-030-100-670	3	4	10	6	70
4HLE-030-150-670	3	4	15	6	70
4HLE-030-200-670	3	4	20	6	70
4HLE-030-250-670	3	4	25	6	70
4HLE-030-300-670	3	4	30	6	70
4HLE-040-120-670	4	4	12	6	70
4HLE-040-150-470	4	4	15	4	70
4HLE-040-150-670	4	4	15	6	70
4HLE-040-200-470	4	4	20	4	70
4HLE-040-200-670	4	4	20	6	70
4HLE-040-250-670	4	4	25	6	70
4HLE-040-300-675	4	4	30	6	75
4HLE-040-350-675	4	4	35	6	75
4HLE-040-400-680	4	4	40	6	80
4HLE-050-200-670	5	4	20	6	70

(Unit: mm)

	R-PRO	제품코드 Product Code	직경 DC	날수 ZEFP	날장 APMX	생크경 DCON	전장 LF
		4HLE-050-250-670	5	4	25	6	70
		4HLE-050-300-675	5	4	30	6	75
		4HLE-050-400-680	5	4	40	6	80
		4HLE-060-200-670	6	4	20	6	70
		4HLE-060-200-6A0	6	4	20	6	100
		4HLE-060-250-675	6	4	25	6	75
		4HLE-060-250-6A0	6	4	25	6	100
		4HLE-060-300-680	6	4	30	6	80
		4HLE-060-350-680	6	4	35	6	80
		4HLE-060-400-690	6	4	40	6	90
		4HLE-080-250-875	8	4	25	8	75
		4HLE-080-250-8A0	8	4	25	8	100
		4HLE-080-300-880	8	4	30	8	80
		4HLE-080-300-8A0	8	4	30	8	100
		4HLE-080-300-8F0	8	4	30	8	150
		4HLE-080-350-880	8	4	35	8	80
		4HLE-080-400-890	8	4	40	8	90
		4HLE-080-450-8A0	8	4	45	8	100
		4HLE-080-500-8A0	8	4	50	8	100
		4HLE-080-550-8A0	8	4	55	8	100
		4HLE-100-300-A80	10	4	30	10	80
		4HLE-100-350-AA0	10	4	35	10	100
		4HLE-100-350-AF0	10	4	35	10	150
		4HLE-100-400-AA0	10	4	40	10	100
		4HLE-100-450-AA0	10	4	45	10	100
		4HLE-100-500-AA0	10	4	50	10	100
		4HLE-100-550-AB0	10	4	55	10	110
		4HLE-100-600-AB0	10	4	60	10	110
		4HLE-100-650-AC0	10	4	65	10	120
		4HLE-100-700-AC0	10	4	70	10	120
		4HLE-120-300-CA0	12	4	30	12	100
		4HLE-120-350-CA0	12	4	35	12	100
		4HLE-120-400-CA0	12	4	40	12	100
		4HLE-120-400-CF0	12	4	40	12	150
		4HLE-120-450-CA0	12	4	45	12	100
		4HLE-120-500-CA0	12	4	50	12	100
		4HLE-120-550-CB0	12	4	55	12	110
		4HLE-120-600-CB0	12	4	60	12	110
		4HLE-120-700-CD0	12	4	70	12	130

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEP	날장 APMX	생크경 DCON	전장 LF
4HLE-140-500-EB0	14	4	50	14	110
4HLE-160-400-GF0	16	4	40	16	150
4HLE-160-550-GC0	16	4	55	16	120
4HLE-160-700-GD0	16	4	70	16	130
4HLE-200-500-KF0	20	4	50	20	150
4HLE-200-600-KD0	20	4	60	20	130
4HLE-250-750-PF0	20	4	75	25	150

R-PRO	
H-PRO	
A-PRO	
X-PRO	
SUS MILL	
S-PRO	
D-PRO	
A-PLUS	
AL-PRO	
AL MILL	
ABS	
MICRO GRAIN	
MULTI	
Technical data	

R-PRO

H-PRO

A-PRO

X-PRO

SUS MILL

S-PRO

D-PRO

A-PLUS

AL-PRO

AL MILL

ABS

MICRO
GRAIN

MULTI

Technical data

4HHE

4날 43° 헬릭스 플랫 엔드밀

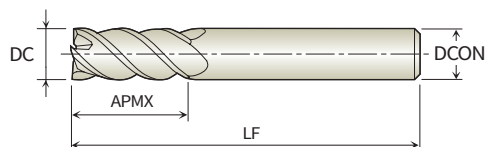
4 Flutes 43° HELIX Flat End Mills

H

4

OD

43°

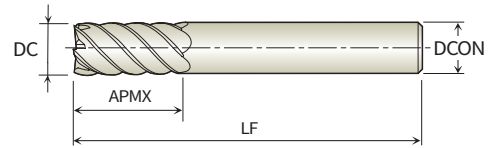
page
No.274

(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEFP	날장 APMX	생크경 DCON	전장 LF
4HHE-010-020-445	1	4	2	4	45
4HHE-010-020-645	1	4	2	6	45
4HHE-015-040-445	1.5	4	4	4	45
4HHE-015-040-645	1.5	4	4	6	45
4HHE-020-050-445	2	4	5	4	45
4HHE-020-050-645	2	4	5	6	45
4HHE-030-080-350	3	4	8	3	50
4HHE-030-080-445	3	4	8	4	45
4HHE-030-080-650	3	4	8	6	50
4HHE-040-100-460	4	4	10	4	60
4HHE-040-100-650	4	4	10	6	50
4HHE-040-120-445	4	4	12	4	45
4HHE-050-130-650	5	4	13	6	50
4HHE-060-150-650	6	4	15	6	50
4HHE-060-150-675	6	4	15	6	75
4HHE-080-200-865	8	4	20	8	65
4HHE-080-200-875	8	4	20	8	75
4HHE-100-250-A70	10	4	25	10	70
4HHE-100-250-A75	10	4	25	10	75
4HHE-120-300-C80	12	4	30	12	80
4HHE-160-400-GA0	16	4	40	16	100
4HHE-200-450-KA0	20	4	45	20	100

6HPE

6날 45° 헬릭스 플랫 엔드밀
6 Flutes 45° HELIX Flat End Mills



(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEP	날장 APMX	샙크경 DCON	전장 LF
6HPE-060-150-650	6	6	15	6	50
6HPE-080-200-865	8	6	20	8	65
6HPE-100-250-A70	10	6	25	10	70
6HPE-120-300-C80	12	6	30	12	80
6HPE-160-400-GA0	16	6	40	16	100
6HPE-200-450-KA0	20	6	45	20	100

