

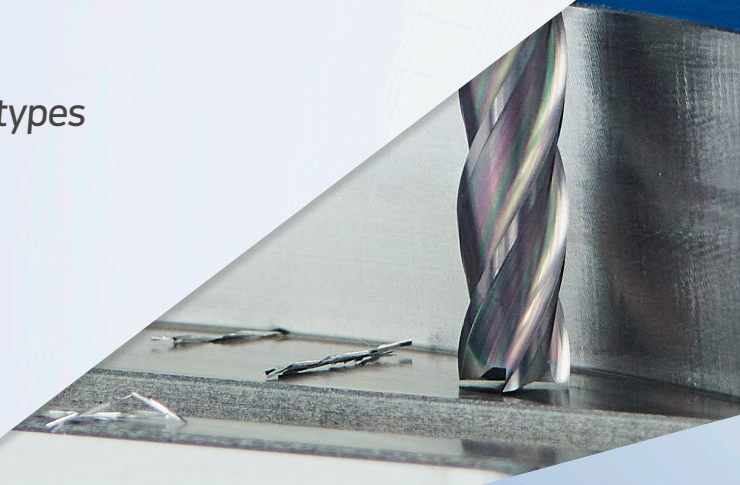
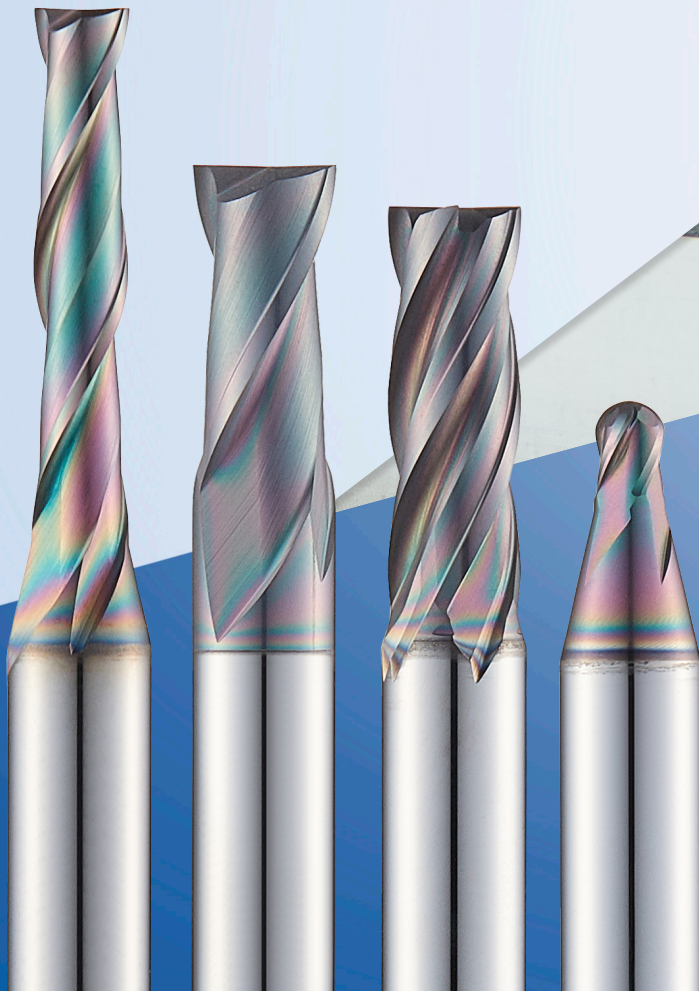


U-WING

Suitable for processing mold steel,
mid hardness steel HRC 30~50

New coatings excellent for wear
resistance and lubrication

Excellent for complex mold processing
by securing various specifications and rib types

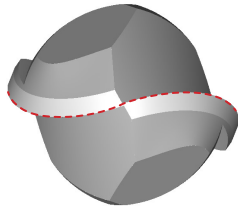


U-WING SERIES

Features

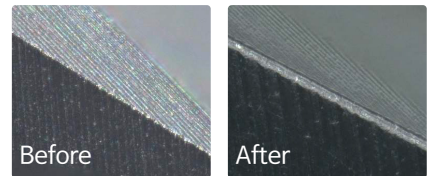
- Suitable for mid hardness steel, mold steel processing from HRC30-50
- Improvement of wear resistance and increased lubricity through AlCrN-based Coating
- Reinforced the cutting edges by improved raw material
- Enhanced chipping resistance of flat end mill through application of high toughness material
- Range of shapes and specifications suitable for complex mold processing
- Suitable for precision processing by applying high precision tolerances on h5 shank, cutting diameter and radius

S curved gash shape



- Improved cutting and wear resistance by dispersing processing loads

Cutting edge



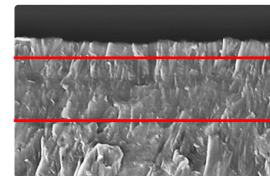
- Improved chipping resistance
- New cutting edge to cope with a variety of mold processing and improved performance and tool life

Adopted new raw material



- Separated raw material by geometry to maximize tool characteristics and to increase versatility

AlCrN based new coating

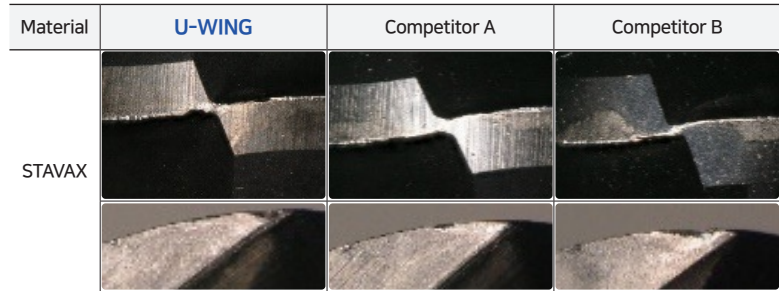
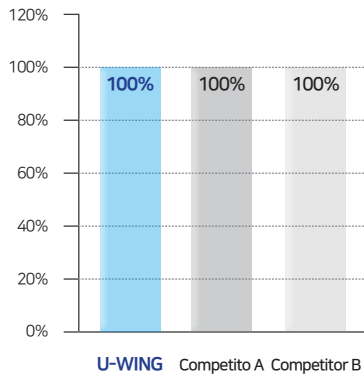


- 내마모성 및 내산화성 향상
- Cr 함유를 통한 윤활성 향상
- Improved heat resistance

Case Study

2F R3.0 BALL ENDMILL

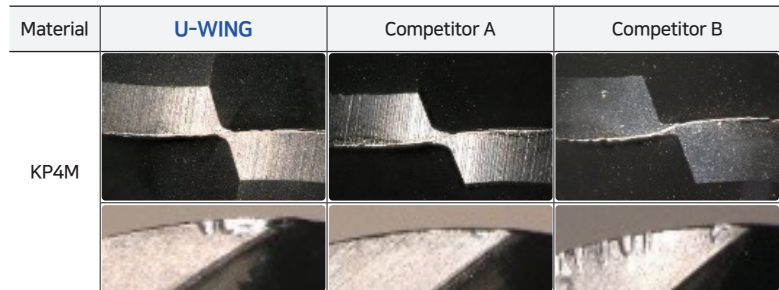
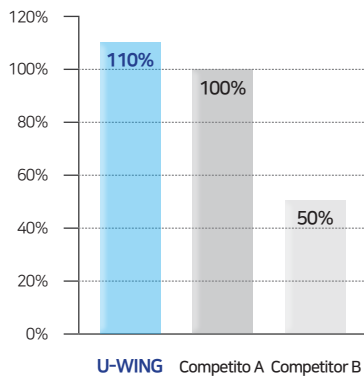
- STAVAX



· Cutting Condition

Cutting Method	rpm	feed	ap	ae	Note
Profiling	8340	2830	0.18	0.3	Wet Machining

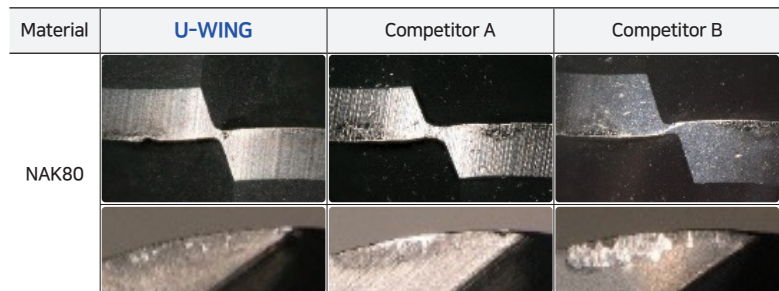
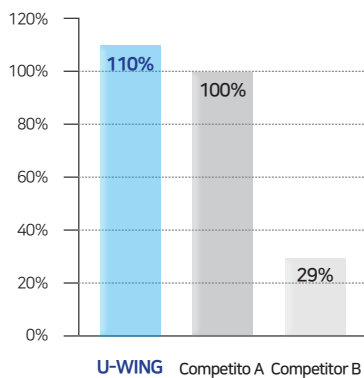
- KP4M



· Cutting Condition

Cutting Method	rpm	feed	ap	ae	Note
Profiling	8040	2410	0.18	0.3	Wet Machining

- NAK80



· Cutting Condition

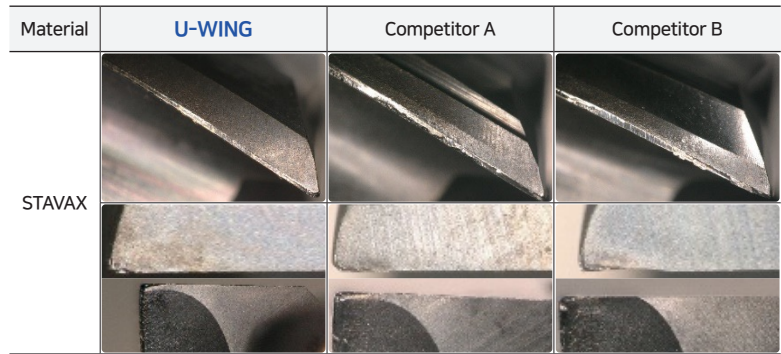
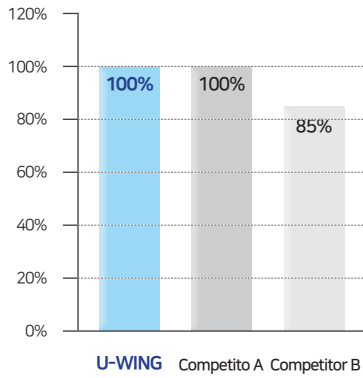
Cutting Method	rpm	feed	ap	ae	Note
Profiling	7128	2420	0.18	0.3	Wet Machining

U-WING SERIES

Cutting test result

4F D6.0 SQUARE ENDMILL

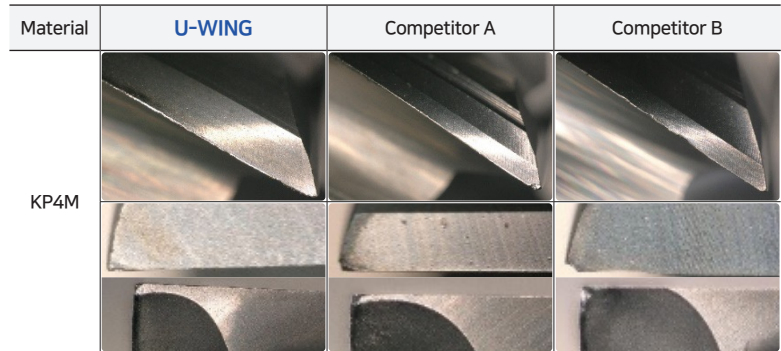
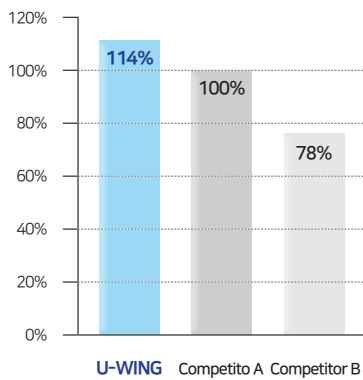
- STAVAX



· Cutting Condition

Cutting Method	rpm	feed	ap	ae	Note
Shouldering	2840	340	6	0.3	Wet Machining

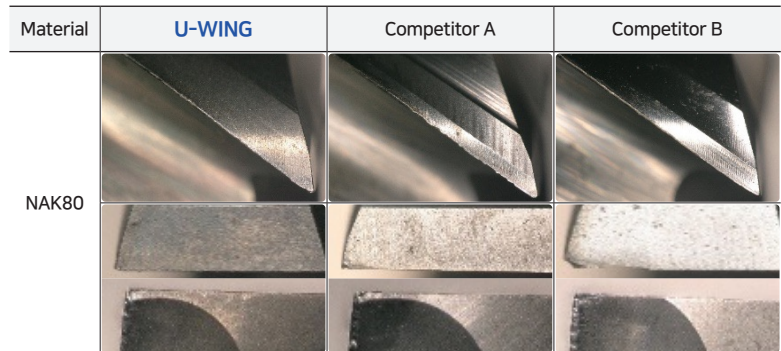
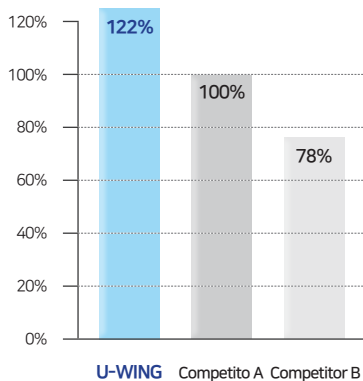
- KP4M



· Cutting Condition

Cutting Method	rpm	feed	ap	ae	Note
Shouldering	5560	660	6	0.3	Wet Machining

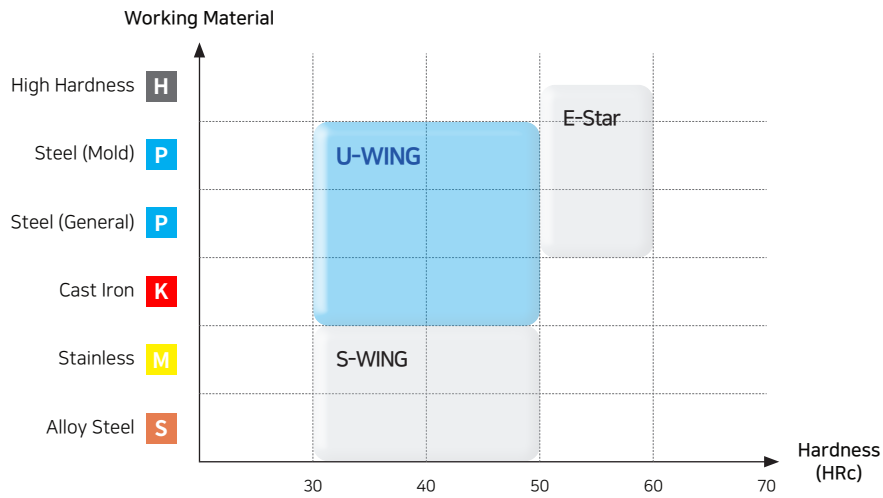
- NAK80



· Cutting Condition

Cutting Method	rpm	feed	ap	ae	Note
Shouldering	3360	400	6	0.3	Wet Machining

Applications
















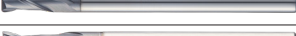

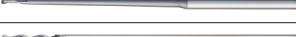

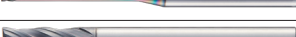



















EDP No. System

U R 5 0 2 030 10 25 - S3

Section	Geometry	Grade	Length, Shank Type	Flutes	Cutting Dia.	Corner Radius	Neck Length	OAL	Detailed characteristics
U (U-WING)	B : Ball	5 : Grade	0 : Straight	2 : 2Flute	0.1	0.05	0.2	35	P : Precision tolerance
	SB : Straight Ball		1 : Neck	3 : 3Flute	~	~	~	~	S3 ~S6 : Shank Dia.
	E : Square		2 : Long Shank	4 : 4Flute	25	5	100	300	H : High Helix
	R : Radius		3 : Lollipop	5 : 5Flute					
	SPM : Speed Power Mill		4 : Tapered Neck	6 : 6Flute					
	XE : Heavy cut square								
	XR : Multi Helix Radius								
	TE : Tapered Square								
	TR : Tapered Radius								
	TB : Tapered Ball								
	DR : Double Radius								
	F : Roughing								
LE : Square (Lathe)									

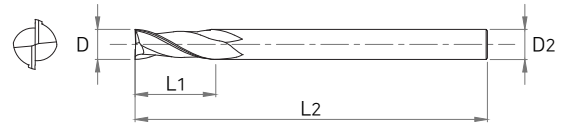
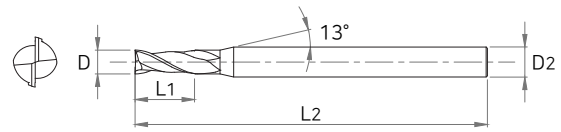
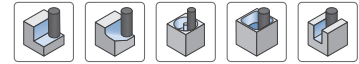
U-WING SERIES

Contents

Section		EDP No.	Geometry	Type	Diameter		Page
Type	Flutes				Min	Max	
Square	2F	UE502		2 FLUTES SQUARE ENDMILL	0.1	25	7
	2F	UE512		2 FLUTES LONG NECK SQUARE ENDMILL	0.1	12	9
	2F	UE522		2 FLUTES SQUARE ENDMILL	1	25	12
	2F	UXE502		2 FLUTES SQUARE ENDMILL FOR HEAVY CUTS	0.1	20	14
	4F	UE504H		4 FLUTES 45° HELIX SQUARE ENDMILL	1	20	16
	4F	UE514		4 FLUTES LONG NECK SQUARE ENDMILL	1	12	17
	4F	UE524		4 FLUTES SQUARE ENDMILL	1	25	19
	4F	ULE504		4 FLUTES AUTOMATIC CNC SQUARE ENDMILL	3	16	21
	4F	UE504		4 FLUTES SQUARE ENDMILL	0.8	25	22
	4F	UXE504		4 FLUTES SQUARE ENDMILL FOR HEAVY CUTS	1	20	23
	6F	UE506		6 FLUTES SQUARE ENDMILL	6	20	25
	2F	UTE502		2 FLUTES TAPERED SQUARE ENDMILL	0.3	10	26
	4F	UTE504		4 FLUTES TAPERED SQUARE ENDMILL	0.8	10	28
	Radius	2F	UR502		2 FLUTES RADIUS ENDMILL	0.2	20
2F		UR512		2 FLUTES NECK TYPE RADIUS ENDMILL	0.2	20	34
2F		UR542		2 FLUTES TAPERED NECK RADIUS ENDMILL	0.2	4	39
4F		UR504		4 FLUTES RADIUS ENDMILL	3	20	44
4F		UR544		4 FLUTES TAPERED NECK RADIUS ENDMILL	1	4	46
4F		UXR504		4 FLUTES MULTI HELIX RADIUS ENDMILL	1	20	50
4F		UXR514		4 FLUTES MULTI HELIX NECK RADIUS ENDMILL	1	20	53
6F		UR506		6 FLUTES RADIUS ENDMILL	6	20	57
3F		UDR503		3 FLUTES DOUBLE RADIUS ENDMILL	6	20	58
4F		USPM4		4 FLUTES RADIUS ENDMILL FOR HIGH SPEED MACHINING	1	20	59
4F		UTR504		4 FLUTES TAPERED RADIUS ENDMILL	0.8	2.5	61
Ball		2F	UB502		2 FLUTES BALL ENDMILL	0.1	25
	2F	UB502---P		2 FLUTES HIGH PRECISION BALL ENDMILL	0.1	12	67
	2F	UB512		2 FLUTES LONG NECK BALL ENDMILL	0.1	12	68
	2F	UB512S6		2 FLUTES LONG NECK BALL ENDMILL (SHANK 6)	0.5	2	71
	2F	UB532		2 FLUTES LOLLIPOP STYLE BALL ENDMILL	3	12	73
	2F	UB542		2 FLUTES TAPERED NECK BALL ENDMILL	0.1	12	74
	2F	USB502		2 FLUTES STRAIGHT BALL ENDMILL	3	20	80
	3F	UB503		3 FLUTES BALL ENDMILL	1	12	81
	4F	UB504		4 FLUTES BALL ENDMILL	1	12	82
	2F	UTB502		2 FLUTES TAPERED BALL ENDMILL	0.3	2	83
	Roughing	3F~5F	UF50		3~5 FLUTES CHAMFER PITCH ROUGHING ENDMILL	3	25
3F~5F		UF51		3~5 FLUTES FINE PITCH ROUGHING ENDMILL	3	25	86
3F~5F		UF51---H		3~5 FLUTES 45° HELIX FINE PITCH ROUGHING ENDMILL	3	25	87
Recommended Cutting Condition							88

UE502

2 FLUTES SQUARE ENDMILL



TOLERANCE

D		SHANK DIA.
D0.1 ~ 6	0 ~ -0.012	h5
D6.5 ~ 25	0 ~ -0.015	



EDP No.	Description (mm)			
	D	L1	L2	D2
UE502001S3	0.1	0.2	40	3
UE502001	0.1	0.2	40	4
UE5020015	0.15	0.3	40	4
UE502002S3	0.2	0.4	40	3
UE502002	0.2	0.4	40	4
UE5020025	0.25	0.5	40	4
UE502003S3	0.3	0.6	40	3
UE502003	0.3	0.6	40	4
UE5020035	0.35	0.7	40	4
UE502004S3	0.4	0.8	40	3
UE502004	0.4	0.8	40	4
UE5020045	0.45	0.9	40	4
UE502005S3	0.5	1	40	3
UE502005	0.5	1	40	4
UE5020055	0.55	1.1	40	4
UE502006S3	0.6	1.2	40	3
UE502006	0.6	1.2	40	4
UE5020065	0.65	1.3	40	4
UE502007S3	0.7	1.4	40	3
UE502007	0.7	1.4	40	4
UE5020075	0.75	1.5	40	4
UE502008S3	0.8	1.6	40	3
UE502008	0.8	1.6	40	4
UE5020085	0.85	1.7	40	4
UE502009S3	0.9	1.8	40	3
UE502009	0.9	1.8	40	4
UE5020095	0.95	2	40	4
UE502010S3	1	2.5	50	3
UE502010S4	1	2.5	50	4
UE502010	1	2.5	50	6
UE502011S4	1.1	3	50	4

EDP No.	Description (mm)			
	D	L1	L2	D2
UE502012S3	1.2	3	50	3
UE502012S4	1.2	3	50	4
UE502012	1.2	3	50	6
UE502013S4	1.3	3	50	4
UE502014S4	1.4	4	50	4
UE502015S3	1.5	4	50	3
UE502015S4	1.5	4	50	4
UE502015	1.5	4	50	6
UE502016S4	1.6	4	50	4
UE502017S4	1.7	4	50	4
UE502018S4	1.8	5	50	4
UE502019S4	1.9	5	50	4
UE502020S3	2	6	50	3
UE502020S4	2	6	50	4
UE502020	2	6	50	6
UE502021S4	2.1	6	50	4
UE502022S4	2.2	6	50	4
UE502023S4	2.3	6	50	4
UE502024S4	2.4	6	50	4
UE502025S3	2.5	7	50	3
UE502025	2.5	7	50	6
UE502025S4	2.5	8	50	4
UE502026S4	2.6	8	50	4
UE502027S4	2.7	8	50	4
UE502028S4	2.8	8	50	4
UE502029S4	2.9	8	50	4
UE502030S3	3	8	50	3
UE502030S4	3	8	50	4
UE502030	3	8	50	6
UE502035S4	3.5	10	50	4
UE502035	3.5	10	50	6

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UE502

2 FLUTES SQUARE ENDMILL

EDP No.	Description (mm)				EDP No.	Description (mm)			
	D	L1	L2	D2		D	L1	L2	D2
UE502040080S4	4	10	80	4	UE502120	12	30	80	12
UE502040S4	4	10	50	4	UE502130	13	35	100	12
UE502040	4	10	50	6	UE502140S16	14	35	100	16
UE502045	4.5	14	50	6	UE502140	14	35	100	14
UE502050	5	15	60	6	UE502140S12	14	35	100	12
UE502055	5.5	15	60	6	UE502150	15	38	100	16
UE502060	6	15	60	6	UE502160	16	40	100	16
UE502065	6.5	18	60	8	UE502170	17	42	100	16
UE502070	7	20	60	8	UE502180	18	45	100	18
UE502075	7.5	20	60	8	UE502180S16	18	45	100	16
UE502080	8	20	70	8	UE502190	19	45	100	20
UE502085	8.5	22	70	10	UE502200	20	45	100	20
UE502090	9	22	70	10	UE502210	21	45	100	20
UE502095	9.5	24	70	10	UE502220	22	45	100	20
UE502100	10	25	75	10	UE502230	23	50	120	25
UE502105	10.5	26	75	12	UE502240	24	50	120	25
UE502110	11	30	75	12	UE502250	25	50	120	25
UE502115	11.5	30	80	12					

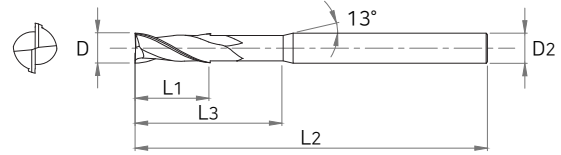
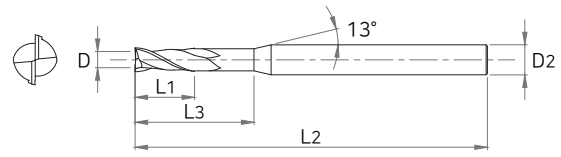
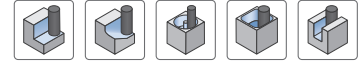
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UE512

2 FLUTES LONG NECK SQUARE ENDMILL



TOLERANCE

D		SHANK DIA.
D0.1 ~ 6	0 ~ -0.012	h5
D8 ~ 12	0 ~ -0.015	



EDP No.	Description (mm)				
	D	L1	L3	L2	D2
UE512001003	0.1	0.15	0.3	40	4
UE512001005	0.1	0.15	0.5	40	4
UE51200101	0.1	0.15	1	40	4
UE512002005	0.2	0.3	0.5	40	4
UE51200201	0.2	0.3	1	40	4
UE512002015	0.2	0.3	1.5	40	4
UE51200202	0.2	0.3	2	40	4
UE51200301	0.3	0.5	1	40	4
UE512003015	0.3	0.5	1.5	40	4
UE51200302	0.3	0.5	2	40	4
UE512003025	0.3	0.5	2.5	40	4
UE51200303	0.3	0.5	3	40	4
UE51200304	0.3	0.5	4	40	4
UE51200305	0.3	0.5	5	40	4
UE51200401	0.4	0.6	1	40	4
UE512004015	0.4	0.6	1.5	40	4
UE51200402	0.4	0.6	2	40	4
UE512004025	0.4	0.6	2.5	40	4
UE51200403	0.4	0.6	3	40	4
UE51200404	0.4	0.6	4	40	4
UE51200405	0.4	0.6	5	40	4
UE51200406	0.4	0.6	6	40	4
UE51200408	0.4	0.6	8	40	4
UE51200410	0.4	0.6	10	40	4
UE51200501	0.5	0.7	1	45	4
UE512005015	0.5	0.7	1.5	45	4
UE51200502	0.5	0.7	2	45	4
UE512005025	0.5	0.7	2.5	45	4
UE51200503	0.5	0.7	3	45	4
UE51200504	0.5	0.7	4	45	4
UE51200505	0.5	0.7	5	45	4

EDP No.	Description (mm)				
	D	L1	L3	L2	D2
UE51200506	0.5	0.7	6	45	4
UE51200508	0.5	0.7	8	45	4
UE51200510	0.5	0.7	10	45	4
UE51200512	0.5	0.7	12	45	4
UE51200514	0.5	0.7	14	45	4
UE51200516	0.5	0.7	16	45	4
UE51200602	0.6	0.9	2	45	4
UE51200603	0.6	0.9	3	45	4
UE51200604	0.6	0.9	4	45	4
UE51200605	0.6	0.9	5	45	4
UE51200606	0.6	0.9	6	45	4
UE51200608	0.6	0.9	8	45	4
UE51200610	0.6	0.9	10	45	4
UE51200612	0.6	0.9	12	45	4
UE51200614	0.6	0.9	14	45	4
UE51200616	0.6	0.9	16	45	4
UE51200702	0.7	1.2	2	45	4
UE51200704	0.7	1.2	4	45	4
UE51200706	0.7	1.2	6	45	4
UE51200708	0.7	1.2	8	45	4
UE51200710	0.7	1.2	10	45	4
UE51200712	0.7	1.2	12	45	4
UE51200802	0.8	1.2	2	45	4
UE51200803	0.8	1.2	3	45	4
UE51200804	0.8	1.2	4	45	4
UE51200805	0.8	1.2	5	45	4
UE51200806	0.8	1.2	6	45	4
UE51200808	0.8	1.2	8	45	4
UE51200810	0.8	1.2	10	45	4
UE51200812	0.8	1.2	12	45	4
UE51200814	0.8	1.2	14	45	4

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)					EDP No.	Description (mm)				
	D	L1	L3	L2	D2		D	L1	L3	L2	D2
UE51200816	0.8	1.2	16	45	4	UE51201520	1.5	2.3	20	50	4
UE51200820	0.8	1.2	20	45	4	UE51201522	1.5	2.3	22	60	4
UE51200906	0.9	1.3	6	45	4	UE51201526	1.5	2.3	26	60	4
UE51200908	0.9	1.3	8	45	4	UE51201530	1.5	2.3	30	70	4
UE51200910	0.9	1.3	10	45	4	UE51201608	1.6	2.3	8	50	4
UE51201002	1	1.5	2	50	4	UE51201610	1.6	2.3	10	50	4
UE51201003	1	1.5	3	50	4	UE51201612	1.6	2.3	12	50	4
UE51201004	1	1.5	4	50	4	UE51201616	1.6	2.3	16	50	4
UE51201005	1	1.5	5	50	4	UE51201620	1.6	2.3	20	50	4
UE51201006	1	1.5	6	50	4	UE51201808	1.8	2.7	8	50	4
UE51201007	1	1.5	7	50	4	UE51201810	1.8	2.7	10	50	4
UE51201008	1	1.5	8	50	4	UE51201812	1.8	2.7	12	50	4
UE51201010	1	1.5	10	50	4	UE51201816	1.8	2.7	16	50	4
UE51201012	1	1.5	12	50	4	UE51201820	1.8	2.7	20	50	4
UE51201014	1	1.5	14	50	4	UE51202006	2	3	6	50	4
UE51201016	1	1.5	16	50	4	UE51202008	2	3	8	50	4
UE51201018	1	1.5	18	50	4	UE51202010	2	3	10	50	4
UE51201020	1	1.5	20	50	4	UE51202012	2	3	12	50	4
UE51201022	1	1.5	22	60	4	UE51202014	2	3	14	50	4
UE51201026	1	1.5	26	60	4	UE51202016	2	3	16	50	4
UE51201030	1	1.5	30	70	4	UE51202018	2	3	18	50	4
UE51201040	1	1.5	40	80	4	UE51202020	2	3	20	50	4
UE51201050	1	1.5	50	100	4	UE51202022	2	3	22	60	4
UE51201204	1.2	1.8	4	50	4	UE51202026	2	3	26	60	4
UE51201206	1.2	1.8	6	50	4	UE51202030	2	3	30	70	4
UE51201208	1.2	1.8	8	50	4	UE51202035	2	3	35	70	4
UE51201210	1.2	1.8	10	50	4	UE51202040	2	3	40	80	4
UE51201212	1.2	1.8	12	50	4	UE51202045	2	3	45	90	4
UE51201214	1.2	1.8	14	50	4	UE51202050	2	3	50	100	4
UE51201216	1.2	1.8	16	50	4	UE51202060	2	3	60	110	4
UE51201220	1.2	1.8	20	50	4	UE51202508	2.5	4	8	50	4
UE51201226	1.2	1.8	26	60	4	UE51202510	2.5	4	10	50	4
UE51201230	1.2	1.8	30	70	4	UE51202512	2.5	4	12	50	4
UE51201406	1.4	2.1	6	50	4	UE51202514	2.5	4	14	50	4
UE51201408	1.4	2.1	8	50	4	UE51202516	2.5	4	16	50	4
UE51201410	1.4	2.1	10	50	4	UE51202518	2.5	4	18	50	4
UE51201414	1.4	2.1	14	50	4	UE51202520	2.5	4	20	50	4
UE51201416	1.4	2.1	16	50	4	UE51202522	2.5	4	22	60	4
UE51201420	1.4	2.1	20	50	4	UE51202526	2.5	4	26	60	4
UE51201504	1.5	2.3	4	50	4	UE51202530	2.5	4	30	70	4
UE51201505	1.5	2.3	5	50	4	UE51202535	2.5	4	35	70	4
UE51201506	1.5	2.3	6	50	4	UE51202540	2.5	4	40	80	4
UE51201507	1.5	2.3	7	50	4	UE51202545	2.5	4	45	90	4
UE51201508	1.5	2.3	8	50	4	UE51202550	2.5	4	50	100	4
UE51201510	1.5	2.3	10	50	4	UE51203006	3	4.5	6	50	6
UE51201512	1.5	2.3	12	50	4	UE51203008	3	4.5	8	50	6
UE51201514	1.5	2.3	14	50	4	UE51203010	3	4.5	10	50	6
UE51201516	1.5	2.3	16	50	4	UE51203012	3	4.5	12	50	6
UE51201518	1.5	2.3	18	50	4	UE51203014	3	4.5	14	60	6

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)					EDP No.	Description (mm)				
	D	L1	L3	L2	D2		D	L1	L3	L2	D2
UE51203016	3	4.5	16	60	6	UE51204050	4	6	50	100	6
UE51203018	3	4.5	18	60	6	UE51204060	4	6	60	100	6
UE51203020	3	4.5	20	60	6	UE51205016	5	8	16	60	6
UE51203022	3	4.5	22	65	6	UE51205020	5	8	20	60	6
UE51203026	3	4.5	26	65	6	UE51205026	5	8	26	65	6
UE51203030	3	4.5	30	70	6	UE51205030	5	8	30	70	6
UE51203035	3	4.5	35	70	6	UE51205035	5	8	35	75	6
UE51203040	3	4.5	40	80	6	UE51205040	5	8	40	80	6
UE51203045	3	4.5	45	90	6	UE51205050	5	8	50	90	6
UE51203050	3	4.5	50	100	6	UE51205060	5	8	60	100	6
UE51203060	3	4.5	60	100	6	UE51206015	6	9	15	60	6
UE51204008	4	6	8	50	6	UE51206020	6	9	20	60	6
UE51204010	4	6	10	50	6	UE51206030	6	9	30	70	6
UE51204012	4	6	12	50	6	UE51206032	6	9	32	90	6
UE51204014	4	6	14	60	6	UE51208025	8	12	25	70	8
UE51204016	4	6	16	60	6	UE51208030	8	12	30	80	8
UE51204018	4	6	18	60	6	UE51208042	8	12	42	100	8
UE51204020	4	6	20	60	6	UE51210030	10	15	30	75	10
UE51204022	4	6	22	65	6	UE51210035	10	15	35	80	10
UE51204026	4	6	26	65	6	UE51210045	10	15	45	100	10
UE51204030	4	6	30	70	6	UE51212035	12	20	35	80	12
UE51204035	4	6	35	70	6	UE51212040	12	20	40	90	12
UE51204040	4	6	40	80	6	UE51212050	12	20	50	110	12
UE51204045	4	6	45	90	6						

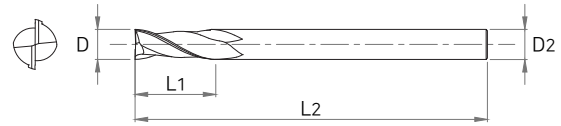
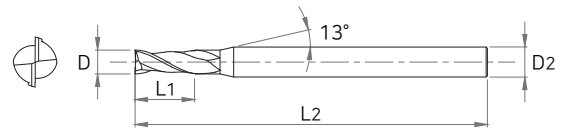
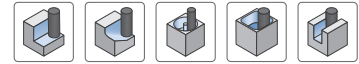
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UE522

2 FLUTES SQUARE ENDMILL



TOLERANCE

D		SHANK DIA.
D0.1 ~ 6	0 ~ -0.012	h5
D6.5 ~ 25	0 ~ -0.015	



EDP No.	Description (mm)			
	D	L1	L2	D2
UE52201003	1	3	60	6
UE52201004	1	4	60	6
UE52201005	1	5	60	6
UE52201006	1	6	60	6
UE52201007	1	7	60	6
UE52201008	1	8	60	6
UE52201010	1	10	60	6
UE52201012	1	12	60	6
UE52201204	1.2	4	60	6
UE52201206	1.2	6	60	6
UE52201208	1.2	8	60	6
UE52201210	1.2	10	60	6
UE52201212	1.2	12	60	6
UE52201506	1.5	6	60	6
UE52201508	1.5	8	60	6
UE52201510	1.5	10	60	6
UE52201512	1.5	12	60	6
UE52201514	1.5	14	60	6
UE52201516	1.5	16	60	6
UE52202008	2	8	60	6
UE52202010	2	10	60	6
UE52202012	2	12	60	6
UE52202014	2	14	60	6
UE52202016	2	16	60	6
UE52202510	2.5	10	60	6
UE52202512	2.5	12	60	6
UE52202516	2.5	16	60	6
UE52202520	2.5	20	60	6
UE52202526	2.5	26	60	6
UE52203010	3	10	70	6
UE52203012	3	12	70	6

EDP No.	Description (mm)			
	D	L1	L2	D2
UE52203014	3	14	70	6
UE52203016	3	16	70	6
UE52203016S3	3	16	100	3
UE52203020	3	20	70	6
UE52203026	3	26	70	6
UE52203030	3	30	70	6
UE52204012	4	12	70	6
UE52204016	4	16	70	6
UE52204020	4	20	70	6
UE52204020S4	4	20	100	4
UE52204026	4	26	70	6
UE52204030	4	30	70	6
UE52205015	5	15	70	6
UE52205020	5	20	70	6
UE52205025100	5	25	100	6
UE52205025	5	25	70	6
UE52205030	5	30	80	6
UE52205035	5	35	90	6
UE52205040	5	40	100	6
UE52206015080	6	15	80	6
UE52206015	6	15	60	6
UE52206020090	6	20	90	6
UE52206020	6	20	70	6
UE52206025	6	25	75	6
UE52206030150	6	30	150	6
UE52206030100	6	30	100	6
UE52206030	6	30	80	6
UE52206035	6	35	90	6
UE52206040120	6	40	120	6
UE52206040	6	40	90	6
UE52206045	6	45	150	6

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)				EDP No.	Description (mm)			
	D	L1	L2	D2		D	L1	L2	D2
UE52207035	7	35	85	8	UE52212065	12	65	150	12
UE52208020	8	20	100	8	UE52212070200	12	70	200	12
UE52208025	8	25	80	8	UE52212070	12	70	120	12
UE52208030100	8	30	100	8	UE52214040	14	40	110	16
UE52208030	8	30	80	8	UE52214050	14	50	110	16
UE52208035	8	35	90	8	UE52214060150	14	60	150	16
UE52208040150	8	40	150	8	UE52214060	14	60	120	16
UE52208040120	8	40	120	8	UE52216040150	16	40	150	16
UE52208040	8	40	90	8	UE52216040	16	40	120	16
UE52208045	8	45	100	8	UE52216050150	16	50	150	16
UE52208050150	8	50	150	8	UE52216050	16	50	110	16
UE52208050	8	50	100	8	UE52216060	16	60	120	16
UE52209045	9	45	100	10	UE52216070200	16	70	200	16
UE52210025	10	25	100	10	UE52216070150	16	70	150	16
UE52210030100	10	30	100	10	UE52216070	16	70	130	16
UE52210030	10	30	80	10	UE52216080	16	80	150	16
UE52210035	10	35	90	10	UE52216090	16	90	150	16
UE52210040120	10	40	120	10	UE522160110	16	110	200	16
UE52210040	10	40	90	10	UE522160120	16	120	250	16
UE52210045	10	45	100	10	UE52218050	18	50	120	20
UE52210050200	10	50	200	10	UE52218060	18	60	120	18
UE52210050150	10	50	150	10	UE52218070	18	70	130	20
UE52210050	10	50	100	10	UE522180100	18	100	200	20
UE52210055	10	55	150	10	UE52220050150	20	50	150	20
UE52210060200	10	60	200	10	UE52220050	20	50	110	20
UE52210060155	10	60	155	10	UE52220060	20	60	130	20
UE52210060	10	60	110	10	UE52220070	20	70	130	20
UE52211050	11	50	110	12	UE52220080	20	80	150	20
UE52212035	12	35	90	12	UE52220090200	20	90	200	20
UE52212040120	12	40	120	12	UE52220090	20	90	150	20
UE52212040	12	40	100	12	UE522200110	20	110	200	20
UE52212045	12	45	130	12	UE522200120	20	120	250	20
UE52212050150	12	50	150	12	UE5222075	22	75	150	20
UE52212050	12	50	100	12	UE52220110	22	110	200	20
UE52212055	12	55	110	12	UE52225070	25	70	150	25
UE52212060200	12	60	200	12	UE52225090	25	90	150	25
UE52212060150	12	60	150	12	UE522250110	25	110	200	25
UE52212060	12	60	110	12	UE522250120	25	120	250	25