R-PRO

H-PRO

A-PRO

X-PRO

SUS MILL

S-PRO

D-PRO

A-PLUS

AL-PRO

AL MILL

ABS

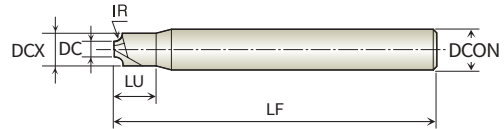
MICRO
GRAIN

MULTI

Technical data

2IRC

2날 코너 라운딩 커터 2 Flutes Inner Corner Radius



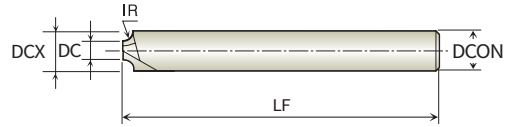
(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZEPF	역코너반경 PRFRAD	날장 APMX	생크경 DCON	전장 LF
2IRC-005-IR055-017-445	0.5	2	R0.55	1.7	4	45
2IRC-005-IR06-018-445	0.5	2	R0.6	1.8	4	45
2IRC-005-IR065-019-445	0.5	2	R0.65	1.9	4	45
2IRC-005-IR07-020-445	0.5	2	R0.7	2	4	45
2IRC-009-IR05-020-445	0.9	2	R0.5	2	4	45
2IRC-009-IR075-025-445	0.9	2	R0.75	2.5	4	45
2IRC-009-IR08-026-445	0.9	2	R0.8	2.6	4	45
2IRC-009-IR085-027-445	0.9	2	R0.85	2.7	4	45
2IRC-009-IR09-028-445	0.9	2	R0.9	2.8	4	45
2IRC-009-IR095-029-445	0.9	2	R0.95	2.9	4	45
2IRC-009-IR10-030-650	0.9	2	R1.0	3	6	50
2IRC-009-IR125-035-650	0.9	2	R1.25	3.5	4	45
2IRC-014-IR15-045-650	1.4	2	R1.5	4.5	6	50
2IRC-014-IR20-055-650	1.4	2	R2.0	5.5	6	50
2IRC-019-IR25-070-860	1.9	2	R2.5	7	8	60
2IRC-019-IR30-080-860	1.9	2	R3.0	8	8	60
2IRC-019-IR35-090-A70	1.9	2	R3.5	9	10	70
2IRC-019-IR40-100-A70	1.9	2	R4.0	10	10	70
2IRC-019-IR45-110-C80	1.9	2	R4.5	11	12	80
2IRC-019-IR50-120-C80	1.9	2	R5.0	12	12	80
2IRC-034-IR125-060-650	3.4	2	R1.25	6	6	50
2IRC-039-IR10-060-650	3.9	2	R1.0	6	6	50
2IRC-039-IR20-080-860	3.9	2	R2.0	8	8	60
2IRC-039-IR60-160-G85	3.9	2	R6.0	16	16	85
2IRC-039-IR80-200-K85	3.9	2	R8.0	20	20	85
2IRC-049-IR05-060-660	4.9	2	R0.5	6	6	60
2IRC-049-IR15-080-860	4.9	2	R1.5	8	8	60
2IRC-059-IR10-080-860	5.9	2	R1.0	8	8	60
2IRC-059-IR70-200-K85	5.9	2	R7.0	20	20	85

4IRC

4날 코너 라운딩 커터

4 Flutes Inner Corner Radius



(Unit: mm)

제품코드 Product Code	직경 DC	날수 ZFP	역코너반경 PRFRAD	날장 APMX	생크경 DCON	전장 LF
4IRC-019-IR10-040-450	1.9	4	R1.0	4	4	50
4IRC-024-IR075-040-450	2.4	4	R0.75	4	4	50
4IRC-029-IR05-040-450	2.9	4	R0.5	4	4	50
4IRC-039-IR10-060-650	3.9	4	R1.0	6	6	50
4IRC-039-IR20-080-860	3.9	4	R2.0	8	8	60
4IRC-039-IR30-100-A70	3.9	4	R3.0	10	10	70
4IRC-039-IR40-120-C80	3.9	4	R4.0	12	12	80
4IRC-039-IR60-160-G80	3.9	4	R6.0	16	16	80
4IRC-049-IR05-060-650	4.9	4	R0.5	6	6	50
4IRC-049-IR075-060-650	4.9	4	R0.75	6	6	50
4IRC-049-IR15-080-860	4.9	4	R1.5	8	8	60
4IRC-049-IR25-100-A70	4.9	4	R2.5	10	10	70
4IRC-059-IR10-080-860	5.9	4	R1.0	8	8	60
4IRC-059-IR20-100-A70	5.9	4	R2.0	10	10	70
4IRC-059-IR30-120-C80	5.9	4	R3.0	12	12	80
4IRC-059-IR50-160-G80	5.9	4	R5.0	16	16	80

R-PRO

H-PRO

A-PRO

X-PRO

SUS MILL

S-PRO

D-PRO

A-PLUS

AL-PRO

AL MILL

ABS

MICRO GRAIN

MULTI

Technical data

H-PRO

2HRB

High Speed Milling Condition

피삭재	프리하든강			고경도강(열처리강)						통합금		
Workpiece	Preharden Steel(NAK)			Hardened Steels(SKD, STAVAX)			Hardened Steels(SKD 11)			Copper Alloy		
HRC	30 ~ 45			45 ~ 55			55 ~ 65					
Radius of Ball Nose	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)
R0.05	0.001-0.005	38000-50000	50-80	0.001-0.005	38000-50000	40-60	0.001-0.004	38000-50000	30-50	0.003-0.010	38000-50000	50-100
R0.1	0.001-0.010	38000-50000	200-350	0.001-0.009	38000-50000	200-280	0.001-0.005	38000-50000	150-240	0.010-0.020	38000-50000	200-500
R0.15	0.004-0.018	38000-50000	200-600	0.003-0.014	38000-50000	200-400	0.003-0.012	38000-50000	150-350	0.010-0.025	38000-50000	300-800
R0.2	0.005-0.020	30000-45000	250-800	0.003-0.014	30000-45000	200-500	0.003-0.011	30000-45000	160-400	0.010-0.030	30000-42000	300-1000
R0.25	0.006-0.020	25000-42000	300-700	0.004-0.014	25000-42000	250-500	0.003-0.011	25000-42000	220-400	0.010-0.030	30000-42000	500-1400
R0.3	0.006-0.030	22000-40000	300-1200	0.006-0.030	22000-40000	250-800	0.003-0.015	20000-27000	210-380	0.010-0.100	24000-40000	350-1600
R0.4	0.006-0.100	20000-40000	260-1800	0.006-0.080	20000-40000	240-1500	0.006-0.021	20000-40000	190-480	0.030-0.100	20000-40000	450-2000
R0.5	0.010-0.200	20000-38000	500-2800	0.010-0.080	20000-38000	300-2400	0.007-0.025	12000-17000	230-420	0.050-0.200	20000-40000	800-3000
R0.6	0.050-0.100	20000-30000	600-2500	0.020-0.060	20000-30000	400-2300	0.011-0.020	13000-14000	260-450	0.060-0.100	20000-30000	1000-2500
R0.75	0.050-0.200	18000-30000	600-3100	0.020-0.180	18000-30000	550-2500	0.010-0.030	8500-11000	200-400	0.100-0.300	18000-30000	1200-3000
R1.0	0.050-0.200	12000-25000	800-2400	0.030-0.120	12000-20000	850-2300	0.015-0.035	7000-8500	280-400	0.100-0.400	12000-20000	1200-3000
R1.5	0.050-0.200	10000-20000	1100-3800	0.030-0.180	10000-20000	900-2900	0.020-0.050	5200-6000	380-550	0.200-0.500	16000-20000	1800-4000
R2.0	0.100-0.300	10000-20000	1300-3900	0.080-0.180	10000-20000	1800-3000	0.050-0.090	4000-4600	380-590	0.300-0.500	16000-20000	2600-4000
R2.5	0.100-0.300	9000-20000	1500-3900	0.050-0.200	8000-18000	1300-3800	0.030-0.160	6000-16000	450-1000	0.300-0.500	9000-20000	2600-4000
R3.0	0.100-0.300	8000-18000	1800-3900	0.050-0.200	8000-18000	1500-3800	0.030-0.160	6000-16000	450-1000	0.300-0.500	8000-18000	2600-4000
R4.0	0.150-0.350	8000-12000	2000-4000	0.100-0.250	6000-10000	1800-3700	0.080-0.200	4000-8000	800-1500	0.300-0.500	8000-12000	2600-5000
R5.0	0.200-0.400	6000-11000	2000-4000	0.100-0.300	4000-9000	1800-3700	0.080-0.250	3000-8000	800-1500	0.300-0.500	6000-11000	2600-5000
R6.0	0.300-0.500	5000-10000	2000-4000	0.200-0.400	3000-8000	1800-3700	0.150-0.350	2000-6000	800-1500	0.300-0.500	5000-10000	2600-5000
Depth of Cut												

⚠ 경고 WARNING

- 정밀하고 강성이 있는 홀더와 장비를 사용해주시십시오.
- 절입량의 ap는 축방향 절입량을 표시합니다.
- 강재 가공 시 Air Blow나 Oil Mist 사용을 추천합니다.
- 회전수와 테이블 이송은 같은 비율로 조정해주시십시오.
- 상기 조건표는 참고 자료이니 실제 가공 시 가공 형상, 기계 용량, 작업환경에 따라 조건을 조정해서 가공하시기 바랍니다.

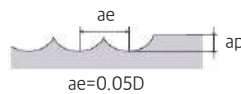
- Use a rigid precise machine and holder.
- ap(mm) : Axial Depth of Cut.
- For milling steels, air blow or MQL(Oil Mist) are recommended.
- Adjust both Spindle speed and Feedrate by the same proportion.
- The above condition are only reference. In actual machining conditions adjust these parameters according to the milling shape, machine capability and the operation environment.

H-PRO 2HSB

High Speed Milling Condition

피삭재	프리하든강			고경도강(열처리강)					
Workpiece	Preharden Steel(NAK, HPM)			*Hardened Steels(SKD 61, STAVAX)			Hardened Steels(SKD 11)		
HRC	30 ~ 45			45 ~ 55			55 ~ 65		
Radius of Ball Nose	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)
R0.05	0.003	50,000	170	0.002	42,000	150	0.001	40,000	100
R0.1	0.004	50,000	200	0.003	42,000	180	0.002	40,000	120
R0.15	0.005	45,000	320	0.004	42,000	300	0.003	40,000	180
R0.2	0.006	45,000	420	0.005	42,000	400	0.004	40,000	240
R0.25	0.007	45,000	530	0.006	42,000	500	0.005	40,000	300
R0.3	0.008	42,000	1,000	0.007	40,000	1,200	0.006	40,000	800
R0.4	0.100	42,000	1,400	0.009	40,000	1,600	0.008	40,000	1,000
R0.5	0.10	40,000	2,600	0.10	30,000	2,000	0.10	25,000	1,300
R0.75	0.15	30,000	3,000	0.10	30,000	2,500	0.10	25,000	1,800
R1.0	0.20	25,000	3,000	0.20	25,000	2,500	0.15	20,000	1,800
R1.25	0.20	25,000	3,000	0.20	20,000	2,500	0.15	16,000	1,800
R1.5	0.20	20,000	3,000	0.20	18,000	2,500	0.15	14,000	2,000
R2.0	0.25	20,000	3,000	0.20	16,000	2,500	0.15	12,000	2,000
R2.5	0.25	18,000	3,000	0.20	14,000	2,500	0.15	9,000	2,000
R3.0	0.30	18,000	3,300	0.25	16,000	2,800	0.15	8,000	2,000
R4.0	0.40	16,000	3,300	0.30	12,000	2,800	0.20	7,000	1,500
R5.0	0.50	13,000	3,400	0.40	10,000	2,600	0.30	5,000	1,300
R6.0	0.60	7,000	2,000	0.50	6,000	1,800	0.40	4,000	1,100

Depth of Cut



△ 경고 WARNING

- 정밀하고 강성이 있는 홀더와 장비를 사용해주시시오.
- 절입량의 ap는 측방향 절입량을 표시합니다.
- 강재 가공 시 Air Blow나 Oil Mist 사용을 추천합니다.
- 회전수와 테이블 이송은 같은 비율로 조정해주시시오.
- 상기 조건표는 참고 자료이니 실제 가공 시 가공 형상, 기계 용량, 작업환경에 따라 조건을 조정해서 가공하시기 바랍니다.

- Use a rigid precise machine and holder.
- ap(mm) : Axial Depth of Cut.
- For milling steels, air blow or MQL(Oil Mist) are recommended.
- Adjust both Spindle speed and Feedrate by the same proportion.
- The above condition are only reference. In actual machining conditions adjust these parameters according to the milling shape, machine capability and the operation environment.

R-PRO

H-PRO

A-PRO

X-PRO

SUS MILL

S-PRO

D-PRO

A-PLUS

AL-PRO

AL MILL

ABS

MICRO GRAIN

MULTI

Technical data

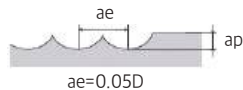
H-PRO

2HPB

High Speed Milling Condition

피삭재	프리하든강			고경도강(열처리강)					
Workpiece	Preharden Steel(NAK, HPM)			Hardened Steels(SKD 61, STAVAX)			Hardened Steels(SKD 11)		
HRC	30 ~ 45			45 ~ 55			55 ~ 65		
Radius of Ball Nose	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)
R0.05	0.003	50,000	170	0.002	42,000	150	0.001	40,000	100
R0.1	0.004	50,000	200	0.003	42,000	180	0.002	40,000	120
R0.15	0.005	45,000	320	0.004	42,000	300	0.003	40,000	180
R0.2	0.006	45,000	420	0.005	42,000	400	0.004	40,000	240
R0.25	0.007	45,000	530	0.006	42,000	500	0.005	40,000	300
R0.3	0.008	42,000	1,000	0.007	40,000	1,200	0.006	40,000	800
R0.4	0.100	42,000	1,400	0.009	40,000	1,600	0.008	40,000	1,000
R0.5	0.10	40,000	2,600	0.10	30,000	2,000	0.10	25,000	1,300
R0.75	0.15	30,000	3,000	0.10	30,000	2,500	0.10	25,000	1,800
R1.0	0.20	25,000	3,000	0.20	25,000	2,500	0.15	20,000	1,800
R1.25	0.20	25,000	3,000	0.20	20,000	2,500	0.15	16,000	1,800
R1.5	0.20	20,000	3,000	0.20	18,000	2,500	0.15	14,000	2,000
R2.0	0.25	20,000	3,000	0.20	16,000	2,500	0.15	12,000	2,000
R2.5	0.25	18,000	3,000	0.20	14,000	2,500	0.15	9,000	2,000
R3.0	0.30	18,000	3,300	0.25	16,000	2,800	0.15	8,000	2,000
R4.0	0.40	16,000	3,300	0.30	12,000	2,800	0.20	7,000	1,500
R5.0	0.50	13,000	3,400	0.40	10,000	2,600	0.30	5,000	1,300
R6.0	0.60	7,000	2,000	0.50	6,000	1,800	0.40	4,000	1,100
R6.5	0.60	7,000	2,000	0.50	6,000	1,800	0.40	4,000	1,100
R7.0	0.70	5,000	1,800	0.60	4,000	1,300	0.45	3,000	800
R8.0	0.70	4,000	1,500	0.60	3,500	1,000	0.45	2,500	800
R10.0	0.80	2,500	1,200	0.70	2,000	1,000	0.50	1,800	800

Depth of Cut



$$ae = 0.05D$$

⚠ 경고 WARNING

1. 정밀하고 강성이 있는 홀더와 장비를 사용해주시시오.
2. 절입량의 ap는 축방향 절입량을 표시합니다.
3. 강재 가공 시 Air Blow나 Oil Mist 사용을 추천합니다.
4. 회전수와 테이블 이송은 같은 비율로 조정해주시시오.
5. 상기 조건표는 참고 자료이니 실제 가공 시 가공 형상, 기계 용량, 작업환경에 따라 조건을 조정해서 가공하시기 바랍니다.

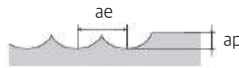
1. Use a rigid precise machine and holder.
2. ap(mm) : Axial Depth of Cut.
3. For milling steels, air blow or MQL(Oil Mist) are recommended.
4. Adjust both Spindle speed and Feedrate by the same proportion.
5. The above condition are only reference. In actual machining conditions adjust these parameters according to the milling shape, machine capability and the operation environment.