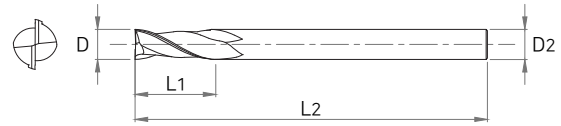
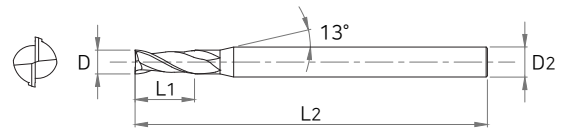
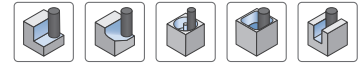
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UXE502

2 FLUTES SQUARE ENDMILL
FOR HEAVY CUTS



■ TOLERANCE

D		SHANK DIA.
D0.1 ~ 7	0 ~ -0.012	h5
D8 ~ 20	0 ~ -0.015	



EDP No.	Description (mm)			
	D	L1	L2	D2
UXE502001001	0.1	0.1	40	4
UXE502001	0.1	0.2	40	4
UXE502001003	0.1	0.3	40	4
UXE502002002	0.2	0.2	40	4
UXE502002	0.2	0.4	40	4
UXE502002006	0.2	0.6	40	4
UXE502003003	0.3	0.3	40	4
UXE502003	0.3	0.6	40	4
UXE502003009	0.3	0.9	40	4
UXE502004004	0.4	0.4	40	4
UXE502004	0.4	0.8	40	4
UXE502004012	0.4	1.2	40	4
UXE502005005	0.5	0.5	40	4
UXE502005	0.5	1	40	4
UXE502005015	0.5	1.5	40	4
UXE502006006	0.6	0.6	40	4
UXE502006	0.6	1.2	40	4
UXE502006018	0.6	1.8	40	4
UXE502007007	0.7	0.7	40	4
UXE502007	0.7	1.4	40	4
UXE502007021	0.7	2.1	40	4
UXE502008008	0.8	0.8	40	4
UXE502008	0.8	1.6	40	4
UXE502008024	0.8	2.4	40	4
UXE502009009	0.9	0.9	40	4
UXE502009	0.9	1.8	40	4
UXE502009027	0.9	2.7	40	4
UXE50201001	1	1	40	6
UXE50201002	1	2	40	6
UXE502010	1	2.5	50	6
UXE50201003	1	3	50	6

EDP No.	Description (mm)			
	D	L1	L2	D2
UXE50201004	1	4	50	6
UXE50201006	1	6	50	6
UXE50201202	1.2	2	40	6
UXE502012	1.2	3	50	6
UXE50201204	1.2	4	50	6
UXE50201206	1.2	6	50	6
UXE502015015	1.5	1.5	40	6
UXE50201503	1.5	3	40	6
UXE502015	1.5	4	50	6
UXE50201506	1.5	6	50	6
UXE50201508	1.5	8	50	6
UXE50201510	1.5	10	50	6
UXE50202002	2	2	40	6
UXE50202004	2	4	40	6
UXE502020	2	6	50	6
UXE50202008	2	8	50	6
UXE50202010	2	10	50	6
UXE50202012	2	12	50	6
UXE502025025	2.5	2.5	40	6
UXE50202505	2.5	5	40	6
UXE502025	2.5	7	50	6
UXE50202510	2.5	10	50	6
UXE50202512	2.5	12	50	6
UXE50203003	3	3	40	6
UXE50203006	3	6	40	6
UXE502030	3	8	50	6
UXE50203010	3	10	50	6
UXE50203012	3	12	50	6
UXE50203014	3	14	50	6
UXE50203510	3.5	10	50	6
UXE50204004	4	4	40	6

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UXE502

2 FLUTES SQUARE ENDMILL
FOR HEAVY CUTS

EDP No.	Description (mm)			
	D	L1	L2	D2
UXE50204008	4	8	40	6
UXE502040	4	10	50	6
UXE50204012	4	12	50	6
UXE50204014	4	14	50	6
UXE50204016	4	16	50	6
UXE50204511	4.5	11	50	6
UXE50205005	5	5	50	6
UXE50205010	5	10	50	6
UXE502050	5	15	60	6
UXE50205020	5	20	60	6
UXE50205025	5	25	60	6
UXE50205513	5.5	13	50	6
UXE50206006	6	6	50	6
UXE50206012	6	12	50	6
UXE502060	6	15	60	6
UXE50206020	6	20	60	6
UXE50206025	6	25	60	6
UXE50206513	6.5	13	60	8

EDP No.	Description (mm)			
	D	L1	L2	D2
UXE50207018	7	18	60	8
UXE50208016	8	16	60	8
UXE502080	8	20	70	8
UXE50208025	8	25	70	8
UXE50208030	8	30	70	8
UXE50210022	10	22	65	10
UXE502100	10	25	75	10
UXE50210030	10	30	75	10
UXE50210035	10	35	75	10
UXE50212026	12	26	70	12
UXE502120	12	30	80	12
UXE50212035	12	35	80	12
UXE50212040	12	40	80	12
UXE502140	14	35	100	16
UXE502160	16	32	100	16
UXE50216040	16	40	100	16
UXE502180	18	45	100	20
UXE502200	20	45	100	20

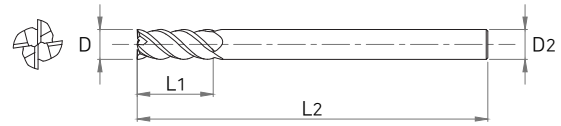
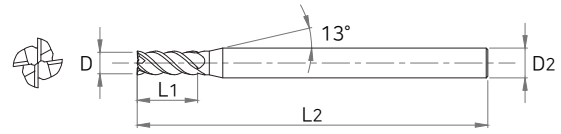
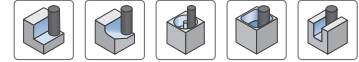
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UE504H

4 FLUTES 45° HELIX SQUARE ENDMILL



■ TOLERANCE

D		SHANK DIA.
D1 ~ 20	0 ~ -0.03	h5



EDP No.	Description (mm)			
	D	L1	L2	D2
UE504H010	1	2.5	50	6
UE504H01004	1	4	60	6
UE504H01006	1	6	60	6
UE504H015	1.5	4	50	6
UE504H01506	1.5	6	60	6
UE504H01508	1.5	8	60	6
UE504H020	2	6	50	6
UE504H02008	2	8	60	6
UE504H02010	2	10	60	6
UE504H030	3	8	50	6
UE504H03010	3	10	70	6
UE504H03012	3	12	70	6
UE504H03016	3	16	70	6
UE504H040	4	10	50	6
UE504H04012	4	12	70	6
UE504H04016	4	16	70	6
UE504H04020	4	20	70	6
UE504H050	5	15	50	6
UE504H05030	5	30	80	6
UE504H060	6	15	60	6
UE504H06020	6	20	70	6

EDP No.	Description (mm)			
	D	L1	L2	D2
UE504H06030	6	30	80	6
UE504H080	8	20	70	8
UE504H08030	8	30	80	8
UE504H08035	8	35	90	8
UE504H08040	8	40	90	8
UE504H100	10	25	75	10
UE504H10030	10	30	80	10
UE504H10040	10	40	90	10
UE504H10050	10	50	100	10
UE504H120	12	30	80	12
UE504H12040	12	40	90	12
UE504H12050	12	50	100	12
UE504H12060	12	60	110	12
UE504H160	16	40	100	16
UE504H16050	16	50	110	16
UE504H16060	16	60	120	16
UE504H160110	16	110	200	16
UE504H200	20	45	100	20
UE504H20060	20	60	120	20
UE504H20070	20	70	130	20
UE504H200110	20	110	200	20

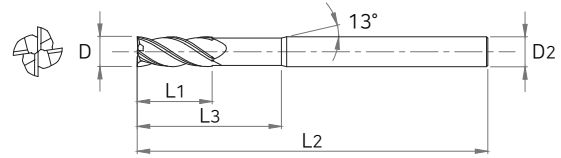
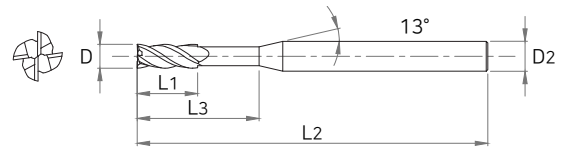
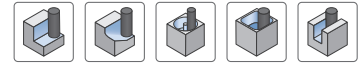
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UE514

4 FLUTES LONG NECK SQUARE ENDMILL



TOLERANCE

D		SHANK DIA.
D1 ~ 12	0 ~ -0.03	h5



EDP No.	Description (mm)				
	D	L1	L3	L2	D2
UE51401002	1	1.5	2	50	4
UE51401003	1	1.5	3	50	4
UE51401004	1	1.5	4	50	4
UE51401005	1	1.5	5	50	4
UE51401006	1	1.5	6	50	4
UE51401007	1	1.5	7	50	4
UE51401008	1	1.5	8	50	4
UE51401010	1	1.5	10	50	4
UE51401012	1	1.5	12	50	4
UE51401014	1	1.5	14	50	4
UE51401016	1	1.5	16	50	4
UE51401018	1	1.5	18	50	4
UE51401020	1	1.5	20	50	4
UE51401022	1	1.5	22	60	4
UE51401026	1	1.5	26	60	4
UE51401030	1	1.5	30	70	4
UE51401040	1	1.5	40	80	4
UE51401050	1	1.5	50	100	4
UE51401204	1.2	1.8	4	50	4
UE51401206	1.2	1.8	6	50	4
UE51401208	1.2	1.8	8	50	4
UE51401210	1.2	1.8	10	50	4
UE51401212	1.2	1.8	12	50	4
UE51401214	1.2	1.8	14	50	4
UE51401216	1.2	1.8	16	50	4
UE51401220	1.2	1.8	20	50	4
UE51401226	1.2	1.8	26	60	4
UE51401230	1.2	1.8	30	70	4
UE51401504	1.5	2.3	4	50	4
UE51401505	1.5	2.3	5	50	4
UE51401506	1.5	2.3	6	50	4

EDP No.	Description (mm)				
	D	L1	L3	L2	D2
UE51401507	1.5	2.3	7	50	4
UE51401508	1.5	2.3	8	50	4
UE51401510	1.5	2.3	10	50	4
UE51401512	1.5	2.3	12	50	4
UE51401514	1.5	2.3	14	50	4
UE51401516	1.5	2.3	16	50	4
UE51401518	1.5	2.3	18	50	4
UE51401520	1.5	2.3	20	50	4
UE51401522	1.5	2.3	22	60	4
UE51401526	1.5	2.3	26	60	4
UE51401530	1.5	2.3	30	70	4
UE51402006	2	3	6	50	4
UE51402008	2	3	8	50	4
UE51402010	2	3	10	50	4
UE51402012	2	3	12	50	4
UE51402014	2	3	14	50	4
UE51402016	2	3	16	50	4
UE51402018	2	3	18	50	4
UE51402020	2	3	20	50	4
UE51402022	2	3	22	60	4
UE51402026	2	3	26	60	4
UE51402030	2	3	30	70	4
UE51402035	2	3	35	70	4
UE51402040	2	3	40	80	4
UE51402045	2	3	45	90	4
UE51402050	2	3	50	100	4
UE51402060	2	3	60	110	4
UE51402508	2.5	4	8	50	4
UE51402510	2.5	4	10	50	4
UE51402512	2.5	4	12	50	4
UE51402514	2.5	4	14	50	4

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)					EDP No.	Description (mm)				
	D	L1	L3	L2	D2		D	L1	L3	L2	D2
UE51402516	2.5	4	16	50	4	UE51404018	4	4.5	18	60	6
UE51402518	2.5	4	18	50	4	UE51404020	4	4.5	20	60	6
UE51402520	2.5	4	20	50	4	UE51404022	4	4.5	22	65	6
UE51402522	2.5	4	22	60	4	UE51404026	4	4.5	26	65	6
UE51402526	2.5	4	26	60	4	UE51404030	4	4.5	30	70	6
UE51402530	2.5	4	30	70	4	UE51404035	4	4.5	35	70	6
UE51402535	2.5	4	35	70	4	UE51404040	4	4.5	40	80	6
UE51402540	2.5	4	40	80	4	UE51404045	4	4.5	45	90	6
UE51402545	2.5	4	45	90	4	UE51404050	4	4.5	50	100	6
UE51402550	2.5	4	50	100	4	UE51404060	4	4.5	60	100	6
UE51403006	3	4.5	6	50	6	UE51405016	5	8	16	60	6
UE51403008	3	4.5	8	50	6	UE51405020	5	8	20	60	6
UE51403010	3	4.5	10	50	6	UE51405026	5	8	26	65	6
UE51403012	3	4.5	12	50	6	UE51405030	5	8	30	70	6
UE51403014	3	4.5	14	60	6	UE51405035	5	8	35	75	6
UE51403016	3	4.5	16	60	6	UE51405040	5	8	40	80	6
UE51403018	3	4.5	18	60	6	UE51405050	5	8	50	90	6
UE51403020	3	4.5	20	60	6	UE51405060	5	8	60	100	6
UE51403022	3	4.5	22	65	6	UE51406015	6	9	15	60	6
UE51403026	3	4.5	26	65	6	UE51406020	6	9	20	60	6
UE51403030	3	4.5	30	70	6	UE51406030	6	9	30	70	6
UE51403035	3	4.5	35	70	6	UE51406032	6	9	32	90	6
UE51403040	3	4.5	40	80	6	UE51408025	8	12	25	70	8
UE51403045	3	4.5	45	90	6	UE51408030	8	12	30	80	8
UE51403050	3	4.5	50	100	6	UE51408042	8	12	42	100	8
UE51403060	3	4.5	60	100	6	UE51410030	10	15	30	75	10
UE51404008	4	4.5	8	50	6	UE51410035	10	15	35	80	10
UE51404010	4	4.5	10	50	6	UE51410045	10	15	45	100	10
UE51404012	4	4.5	12	50	6	UE51412035	12	20	35	80	12
UE51404014	4	4.5	14	60	6	UE51412040	12	20	40	90	12
UE51404016	4	4.5	16	60	6	UE51412050	12	20	50	110	12

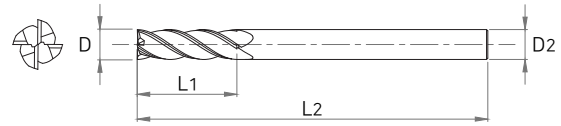
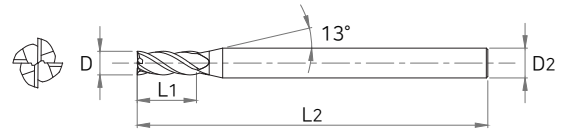
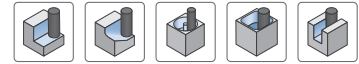
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRC30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRC55	SKD11 HRC55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UE524

4 FLUTES SQUARE ENDMILL



TOLERANCE

D		SHANK DIA.
D1 ~ 25	0 ~ -0.03	h5



EDP No.	Description (mm)			
	D	L1	L2	D2
UE52401003	1	3	60	6
UE52401004	1	4	60	6
UE52401005	1	5	60	6
UE52401006	1	6	60	6
UE52401007	1	7	60	6
UE52401008	1	8	60	6
UE52401010	1	10	60	6
UE52401012	1	12	60	6
UE52401204	1.2	4	60	6
UE52401206	1.2	6	60	6
UE52401208	1.2	8	60	6
UE52401210	1.2	10	60	6
UE52401212	1.2	12	60	6
UE52401506	1.5	6	60	6
UE52401508	1.5	8	60	6
UE52401510	1.5	10	60	6
UE52401512	1.5	12	60	6
UE52401514	1.5	14	60	6
UE52401516	1.5	16	60	6
UE52401520	1.5	20	60	6
UE52401526	1.5	26	60	6
UE52402008	2	8	60	6
UE52402008S4	2	8	40	4
UE52402010	2	10	60	6
UE52402012	2	12	60	6
UE52402014	2	14	60	6
UE52402016	2	16	60	6
UE52402510	2.5	10	60	6
UE52402512	2.5	12	60	6
UE52402516	2.5	16	60	6
UE52402520	2.5	20	60	6

EDP No.	Description (mm)			
	D	L1	L2	D2
UE52402526	2.5	26	60	6
UE52403010	3	10	70	6
UE52403012	3	12	70	6
UE52403014	3	14	70	6
UE52403016	3	16	70	6
UE52403016S3	3	16	100	3
UE52403020	3	20	70	6
UE52403026	3	26	70	6
UE52403030	3	30	70	6
UE52403035	3	35	90	6
UE52404012	4	12	70	6
UE52404016	4	16	70	6
UE52404020	4	20	70	6
UE52404020S4	4	20	100	4
UE52404026	4	26	70	6
UE52404030	4	30	70	6
UE52405015	5	15	70	6
UE52405020	5	20	70	6
UE52405025100	5	25	100	6
UE52405025	5	25	70	6
UE52405030	5	30	80	6
UE52405035	5	35	90	6
UE52405040	5	40	100	6
UE52406015080	6	15	80	6
UE52406015	6	15	60	6
UE52406020090	6	20	90	6
UE52406020	6	20	70	6
UE52406025	6	25	75	6
UE52406030150	6	30	150	6
UE52406030100	6	30	100	6
UE52406030	6	30	80	6

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)				EDP No.	Description (mm)			
	D	L1	L2	D2		D	L1	L2	D2
UE52406030100	6	30	100	6	UE52412060200	12	60	200	12
UE52406030	6	30	80	6	UE52412060150	12	60	150	12
UE52406035	6	35	90	6	UE52412060	12	60	110	12
UE52406040120	6	40	120	6	UE52412065	12	65	150	12
UE52406040	6	40	90	6	UE52412070200	12	70	200	12
UE52406045	6	45	150	6	UE52412070	12	70	120	12
UE52407035	7	35	85	8	UE52412080	12	80	200	12
UE52408020	8	20	100	8	UE52414040	14	40	110	16
UE52408025	8	25	80	8	UE52414050	14	50	110	16
UE52408030100	8	30	100	8	UE52414060	14	60	150	16
UE52408030	8	30	80	8	UE52416040	16	40	150	16
UE52408035	8	35	90	8	UE52416050150	16	50	150	16
UE52408040150	8	40	150	8	UE52416050	16	50	110	16
UE52408040120	8	40	120	8	UE52416060	16	60	120	16
UE52408040	8	40	90	8	UE52416070200	16	70	200	16
UE52408045	8	45	100	8	UE52416070150	16	70	150	16
UE52408050150	8	50	150	8	UE52416070	16	70	130	16
UE52408050	8	50	100	8	UE52416080	16	80	150	16
UE52408060	8	60	155	8	UE52416090	16	90	150	16
UE52408080	8	80	200	8	UE524160100	16	100	200	16
UE52409045	9	45	100	10	UE524160110	16	110	200	16
UE52410025	10	25	100	10	UE524160120	16	120	250	16
UE524100100	10	30	100	10	UE52418050	18	50	120	20
UE52410030	10	30	80	10	UE52418070	18	70	130	20
UE52410035	10	35	90	10	UE524180100	18	100	200	20
UE52410040120	10	40	120	10	UE52420050150	20	50	150	20
UE52410040	10	40	90	10	UE52420050	20	50	110	20
UE52410045	10	45	100	10	UE52420060	20	60	130	20
UE52410050200	10	50	200	10	UE52420070	20	70	130	20
UE52410050150	10	50	150	10	UE52420080	20	80	150	20
UE52410050	10	50	100	10	UE52420090200	20	90	200	20
UE52410055	10	55	150	10	UE52420090	20	90	150	20
UE52410060200	10	60	200	10	UE524200100	20	100	200	20
UE52410060155	10	60	155	10	UE524200110	20	110	200	20
UE52410060	10	60	110	10	UE524200120	20	120	250	20
UE52410080200	10	80	200	10	UE524200130	20	130	250	20
UE52411050	11	50	110	12	UE52422075	22	75	150	20
UE52412030	12	30	110	12	UE524220110	22	110	200	20
UE52412035	12	35	90	12	UE52425070	25	70	150	25
UE52412040120	12	40	120	12	UE52425090	25	90	150	25
UE52412040	12	40	100	12	UE524250100	25	100	200	25
UE52412045	12	45	130	12	UE524250110	25	110	200	25
UE52412050150	12	50	150	12	UE524250120	25	120	250	25
UE52412050	12	50	100	12	UE524250150	25	150	250	25
UE52412055	12	55	110	12					

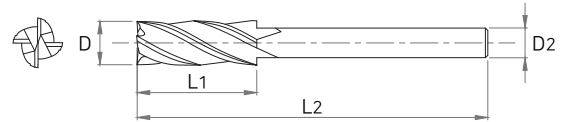
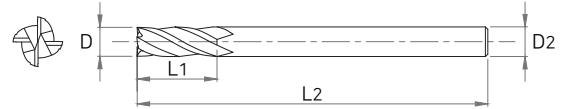
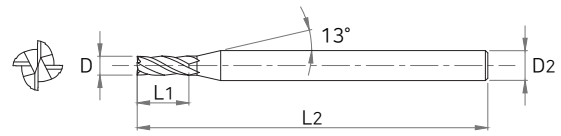
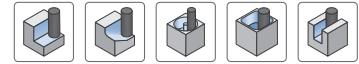
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRC30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRC55	SKD11 HRC55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

ULE504

4 FLUTES AUTOMATIC CNC SQUARE ENDMILL



■ TOLERANCE

D		SHANK DIA.
D3 ~ 16	0 ~ -0.02	h5



EDP No.	Description (mm)			
	D	L1	L2	D2
ULE504030S04	3	3	35	4
ULE504040S04	4	4	35	4
ULE504060S06	6	6	35	6
ULE504070S07	7	20	45	7
ULE504080S08	8	8	45	8
ULE504080S06	8	8	35	6
ULE504080S07	8	15	45	7
ULE504090S07	9	15	45	7
ULE504100S06	10	10	35	6
ULE504100S10	10	15	45	10
ULE504100S07	10	15	45	7
ULE504110S07	11	15	45	7
ULE504120S10	12	12	45	10
ULE504120S06	12	12	35	6
ULE504120S07	12	15	45	7
ULE504120-25S10	12	25	55	10
ULE504130S10	13	25	55	10
ULE504140S10	14	25	55	10
ULE504140S07	14	25	55	7
ULE504160S10	16	25	60	10

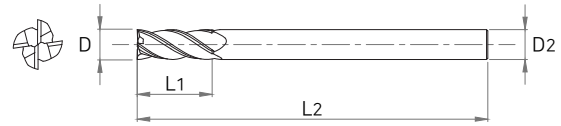
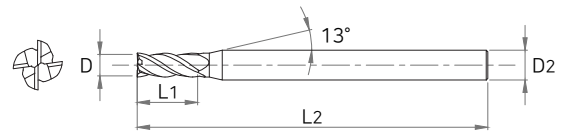
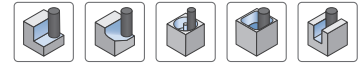
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UE504

4 FLUTES SQUARE ENDMILL



■ TOLERANCE

D		SHANK DIA.
D0.8 ~ 25	0 ~ -0.03	h5



EDP No.	Description (mm)			
	D	L1	L2	D2
UE504008	0.8	1.6	40	4
UE504009	0.9	1.8	40	4
UE504010	1	2.5	50	6
UE504012	1.2	3	50	6
UE504015	1.5	4	50	6
UE504020	2	6	50	6
UE504025	2.5	7	50	6
UE504030	3	8	50	6
UE504035	3.5	10	50	6
UE504040	4	10	50	6
UE504045	4.5	14	50	6
UE504050	5	15	60	6
UE504055	5.5	15	60	6
UE504060	6	15	60	6
UE504065	6.5	18	60	8
UE504070	7	20	60	8
UE504075	7.5	20	60	8
UE504080	8	20	70	8
UE504085	8.5	22	70	10
UE504090	9	22	70	10
UE504095	9.5	24	70	10
UE504100	10	25	75	10

EDP No.	Description (mm)			
	D	L1	L2	D2
UE504105	10.5	26	75	12
UE504110	11	30	75	12
UE504115	11.5	30	80	12
UE504120	12	30	80	12
UE504125	12.5	30	80	12
UE504130	13	35	100	12
UE504140	14	35	100	16
UE504140S14	14	35	100	14
UE504140S12	14	35	100	12
UE504150	15	38	100	16
UE504160	16	40	100	16
UE504170	17	42	100	16
UE504180	18	45	100	18
UE504180S16	18	45	100	16
UE504190	19	45	100	20
UE504200	20	45	100	20
UE504210	21	45	100	20
UE504220	22	45	100	20
UE504230	23	50	120	25
UE504240	24	50	120	25
UE504250	25	50	120	25

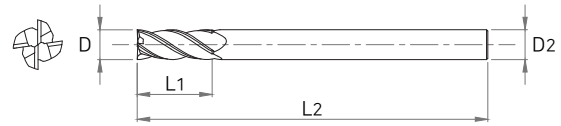
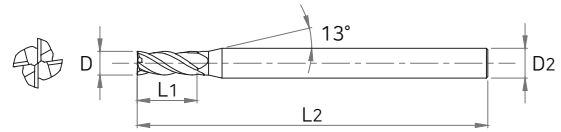
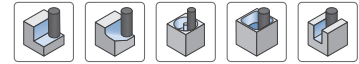
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UXE504

4 FLUTES SQUARE ENDMILL FOR HEAVY CUTS



■ TOLERANCE

D		SHANK DIA.
D1 ~ 25	0 ~ -0.03	h5



EDP No.	Description (mm)			
	D	L1	L2	D2
UXE50401001	1	1	40	6
UXE50401002	1	2	40	6
UXE504010	1	2.5	50	6
UXE50401003	1	3	50	6
UXE50401004	1	4	50	6
UXE50401006	1	6	50	6
UXE50401202	1.2	2	40	6
UXE504012	1.2	3	50	6
UXE50401204	1.2	4	50	6
UXE50401206	1.2	6	50	6
UXE504015015	1.5	1.5	40	6
UXE50401503	1.5	3	40	6
UXE504015	1.5	4	50	6
UXE50401506	1.5	6	50	6
UXE50401508	1.5	8	50	6
UXE50401510	1.5	10	50	6
UXE50402002	2	2	40	6
UXE50402004	2	4	40	6
UXE504020	2	6	50	6
UXE50402008	2	8	50	6
UXE50402010	2	10	50	6
UXE50402012	2	12	50	6
UXE504025025	2.5	2.5	40	6
UXE50402505	2.5	5	40	6
UXE504025	2.5	7	50	6
UXE50402510	2.5	10	50	6
UXE50402512	2.5	12	50	6
UXE50403003	3	3	40	6
UXE50403006	3	6	40	6
UXE504030	3	8	50	6
UXE50403010	3	10	50	6

EDP No.	Description (mm)			
	D	L1	L2	D2
UXE50403012	3	12	50	6
UXE50403014	3	14	50	6
UXE50404004	4	4	40	6
UXE50404008	4	8	40	6
UXE504040	4	10	50	6
UXE50404012	4	12	50	6
UXE50404014	4	14	50	6
UXE50404016	4	16	50	6
UXE50405005	5	5	50	6
UXE50405010	5	10	50	6
UXE504050	5	15	60	6
UXE50405020	5	20	60	6
UXE50405025	5	25	60	6
UXE50406006	6	6	50	6
UXE50406012	6	12	50	6
UXE504060	6	15	60	6
UXE50406020	6	20	60	6
UXE50406025	6	25	60	6
UXE50408016	8	16	60	8
UXE504080	8	20	70	8
UXE50408025	8	25	70	8
UXE50408030	8	30	70	8
UXE50410022	10	22	65	10
UXE504100	10	25	75	10
UXE50410030	10	30	75	10
UXE50410035	10	35	75	10
UXE50412026	12	26	70	12
UXE504120	12	30	80	12
UXE50412035	12	35	80	12
UXE50412040	12	40	80	12
UXE504140	14	35	100	16

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UXE504

4 FLUTES SQUARE ENDMILL
FOR HEAVY CUTS

EDP No.	Description (mm)			
	D	L1	L2	D2
UXE50416032	16	32	100	16
UXE504160	16	40	100	16

EDP No.	Description (mm)			
	D	L1	L2	D2
UXE504180	18	45	100	20
UXE504200	20	45	100	20

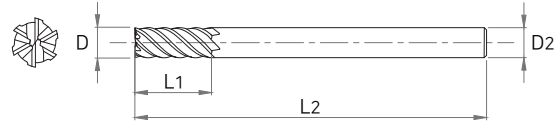
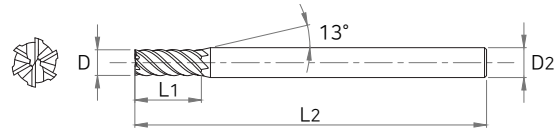
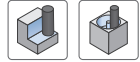
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UE506

6 FLUTES SQUARE END MILL



TOLERANCE

D		SHANK DIA.
D6 ~ 25	0 ~ -0.03	h5



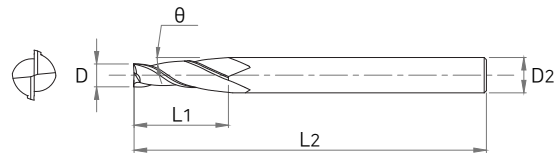
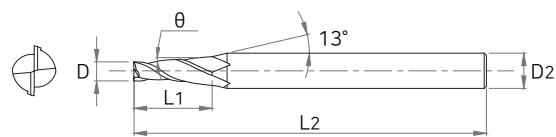
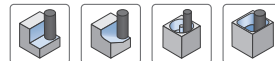
EDP No.	Description (mm)			
	D	L1	L2	D2
UE506060	6	15	60	6
UE50606020	6	20	70	6
UE50606030110	6	30	110	6
UE50606030	6	30	80	6
UE506070	7	18	60	8
UE506080	8	20	70	8
UE50608030	8	30	80	8
UE50608035	8	35	90	8
UE50608040130	8	40	130	8
UE50608040	8	40	90	8
UE506090	9	22	70	10
UE506100	10	25	75	10
UE50610030	10	30	80	10
UE50610040	10	40	90	10
UE50610050150	10	50	150	10
UE50610050	10	50	100	10
UE506110	11	26	75	12
UE506120	12	30	80	12
UE50612040	12	40	90	12
UE50612050	12	50	100	12

EDP No.	Description (mm)			
	D	L1	L2	D2
UE50612060150	12	60	150	12
UE50612060	12	60	110	12
UE506130	13	32	85	14
UE506140	14	32	85	14
UE506160	16	40	100	16
UE50616050	16	50	110	16
UE50616060	16	60	120	16
UE50616090	16	90	150	16
UE506160110250	16	110	250	16
UE506160110	16	110	200	16
UE506180	18	44	100	18
UE506200	20	45	100	20
UE50620060	20	60	120	20
UE50620070	20	70	130	20
UE506200110300	20	110	300	20
UE506200110250	20	110	250	20
UE506200110	20	110	200	20
UE506250	25	50	120	25
UE506251	25	92	180	25

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent



TOLERANCE

D		SHANK DIA.
D1 ~ 12	0 ~ -0.03	h5



EDP No.	Description (mm)				
	D	θ	L1	L2	D2
UTE502003005	0.3	0.5	1.2	40	4
UTE50200301	0.3	1	1.2	40	4
UTE502003015	0.3	1.5	1.2	40	4
UTE50200302	0.3	2	1.2	40	4
UTE50200303	0.3	3	1.5	40	4
UTE50200305	0.3	5	1.5	40	4
UTE50200307	0.3	7	1.5	40	4
UTE50200310	0.3	10	1.5	40	4
UTE502004005	0.4	0.5	1.6	40	4
UTE50200401	0.4	1	1.6	40	4
UTE502004015	0.4	1.5	1.6	40	4
UTE50200402	0.4	2	1.6	40	4
UTE50200403	0.4	3	1.6	40	4
UTE50200405	0.4	5	2	40	4
UTE50200407	0.4	7	2	40	4
UTE50200410	0.4	10	2	40	4
UTE502005005	0.5	0.5	2	45	4
UTE50200501	0.5	1	2	45	4
UTE502005015	0.5	1.5	2	45	4
UTE50200502	0.5	2	2	45	4
UTE50200503	0.5	3	2	45	4
UTE50200505	0.5	5	2.5	45	4
UTE50200507	0.5	7	2.5	45	4
UTE50200510	0.5	10	2.5	45	4
UTE502006005	0.6	0.5	2.4	45	4
UTE50200601	0.6	1	2.4	45	4
UTE502006015	0.6	1.5	2.4	45	4
UTE50200602	0.6	2	2.4	45	4
UTE50200603	0.6	3	2.4	45	4
UTE50200605	0.6	5	3	45	4
UTE50200607	0.6	7	3	45	4

EDP No.	Description (mm)				
	D	θ	L1	L2	D2
UTE50200610	0.6	10	3	45	4
UTE502007005	0.7	0.5	2.8	45	4
UTE50200701	0.7	1	2.8	45	4
UTE502007015	0.7	1.5	2.8	45	4
UTE50200702	0.7	2	2.8	45	4
UTE50200703	0.7	3	2.8	45	4
UTE50200705	0.7	5	3.5	45	4
UTE50200707	0.7	7	3.5	45	4
UTE50200710	0.7	10	3.5	45	4
UTE502008005	0.8	0.5	3.2	45	4
UTE50200801	0.8	1	3.2	45	4
UTE502008015	0.8	1.5	3.2	45	4
UTE50200802	0.8	2	3.2	45	4
UTE50200803	0.8	3	3.2	45	4
UTE50200805	0.8	5	4	45	4
UTE50200807	0.8	7	4	45	4
UTE50200810	0.8	10	4	45	4
UTE502010005	1	0.5	4	50	4
UTE50201001	1	1	4	50	4
UTE502010015	1	1.5	4	50	4
UTE50201002	1	2	6	50	4
UTE50201003	1	3	6	50	4
UTE50201005	1	5	8	50	4
UTE50201007	1	7	8	50	4
UTE50201010	1	10	8	50	4
UTE502015005	1.5	0.5	6	50	4
UTE50201501	1.5	1	6	50	4
UTE502015015	1.5	1.5	6	50	4
UTE50201502	1.5	2	8	50	4
UTE50201503	1.5	3	8	50	4
UTE50201505	1.5	5	10	50	4

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

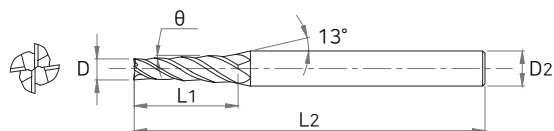
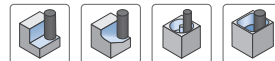
○ : Good ◎ : Excellent

EDP No.	Description (mm)					EDP No.	Description (mm)				
	D	Ø	L1	L2	D2		D	Ø	L1	L2	D2
UTE50201507	1.5	7	10	50	4	UTE50204010	4	10	17	65	10
UTE50201510	1.5	10	10	50	6	UTE502060005	6	0.5	20	65	8
UTE502020005	2	0.5	8	50	4	UTE50206001	6	1	20	65	8
UTE50202001	2	1	8	50	4	UTE502060015	6	1.5	20	65	8
UTE502020015	2	1.5	8	50	4	UTE50206002	6	2	20	65	8
UTE50202002	2	2	10	50	4	UTE50206003	6	3	19	65	8
UTE50202003	2	3	10	50	4	UTE50206005	6	5	22	75	10
UTE50202005	2	5	12	50	6	UTE50206007	6	7	24	75	12
UTE50202007	2	7	12	50	6	UTE50206010	6	10	17	75	12
UTE50202010	2	10	12	50	8	UTE502070005	7	0.5	28	70	8
UTE502025005	2.5	0.5	10	50	6	UTE50207001	7	1	28	70	8
UTE50202501	2.5	1	10	50	6	UTE502070015	7	1.5	28	70	10
UTE502025015	2.5	1.5	10	50	6	UTE50207002	7	2	28	80	10
UTE50202502	2.5	2	12	50	6	UTE50207003	7	3	28	80	10
UTE50202503	2.5	3	12	50	6	UTE50207005	7	5	28	80	12
UTE50202505	2.5	5	14	50	6	UTE502080005	8	0.5	35	90	10
UTE50202507	2.5	7	14	50	6	UTE50208001	8	1	35	90	10
UTE50202510	2.5	10	14	50	8	UTE502080015	8	1.5	35	90	10
UTE502030005	3	0.5	12	50	6	UTE50208002	8	2	28	90	10
UTE50203001	3	1	12	50	6	UTE50208003	8	3	38	90	12
UTE502030015	3	1.5	12	50	6	UTE50208005	8	5	45	100	16
UTE50203002	3	2	14	50	6	UTE50208007	8	7	32	90	16
UTE50203003	3	3	14	50	6	UTE50208010	8	10	34	100	20
UTE50203005	3	5	16	50	6	UTE50208010S25	8	10	48	150	25
UTE50203007	3	7	16	50	8	UTE502100005	10	0.5	40	90	12
UTE50203010	3	10	16	50	10	UTE50210001	10	1	40	90	12
UTE502040005	4	0.5	16	60	6	UTE502100015	10	1.5	38	90	12
UTE50204001	4	1	16	60	6	UTE50210002	10	2	40	75	16
UTE502040015	4	1.5	16	60	6	UTE50210003	10	3	40	100	16
UTE50204002	4	2	16	60	6	UTE50210005	10	5	34	100	16
UTE50204003	4	3	19	60	6	UTE50210007	10	7	40	90	20
UTE50204005	4	5	22	65	8	UTE50210010	10	10	42	100	25
UTE50204007	4	7	16	65	8						

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent



TOLERANCE

D		SHANK DIA.
D0.8 ~ 10	0 ~ -0.08	h5



EDP No.	Description (mm)				
	D	θ	L1	L2	D2
UTE50400800504	0.8	0.5	4	45	4
UTE50400800506	0.8	0.5	6	45	4
UTE50400800508	0.8	0.5	8	45	4
UTE50400800510	0.8	0.5	10	45	4
UTE50400800512	0.8	0.5	12	45	4
UTE50400801004	0.8	1	4	45	4
UTE50400801006	0.8	1	6	45	4
UTE50400801008	0.8	1	8	45	4
UTE50400801010	0.8	1	10	45	4
UTE50400801012	0.8	1	12	45	4
UTE50400801504	0.8	1.5	4	45	4
UTE50400801506	0.8	1.5	6	45	4
UTE50400801508	0.8	1.5	8	45	4
UTE50400801510	0.8	1.5	10	45	4
UTE50400801512	0.8	1.5	12	45	4
UTE50400802004	0.8	2	4	45	4
UTE50400802006	0.8	2	6	45	4
UTE50400802008	0.8	2	8	45	4
UTE50400802010	0.8	2	10	45	4
UTE50400802012	0.8	2	12	45	4
UTE50401000504	1	0.5	4	50	4
UTE50401000506	1	0.5	6	50	4
UTE50401000508	1	0.5	8	50	4
UTE50401000510	1	0.5	10	50	4
UTE50401000512	1	0.5	12	50	4
UTE50401000516	1	0.5	16	50	4
UTE50401001004	1	1	4	50	4
UTE50401001006	1	1	6	50	4
UTE50401001008	1	1	8	50	4
UTE50401001010	1	1	10	50	4
UTE50401001012	1	1	12	50	4

EDP No.	Description (mm)				
	D	θ	L1	L2	D2
UTE50401001016	1	1	16	50	4
UTE50401001504	1	1.5	4	50	4
UTE50401001506	1	1.5	6	50	4
UTE50401001508	1	1.5	8	50	4
UTE50401001510	1	1.5	10	50	4
UTE50401001512	1	1.5	12	50	4
UTE50401001516	1	1.5	16	50	4
UTE50401002004	1	2	4	50	4
UTE50401002006	1	2	6	50	4
UTE50401002008	1	2	8	50	4
UTE50401002010	1	2	10	50	4
UTE50401002012	1	2	12	50	4
UTE50401002016	1	2	16	50	4
UTE50401003004	1	3	4	50	4
UTE50401003006	1	3	6	50	4
UTE50401003008	1	3	8	50	4
UTE50401003010	1	3	10	50	4
UTE50401003012	1	3	12	50	4
UTE50401003016	1	3	16	50	4
UTE50401200506	1.2	0.5	6	50	4
UTE50401200508	1.2	0.5	8	50	4
UTE50401200510	1.2	0.5	10	50	4
UTE50401200512	1.2	0.5	12	50	4
UTE50401200516	1.2	0.5	16	50	4
UTE50401201006	1.2	1	6	50	4
UTE50401201008	1.2	1	8	50	4
UTE50401201010	1.2	1	10	50	4
UTE50401201012	1.2	1	12	50	4
UTE50401201016	1.2	1	16	50	4
UTE50401201506	1.2	1.5	6	50	4
UTE50401201508	1.2	1.5	8	50	4

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)					EDP No.	Description (mm)				
	D	θ	L1	L2	D2		D	θ	L1	L2	D2
UTE50401201510	1.2	1.5	10	50	4	UTE50402001008	2	1	8	50	4
UTE50401201512	1.2	1.5	12	50	4	UTE50402001010	2	1	10	50	4
UTE50401201516	1.2	1.5	16	50	4	UTE50402001012	2	1	12	50	4
UTE50401202006	1.2	2	6	50	4	UTE50402001016	2	1	16	50	4
UTE50401202008	1.2	2	8	50	4	UTE50402001020	2	1	20	60	4
UTE50401202010	1.2	2	10	50	4	UTE50402001025	2	1	25	60	4
UTE50401202012	1.2	2	12	50	4	UTE50402001508	2	1.5	8	50	4
UTE50401202016	1.2	2	16	50	4	UTE50402001510	2	1.5	10	50	4
UTE50401203006	1.2	3	6	50	4	UTE50402001512	2	1.5	12	50	4
UTE50401203008	1.2	3	8	50	4	UTE50402001516	2	1.5	16	50	4
UTE50401203010	1.2	3	10	50	4	UTE50402001520	2	1.5	20	60	4
UTE50401203012	1.2	3	12	50	4	UTE50402001525	2	1.5	25	60	4
UTE50401203016	1.2	3	16	50	4	UTE50402002008	2	2	8	50	4
UTE50401500506	1.5	0.5	6	50	4	UTE50402002010	2	2	10	50	4
UTE50401500508	1.5	0.5	8	50	4	UTE50402002012	2	2	12	50	4
UTE50401500510	1.5	0.5	10	50	4	UTE50402002016	2	2	16	50	4
UTE50401500512	1.5	0.5	12	50	4	UTE50402002020	2	2	20	60	4
UTE50401500516	1.5	0.5	16	50	4	UTE50402002025	2	2	25	60	4
UTE50401500520	1.5	0.5	20	60	4	UTE50402003008	2	3	8	50	4
UTE50401501006	1.5	1	6	50	4	UTE50402003010	2	3	10	50	4
UTE50401501008	1.5	1	8	50	4	UTE50402003012	2	3	12	50	4
UTE50401501010	1.5	1	10	50	4	UTE50402003016	2	3	16	50	4
UTE50401501012	1.5	1	12	50	4	UTE50402003020	2	3	20	60	6
UTE50401501016	1.5	1	16	50	4	UTE50402003025	2	3	25	60	6
UTE50401501020	1.5	1	20	60	4	UTE50402500510	2.5	0.5	10	50	4
UTE50401501506	1.5	1.5	6	50	4	UTE50402500512	2.5	0.5	12	50	4
UTE50401501508	1.5	1.5	8	50	4	UTE50402500516	2.5	0.5	16	50	4
UTE50401501510	1.5	1.5	10	50	4	UTE50402500520	2.5	0.5	20	60	4
UTE50401501512	1.5	1.5	12	50	4	UTE50402500525	2.5	0.5	25	60	4
UTE50401501516	1.5	1.5	16	50	4	UTE50402500530	2.5	0.5	30	60	4
UTE50401501520	1.5	1.5	20	60	4	UTE50402501010	2.5	1	10	50	4
UTE50401502006	1.5	2	6	50	4	UTE50402501012	2.5	1	12	50	4
UTE50401502008	1.5	2	8	50	4	UTE50402501016	2.5	1	16	50	4
UTE50401502010	1.5	2	10	50	4	UTE50402501020	2.5	1	20	60	4
UTE50401502012	1.5	2	12	50	4	UTE50402501025	2.5	1	25	60	4
UTE50401502016	1.5	2	16	50	4	UTE50402501030	2.5	1	30	60	4
UTE50401502020	1.5	2	20	60	4	UTE50402501510	2.5	1.5	10	50	4
UTE50401503006	1.5	3	6	50	4	UTE50402501512	2.5	1.5	12	50	4
UTE50401503008	1.5	3	8	50	4	UTE50402501516	2.5	1.5	16	50	4
UTE50401503010	1.5	3	10	50	4	UTE50402501520	2.5	1.5	20	60	4
UTE50401503012	1.5	3	12	50	4	UTE50402501525	2.5	1.5	25	60	4
UTE50401503016	1.5	3	16	50	4	UTE50402501530	2.5	1.5	30	60	6
UTE50401503020	1.5	3	20	60	4	UTE50402502010	2.5	2	10	50	4
UTE50402000508	2	0.5	8	50	4	UTE50402502012	2.5	2	12	50	4
UTE50402000510	2	0.5	10	50	4	UTE50402502016	2.5	2	16	50	4
UTE50402000512	2	0.5	12	50	4	UTE50402502020	2.5	2	20	60	4
UTE50402000516	2	0.5	16	50	4	UTE50402502025	2.5	2	25	60	6
UTE50402000520	2	0.5	20	60	4	UTE50402502030	2.5	2	30	60	6
UTE50402000525	2	0.5	25	60	4	UTE50402503010	2.5	3	10	50	4

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)					EDP No.	Description (mm)				
	D	θ	L1	L2	D2		D	θ	L1	L2	D2
UTE50402503012	2.5	3	12	50	4	UTE50406005	6	5	22	75	10
UTE50402503016	2.5	3	16	50	6	UTE50406007	6	7	24	75	12
UTE50402503020	2.5	3	20	60	6	UTE50406010	6	10	17	75	12
UTE50402503025	2.5	3	25	60	6	UTE504070005	7	0.5	28	70	8
UTE50402503030	2.5	3	30	60	6	UTE50407001	7	1	28	70	8
UTE504030005	3	0.5	12	50	6	UTE504070015	7	1.5	28	70	10
UTE50403001	3	1	12	50	6	UTE50407002	7	2	28	80	10
UTE504030015	3	1.5	12	50	6	UTE50407003	7	3	28	80	10
UTE50403002	3	2	14	50	6	UTE50407005	7	5	28	80	12
UTE50403003	3	3	14	50	6	UTE504080005	8	0.5	35	90	10
UTE50403005	3	5	16	50	6	UTE50408001	8	1	35	90	10
UTE50403007	3	7	16	50	8	UTE504080015	8	1.5	35	90	10
UTE50403010	3	10	16	50	10	UTE50408002	8	2	28	90	10
UTE504040005	4	0.5	16	60	6	UTE50408003	8	3	38	90	12
UTE50404001	4	1	16	60	6	UTE50408005	8	5	45	100	16
UTE504040015	4	1.5	16	60	6	UTE50408007	8	7	32	90	16
UTE50404002	4	2	16	60	6	UTE50408010	8	10	34	100	20
UTE50404003	4	3	19	60	6	UTE504100005	10	0.5	40	90	12
UTE50404005	4	5	22	65	8	UTE50410001	10	1	40	90	12
UTE50404007	4	7	16	65	8	UTE504100015	10	1.5	38	90	12
UTE50404010	4	10	17	65	10	UTE50410002	10	2	40	90	16
UTE504060005	6	0.5	20	65	8	UTE50410003	10	3	40	100	16
UTE50406001	6	1	20	65	8	UTE50410005	10	5	34	100	16
UTE504060015	6	1.5	20	65	8	UTE50410007	10	7	40	90	20
UTE50406002	6	2	20	65	8	UTE50410010	10	10	42	100	25
UTE50406003	6	3	19	65	8						

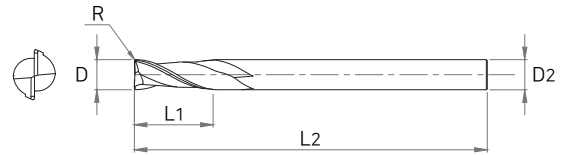
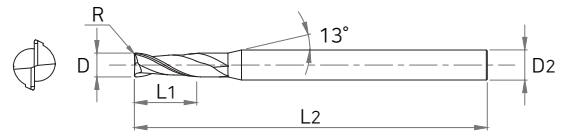
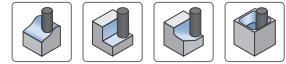
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

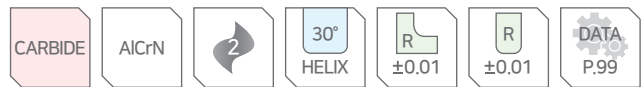
UR502

2 FLUTES RADIUS ENDMILL



TOLERANCE

D		SHANK DIA.
D0.2~6	0~-0.012	h5
D7~20	0~-0.015	



EDP No.	Description (mm)				
	D	R	L1	L2	D2
UR502002002	0.2	0.02	0.4	40	4
UR502002005	0.2	0.05	0.4	40	4
UR502003002	0.3	0.02	0.6	40	4
UR502003005	0.3	0.05	0.6	40	4
UR502004005	0.4	0.05	0.8	40	4
UR50200401	0.4	0.1	0.8	40	4
UR502005005	0.5	0.05	1	40	4
UR50200501	0.5	0.1	1	40	4
UR502006005	0.6	0.05	1.2	40	4
UR50200601	0.6	0.1	1.2	40	4
UR50200602	0.6	0.2	1.2	40	4
UR502007005	0.7	0.05	1.4	40	4
UR50200701	0.7	0.1	1.4	40	4
UR50200702	0.7	0.2	1.4	40	4
UR502008005	0.8	0.05	1.6	40	4
UR50200801	0.8	0.1	1.6	40	4
UR50200802	0.8	0.2	1.6	40	4
UR502009005	0.9	0.05	1.8	40	4
UR50200901	0.9	0.1	1.8	40	4
UR502010005	1	0.05	2.5	50	6
UR50201001	1	0.1	2.5	50	6
UR50201002	1	0.2	2.5	50	6
UR50201003	1	0.3	2.5	50	6
UR502012005	1.2	0.05	3	50	6
UR50201201	1.2	0.1	3	50	6
UR50201202	1.2	0.2	3	50	6
UR50201203	1.2	0.3	3	50	6
UR502015005	1.5	0.05	4	50	6
UR50201501	1.5	0.1	4	50	6
UR50201502	1.5	0.2	4	50	6
UR50201503	1.5	0.3	4	50	6

EDP No.	Description (mm)				
	D	R	L1	L2	D2
UR50201505	1.5	0.5	4	50	6
UR50202001	2	0.1	6	50	6
UR50202002	2	0.2	6	50	6
UR50202003	2	0.3	6	50	6
UR50202005	2	0.5	6	50	6
UR50202501	2.5	0.1	7	60	6
UR50202502	2.5	0.2	7	60	6
UR50202503	2.5	0.3	7	60	6
UR50202505	2.5	0.5	7	60	6
UR50203001	3	0.1	8	60	6
UR50203002	3	0.2	8	60	6
UR50203003	3	0.3	8	60	6
UR50203005	3	0.5	8	60	6
UR50203010	3	1	8	60	6
UR50203501	3.5	0.1	10	70	6
UR50203502	3.5	0.2	10	70	6
UR50203503	3.5	0.3	10	70	6
UR50203505	3.5	0.5	10	70	6
UR50204001	4	0.1	10	70	6
UR50204001100S4	4	0.1	10	100	4
UR50204001S4	4	0.1	10	70	4
UR50204002	4	0.2	10	70	6
UR50204002100S4	4	0.2	10	100	4
UR50204002S4	4	0.2	10	70	4
UR50204003	4	0.3	10	70	6
UR50204003100S4	4	0.3	10	100	4
UR50204003S4	4	0.3	10	70	4
UR50204005	4	0.5	10	70	6
UR50204005100S4	4	0.5	10	100	4
UR50204005S4	4	0.5	10	70	4
UR50204010	4	1	10	70	6

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)					EDP No.	Description (mm)				
	D	R	L1	L2	D2		D	R	L1	L2	D2
UR50204010100S4	4	1	10	100	4	UR50208020	8	2	20	100	8
UR50204010S4	4	1	10	70	4	UR50208025	8	2.5	20	100	8
UR50204501	4.5	0.1	11	80	6	UR50208030	8	3	20	100	8
UR50204502	4.5	0.2	11	80	6	UR50210001	10	0.1	25	100	10
UR50204503	4.5	0.3	11	80	6	UR50210002	10	0.2	25	100	10
UR50204505	4.5	0.5	11	80	6	UR50210003	10	0.3	25	100	10
UR50205001	5	0.1	13	90	6	UR5021000375	10	0.3	25	75	10
UR50205002	5	0.2	13	90	6	UR50210005	10	0.5	25	100	10
UR50205003	5	0.3	13	90	6	UR50210005130	10	0.5	25	130	10
UR50205005	5	0.5	13	90	6	UR50210005150	10	0.5	25	150	10
UR50205010	5	1	13	90	6	UR5021000575	10	0.5	25	75	10
UR50205501	5.5	0.1	13	90	6	UR50210010	10	1	25	100	10
UR50205502	5.5	0.2	13	90	6	UR50210010130	10	1	25	130	10
UR50205503	5.5	0.3	13	90	6	UR50210010150	10	1	25	150	10
UR50205505	5.5	0.5	13	90	6	UR5021001075	10	1	25	75	10
UR50205510	5.5	1	13	90	6	UR50210015	10	1.5	25	100	10
UR50206001	6	0.1	15	90	6	UR50210020	10	2	25	100	10
UR50206002	6	0.2	15	90	6	UR50210025	10	2.5	25	100	10
UR50206003	6	0.3	15	90	6	UR50210030	10	3	25	100	10
UR5020600360	6	0.3	15	60	6	UR50210040	10	4	25	100	10
UR50206005	6	0.5	15	90	6	UR50211002	11	0.2	25	110	12
UR50206005110	6	0.5	15	110	6	UR50211003	11	0.3	25	110	12
UR50206005130	6	0.5	15	130	6	UR50211005	11	0.5	25	110	12
UR5020600560	6	0.5	15	60	6	UR50211010	11	1	25	110	12
UR50206010	6	1	15	90	6	UR50211020	11	2	25	110	12
UR50206010110	6	1	15	110	6	UR50212001	12	0.1	30	110	12
UR50206010130	6	1	15	130	6	UR50212002	12	0.2	30	110	12
UR5020601060	6	1	15	60	6	UR50212003	12	0.3	30	110	12
UR50206015	6	1.5	15	90	6	UR5021200380	12	0.3	30	80	12
UR50206020	6	2	15	90	6	UR50212005	12	0.5	30	110	12
UR50207001	7	0.1	16	90	8	UR50212005130	12	0.5	30	130	12
UR50207002	7	0.2	16	90	8	UR50212005150	12	0.5	30	150	12
UR50207003	7	0.3	16	90	8	UR5021200580	12	0.5	30	80	12
UR50207005	7	0.5	16	90	8	UR50212010	12	1	30	110	12
UR50207010	7	1	16	90	8	UR50212010130	12	1	30	130	12
UR50207020	7	2	16	90	8	UR50212010150	12	1	30	150	12
UR50208001	8	0.1	20	100	8	UR5021201080	12	1	30	80	12
UR50208002	8	0.2	20	100	8	UR50212015	12	1.5	30	110	12
UR50208003	8	0.3	20	100	8	UR50212020	12	2	30	110	12
UR5020800370	8	0.3	20	70	8	UR50212025	12	2.5	30	110	12
UR50208005	8	0.5	20	100	8	UR50212030	12	3	30	110	12
UR50208005120	8	0.5	20	120	8	UR50212040	12	4	30	110	12
UR50208005150	8	0.5	20	150	8	UR50212050	12	5	30	110	12
UR5020800570	8	0.5	20	70	8	UR50214005	14	0.5	30	150	16
UR50208010	8	1	20	100	8	UR50214010	14	1	30	150	16
UR50208010120	8	1	20	120	8	UR50214020	14	2	30	150	16
UR50208010150	8	1	20	150	8	UR50216005	16	0.5	32	150	16
UR5020801070	8	1	20	70	8	UR50216010	16	1	32	150	16
UR50208015	8	1.5	20	100	8	UR50216015	16	1.5	32	150	16

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

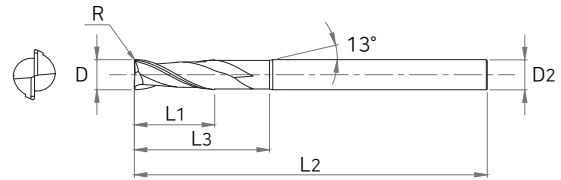
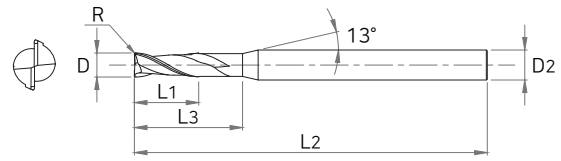
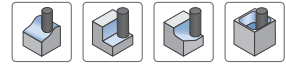
○ : Good ◎ : Excellent

EDP No.	Description (mm)					EDP No.	Description (mm)				
	D	R	L1	L2	D2		D	R	L1	L2	D2
UR502002002	0.2	0.02	0.4	40	4	UR50201505	1.5	0.5	4	50	6
UR502002005	0.2	0.05	0.4	40	4	UR50202001	2	0.1	6	50	6
UR502003002	0.3	0.02	0.6	40	4	UR50202002	2	0.2	6	50	6
UR502003005	0.3	0.05	0.6	40	4	UR50202003	2	0.3	6	50	6
UR502004005	0.4	0.05	0.8	40	4	UR50202005	2	0.5	6	50	6
UR50200401	0.4	0.1	0.8	40	4	UR50202501	2.5	0.1	7	60	6
UR502005005	0.5	0.05	1	40	4	UR50202502	2.5	0.2	7	60	6
UR50200501	0.5	0.1	1	40	4	UR50202503	2.5	0.3	7	60	6
UR502006005	0.6	0.05	1.2	40	4	UR50202505	2.5	0.5	7	60	6
UR50200601	0.6	0.1	1.2	40	4	UR50203001	3	0.1	8	60	6
UR50200602	0.6	0.2	1.2	40	4	UR50203002	3	0.2	8	60	6
UR502007005	0.7	0.05	1.4	40	4	UR50203003	3	0.3	8	60	6
UR50200701	0.7	0.1	1.4	40	4	UR50203005	3	0.5	8	60	6
UR50200702	0.7	0.2	1.4	40	4	UR50203010	3	1	8	60	6
UR502008005	0.8	0.05	1.6	40	4	UR50203501	3.5	0.1	10	70	6
UR50200801	0.8	0.1	1.6	40	4	UR50203502	3.5	0.2	10	70	6
UR50200802	0.8	0.2	1.6	40	4	UR50203503	3.5	0.3	10	70	6
UR502009005	0.9	0.05	1.8	40	4	UR50203505	3.5	0.5	10	70	6
UR50200901	0.9	0.1	1.8	40	4	UR50204001	4	0.1	10	70	6
UR502010005	1	0.05	2.5	50	6	UR50204001100S4	4	0.1	10	100	4
UR50201001	1	0.1	2.5	50	6	UR50204001S4	4	0.1	10	70	4
UR50201002	1	0.2	2.5	50	6	UR50204002	4	0.2	10	70	6
UR50201003	1	0.3	2.5	50	6	UR50204002100S4	4	0.2	10	100	4
UR502012005	1.2	0.05	3	50	6	UR50204002S4	4	0.2	10	70	4
UR50201201	1.2	0.1	3	50	6	UR50204003	4	0.3	10	70	6
UR50201202	1.2	0.2	3	50	6	UR50204003100S4	4	0.3	10	100	4
UR50201203	1.2	0.3	3	50	6	UR50204003S4	4	0.3	10	70	4
UR502015005	1.5	0.05	4	50	6	UR50204005	4	0.5	10	70	6
UR50201501	1.5	0.1	4	50	6	UR50204005100S4	4	0.5	10	100	4
UR50201502	1.5	0.2	4	50	6	UR50204005S4	4	0.5	10	70	4
UR50201503	1.5	0.3	4	50	6	UR50204010	4	1	10	70	6

■ Applicable Working Material

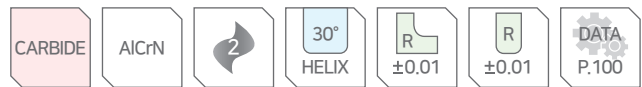
Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent



TOLERANCE

D		SHANK DIA.
D0.2~6	0~-0.012	h5
D8~20	0~-0.015	



EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2
UR512002002005	0.2	0.02	0.3	0.5	40	4
UR51200200201	0.2	0.02	0.3	1	40	4
UR512002002015	0.2	0.02	0.3	1.5	40	4
UR51200200202	0.2	0.02	0.3	2	40	4
UR512002005005	0.2	0.05	0.3	0.5	40	4
UR51200200501	0.2	0.05	0.3	1	40	4
UR512002005015	0.2	0.05	0.3	1.5	40	4
UR51200200502	0.2	0.05	0.3	2	40	4
UR51200300201	0.3	0.02	0.5	1	40	4
UR51200300202	0.3	0.02	0.5	2	40	4
UR51200300203	0.3	0.02	0.5	3	40	4
UR51200300501	0.3	0.05	0.5	1	40	4
UR51200300502	0.3	0.05	0.5	2	40	4
UR51200300503	0.3	0.05	0.5	3	40	4
UR51200400501	0.4	0.05	0.6	1	40	4
UR512004005015	0.4	0.05	0.6	1.5	40	4
UR51200400502	0.4	0.05	0.6	2	40	4
UR512004005025	0.4	0.05	0.6	2.5	40	4
UR51200400503	0.4	0.05	0.6	3	40	4
UR51200400504	0.4	0.05	0.6	4	40	4
UR5120040101	0.4	0.1	0.6	1	40	4
UR51200401015	0.4	0.1	0.6	1.5	40	4
UR5120040102	0.4	0.1	0.6	2	40	4
UR51200401025	0.4	0.1	0.6	2.5	40	4
UR5120040103	0.4	0.1	0.6	3	40	4
UR5120040104	0.4	0.1	0.6	4	40	4
UR51200500501	0.5	0.05	0.7	1	45	4
UR512005005015	0.5	0.05	0.7	1.5	45	4
UR51200500502	0.5	0.05	0.7	2	45	4
UR512005005025	0.5	0.05	0.7	2.5	45	4
UR51200500503	0.5	0.05	0.7	3	45	4

EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2
UR51200500504	0.5	0.05	0.7	4	45	4
UR51200500505	0.5	0.05	0.7	5	45	4
UR51200500506	0.5	0.05	0.7	6	45	4
UR5120050101	0.5	0.1	0.7	1	45	4
UR51200501015	0.5	0.1	0.7	1.5	45	4
UR5120050102	0.5	0.1	0.7	2	45	4
UR51200501025	0.5	0.1	0.7	2.5	45	4
UR5120050103	0.5	0.1	0.7	3	45	4
UR5120050104	0.5	0.1	0.7	4	45	4
UR5120050105	0.5	0.1	0.7	5	45	4
UR5120050106	0.5	0.1	0.7	6	45	4
UR51200600502	0.6	0.05	0.9	2	45	4
UR51200600503	0.6	0.05	0.9	3	45	4
UR51200600504	0.6	0.05	0.9	4	45	4
UR51200600506	0.6	0.05	0.9	6	45	4
UR51200600508	0.6	0.05	0.9	8	45	4
UR51200600510	0.6	0.05	0.9	10	45	4
UR5120060102	0.6	0.1	0.9	2	45	4
UR5120060103	0.6	0.1	0.9	3	45	4
UR5120060104	0.6	0.1	0.9	4	45	4
UR5120060106	0.6	0.1	0.9	6	45	4
UR5120060108	0.6	0.1	0.9	8	45	4
UR5120060110	0.6	0.1	0.9	10	45	4
UR5120060202	0.6	0.2	0.9	2	45	4
UR5120060203	0.6	0.2	0.9	3	45	4
UR5120060204	0.6	0.2	0.9	4	45	4
UR5120060206	0.6	0.2	0.9	6	45	4
UR5120060208	0.6	0.2	0.9	8	45	4
UR5120060210	0.6	0.2	0.9	10	45	4
UR51200700502	0.7	0.05	1.2	2	45	4
UR51200700504	0.7	0.05	1.2	4	45	4

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)						EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2		D	R	L1	L3	L2	D2
UR51200700506	0.7	0.05	1.2	6	45	4	UR5120100203	1	0.2	1.5	3	50	4
UR51200700508	0.7	0.05	1.2	8	45	4	UR5120100204	1	0.2	1.5	4	50	4
UR51200700510	0.7	0.05	1.2	10	45	4	UR5120100206	1	0.2	1.5	6	50	4
UR5120070102	0.7	0.1	1.2	2	45	4	UR5120100208	1	0.2	1.5	8	50	4
UR5120070104	0.7	0.1	1.2	4	45	4	UR5120100210	1	0.2	1.5	10	50	4
UR5120070106	0.7	0.1	1.2	6	45	4	UR5120100212	1	0.2	1.5	12	50	4
UR5120070108	0.7	0.1	1.2	8	45	4	UR5120100214	1	0.2	1.5	14	50	4
UR5120070110	0.7	0.1	1.2	10	45	4	UR5120100216	1	0.2	1.5	16	50	4
UR5120070202	0.7	0.2	1.2	2	45	4	UR5120100220	1	0.2	1.5	20	50	4
UR5120070204	0.7	0.2	1.2	4	45	4	UR5120100303	1	0.3	1.5	3	50	4
UR5120070206	0.7	0.2	1.2	6	45	4	UR5120100304	1	0.3	1.5	4	50	4
UR5120070208	0.7	0.2	1.2	8	45	4	UR5120100306	1	0.3	1.5	6	50	4
UR5120070210	0.7	0.2	1.2	10	45	4	UR5120100308	1	0.3	1.5	8	50	4
UR51200800502	0.8	0.05	1.2	2	45	4	UR5120100310	1	0.3	1.5	10	50	4
UR51200800503	0.8	0.05	1.2	3	45	4	UR5120100312	1	0.3	1.5	12	50	4
UR51200800504	0.8	0.05	1.2	4	45	4	UR5120100314	1	0.3	1.5	14	50	4
UR51200800506	0.8	0.05	1.2	6	45	4	UR5120100316	1	0.3	1.5	16	50	4
UR51200800508	0.8	0.05	1.2	8	45	4	UR5120100320	1	0.3	1.5	20	50	4
UR51200800510	0.8	0.05	1.2	10	45	4	UR51201200503	1.2	0.05	1.8	3	50	4
UR5120080102	0.8	0.1	1.2	2	45	4	UR51201200504	1.2	0.05	1.8	4	50	4
UR5120080103	0.8	0.1	1.2	3	45	4	UR51201200506	1.2	0.05	1.8	6	50	4
UR5120080104	0.8	0.1	1.2	4	45	4	UR51201200508	1.2	0.05	1.8	8	50	4
UR5120080106	0.8	0.1	1.2	6	45	4	UR51201200510	1.2	0.05	1.8	10	50	4
UR5120080108	0.8	0.1	1.2	8	45	4	UR51201200512	1.2	0.05	1.8	12	50	4
UR5120080110	0.8	0.1	1.2	10	45	4	UR51201200516	1.2	0.05	1.8	16	50	4
UR5120080202	0.8	0.2	1.2	2	45	4	UR51201200520	1.2	0.05	1.8	20	50	4
UR5120080203	0.8	0.2	1.2	3	45	4	UR5120120103	1.2	0.1	1.8	3	50	4
UR5120080204	0.8	0.2	1.2	4	45	4	UR5120120104	1.2	0.1	1.8	4	50	4
UR5120080206	0.8	0.2	1.2	6	45	4	UR5120120106	1.2	0.1	1.8	6	50	4
UR5120080208	0.8	0.2	1.2	8	45	4	UR5120120108	1.2	0.1	1.8	8	50	4
UR5120080210	0.8	0.2	1.2	10	45	4	UR5120120110	1.2	0.1	1.8	10	50	4
UR51201000503	1	0.05	1.5	3	50	4	UR5120120112	1.2	0.1	1.8	12	50	4
UR51201000504	1	0.05	1.5	4	50	4	UR5120120116	1.2	0.1	1.8	16	50	4
UR51201000506	1	0.05	1.5	6	50	4	UR5120120120	1.2	0.1	1.8	20	50	4
UR51201000508	1	0.05	1.5	8	50	4	UR5120120203	1.2	0.2	1.8	3	50	4
UR51201000510	1	0.05	1.5	10	50	4	UR5120120204	1.2	0.2	1.8	4	50	4
UR51201000512	1	0.05	1.5	12	50	4	UR5120120206	1.2	0.2	1.8	6	50	4
UR51201000514	1	0.05	1.5	14	50	4	UR5120120208	1.2	0.2	1.8	8	50	4
UR51201000516	1	0.05	1.5	16	50	4	UR5120120210	1.2	0.2	1.8	10	50	4
UR51201000520	1	0.05	1.5	20	50	4	UR5120120212	1.2	0.2	1.8	12	50	4
UR5120100103	1	0.1	1.5	3	50	4	UR5120120216	1.2	0.2	1.8	16	50	4
UR5120100104	1	0.1	1.5	4	50	4	UR5120120220	1.2	0.2	1.8	20	50	4
UR5120100106	1	0.1	1.5	6	50	4	UR5120120303	1.2	0.3	1.8	3	50	4
UR5120100108	1	0.1	1.5	8	50	4	UR5120120304	1.2	0.3	1.8	4	50	4
UR5120100110	1	0.1	1.5	10	50	4	UR5120120306	1.2	0.3	1.8	6	50	4
UR5120100112	1	0.1	1.5	12	50	4	UR5120120308	1.2	0.3	1.8	8	50	4
UR5120100114	1	0.1	1.5	14	50	4	UR5120120310	1.2	0.3	1.8	10	50	4
UR5120100116	1	0.1	1.5	16	50	4	UR5120120312	1.2	0.3	1.8	12	50	4
UR5120100120	1	0.1	1.5	20	50	4	UR5120120316	1.2	0.3	1.8	16	50	4

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)						EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2		D	R	L1	L3	L2	D2
UR5120120320	1.2	0.3	1.8	20	50	4	UR5120150522	1.5	0.5	2.3	22	60	4
UR51201500504	1.5	0.05	2.3	4	50	4	UR5120150526	1.5	0.5	2.3	26	60	4
UR51201500506	1.5	0.05	2.3	6	50	4	UR5120200106	2	0.1	3	6	50	4
UR51201500508	1.5	0.05	2.3	8	50	4	UR5120200108	2	0.1	3	8	50	4
UR51201500510	1.5	0.05	2.3	10	50	4	UR5120200110	2	0.1	3	10	50	4
UR51201500512	1.5	0.05	2.3	12	50	4	UR5120200112	2	0.1	3	12	50	4
UR51201500514	1.5	0.05	2.3	14	50	4	UR5120200114	2	0.1	3	14	50	4
UR51201500516	1.5	0.05	2.3	16	50	4	UR5120200116	2	0.1	3	16	50	4
UR51201500520	1.5	0.05	2.3	20	50	4	UR5120200120	2	0.1	3	20	50	4
UR51201500522	1.5	0.05	2.3	22	60	4	UR5120200122	2	0.1	3	22	60	4
UR51201500526	1.5	0.05	2.3	26	60	4	UR5120200126	2	0.1	3	26	60	4
UR5120150104	1.5	0.1	2.3	4	50	4	UR5120200130	2	0.1	3	30	70	4
UR5120150106	1.5	0.1	2.3	6	50	4	UR5120200206	2	0.2	3	6	50	4
UR5120150108	1.5	0.1	2.3	8	50	4	UR5120200208	2	0.2	3	8	50	4
UR5120150110	1.5	0.1	2.3	10	50	4	UR5120200210	2	0.2	3	10	50	4
UR5120150112	1.5	0.1	2.3	12	50	4	UR5120200212	2	0.2	3	12	50	4
UR5120150114	1.5	0.1	2.3	14	50	4	UR5120200214	2	0.2	3	14	50	4
UR5120150116	1.5	0.1	2.3	16	50	4	UR5120200216	2	0.2	3	16	50	4
UR5120150120	1.5	0.1	2.3	20	50	4	UR5120200220	2	0.2	3	20	50	4
UR5120150122	1.5	0.1	2.3	22	60	4	UR5120200222	2	0.2	3	22	60	4
UR5120150126	1.5	0.1	2.3	26	60	4	UR5120200226	2	0.2	3	26	60	4
UR5120150204	1.5	0.2	2.3	4	50	4	UR5120200230	2	0.2	3	30	70	4
UR5120150206	1.5	0.2	2.3	6	50	4	UR5120200306	2	0.3	3	6	50	4
UR5120150208	1.5	0.2	2.3	8	50	4	UR5120200308	2	0.3	3	8	50	4
UR5120150210	1.5	0.2	2.3	10	50	4	UR5120200310	2	0.3	3	10	50	4
UR5120150212	1.5	0.2	2.3	12	50	4	UR5120200312	2	0.3	3	12	50	4
UR5120150214	1.5	0.2	2.3	14	50	4	UR5120200314	2	0.3	3	14	50	4
UR5120150216	1.5	0.2	2.3	16	50	4	UR5120200316	2	0.3	3	16	50	4
UR5120150220	1.5	0.2	2.3	20	50	4	UR5120200320	2	0.3	3	20	50	4
UR5120150222	1.5	0.2	2.3	22	60	4	UR5120200322	2	0.3	3	22	60	4
UR5120150226	1.5	0.2	2.3	26	60	4	UR5120200326	2	0.3	3	26	60	4
UR5120150304	1.5	0.3	2.3	4	50	4	UR5120200330	2	0.3	3	30	70	4
UR5120150306	1.5	0.3	2.3	6	50	4	UR5120200506	2	0.5	3	6	50	4
UR5120150308	1.5	0.3	2.3	8	50	4	UR5120200508	2	0.5	3	8	50	4
UR5120150310	1.5	0.3	2.3	10	50	4	UR5120200510	2	0.5	3	10	50	4
UR5120150312	1.5	0.3	2.3	12	50	4	UR5120200512	2	0.5	3	12	50	4
UR5120150314	1.5	0.3	2.3	14	50	4	UR5120200514	2	0.5	3	14	50	4
UR5120150316	1.5	0.3	2.3	16	50	4	UR5120200516	2	0.5	3	16	50	4
UR5120150320	1.5	0.3	2.3	20	50	4	UR5120200520	2	0.5	3	20	50	4
UR5120150322	1.5	0.3	2.3	22	60	4	UR5120200522	2	0.5	3	22	60	4
UR5120150326	1.5	0.3	2.3	26	60	4	UR5120200526	2	0.5	3	26	60	4
UR5120150504	1.5	0.5	2.3	4	50	4	UR5120200530	2	0.5	3	30	70	4
UR5120150506	1.5	0.5	2.3	6	50	4	UR5120250108	2.5	0.1	4	8	50	4
UR5120150508	1.5	0.5	2.3	8	50	4	UR5120250110	2.5	0.1	4	10	50	4
UR5120150510	1.5	0.5	2.3	10	50	4	UR5120250112	2.5	0.1	4	12	50	4
UR5120150512	1.5	0.5	2.3	12	50	4	UR5120250114	2.5	0.1	4	14	50	4
UR5120150514	1.5	0.5	2.3	14	50	4	UR5120250116	2.5	0.1	4	16	50	4
UR5120150516	1.5	0.5	2.3	16	50	4	UR5120250120	2.5	0.1	4	20	50	4
UR5120150520	1.5	0.5	2.3	20	50	4	UR5120250126	2.5	0.1	4	26	60	4

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)						EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2		D	R	L1	L3	L2	D2
UR5120250130	2.5	0.1	4	30	70	4	UR5120300316	3	0.3	4.5	16	60	6
UR5120250208	2.5	0.2	4	8	50	4	UR5120300320	3	0.3	4.5	20	60	6
UR5120250210	2.5	0.2	4	10	50	4	UR5120300326	3	0.3	4.5	26	65	6
UR5120250212	2.5	0.2	4	12	50	4	UR5120300330	3	0.3	4.5	30	70	6
UR5120250214	2.5	0.2	4	14	50	4	UR5120300335	3	0.3	4.5	35	70	6
UR5120250216	2.5	0.2	4	16	50	4	UR5120300340	3	0.3	4.5	40	80	6
UR5120250220	2.5	0.2	4	20	50	4	UR5120300508	3	0.5	4.5	8	50	6
UR5120250226	2.5	0.2	4	26	60	4	UR5120300510	3	0.5	4.5	10	50	6
UR5120250230	2.5	0.2	4	30	70	4	UR5120300512	3	0.5	4.5	12	50	6
UR5120250308	2.5	0.3	4	8	50	4	UR5120300514	3	0.5	4.5	14	60	6
UR5120250310	2.5	0.3	4	10	50	4	UR5120300516	3	0.5	4.5	16	60	6
UR5120250312	2.5	0.3	4	12	50	4	UR5120300520	3	0.5	4.5	20	60	6
UR5120250314	2.5	0.3	4	14	50	4	UR5120300526	3	0.5	4.5	26	65	6
UR5120250316	2.5	0.3	4	16	50	4	UR5120300530	3	0.5	4.5	30	70	6
UR5120250320	2.5	0.3	4	20	50	4	UR5120300535	3	0.5	4.5	35	70	6
UR5120250326	2.5	0.3	4	26	60	4	UR5120300540	3	0.5	4.5	40	80	6
UR5120250330	2.5	0.3	4	30	70	4	UR5120301008	3	1	4.5	8	50	6
UR5120250508	2.5	0.5	4	8	50	4	UR5120301010	3	1	4.5	10	50	6
UR5120250510	2.5	0.5	4	10	50	4	UR5120301012	3	1	4.5	12	50	6
UR5120250512	2.5	0.5	4	12	50	4	UR5120301014	3	1	4.5	14	60	6
UR5120250514	2.5	0.5	4	14	50	4	UR5120301016	3	1	4.5	16	60	6
UR5120250516	2.5	0.5	4	16	50	4	UR5120301020	3	1	4.5	20	60	6
UR5120250520	2.5	0.5	4	20	50	4	UR5120301026	3	1	4.5	26	65	6
UR5120250526	2.5	0.5	4	26	60	4	UR5120301030	3	1	4.5	30	70	6
UR5120250530	2.5	0.5	4	30	70	4	UR5120301035	3	1	4.5	35	70	6
UR5120300108	3	0.1	4.5	8	50	6	UR5120301040	3	1	4.5	40	80	6
UR5120300110	3	0.1	4.5	10	50	6	UR5120400110	4	0.1	6	10	50	6
UR5120300112	3	0.1	4.5	12	50	6	UR5120400112	4	0.1	6	12	50	6
UR5120300114	3	0.1	4.5	14	60	6	UR5120400114	4	0.1	6	14	60	6
UR5120300116	3	0.1	4.5	16	60	6	UR5120400116	4	0.1	6	16	60	6
UR5120300120	3	0.1	4.5	20	60	6	UR5120400120	4	0.1	6	20	60	6
UR5120300126	3	0.1	4.5	26	65	6	UR5120400126	4	0.1	6	26	65	6
UR5120300130	3	0.1	4.5	30	70	6	UR5120400130	4	0.1	6	30	65	6
UR5120300135	3	0.1	4.5	35	70	6	UR5120400135	4	0.1	6	35	70	6
UR5120300140	3	0.1	4.5	40	80	6	UR5120400140	4	0.1	6	40	80	6
UR5120300208	3	0.2	4.5	8	50	6	UR5120400145	4	0.1	6	45	90	6
UR5120300210	3	0.2	4.5	10	50	6	UR5120400150	4	0.1	6	50	100	6
UR5120300212	3	0.2	4.5	12	50	6	UR5120400210	4	0.2	6	10	50	6
UR5120300214	3	0.2	4.5	14	60	6	UR5120400212	4	0.2	6	12	50	6
UR5120300216	3	0.2	4.5	16	60	6	UR5120400214	4	0.2	6	14	60	6
UR5120300220	3	0.2	4.5	20	60	6	UR5120400216	4	0.2	6	16	60	6
UR5120300226	3	0.2	4.5	26	65	6	UR5120400220	4	0.2	6	20	60	6
UR5120300230	3	0.2	4.5	30	70	6	UR5120400226	4	0.2	6	26	65	6
UR5120300235	3	0.2	4.5	35	70	6	UR5120400230	4	0.2	6	30	65	6
UR5120300240	3	0.2	4.5	40	80	6	UR5120400235	4	0.2	6	35	70	6
UR5120300308	3	0.3	4.5	8	50	6	UR5120400240	4	0.2	6	40	80	6
UR5120300310	3	0.3	4.5	10	50	6	UR5120400245	4	0.2	6	45	90	6
UR5120300312	3	0.3	4.5	12	50	6	UR5120400250	4	0.2	6	50	100	6
UR5120300314	3	0.3	4.5	14	60	6	UR5120400310	4	0.3	6	10	50	6

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

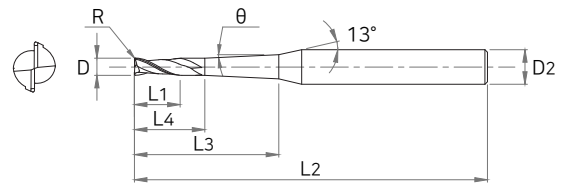
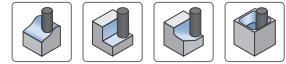
○ : Good ◎ : Excellent