H-PRO 3HPB

High Speed Milling Condition

피삭재	프리하든강			고경도강(열처리강)					
Workpiece	Preharden Steel(NAK, HPM)			Hardened Steels(SKD 61, STAVAX)			Hardened Steels(SKD 11)		
HRC	30 ~ 45			45 ~ 55			55 ~ 65		
Radius of Ball Nose	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)
R0.5	0.08	27,500	1,650	0.08	22,000	1,400	0.05	11,000	1,000
R0.75	0.12	24,000	1,650	0.12	20,000	1,400	0.08	10,000	1,000
R1.0	0.15	22,000	1,650	0.15	18,000	1,800	0.10	9,500	1,200
R1.25	0.20	20,000	2,200	0.20	14,000	1,800	0.13	7,000	1,200
R1.5	0.23	18,000	2,200	0.23	12,000	1,800	0.15	6,500	1,200
R2.0	0.30	16,500	3,300	0.30	10,000	3,500	0.20	6,000	2,000
R2.5	0.38	11,000	2,800	0.38	9,500	4,000	0.25	6,000	2,000
R3.0	0.45	10,000	2,800	0.45	9,000	4,000	0.30	5,500	2,000
R4.0	0.60	7,000	3,500	0.60	7,000	3,500	0.40	5,000	1,800
R5.0	0.75	5,500	3,300	0.75	5,000	3,200	0.50	4,000	1,800
R6.0	0.90	4,500	3,300	0.90	4,000	3,200	0.60	3,300	1,800

Depth of Cut



△ 경고 WARNING

- 정밀하고 강성이 있는 홀더와 장비를 사용해주시시오.
- 절입량의 ap는 측방향 절입량을 표시합니다.
- 강재 가공 시 Air Blow나 Oil Mist 사용을 추천합니다.
- 회전수와 테이블 이송은 같은 비율로 조정해주시시오.
- 상기 조건표는 참고 자료이니 실제 가공 시 가공 형상, 기계 용량, 작업환경에 따라 조건을 조정해서 가공하시기 바랍니다.

- Use a rigid precise machine and holder.
- ap(mm) : Axial Depth of Cut.
- For milling steels, air blow or MQL(Oil Mist) are recommended.
- Adjust both Spindle speed and Feedrate by the same proportion.
- The above condition are only reference. In actual machining conditions adjust these parameters according to the milling shape, machine capability and the operation environment.

R-PRO

H-PRO

A-PRO

X-PRO

SUS MILL

S-PRO

D-PRO

A-PLUS

AL-PRO

AL MILL

ABS

MICRO GRAIN

MULTI

Technical data

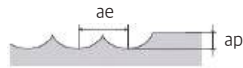
H-PRO

4HPB

High Speed Milling Condition

피삭재	프리하든강			고경도강(열처리강)					
Workpiece	Preharden Steel(NAK, HPM)			Hardened Steels(SKD 61, STAVAX)			Hardened Steels(SKD 11)		
HRC	30 ~ 45			45 ~ 55			55 ~ 65		
Radius of Ball Nose	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)
R0.5	0.08	25,000	1,500	0.08	20,000	1,200	0.05	10,000	1,000
R0.75	0.12	22,000	1,500	0.12	18,000	1,200	0.08	9,500	1,000
R1.0	0.15	20,000	1,500	0.15	16,000	1,500	0.10	8,500	1,200
R1.25	0.20	18,000	2,000	0.20	13,000	1,500	0.13	6,500	1,200
R1.5	0.23	16,000	2,000	0.23	10,500	1,500	0.15	5,500	1,200
R2.0	0.30	15,000	3,000	0.30	9,000	3,000	0.20	6,200	2,000
R2.5	0.38	10,000	2,500	0.38	8,500	3,500	0.25	5,500	2,000
R3.0	0.45	9,000	2,500	0.45	8,000	3,500	0.30	5,000	2,000
R4.0	0.60	6,500	3,300	0.60	6,200	3,000	0.40	4,500	1,800
R5.0	0.75	5,000	3,000	0.75	4,500	2,700	0.50	3,600	1,800
R6.0	0.90	4,000	3,000	0.90	3,750	2,700	0.60	3,000	1,800

Depth of Cut



⚠ 경고 WARNING

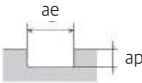
1. 정밀하고 강성이 있는 홀더와 장비를 사용해주시시오.
2. 절입량의 ap는 축방향 절입량을 표시합니다.
3. 강재 가공 시 Air Blow나 Oil Mist 사용을 추천합니다.
4. 회전수와 테이블 이송은 같은 비율로 조정해주시시오.
5. 상기 조건표는 참고 자료이니 실제 가공 시 가공 형상, 기계 용량, 작업환경에 따라 조건을 조정해서 가공하시기 바랍니다.

1. Use a rigid precise machine and holder.
2. ap(mm) : Axial Depth of Cut.
3. For milling steels, air blow or MQL(Oil Mist) are recommended.
4. Adjust both Spindle speed and Feedrate by the same proportion.
5. The above condition are only reference. In actual machining conditions adjust these parameters according to the milling shape, machine capability and the operation environment.

H-PRO

2HRR & 2HCR

High Speed Milling Condition

피삭재	프리하든강			고경도강(열처리강)			통합금		
Workpiece	Preharden Steel(NAK, HPM)			Hardened Steels(SKD 61, STAVAX)			Copper Alloy		
HRC	30 ~ 45			45 ~ 55					
Outside Diameter	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)
0.2	0.002~0.005	30,000~38,000	80~150	0.002~0.005	32,000~42,000	60~120	0.002~0.005	30,000~38,000	120~220
0.3	0.005~0.007	28,000~35,000	100~200	0.003~0.006	30,000~36,000	80~160	0.005~0.018	28,000~35,000	180~260
0.4	0.005~0.010	25,000~30,000	200~350	0.003~0.008	28,000~35,000	120~300	0.005~0.024	25,000~30,000	200~360
0.5	0.005~0.020	18,000~30,000	200~500	0.005~0.010	20,000~25,000	150~350	0.005~0.030	22,000~30,000	220~600
0.6	0.006~0.030	18,000~30,000	180~600	0.006~0.020	12,000~25,000	100~400	0.006~0.030	18,000~30,000	250~650
0.7	0.007~0.030	18,000~30,000	140~650	0.007~0.020	12,000~25,000	100~450	0.007~0.050	18,000~30,000	250~700
0.8	0.008~0.030	14,000~25,000	250~1,100	0.008~0.025	12,000~25,000	150~900	0.008~0.060	14,000~25,000	400~1,400
1.0	0.010~0.050	14,000~25,000	250~1,100	0.005~0.050	10,000~20,000	150~900	0.010~0.080	14,000~25,000	500~2,000
1.2	0.010~0.050	11,000~25,000	300~1,100	0.008~0.050	10,000~18,000	150~800	0.010~0.080	11,000~25,000	600~2,000
1.5	0.015~0.090	10,000~20,000	300~1,600	0.005~0.060	8,000~18,000	180~1,000	0.015~0.090	10,000~20,000	800~2,000
2.0	0.020~0.120	9,000~18,000	300~2,000	0.010~0.050	8,000~16,000	250~1,000	0.020~0.130	9,000~18,000	1,200~2,500
2.5	0.050~0.130	8,000~18,000	300~2,000	0.035~0.070	8,000~16,000	250~1,000	0.050~0.130	8,000~18,000	1,200~2,800
3.0	0.030~0.150	5,000~18,000	400~1,800	0.010~0.080	6,000~10,000	250~1,000	0.030~0.200	5,000~18,000	1,500~3,000
4.0	0.030~0.200	5,000~14,000	500~1,500	0.025~0.200	4,000~10,000	300~1,000	0.030~0.300	5,000~14,000	1,500~3,200
5.0	0.100~0.200	5,000~14,000	500~1,800	0.100~0.200	4,000~13,000	400~1,500	0.100~0.400	5,000~14,000	1,500~3,200
6.0	0.100~0.200	4,000~9,000	1,000~2,000	0.100~0.200	4,000~13,000	800~1,200	0.200~0.400	8,000~14,000	2,500~3,500
8.0	0.100~0.200	3,500~6,000	1,000~2,000	0.100~0.200	3,500~7,500	800~1,200	0.200~0.400	7,000~12,000	2,500~4,000
10.0	0.100~0.200	3,000~5,000	1,000~2,000	0.100~0.200	3,000~6,000	800~1,200	0.200~0.400	5,000~12,000	2,500~4,500
12.0	0.100~0.200	3,000~5,000	1,000~2,000	0.100~0.200	3,000~5,000	800~1,200	0.200~0.400	3,000~9,000	2,500~4,500
16.0	0.100~0.200	1,800~3,000	1,000~2,000	0.100~0.200	1,800~3,000	800~1,200	0.200~0.400	1,800~3,000	2,500~4,500
20.0	0.100~0.200	1,200~2,500	1,000~2,000	0.100~0.200	1,200~2,500	800~1,200	0.200~0.400	1,200~2,500	2,500~4,500
Depth of Cut									

△ 경고 WARNING

- 정밀하고 강성이 있는 홀더와 장비를 사용하십시오.
- 절입량의 a_p 는 측방향 절입량을 표시합니다.
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- 상기 조건표는 참고 자료이니 실제 가공 시 가공 형상, 기계 용량, 작업환경에 따라 조건을 조정해서 가공하시기 바랍니다.

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- a_p (mm) : Axial Depth of Cut.
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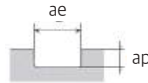
H-PRO

4HRR & 4HCR

High Speed Milling Condition

피삭재	프리하든강			고경도강(열처리강)					
Workpiece	Preharden Steel(NAK, HPM)			Hardened Steels(SKD 61, STAVAX)			Hardened Steels(SKD 11)		
HRC	30 ~ 45			45 ~ 55			55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)
0.8	0.006~0.030	12,000~25,000	250~1,000	0.004~0.025	12,000~25,000	250~1,000	0.002~0.020	12,000~25,000	250~1,000
1.0	0.007~0.050	10,000~25,000	600~2,000	0.005~0.040	8,000~20,000	500~1,800	0.003~0.030	5,000~16,000	500~1,800
1.2	0.009~0.045	10,000~25,000	500~1,000	0.006~0.040	8,000~20,000	500~1,800	0.004~0.030	8,000~20,000	500~1,800
1.5	0.010~0.050	8,000~20,000	450~2,000	0.007~0.040	7,000~20,000	350~1,600	0.005~0.030	5,000~15,000	350~1,600
2.0	0.015~0.060	7,000~18,000	500~1,800	0.010~0.050	8,000~15,000	450~1,500	0.005~0.030	5,000~12,000	450~1,500
2.5	0.030~0.070	7,000~14,000	600~1,500	0.020~0.050	8,000~15,000	500~1,400	0.008~0.030	4,500~10,000	500~1,400
3.0	0.020~0.100	5,000~18,000	700~2,200	0.015~0.060	6,000~12,000	600~1,800	0.008~0.030	4,500~10,000	600~1,800
4.0	0.025~0.100	4,500~12,000	700~2,000	0.010~0.060	4,000~10,000	600~1,500	0.008~0.050	3,000~8,500	600~1,500
5.0	0.100~0.200	5,000~8,000	1,000~2,000	0.050~0.100	3,500~10,000	1,000~1,600	0.030~0.050	3,500~7,000	800~1,300
6.0	0.050~0.150	4,000~10,000	2,000~3,500	0.030~0.100	3,500~10,000	2,000~3,000	0.010~0.060	3,500~7,000	1,200~2,000
8.0	0.050~0.150	6,500~9,000	2,500~3,600	0.030~0.100	5,000~7,500	2,000~3,000	0.020~0.050	4,500~6,000	1,500~2,500
10.0	0.050~0.150	5,000~7,500	2,300~3,000	0.030~0.100	4,000~6,000	1,800~2,300	0.020~0.050	3,500~5,500	1,200~2,000
12.0	0.050~0.200	3,000~5,000	1,700~2,500	0.030~0.120	3,000~5,000	1,500~2,000	0.020~0.050	2,800~4,000	1,000~1,600
16.0	0.050~0.200	1,500~2,800	1,500~3,000	0.030~0.120	1,500~2,800	1,500~2,000	0.020~0.050	2,800~4,000	1,000~1,600
20.0	0.050~0.200	1,200~2,500	1,500~3,000	0.030~0.120	1,200~2,500	1,500~2,000	0.020~0.050	2,800~4,000	1,000~1,600

Depth of Cut



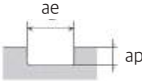
⚠ 경고 WARNING

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- Adjust both Spindle speed and Feedrate by the same proportion.
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H-PRO 4HIT

High Speed Milling Condition

피삭재	프리하든강			고경도강(열처리강)					
Workpiece	Preharden Steel(NAK, HPM)			Hardened Steels(SKD 61, STAVAX)			Hardened Steels(SKD 11)		
HRC	30 ~ 45			45 ~ 55			55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)
1.5	0.030~0.050	28,000~38,000	2,500~6,000	0.030~0.050	20,000~30,000	2,000~5,000	0.005~0.015	15,000~25,000	1,000~4,000
2.0	0.050~0.100	25,000~35,000	3,500~8,000	0.050~0.100	20,000~28,000	2,500~7,000	0.005~0.025	15,000~22,000	1,500~6,000
3.0	0.050~0.100	20,000~27,000	5,000~8,000	0.050~0.100	15,000~23,000	4,000~7,000	0.008~0.025	10,000~18,000	3,000~6,000
4.0	0.050~0.100	13,000~18,000	5,000~8,000	0.050~0.100	8,000~15,000	4,000~7,000	0.008~0.050	6,000~12,000	3,000~6,000
5.0	0.050~0.150	8,000~13,000	5,000~8,000	0.050~0.150	6,500~10,000	4,000~7,000	0.030~0.050	4,500~8,000	3,000~6,000
6.0	0.050~0.150	8,000~13,000	5,000~8,000	0.050~0.150	6,500~10,000	4,000~7,000	0.010~0.050	4,500~8,000	3,000~6,000
8.0	0.050~0.150	6,000~9,500	5,000~9,000	0.050~0.150	5,000~7,500	4,000~8,000	0.020~0.050	4,000~6,500	3,000~7,000
10.0	0.050~0.150	6,000~8,000	5,000~10,000	0.050~0.150	4,000~7,000	4,000~9,000	0.020~0.050	3,000~5,500	3,000~7,000
12.0	0.050~0.150	5,000~7,000	5,000~10,000	0.050~0.150	4,000~6,000	4,000~9,000	0.020~0.050	3,000~5,000	3,000~7,000
Depth of Cut									

△ 경고 WARNING

- 정밀하고 강성이 있는 홀더와 장비를 사용하십시오.
- 절입량의 a_p 는 축방향 절입량을 표시합니다.
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R-PRO