EDP No.	Description (mm)						EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2		D	R	L1	L3	L2	D2
UR5120400312	4	0.3	6	12	50	6	UR51206005	6	0.5	9	20	60	6
UR5120400314	4	0.3	6	14	60	6	UR5120600590	6	0.5	15	30	90	6
UR5120400316	4	0.3	6	16	60	6	UR51206010	6	1	9	20	60	6
UR5120400320	4	0.3	6	20	60	6	UR5120601090	6	1	15	30	90	6
UR5120400326	4	0.3	6	26	65	6	UR51206015	6	1.5	9	20	60	6
UR5120400330	4	0.3	6	30	65	6	UR51206020	6	2	9	20	60	6
UR5120400335	4	0.3	6	35	70	6	UR51208001	8	0.1	12	25	70	8
UR5120400340	4	0.3	6	40	80	6	UR51208002	8	0.2	12	25	70	8
UR5120400345	4	0.3	6	45	90	6	UR51208003	8	0.3	12	25	70	8
UR5120400350	4	0.3	6	50	100	6	UR51208003100	8	0.3	20	35	100	8
UR5120400510	4	0.5	6	10	50	6	UR51208005	8	0.5	12	25	70	8
UR5120400512	4	0.5	6	12	50	6	UR51208005100	8	0.5	20	35	100	8
UR5120400514	4	0.5	6	14	60	6	UR51208010	8	1	12	25	70	8
UR5120400516	4	0.5	6	16	60	6	UR51208010100	8	1	20	35	100	8
UR5120400520	4	0.5	6	20	60	6	UR51208015	8	1.5	12	25	70	8
UR5120400526	4	0.5	6	26	65	6	UR51208020	8	2	12	25	70	8
UR5120400530	4	0.5	6	30	65	6	UR51210001	10	0.1	15	30	75	10
UR5120400535	4	0.5	6	35	70	6	UR51210002	10	0.2	15	30	75	10
UR5120400540	4	0.5	6	40	80	6	UR51210003	10	0.3	15	30	75	10
UR5120400545	4	0.5	6	45	90	6	UR51210003100	10	0.3	25	40	100	10
UR5120400550	4	0.5	6	50	100	6	UR51210005	10	0.5	15	30	75	10
UR5120401010	4	1	6	10	50	6	UR51210005100	10	0.5	25	40	100	10
UR5120401012	4	1	6	12	50	6	UR51210010	10	1	15	30	75	10
UR5120401014	4	1	6	14	60	6	UR51210010100	10	1	25	40	100	10
UR5120401016	4	1	6	16	60	6	UR51210015	10	1.5	15	30	75	10
UR5120401020	4	1	6	20	60	6	UR51210020	10	2	15	30	75	10
UR5120401026	4	1	6	26	65	6	UR51212002	12	0.2	18	32	80	12
UR5120401030	4	1	6	30	65	6	UR51212003	12	0.3	18	32	80	12
UR5120401035	4	1	6	35	70	6	UR51212003110	12	0.3	30	45	110	12
UR5120401040	4	1	6	40	80	6	UR51212005	12	0.5	18	32	80	12
UR5120401045	4	1	6	45	90	6	UR51212005110	12	0.5	30	45	110	12
UR5120401050	4	1	6	50	100	6	UR51212010	12	1	18	32	80	12
UR51205001	5	0.1	8	15	60	6	UR51212010110	12	1	30	45	110	12
UR51205002	5	0.2	8	15	60	6	UR51212015	12	1.5	18	32	80	12
UR51205003	5	0.3	8	15	60	6	UR51212020	12	2	18	32	80	12
UR51205005	5	0.5	8	15	60	6	UR51216005	16	0.5	20	35	100	16
UR51205010	5	1	8	15	60	6	UR51216005150	16	0.5	35	50	150	16
UR51205015	5	1.5	8	15	60	6	UR51216010	16	1	20	35	100	16
UR51205020	5	2	8	15	60	6	UR51216010150	16	1	35	50	150	16
UR51206001	6	0.1	9	20	60	6	UR51220005	20	0.5	25	40	100	20
UR51206002	6	0.2	9	20	60	6	UR51220005150	20	0.5	40	55	150	20
UR51206003	6	0.3	9	20	60	6	UR51220010	20	1	25	40	100	20
UR5120600390	6	0.3	15	30	90	6	UR51220010150	20	1	40	55	150	20

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRC30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRC55	SKD11 HRC55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent



TOLERANCE

D		SHANK DIA.
D0.2~4	0~-0.012	h5



EDP No.	Description (mm)							
	D	R	θ	L1	L4	L3	L2	D2
UR5420020050101	0.2	0.05	1	0.3	0.4	1	40	4
UR5420020050102	0.2	0.05	1	0.3	0.4	2	40	4
UR5420020050103	0.2	0.05	1	0.3	0.4	3	40	4
UR5420020050201	0.2	0.05	2	0.3	0.4	1	40	4
UR5420020050202	0.2	0.05	2	0.3	0.4	2	40	4
UR5420020050203	0.2	0.05	2	0.3	0.4	3	40	4
UR5420030050102	0.3	0.05	1	0.5	0.6	2	40	4
UR5420030050103	0.3	0.05	1	0.5	0.6	3	40	4
UR5420030050104	0.3	0.05	1	0.5	0.6	4	40	4
UR5420030050105	0.3	0.05	1	0.5	0.6	5	40	4
UR5420030050202	0.3	0.05	2	0.5	0.6	2	40	4
UR5420030050203	0.3	0.05	2	0.5	0.6	3	40	4
UR5420030050204	0.3	0.05	2	0.5	0.6	4	40	4
UR5420030050205	0.3	0.05	2	0.5	0.6	5	40	4
UR5420040050102	0.4	0.05	1	0.6	0.8	2	50	4
UR5420040050103	0.4	0.05	1	0.6	0.8	3	50	4
UR5420040050104	0.4	0.05	1	0.6	0.8	4	50	4
UR5420040050105	0.4	0.05	1	0.6	0.8	5	50	4
UR5420040050106	0.4	0.05	1	0.6	0.8	6	50	4
UR5420040050202	0.4	0.05	2	0.6	0.8	2	50	4
UR5420040050203	0.4	0.05	2	0.6	0.8	3	50	4
UR5420040050204	0.4	0.05	2	0.6	0.8	4	50	4
UR5420040050205	0.4	0.05	2	0.6	0.8	5	50	4
UR5420040050206	0.4	0.05	2	0.6	0.8	6	50	4
UR542004010102	0.4	0.1	1	0.6	0.8	2	50	4
UR542004010103	0.4	0.1	1	0.6	0.8	3	50	4
UR542004010104	0.4	0.1	1	0.6	0.8	4	50	4
UR542004010105	0.4	0.1	1	0.6	0.8	5	50	4
UR542004010106	0.4	0.1	1	0.6	0.8	6	50	4
UR542004010202	0.4	0.1	2	0.6	0.8	2	50	4
UR542004010203	0.4	0.1	2	0.6	0.8	3	50	4

EDP No.	Description (mm)							
	D	R	θ	L1	L4	L3	L2	D2
UR5420040050204	0.4	0.05	2	0.6	0.8	4	50	4
UR5420040050205	0.4	0.05	2	0.6	0.8	5	50	4
UR542004010102	0.4	0.1	1	0.6	0.8	2	50	4
UR542004010103	0.4	0.1	1	0.6	0.8	3	50	4
UR542004010104	0.4	0.1	1	0.6	0.8	4	50	4
UR542004010105	0.4	0.1	1	0.6	0.8	5	50	4
UR542004010106	0.4	0.1	1	0.6	0.8	6	50	4
UR542004010202	0.4	0.1	2	0.6	0.8	2	50	4
UR542004010203	0.4	0.1	2	0.6	0.8	3	50	4
UR542004010204	0.4	0.1	2	0.6	0.8	4	50	4
UR542004010205	0.4	0.1	2	0.6	0.8	5	50	4
UR542004010206	0.4	0.1	2	0.6	0.8	6	50	4
UR5420050050104	0.5	0.05	1	0.7	1	4	50	4
UR5420050050106	0.5	0.05	1	0.7	1	6	50	4
UR5420050050108	0.5	0.05	1	0.7	1	8	50	4
UR5420050050110	0.5	0.05	1	0.7	1	10	50	4
UR5420050050204	0.5	0.05	2	0.7	1	4	50	4
UR5420050050206	0.5	0.05	2	0.7	1	6	50	4
UR5420050050208	0.5	0.05	2	0.7	1	8	50	4
UR5420050050210	0.5	0.05	2	0.7	1	10	50	4
UR542005010104	0.5	0.1	1	0.7	1	4	50	4
UR542005010106	0.5	0.1	1	0.7	1	6	50	4
UR542005010108	0.5	0.1	1	0.7	1	8	50	4
UR542005010110	0.5	0.1	1	0.7	1	10	50	4
UR542005010204	0.5	0.1	2	0.7	1	4	50	4
UR542005010206	0.5	0.1	2	0.7	1	6	50	4
UR542005010208	0.5	0.1	2	0.7	1	8	50	4
UR542005010210	0.5	0.1	2	0.7	1	10	50	4
UR542006010104	0.6	0.1	1	0.9	1.2	4	50	4
UR542006010106	0.6	0.1	1	0.9	1.2	6	50	4

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)								EDP No.	Description (mm)							
	D	R	θ	L1	L4	L3	L2	D2		D	R	θ	L1	L4	L3	L2	D2
UR5420020050101	0.2	0.05	1	0.3	0.4	1	40	4	UR542005010210	0.5	0.1	2	0.7	1	10	50	4
UR5420020050102	0.2	0.05	1	0.3	0.4	2	40	4	UR542006010104	0.6	0.1	1	0.9	1.2	4	50	4
UR5420020050103	0.2	0.05	1	0.3	0.4	3	40	4	UR542006010106	0.6	0.1	1	0.9	1.2	6	50	4
UR5420020050201	0.2	0.05	2	0.3	0.4	1	40	4	UR542006010108	0.6	0.1	1	0.9	1.2	8	50	4
UR5420020050202	0.2	0.05	2	0.3	0.4	2	40	4	UR542006010110	0.6	0.1	1	0.9	1.2	10	50	4
UR5420020050203	0.2	0.05	2	0.3	0.4	3	40	4	UR542006010112	0.6	0.1	1	0.9	1.2	12	50	4
UR5420030050102	0.3	0.05	1	0.5	0.6	2	40	4	UR542006010204	0.6	0.1	2	0.9	1.2	4	50	4
UR5420030050103	0.3	0.05	1	0.5	0.6	3	40	4	UR542006010206	0.6	0.1	2	0.9	1.2	6	50	4
UR5420030050104	0.3	0.05	1	0.5	0.6	4	40	4	UR542006010208	0.6	0.1	2	0.9	1.2	8	50	4
UR5420030050105	0.3	0.05	1	0.5	0.6	5	40	4	UR542006010210	0.6	0.1	2	0.9	1.2	10	50	4
UR5420030050202	0.3	0.05	2	0.5	0.6	2	40	4	UR542006010212	0.6	0.1	2	0.9	1.2	12	50	4
UR5420030050203	0.3	0.05	2	0.5	0.6	3	40	4	UR542006020104	0.6	0.2	1	0.9	1.2	4	50	4
UR5420030050204	0.3	0.05	2	0.5	0.6	4	40	4	UR542006020106	0.6	0.2	1	0.9	1.2	6	50	4
UR5420030050205	0.3	0.05	2	0.5	0.6	5	40	4	UR542006020108	0.6	0.2	1	0.9	1.2	8	50	4
UR5420040050102	0.4	0.05	1	0.6	0.8	2	50	4	UR542006020110	0.6	0.2	1	0.9	1.2	10	50	4
UR5420040050103	0.4	0.05	1	0.6	0.8	3	50	4	UR542006020112	0.6	0.2	1	0.9	1.2	12	50	4
UR5420040050104	0.4	0.05	1	0.6	0.8	4	50	4	UR542006020204	0.6	0.2	2	0.9	1.2	4	50	4
UR5420040050105	0.4	0.05	1	0.6	0.8	5	50	4	UR542006020206	0.6	0.2	2	0.9	1.2	6	50	4
UR5420040050106	0.4	0.05	1	0.6	0.8	6	50	4	UR542006020208	0.6	0.2	2	0.9	1.2	8	50	4
UR5420040050202	0.4	0.05	2	0.6	0.8	2	50	4	UR542006020210	0.6	0.2	2	0.9	1.2	10	50	4
UR5420040050203	0.4	0.05	2	0.6	0.8	3	50	4	UR542006020212	0.6	0.2	2	0.9	1.2	12	50	4
UR5420040050204	0.4	0.05	2	0.6	0.8	4	50	4	UR542008010104	0.8	0.1	1	1.2	1.6	4	50	4
UR5420040050205	0.4	0.05	2	0.6	0.8	5	50	4	UR542008010106	0.8	0.1	1	1.2	1.6	6	50	4
UR5420040050206	0.4	0.05	2	0.6	0.8	6	50	4	UR542008010108	0.8	0.1	1	1.2	1.6	8	50	4
UR542004010102	0.4	0.1	1	0.6	0.8	2	50	4	UR542008010110	0.8	0.1	1	1.2	1.6	10	50	4
UR542004010103	0.4	0.1	1	0.6	0.8	3	50	4	UR542008010112	0.8	0.1	1	1.2	1.6	12	50	4
UR542004010104	0.4	0.1	1	0.6	0.8	4	50	4	UR542008010116	0.8	0.1	1	1.2	1.6	16	50	4
UR542004010105	0.4	0.1	1	0.6	0.8	5	50	4	UR542008010204	0.8	0.1	2	1.2	1.6	4	50	4
UR542004010106	0.4	0.1	1	0.6	0.8	6	50	4	UR542008010206	0.8	0.1	2	1.2	1.6	6	50	4
UR542004010202	0.4	0.1	2	0.6	0.8	2	50	4	UR542008010208	0.8	0.1	2	1.2	1.6	8	50	4
UR542004010203	0.4	0.1	2	0.6	0.8	3	50	4	UR542008010210	0.8	0.1	2	1.2	1.6	10	50	4
UR542004010204	0.4	0.1	2	0.6	0.8	4	50	4	UR542008010212	0.8	0.1	2	1.2	1.6	12	50	4
UR542004010205	0.4	0.1	2	0.6	0.8	5	50	4	UR542008010216	0.8	0.1	2	1.2	1.6	16	50	4
UR542004010206	0.4	0.1	2	0.6	0.8	6	50	4	UR542008020104	0.8	0.2	1	1.2	1.6	4	50	4
UR5420050050104	0.5	0.05	1	0.7	1	4	50	4	UR542008020106	0.8	0.2	1	1.2	1.6	6	50	4
UR5420050050106	0.5	0.05	1	0.7	1	6	50	4	UR542008020108	0.8	0.2	1	1.2	1.6	8	50	4
UR5420050050108	0.5	0.05	1	0.7	1	8	50	4	UR542008020110	0.8	0.2	1	1.2	1.6	10	50	4
UR5420050050110	0.5	0.05	1	0.7	1	10	50	4	UR542008020112	0.8	0.2	1	1.2	1.6	12	50	4
UR5420050050204	0.5	0.05	2	0.7	1	4	50	4	UR542008020116	0.8	0.2	1	1.2	1.6	16	50	4
UR5420050050206	0.5	0.05	2	0.7	1	6	50	4	UR542008020204	0.8	0.2	2	1.2	1.6	4	50	4
UR5420050050208	0.5	0.05	2	0.7	1	8	50	4	UR542008020206	0.8	0.2	2	1.2	1.6	6	50	4
UR5420050050210	0.5	0.05	2	0.7	1	10	50	4	UR542008020208	0.8	0.2	2	1.2	1.6	8	50	4
UR542005010104	0.5	0.1	1	0.7	1	4	50	4	UR542008020210	0.8	0.2	2	1.2	1.6	10	50	4
UR542005010106	0.5	0.1	1	0.7	1	6	50	4	UR542008020212	0.8	0.2	2	1.2	1.6	12	50	4
UR542005010108	0.5	0.1	1	0.7	1	8	50	4	UR542008020216	0.8	0.2	2	1.2	1.6	16	50	4
UR542005010110	0.5	0.1	1	0.7	1	10	50	4	UR542010010106	1	0.1	1	1.5	2.5	6	50	4
UR542005010204	0.5	0.1	2	0.7	1	4	50	4	UR542010010108	1	0.1	1	1.5	2.5	8	50	4
UR542005010206	0.5	0.1	2	0.7	1	6	50	4	UR542010010110	1	0.1	1	1.5	2.5	10	50	4
UR542005010208	0.5	0.1	2	0.7	1	8	50	4	UR542010010112	1	0.1	1	1.5	2.5	12	50	4

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)								EDP No.	Description (mm)							
	D	R	θ	L1	L4	L3	L2	D2		D	R	θ	L1	L4	L3	L2	D2
UR542010010116	1	0.1	1	1.5	2.5	16	50	4	UR542012020112	1.2	0.2	1	1.8	3	12	50	4
UR542010010120	1	0.1	1	1.5	2.5	20	50	4	UR542012020116	1.2	0.2	1	1.8	3	16	50	4
UR542010010125	1	0.1	1	1.5	2.5	25	60	4	UR542012020120	1.2	0.2	1	1.8	3	20	50	4
UR542010010130	1	0.1	1	1.5	2.5	30	70	4	UR542012020125	1.2	0.2	1	1.8	3	25	60	4
UR542010010140	1	0.1	1	1.5	2.5	40	80	4	UR542012020130	1.2	0.2	1	1.8	3	30	70	4
UR542010010150	1	0.1	1	1.5	2.5	50	90	6	UR542012020208	1.2	0.2	2	1.8	3	8	50	4
UR542010010206	1	0.1	2	1.5	2.5	6	50	4	UR542012020212	1.2	0.2	2	1.8	3	12	50	4
UR542010010208	1	0.1	2	1.5	2.5	8	50	4	UR542012020216	1.2	0.2	2	1.8	3	16	50	4
UR5420100102010	1	0.1	2	1.5	2.5	10	50	4	UR542012020220	1.2	0.2	2	1.8	3	20	50	4
UR5420100102012	1	0.1	2	1.5	2.5	12	50	4	UR542012020225	1.2	0.2	2	1.8	3	25	60	4
UR5420100102016	1	0.1	2	1.5	2.5	16	50	4	UR542012020230	1.2	0.2	2	1.8	3	30	70	4
UR5420100102020	1	0.1	2	1.5	2.5	20	50	4	UR542015010108	1.5	0.1	1	2.3	3	8	50	4
UR5420100102025	1	0.1	2	1.5	2.5	25	60	4	UR542015010110	1.5	0.1	1	2.3	3	10	50	4
UR5420100102030	1	0.1	2	1.5	2.5	30	70	4	UR542015010112	1.5	0.1	1	2.3	3	12	50	4
UR5420100102040	1	0.1	2	1.5	2.5	40	80	4	UR542015010116	1.5	0.1	1	2.3	3	16	50	4
UR5420100102050	1	0.1	2	1.5	2.5	50	90	6	UR542015010120	1.5	0.1	1	2.3	3	20	50	4
UR542010020106	1	0.2	1	1.5	2.5	6	50	4	UR542015010125	1.5	0.1	1	2.3	3	25	60	4
UR542010020108	1	0.2	1	1.5	2.5	8	50	4	UR542015010130	1.5	0.1	1	2.3	3	30	70	4
UR542010020110	1	0.2	1	1.5	2.5	10	50	4	UR542015010140	1.5	0.1	1	2.3	3	40	80	4
UR542010020112	1	0.2	1	1.5	2.5	12	50	4	UR542015010150	1.5	0.1	1	2.3	3	50	90	4
UR542010020116	1	0.2	1	1.5	2.5	16	50	4	UR542015010208	1.5	0.1	2	2.3	3	8	50	4
UR542010020120	1	0.2	1	1.5	2.5	20	50	4	UR542015010210	1.5	0.1	2	2.3	3	10	50	4
UR542010020125	1	0.2	1	1.5	2.5	25	60	4	UR542015010212	1.5	0.1	2	2.3	3	12	50	4
UR542010020130	1	0.2	1	1.5	2.5	30	70	4	UR542015010216	1.5	0.1	2	2.3	3	16	50	4
UR542010020140	1	0.2	1	1.5	2.5	40	80	4	UR542015010220	1.5	0.1	2	2.3	3	20	50	4
UR542010020150	1	0.2	1	1.5	2.5	50	90	6	UR542015010225	1.5	0.1	2	2.3	3	25	60	4
UR542010020206	1	0.2	2	1.5	2.5	6	50	4	UR542015010230	1.5	0.1	2	2.3	3	30	70	4
UR542010020208	1	0.2	2	1.5	2.5	8	50	4	UR542015010240	1.5	0.1	2	2.3	3	40	80	6
UR5420100202010	1	0.2	2	1.5	2.5	10	50	4	UR542015010250	1.5	0.1	2	2.3	3	50	90	6
UR5420100202012	1	0.2	2	1.5	2.5	12	50	4	UR542015020108	1.5	0.2	1	2.3	3	8	50	4
UR5420100202016	1	0.2	2	1.5	2.5	16	50	4	UR542015020110	1.5	0.2	1	2.3	3	10	50	4
UR5420100202020	1	0.2	2	1.5	2.5	20	50	4	UR542015020112	1.5	0.2	1	2.3	3	12	50	4
UR5420100202025	1	0.2	2	1.5	2.5	25	60	4	UR542015020116	1.5	0.2	1	2.3	3	16	50	4
UR5420100202030	1	0.2	2	1.5	2.5	30	70	4	UR542015020120	1.5	0.2	1	2.3	3	20	50	4
UR5420100202040	1	0.2	2	1.5	2.5	40	80	4	UR542015020125	1.5	0.2	1	2.3	3	25	60	4
UR5420100202050	1	0.2	2	1.5	2.5	50	90	6	UR542015020130	1.5	0.2	1	2.3	3	30	70	4
UR542012010108	1.2	0.1	1	1.8	3	8	50	4	UR542015020140	1.5	0.2	1	2.3	3	40	80	4
UR542012010112	1.2	0.1	1	1.8	3	12	50	4	UR542015020150	1.5	0.2	1	2.3	3	50	90	4
UR542012010116	1.2	0.1	1	1.8	3	16	50	4	UR542015020208	1.5	0.2	2	2.3	3	8	50	4
UR542012010120	1.2	0.1	1	1.8	3	20	50	4	UR542015020210	1.5	0.2	2	2.3	3	10	50	4
UR542012010125	1.2	0.1	1	1.8	3	25	60	4	UR542015020212	1.5	0.2	2	2.3	3	12	50	4
UR542012010130	1.2	0.1	1	1.8	3	30	70	4	UR542015020216	1.5	0.2	2	2.3	3	16	50	4
UR542012010208	1.2	0.1	2	1.8	3	8	50	4	UR542015020220	1.5	0.2	2	2.3	3	20	50	4
UR5420120102012	1.2	0.1	2	1.8	3	12	50	4	UR542015020225	1.5	0.2	2	2.3	3	25	60	4
UR5420120102016	1.2	0.1	2	1.8	3	16	50	4	UR542015020230	1.5	0.2	2	2.3	3	30	70	4
UR5420120102020	1.2	0.1	2	1.8	3	20	50	4	UR542015020240	1.5	0.2	2	2.3	3	40	80	6
UR5420120102025	1.2	0.1	2	1.8	3	25	60	4	UR542015020250	1.5	0.2	2	2.3	3	50	90	6
UR5420120102030	1.2	0.1	2	1.8	3	30	70	4	UR542015030108	1.5	0.3	1	2.3	3	8	50	4
UR542012020108	1.2	0.2	1	1.8	3	8	50	4	UR542015030110	1.5	0.3	1	2.3	3	10	50	4

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRC55	SKD11 HRC55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)								EDP No.	Description (mm)							
	D	R	θ	L1	L4	L3	L2	D2		D	R	θ	L1	L4	L3	L2	D2
UR542015030112	1.5	0.3	1	2.3	3	12	50	4	UR542020020220	2	0.2	2	2	5	20	50	4
UR542015030116	1.5	0.3	1	2.3	3	16	50	4	UR542020020225	2	0.2	2	2	5	25	60	4
UR542015030120	1.5	0.3	1	2.3	3	20	50	4	UR542020020230	2	0.2	2	2	5	30	70	4
UR542015030125	1.5	0.3	1	2.3	3	25	60	4	UR542020020240	2	0.2	2	2	5	40	80	6
UR542015030130	1.5	0.3	1	2.3	3	30	70	4	UR542020020250	2	0.2	2	2	5	50	100	6
UR542015030140	1.5	0.3	1	2.3	3	40	80	4	UR542020020260	2	0.2	2	2	5	60	100	6
UR542015030150	1.5	0.3	1	2.3	3	50	90	4	UR542020020280	2	0.2	2	2	5	80	140	8
UR542015030208	1.5	0.3	2	2.3	3	8	50	4	UR542020030110	2	0.3	1	2	5	10	50	4
UR542015030210	1.5	0.3	2	2.3	3	10	50	4	UR542020030112	2	0.3	1	2	5	12	50	4
UR542015030212	1.5	0.3	2	2.3	3	12	50	4	UR542020030116	2	0.3	1	2	5	16	50	4
UR542015030216	1.5	0.3	2	2.3	3	16	50	4	UR542020030120	2	0.3	1	2	5	20	50	4
UR542015030220	1.5	0.3	2	2.3	3	20	50	4	UR542020030125	2	0.3	1	2	5	25	60	4
UR542015030225	1.5	0.3	2	2.3	3	25	60	4	UR542020030130	2	0.3	1	2	5	30	70	4
UR542015030230	1.5	0.3	2	2.3	3	30	70	4	UR542020030140	2	0.3	1	2	5	40	80	6
UR542015030240	1.5	0.3	2	2.3	3	40	80	6	UR542020030150	2	0.3	1	2	5	50	100	6
UR542015030250	1.5	0.3	2	2.3	3	50	90	6	UR542020030160	2	0.3	1	2	5	60	100	6
UR542020010110	2	0.1	1	2	5	10	50	4	UR542020030180	2	0.3	1	2	5	80	140	6
UR542020010112	2	0.1	1	2	5	12	50	4	UR542020030210	2	0.3	2	2	5	10	50	4
UR542020010116	2	0.1	1	2	5	16	50	4	UR542020030212	2	0.3	2	2	5	12	50	4
UR542020010120	2	0.1	1	2	5	20	50	4	UR542020030216	2	0.3	2	2	5	16	50	4
UR542020010125	2	0.1	1	2	5	25	60	4	UR542020030220	2	0.3	2	2	5	20	50	4
UR542020010130	2	0.1	1	2	5	30	70	4	UR542020030225	2	0.3	2	2	5	25	60	4
UR542020010140	2	0.1	1	2	5	40	80	6	UR542020030230	2	0.3	2	2	5	30	70	4
UR542020010150	2	0.1	1	2	5	50	100	6	UR542020030240	2	0.3	2	2	5	40	80	6
UR542020010160	2	0.1	1	2	5	60	100	6	UR542020030250	2	0.3	2	2	5	50	100	6
UR542020010180	2	0.1	1	2	5	80	140	6	UR542020030260	2	0.3	2	2	5	60	100	6
UR542020010210	2	0.1	2	2	5	10	50	4	UR542020030280	2	0.3	2	2	5	80	140	8
UR542020010212	2	0.1	2	2	5	12	50	4	UR542020050110	2	0.5	1	2	5	10	50	4
UR542020010216	2	0.1	2	2	5	16	50	4	UR542020050112	2	0.5	1	2	5	12	50	4
UR542020010220	2	0.1	2	2	5	20	50	4	UR542020050116	2	0.5	1	2	5	16	50	4
UR542020010225	2	0.1	2	2	5	25	60	4	UR542020050120	2	0.5	1	2	5	20	50	4
UR542020010230	2	0.1	2	2	5	30	70	4	UR542020050125	2	0.5	1	2	5	25	60	4
UR542020010240	2	0.1	2	2	5	40	80	6	UR542020050130	2	0.5	1	2	5	30	70	4
UR542020010250	2	0.1	2	2	5	50	100	6	UR542020050140	2	0.5	1	2	5	40	80	6
UR542020010260	2	0.1	2	2	5	60	100	6	UR542020050150	2	0.5	1	2	5	50	100	6
UR542020010280	2	0.1	2	2	5	80	140	8	UR542020050160	2	0.5	1	2	5	60	100	6
UR542020020110	2	0.2	1	2	5	10	50	4	UR542020050180	2	0.5	1	2	5	80	140	6
UR542020020112	2	0.2	1	2	5	12	50	4	UR542020050210	2	0.5	2	2	5	10	50	4
UR542020020116	2	0.2	1	2	5	16	50	4	UR542020050212	2	0.5	2	2	5	12	50	4
UR542020020120	2	0.2	1	2	5	20	50	4	UR542020050216	2	0.5	2	2	5	16	50	4
UR542020020125	2	0.2	1	2	5	25	60	4	UR542020050220	2	0.5	2	2	5	20	50	4
UR542020020130	2	0.2	1	2	5	30	70	4	UR542020050225	2	0.5	2	2	5	25	60	4
UR542020020140	2	0.2	1	2	5	40	80	6	UR542020050230	2	0.5	2	2	5	30	70	4
UR542020020150	2	0.2	1	2	5	50	100	6	UR542020050240	2	0.5	2	2	5	40	80	6
UR542020020160	2	0.2	1	2	5	60	100	6	UR542020050250	2	0.5	2	2	5	50	100	6
UR542020020180	2	0.2	1	2	5	80	140	6	UR542020050260	2	0.5	2	2	5	60	100	6
UR542020020210	2	0.2	2	2	5	10	50	4	UR542020050280	2	0.5	2	2	5	80	140	8
UR542020020212	2	0.2	2	2	5	12	50	4	UR542030020116	3	0.2	1	4.5	6	16	60	6
UR542020020216	2	0.2	2	2	5	16	50	4	UR542030020120	3	0.2	1	4.5	6	20	65	6

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)								EDP No.	Description (mm)							
	D	R	θ	L1	L4	L3	L2	D2		D	R	θ	L1	L4	L3	L2	D2
UR542030020130	3	0.2	1	4.5	6	30	70	6	UR542030050220	3	0.5	2	4.5	6	20	65	6
UR542030020140	3	0.2	1	4.5	6	40	80	6	UR542030050230	3	0.5	2	4.5	6	30	70	6
UR542030020150	3	0.2	1	4.5	6	50	90	6	UR542030050240	3	0.5	2	4.5	6	40	80	6
UR542030020160	3	0.2	1	4.5	6	60	100	6	UR542030050250	3	0.5	2	4.5	6	50	90	8
UR542030020216	3	0.2	2	4.5	6	16	60	6	UR542030050260	3	0.5	2	4.5	6	60	100	8
UR542030020220	3	0.2	2	4.5	6	20	65	6	UR542030050270	3	0.5	2	4.5	6	70	120	8
UR542030020230	3	0.2	2	4.5	6	30	70	6	UR542040020140	4	0.2	1	6	8	40	90	6
UR542030020240	3	0.2	2	4.5	6	40	80	6	UR542040020150	4	0.2	1	6	8	50	100	6
UR542030020250	3	0.2	2	4.5	6	50	90	8	UR542040020160	4	0.2	1	6	8	60	110	6
UR542030020260	3	0.2	2	4.5	6	60	100	8	UR542040020170	4	0.2	1	6	8	70	120	8
UR542030020270	3	0.2	2	4.5	6	70	120	8	UR542040020240	4	0.2	2	6	8	40	90	8
UR542030030116	3	0.3	1	4.5	6	16	60	6	UR542040020250	4	0.2	2	6	8	50	100	8
UR542030030120	3	0.3	1	4.5	6	20	65	6	UR542040020260	4	0.2	2	6	8	60	110	8
UR542030030130	3	0.3	1	4.5	6	30	70	6	UR542040020270	4	0.2	2	6	8	70	120	10
UR542030030140	3	0.3	1	4.5	6	40	80	6	UR542040030140	4	0.3	1	6	8	40	90	6
UR542030030150	3	0.3	1	4.5	6	50	90	6	UR542040030150	4	0.3	1	6	8	50	100	6
UR542030030160	3	0.3	1	4.5	6	60	100	6	UR542040030160	4	0.3	1	6	8	60	110	6
UR542030030216	3	0.3	2	4.5	6	16	60	6	UR542040030170	4	0.3	1	6	8	70	120	8
UR542030030220	3	0.3	2	4.5	6	20	65	6	UR542040030240	4	0.3	2	6	8	40	90	8
UR542030030230	3	0.3	2	4.5	6	30	70	6	UR542040030250	4	0.3	2	6	8	50	100	8
UR542030030240	3	0.3	2	4.5	6	40	80	6	UR542040030260	4	0.3	2	6	8	60	110	8
UR542030030250	3	0.3	2	4.5	6	50	90	8	UR542040030270	4	0.3	2	6	8	70	120	10
UR542030030260	3	0.3	2	4.5	6	60	100	8	UR542040050140	4	0.5	1	6	8	40	90	6
UR542030030270	3	0.3	2	4.5	6	70	120	8	UR542040050150	4	0.5	1	6	8	50	100	6
UR542030050116	3	0.5	1	4.5	6	16	60	6	UR542040050160	4	0.5	1	6	8	60	110	6
UR542030050120	3	0.5	1	4.5	6	20	65	6	UR542040050170	4	0.5	1	6	8	70	120	8
UR542030050130	3	0.5	1	4.5	6	30	70	6	UR542040050240	4	0.5	2	6	8	40	90	8
UR542030050140	3	0.5	1	4.5	6	40	80	6	UR542040050250	4	0.5	2	6	8	50	100	8
UR542030050150	3	0.5	1	4.5	6	50	90	6	UR542040050260	4	0.5	2	6	8	60	110	8
UR542030050160	3	0.5	1	4.5	6	60	100	6	UR542040050270	4	0.5	2	6	8	70	120	10
UR542030050216	3	0.5	2	4.5	6	16	60	6									

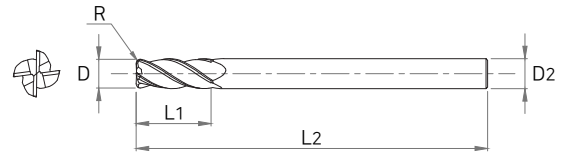
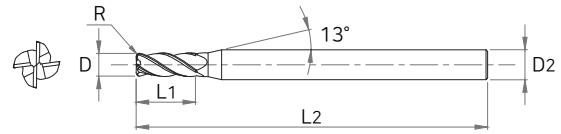
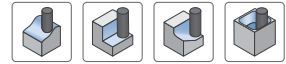
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRC30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRC55	SKD11 HRC55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UR504

4 FLUTES RADIUS ENDMILL



TOLERANCE

D		SHANK DIA.
D3 ~ 20	0 ~ -0.03	h5



EDP No.	Description (mm)				
	D	R	L1	L2	D2
UR50403002	3	0.2	8	60	6
UR50403002S4	3	0.2	8	60	4
UR50403003	3	0.3	8	60	6
UR50403005	3	0.5	8	60	6
UR50403005S4	3	0.5	8	60	4
UR50404002	4	0.2	10	70	6
UR50404002S4	4	0.2	10	70	4
UR50404003	4	0.3	10	70	6
UR50404005	4	0.5	10	70	6
UR50404005S4	4	0.5	10	70	4
UR50404010	4	1	10	70	6
UR50404010S4	4	1	10	70	4
UR50405002	5	0.2	13	90	6
UR50405003	5	0.3	13	90	6
UR50405003060	5	0.3	13	60	6
UR50405005	5	0.5	13	90	6
UR50405005060	5	0.5	13	60	6
UR50405010	5	1	13	90	6
UR50406002	6	0.2	13	90	6
UR50406003	6	0.3	15	90	6
UR50406003060	6	0.3	15	60	6
UR50406005	6	0.5	15	90	6
UR50406005060	6	0.5	15	60	6
UR50406010	6	1	15	90	6
UR50406010060	6	1	15	60	6
UR50408003	8	0.3	20	100	8
UR50408003070	8	0.3	20	70	8
UR50408005	8	0.5	20	100	8
UR50408005070	8	0.5	20	70	8
UR50408010	8	1	20	100	8
UR50408010070	8	1	20	70	8

EDP No.	Description (mm)				
	D	R	L1	L2	D2
UR50408015	8	1.5	20	100	8
UR50408020	8	2	20	100	8
UR50410003	10	0.3	25	100	10
UR50410003075	10	0.3	25	75	10
UR50410005	10	0.5	25	100	10
UR50410005075	10	0.5	25	75	10
UR50410010	10	1	25	100	10
UR50410010075	10	1	25	75	10
UR50410015	10	1.5	25	100	10
UR50410020	10	2	25	100	10
UR50410025	10	2.5	25	100	10
UR50412003	12	0.3	30	110	12
UR50412003080	12	0.3	30	80	12
UR50412005	12	0.5	30	110	12
UR50412005080	12	0.5	30	80	12
UR50412010	12	1	30	110	12
UR50412010080	12	1	30	80	12
UR50412015	12	1.5	30	110	12
UR50412020	12	2	30	110	12
UR50412025	12	2.5	30	110	12
UR50412030	12	3	30	110	12
UR50416005	16	0.5	32	150	16
UR50416005100	16	0.5	32	100	16
UR50416010	16	1	32	150	16
UR50416010100	16	1	32	100	16
UR50416015	16	1.5	32	150	16
UR50416015100	16	1.5	32	100	16
UR50416020	16	2	32	150	16
UR50416020100	16	2	32	100	16
UR50420005	20	0.5	38	150	20
UR50420005100	20	0.5	38	100	20

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UR504

4 FLUTES RADIUS ENDMILL

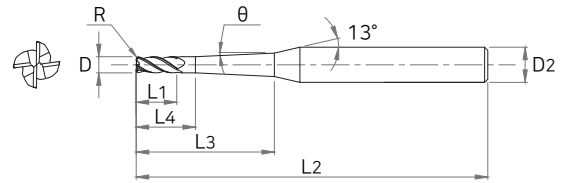
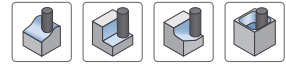
EDP No.	Description (mm)				
	D	R	L1	L2	D2
UR50420010	20	1	38	150	20
UR50420010100	20	1	38	100	20
UR50420015	20	1.5	38	150	20

EDP No.	Description (mm)				
	D	R	L1	L2	D2
UR50420015100	20	1.5	38	100	20
UR50420020	20	2	38	150	20
UR50420020100	20	2	38	100	20

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent



TOLERANCE

D		SHANK DIA.
D1 ~ 4	0 ~ -0.012	h5



EDP No.	Description (mm)							
	D	R	θ	L1	L4	L3	L2	D2
UR544010010106	1	0.1	1	1.5	2.5	6	50	4
UR544010010108	1	0.1	1	1.5	2.5	8	50	4
UR544010010110	1	0.1	1	1.5	2.5	10	50	4
UR544010010112	1	0.1	1	1.5	2.5	12	50	4
UR544010010116	1	0.1	1	1.5	2.5	16	50	4
UR544010010120	1	0.1	1	1.5	2.5	20	50	4
UR544010010125	1	0.1	1	1.5	2.5	25	60	4
UR544010010130	1	0.1	1	1.5	2.5	30	70	4
UR544010010140	1	0.1	1	1.5	2.5	40	80	4
UR544010010150	1	0.1	1	1.5	2.5	50	90	4
UR544010010206	1	0.1	1	1.5	2.5	6	50	4
UR544010010208	1	0.1	2	1.5	2.5	8	50	4
UR544010010210	1	0.1	2	1.5	2.5	10	50	4
UR544010010212	1	0.1	2	1.5	2.5	12	50	4
UR544010010216	1	0.1	2	1.5	2.5	16	50	4
UR544010010220	1	0.1	2	1.5	2.5	20	50	4
UR544010010225	1	0.1	2	1.5	2.5	25	60	4
UR544010010230	1	0.1	2	1.5	2.5	30	70	4
UR544010010240	1	0.1	2	1.5	2.5	40	80	4
UR544010010250	1	0.1	2	1.5	2.5	50	90	6
UR544010020106	1	0.2	2	1.5	2.5	6	50	4
UR544010020108	1	0.2	1	1.5	2.5	8	50	4
UR544010020110	1	0.2	1	1.5	2.5	10	50	4
UR544010020112	1	0.2	1	1.5	2.5	12	50	4
UR544010020116	1	0.2	1	1.5	2.5	16	50	4
UR544010020120	1	0.2	1	1.5	2.5	20	50	4
UR544010020125	1	0.2	1	1.5	2.5	25	60	4
UR544010020130	1	0.2	1	1.5	2.5	30	70	4
UR544010020140	1	0.2	1	1.5	2.5	40	80	4
UR544010020150	1	0.2	1	1.5	2.5	50	90	4
UR544010020206	1	0.2	1	1.5	2.5	6	50	4

EDP No.	Description (mm)							
	D	R	θ	L1	L4	L3	L2	D2
UR544010020208	1	0.2	2	1.5	2.5	8	50	4
UR544010020210	1	0.2	2	1.5	2.5	10	50	4
UR544010020212	1	0.2	2	1.5	2.5	12	50	4
UR544010020216	1	0.2	2	1.5	2.5	16	50	4
UR544010020220	1	0.2	2	1.5	2.5	20	50	4
UR544010020225	1	0.2	2	1.5	2.5	25	60	4
UR544010020230	1	0.2	2	1.5	2.5	30	70	4
UR544010020240	1	0.2	2	1.5	2.5	40	80	4
UR544010020250	1	0.2	2	1.5	2.5	50	90	6
UR544012010108	1.2	0.1	2	1.8	3	8	50	4
UR544012010112	1.2	0.1	1	1.8	3	12	50	4
UR544012010116	1.2	0.1	1	1.8	3	16	50	4
UR544012010120	1.2	0.1	1	1.8	3	20	50	4
UR544012010125	1.2	0.1	1	1.8	3	25	60	4
UR544012010130	1.2	0.1	1	1.8	3	30	70	4
UR544012010208	1.2	0.1	1	1.8	3	8	50	4
UR544012010212	1.2	0.1	2	1.8	3	12	50	4
UR544012010216	1.2	0.1	2	1.8	3	16	50	4
UR544012010220	1.2	0.1	2	1.8	3	20	50	4
UR544012010225	1.2	0.1	2	1.8	3	25	60	4
UR544012010230	1.2	0.1	2	1.8	3	30	70	4
UR544012020108	1.2	0.2	2	1.8	3	8	50	4
UR544012020112	1.2	0.2	1	1.8	3	12	50	4
UR544012020116	1.2	0.2	1	1.8	3	16	50	4
UR544012020120	1.2	0.2	1	1.8	3	20	50	4
UR544012020125	1.2	0.2	1	1.8	3	25	60	4
UR544012020130	1.2	0.2	1	1.8	3	30	70	4
UR544012020208	1.2	0.2	1	1.8	3	8	50	4
UR544012020212	1.2	0.2	2	1.8	3	12	50	4
UR544012020216	1.2	0.2	2	1.8	3	16	50	4
UR544012020220	1.2	0.2	2	1.8	3	20	50	4