H-PRO

A-PRO

X-PRO

SUS MILL

S-PRO

D-PRO

A-PLUS

AL-PRO

AL MILL

ABS

MICRO GRAIN

MULTI

Technical data

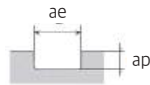
H-PRO

2HRE

High Speed Milling Condition

피삭재	프리하드강			고경도강(열처리강)					
Workpiece	Preharden Steel(NAK, HPM)			Hardened Steels(SKD 61, STAVAX)			Hardened Steels(SKD 11)		
HRC	30 ~ 45			45 ~ 55			55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)
0.1	0.001~0.004	38,000~50,000	50~80	0.001~0.004	35,000~45,000	30~65	0.001~0.002	25,000~35,000	20~60
0.2	0.002~0.005	30,000~50,000	60~240	0.002~0.005	25,000~40,000	40~200	0.002~0.003	20,000~32,000	30~160
0.3	0.003~0.007	30,000~48,000	60~350	0.003~0.007	22,000~38,000	45~300	0.002~0.003	18,000~30,000	35~250
0.4	0.003~0.010	25,000~40,000	150~500	0.003~0.010	20,000~35,000	100~400	0.002~0.005	18,000~30,000	80~350
0.5	0.003~0.020	16,000~30,000	150~500	0.003~0.020	16,000~30,000	100~400	0.001~0.007	12,000~23,000	80~360
0.6	0.004~0.020	16,000~30,000	230~620	0.004~0.020	16,000~28,000	130~500	0.002~0.007	12,000~23,000	100~400
0.7	0.010~0.040	16,000~30,000	330~650	0.005~0.040	16,000~25,000	130~550	0.003~0.020	12,000~23,000	100~450
0.8	0.005~0.040	16,000~30,000	250~900	0.005~0.040	13,500~23,000	150~800	0.002~0.040	10,000~20,000	100~650
1.0	0.005~0.050	12,000~27,000	150~1,000	0.003~0.050	10,000~23,000	60~900	0.002~0.040	6,000~18,000	50~800
1.2	0.010~0.050	12,500~25,000	350~1,000	0.007~0.050	10,000~23,000	250~900	0.003~0.040	7,000~18,000	200~800
1.5	0.010~0.070	9,000~23,000	300~1,200	0.010~0.060	8,000~20,000	200~900	0.005~0.040	7,000~18,000	150~800
2.0	0.015~0.080	7,000~20,000	280~1,000	0.015~0.060	7,000~18,000	180~900	0.010~0.050	7,000~15,000	160~750
3.0	0.030~0.100	5,000~16,000	350~900	0.020~0.100	6,000~16,000	250~800	0.015~0.070	6,000~10,000	200~700
4.0	0.035~0.100	4,500~14,000	350~900	0.035~0.100	5,000~12,000	250~800	0.025~0.070	5,000~9,500	200~700
5.0	0.050~0.120	3,500~12,000	400~1,000	0.040~0.100	4,000~10,000	300~900	0.030~0.080	3,000~8,000	250~800
6.0	0.050~0.120	3,500~12,000	400~1,000	0.040~0.120	4,000~10,000	300~900	0.030~0.080	3,000~8,000	250~800
8.0	0.060~0.150	4,500~10,000	450~1,000	0.050~0.120	3,500~9,000	350~900	0.040~0.100	2,500~7,000	300~800
10.0	0.080~0.150	4,000~8,000	500~1,000	0.060~0.120	3,000~7,000	400~900	0.040~0.100	2,000~5,000	300~800
12.0	0.080~0.200	3,500~7,000	500~1,000	0.070~0.180	2,500~6,000	400~900	0.050~0.120	1,500~4,000	300~800

Depth of Cut



⚠ 경고 WARNING

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2. 절입량의 ap는 축방향 절입량을 표시합니다.
3. 강재 가공 시 Air Blow나 Oil Mist 사용을 추천합니다.
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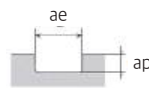
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H-PRO 2HPE

High Speed Milling Condition

피삭재	프리하든강			고경도강(열처리강)					
Workpiece	Preharden Steel(NAK, HPM)			Hardened Steels(SKD 61, STAVAX)			Hardened Steels(SKD 11)		
HRC	30 ~ 45			45 ~ 55			55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)
0.1	0.01	38,000~50,000	50~80	0.005	32,000~45,000	50~80	0.003	30,000~40,000	50~80
0.2	0.02	30,000~50,000	60~240	0.010	28,000~42,000	60~240	0.005	25,000~38,000	50~100
0.3	0.03	30,000~48,000	60~350	0.015	25,000~40,000	60~350	0.008	22,000~35,000	60~150
0.4	0.04	25,000~40,000	150~500	0.020	20,000~35,000	150~500	0.010	18,000~32,000	70~150
0.5	0.05	16,000~30,000	150~500	0.025	12,000~25,000	150~500	0.013	15,000~30,000	70~150
0.6	0.06	16,000~30,000	230~620	0.03	12,000~25,000	230~620	0.02	12,000~25,000	80~150
0.7	0.07	16,000~30,000	330~650	0.04	12,000~25,000	330~650	0.02	12,000~25,000	80~150
0.8	0.08	16,000~30,000	250~900	0.04	12,000~25,000	250~900	0.02	12,000~25,000	80~150
1.0	0.10	25,000~32,000	150~500	0.05	16,000~24,000	150~500	0.03	12,000~20,000	90~120
1.5	0.15	18,000~25,000	200~500	0.08	10,000~15,000	200~500	0.04	8,000~15,000	100~150
2.0	0.20	16,000~20,000	200~500	0.10	8,000~13,000	200~500	0.05	7,000~12,000	100~150
2.5	0.25	10,000~15,000	200~500	0.13	7,000~12,000	200~500	0.06	6,000~12,000	120~230
3.0	0.30	8,000~13,000	200~500	0.15	6,000~11,000	200~500	0.08	5,000~10,000	150~250
4.0	0.40	7,000~12,000	200~600	0.20	5,000~10,000	200~600	0.10	4,000~9,000	150~250
5.0	0.50	6,500~10,000	200~500	0.25	4,000~8,500	200~500	0.13	3,500~7,500	150~230
6.0	0.60	6,500~10,000	200~600	0.30	4,000~8,500	200~600	0.15	3,500~7,500	150~230
8.0	1.20	4,500~8,000	200~400	0.40	2,500~6,500	150~400	0.20	2,500~5,000	120~200
10.0	1.50	3,000~6,000	200~400	0.50	2,000~5,500	150~400	0.25	2,000~4,500	120~200
12.0	1.80	2,500~5,000	200~400	0.60	1,500~3,500	150~400	0.30	1,500~3,200	120~200

Depth of Cut



△ 경고 WARNING

- 정밀하고 강성이 있는 홀더와 장비를 사용해주십시오.
- 절입량의 ap는 축방향 절입량을 표시합니다.
- 강재 가공 시 Air Blow나 Oil Mist 사용을 추천합니다.
- 회전수와 테이블 이송은 같은 비율로 조정해주십시오.
- 상기 조건표는 참고 자료이니 실제 가공 시 가공 형상, 기계 용량, 작업환경에 따라 조건을 조정해서 가공하시기 바랍니다.

- Use a rigid precise machine and holder.
- ap(mm) : Axial Depth of Cut.
- For milling steels, air blow or MQL(Oil Mist) are recommended.
- Adjust both Spindle speed and Feedrate by the same proportion.
- The above condition are only reference. In actual machining conditions adjust these parameters according to the milling shape, machine capability and the operation environment.

R-PRO

H-PRO

A-PRO

X-PRO

SUS MILL

S-PRO

D-PRO

A-PLUS

AL-PRO

AL MILL

ABS

MICRO GRAIN

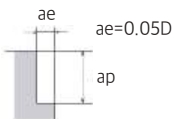
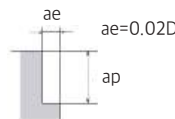
MULTI

Technical data

H-PRO

2HLE

Milling Condition

피삭재	프리하드강			고경도강(열처리강)					
Workpiece	Preharden Steel(NAK, HPM)			Hardened Steels(SKD 61, STAVAX)			Hardened Steels(SKD 11)		
HRC	30 ~ 45			45 ~ 55			55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)
1.0	1.0	10,000~15,000	40~80	1.0	7,000~12,000	40~80	0.5	7,000~12,000	40~80
1.5	1.5	9,000~13,000	40~80	1.5	6,000~10,000	40~80	0.75	6,000~10,000	40~80
2.0	2.0	5,000~8,000	40~80	2.0	3,000~6,000	40~80	1.0	3,000~6,000	40~80
2.5	2.5	4,500~7,000	40~80	2.5	2,500~5,000	40~80	1.25	2,500~5,000	40~80
3.0	3.0	4,000~6,000	40~80	3.0	2,000~4,000	40~80	1.5	2,000~4,000	40~80
4.0	4.0	3,000~5,000	50~100	4.0	1,500~3,000	50~100	2.0	1,500~3,000	50~100
5.0	5.0	2,500~4,500	50~100	5.0	1,500~2,500	50~100	2.5	1,500~2,500	50~100
6.0	6.0	2,000~4,000	50~100	6.0	1,500~2,000	50~100	3.0	1,500~2,000	50~100
8.0	8.0	1,800~2,500	50~100	8.0	1,800~2,500	50~100	4.0	1,800~2,500	50~100
10.0	10.0	1,500~2,000	50~100	10.0	1,500~2,000	50~100	5.0	1,500~2,000	50~100
12.0	12.0	1,200~1,800	40~80	12.0	600~1,000	40~80	6.0	600~1,000	40~80
16.0	16.0	800~1,500	40~80	16.0	400~800	40~80	8.0	400~800	40~80
20.0	20.0	700~1,200	40~80	20.0	300~700	40~80	10.0	300~700	40~80
25.0	25.0	500~800	40~80	25.0	250~600	40~80	12.5	250~600	40~80
Depth of Cut									

⚠ 경고 WARNING

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- 상기 조건표는 참고 자료이니 실제 가공 시 가공 형상, 기계 용량, 작업환경에 따라 조건을 조정해서 가공하시기 바랍니다.