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)							
	D	R	θ	L1	L4	L3	L2	D2
UR544012020225	1.2	0.2	2	1.8	3	25	60	4
UR544012020230	1.2	0.2	2	1.8	3	30	70	4
UR544015010108	1.5	0.1	2	2.3	3	8	50	4
UR544015010110	1.5	0.1	1	2.3	3	10	50	4
UR544015010112	1.5	0.1	1	2.3	3	12	50	4
UR544015010116	1.5	0.1	1	2.3	3	16	50	4
UR544015010120	1.5	0.1	1	2.3	3	20	50	4
UR544015010125	1.5	0.1	1	2.3	3	25	60	4
UR544015010130	1.5	0.1	1	2.3	3	30	70	4
UR544015010140	1.5	0.1	1	2.3	3	40	80	4
UR544015010150	1.5	0.1	1	2.3	3	50	90	4
UR544015010208	1.5	0.1	1	2.3	3	8	50	4
UR544015010210	1.5	0.1	2	2.3	3	10	50	4
UR544015010212	1.5	0.1	2	2.3	3	12	50	4
UR544015010216	1.5	0.1	2	2.3	3	16	50	4
UR544015010220	1.5	0.1	2	2.3	3	20	50	4
UR544015010225	1.5	0.1	2	2.3	3	25	60	4
UR544015010230	1.5	0.1	2	2.3	3	30	70	4
UR544015010240	1.5	0.1	2	2.3	3	40	80	6
UR544015010250	1.5	0.1	2	2.3	3	50	90	6
UR544015020108	1.5	0.2	2	2.3	3	8	50	4
UR544015020110	1.5	0.2	1	2.3	3	10	50	4
UR544015020112	1.5	0.2	1	2.3	3	12	50	4
UR544015020116	1.5	0.2	1	2.3	3	16	50	4
UR544015020120	1.5	0.2	1	2.3	3	20	50	4
UR544015020125	1.5	0.2	1	2.3	3	25	60	4
UR544015020130	1.5	0.2	1	2.3	3	30	70	4
UR544015020140	1.5	0.2	1	2.3	3	40	80	4
UR544015020150	1.5	0.2	1	2.3	3	50	90	4
UR544015020208	1.5	0.2	1	2.3	3	8	50	4
UR544015020210	1.5	0.2	2	2.3	3	10	50	4
UR544015020212	1.5	0.2	2	2.3	3	12	50	4
UR544015020216	1.5	0.2	2	2.3	3	16	50	4
UR544015020220	1.5	0.2	2	2.3	3	20	50	4
UR544015020225	1.5	0.2	2	2.3	3	25	60	4
UR544015020230	1.5	0.2	2	2.3	3	30	70	4
UR544015020240	1.5	0.2	2	2.3	3	40	80	6
UR544015020250	1.5	0.2	2	2.3	3	50	90	6
UR544015030108	1.5	0.3	2	2.3	3	8	50	4
UR544015030110	1.5	0.3	1	2.3	3	10	50	4
UR544015030112	1.5	0.3	1	2.3	3	12	50	4
UR544015030116	1.5	0.3	1	2.3	3	16	50	4
UR544015030120	1.5	0.3	1	2.3	3	20	50	4
UR544015030125	1.5	0.3	1	2.3	3	25	60	4
UR544015030130	1.5	0.3	1	2.3	3	30	70	4
UR544015030140	1.5	0.3	1	2.3	3	40	80	4
UR544015030150	1.5	0.3	1	2.3	3	50	90	4
UR544015030208	1.5	0.3	1	2.3	3	8	50	4
UR544015030210	1.5	0.3	2	2.3	3	10	50	4

EDP No.	Description (mm)							
	D	R	θ	L1	L4	L3	L2	D2
UR544015030212	1.5	0.3	2	2.3	3	12	50	4
UR544015030216	1.5	0.3	2	2.3	3	16	50	4
UR544015030220	1.5	0.3	2	2.3	3	20	50	4
UR544015030225	1.5	0.3	2	2.3	3	25	60	4
UR544015030230	1.5	0.3	2	2.3	3	30	70	4
UR544015030240	1.5	0.3	2	2.3	3	40	80	6
UR544015030250	1.5	0.3	2	2.3	3	50	90	6
UR544020010110	2	0.1	2	2	5	10	50	4
UR544020010112	2	0.1	1	2	5	12	50	4
UR544020010116	2	0.1	1	2	5	16	50	4
UR544020010120	2	0.1	1	2	5	20	50	4
UR544020010125	2	0.1	1	2	5	25	60	4
UR544020010130	2	0.1	1	2	5	30	70	4
UR544020010140	2	0.1	1	2	5	40	80	6
UR544020010150	2	0.1	1	2	5	50	100	6
UR544020010160	2	0.1	1	2	5	60	100	6
UR544020010180	2	0.1	1	2	5	80	140	6
UR544020010210	2	0.1	1	2	5	10	50	4
UR544020010212	2	0.1	2	2	5	12	50	4
UR544020010216	2	0.1	2	2	5	16	50	4
UR544020010220	2	0.1	2	2	5	20	50	4
UR544020010225	2	0.1	2	2	5	25	60	4
UR544020010230	2	0.1	2	2	5	30	70	4
UR544020010240	2	0.1	2	2	5	40	80	6
UR544020010250	2	0.1	2	2	5	50	100	6
UR544020010260	2	0.1	2	2	5	60	100	6
UR544020010280	2	0.1	2	2	5	80	140	8
UR544020020110	2	0.2	2	2	5	10	50	4
UR544020020112	2	0.2	1	2	5	12	50	4
UR544020020116	2	0.2	1	2	5	16	50	4
UR544020020120	2	0.2	1	2	5	20	50	4
UR544020020125	2	0.2	1	2	5	25	60	4
UR544020020130	2	0.2	1	2	5	30	70	4
UR544020020140	2	0.2	1	2	5	40	80	6
UR544020020150	2	0.2	1	2	5	50	100	6
UR544020020160	2	0.2	1	2	5	60	100	6
UR544020020180	2	0.2	1	2	5	80	140	6
UR544020020210	2	0.2	1	2	5	10	50	4
UR544020020212	2	0.2	2	2	5	12	50	4
UR544020020216	2	0.2	2	2	5	16	50	4
UR544020020220	2	0.2	2	2	5	20	50	4
UR544020020225	2	0.2	2	2	5	25	60	4
UR544020020230	2	0.2	2	2	5	30	70	4
UR544020020240	2	0.2	2	2	5	40	80	6
UR544020020250	2	0.2	2	2	5	50	100	6
UR544020020260	2	0.2	2	2	5	60	100	6
UR544020020280	2	0.2	2	2	5	80	140	8
UR544020030110	2	0.3	2	2	5	10	50	4
UR544020030112	2	0.3	1	2	5	12	50	4

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)							
	D	R	θ	L1	L4	L3	L2	D2
UR544020030116	2	0.3	1	2	5	16	50	4
UR544020030120	2	0.3	1	2	5	20	50	4
UR544020030125	2	0.3	1	2	5	25	60	4
UR544020030130	2	0.3	1	2	5	30	70	4
UR544020030140	2	0.3	1	2	5	40	80	6
UR544020030150	2	0.3	1	2	5	50	100	6
UR544020030160	2	0.3	1	2	5	60	100	6
UR544020030180	2	0.3	1	2	5	80	140	6
UR544020030210	2	0.3	1	2	5	10	50	4
UR544020030212	2	0.3	2	2	5	12	50	4
UR544020030216	2	0.3	2	2	5	16	50	4
UR544020030220	2	0.3	2	2	5	20	50	4
UR544020030225	2	0.3	2	2	5	25	60	4
UR544020030230	2	0.3	2	2	5	30	70	4
UR544020030240	2	0.3	2	2	5	40	80	6
UR544020030250	2	0.3	2	2	5	50	100	6
UR544020030260	2	0.3	2	2	5	60	100	6
UR544020030280	2	0.3	2	2	5	80	140	8
UR544020050110	2	0.5	2	2	5	10	50	4
UR544020050112	2	0.5	1	2	5	12	50	4
UR544020050116	2	0.5	1	2	5	16	50	4
UR544020050120	2	0.5	1	2	5	20	50	4
UR544020050125	2	0.5	1	2	5	25	60	4
UR544020050130	2	0.5	1	2	5	30	70	4
UR544020050140	2	0.5	1	2	5	40	80	6
UR544020050150	2	0.5	1	2	5	50	100	6
UR544020050160	2	0.5	1	2	5	60	100	6
UR544020050180	2	0.5	1	2	5	80	140	6
UR544020050210	2	0.5	1	2	5	10	50	4
UR544020050212	2	0.5	2	2	5	12	50	4
UR544020050216	2	0.5	2	2	5	16	50	4
UR544020050220	2	0.5	2	2	5	20	50	4
UR544020050225	2	0.5	2	2	5	25	60	4
UR544020050230	2	0.5	2	2	5	30	70	4
UR544020050240	2	0.5	2	2	5	40	80	6
UR544020050250	2	0.5	2	2	5	50	100	6
UR544020050260	2	0.5	2	2	5	60	100	6
UR544020050280	2	0.5	2	2	5	80	140	8
UR544030020116	3	0.2	2	4.5	6	16	60	6
UR544030020120	3	0.2	1	4.5	6	20	65	6
UR544030020130	3	0.2	1	4.5	6	30	70	6
UR544030020140	3	0.2	1	4.5	6	40	80	6
UR544030020150	3	0.2	1	4.5	6	50	90	6
UR544030020160	3	0.2	1	4.5	6	60	100	6
UR544030020216	3	0.2	1	4.5	6	16	60	6
UR544030020220	3	0.2	2	4.5	6	20	65	6
UR544030020230	3	0.2	2	4.5	6	30	70	6
UR544030020240	3	0.2	2	4.5	6	40	80	6
UR544030020250	3	0.2	2	4.5	6	50	90	8

EDP No.	Description (mm)							
	D	R	θ	L1	L4	L3	L2	D2
UR544030020260	3	0.2	2	4.5	6	60	100	8
UR544030020270	3	0.2	2	4.5	6	70	120	8
UR544030030116	3	0.3	2	4.5	6	16	60	6
UR544030030120	3	0.3	1	4.5	6	20	65	6
UR544030030130	3	0.3	1	4.5	6	30	70	6
UR544030030140	3	0.3	1	4.5	6	40	80	6
UR544030030150	3	0.3	1	4.5	6	50	90	6
UR544030030160	3	0.3	1	4.5	6	60	100	6
UR544030030216	3	0.3	1	4.5	6	16	60	6
UR544030030220	3	0.3	2	4.5	6	20	65	6
UR544030030230	3	0.3	2	4.5	6	30	70	6
UR544030030240	3	0.3	2	4.5	6	40	80	6
UR544030030250	3	0.3	2	4.5	6	50	90	8
UR544030030260	3	0.3	2	4.5	6	60	100	8
UR544030030270	3	0.3	2	4.5	6	70	120	8
UR544030050116	3	0.5	2	4.5	6	16	60	6
UR544030050120	3	0.5	1	4.5	6	20	65	6
UR544030050130	3	0.5	1	4.5	6	30	70	6
UR544030050140	3	0.5	1	4.5	6	40	80	6
UR544030050150	3	0.5	1	4.5	6	50	90	6
UR544030050160	3	0.5	1	4.5	6	60	100	6
UR544030050216	3	0.5	1	4.5	6	16	60	6
UR544030050220	3	0.5	2	4.5	6	20	65	6
UR544030050230	3	0.5	2	4.5	6	30	70	6
UR544030050240	3	0.5	2	4.5	6	40	80	6
UR544030050250	3	0.5	2	4.5	6	50	90	8
UR544030050260	3	0.5	2	4.5	6	60	100	8
UR544030050270	3	0.5	2	4.5	6	70	120	8
UR544040020140	4	0.2	2	6	8	40	90	6
UR544040020150	4	0.2	1	6	8	50	100	6
UR544040020160	4	0.2	1	6	8	60	110	6
UR544040020170	4	0.2	1	6	8	70	120	8
UR544040020240	4	0.2	1	6	8	40	90	8
UR544040020250	4	0.2	2	6	8	50	100	8
UR544040020260	4	0.2	2	6	8	60	110	8
UR544040020270	4	0.2	2	6	8	70	120	10
UR544040030140	4	0.3	2	6	8	40	90	6
UR544040030150	4	0.3	1	6	8	50	100	6
UR544040030160	4	0.3	1	6	8	60	110	6
UR544040030170	4	0.3	1	6	8	70	120	8
UR544040030240	4	0.3	1	6	8	40	90	8
UR544040030250	4	0.3	2	6	8	50	100	8
UR544040030260	4	0.3	2	6	8	60	110	8
UR544040030270	4	0.3	2	6	8	70	120	10
UR544040050140	4	0.5	2	6	8	40	90	6
UR544040050150	4	0.5	1	6	8	50	100	6
UR544040050160	4	0.5	1	6	8	60	110	6
UR544040050170	4	0.5	1	6	8	70	120	8
UR544040050240	4	0.5	1	6	8	40	90	8

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRC55	SKD11 HRC55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UR544

4 FLUTES TAPERED NECK RADIUS ENDMILL

EDP No.	Description (mm)							
	D	R	θ	L1	L4	L3	L2	D2
UR544040050250	4	0.5	2	6	8	50	100	8
UR544040050260	4	0.5	2	6	8	60	110	8

EDP No.	Description (mm)							
	D	R	θ	L1	L4	L3	L2	D2
UR544040050270	4	0.5	2	6	8	70	120	10

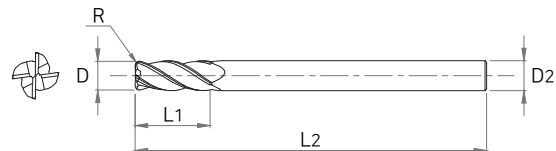
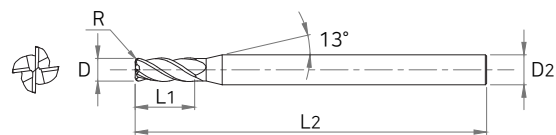
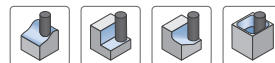
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

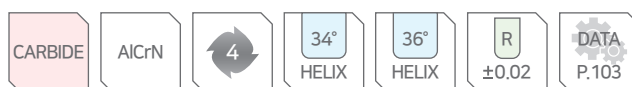
UXR504

4 FLUTES MULTI HELIX RADIUS ENDMILL



TOLERANCE

D		SHANK DIA.
D1 ~ 20	0 ~ -0.03	h5



EDP No.	Description (mm)				
	D	R	L1	L2	D2
UXR504010005	1	0.05	2.5	50	6
UXR50401001	1	0.1	2.5	50	6
UXR50401002	1	0.2	2.5	50	6
UXR50401003	1	0.3	2.5	50	6
UXR504012005	1.2	0.05	3	50	6
UXR50401201	1.2	0.1	3	50	6
UXR50401202	1.2	0.2	3	50	6
UXR50401203	1.2	0.3	3	50	6
UXR504015005	1.5	0.05	4	50	6
UXR50401501	1.5	0.1	4	50	6
UXR50401502	1.5	0.2	4	50	6
UXR50401503	1.5	0.3	4	50	6
UXR50401505	1.5	0.5	4	50	6
UXR50402001	2	0.1	6	50	6
UXR50402002	2	0.2	6	50	6
UXR50402003	2	0.3	6	50	6
UXR50402005	2	0.5	6	50	6
UXR50402501	2.5	0.1	7	60	6
UXR50402502	2.5	0.2	7	60	6
UXR50402503	2.5	0.3	7	60	6
UXR50402505	2.5	0.5	7	60	6
UXR50403001	3	0.1	8	60	6
UXR50403002	3	0.2	8	60	6
UXR50403003	3	0.3	8	60	6
UXR50403005	3	0.5	8	60	6
UXR50403010	3	1	8	60	6
UXR50403501	3.5	0.1	10	70	6
UXR50403502	3.5	0.2	10	70	6
UXR50403503	3.5	0.3	10	70	6
UXR50403505	3.5	0.5	10	70	6
UXR50404001	4	0.1	10	70	6

EDP No.	Description (mm)				
	D	R	L1	L2	D2
UXR50404001100S4	4	0.1	10	100	4
UXR50404001S4	4	0.1	10	70	4
UXR50404002	4	0.2	10	70	6
UXR50404002100S4	4	0.2	10	100	4
UXR50404002S4	4	0.2	10	70	4
UXR50404003	4	0.3	10	70	6
UXR50404003100S4	4	0.3	10	100	4
UXR50404003S4	4	0.3	10	70	4
UXR50404005	4	0.5	10	70	6
UXR50404005100S4	4	0.5	10	100	4
UXR50404005S4	4	0.5	10	70	4
UXR50404010	4	1	10	70	6
UXR50404010100S4	4	1	10	100	4
UXR50404010S4	4	1	10	70	4
UXR50404501	4.5	0.1	11	80	6
UXR50404502	4.5	0.2	11	80	6
UXR50404503	4.5	0.3	11	80	6
UXR50404505	4.5	0.5	11	80	6
UXR50405001	5	0.1	13	90	6
UXR50405002	5	0.2	13	90	6
UXR50405003	5	0.3	13	90	6
UXR50405005	5	0.5	13	90	6
UXR50405010	5	1	13	90	6
UXR50405501	5.5	0.1	13	90	6
UXR50405502	5.5	0.2	13	90	6
UXR50405503	5.5	0.3	13	90	6
UXR50405505	5.5	0.5	13	90	6
UXR50405510	5.5	1	13	90	6
UXR50406001	6	0.1	15	90	6
UXR50406001060	6	0.1	15	60	6
UXR50406002	6	0.2	15	90	6

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)					EDP No.	Description (mm)				
	D	R	L1	L2	D2		D	R	L1	L2	D2
UXR50406002060	6	0.2	15	60	6	UXR50410020	10	2	25	100	10
UXR50406003	6	0.3	15	90	6	UXR50410025	10	2.5	25	100	10
UXR50406005	6	0.5	15	90	6	UXR50410030	10	3	25	100	10
UXR50406005060	6	0.5	15	60	6	UXR50410040	10	4	25	100	10
UXR50406005110	6	0.5	15	110	6	UXR50411002	11	0.2	25	110	12
UXR50406005130	6	0.5	15	130	6	UXR50411003	11	0.3	25	110	12
UXR50406010	6	1	15	90	6	UXR50411005	11	0.5	25	110	12
UXR50406010060	6	1	15	60	6	UXR50411010	11	1	25	110	12
UXR50406010110	6	1	15	110	6	UXR50411020	11	2	25	110	12
UXR50406010130	6	1	15	130	6	UXR50412001	12	0.1	30	110	12
UXR50406015	6	1.5	15	90	6	UXR50412002	12	0.2	30	110	12
UXR50406020	6	2	15	90	6	UXR50412003	12	0.3	30	110	12
UXR50407001	7	0.1	16	90	8	UXR50412003080	12	0.3	30	80	12
UXR50407002	7	0.2	16	90	8	UXR50412005	12	0.5	30	110	12
UXR50407003	7	0.3	16	90	8	UXR50412005080	12	0.5	30	80	12
UXR50407005	7	0.5	16	90	8	UXR50412005130	12	0.5	30	130	12
UXR50407010	7	1	16	90	8	UXR50412005150	12	0.5	30	150	12
UXR50407020	7	2	16	90	8	UXR50412010	12	1	30	110	12
UXR50408001	8	0.1	20	100	8	UXR50412010080	12	1	30	80	12
UXR50408002	8	0.2	20	100	8	UXR50412010130	12	1	30	130	12
UXR50408003	8	0.3	20	100	8	UXR50412010150	12	1	30	150	12
UXR50408003070	8	0.3	20	70	8	UXR50412015	12	1.5	30	110	12
UXR50408005	8	0.5	20	100	8	UXR50412015080	12	1.5	30	80	12
UXR50408005070	8	0.5	20	70	8	UXR50412020	12	2	30	110	12
UXR50408005120	8	0.5	20	120	8	UXR50412020080	12	2	30	80	12
UXR50408005150	8	0.5	20	150	8	UXR50412025	12	2.5	30	110	12
UXR50408010	8	1	20	100	8	UXR50412025080	12	2.5	30	80	12
UXR50408010070	8	1	20	70	8	UXR50412030	12	3	30	110	12
UXR50408010120	8	1	20	120	8	UXR50412030080	12	3	30	80	12
UXR50408010150	8	1	20	150	8	UXR50412040	12	4	30	110	12
UXR50408015	8	1.5	20	100	8	UXR50412050	12	5	30	110	12
UXR50408015070	8	1.5	20	70	8	UXR50414005	14	0.5	35	150	16
UXR50408020	8	2	20	100	8	UXR50414010	14	1	35	150	16
UXR50408020070	8	2	20	70	8	UXR50414020	14	2	35	150	16
UXR50408025	8	2.5	20	100	8	UXR50416005	16	0.5	40	100	16
UXR50408030	8	3	20	100	8	UXR50416005150	16	0.5	40	150	16
UXR50410001	10	0.1	25	100	10	UXR50416010	16	1	40	100	16
UXR50410002	10	0.2	25	100	10	UXR50416010150	16	1	40	150	16
UXR50410003	10	0.3	25	100	10	UXR50416015	16	1.5	40	100	16
UXR50410003075	10	0.3	25	75	10	UXR50416015150	16	1.5	40	150	16
UXR50410005	10	0.5	25	100	10	UXR50416020	16	2	40	100	16
UXR50410005075	10	0.5	25	75	10	UXR50416020150	16	2	40	150	16
UXR50410005130	10	0.5	22	130	10	UXR50416030	16	3	40	100	16
UXR50410005150	10	0.5	22	150	10	UXR50420005	20	0.5	45	110	20
UXR50410010	10	1	25	100	10	UXR50420005150	20	0.5	45	150	20
UXR50410010075	10	1	25	75	10	UXR50420010	20	1	45	110	20
UXR50410010130	10	1	22	130	10	UXR50420010150	20	1	45	150	20
UXR50410010150	10	1	22	150	10	UXR50420015	20	1.5	45	110	20
UXR50410015	10	1.5	25	100	10	UXR50420015150	20	1.5	45	150	20

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UXR504

4 FLUTES MULTI HELIX RADIUS ENDMILL

EDP No.	Description (mm)				
	D	R	L1	L2	D2
UXR50420020	20	2	45	110	20
UXR50420020150	20	2	45	150	20

EDP No.	Description (mm)				
	D	R	L1	L2	D2
UXR50420030	20	3	45	110	20

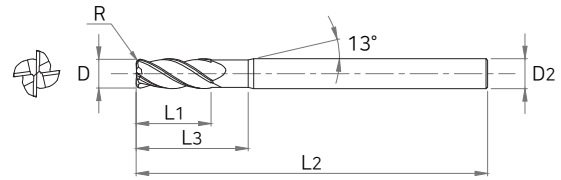
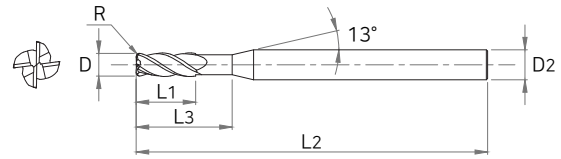
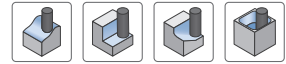
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UXR514

4 FLUTES MULTI HELIX NECK RADIUS ENDMILL



■ TOLERANCE

D		SHANK DIA.
D1 ~ 20	0 ~ -0.03	h5



EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2
UXR51401000503	1	0.05	1.5	3	50	4
UXR51401000504	1	0.05	1.5	4	50	4
UXR51401000506	1	0.05	1.5	6	50	4
UXR51401000508	1	0.05	1.5	8	50	4
UXR51401000510	1	0.05	1.5	10	50	4
UXR51401000512	1	0.05	1.5	12	50	4
UXR51401000514	1	0.05	1.5	14	50	4
UXR51401000516	1	0.05	1.5	16	50	4
UXR51401000520	1	0.05	1.5	20	50	4
UXR5140100103	1	0.1	1.5	3	50	4
UXR5140100104	1	0.1	1.5	4	50	4
UXR5140100106	1	0.1	1.5	6	50	4
UXR5140100108	1	0.1	1.5	8	50	4
UXR5140100110	1	0.1	1.5	10	50	4
UXR5140100112	1	0.1	1.5	12	50	4
UXR5140100114	1	0.1	1.5	14	50	4
UXR5140100116	1	0.1	1.5	16	50	4
UXR5140100120	1	0.1	1.5	20	50	4
UXR5140100203	1	0.2	1.5	3	50	4
UXR5140100204	1	0.2	1.5	4	50	4
UXR5140100206	1	0.2	1.5	6	50	4
UXR5140100208	1	0.2	1.5	8	50	4
UXR5140100210	1	0.2	1.5	10	50	4
UXR5140100212	1	0.2	1.5	12	50	4
UXR5140100214	1	0.2	1.5	14	50	4
UXR5140100216	1	0.2	1.5	16	50	4
UXR5140100220	1	0.2	1.5	20	50	4
UXR5140100303	1	0.3	1.5	3	50	4
UXR5140100304	1	0.3	1.5	4	50	4
UXR5140100306	1	0.3	1.5	6	50	4
UXR5140100308	1	0.3	1.5	8	50	4

EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2
UXR5140100310	1	0.3	1.5	10	50	4
UXR5140100312	1	0.3	1.5	12	50	4
UXR5140100314	1	0.3	1.5	14	50	4
UXR5140100316	1	0.3	1.5	16	50	4
UXR5140100320	1	0.3	1.5	20	50	4
UXR51401200503	1.2	0.05	1.8	3	50	4
UXR51401200504	1.2	0.05	1.8	4	50	4
UXR51401200506	1.2	0.05	1.8	6	50	4
UXR51401200508	1.2	0.05	1.8	8	50	4
UXR51401200510	1.2	0.05	1.8	10	50	4
UXR51401200512	1.2	0.05	1.8	12	50	4
UXR51401200516	1.2	0.05	1.8	16	50	4
UXR51401200520	1.2	0.05	1.8	20	50	4
UXR5140120103	1.2	0.1	1.8	3	50	4
UXR5140120104	1.2	0.1	1.8	4	50	4
UXR5140120106	1.2	0.1	1.8	6	50	4
UXR5140120108	1.2	0.1	1.8	8	50	4
UXR5140120110	1.2	0.1	1.8	10	50	4
UXR5140120112	1.2	0.1	1.8	12	50	4
UXR5140120116	1.2	0.1	1.8	16	50	4
UXR5140120120	1.2	0.1	1.8	20	50	4
UXR5140120203	1.2	0.2	1.8	3	50	4
UXR5140120204	1.2	0.2	1.8	4	50	4
UXR5140120206	1.2	0.2	1.8	6	50	4
UXR5140120208	1.2	0.2	1.8	8	50	4
UXR5140120210	1.2	0.2	1.8	10	50	4
UXR5140120212	1.2	0.2	1.8	12	50	4
UXR5140120216	1.2	0.2	1.8	16	50	4
UXR5140120220	1.2	0.2	1.8	20	50	4
UXR5140120303	1.2	0.3	1.8	3	50	4
UXR5140120304	1.2	0.3	1.8	4	50	4

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)						EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2		D	R	L1	L3	L2	D2
UXR5140120306	1.2	0.3	1.8	6	50	4	UXR5140150510	1.5	0.5	2.3	10	50	4
UXR5140120308	1.2	0.3	1.8	8	50	4	UXR5140150512	1.5	0.5	2.3	12	50	4
UXR5140120310	1.2	0.3	1.8	10	50	4	UXR5140150514	1.5	0.5	2.3	14	50	4
UXR5140120312	1.2	0.3	1.8	12	50	4	UXR5140150516	1.5	0.5	2.3	16	50	4
UXR5140120316	1.2	0.3	1.8	16	50	4	UXR5140150520	1.5	0.5	2.3	20	50	4
UXR5140120320	1.2	0.3	1.8	20	50	4	UXR5140150522	1.5	0.5	2.3	22	60	4
UXR51401500504	1.5	0.05	2.3	4	50	4	UXR5140150526	1.5	0.5	2.3	26	60	4
UXR51401500506	1.5	0.05	2.3	6	50	4	UXR5140200106	2	0.1	3	6	50	4
UXR51401500508	1.5	0.05	2.3	8	50	4	UXR5140200108	2	0.1	3	8	50	4
UXR51401500510	1.5	0.05	2.3	10	50	4	UXR5140200110	2	0.1	3	10	50	4
UXR51401500512	1.5	0.05	2.3	12	50	4	UXR5140200112	2	0.1	3	12	50	4
UXR51401500514	1.5	0.05	2.3	14	50	4	UXR5140200114	2	0.1	3	14	50	4
UXR51401500516	1.5	0.05	2.3	16	50	4	UXR5140200116	2	0.1	3	16	50	4
UXR51401500520	1.5	0.05	2.3	20	50	4	UXR5140200120	2	0.1	3	20	50	4
UXR51401500522	1.5	0.05	2.3	22	60	4	UXR5140200122	2	0.1	3	22	60	4
UXR51401500526	1.5	0.05	2.3	26	60	4	UXR5140200126	2	0.1	3	26	60	4
UXR5140150104	1.5	0.1	2.3	4	50	4	UXR5140200130	2	0.1	3	30	70	4
UXR5140150106	1.5	0.1	2.3	6	50	4	UXR5140200206	2	0.2	3	6	50	4
UXR5140150108	1.5	0.1	2.3	8	50	4	UXR5140200208	2	0.2	3	8	50	4
UXR5140150110	1.5	0.1	2.3	10	50	4	UXR5140200210	2	0.2	3	10	50	4
UXR5140150112	1.5	0.1	2.3	12	50	4	UXR5140200212	2	0.2	3	12	50	4
UXR5140150114	1.5	0.1	2.3	14	50	4	UXR5140200214	2	0.2	3	14	50	4
UXR5140150116	1.5	0.1	2.3	16	50	4	UXR5140200216	2	0.2	3	16	50	4
UXR5140150120	1.5	0.1	2.3	20	50	4	UXR5140200220	2	0.2	3	20	50	4
UXR5140150122	1.5	0.1	2.3	22	60	4	UXR5140200222	2	0.2	3	22	60	4
UXR5140150126	1.5	0.1	2.3	26	60	4	UXR5140200226	2	0.2	3	26	60	4
UXR5140150204	1.5	0.2	2.3	4	50	4	UXR5140200230	2	0.2	3	30	70	4
UXR5140150206	1.5	0.2	2.3	6	50	4	UXR5140200306	2	0.3	3	6	50	4
UXR5140150208	1.5	0.2	2.3	8	50	4	UXR5140200308	2	0.3	3	8	50	4
UXR5140150210	1.5	0.2	2.3	10	50	4	UXR5140200310	2	0.3	3	10	50	4
UXR5140150212	1.5	0.2	2.3	12	50	4	UXR5140200312	2	0.3	3	12	50	4
UXR5140150214	1.5	0.2	2.3	14	50	4	UXR5140200314	2	0.3	3	14	50	4
UXR5140150216	1.5	0.2	2.3	16	50	4	UXR5140200316	2	0.3	3	16	50	4
UXR5140150220	1.5	0.2	2.3	20	50	4	UXR5140200320	2	0.3	3	20	50	4
UXR5140150222	1.5	0.2	2.3	22	60	4	UXR5140200322	2	0.3	3	22	60	4
UXR5140150226	1.5	0.2	2.3	26	60	4	UXR5140200326	2	0.3	3	26	60	4
UXR5140150304	1.5	0.3	2.3	4	50	4	UXR5140200330	2	0.3	3	30	70	4
UXR5140150306	1.5	0.3	2.3	6	50	4	UXR5140200506	2	0.5	3	6	50	4
UXR5140150308	1.5	0.3	2.3	8	50	4	UXR5140200508	2	0.5	3	8	50	4
UXR5140150310	1.5	0.3	2.3	10	50	4	UXR5140200510	2	0.5	3	10	50	4
UXR5140150312	1.5	0.3	2.3	12	50	4	UXR5140200512	2	0.5	3	12	50	4
UXR5140150314	1.5	0.3	2.3	14	50	4	UXR5140200514	2	0.5	3	14	50	4
UXR5140150316	1.5	0.3	2.3	16	50	4	UXR5140200516	2	0.5	3	16	50	4
UXR5140150320	1.5	0.3	2.3	20	50	4	UXR5140200520	2	0.5	3	20	50	4
UXR5140150322	1.5	0.3	2.3	22	60	4	UXR5140200522	2	0.5	3	22	60	4
UXR5140150326	1.5	0.3	2.3	26	60	4	UXR5140200526	2	0.5	3	26	60	4
UXR5140150504	1.5	0.5	2.3	4	50	4	UXR5140200530	2	0.5	3	30	70	4
UXR5140150506	1.5	0.5	2.3	6	50	4	UXR5140250108	2.5	0.1	4	8	50	4
UXR5140150508	1.5	0.5	2.3	8	50	4	UXR5140250110	2.5	0.1	4	10	50	4

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)						EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2		D	R	L1	L3	L2	D2
UXR5140250112	2.5	0.1	4	12	50	4	UXR5140300240	3	0.2	4.5	40	80	6
UXR5140250114	2.5	0.1	4	14	50	4	UXR5140300308	3	0.3	4.5	8	50	6
UXR5140250116	2.5	0.1	4	16	50	4	UXR5140300310	3	0.3	4.5	10	50	6
UXR5140250120	2.5	0.1	4	20	50	4	UXR5140300312	3	0.3	4.5	12	50	6
UXR5140250126	2.5	0.1	4	26	60	4	UXR5140300314	3	0.3	4.5	14	60	6
UXR5140250130	2.5	0.1	4	30	70	4	UXR5140300316	3	0.3	4.5	16	60	6
UXR5140250208	2.5	0.2	4	8	50	4	UXR5140300320	3	0.3	4.5	20	60	6
UXR5140250210	2.5	0.2	4	10	50	4	UXR5140300326	3	0.3	4.5	26	65	6
UXR5140250212	2.5	0.2	4	12	50	4	UXR5140300330	3	0.3	4.5	30	70	6
UXR5140250214	2.5	0.2	4	14	50	4	UXR5140300335	3	0.3	4.5	35	70	6
UXR5140250216	2.5	0.2	4	16	50	4	UXR5140300340	3	0.3	4.5	40	80	6
UXR5140250220	2.5	0.2	4	20	50	4	UXR5140300508	3	0.5	4.5	8	50	6
UXR5140250226	2.5	0.2	4	26	60	4	UXR5140300510	3	0.5	4.5	10	50	6
UXR5140250230	2.5	0.2	4	30	70	4	UXR5140300512	3	0.5	4.5	12	50	6
UXR5140250308	2.5	0.3	4	8	50	4	UXR5140300514	3	0.5	4.5	14	60	6
UXR5140250310	2.5	0.3	4	10	50	4	UXR5140300516	3	0.5	4.5	16	60	6
UXR5140250312	2.5	0.3	4	12	50	4	UXR5140300520	3	0.5	4.5	20	60	6
UXR5140250314	2.5	0.3	4	14	50	4	UXR5140300526	3	0.5	4.5	26	65	6
UXR5140250316	2.5	0.3	4	16	50	4	UXR5140300530	3	0.5	4.5	30	70	6
UXR5140250320	2.5	0.3	4	20	50	4	UXR5140300535	3	0.5	4.5	35	70	6
UXR5140250326	2.5	0.3	4	26	60	4	UXR5140300540	3	0.5	4.5	40	80	6
UXR5140250330	2.5	0.3	4	30	70	4	UXR5140301008	3	1	4.5	8	50	6
UXR5140250508	2.5	0.5	4	8	50	4	UXR5140301010	3	1	4.5	10	50	6
UXR5140250510	2.5	0.5	4	10	50	4	UXR5140301012	3	1	4.5	12	50	6
UXR5140250512	2.5	0.5	4	12	50	4	UXR5140301014	3	1	4.5	14	60	6
UXR5140250514	2.5	0.5	4	14	50	4	UXR5140301016	3	1	4.5	16	60	6
UXR5140250516	2.5	0.5	4	16	50	4	UXR5140301020	3	1	4.5	20	60	6
UXR5140250520	2.5	0.5	4	20	50	4	UXR5140301026	3	1	4.5	26	65	6
UXR5140250526	2.5	0.5	4	26	60	4	UXR5140301030	3	1	4.5	30	70	6
UXR5140250530	2.5	0.5	4	30	70	4	UXR5140301035	3	1	4.5	35	70	6
UXR5140300108	3	0.1	4.5	8	50	6	UXR5140301040	3	1	4.5	40	80	6
UXR5140300110	3	0.1	4.5	10	50	6	UXR5140400110	4	0.1	6	10	50	6
UXR5140300112	3	0.1	4.5	12	50	6	UXR5140400112	4	0.1	6	12	50	6
UXR5140300114	3	0.1	4.5	14	60	6	UXR5140400114	4	0.1	6	14	60	6
UXR5140300116	3	0.1	4.5	16	60	6	UXR5140400116	4	0.1	6	16	60	6
UXR5140300120	3	0.1	4.5	20	60	6	UXR5140400120	4	0.1	6	20	60	6
UXR5140300126	3	0.1	4.5	26	65	6	UXR5140400126	4	0.1	6	26	65	6
UXR5140300130	3	0.1	4.5	30	70	6	UXR5140400130	4	0.1	6	30	70	6
UXR5140300135	3	0.1	4.5	35	70	6	UXR5140400135	4	0.1	6	35	70	6
UXR5140300140	3	0.1	4.5	40	80	6	UXR5140400140	4	0.1	6	40	80	6
UXR5140300208	3	0.2	4.5	8	50	6	UXR5140400145	4	0.1	6	45	90	6
UXR5140300210	3	0.2	4.5	10	50	6	UXR5140400150	4	0.1	6	50	100	6
UXR5140300212	3	0.2	4.5	12	50	6	UXR5140400210	4	0.2	6	10	50	6
UXR5140300214	3	0.2	4.5	14	60	6	UXR5140400212	4	0.2	6	12	50	6
UXR5140300216	3	0.2	4.5	16	60	6	UXR5140400214	4	0.2	6	14	60	6
UXR5140300220	3	0.2	4.5	20	60	6	UXR5140400216	4	0.2	6	16	60	6
UXR5140300226	3	0.2	4.5	26	65	6	UXR5140400220	4	0.2	6	20	60	6
UXR5140300230	3	0.2	4.5	30	70	6	UXR5140400226	4	0.2	6	26	65	6
UXR5140300235	3	0.2	4.5	35	70	6	UXR5140400230	4	0.2	6	30	70	6

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2
UXR5140400235	4	0.2	6	35	70	6
UXR5140400240	4	0.2	6	40	80	6
UXR5140400245	4	0.2	6	45	90	6
UXR5140400250	4	0.2	6	50	100	6
UXR5140400310	4	0.3	6	10	50	6
UXR5140400312	4	0.3	6	12	50	6
UXR5140400314	4	0.3	6	14	60	6
UXR5140400316	4	0.3	6	16	60	6
UXR5140400320	4	0.3	6	20	60	6
UXR5140400326	4	0.3	6	26	65	6
UXR5140400330	4	0.3	6	30	70	6
UXR5140400335	4	0.3	6	35	70	6
UXR5140400340	4	0.3	6	40	80	6
UXR5140400345	4	0.3	6	45	90	6
UXR5140400350	4	0.3	6	50	100	6
UXR5140400510	4	0.5	6	10	50	6
UXR5140400512	4	0.5	6	12	50	6
UXR5140400514	4	0.5	6	14	60	6
UXR5140400516	4	0.5	6	16	60	6
UXR5140400520	4	0.5	6	20	60	6
UXR5140400526	4	0.5	6	26	65	6
UXR5140400530	4	0.5	6	30	70	6
UXR5140400535	4	0.5	6	35	70	6
UXR5140400540	4	0.5	6	40	80	6
UXR5140400545	4	0.5	6	45	90	6
UXR5140400550	4	0.5	6	50	100	6
UXR5140401010	4	1	6	10	50	6
UXR5140401012	4	1	6	12	50	6
UXR5140401014	4	1	6	14	60	6
UXR5140401016	4	1	6	16	60	6
UXR5140401020	4	1	6	20	60	6
UXR5140401026	4	1	6	26	65	6
UXR5140401030	4	1	6	30	70	6
UXR5140401035	4	1	6	35	70	6
UXR5140401040	4	1	6	40	80	6
UXR5140401045	4	1	6	45	90	6
UXR5140401050	4	1	6	50	100	6
UXR51405001	5	0.1	8	15	60	6
UXR51405002	5	0.2	8	15	60	6
UXR51405003	5	0.3	8	15	60	6
UXR51405005	5	0.5	8	15	60	6
UXR51405010	5	1	8	15	60	6
UXR51405015	5	1.5	8	15	60	6
UXR51405020	5	2	8	15	60	6
UXR51406001	6	0.1	9	20	60	6
UXR51406002	6	0.2	9	20	60	6

EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2
UXR51406003	6	0.3	9	20	60	6
UXR51406003090	6	0.3	15	30	90	6
UXR51406005	6	0.5	9	20	60	6
UXR51406005090	6	0.5	15	30	90	6
UXR51406010	6	1	9	20	60	6
UXR51406010090	6	1	15	30	90	6
UXR51406015	6	1.5	9	20	60	6
UXR51406020	6	2	9	20	60	6
UXR51408001	8	0.1	12	25	70	8
UXR51408002	8	0.2	12	25	70	8
UXR51408003	8	0.3	12	25	70	8
UXR51408003100	8	0.3	20	35	100	8
UXR51408005	8	0.5	12	25	70	8
UXR51408005100	8	0.5	20	35	100	8
UXR51408010	8	1	12	25	70	8
UXR51408010100	8	1	20	35	100	8
UXR51408015	8	1.5	12	25	70	8
UXR51408015	8	2	12	25	70	8
UXR51410001	10	0.1	15	30	75	10
UXR51410002	10	0.2	15	30	75	10
UXR51410003	10	0.3	15	30	75	10
UXR51410003100	10	0.3	25	40	100	10
UXR51410005	10	0.5	15	30	75	10
UXR51410005100	10	0.5	25	40	100	10
UXR51410010	10	1	15	30	75	10
UXR51410010100	10	1	25	40	100	10
UXR51410015	10	1.5	15	30	75	10
UXR51410020	10	2	15	30	75	10
UXR51412002	12	0.2	18	32	80	12
UXR51412003	12	0.3	18	32	80	12
UXR51412003110	12	0.3	30	45	110	12
UXR51412005	12	0.5	18	32	80	12
UXR51412005110	12	0.5	30	45	110	12
UXR51412010	12	1	18	32	80	12
UXR51412010110	12	1	30	45	110	12
UXR51412015	12	1.5	18	32	80	12
UXR51412020	12	2	18	32	80	12
UXR51416005	16	0.5	20	35	100	16
UXR51416005150	16	0.5	35	50	150	16
UXR51416010	16	1	20	35	100	16
UXR51416010150	16	1	35	50	150	16
UXR51420005	20	0.5	25	40	100	20
UXR51420005150	20	0.5	40	55	150	20
UXR51420010	20	1	25	40	100	20
UXR51420010150	20	1	40	55	150	20

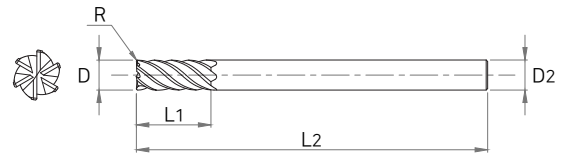
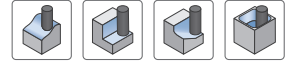
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UR506

6 FLUTES RADIUS ENDMILL



TOLERANCE

D		SHANK DIA.
D6 ~ 20	0 ~ -0.03	h5



EDP No.	Description (mm)				
	D	R	L1	L2	D2
UR50606003	6	0.3	15	90	6
UR50606005	6	0.5	15	90	6
UR50606010	6	1	15	90	6
UR50608003	8	0.3	20	100	8
UR50608005	8	0.5	20	100	8
UR50608010	8	1	20	100	8
UR50610003	10	0.3	25	100	10
UR50610005	10	0.5	25	100	10
UR50610010	10	1	25	100	10
UR50612003	12	0.3	30	110	12
UR50612005	12	0.5	30	110	12
UR50612010	12	1	30	110	12
UR50616005	16	0.5	32	150	16
UR50616010	16	1	32	150	16
UR50616015	16	1.5	32	150	16
UR50616020	16	2	32	150	16
UR50620005	20	0.5	38	150	20
UR50620010	20	1	38	150	20
UR50620015	20	1.5	38	150	20
UR50620020	20	2	38	150	20

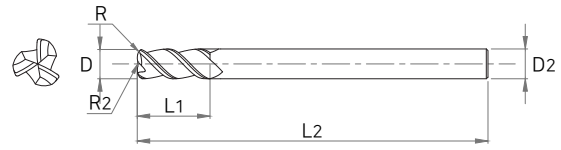
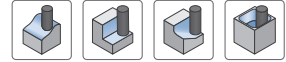
Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UDR503

3 FLUTES DOUBLE RADIUS ENDMILL



■ TOLERANCE

D		SHANK DIA.
D6 ~ 20	0 ~ -0.02	h5

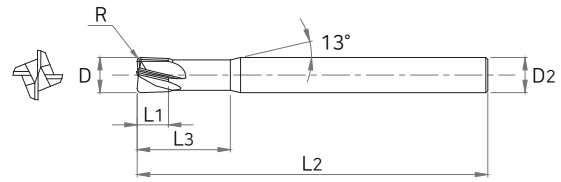
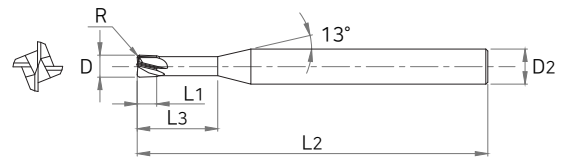
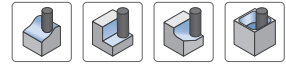


EDP No.	Description (mm)					
	D	R	R2	L1	L2	D2
UDR50306005	6	0.5	6	10	90	6
UDR50306010	6	1	6	10	90	6
UDR50306020	6	2	6	10	90	6
UDR50308005	8	0.5	8	16	100	8
UDR50308010	8	1	8	16	100	8
UDR50308020	8	2	8	16	100	8
UDR50310005	10	0.5	10	20	100	10
UDR50310010	10	1	10	20	100	10
UDR50310020	10	2	10	20	100	10
UDR50312005	12	0.5	12	24	110	12
UDR50312010	12	1	12	24	110	12
UDR50312020	12	2	12	24	110	12
UDR50316005	16	0.5	16	32	150	16
UDR50316010	16	1	16	32	150	16
UDR50320005	20	0.5	20	40	150	20
UDR50320010	20	1	20	40	150	20

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent



■ TOLERANCE

D		SHANK DIA.
D1 ~ 20	0 ~ -0.03	h5



EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2
USPM4010-01	1	0.1	1	2.5	50	6
USPM4010-02	1	0.2	1	2.5	50	6
USPM4010-03	1	0.3	1	2.5	50	6
USPM4015-02	1.5	0.2	1.5	4	50	6
USPM4015-03	1.5	0.3	1.5	4	50	6
USPM4015-05	1.5	0.5	1.5	4	50	6
USPM4020-02	2	0.2	2	6	50	6
USPM4020-03	2	0.3	2	6	50	6
USPM4020-05	2	0.5	2	6	50	6
USPM4030-02	3	0.2	3	8	50	6
USPM4030-03	3	0.3	3	8	50	6
USPM4030-05	3	0.5	3	8	50	6
USPM4040-02	4	0.2	4	10	50	6
USPM4040-03	4	0.3	4	10	50	6
USPM4040-05	4	0.5	4	10	50	6
USPM4040-10	4	1	4	10	50	6
USPM4060-02	6	0.2	6	15	60	6
USPM4060-02L	6	0.2	6	15	90	6
USPM4060-03	6	0.3	6	15	60	6
USPM4060-03L	6	0.3	6	15	90	6
USPM4060-05	6	0.5	6	15	60	6
USPM4060-05L	6	0.5	6	15	90	6
USPM4060-10	6	1	6	15	60	6
USPM4060-10L	6	1	6	15	90	6
USPM4060-20	6	2	6	15	60	6
USPM4060-20L	6	2	6	15	90	6
USPM4080-02	8	0.2	8	20	70	8
USPM4080-02L	8	0.2	8	20	100	8
USPM4080-03	8	0.3	8	20	70	8
USPM4080-03L	8	0.3	8	20	100	8
USPM4080-05	8	0.5	8	20	70	8

EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2
USPM4080-05L	8	0.5	8	20	100	8
USPM4080-10	8	1	8	20	70	8
USPM4080-10L	8	1	8	20	100	8
USPM4080-20	8	2	8	20	70	8
USPM4080-20L	8	2	8	20	100	8
USPM4100-02	10	0.2	10	25	75	10
USPM4100-02L	10	0.2	10	25	100	10
USPM4100-03	10	0.3	10	25	75	10
USPM4100-03L	10	0.3	10	25	100	10
USPM4100-05	10	0.5	10	25	75	10
USPM4100-05L	10	0.5	10	25	100	10
USPM4100-10	10	1	10	25	75	10
USPM4100-10L	10	1	10	25	100	10
USPM4100-15	10	1.5	10	25	75	10
USPM4100-15L	10	1.5	10	25	100	10
USPM4100-20	10	2	10	25	75	10
USPM4100-20L	10	2	10	25	100	10
USPM4120-03	12	0.3	12	30	80	12
USPM4120-03L	12	0.3	12	30	110	12
USPM4120-05	12	0.5	12	30	80	12
USPM4120-05L	12	0.5	12	30	110	12
USPM4120-10	12	1	12	30	80	12
USPM4120-10L	12	1	12	30	110	12
USPM4120-15	12	1.5	12	30	80	12
USPM4120-15L	12	1.5	12	30	110	12
USPM4120-20	12	2	12	30	80	12
USPM4120-20L	12	2	12	30	110	12
USPM4120-30	12	3	12	30	80	12
USPM4120-30L	12	3	12	30	110	12
USPM4160-05	16	0.5	16	35	100	16
USPM4160-05L	16	0.5	16	35	150	16

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2
USPM4160-10	16	1	16	35	100	16
USPM4160-10L	16	1	16	35	150	16
USPM4160-20	16	2	16	35	100	16
USPM4160-20L	16	2	16	35	150	16
USPM4200-05	20	0.5	20	40	100	20

EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2
USPM4200-05L	20	0.5	20	40	150	20
USPM4200-10	20	1	20	40	100	20
USPM4200-10L	20	1	20	40	150	20
USPM4200-20	20	2	20	40	100	20
USPM4200-20L	20	2	20	40	150	20

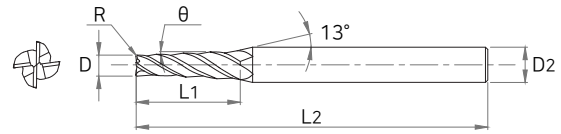
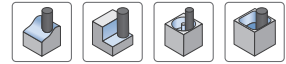
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UTR504

4 FLUTES TAPERED RADIUS ENDMILL



TOLERANCE

D		SHANK DIA.
D0.8 ~ 2.5	0 ~ -0.03	h5



EDP No.	Description (mm)					
	D	R	θ	L1	L2	D2
UTR504008010104	0.8	0.1	1	4	45	4
UTR504008010106	0.8	0.1	1	6	45	4
UTR504008010108	0.8	0.1	1	8	45	4
UTR5040080101504	0.8	0.1	1.5	4	45	4
UTR5040080101506	0.8	0.1	1.5	6	45	4
UTR5040080101508	0.8	0.1	1.5	8	45	4
UTR504008020104	0.8	0.2	1	4	45	4
UTR504008020106	0.8	0.2	1	6	45	4
UTR504008020108	0.8	0.2	1	8	45	4
UTR5040080201504	0.8	0.2	1.5	4	45	4
UTR5040080201506	0.8	0.2	1.5	6	45	4
UTR5040080201508	0.8	0.2	1.5	8	45	4
UTR504010010104	1	0.1	1	4	50	4
UTR504010010106	1	0.1	1	6	50	4
UTR504010010108	1	0.1	1	8	50	4
UTR504010010110	1	0.1	1	10	50	4
UTR504010010112	1	0.1	1	12	50	4
UTR5040100101504	1	0.1	1.5	4	50	4
UTR5040100101506	1	0.1	1.5	6	50	4
UTR5040100101508	1	0.1	1.5	8	50	4
UTR5040100101510	1	0.1	1.5	10	50	4
UTR5040100101512	1	0.1	1.5	12	50	4
UTR504010010204	1	0.1	2	4	50	4
UTR504010010206	1	0.1	2	6	50	4
UTR504010010208	1	0.1	2	8	50	4
UTR504010010210	1	0.1	2	10	50	4
UTR504010010212	1	0.1	2	12	50	4
UTR504010010304	1	0.1	3	4	50	4
UTR504010010306	1	0.1	3	6	50	4
UTR504010010308	1	0.1	3	8	50	4
UTR504010010310	1	0.1	3	10	50	4

EDP No.	Description (mm)					
	D	R	θ	L1	L2	D2
UTR504010010312	1	0.1	3	12	50	4
UTR504010020104	1	0.2	1	4	50	4
UTR504010020106	1	0.2	1	6	50	4
UTR504010020108	1	0.2	1	8	50	4
UTR504010020110	1	0.2	1	10	50	4
UTR504010020112	1	0.2	1	12	50	4
UTR5040100201504	1	0.2	1.5	4	50	4
UTR5040100201506	1	0.2	1.5	6	50	4
UTR5040100201508	1	0.2	1.5	8	50	4
UTR5040100201510	1	0.2	1.5	10	50	4
UTR5040100201512	1	0.2	1.5	12	50	4
UTR504010020204	1	0.2	2	4	50	4
UTR504010020206	1	0.2	2	6	50	4
UTR504010020208	1	0.2	2	8	50	4
UTR504010020210	1	0.2	2	10	50	4
UTR504010020212	1	0.2	2	12	50	4
UTR504010020304	1	0.2	3	4	50	4
UTR504010020306	1	0.2	3	6	50	4
UTR504010020308	1	0.2	3	8	50	4
UTR504010020310	1	0.2	3	10	50	4
UTR504010020312	1	0.2	3	12	50	4
UTR504010030104	1	0.3	1	4	50	4
UTR504010030106	1	0.3	1	6	50	4
UTR504010030108	1	0.3	1	8	50	4
UTR504010030110	1	0.3	1	10	50	4
UTR504010030112	1	0.3	1	12	50	4
UTR5040100301504	1	0.3	1.5	4	50	4
UTR5040100301506	1	0.3	1.5	6	50	4
UTR5040100301508	1	0.3	1.5	8	50	4
UTR5040100301510	1	0.3	1.5	10	50	4
UTR5040100301512	1	0.3	1.5	12	50	4

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)						EDP No.	Description (mm)					
	D	R	θ	L1	L2	D2		D	R	θ	L1	L2	D2
UTR504010030204	1	0.3	2	4	50	4	UTR504015010112	1.5	0.1	1	12	50	4
UTR504010030206	1	0.3	2	6	50	4	UTR504015010116	1.5	0.1	1	16	50	4
UTR504010030208	1	0.3	2	8	50	4	UTR504015010120	1.5	0.1	1	20	60	4
UTR504010030210	1	0.3	2	10	50	4	UTR504015010206	1.5	0.1	2	6	50	4
UTR504010030212	1	0.3	2	12	50	4	UTR504015010208	1.5	0.1	2	8	50	4
UTR504010030304	1	0.3	3	4	50	4	UTR504015010210	1.5	0.1	2	10	50	4
UTR504010030306	1	0.3	3	6	50	4	UTR504015010212	1.5	0.1	2	12	50	4
UTR504010030308	1	0.3	3	8	50	4	UTR504015010216	1.5	0.1	2	16	50	4
UTR504010030310	1	0.3	3	10	50	4	UTR504015010220	1.5	0.1	2	20	60	4
UTR504010030312	1	0.3	3	12	50	4	UTR504015010306	1.5	0.1	3	6	50	4
UTR504012010106	1.2	0.1	1	6	50	4	UTR504015010308	1.5	0.1	3	8	50	4
UTR504012010108	1.2	0.1	1	8	50	4	UTR504015010310	1.5	0.1	3	10	50	4
UTR504012010110	1.2	0.1	1	10	50	4	UTR504015010312	1.5	0.1	3	12	50	4
UTR504012010112	1.2	0.1	1	12	50	4	UTR504015010316	1.5	0.1	3	16	50	4
UTR504012010206	1.2	0.1	2	6	50	4	UTR504015010320	1.5	0.1	3	20	60	4
UTR504012010208	1.2	0.1	2	8	50	4	UTR504015020106	1.5	0.2	1	6	50	4
UTR504012010210	1.2	0.1	2	10	50	4	UTR504015020108	1.5	0.2	1	8	50	4
UTR504012010212	1.2	0.1	2	12	50	4	UTR504015020110	1.5	0.2	1	10	50	4
UTR504012010306	1.2	0.1	3	6	50	4	UTR504015020112	1.5	0.2	1	12	50	4
UTR504012010308	1.2	0.1	3	8	50	4	UTR504015020116	1.5	0.2	1	16	50	4
UTR504012010310	1.2	0.1	3	10	50	4	UTR504015020120	1.5	0.2	1	20	60	4
UTR504012010312	1.2	0.1	3	12	50	4	UTR504015020206	1.5	0.2	2	6	50	4
UTR504012020106	1.2	0.2	1	6	50	4	UTR504015020208	1.5	0.2	2	8	50	4
UTR504012020108	1.2	0.2	1	8	50	4	UTR504015020210	1.5	0.2	2	10	50	4
UTR504012020110	1.2	0.2	1	10	50	4	UTR504015020212	1.5	0.2	2	12	50	4
UTR504012020112	1.2	0.2	1	12	50	4	UTR504015020216	1.5	0.2	2	16	50	4
UTR504012020206	1.2	0.2	2	6	50	4	UTR504015020220	1.5	0.2	2	20	60	4
UTR504012020208	1.2	0.2	2	8	50	4	UTR504015020306	1.5	0.2	3	6	50	4
UTR504012020210	1.2	0.2	2	10	50	4	UTR504015020308	1.5	0.2	3	8	50	4
UTR504012020212	1.2	0.2	2	12	50	4	UTR504015020310	1.5	0.2	3	10	50	4
UTR504012020306	1.2	0.2	3	6	50	4	UTR504015020312	1.5	0.2	3	12	50	4
UTR504012020308	1.2	0.2	3	8	50	4	UTR504015020316	1.5	0.2	3	16	50	4
UTR504012020310	1.2	0.2	3	10	50	4	UTR504015020320	1.5	0.2	3	20	60	4
UTR504012020312	1.2	0.2	3	12	50	4	UTR504015030106	1.5	0.3	1	6	50	4
UTR504012030106	1.2	0.3	1	6	50	4	UTR504015030108	1.5	0.3	1	8	50	4
UTR504012030108	1.2	0.3	1	8	50	4	UTR504015030110	1.5	0.3	1	10	50	4
UTR504012030110	1.2	0.3	1	10	50	4	UTR504015030112	1.5	0.3	1	12	50	4
UTR504012030112	1.2	0.3	1	12	50	4	UTR504015030116	1.5	0.3	1	16	50	4
UTR504012030206	1.2	0.3	2	6	50	4	UTR504015030120	1.5	0.3	1	20	60	4
UTR504012030208	1.2	0.3	2	8	50	4	UTR504015030206	1.5	0.3	2	6	50	4
UTR504012030210	1.2	0.3	2	10	50	4	UTR504015030208	1.5	0.3	2	8	50	4
UTR504012030212	1.2	0.3	2	12	50	4	UTR504015030210	1.5	0.3	2	10	50	4
UTR504012030306	1.2	0.3	3	6	50	4	UTR504015030212	1.5	0.3	2	12	50	4
UTR504012030308	1.2	0.3	3	8	50	4	UTR504015030216	1.5	0.3	2	16	50	4
UTR504012030310	1.2	0.3	3	10	50	4	UTR504015030220	1.5	0.3	2	20	60	4
UTR504012030312	1.2	0.3	3	12	50	4	UTR504015030306	1.5	0.3	3	6	50	4
UTR504015010106	1.5	0.1	1	6	50	4	UTR504015030308	1.5	0.3	3	8	50	4
UTR504015010108	1.5	0.1	1	8	50	4	UTR504015030310	1.5	0.3	3	10	50	4
UTR504015010110	1.5	0.1	1	10	50	4	UTR504015030312	1.5	0.3	3	12	50	4

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)						EDP No.	Description (mm)					
	D	R	θ	L1	L2	D2		D	R	θ	L1	L2	D2
UTR504015030316	1.5	0.3	3	16	50	4	UTR504020030225	2	0.3	2	25	60	4
UTR504015030320	1.5	0.3	3	20	60	4	UTR504020030308	2	0.3	3	8	50	4
UTR504020010108	2	0.1	1	8	50	4	UTR504020030310	2	0.3	3	10	50	4
UTR504020010110	2	0.1	1	10	50	4	UTR504020030312	2	0.3	3	12	50	4
UTR504020010112	2	0.1	1	12	50	4	UTR504020030316	2	0.3	3	16	50	4
UTR504020010116	2	0.1	1	16	50	4	UTR504020030320	2	0.3	3	20	60	6
UTR504020010120	2	0.1	1	20	60	4	UTR504020030325	2	0.3	3	25	60	6
UTR504020010125	2	0.1	1	25	60	4	UTR504025010110	2.5	0.1	1	10	50	4
UTR504020010208	2	0.1	2	8	50	4	UTR504025010112	2.5	0.1	1	12	50	4
UTR504020010210	2	0.1	2	10	50	4	UTR504025010116	2.5	0.1	1	16	50	4
UTR504020010212	2	0.1	2	12	50	4	UTR504025010120	2.5	0.1	1	20	60	4
UTR504020010216	2	0.1	2	16	50	4	UTR504025010125	2.5	0.1	1	25	60	4
UTR504020010220	2	0.1	2	20	60	4	UTR504025010130	2.5	0.1	1	30	60	4
UTR504020010225	2	0.1	2	25	60	4	UTR504025010210	2.5	0.1	2	10	50	4
UTR504020010308	2	0.1	3	8	50	4	UTR504025010212	2.5	0.1	2	12	50	4
UTR504020010310	2	0.1	3	10	50	4	UTR504025010216	2.5	0.1	2	16	50	4
UTR504020010312	2	0.1	3	12	50	4	UTR504025010220	2.5	0.1	2	20	60	4
UTR504020010316	2	0.1	3	16	50	4	UTR504025010225	2.5	0.1	2	25	60	6
UTR504020010320	2	0.1	3	20	60	6	UTR504025010230	2.5	0.1	2	30	60	6
UTR504020010325	2	0.1	3	25	60	6	UTR504025010310	2.5	0.1	3	10	50	4
UTR504020020108	2	0.2	1	8	50	4	UTR504025010312	2.5	0.1	3	12	50	4
UTR504020020110	2	0.2	1	10	50	4	UTR504025010316	2.5	0.1	3	16	50	6
UTR504020020112	2	0.2	1	12	50	4	UTR504025010320	2.5	0.1	3	20	60	6
UTR504020020116	2	0.2	1	16	50	4	UTR504025010325	2.5	0.1	3	25	60	6
UTR504020020120	2	0.2	1	20	60	4	UTR504025010330	2.5	0.1	3	30	60	6
UTR504020020125	2	0.2	1	25	60	4	UTR504025020110	2.5	0.2	1	10	50	4
UTR504020020208	2	0.2	2	8	50	4	UTR504025020112	2.5	0.2	1	12	50	4
UTR504020020210	2	0.2	2	10	50	4	UTR504025020116	2.5	0.2	1	16	50	4
UTR504020020212	2	0.2	2	12	50	4	UTR504025020120	2.5	0.2	1	20	60	4
UTR504020020216	2	0.2	2	16	50	4	UTR504025020125	2.5	0.2	1	25	60	4
UTR504020020220	2	0.2	2	20	60	4	UTR504025020130	2.5	0.2	1	30	60	4
UTR504020020225	2	0.2	2	25	60	4	UTR504025020210	2.5	0.2	2	10	50	4
UTR504020020308	2	0.2	3	8	50	4	UTR504025020212	2.5	0.2	2	12	50	4
UTR504020020310	2	0.2	3	10	50	4	UTR504025020216	2.5	0.2	2	16	50	4
UTR504020020312	2	0.2	3	12	50	4	UTR504025020220	2.5	0.2	2	20	60	4
UTR504020020316	2	0.2	3	16	50	4	UTR504025020225	2.5	0.2	2	25	60	6
UTR504020020320	2	0.2	3	20	60	6	UTR504025020230	2.5	0.2	2	30	60	6
UTR504020020325	2	0.2	3	25	60	6	UTR504025020310	2.5	0.2	3	10	50	4
UTR504020030108	2	0.3	1	8	50	4	UTR504025020312	2.5	0.2	3	12	50	4
UTR504020030110	2	0.3	1	10	50	4	UTR504025020316	2.5	0.2	3	16	50	6
UTR504020030112	2	0.3	1	12	50	4	UTR504025020320	2.5	0.2	3	20	60	6
UTR504020030116	2	0.3	1	16	50	4	UTR504025020325	2.5	0.2	3	25	60	6
UTR504020030120	2	0.3	1	20	60	4	UTR504025020330	2.5	0.2	3	30	60	6
UTR504020030125	2	0.3	1	25	60	4	UTR504025030110	2.5	0.3	1	10	50	4
UTR504020030208	2	0.3	2	8	50	4	UTR504025030112	2.5	0.3	1	12	50	4
UTR504020030210	2	0.3	2	10	50	4	UTR504025030116	2.5	0.3	1	16	50	4
UTR504020030212	2	0.3	2	12	50	4	UTR504025030120	2.5	0.3	1	20	60	4
UTR504020030216	2	0.3	2	16	50	4	UTR504025030125	2.5	0.3	1	25	60	4
UTR504020030220	2	0.3	2	20	60	4	UTR504025030130	2.5	0.3	1	30	60	4

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UTR504

4 FLUTES TAPERED RADIUS ENDMILL

EDP No.	Description (mm)					
	D	R	θ	L1	L2	D2
UTR504025030212	2.5	0.3	2	12	50	4
UTR504025030216	2.5	0.3	2	16	50	4
UTR504025030220	2.5	0.3	2	20	60	4
UTR504025030225	2.5	0.3	2	25	60	6
UTR504025030230	2.5	0.3	2	30	60	6
UTR504025030310	2.5	0.3	3	10	50	4

EDP No.	Description (mm)					
	D	R	θ	L1	L2	D2
UTR504025030312	2.5	0.3	3	12	50	4
UTR504025030316	2.5	0.3	3	16	50	6
UTR504025030320	2.5	0.3	3	20	60	6
UTR504025030325	2.5	0.3	3	25	60	6
UTR504025030330	2.5	0.3	3	30	60	6

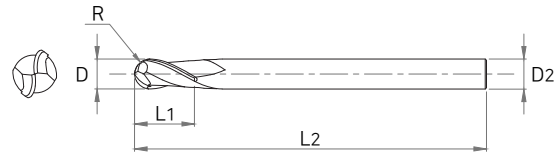
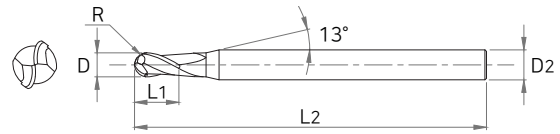
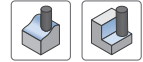
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

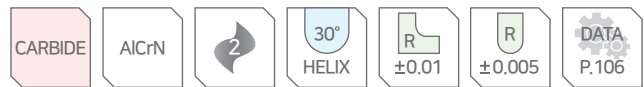
UB502

2 FLUTES BALL ENDMILL



TOLERANCE

D		SHANK DIA.
D0.1 ~ 6	0 ~ -0.012	h5
D6.5 ~ 25	0 ~ -0.015	



EDP No.	Description (mm)				
	D	R	L1	L2	D2
UB502001S	0.1	0.05	0.1	40	4
UB502001	0.1	0.05	0.2	40	4
UB502001S3	0.1	0.05	0.2	40	3
UB5020015S	0.15	0.075	0.15	40	4
UB5020015	0.15	0.075	0.3	40	4
UB5020015S3	0.15	0.075	0.3	40	3
UB502002S	0.2	0.1	0.2	40	4
UB502002	0.2	0.1	0.4	40	4
UB502002S3	0.2	0.1	0.4	40	3
UB502003S	0.3	0.15	0.3	40	4
UB502003	0.3	0.15	0.6	40	4
UB502003S3	0.3	0.15	0.6	40	3
UB502004S	0.4	0.2	0.4	40	4
UB502004	0.4	0.2	0.8	40	4
UB502004S3	0.4	0.2	0.8	40	3
UB502005S	0.5	0.25	0.5	40	4
UB502005	0.5	0.25	1	40	4
UB502005S3	0.5	0.25	1	40	3
UB502006S	0.6	0.3	0.6	40	4
UB502006	0.6	0.3	1.2	40	4
UB502006S3	0.6	0.3	1.2	40	3
UB502007S	0.7	0.35	0.7	40	4
UB502007	0.7	0.35	1.4	40	4
UB502007S3	0.7	0.35	1.4	40	3
UB502008S	0.8	0.4	0.8	40	4
UB502008	0.8	0.4	1.6	40	4
UB502008S3	0.8	0.4	1.6	40	3
UB502009S	0.9	0.45	0.9	40	4
UB502009	0.9	0.45	1.8	40	4
UB502009S3	0.9	0.45	1.8	40	3
UB502010S	1	0.5	1.5	40	6

EDP No.	Description (mm)				
	D	R	L1	L2	D2
UB502010S3	1	0.5	2.5	50	3
UB502010S4	1	0.5	2.5	50	4
UB502010	1	0.5	2.5	50	6
UB502010070	1	0.5	2.5	70	6
UB502010100	1	0.5	2.5	100	6
UB502012S	1.2	0.6	2	40	6
UB502012S3	1.2	0.6	3	50	3
UB502012S4	1.2	0.6	3	50	4
UB502012	1.2	0.6	3	50	6
UB502012070	1.2	0.6	3	70	6
UB502012100	1.2	0.6	3	100	6
UB502015S	1.5	0.75	2.5	40	6
UB502015S3	1.5	0.75	4	50	3
UB502015S4	1.5	0.75	4	50	4
UB502015	1.5	0.75	4	50	6
UB502015070	1.5	0.75	4	70	6
UB502015100	1.5	0.75	4	100	6
UB502020S	2	1	3	40	6
UB502020S3	2	1	5	50	3
UB502020S4	2	1	5	50	4
UB502020	2	1	5	50	6
UB502020080	2	1	5	80	6
UB502020100	2	1	5	100	6
UB502025S	2.5	1.25	4	40	6
UB502025S3	2.5	1.25	6	60	3
UB502025S4	2.5	1.25	6	60	4
UB502025	2.5	1.25	6	60	6
UB502025080	2.5	1.25	6	80	6
UB502025100	2.5	1.25	6	100	6
UB502030S	3	1.5	4.5	40	6
UB502030S3	3	1.5	6	60	3

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRC30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRC55	SKD11 HRC55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)					EDP No.	Description (mm)				
	D	R	L1	L2	D2		D	R	L1	L2	D2
UB502030S4	3	1.5	6	60	4	UB502100060	10	5	15	60	10
UB502030	3	1.5	6	60	6	UB502100080	10	5	15	80	10
UB502030080	3	1.5	6	80	6	UB502100090	10	5	15	90	10
UB502030100	3	1.5	6	100	6	UB502100	10	5	18	100	10
UB502035	3.5	1.75	8	70	6	UB502100130	10	5	18	130	10
UB502040S	4	2	6	50	6	UB502100150	10	5	18	150	10
UB502040S4	4	2	8	70	4	UB502100180	10	5	18	180	10
UB502040	4	2	8	70	6	UB502100200	10	5	18	200	10
UB502040100S4	4	2	8	100	4	UB502110	11	5.5	20	100	12
UB502040120S4	4	2	8	120	4	UB502120S	12	6	18	60	12
UB502040100	4	2	8	100	6	UB502120080	12	6	18	80	12
UB502040120	4	2	8	120	6	UB502120090	12	6	18	90	12
UB502045	4.5	2.25	9	80	6	UB502120100	12	6	18	100	12
UB502050S	5	2.5	7.5	60	6	UB502120	12	6	24	110	12
UB502050	5	2.5	10	80	6	UB502120130	12	6	24	130	12
UB502050S5	5	2.5	10	80	5	UB502120150	12	6	24	150	12
UB502055	5.5	2.75	11	90	6	UB502120180	12	6	24	180	12
UB502060S	6	3	9	50	6	UB502120200	12	6	24	200	12
UB502060060	6	3	9	60	6	UB502130	13	6.5	24	100	12
UB502060080	6	3	9	80	6	UB502140S12	14	7	26	100	12
UB502060	6	3	12	90	6	UB502140	14	7	26	100	14
UB502060110	6	3	12	110	6	UB502140S16	14	7	26	100	16
UB502060130	6	3	12	130	6	UB502150	15	7.5	28	140	16
UB502060150	6	3	12	150	6	UB502160100	16	8	24	100	16
UB502065	6.5	3.25	13	90	8	UB502160130	16	8	24	130	16
UB502070	7	3.5	14	90	8	UB502160	16	8	30	150	16
UB502080S	8	4	12	50	8	UB502160180	16	8	30	180	16
UB502080060	8	4	12	60	8	UB502160200	16	8	30	200	16
UB502080080	8	4	12	80	8	UB502180S16	18	9	34	150	16
UB502080090	8	4	12	90	8	UB502180	18	9	34	150	18
UB502080	8	4	14	100	8	UB502200100	20	10	30	100	20
UB502080130	8	4	14	130	8	UB502200130	20	10	30	130	20
UB502080150	8	4	14	150	8	UB502200	20	10	38	150	20
UB502085	8.5	4.25	16	100	10	UB502200200	20	10	38	200	20
UB502090	9	4.5	18	100	10	UB502250120	25	12.5	50	120	25
UB502100S	10	5	15	50	10	UB502250180	25	12.5	50	180	25

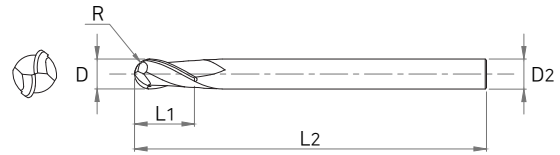
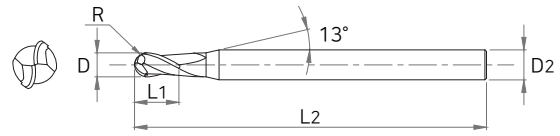
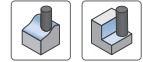
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

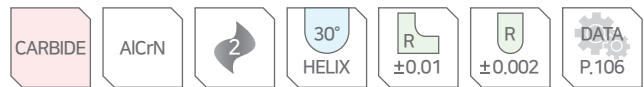
UB502...P

2 FLUTES HIGH PRECISION BALL ENDMILL



TOLERANCE

D		SHANK DIA.
D0.1 ~ 6	0 ~ -0.012	h5
D6.5 ~ 25	0 ~ -0.015	



EDP No.	Description (mm)				
	D	R	L1	L2	D2
UB502001P	0.1	0.05	0.2	40	4
UB5020015P	0.15	0.075	0.3	40	4
UB502002P	0.2	0.1	0.4	40	4
UB502003P	0.3	0.15	0.6	40	4
UB502004P	0.4	0.2	0.8	40	4
UB502005P	0.5	0.25	1	40	4
UB502006P	0.6	0.3	1.2	40	4
UB502007P	0.7	0.35	1.4	40	4
UB502008P	0.8	0.4	1.6	40	4
UB502009P	0.9	0.45	1.8	40	4
UB502010P	1	0.5	2.5	50	6
UB502012P	1.2	0.6	3	50	6
UB502015P	1.5	0.75	4	50	6
UB502020P	2	1	5	50	6
UB502025P	2.5	1.25	6	60	6
UB502030P	3	1.5	6	60	6
UB502040P	4	2	8	70	6
UB502050P	5	2.5	10	80	6
UB502060P	6	3	12	90	6
UB502080P	8	4	14	100	8
UB502100P	10	5	18	100	10
UB502120P	12	6	24	110	12

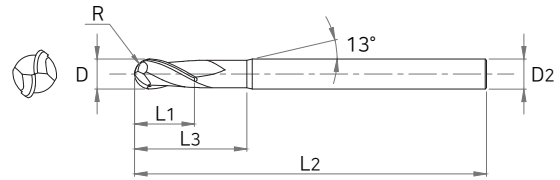
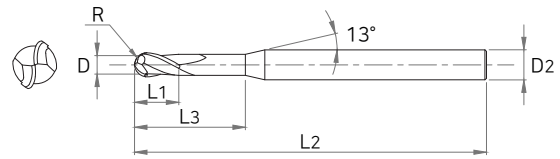
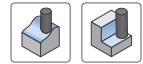
Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

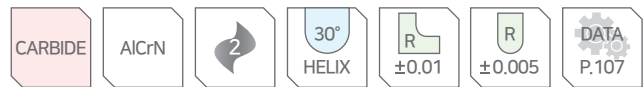
UB512

2 FLUTES LONG NECK BALL ENDMILL



TOLERANCE

D		SHANK DIA.
D0.1 ~ 6	0 ~ -0.012	h5
D8 ~ 12	0 ~ -0.015	



EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2
UB512001002	0.1	0.05	0.1	0.2	40	4
UB512001003	0.1	0.05	0.1	0.3	40	4
UB512001005	0.1	0.05	0.1	0.5	40	4
UB51200101	0.1	0.05	0.1	1	40	4
UB512002005	0.2	0.1	0.2	0.5	40	4
UB51200201	0.2	0.1	0.2	1	40	4
UB512002015	0.2	0.1	0.2	1.5	40	4
UB51200202	0.2	0.1	0.2	2	40	4
UB51200203	0.2	0.1	0.2	3	40	4
UB51200301	0.3	0.15	0.3	1	40	4
UB512003015	0.3	0.15	0.3	1.5	40	4
UB51200302	0.3	0.15	0.3	2	40	4
UB512003025	0.3	0.15	0.3	2.5	40	4
UB51200303	0.3	0.15	0.3	3	40	4
UB51200304	0.3	0.15	0.3	4	40	4
UB51200305	0.3	0.15	0.3	5	40	4
UB51200401	0.4	0.2	0.4	1	40	4
UB512004015	0.4	0.2	0.4	1.5	40	4
UB51200402	0.4	0.2	0.4	2	40	4
UB512004025	0.4	0.2	0.4	2.5	40	4
UB51200403	0.4	0.2	0.4	3	40	4
UB51200404	0.4	0.2	0.4	4	40	4
UB51200405	0.4	0.2	0.4	5	40	4
UB51200406	0.4	0.2	0.4	6	40	4
UB51200408	0.4	0.2	0.4	8	40	4
UB51200410	0.4	0.2	0.4	10	40	4
UB51200501	0.5	0.25	0.5	1	45	4
UB512005015	0.5	0.25	0.5	1.5	45	4
UB51200502	0.5	0.25	0.5	2	45	4
UB512005025	0.5	0.25	0.5	2.5	45	4
UB51200503	0.5	0.25	0.5	3	45	4

EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2
UB51200504	0.5	0.25	0.5	4	45	4
UB51200505	0.5	0.25	0.5	5	45	4
UB51200506	0.5	0.25	0.5	6	45	4
UB51200508	0.5	0.25	0.5	8	45	4
UB51200510	0.5	0.25	0.5	10	45	4
UB51200512	0.5	0.25	0.5	12	45	4
UB51200514	0.5	0.25	0.5	14	45	4
UB51200516	0.5	0.25	0.5	16	45	4
UB51200601	0.6	0.3	0.6	1	45	4
UB51200602	0.6	0.3	0.6	2	45	4
UB51200603	0.6	0.3	0.6	3	45	4
UB51200604	0.6	0.3	0.6	4	45	4
UB51200605	0.6	0.3	0.6	5	45	4
UB51200606	0.6	0.3	0.6	6	45	4
UB51200608	0.6	0.3	0.6	8	45	4
UB51200610	0.6	0.3	0.6	10	45	4
UB51200612	0.6	0.3	0.6	12	45	4
UB51200614	0.6	0.3	0.6	14	45	4
UB51200616	0.6	0.3	0.6	16	45	4
UB51200702	0.7	0.35	0.7	2	45	4
UB51200704	0.7	0.35	0.7	4	45	4
UB51200706	0.7	0.35	0.7	6	45	4
UB51200708	0.7	0.35	0.7	8	45	4
UB51200710	0.7	0.35	0.7	10	45	4
UB51200712	0.7	0.35	0.7	12	45	4
UB51200801	0.8	0.4	0.8	1	45	4
UB51200802	0.8	0.4	0.8	2	45	4
UB51200803	0.8	0.4	0.8	3	45	4
UB51200804	0.8	0.4	0.8	4	45	4
UB51200805	0.8	0.4	0.8	5	45	4
UB51200806	0.8	0.4	0.8	6	45	4

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)						EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2		D	R	L1	L3	L2	D2
UB51200807	0.8	0.4	0.8	7	45	4	UB51201507	1.5	0.75	1.5	7	50	4
UB51200808	0.8	0.4	0.8	8	45	4	UB51201508	1.5	0.75	1.5	8	50	4
UB51200810	0.8	0.4	0.8	10	45	4	UB51201510	1.5	0.75	1.5	10	50	4
UB51200812	0.8	0.4	0.8	12	45	4	UB51201512	1.5	0.75	1.5	12	50	4
UB51200814	0.8	0.4	0.8	14	45	4	UB51201514	1.5	0.75	1.5	14	50	4
UB51200816	0.8	0.4	0.8	16	45	4	UB51201516	1.5	0.75	1.5	16	50	4
UB51200820	0.8	0.4	0.8	20	45	4	UB51201518	1.5	0.75	1.5	18	50	4
UB51200904	0.9	0.45	0.9	4	45	4	UB51201520	1.5	0.75	1.5	20	55	4
UB51200906	0.9	0.45	0.9	6	45	4	UB51201522	1.5	0.75	1.5	22	60	4
UB51200908	0.9	0.45	0.9	8	45	4	UB51201526	1.5	0.75	1.5	26	60	4
UB51200910	0.9	0.45	0.9	10	45	4	UB51201530	1.5	0.75	1.5	30	70	4
UB51201002	1	0.5	1	2	50	4	UB51201535	1.5	0.75	1.5	35	70	4
UB512010025	1	0.5	1	2.5	50	4	UB51201540	1.5	0.75	1.5	40	80	4
UB51201003	1	0.5	1	3	50	4	UB51201604	1.6	0.8	1.6	4	50	4
UB51201004	1	0.5	1	4	50	4	UB51201606	1.6	0.8	1.6	6	50	4
UB51201005	1	0.5	1	5	50	4	UB51201608	1.6	0.8	1.6	8	50	4
UB51201006	1	0.5	1	6	50	4	UB51201610	1.6	0.8	1.6	10	50	4
UB51201007	1	0.5	1	7	50	4	UB51201612	1.6	0.8	1.6	12	50	4
UB51201008	1	0.5	1	8	50	4	UB51201616	1.6	0.8	1.6	16	50	4
UB51201009	1	0.5	1	9	50	4	UB51201620	1.6	0.8	1.6	20	50	4
UB51201010	1	0.5	1	10	50	4	UB51201804	1.8	0.9	1.8	4	50	4
UB51201012	1	0.5	1	12	50	4	UB51201806	1.8	0.9	1.8	6	50	4
UB51201014	1	0.5	1	14	50	4	UB51201808	1.8	0.9	1.8	8	50	4
UB51201016	1	0.5	1	16	50	4	UB51201810	1.8	0.9	1.8	10	50	4
UB51201018	1	0.5	1	18	50	4	UB51201812	1.8	0.9	1.8	12	50	4
UB51201020	1	0.5	1	20	55	4	UB51201816	1.8	0.9	1.8	16	50	4
UB51201022	1	0.5	1	22	60	4	UB51201820	1.8	0.9	1.8	20	50	4
UB51201026	1	0.5	1	26	60	4	UB51202004	2	1	2	4	50	4
UB51201030	1	0.5	1	30	70	4	UB51202005	2	1	2	5	50	4
UB51201040	1	0.5	1	40	80	4	UB51202006	2	1	2	6	50	4
UB51201050	1	0.5	1	50	100	4	UB51202008	2	1	2	8	50	4
UB51201204	1.2	0.6	1.2	4	50	4	UB51202010	2	1	2	10	50	4
UB51201206	1.2	0.6	1.2	6	50	4	UB51202012	2	1	2	12	50	4
UB51201208	1.2	0.6	1.2	8	50	4	UB51202014	2	1	2	14	50	4
UB51201210	1.2	0.6	1.2	10	50	4	UB51202016	2	1	2	16	50	4
UB51201212	1.2	0.6	1.2	12	50	4	UB51202018	2	1	2	18	55	4
UB51201214	1.2	0.6	1.2	14	50	4	UB51202020	2	1	2	20	55	4
UB51201216	1.2	0.6	1.2	16	50	4	UB51202022	2	1	2	22	60	4
UB51201220	1.2	0.6	1.2	20	55	4	UB51202026	2	1	2	26	60	4
UB51201226	1.2	0.6	1.2	26	60	4	UB51202030	2	1	2	30	70	4
UB51201406	1.4	0.7	1.4	6	50	4	UB51202035	2	1	2	35	70	4
UB51201408	1.4	0.7	1.4	8	50	4	UB51202040	2	1	2	40	80	4
UB51201410	1.4	0.7	1.4	10	50	4	UB51202045	2	1	2	45	90	4
UB51201412	1.4	0.7	1.4	12	50	4	UB51202050	2	1	2	50	100	4
UB51201416	1.4	0.7	1.4	16	50	4	UB51202060	2	1	2	60	110	4
UB51201503	1.5	0.75	1.5	3	50	4	UB51202508	2.5	1.25	2.5	8	50	4
UB51201504	1.5	0.75	1.5	4	50	4	UB51202510	2.5	1.25	2.5	10	50	4
UB51201505	1.5	0.75	1.5	5	50	4	UB51202512	2.5	1.25	2.5	12	50	4
UB51201506	1.5	0.75	1.5	6	50	4	UB51202516	2.5	1.25	2.5	16	50	4

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2
UB51202520	2.5	1.25	2.5	20	50	4
UB51202522	2.5	1.25	2.5	22	60	4
UB51202526	2.5	1.25	2.5	26	60	4
UB51202530	2.5	1.25	2.5	30	70	4
UB51202535	2.5	1.25	2.5	35	70	4
UB51202540	2.5	1.25	2.5	40	80	4
UB51202545	2.5	1.25	2.5	45	90	4
UB51202550	2.5	1.25	2.5	50	100	4
UB51203006	3	1.5	3	6	50	6
UB51203008	3	1.5	3	8	50	6
UB51203010	3	1.5	3	10	50	6
UB51203012	3	1.5	3	12	50	6
UB51203014	3	1.5	3	14	60	6
UB51203016	3	1.5	3	16	60	6
UB51203018	3	1.5	3	18	60	6
UB51203020	3	1.5	3	20	60	6
UB51203022	3	1.5	3	22	65	6
UB51203026	3	1.5	3	26	65	6
UB51203030	3	1.5	3	30	70	6
UB51203035	3	1.5	3	35	70	6
UB51203040	3	1.5	3	40	80	6
UB51203045	3	1.5	3	45	90	6
UB51203050	3	1.5	3	50	100	6
UB51203060	3	1.5	3	60	100	6
UB51204008	4	2	4	8	50	6
UB51204010	4	2	4	10	50	6
UB51204012	4	2	4	12	50	6
UB51204014	4	2	4	14	60	6
UB51204016	4	2	4	16	60	6
UB51204018	4	2	4	18	60	6
UB51204020	4	2	4	20	60	6
UB51204022	4	2	4	22	65	6
UB51204026	4	2	4	26	65	6

EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2
UB51204030	4	2	4	30	70	6
UB51204035	4	2	4	35	70	6
UB51204040	4	2	4	40	80	6
UB51204045	4	2	4	45	90	6
UB51204050	4	2	4	50	100	6
UB51204055	4	2	4	55	100	6
UB51204060	4	2	4	60	100	6
UB51205015	5	2.5	6	15	60	6
UB51205020	5	2.5	6	20	60	6
UB51205026	5	2.5	6	26	65	6
UB51205030	5	2.5	6	30	70	6
UB51205035	5	2.5	6	35	70	6
UB51205040	5	2.5	6	40	80	6
UB51205045	5	2.5	6	45	90	6
UB51205050	5	2.5	6	50	100	6
UB51205055	5	2.5	6	55	100	6
UB51205060	5	2.5	6	60	100	6
UB51206020	6	3	8	20	60	6
UB5120602090	6	3	12	20	90	6
UB51206030	6	3	8	30	60	6
UB5120603090	6	3	12	30	90	6
UB51208025	8	4	10	25	70	8
UB51208025100	8	4	14	25	100	8
UB51208035	8	4	10	35	70	8
UB51208035100	8	4	14	35	100	8
UB51210030	10	5	12	30	75	10
UB51210030100	10	5	18	30	100	10
UB51210040	10	5	12	40	75	10
UB51210040100	10	5	18	40	100	10
UB51212032	12	6	14	32	80	12
UB51212032110	12	6	22	32	110	12
UB51212045	12	6	14	45	80	12
UB51212045110	12	6	22	45	110	12

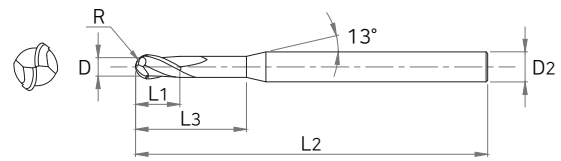
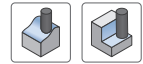
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UB512S6

2 FLUTES LONG NECK BALL ENDMILL (SHANK 6)



TOLERANCE

D		SHANK DIA.
D0.5~2	0~-0.012	h5



EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2
UB51200501S6	0.5	0.25	0.5	1	45	6
UB51200502S6	0.5	0.25	0.5	2	45	6
UB51200504S6	0.5	0.25	0.5	4	45	6
UB51200601S6	0.6	0.3	0.6	1	45	6
UB51200602S6	0.6	0.3	0.6	2	45	6
UB51200603S6	0.6	0.3	0.6	3	45	6
UB51200604S6	0.6	0.3	0.6	4	45	6
UB51200605S6	0.6	0.3	0.6	5	45	6
UB51200606S6	0.6	0.3	0.6	6	45	6
UB51200608S6	0.6	0.3	0.6	8	45	6
UB51200610S6	0.6	0.3	0.6	10	45	6
UB51200612S6	0.6	0.3	0.6	12	45	6
UB51200614S6	0.6	0.3	0.6	14	45	6
UB51200616S6	0.6	0.3	0.6	16	45	6
UB51200801S6	0.8	0.4	0.8	1	45	6
UB51200802S6	0.8	0.4	0.8	2	45	6
UB51200803S6	0.8	0.4	0.8	3	45	6
UB51200804S6	0.8	0.4	0.8	4	45	6
UB51200805S6	0.8	0.4	0.8	5	45	6
UB51200806S6	0.8	0.4	0.8	6	45	6
UB51200808S6	0.8	0.4	0.8	8	45	6
UB51200810S6	0.8	0.4	0.8	10	45	6
UB51200812S6	0.8	0.4	0.8	12	45	6
UB51200814S6	0.8	0.4	0.8	14	45	6
UB51200816S6	0.8	0.4	0.8	16	45	6
UB51200820S6	0.8	0.4	0.8	20	55	6
UB51201002S6	1	0.5	1	2	50	6
UB51201003S6	1	0.5	1	3	50	6
UB51201004S6	1	0.5	1	4	50	6
UB51201005S6	1	0.5	1	5	50	6
UB51201006S6	1	0.5	1	6	50	6

EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2
UB51201007S6	1	0.5	1	7	50	6
UB51201008S6	1	0.5	1	8	50	6
UB51201009S6	1	0.5	1	9	50	6
UB51201010S6	1	0.5	1	10	50	6
UB51201012S6	1	0.5	1	12	50	6
UB51201014S6	1	0.5	1	14	50	6
UB51201016S6	1	0.5	1	16	50	6
UB51201018S6	1	0.5	1	18	50	6
UB51201020S6	1	0.5	1	20	55	6
UB51201022S6	1	0.5	1	22	60	6
UB51201026S6	1	0.5	1	26	60	6
UB51201030S6	1	0.5	1	30	70	6
UB51201503S6	1.5	0.75	1.5	3	50	6
UB51201504S6	1.5	0.75	1.5	4	50	6
UB51201506S6	1.5	0.75	1.5	6	50	6
UB51201508S6	1.5	0.75	1.5	8	50	6
UB51201510S6	1.5	0.75	1.5	10	50	6
UB51201512S6	1.5	0.75	1.5	12	50	6
UB51201514S6	1.5	0.75	1.5	14	50	6
UB51201516S6	1.5	0.75	1.5	16	50	6
UB51201518S6	1.5	0.75	1.5	18	50	6
UB51201520S6	1.5	0.75	1.5	20	55	6
UB51201522S6	1.5	0.75	1.5	22	60	6
UB51201526S6	1.5	0.75	1.5	26	60	6
UB51201530S6	1.5	0.75	1.5	30	70	6
UB51201535S6	1.5	0.75	1.5	35	70	6
UB51201540S6	1.5	0.75	1.5	40	80	6
UB51202004S6	2	1	2	4	50	6
UB51202006S6	2	1	2	6	50	6
UB51202008S6	2	1	2	8	50	6
UB51202010S6	2	1	2	10	50	6

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UB512S6

2 FLUTES LONG NECK BALL ENDMILL (SHANK 6)

EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2
UB51202012S6	2	1	2	12	50	6
UB51202014S6	2	1	2	14	50	6
UB51202016S6	2	1	2	16	50	6
UB51202018S6	2	1	2	18	50	6
UB51202020S6	2	1	2	20	50	6
UB51202022S6	2	1	2	22	60	6

EDP No.	Description (mm)					
	D	R	L1	L3	L2	D2
UB51202026S6	2	1	2	26	60	6
UB51202030S6	2	1	2	30	70	6
UB51202035S6	2	1	2	35	70	6
UB51202040S6	2	1	2	40	80	6
UB51202045S6	2	1	2	45	90	6
UB51202050S6	2	1	2	50	100	6

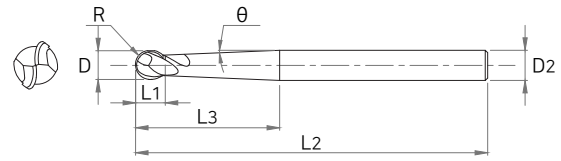
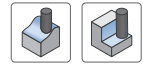
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UB532

2 FLUTES LOLLIPOP STYLE BALL ENDMILL



■ TOLERANCE

D		SHANK DIA.
D3 ~ 12	0 ~ -0.03	h5

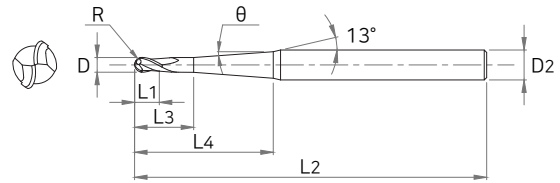
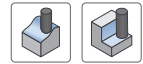


EDP No.	Description (mm)						
	D	R	θ	L1	L3	L2	D2
UB532030	3	1.5	1.5	2.3	16	80	6
UB532040	4	2	1.5	3.1	20	80	6
UB532050	5	2.5	1.5	3.9	25	80	6
UB532060	6	3	1.5	4.9	30	100	6
UB532080	8	4	1.5	6.3	35	100	8
UB532100	10	5	1.5	7.9	40	100	10
UB532120	12	6	1.5	9.5	50	100	12

■ Applicable Working Material

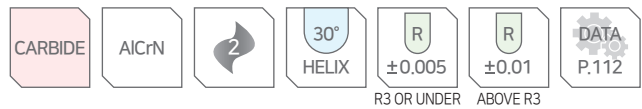
Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent



TOLERANCE

D		SHANK DIA.
D0.1 ~ 6	0 ~ -0.012	h5
D8 ~ 12	0 ~ -0.015	



EDP No.	Description (mm)							
	D	R	θ	L1	L3	L4	L2	D2
UB54200105005	0.1	0.05	0.5	0.1	-	0.5	40	4
UB5420010501	0.1	0.05	0.5	0.1	-	1	40	4
UB54200110005	0.1	0.05	1	0.1	-	0.5	40	4
UB5420011001	0.1	0.05	1	0.1	-	1	40	4
UB54200115005	0.1	0.05	1.5	0.1	-	0.5	40	4
UB5420011501	0.1	0.05	1.5	0.1	-	1	40	4
UB54200120005	0.1	0.05	2	0.1	-	0.5	40	4
UB5420012001	0.1	0.05	2	0.1	-	1	40	4
UB54200130005	0.1	0.05	3	0.1	-	0.5	40	4
UB5420013001	0.1	0.05	3	0.1	-	1	40	4
UB5420020501	0.2	0.1	0.5	0.2	0.4	1	40	4
UB5420020502	0.2	0.1	0.5	0.2	0.4	2	40	4
UB5420020503	0.2	0.1	0.5	0.2	0.4	3	40	4
UB5420021001	0.2	0.1	1	0.2	0.4	1	40	4
UB5420021002	0.2	0.1	1	0.2	0.4	2	40	4
UB5420021003	0.2	0.1	1	0.2	0.4	3	40	4
UB5420021501	0.2	0.1	1.5	0.2	0.4	1	40	4
UB5420021502	0.2	0.1	1.5	0.2	0.4	2	40	4
UB5420021503	0.2	0.1	1.5	0.2	0.4	3	40	4
UB5420022001	0.2	0.1	2	0.2	0.4	1	40	4
UB5420022002	0.2	0.1	2	0.2	0.4	2	40	4
UB5420022003	0.2	0.1	2	0.2	0.4	3	40	4
UB5420023001	0.2	0.1	3	0.2	0.4	1	40	4
UB5420023002	0.2	0.1	3	0.2	0.4	2	40	4
UB5420023003	0.2	0.1	3	0.2	0.4	3	40	4
UB5420025002	0.2	0.1	5	0.2	0.4	2	40	4
UB5420025003	0.2	0.1	5	0.2	0.4	3	40	4
UB5420030502	0.3	0.15	0.5	0.3	0.6	2	40	4
UB5420030503	0.3	0.15	0.5	0.3	0.6	3	40	4
UB5420030504	0.3	0.15	0.5	0.3	0.6	4	40	4
UB5420030505	0.3	0.15	0.5	0.3	0.6	5	40	4

EDP No.	Description (mm)							
	D	R	θ	L1	L3	L4	L2	D2
UB5420031002	0.3	0.15	1	0.3	0.6	2	40	4
UB5420031003	0.3	0.15	1	0.3	0.6	3	40	4
UB5420031004	0.3	0.15	1	0.3	0.6	4	40	4
UB5420031005	0.3	0.15	1	0.3	0.6	5	40	4
UB5420031502	0.3	0.15	1.5	0.3	0.6	2	40	4
UB5420031503	0.3	0.15	1.5	0.3	0.6	3	40	4
UB5420031504	0.3	0.15	1.5	0.3	0.6	4	40	4
UB5420031505	0.3	0.15	1.5	0.3	0.6	5	40	4
UB5420032002	0.3	0.15	2	0.3	0.6	2	40	4
UB5420032003	0.3	0.15	2	0.3	0.6	3	40	4
UB5420032004	0.3	0.15	2	0.3	0.6	4	40	4
UB5420032005	0.3	0.15	2	0.3	0.6	5	40	4
UB5420033002	0.3	0.15	3	0.3	0.6	2	40	4
UB5420033003	0.3	0.15	3	0.3	0.6	3	40	4
UB5420033004	0.3	0.15	3	0.3	0.6	4	40	4
UB5420033005	0.3	0.15	3	0.3	0.6	5	40	4
UB5420035005	0.3	0.15	5	0.3	0.6	5	40	4
UB5420040502	0.4	0.2	0.5	0.4	0.8	2	50	4
UB5420040503	0.4	0.2	0.5	0.4	0.8	3	50	4
UB5420040504	0.4	0.2	0.5	0.4	0.8	4	50	4
UB5420040505	0.4	0.2	0.5	0.4	0.8	5	50	4
UB5420040506	0.4	0.2	0.5	0.4	0.8	6	50	4
UB5420041002	0.4	0.2	1	0.4	0.8	2	50	4
UB5420041003	0.4	0.2	1	0.4	0.8	3	50	4
UB5420041004	0.4	0.2	1	0.4	0.8	4	50	4
UB5420041005	0.4	0.2	1	0.4	0.8	5	50	4
UB5420041006	0.4	0.2	1	0.4	0.8	6	50	4
UB5420041502	0.4	0.2	1.5	0.4	0.8	2	50	4
UB5420041503	0.4	0.2	1.5	0.4	0.8	3	50	4
UB5420041504	0.4	0.2	1.5	0.4	0.8	4	50	4
UB5420041505	0.4	0.2	1.5	0.4	0.8	5	50	4

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)							
	D	R	θ	L1	L3	L4	L2	D2
UB5420041506	0.4	0.2	1.5	0.4	0.8	6	50	4
UB5420042002	0.4	0.2	2	0.4	0.8	2	50	4
UB5420042003	0.4	0.2	2	0.4	0.8	3	50	4
UB5420042004	0.4	0.2	2	0.4	0.8	4	50	4
UB5420042005	0.4	0.2	2	0.4	0.8	5	50	4
UB5420042006	0.4	0.2	2	0.4	0.8	6	50	4
UB5420043002	0.4	0.2	3	0.4	0.8	2	50	4
UB5420043003	0.4	0.2	3	0.4	0.8	3	50	4
UB5420043004	0.4	0.2	3	0.4	0.8	4	50	4
UB5420043005	0.4	0.2	3	0.4	0.8	5	50	4
UB5420043006	0.4	0.2	3	0.4	0.8	6	50	4
UB5420045004	0.4	0.2	5	0.4	0.8	4	50	4
UB5420045006	0.4	0.2	5	0.4	0.8	6	50	4
UB5420050504	0.5	0.25	0.5	0.5	1	4	50	4
UB5420050506	0.5	0.25	0.5	0.5	1	6	50	4
UB5420050508	0.5	0.25	0.5	0.5	1	8	50	4
UB5420050510	0.5	0.25	0.5	0.5	1	10	50	4
UB5420051004	0.5	0.25	1	0.5	1	4	50	4
UB5420051006	0.5	0.25	1	0.5	1	6	50	4
UB5420051008	0.5	0.25	1	0.5	1	8	50	4
UB5420051010	0.5	0.25	1	0.5	1	10	50	4
UB5420051504	0.5	0.25	1.5	0.5	1	4	50	4
UB5420051506	0.5	0.25	1.5	0.5	1	6	50	4
UB5420051508	0.5	0.25	1.5	0.5	1	8	50	4
UB5420051510	0.5	0.25	1.5	0.5	1	10	50	4
UB5420052004	0.5	0.25	2	0.5	1	4	50	4
UB5420052006	0.5	0.25	2	0.5	1	6	50	4
UB5420052008	0.5	0.25	2	0.5	1	8	50	4
UB5420052010	0.5	0.25	2	0.5	1	10	50	4
UB5420053004	0.5	0.25	3	0.5	1	4	50	4
UB5420053006	0.5	0.25	3	0.5	1	6	50	4
UB5420053008	0.5	0.25	3	0.5	1	8	50	4
UB5420053010	0.5	0.25	3	0.5	1	10	50	4
UB5420060504	0.6	0.3	0.5	0.6	1.2	4	50	4
UB5420060506	0.6	0.3	0.5	0.6	1.2	6	50	4
UB5420060508	0.6	0.3	0.5	0.6	1.2	8	50	4
UB5420060510	0.6	0.3	0.5	0.6	1.2	10	50	4
UB5420060512	0.6	0.3	0.5	0.6	1.2	12	50	4
UB5420061004	0.6	0.3	1	0.6	1.2	4	50	4
UB5420061006	0.6	0.3	1	0.6	1.2	6	50	4
UB5420061008	0.6	0.3	1	0.6	1.2	8	50	4
UB5420061010	0.6	0.3	1	0.6	1.2	10	50	4
UB5420061012	0.6	0.3	1	0.6	1.2	12	50	4
UB5420061504	0.6	0.3	1.5	0.6	1.2	4	50	4
UB5420061506	0.6	0.3	1.5	0.6	1.2	6	50	4
UB5420061508	0.6	0.3	1.5	0.6	1.2	8	50	4
UB5420061510	0.6	0.3	1.5	0.6	1.2	10	50	4
UB5420061512	0.6	0.3	1.5	0.6	1.2	12	50	4
UB5420062004	0.6	0.3	2	0.6	1.2	4	50	4

EDP No.	Description (mm)							
	D	R	θ	L1	L3	L4	L2	D2
UB5420062006	0.6	0.3	2	0.6	1.2	6	50	4
UB5420062008	0.6	0.3	2	0.6	1.2	8	50	4
UB5420062010	0.6	0.3	2	0.6	1.2	10	50	4
UB5420062012	0.6	0.3	2	0.6	1.2	12	50	4
UB5420063004	0.6	0.3	3	0.6	1.2	4	50	4
UB5420063006	0.6	0.3	3	0.6	1.2	6	50	4
UB5420063008	0.6	0.3	3	0.6	1.2	8	50	4
UB5420063010	0.6	0.3	3	0.6	1.2	10	50	4
UB5420063012	0.6	0.3	3	0.6	1.2	12	50	4
UB5420080504	0.8	0.4	0.5	0.8	1.6	4	50	4
UB5420080506	0.8	0.4	0.5	0.8	1.6	6	50	4
UB5420080508	0.8	0.4	0.5	0.8	1.6	8	50	4
UB5420080510	0.8	0.4	0.5	0.8	1.6	10	50	4
UB5420080512	0.8	0.4	0.5	0.8	1.6	12	50	4
UB5420080516	0.8	0.4	0.5	0.8	1.6	16	50	4
UB5420081004	0.8	0.4	1	0.8	1.6	4	50	4
UB5420081006	0.8	0.4	1	0.8	1.6	6	50	4
UB5420081008	0.8	0.4	1	0.8	1.6	8	50	4
UB5420081010	0.8	0.4	1	0.8	1.6	10	50	4
UB5420081012	0.8	0.4	1	0.8	1.6	12	50	4
UB5420081016	0.8	0.4	1	0.8	1.6	16	50	4
UB5420081504	0.8	0.4	1.5	0.8	1.6	4	50	4
UB5420081506	0.8	0.4	1.5	0.8	1.6	6	50	4
UB5420081508	0.8	0.4	1.5	0.8	1.6	8	50	4
UB5420081510	0.8	0.4	1.5	0.8	1.6	10	50	4
UB5420081512	0.8	0.4	1.5	0.8	1.6	12	50	4
UB5420081516	0.8	0.4	1.5	0.8	1.6	16	50	4
UB5420082004	0.8	0.4	2	0.8	1.6	4	50	4
UB5420082006	0.8	0.4	2	0.8	1.6	6	50	4
UB5420082008	0.8	0.4	2	0.8	1.6	8	50	4
UB5420082010	0.8	0.4	2	0.8	1.6	10	50	4
UB5420082012	0.8	0.4	2	0.8	1.6	12	50	4
UB5420082016	0.8	0.4	2	0.8	1.6	16	50	4
UB5420083004	0.8	0.4	3	0.8	1.6	4	50	4
UB5420083006	0.8	0.4	3	0.8	1.6	6	50	4
UB5420083008	0.8	0.4	3	0.8	1.6	8	50	4
UB5420083010	0.8	0.4	3	0.8	1.6	10	50	4
UB5420083012	0.8	0.4	3	0.8	1.6	12	50	4
UB5420083016	0.8	0.4	3	0.8	1.6	16	50	4
UB5420100506	1	0.5	0.5	1	2.5	6	50	4
UB5420100508	1	0.5	0.5	1	2.5	8	50	4
UB5420100510	1	0.5	0.5	1	2.5	10	50	4
UB5420100512	1	0.5	0.5	1	2.5	12	50	4
UB5420100516	1	0.5	0.5	1	2.5	16	50	4
UB5420100520	1	0.5	0.5	1	2.5	20	50	4
UB5420100525	1	0.5	0.5	1	2.5	25	60	4
UB5420100530	1	0.5	0.5	1	2.5	30	70	4
UB5420100540	1	0.5	0.5	1	2.5	40	80	4
UB5420100550	1	0.5	0.5	1	2.5	50	90	4

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)							
	D	R	θ	L1	L3	L4	L2	D2
UB5420101006	1	0.5	1	1	2.5	6	50	4
UB5420101008	1	0.5	1	1	2.5	8	50	4
UB5420101010	1	0.5	1	1	2.5	10	50	4
UB5420101012	1	0.5	1	1	2.5	12	50	4
UB5420101016	1	0.5	1	1	2.5	16	50	4
UB5420101020	1	0.5	1	1	2.5	20	50	4
UB5420101025	1	0.5	1	1	2.5	25	60	4
UB5420101030	1	0.5	1	1	2.5	30	70	4
UB5420101040	1	0.5	1	1	2.5	40	80	4
UB5420101050	1	0.5	1	1	2.5	50	90	4
UB5420101506	1	0.5	1.5	1	2.5	6	50	4
UB5420101508	1	0.5	1.5	1	2.5	8	50	4
UB5420101510	1	0.5	1.5	1	2.5	10	50	4
UB5420101512	1	0.5	1.5	1	2.5	12	50	4
UB5420101516	1	0.5	1.5	1	2.5	16	50	4
UB5420101520	1	0.5	1.5	1	2.5	20	50	4
UB5420101525	1	0.5	1.5	1	2.5	25	60	4
UB5420101530	1	0.5	1.5	1	2.5	30	70	4
UB5420101540	1	0.5	1.5	1	2.5	40	80	4
UB5420101550	1	0.5	1.5	1	2.5	50	90	4
UB5420102006	1	0.5	2	1	2.5	6	50	4
UB5420102008	1	0.5	2	1	2.5	8	50	4
UB5420102010	1	0.5	2	1	2.5	10	50	4
UB5420102012	1	0.5	2	1	2.5	12	50	4
UB5420102016	1	0.5	2	1	2.5	16	50	4
UB5420102020	1	0.5	2	1	2.5	20	50	4
UB5420102025	1	0.5	2	1	2.5	25	60	4
UB5420102030	1	0.5	2	1	2.5	30	70	4
UB5420102040	1	0.5	2	1	2.5	40	80	4
UB5420102050	1	0.5	2	1	2.5	50	90	6
UB5420103006	1	0.5	3	1	2.5	6	50	4
UB5420103008	1	0.5	3	1	2.5	8	50	4
UB5420103010	1	0.5	3	1	2.5	10	50	4
UB5420103012	1	0.5	3	1	2.5	12	50	4
UB5420103016	1	0.5	3	1	2.5	16	50	4
UB5420103020	1	0.5	3	1	2.5	20	50	4
UB5420103025	1	0.5	3	1	2.5	25	60	4
UB5420103030	1	0.5	3	1	2.5	30	70	6
UB5420103040	1	0.5	3	1	2.5	40	80	6
UB5420103050	1	0.5	3	1	2.5	50	90	6
UB5420105030	1	0.5	5	1	2.5	30	70	6
UB5420120508	1.2	0.6	0.5	1.2	3	8	50	4
UB5420120512	1.2	0.6	0.5	1.2	3	12	50	4
UB5420120516	1.2	0.6	0.5	1.2	3	16	50	4
UB5420120520	1.2	0.6	0.5	1.2	3	20	50	4
UB5420120525	1.2	0.6	0.5	1.2	3	25	60	4
UB5420120530	1.2	0.6	0.5	1.2	3	30	70	4
UB5420121008	1.2	0.6	1	1.2	3	8	50	4
UB5420121012	1.2	0.6	1	1.2	3	12	50	4

EDP No.	Description (mm)							
	D	R	θ	L1	L3	L4	L2	D2
UB5420121016	1.2	0.6	1	1.2	3	16	50	4
UB5420121020	1.2	0.6	1	1.2	3	20	50	4
UB5420121025	1.2	0.6	1	1.2	3	25	60	4
UB5420121030	1.2	0.6	1	1.2	3	30	70	4
UB5420121508	1.2	0.6	1.5	1.2	3	8	50	4
UB5420121512	1.2	0.6	1.5	1.2	3	12	50	4
UB5420121516	1.2	0.6	1.5	1.2	3	16	50	4
UB5420121520	1.2	0.6	1.5	1.2	3	20	50	4
UB5420121525	1.2	0.6	1.5	1.2	3	25	60	4
UB5420121530	1.2	0.6	1.5	1.2	3	30	70	4
UB5420122008	1.2	0.6	2	1.2	3	8	50	4
UB5420122012	1.2	0.6	2	1.2	3	12	50	4
UB5420122016	1.2	0.6	2	1.2	3	16	50	4
UB5420122020	1.2	0.6	2	1.2	3	20	50	4
UB5420122025	1.2	0.6	2	1.2	3	25	60	4
UB5420122030	1.2	0.6	2	1.2	3	30	70	4
UB5420123008	1.2	0.6	3	1.2	3	8	50	4
UB5420123012	1.2	0.6	3	1.2	3	12	50	4
UB5420123016	1.2	0.6	3	1.2	3	16	50	4
UB5420123020	1.2	0.6	3	1.2	3	20	50	4
UB5420123025	1.2	0.6	3	1.2	3	25	60	4
UB5420123030	1.2	0.6	5	1.2	3	30	70	6
UB5420150508	1.5	0.75	0.5	1.5	4	8	50	4
UB5420150510	1.5	0.75	0.5	1.5	4	10	50	4
UB5420150512	1.5	0.75	0.5	1.5	4	12	50	4
UB5420150516	1.5	0.75	0.5	1.5	4	16	50	4
UB5420150520	1.5	0.75	0.5	1.5	4	20	50	4
UB5420150525	1.5	0.75	0.5	1.5	4	25	60	4
UB5420150530	1.5	0.75	0.5	1.5	4	30	70	4
UB5420150540	1.5	0.75	0.5	1.5	4	40	80	4
UB5420150550	1.5	0.75	0.5	1.5	4	50	90	4
UB5420151008	1.5	0.75	1	1.5	4	8	50	4
UB5420151010	1.5	0.75	1	1.5	4	10	50	4
UB5420151012	1.5	0.75	1	1.5	4	12	50	4
UB5420151016	1.5	0.75	1	1.5	4	16	50	4
UB5420151020	1.5	0.75	1	1.5	4	20	50	4
UB5420151025	1.5	0.75	1	1.5	4	25	60	4
UB5420151030	1.5	0.75	1	1.5	4	30	70	4
UB5420151040	1.5	0.75	1	1.5	4	40	80	4
UB5420151050	1.5	0.75	1	1.5	4	50	90	4
UB5420151508	1.5	0.75	1.5	1.5	4	8	50	4
UB5420151510	1.5	0.75	1.5	1.5	4	10	50	4
UB5420151512	1.5	0.75	1.5	1.5	4	12	50	4
UB5420151516	1.5	0.75	1.5	1.5	4	16	50	4
UB5420151520	1.5	0.75	1.5	1.5	4	20	50	4
UB5420151525	1.5	0.75	1.5	1.5	4	25	60	4
UB5420151530	1.5	0.75	1.5	1.5	4	30	70	4
UB5420151540	1.5	0.75	1.5	1.5	4	40	80	4
UB5420151550	1.5	0.75	1.5	1.5	4	50	90	4

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRC55	SKD11 HRC55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)							
	D	R	θ	L1	L3	L4	L2	D2
UB5420121016	1.2	0.6	1	1.2	3	16	50	4
UB5420121020	1.2	0.6	1	1.2	3	20	50	4
UB5420121025	1.2	0.6	1	1.2	3	25	60	4
UB5420121030	1.2	0.6	1	1.2	3	30	70	4
UB5420121508	1.2	0.6	1.5	1.2	3	8	50	4
UB5420121512	1.2	0.6	1.5	1.2	3	12	50	4
UB5420121516	1.2	0.6	1.5	1.2	3	16	50	4
UB5420121520	1.2	0.6	1.5	1.2	3	20	50	4
UB5420121525	1.2	0.6	1.5	1.2	3	25	60	4
UB5420121530	1.2	0.6	1.5	1.2	3	30	70	4
UB5420122008	1.2	0.6	2	1.2	3	8	50	4
UB5420122012	1.2	0.6	2	1.2	3	12	50	4
UB5420122016	1.2	0.6	2	1.2	3	16	50	4
UB5420122020	1.2	0.6	2	1.2	3	20	50	4
UB5420122025	1.2	0.6	2	1.2	3	25	60	4
UB5420122030	1.2	0.6	2	1.2	3	30	70	4
UB5420123008	1.2	0.6	3	1.2	3	8	50	4
UB5420123012	1.2	0.6	3	1.2	3	12	50	4
UB5420123016	1.2	0.6	3	1.2	3	16	50	4
UB5420123020	1.2	0.6	3	1.2	3	20	50	4
UB5420123025	1.2	0.6	3	1.2	3	25	60	4
UB5420123030	1.2	0.6	5	1.2	3	30	70	6
UB5420150508	1.5	0.75	0.5	1.5	4	8	50	4
UB5420150510	1.5	0.75	0.5	1.5	4	10	50	4
UB5420150512	1.5	0.75	0.5	1.5	4	12	50	4
UB5420150516	1.5	0.75	0.5	1.5	4	16	50	4
UB5420150520	1.5	0.75	0.5	1.5	4	20	50	4
UB5420150525	1.5	0.75	0.5	1.5	4	25	60	4
UB5420150530	1.5	0.75	0.5	1.5	4	30	70	4
UB5420150540	1.5	0.75	0.5	1.5	4	40	80	4
UB5420150550	1.5	0.75	0.5	1.5	4	50	90	4
UB5420151008	1.5	0.75	1	1.5	4	8	50	4
UB5420151010	1.5	0.75	1	1.5	4	10	50	4
UB5420151012	1.5	0.75	1	1.5	4	12	50	4
UB5420151016	1.5	0.75	1	1.5	4	16	50	4
UB5420151020	1.5	0.75	1	1.5	4	20	50	4
UB5420151025	1.5	0.75	1	1.5	4	25	60	4
UB5420151030	1.5	0.75	1	1.5	4	30	70	4
UB5420151040	1.5	0.75	1	1.5	4	40	80	4
UB5420151050	1.5	0.75	1	1.5	4	50	90	4
UB5420151508	1.5	0.75	1.5	1.5	4	8	50	4
UB5420151510	1.5	0.75	1.5	1.5	4	10	50	4
UB5420151512	1.5	0.75	1.5	1.5	4	12	50	4
UB5420151516	1.5	0.75	1.5	1.5	4	16	50	4
UB5420151520	1.5	0.75	1.5	1.5	4	20	50	4
UB5420151525	1.5	0.75	1.5	1.5	4	25	60	4
UB5420151530	1.5	0.75	1.5	1.5	4	30	70	4
UB5420151540	1.5	0.75	1.5	1.5	4	40	80	4
UB5420151550	1.5	0.75	1.5	1.5	4	50	90	4

EDP No.	Description (mm)							
	D	R	θ	L1	L3	L4	L2	D2
UB5420152008	1.5	0.75	2	1.5	4	8	50	4
UB5420152010	1.5	0.75	2	1.5	4	10	50	4
UB5420152012	1.5	0.75	2	1.5	4	12	50	4
UB5420152016	1.5	0.75	2	1.5	4	16	50	4
UB5420152020	1.5	0.75	2	1.5	4	20	50	4
UB5420152025	1.5	0.75	2	1.5	4	25	60	4
UB5420152030	1.5	0.75	2	1.5	4	30	70	4
UB5420152040	1.5	0.75	2	1.5	4	40	80	6
UB5420152050	1.5	0.75	2	1.5	4	50	90	6
UB5420153020	1.5	0.75	3	1.5	4	20	50	6
UB5420153030	1.5	0.75	3	1.5	4	30	70	6
UB5420153040	1.5	0.75	3	1.5	4	40	80	6
UB5420153050	1.5	0.75	3	1.5	4	50	90	8
UB5420155030	1.5	0.75	5	1.5	4	30	70	8
UB5420200510	2	1	0.5	2	5	10	50	4
UB5420200512	2	1	0.5	2	5	12	50	4
UB5420200516	2	1	0.5	2	5	16	50	4
UB5420200520	2	1	0.5	2	5	20	50	4
UB5420200525	2	1	0.5	2	5	25	60	4
UB5420200530	2	1	0.5	2	5	30	70	4
UB5420200540	2	1	0.5	2	5	40	80	4
UB5420200550	2	1	0.5	2	5	50	100	6
UB5420200560	2	1	0.5	2	5	60	100	6
UB5420200580	2	1	0.5	2	5	80	140	6
UB5420201010	2	1	1	2	5	10	50	4
UB5420201012	2	1	1	2	5	12	50	4
UB5420201016	2	1	1	2	5	16	50	4
UB5420201020	2	1	1	2	5	20	50	4
UB5420201025	2	1	1	2	5	25	60	4
UB5420201030	2	1	1	2	5	30	70	4
UB5420201040	2	1	1	2	5	40	80	6
UB5420201050	2	1	1	2	5	50	100	6
UB5420201060	2	1	1	2	5	60	100	6
UB5420201080	2	1	1	2	5	80	140	6
UB5420201510	2	1	1.5	2	5	10	50	4
UB5420201512	2	1	1.5	2	5	12	50	4
UB5420201516	2	1	1.5	2	5	16	50	4
UB5420201520	2	1	1.5	2	5	20	50	4
UB5420201525	2	1	1.5	2	5	25	60	4
UB5420201530	2	1	1.5	2	5	30	70	6
UB5420201540	2	1	1.5	2	5	40	80	6
UB5420201550	2	1	1.5	2	5	50	100	6
UB5420201560	2	1	1.5	2	5	60	100	6
UB5420201580	2	1	1.5	2	5	80	140	6
UB5420202010	2	1	2	2	5	10	50	4
UB5420202012	2	1	2	2	5	12	50	4
UB5420202016	2	1	2	2	5	16	50	4
UB5420202020	2	1	2	2	5	20	55	4
UB5420202025	2	1	2	2	5	25	60	4

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRC30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRC55	SKD11 HRC55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