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- ap(mm) : Axial Depth of Cut.
- For milling steels, air blow or MQL(Oil Mist) are recommended.
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H-PRO 4HRE

High Speed Milling Condition

피삭재	프리하든강			고경도강(열처리강)					
Workpiece	Preharden Steel(NAK, HPM)			Hardened Steels(SKD 61, STAVAX)			Hardened Steels(SKD 11)		
HRC	30 ~ 45			45 ~ 55			55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)
0.8	0.005~0.040	15,000~28,000	250~900	0.005~0.025	12,000~25,000	250~900	0.002~0.040	10,000~20,000	100~650
1.0	0.010~0.050	12,000~25,000	400~2,000	0.003~0.030	10,000~20,000	300~1,800	0.002~0.040	8,000~18,000	200~1,200
1.2	0.010~0.050	10,000~25,000	500~2,000	0.007~0.050	9,000~20,000	300~1,600	0.003~0.040	7,000~18,000	200~1,200
1.5	0.020~0.060	9,000~23,000	700~2,000	0.010~0.030	8,000~20,000	400~1,600	0.005~0.040	7,000~18,000	200~1,200
2.0	0.030~0.080	7,000~20,000	800~2,000	0.015~0.050	6,000~18,000	400~1,600	0.010~0.050	5,000~15,000	200~1,200
3.0	0.050~0.100	5,000~16,000	800~2,000	0.020~0.060	5,000~15,000	400~1,600	0.015~0.070	4,000~10,000	200~1,200
4.0	0.050~0.150	4,500~14,000	800~2,000	0.025~0.080	4,000~10,000	400~2,000	0.025~0.070	3,000~8,000	200~1,200
5.0	0.050~0.120	3,500~12,000	600~1,500	0.040~0.100	3,000~8,000	400~1,000	0.030~0.080	2,500~6,000	250~800
6.0	0.050~0.120	3,500~12,000	600~1,500	0.040~0.120	3,000~8,000	400~1,000	0.030~0.080	2,500~6,000	250~800
8.0	0.060~0.150	4,500~10,000	450~1,000	0.050~0.120	2,500~7,000	350~900	0.040~0.100	2,000~5,000	300~700
10.0	0.080~0.150	4,000~8,000	500~1,000	0.060~0.120	2,000~5,000	300~800	0.040~0.100	2,000~4,500	300~700
12.0	0.080~0.200	3,500~7,000	500~1,000	0.070~0.180	2,000~4,000	300~800	0.050~0.120	1,500~4,000	300~650

Depth of Cut

△ 경고 WARNING

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R-PRO

H-PRO

A-PRO

X-PRO

SUS MILL

S-PRO

D-PRO

A-PLUS

AL-PRO

AL MILL

ABS

MICRO GRAIN

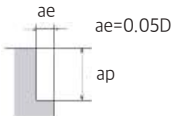
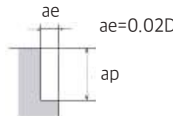
MULTI

Technical data

H-PRO

4HLE

Milling Condition

피삭재	프리하드강			고경도강(열처리강)					
Workpiece	Preharden Steel(NAK, HPM)			Hardened Steels(SKD 61, STAVAX)			Hardened Steels(SKD 11)		
HRC	30 ~ 45			45 ~ 55			55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)
1.0	1.0	10,000~15,000	40~80	1.0	7,000~12,000	40~80	0.5	7,000~12,000	40~80
1.5	1.5	9,000~13,000	40~80	1.5	6,000~10,000	40~80	0.75	6,000~10,000	40~80
2.0	2.0	5,000~8,000	40~80	2.0	3,000~6,000	40~80	1.0	3,000~6,000	40~80
2.5	2.5	4,500~7,000	40~80	2.5	2,500~5,000	40~80	1.25	2,500~5,000	40~80
3.0	3.0	4,000~6,000	40~80	3.0	2,000~4,000	40~80	1.5	2,000~4,000	40~80
4.0	4.0	3,000~5,000	50~100	4.0	1,500~3,000	50~100	2.0	1,500~3,000	50~100
5.0	5.0	2,500~4,500	50~100	5.0	1,500~2,500	50~100	2.5	1,500~2,500	50~100
6.0	6.0	2,000~4,000	50~100	6.0	1,500~2,000	50~100	3.0	1,500~2,000	50~100
8.0	8.0	1,800~2,500	50~100	8.0	1,800~2,500	50~100	4.0	1,800~2,500	50~100
10.0	10.0	1,500~2,000	50~100	10.0	1,500~2,000	50~100	5.0	1,500~2,000	50~100
12.0	12.0	1,200~1,800	40~80	12.0	600~1,000	40~80	6.0	600~1,000	40~80
16.0	16.0	800~1,500	40~80	16.0	400~800	40~80	8.0	400~800	40~80
20.0	20.0	700~1,200	40~80	20.0	300~700	40~80	10.0	300~700	40~80
25.0	25.0	500~800	40~80	25.0	250~600	40~80	12.5	250~600	40~80
Depth of Cut									

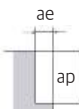
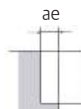
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H-PRO 4HPE

Milling Condition

피삭재	프리하든강			고경도강(열처리강)					
Workpiece	Prehardened Steel(NAK)			Hardened Steels(SKD 61, STAVAX)			Hardened Steels(SKD 11)		
HRC	30 ~ 45			45 ~ 55			55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)
0.8	0.04	15,000~28,000	250~900	0.04	12,000~25,000	250~900	0.010	10,000~20,000	100~650
1.0	0.05	12,000~25,000	400~2,000	0.05	10,000~20,000	300~1,800	0.02	8,000~18,000	200~1,200
1.2	0.06	10,000~25,000	500~2,000	0.06	9,000~20,000	300~1,600	0.02	7,000~18,000	200~1,200
1.5	0.08	9,000~23,000	700~2,000	0.08	8,000~20,000	400~1,600	0.03	7,000~18,000	200~1,200
2.0	0.10	7,000~20,000	800~2,000	0.10	6,000~18,000	400~1,600	0.04	5,000~15,000	200~1,200
3.0	0.30	5,000~16,000	800~2,000	0.30	5,000~15,000	400~1,600	0.06	4,000~10,000	200~1,200
4.0	0.40	4,500~14,000	800~2,000	0.40	4,000~10,000	400~2,000	0.08	3,000~8,000	200~1,200
5.0	0.50	3,500~12,000	600~1,500	0.50	3,000~8,000	400~1,000	0.10	2,500~6,000	250~800
6.0	0.60	3,500~12,000	600~1,500	0.60	3,000~8,000	400~1,000	0.12	2,500~6,000	250~800
8.0	1.20	2,500~10,000	450~1,000	0.80	2,500~7,000	350~900	0.16	2,000~5,000	300~700
10.0	1.50	2,000~7,500	500~1,000	1.00	2,000~5,000	300~800	0.20	2,000~4,500	300~700
12.0	1.80	1,800~7,000	500~1,000	1.20	2,000~4,000	300~800	0.24	1,500~4,000	300~650
Depth of Cut	 $ap=1.5D$ $ae=0.05D$ ($0.8 \leq D \leq \varnothing 2$) $ae=0.10D$ ($3 \leq D \leq \varnothing 6$) $ae=0.15D$ ($7 \leq D \leq \varnothing 12$)			 $ae=0.03D$					

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R-PRO

H-PRO

A-PRO

X-PRO

SUS MILL

S-PRO

D-PRO

A-PLUS

AL-PRO

AL MILL

ABS

MICRO GRAIN

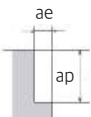
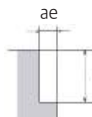
MULTI

Technical data

H-PRO

4HHE

Milling Condition

피삭재	프리하든강			고경도강(열처리강)					
Workpiece	Prehardened Steel(NAK)			Hardened Steels(SKD 61, STAVAX)			Hardened Steels(SKD 11)		
HRC	30 ~ 45			45 ~ 55			55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)	Depth of Cut Ad(mm)	RPM	Feed (mm/min)
1.0	0.05	12,000~25,000	400~2,000	0.05	10,000~20,000	300~1,800	0.02	8,000~18,000	200~1,200
1.2	0.06	10,000~25,000	500~2,000	0.06	9,000~20,000	300~1,600	0.02	7,000~18,000	200~1,200
1.5	0.08	9,000~23,000	700~2,000	0.08	8,000~20,000	400~1,600	0.03	7,000~18,000	200~1,200
2.0	0.10	7,000~20,000	800~2,000	0.10	6,000~18,000	400~1,600	0.04	5,000~15,000	200~1,200
3.0	0.30	5,000~16,000	800~2,000	0.30	5,000~15,000	400~1,600	0.06	4,000~10,000	200~1,200
4.0	0.40	4,500~14,000	800~2,000	0.40	4,000~10,000	400~2,000	0.08	3,000~8,000	200~1,200
5.0	0.50	3,500~12,000	600~1,500	0.50	3,000~8,000	400~1,000	0.10	2,500~6,000	250~800
6.0	0.60	3,500~12,000	600~1,500	0.60	3,000~8,000	400~1,000	0.12	2,500~6,000	250~800
8.0	1.20	2,500~10,000	450~1,000	1.20	2,500~7,000	350~900	0.16	2,000~5,000	300~700
10.0	1.50	2,000~7,500	500~1,000	1.50	2,000~5,000	300~800	0.20	2,000~4,500	300~700
12.0	1.80	1,800~7,000	500~1,000	1.80	2,000~4,000	300~800	0.24	1,500~4,000	300~650
Depth of Cut									
	ap=1.5D ae=0.05D (0.8 ≤ D ≤ Ø2) ae=0.10D (3 ≤ D ≤ Ø6) ae=0.15D (7 ≤ D ≤ Ø12)			ae=0.03D					

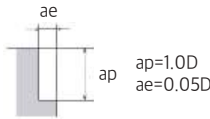
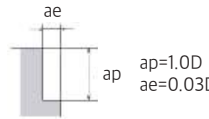
⚠ 경고 WARNING

- 정밀하고 강성이 있는 홀더와 장비를 사용해주시시오.
- 절입량의 ap는 축방향 절입량을 표시합니다.
- 강재 가공 시 Air Blow나 Oil Mist 사용을 추천합니다.
- 회전수와 테이블 이송은 같은 비율로 조정해주시시오.
- 상기 조건표는 참고 자료이니 실제 가공 시 가공 형상, 기계 용량, 작업환경에 따라 조건을 조정해서 가공하시기 바랍니다.

- Use a rigid precise machine and holder.
- ap(mm) : Axial Depth of Cut.
- For milling steels, air blow or MQL(Oil Mist) are recommended.
- Adjust both Spindle speed and Feedrate by the same proportion.
- The above condition are only reference. In actual machining conditions adjust these parameters according to the milling shape, machine capability and the operation environment.

H-PRO 6HPE

High Speed Milling Condition

피삭재	프리하든강		고경도강(열처리강)					
Workpiece	Prehardened Steel(NAK, CENA 1)		Hardened Steels(SKD 61, STAVAX)		Hardened Steels(SKD 11, SKD 61)		Hardened Steels(ASP)	
HRC	30 ~ 45		45 ~ 55		55 ~ 65		65 ~ 70	
Outside Diameter	RPM	Feed (mm/min)	RPM	Feed (mm/min)	RPM	Feed (mm/min)	RPM	Feed (mm/min)
6.0	13,000	4,400	11,000	3,300	8,000	2,200	5,300	1,300
8.0	10,000	4,500	8,000	3,200	6,000	2,200	4,000	1,300
10.0	8,000	4,300	6,400	3,050	4,800	2,100	3,200	1,250
12.0	6,600	4,000	5,300	2,800	4,000	1,900	2,700	1,170
16.0	5,000	3,800	4,000	2,650	3,000	1,800	2,000	1,100
20.0	4,000	3,600	3,200	2,530	2,400	1,730	1,600	1,050
Depth of Cut								

△ 경고 WARNING

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R-PRO

H-PRO

A-PRO

X-PRO

SUS MILL

S-PRO

D-PRO

A-PLUS

AL-PRO

AL MILL

ABS

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MULTI

Technical data

H-PRO 2IRC

Milling Condition

피삭재	탄소강		합금강		프리하드강	
Workpiece	Carbon Steels (S45C, SCM440, SCr415)		Alloy Steels (SKD)		Prehardened Steels (NAK 80, HPM 50)	
Outside Diameter	RPM	Feed (mm/min)	RPM	Feed (mm/min)	RPM	Feed (mm/min)
1.9	3,000~3,500	200~500	2,000~2,500	150~400	2,300~2,800	100~300
2.9	2,300~2,800	200~500	1,500~2,000	150~400	1,500~2,000	100~300
3.9	1,500~2,000	200~500	1,300~1,800	150~400	1,300~1,800	100~300
4.9	1,300~1,800	200~500	1,200~1,700	150~400	1,200~1,700	100~300
5.9	1,200~1,700	200~500	700~1,200	150~400	700~1,200	100~300

⚠ 경고 WARNING

1. 정밀하고 강성이 있는 홀더와 장비를 사용해주시요.
2. 절입량의 ap는 축방향 절입량을 표시합니다.
3. 강재 가공 시 Air Blow나 Oil Mist 사용을 추천합니다.
4. 회전수와 테이블 이송은 같은 비율로 조정해주시요.
5. 상기 조건표는 참고 자료이니 실제 가공 시 가공 형상, 기계 용량, 작업환경에 따라 조건을 조정해서 가공하시기 바랍니다.

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H-PRO 4IRC

Milling Condition

피삭재	탄소강		합금강		프리하든강	
Workpiece	Carbon Steels (S45C, SCM440, SCr415)		Alloy Steels (SKD)		Prehardened Steels (NAK 80, HPM 50)	
Outside Diameter	RPM	Feed (mm/min)	RPM	Feed (mm/min)	RPM	Feed (mm/min)
1.9	5,500~6,500	300~800	5,000~6,000	200~700	3,800~4,800	150~650
2.9	5,000~6,000	300~800	4,000~5,000	200~700	3,200~4,200	150~650
3.9	4,000~5,000	300~800	3,800~4,800	200~700	2,800~3,800	150~650
4.9	3,800~4,800	300~800	3,200~4,200	200~700	2,500~3,500	150~650
5.9	3,200~4,200	300~800	2,500~3,500	200~700	2,000~3,000	150~650

△ 경고 WARNING

1. 정밀하고 강성이 있는 홀더와 장비를 사용해주십시오.
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