EDP No.	Description (mm)							
	D	R	θ	L1	L3	L4	L2	D2
UB5420202030	2	1	2	2	5	30	70	4
UB5420202040	2	1	2	2	5	40	80	6
UB5420202050	2	1	2	2	5	50	90	6
UB5420202060	2	1	2	2	5	60	100	6
UB5420202080	2	1	2	2	5	80	140	8
UB5420203030	2	1	3	2	5	30	70	6
UB5420203040	2	1	3	2	5	40	80	6
UB5420203050	2	1	3	2	5	50	90	8
UB5420203060	2	1	3	2	5	60	100	8
UB5420203080	2	1	3	2	5	80	140	10
UB5420205030	2	1	5	2	5	30	70	8
UB5420205040	2	1	5	2	5	40	90	10
UB5420300516	3	1.5	0.5	4.5	6	16	60	6
UB5420300520	3	1.5	0.5	4.5	6	20	65	6
UB5420300530	3	1.5	0.5	4.5	6	30	70	6
UB5420300540	3	1.5	0.5	4.5	6	40	80	6
UB5420300550	3	1.5	0.5	4.5	6	50	90	6
UB5420300560	3	1.5	0.5	4.5	6	60	100	6
UB5420301016	3	1.5	1	4.5	6	16	60	6
UB5420301020	3	1.5	1	4.5	6	20	65	6
UB5420301030	3	1.5	1	4.5	6	30	70	6
UB5420301040	3	1.5	1	4.5	6	40	80	6
UB5420301050	3	1.5	1	4.5	6	50	90	6
UB5420301060	3	1.5	1	4.5	6	60	100	6
UB5420301070	3	1.5	1	4.5	6	70	120	6
UB5420301516	3	1.5	1.5	4.5	6	16	60	6
UB5420301520	3	1.5	1.5	4.5	6	20	65	6
UB5420301530	3	1.5	1.5	4.5	6	30	70	6
UB5420301540	3	1.5	1.5	4.5	6	40	80	6
UB5420301550	3	1.5	1.5	4.5	6	50	90	6
UB5420301560	3	1.5	1.5	4.5	6	60	100	6
UB5420302016	3	1.5	2	4.5	6	16	60	6
UB5420302020	3	1.5	2	4.5	6	20	65	6
UB5420302030	3	1.5	2	4.5	6	30	70	6
UB5420302040	3	1.5	2	4.5	6	40	80	6
UB5420302050	3	1.5	2	4.5	6	50	90	8
UB5420303030	3	1.5	3	4.5	6	30	70	6
UB5420303040	3	1.5	3	4.5	6	40	90	8
UB5420305030	3	1.5	5	4.5	6	30	70	8
UB5420305040	3	1.5	5	4.5	6	40	90	10
UB5420400540	4	2	0.5	6	8	40	90	6
UB5420400550	4	2	0.5	6	8	50	100	6
UB5420400560	4	2	0.5	6	8	60	110	6
UB5420400570	4	2	0.5	6	8	70	120	6
UB5420401040	4	2	1	6	8	40	90	6
UB5420401050	4	2	1	6	8	50	100	6
UB5420401060	4	2	1	6	8	60	110	8
UB5420401070	4	2	1	6	8	70	120	8
UB5420401540	4	2	1.5	6	8	40	90	6

EDP No.	Description (mm)							
	D	R	θ	L1	L3	L4	L2	D2
UB5420401550	4	2	1.5	6	8	50	100	8
UB5420401560	4	2	1.5	6	8	60	110	8
UB5420401570	4	2	1.5	6	8	70	120	8
UB5420403050	4	2	3	6	8	50	100	10
UB5420405050	4	2	5	6	8	50	100	12
UB5420501060	5	2.5	1	10	13	60	120	8
UB5420501560	5	2.5	1.5	10	13	60	120	8
UB5420503040	5	2.5	3	10	13	40	120	8
UB5420601060	6	3	1	12	15	60	120	8
UB5420601090	6	3	1	12	15	90	150	10
UB5420601560	6	3	1.5	12	15	60	120	10
UB5420601590	6	3	1.5	12	15	90	150	10
UB5420602060	6	3	2	12	15	60	120	10
UB5420602090	6	3	2	12	15	90	150	12
UB5420603060	6	3	3	12	15	60	120	12
UB5420603090	6	3	3	12	15	90	150	14
UB54208010100	8	4	1	14	18	100	150	12
UB5420801070	8	4	1	14	18	70	130	10
UB54208015100	8	4	1.5	14	18	100	150	14
UB5420801570	8	4	1.5	14	18	70	130	12
UB54208020100	8	4	2	14	18	100	150	14
UB5420802070	8	4	2	14	18	70	130	12
UB54208030100	8	4	3	14	18	100	150	18
UB5420803070	8	4	3	14	18	70	130	14
UB54210010100	10	5	1	18	22	100	200	14
UB5421001070	10	5	1	18	22	70	130	12
UB5421001080	10	5	1	18	22	80	150	14
UB54210015100	10	5	1.5	18	22	100	200	16
UB5421001570	10	5	1.5	18	22	70	130	14
UB5421001580	10	5	1.5	18	22	80	150	14
UB54210020100	10	5	2	18	22	100	200	16
UB5421002070	10	5	2	18	22	70	130	14
UB5421002080	10	5	2	18	22	80	150	16
UB54210030100	10	5	3	18	22	100	200	20
UB5421003070	10	5	3	18	22	70	130	16
UB5421003080	10	5	3	18	22	80	150	18
UB54212010100	12	6	1	22	25	100	200	16
UB5421201060	12	6	1	22	25	60	130	14
UB5421201080	12	6	1	22	25	80	150	14
UB5421201090	12	6	1	22	25	90	180	16
UB54212015100	12	6	1.5	22	25	100	200	16
UB5421201560	12	6	1.5	22	25	60	130	14
UB5421201580	12	6	1.5	22	25	80	150	16
UB5421201590	12	6	1.5	22	25	90	180	16
UB54212020100	12	6	2	22	25	100	200	18
UB5421202060	12	6	2	22	25	60	130	16
UB5421202080	12	6	2	22	25	80	150	16
UB5421202090	12	6	2	22	25	90	180	18
UB54212030100	12	6	3	22	25	100	200	20

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRC30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRC55	SKD11 HRC55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UB542

2 FLUTES TAPERED NECK BALL ENDMILL

EDP No.	Description (mm)							
	D	R	θ	L1	L3	L4	L2	D2
UB5421203060	12	6	3	22	25	60	130	16
UB5421203080	12	6	3	22	25	80	150	18

EDP No.	Description (mm)							
	D	R	θ	L1	L3	L4	L2	D2
UB5421203090	12	6	3	22	25	90	180	20

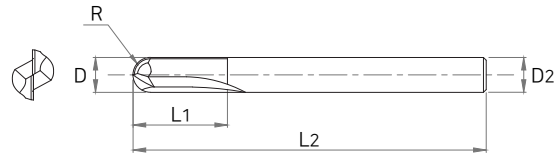
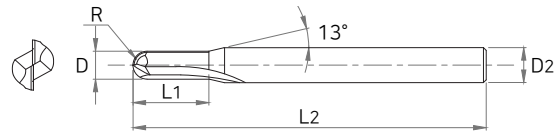
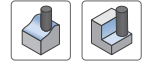
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

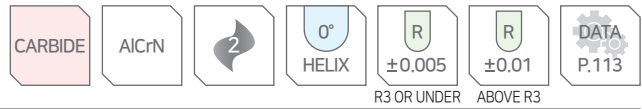
USB502

2 FLUTES STRAIGHT BALL ENDMILL



TOLERANCE

D		SHANK DIA.
D3 ~ 6	0 ~ -0.012	h5
D8 ~ 20	0 ~ -0.015	



EDP No.	Description (mm)				
	D	R	L1	L2	D2
USB502030	3	1.5	10	70	6
USB502040	4	2	12	70	6
USB502050	5	2.5	18	90	6
USB502060	6	3	20	90	6
USB502080	8	4	25	100	8
USB502100	10	5	30	100	10
USB502120	12	6	32	110	12
USB502160	16	8	35	150	16
USB502200	20	10	40	150	20

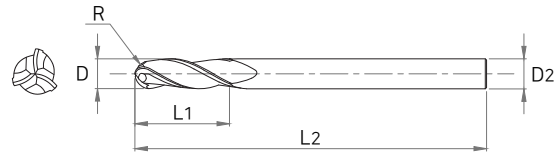
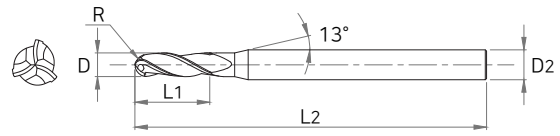
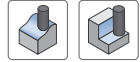
Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

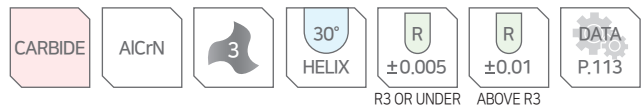
UB503

3 FLUTES BALL ENDMILL



■ TOLERANCE

D		SHANK DIA.
D1 ~ 12	0 ~ -0.02	h5



EDP No.	Description (mm)				
	D	R	L1	L2	D2
UB503010	1	0.5	1	50	6
UB503015	1.5	0.75	1.5	50	6
UB503020	2	1	2	50	6
UB503030	3	1.5	3	60	6
UB503040	4	2	4	70	6
UB503050	5	2.5	5	80	6
UB503060	6	3	6	90	6
UB503080	8	4	8	100	8
UB503100	10	5	10	100	10
UB503120	12	6	12	110	12

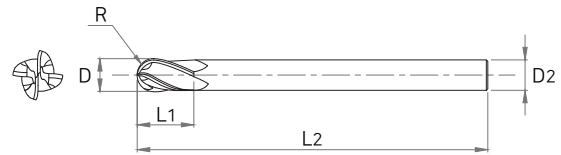
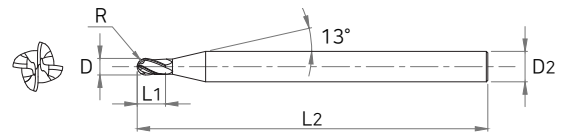
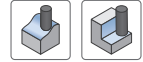
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UB504

4 FLUTES BALL ENDMILL



■ TOLERANCE

D		SHANK DIA.
D1 ~ 12	0 ~ -0.02	h5

CARBIDE
AlCrN
4
30° HELIX
R ±0.005 R3 OR UNDER
R ±0.01 ABOVE R3
DATA P.114

EDP No.	Description (mm)				
	D	R	L1	L2	D2
UB504010	1	0.5	1	50	6
UB504015	1.5	0.75	1.5	50	6
UB504020	2	1	2	50	6
UB504030	3	1.5	3	60	6
UB504040	4	2	4	70	6
UB504050	5	2.5	5	80	6
UB504060	6	3	6	90	6
UB504080	8	4	8	100	8
UB504100	10	5	10	100	10
UB504120	12	6	12	110	12

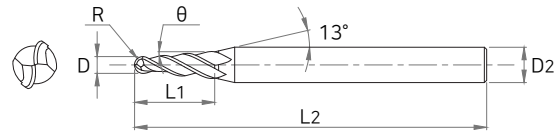
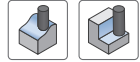
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UTB502

2 FLUTES TAPERED BALL ENDMILL



■ TOLERANCE

D		SHANK DIA.
D0.3 ~ 2	0 ~ -0.03	h5



EDP No.	Description (mm)					
	D	R	θ	L1	L2	D2
UTB502003005	0.3	0.15	0.5	1.2	40	4
UTB50200301	0.3	0.15	1	1.2	40	4
UTB502003015	0.3	0.15	1.5	1.2	40	4
UTB50200302	0.3	0.15	2	1.2	40	4
UTB50200303	0.3	0.15	3	1.2	40	4
UTB50200305	0.3	0.15	5	1.2	40	4
UTB50200307	0.3	0.15	7	1.5	40	4
UTB50200310	0.3	0.15	10	1.5	40	4
UTB502004005	0.4	0.2	0.5	1.6	40	4
UTB50200401	0.4	0.2	1	1.6	40	4
UTB502004015	0.4	0.2	1.5	1.6	40	4
UTB50200402	0.4	0.2	2	1.6	40	4
UTB50200403	0.4	0.2	3	1.6	40	4
UTB50200405	0.4	0.2	5	1.6	40	4
UTB50200407	0.4	0.2	7	2	40	4
UTB50200410	0.4	0.2	10	2	40	4
UTB502005005	0.5	0.25	0.5	2	45	4
UTB50200501	0.5	0.25	1	2	45	4
UTB502005015	0.5	0.25	1.5	2	45	4
UTB50200502	0.5	0.25	2	2	45	4
UTB50200503	0.5	0.25	3	2	45	4
UTB50200505	0.5	0.25	5	2	45	4
UTB50200507	0.5	0.25	7	2.5	45	4
UTB50200510	0.5	0.25	10	2.5	45	4
UTB502006005	0.6	0.3	0.5	2	45	4
UTB50200601	0.6	0.3	1	2	45	4
UTB502006015	0.6	0.3	1.5	2	45	4
UTB50200602	0.6	0.3	2	2	45	4
UTB50200603	0.6	0.3	3	2	45	4
UTB50200605	0.6	0.3	5	2	45	4
UTB50200607	0.6	0.3	7	2.5	45	4

EDP No.	Description (mm)					
	D	R	θ	L1	L2	D2
UTB50200610	0.6	0.3	10	2.5	45	4
UTB502007005	0.7	0.35	0.5	2.5	45	4
UTB50200701	0.7	0.35	1	2.5	45	4
UTB502007015	0.7	0.35	1.5	2.5	45	4
UTB50200702	0.7	0.35	2	2.5	45	4
UTB50200703	0.7	0.35	3	2.5	45	4
UTB50200705	0.7	0.35	5	2.5	45	4
UTB50200707	0.7	0.35	7	3	45	4
UTB50200710	0.7	0.35	10	3	45	4
UTB502008005	0.8	0.4	0.5	3.2	45	4
UTB50200801	0.8	0.4	1	3.2	45	4
UTB502008015	0.8	0.4	1.5	3.2	45	4
UTB50200802	0.8	0.4	2	3.2	45	4
UTB50200803	0.8	0.4	3	3.2	45	4
UTB50200805	0.8	0.4	5	3.2	45	4
UTB50200807	0.8	0.4	7	3.2	45	4
UTB50200810	0.8	0.4	10	3.2	45	4
UTB502010005	1	0.5	0.5	4	50	4
UTB50201001	1	0.5	1	4	50	4
UTB502010015	1	0.5	1.5	4	50	4
UTB50201002	1	0.5	2	4	50	4
UTB50201003	1	0.5	3	4	50	4
UTB50201005	1	0.5	5	4	50	4
UTB50201007	1	0.5	7	4	50	4
UTB50201010	1	0.5	10	4	50	4
UTB502015005	1.5	0.75	0.5	6	50	4
UTB50201501	1.5	0.75	1	6	50	4
UTB502015015	1.5	0.75	1.5	6	50	4
UTB50201502	1.5	0.75	2	7	50	4
UTB50201503	1.5	0.75	3	8	50	4
UTB50201505	1.5	0.75	5	10	50	4

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UTB502

2 FLUTES TAPERED BALL ENDMILL

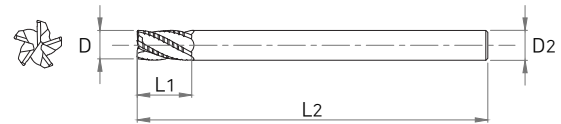
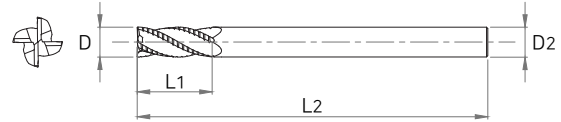
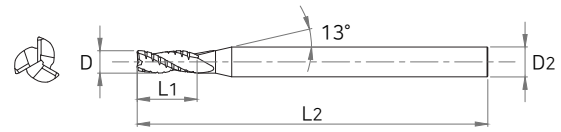
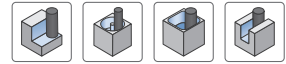
EDP No.	Description (mm)					
	D	R	θ	L1	L2	D2
UTB50201507	1.5	0.75	7	10	50	4
UTB50201510	1.5	0.75	10	10	50	6
UTB502020005	2	1	0.5	6	50	4
UTB50202001	2	1	1	6	50	4
UTB502020015	2	1	1.5	6	50	4

EDP No.	Description (mm)					
	D	R	θ	L1	L2	D2
UTB50202002	2	1	2	10	50	4
UTB50202003	2	1	3	10	50	4
UTB50202005	2	1	5	10	50	4
UTB50202007	2	1	7	10	50	6
UTB50202010	2	1	10	11	50	6

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent



■ TOLERANCE

D		SHANK DIA.
D3 ~ 25	0 ~ -0.05	h5



EDP No.	Description (mm)					
	D	R	L1	L2	D2	Z
UF503030	3	0.2	8	50	6	3
UF503040	4	0.2	10	50	6	3
UF504050	5	0.2	13	50	6	4
UF504060	6	0.2	10	50	6	4
UF50406015	6	0.2	15	60	6	4
UF504070	7	0.2	18	70	8	4
UF504080	8	0.2	12	60	8	4
UF50408020	8	0.2	20	70	8	4
UF504090	9	0.3	22	75	10	4
UF504100	10	0.3	15	65	10	4
UF50410025	10	0.3	25	75	10	4
UF504110	11	0.3	27	80	12	4
UF504120	12	0.3	20	70	12	4
UF50412030	12	0.3	30	80	12	4
UF505130	13	0.5	35	100	12	5
UF505140S16	14	0.5	35	100	16	5
UF505140	14	0.5	35	100	14	5
UF505150	15	0.5	35	100	16	5
UF505160	16	1	25	80	16	5
UF50516040	16	1	40	100	16	5
UF505180S20	18	1	40	100	20	5
UF505180	18	1	40	100	18	5
UF505200	20	1	25	80	20	5
UF50520045	20	1	45	100	20	5
UF505250	25	1	45	100	25	5

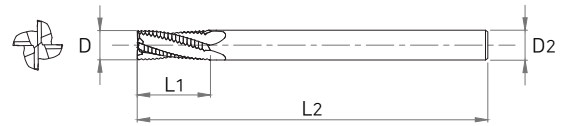
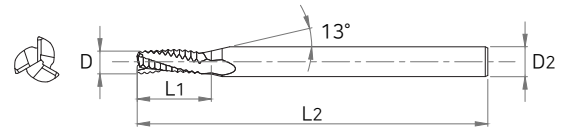
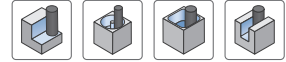
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UF51

3~5 FLUTES FINE PITCH ROUGHING ENDMILL



■ TOLERANCE

D		SHANK DIA.
D3	0 ~ -0.04	h5
D4 ~ 6	0 ~ -0.048	
D7 ~ 10	0 ~ -0.058	
D11 ~ 18	0 ~ -0.07	
D20 ~ 25	0 ~ -0.084	



EDP No.	Description (mm)				
	D	L1	L2	D2	Z
UF513030	3	8	50	6	3
UF513040	4	10	50	6	3
UF513050	5	13	50	6	3
UF513060	6	15	60	6	3
UF51306020	6	20	60	6	3
UF513070	7	18	70	8	3
UF513080	8	20	70	8	3
UF51308025	8	25	70	8	3
UF514090	9	22	75	10	4
UF514100	10	25	75	10	4
UF51410030	10	30	75	10	4
UF514110	11	27	80	12	4
UF514120	12	30	80	12	4
UF51412035	12	35	80	12	4
UF514130	13	35	100	12	4
UF514140	14	35	100	16	4
UF514160	16	40	100	16	4
UF514180	18	40	100	18	4
UF514200	20	50	100	20	4
UF515250	25	50	100	25	5

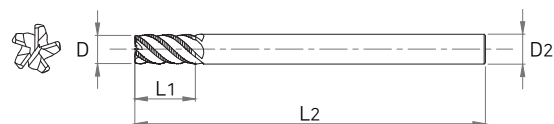
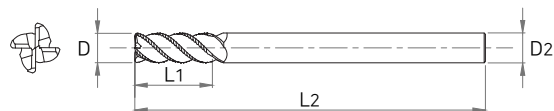
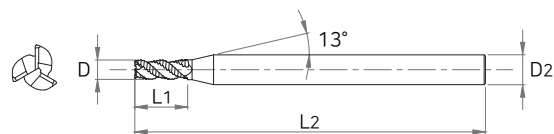
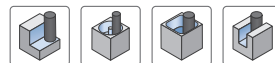
■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

○ : Good ◎ : Excellent

UF51H

3~5 FLUTES 45° HELIX FINE PITCH
ROUGHING ENDMILL



■ TOLERANCE

D		SHANK DIA.
D3 ~ 25	0 ~ -0.05	h5



EDP No.	Description (mm)				
	D	L1	L2	D2	Z
UF513030H	3	8	50	6	3
UF513040H	4	10	50	6	3
UF514050H	5	13	50	6	4
UF514060H	6	10	50	6	4
UF51406015H	6	15	60	6	4
UF514070H	7	18	70	8	4
UF514080H	8	12	60	8	4
UF51408020H	8	20	70	8	4
UF514090H	9	22	75	10	4
UF514100H	10	15	65	10	4
UF51410025H	10	25	75	10	4
UF514110H	11	27	80	12	4
UF514120H	12	20	70	12	4
UF51412030H	12	30	80	12	4
UF515130H	13	35	100	12	5
UF515140S16H	14	35	100	16	5
UF515140H	14	35	100	14	5
UF515160H	16	25	80	16	5
UF51516040H	16	40	100	16	5
UF515180S20H	18	40	100	20	5
UF515180H	18	40	100	18	5
UF515200H	20	25	80	20	5
UF51520045H	20	45	100	20	5
UF515250H	25	45	100	25	5

■ Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Prehardened Steel HRc30~50	Hardened Steel		Cast Iron ~FCD500	Aluminum	Stainless Steel	Ti-Alloy	Ni-Alloy
			SKD61 ~HRc55	SKD11 HRc55~					
○	◎	◎	○		○				

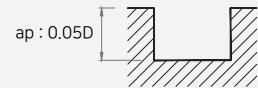
○ : Good ◎ : Excellent

Recommended Cutting Condition

UE502, UXE502 SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Stainless Steels (SUS)		Hardened Steels (SKD, SKT, STAVAX)	
	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
Hardness	~ HRC35		HRC35 ~ HRC45				HRC45 ~ HRC55	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2				1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
2	11,560	190	7,560	120	6,300	90	5,040	35
3	8,920	210	5,560	140	4,620	120	3,360	40
4	7,560	300	4,620	180	3,880	150	2,940	40
5	6,300	320	3,780	190	3,160	160	2,320	50
6	5,560	350	3,360	220	2,840	180	2,000	55
8	4,200	380	2,520	200	2,100	180	1,680	75
10	3,260	330	2,000	160	1,680	160	1,360	60
12	2,740	280	1,680	130	1,360	130	1,160	55
16	2,200	220	1,360	110	1,060	110	900	40
20	1,680	170	1,060	80	840	80	680	30
25	1,360	130	840	70	680	60	540	20

RPM = rev / min
FEED = mm / min



UE512 SERIES

Workpiece		Alloy Steels Carbon Steels (SCM, SNCM, S45C)			Prehardened Steels (NAK, CENA, KP4)			Hardened Steels (SKD, SKT, STAVAX)		
Hardness		~ HRC35			HRC35 ~ HRC45			HRC45 ~ HRC55		
Strength		~ 1100N/mm2			1100 ~ 1500N/mm2			1500 ~ 2000N/mm2		
Diameter (mm)	Effective Length (mm)	RPM	FEED	ap(mm)	RPM	FEED	ap(mm)	RPM	FEED	ap(mm)
0.1	0.3	50000	315	0.009	46200	230	0.007	40600	170	0.005
0.1	0.5	50000	315	0.006	46200	230	0.005	40600	170	0.004
0.1	1	45000	255	0.002	41580	185	0.002	36540	140	0.001
0.2	0.5	38500	380	0.018	36300	270	0.014	32100	200	0.01
0.2	1	38500	380	0.013	36300	270	0.010	32100	200	0.007
0.2	1.5	34650	310	0.007	32670	220	0.006	28890	160	0.004
0.2	2	34650	310	0.005	32670	220	0.004	28890	160	0.003
0.3	1	34200	390	0.019	32300	270	0.015	28500	230	0.011
0.3	1.5	34200	390	0.019	32300	270	0.015	25800	230	0.011
0.3	2	30780	315	0.011	29070	220	0.008	25650	185	0.006
0.3	2.5	30780	315	0.007	29070	220	0.005	25650	185	0.004
0.3	3	30780	315	0.007	29070	220	0.005	25650	185	0.004
0.3	4	27360	250	0.004	25840	175	0.003	22800	145	0.002
0.3	5	20520	165	0.003	19380	115	0.002	17100	95	0.002
0.4	1	27400	540	0.036	25800	380	0.028	22800	280	0.02
0.4	1.5	27400	540	0.025	25800	380	0.020	22800	280	0.014
0.4	2	27400	540	0.025	25800	380	0.020	22800	280	0.014
0.4	2.5	24660	435	0.014	23220	310	0.011	20520	225	0.008
0.4	3	24660	435	0.014	23220	310	0.011	20520	225	0.008
0.4	4	24660	435	0.009	23220	310	0.007	20520	225	0.005
0.4	5	21920	345	0.009	20640	245	0.007	18240	180	0.005
0.4	6	21920	345	0.005	20640	245	0.004	18240	180	0.003
0.4	8	16440	225	0.004	15480	160	0.003	13680	120	0.002
0.4	10	8220	95	0.004	7740	70	0.003	6840	50	0.002
0.5	1	27400	540	0.045	25800	425	0.035	22800	285	0.025
0.5	1.5	27400	540	0.045	25800	425	0.035	22800	285	0.025
0.5	2	27400	540	0.032	25800	425	0.025	22800	285	0.018
0.5	2.5	27400	540	0.032	25800	425	0.025	22800	285	0.018
0.5	3	24660	435	0.018	23220	345	0.014	20520	230	0.01
0.5	4	24660	435	0.018	23220	345	0.014	20520	230	0.01
0.5	5	24660	435	0.011	23220	345	0.009	20520	230	0.006
0.5	6	21920	345	0.011	20640	270	0.009	18240	180	0.006
0.5	8	16440	225	0.007	15480	180	0.005	13680	120	0.004
0.5	10	16440	225	0.005	15480	180	0.004	13680	120	0.003
0.5	12	8220	95	0.005	7740	75	0.004	6840	50	0.003
0.5	14	8220	95	0.005	7740	75	0.004	6840	50	0.003
0.5	16	2740	25	0.005	2580	20	0.004	2280	15	0.003
0.6	2	27400	775	0.038	25800	545	0.029	22800	405	0.021
0.6	3	27400	775	0.038	25800	545	0.029	22800	405	0.021
0.6	4	24660	630	0.022	23220	440	0.017	20520	330	0.012
0.6	5	24660	630	0.014	23220	440	0.011	20520	330	0.008
0.6	6	24660	630	0.014	23220	440	0.011	20520	330	0.008
0.6	8	21920	495	0.008	20640	350	0.006	18240	260	0.005
0.6	10	16440	325	0.005	15480	230	0.004	13680	170	0.003
0.6	12	16440	325	0.005	15480	230	0.004	13680	170	0.003
0.6	14	8220	140	0.005	7740	100	0.004	6840	75	0.003

Recommended Cutting Condition

UE512 SERIES

Workpiece		Alloy Steels Carbon Steels (SCM, SNCM, S45C)			Prehardened Steels (NAK, CENA, KP4)			Hardened Steels (SKD, SKT, STAVAX)		
Hardness		~ HRC35			HRC35 ~ HRC45			HRC45 ~ HRC55		
Strength		~ 1100N/mm2			1100 ~ 1500N/mm2			1500 ~ 2000N/mm2		
Diameter (mm)	Effective Length (mm)	RPM	FEED	ap(mm)	RPM	FEED	ap(mm)	RPM	FEED	ap(mm)
0.6	16	8220	140	0.005	7740	100	0.004	6840	75	0.003
0.7	2	27400	775	0.063	25800	545	0.049	22800	405	0.035
0.7	4	24660	630	0.025	23220	440	0.020	20520	330	0.014
0.7	6	24660	630	0.016	23220	440	0.012	20520	330	0.009
0.7	8	21920	495	0.016	20640	350	0.012	18240	260	0.009
0.7	10	21920	495	0.009	20640	350	0.007	18240	260	0.005
0.7	12	16440	325	0.009	15480	230	0.005	13680	170	0.004
0.8	2	27400	775	0.072	25800	605	0.056	22800	450	0.040
0.8	3	27400	775	0.050	25800	605	0.039	22800	450	0.028
0.8	4	27400	775	0.050	25800	605	0.039	22800	450	0.028
0.8	5	24660	630	0.029	23220	490	0.022	20520	365	0.016
0.8	6	24660	630	0.029	23220	490	0.022	20520	365	0.016
0.8	8	24660	630	0.018	23220	490	0.014	20520	365	0.010
0.8	10	21920	495	0.018	20640	385	0.014	18240	290	0.01
0.8	12	21920	495	0.011	20640	385	0.008	18240	290	0.006
0.8	14	16440	325	0.007	15480	255	0.006	13680	190	0.004
0.8	16	16440	325	0.007	15480	255	0.006	13680	190	0.004
0.8	20	8220	140	0.007	7740	110	0.006	6840	80	0.004
0.9	6	22140	575	0.032	20970	440	0.025	18450	330	0.018
0.9	8	22140	575	0.020	20970	440	0.016	18450	330	0.011
0.9	10	19680	455	0.020	18640	350	0.016	16400	260	0.011
1.0	2	24600	1045	0.090	23300	890	0.070	20500	665	0.050
1.0	3	24600	1045	0.090	23300	890	0.070	20500	665	0.050
1.0	4	24600	1045	0.063	23300	890	0.049	20500	665	0.035
1.0	5	24600	1045	0.063	23300	890	0.049	20500	665	0.035
1.0	6	22140	845	0.036	20970	720	0.028	18450	540	0.020
1.0	7	22140	845	0.036	20970	720	0.028	18450	540	0.020
1.0	8	22140	845	0.036	20970	720	0.028	18450	540	0.020
1.0	10	22140	845	0.023	20970	720	0.018	18450	540	0.013
1.0	12	19680	670	0.023	18640	570	0.018	16400	425	0.013
1.0	14	19680	670	0.014	18640	570	0.011	16400	425	0.008
1.0	16	14760	440	0.014	13980	375	0.011	12300	280	0.008
1.0	18	14760	440	0.009	13980	375	0.007	12300	280	0.005
1.0	20	14760	440	0.009	13980	375	0.007	12300	280	0.005
1.0	22	7380	190	0.009	6990	160	0.007	6150	120	0.005
1.0	26	7380	190	0.009	6990	160	0.007	6150	120	0.005
1.0	30	7380	190	0.009	6990	160	0.007	6150	120	0.005
1.0	40	2460	50	0.009	2330	45	0.007	2050	35	0.005
1.0	50	2460	50	0.006	2330	45	0.005	2050	35	0.003
1.2	4	21900	930	0.076	20700	720	0.059	18200	485	0.042
1.2	6	21900	930	0.076	20700	720	0.059	18200	485	0.042
1.2	8	19710	755	0.043	18630	585	0.034	16380	395	0.024
1.2	10	19710	755	0.027	18630	585	0.021	16380	395	0.015
1.2	12	19710	755	0.027	18630	585	0.021	16380	395	0.015
1.2	14	17520	595	0.027	16560	460	0.021	14560	310	0.015
1.2	16	17520	595	0.016	16560	460	0.013	14560	310	0.009

UE512 SERIES

Workpiece		Alloy Steels Carbon Steels (SCM, SNCM, S45C)			Prehardened Steels (NAK, CENA, KP4)			Hardened Steels (SKD, SKT, STAVAX)		
Hardness		~ HRC35			HRC35 ~ HRC45			HRC45 ~ HRC55		
Strength		~ 1100N/mm2			1100 ~ 1500N/mm2			1500 ~ 2000N/mm2		
Diameter (mm)	Effective Length (mm)	RPM	FEED	ap(mm)	RPM	FEED	ap(mm)	RPM	FEED	ap(mm)
1.2	20	13140	390	0.011	12420	300	0.008	10920	205	0.006
1.2	26	6570	165	0.011	6210	130	0.008	5460	85	0.006
1.2	30	6570	165	0.011	6210	130	0.008	5460	85	0.006
1.4	6	19200	815	0.088	18100	570	0.069	16000	425	0.049
1.4	8	17280	660	0.050	16290	460	0.039	14400	345	0.028
1.4	10	17280	660	0.050	16290	460	0.039	14400	345	0.028
1.4	14	17280	660	0.032	16290	460	0.025	14400	345	0.018
1.4	16	15360	520	0.032	14480	365	0.025	12800	270	0.018
1.4	20	15360	520	0.019	14480	365	0.015	12800	270	0.011
1.5	4	19200	905	0.135	18100	635	0.105	16000	475	0.075
1.5	5	19200	905	0.095	18100	635	0.074	16000	475	0.053
1.5	6	19200	905	0.095	18100	635	0.074	16000	475	0.053
1.5	7	19200	905	0.095	18100	635	0.074	16000	475	0.053
1.5	8	17280	735	0.054	16290	515	0.042	14400	385	0.030
1.5	10	17280	735	0.054	16290	515	0.042	14400	385	0.030
1.5	12	17280	735	0.054	16290	515	0.042	14400	385	0.030
1.5	14	17280	735	0.034	16290	515	0.026	14400	385	0.019
1.5	16	15360	580	0.034	14480	405	0.026	12800	305	0.019
1.5	18	15360	580	0.034	14480	405	0.026	12800	305	0.019
1.5	20	15360	580	0.020	14480	405	0.016	12800	305	0.011
1.5	22	15360	580	0.020	14480	405	0.016	12800	305	0.011
1.5	26	11520	380	0.014	10860	265	0.011	9600	200	0.008
1.5	30	11520	380	0.014	10860	265	0.011	9600	200	0.008
1.6	8	17800	840	0.101	16800	655	0.078	14800	490	0.056
1.6	10	16020	680	0.058	15120	530	0.045	13320	395	0.032
1.6	12	16020	680	0.058	15120	530	0.045	13320	395	0.032
1.6	16	16020	680	0.036	15120	530	0.028	13320	395	0.020
1.6	20	14240	540	0.036	13440	420	0.028	11840	315	0.020
1.8	8	17800	840	0.113	16800	655	0.088	14800	490	0.063
1.8	10	16020	680	0.065	15120	530	0.050	13320	395	0.036
1.8	12	16020	680	0.065	15120	530	0.050	13320	395	0.036
1.8	16	16020	680	0.041	15120	530	0.032	13320	395	0.023
1.8	20	14240	540	0.041	13440	420	0.032	11840	315	0.023
2.0	6	14400	820	0.180	13600	620	0.140	12000	475	0.100
2.0	8	14400	820	0.126	13600	620	0.098	12000	475	0.070
2.0	10	14400	820	0.126	13600	620	0.098	12000	475	0.070
2.0	12	12960	665	0.072	12240	500	0.056	10800	385	0.040
2.0	14	12960	665	0.072	12240	500	0.056	10800	385	0.040
2.0	16	12960	665	0.072	12240	500	0.056	10800	385	0.040
2.0	18	12960	665	0.045	12240	500	0.035	10800	385	0.025
2.0	20	12960	665	0.045	12240	500	0.035	10800	385	0.025
2.0	22	11520	525	0.045	10880	395	0.035	9600	305	0.025
2.0	26	11520	525	0.045	10880	395	0.035	9600	305	0.025
2.0	30	11520	525	0.027	10880	395	0.021	9600	305	0.015
2.0	35	8640	345	0.018	8160	260	0.014	7200	200	0.010
2.0	40	8640	345	0.018	8160	260	0.014	7200	200	0.010

Recommended Cutting Condition

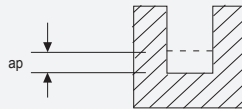
UE512 SERIES

Workpiece		Alloy Steels Carbon Steels (SCM, SNCM, S45C)			Prehardened Steels (NAK, CENA, KP4)			Hardened Steels (SKD, SKT, STAVAX)		
Hardness		~ HRC35			HRC35 ~ HRC45			HRC45 ~ HRC55		
Strength		~ 1100N/mm2			1100 ~ 1500N/mm2			1500 ~ 2000N/mm2		
Diameter (mm)	Effective Length (mm)	RPM	FEED	ap(mm)	RPM	FEED	ap(mm)	RPM	FEED	ap(mm)
2.0	45	4320	150	0.018	4080	110	0.014	3600	85	0.010
2.0	50	4320	150	0.018	4080	110	0.014	3600	85	0.010
2.0	60	4320	150	0.018	4080	110	0.014	3600	85	0.010
2.5	8	12300	970	0.158	11600	680	0.123	10300	510	0.088
2.5	10	12300	970	0.158	11600	680	0.123	10300	510	0.088
2.5	12	12300	970	0.158	11600	680	0.123	10300	510	0.088
2.5	14	11070	785	0.090	10440	550	0.070	9270	415	0.050
2.5	16	11070	785	0.090	10440	550	0.070	9270	415	0.050
2.5	18	11070	785	0.090	10440	550	0.070	9270	415	0.050
2.5	20	11070	785	0.090	10440	550	0.070	9270	415	0.050
2.5	22	11070	785	0.056	10440	550	0.044	9270	415	0.031
2.5	26	9840	620	0.056	9280	435	0.044	8240	325	0.031
2.5	30	9840	620	0.056	9280	435	0.044	8240	325	0.031
2.5	35	9840	620	0.034	9280	435	0.026	8240	325	0.019
2.5	40	7380	405	0.034	6960	285	0.026	6180	215	0.019
2.5	45	7380	405	0.023	6960	285	0.018	6180	215	0.013
2.5	50	7380	405	0.023	6960	285	0.018	6180	215	0.013
3.0	6	10900	860	0.270	10300	605	0.210	6600	450	0.150
3.0	8	10900	860	0.270	10300	605	0.210	6600	450	0.150
3.0	10	10900	860	0.189	10300	605	0.147	6600	450	0.105
3.0	12	10900	860	0.189	10300	605	0.147	6600	450	0.105
3.0	14	10900	860	0.189	10300	605	0.147	6600	450	0.105
3.0	16	9810	695	0.108	9270	490	0.084	5940	365	0.060
3.0	18	9810	695	0.108	9270	490	0.084	5940	365	0.060
3.0	20	9810	695	0.108	9270	490	0.084	5940	365	0.060
3.0	22	9810	695	0.108	9270	490	0.084	5940	365	0.060
3.0	26	9810	695	0.068	9270	490	0.053	5940	365	0.038
3.0	30	9810	695	0.068	9270	490	0.053	5940	365	0.038
3.0	35	8720	550	0.068	8240	385	0.053	5280	290	0.038
3.0	40	8720	550	0.041	8240	385	0.032	5280	290	0.023
3.0	45	8720	550	0.041	8240	385	0.032	5280	290	0.023
3.0	50	6540	360	0.027	6180	255	0.021	3960	190	0.015
3.0	60	6540	360	0.027	6180	255	0.021	3960	190	0.015
4.0	8	8000	1300	0.360	7600	1160	0.280	6700	770	0.200
4.0	10	8000	1300	0.360	7600	1160	0.280	6700	770	0.200
4.0	12	8000	1300	0.360	7600	1160	0.280	6700	770	0.200
4.0	14	8000	1300	0.252	7600	1160	0.196	6700	770	0.140
4.0	16	8000	1300	0.252	7600	1160	0.196	6700	770	0.140
4.0	18	8000	1300	0.252	7600	1160	0.196	6700	770	0.140
4.0	20	8000	1300	0.252	7600	1160	0.196	6700	770	0.140
4.0	22	7200	1055	0.144	6840	940	0.112	6030	625	0.080
4.0	26	7200	1055	0.144	6840	940	0.112	6030	625	0.080
4.0	30	7200	1055	0.144	6840	940	0.112	6030	625	0.080
4.0	35	7200	1055	0.090	6840	940	0.070	6030	625	0.050
4.0	40	7200	1055	0.090	6840	940	0.070	6030	625	0.050
4.0	45	6400	830	0.090	6080	740	0.070	5360	495	0.050

UE512 SERIES

Workpiece		Alloy Steels Carbon Steels (SCM, SNCM, S45C)			Prehardened Steels (NAK, CENA, KP4)			Hardened Steels (SKD, SKT, STAVAX)		
Hardness		~ HRC35			HRC35 ~ HRC45			HRC45 ~ HRC55		
Strength		~ 1100N/mm2			1100 ~ 1500N/mm2			1500 ~ 2000N/mm2		
Diameter (mm)	Effective Length (mm)	RPM	FEED	ap(mm)	RPM	FEED	ap(mm)	RPM	FEED	ap(mm)
4.0	50	6400	830	0.090	6080	740	0.070	5360	495	0.050
4.0	60	6400	830	0.054	6080	740	0.042	5360	495	0.030
5.0	16	6400	1155	0.315	6100	900	0.245	5400	605	0.175
5.0	20	6400	1155	0.315	6100	900	0.245	5400	605	0.175
5.0	26	5760	935	0.180	5490	730	0.140	4860	490	0.100
5.0	30	5760	935	0.180	5490	730	0.140	4860	490	0.100
5.0	35	5760	935	0.180	5490	730	0.140	4860	490	0.100
5.0	40	5760	935	0.180	5490	730	0.140	4860	490	0.100
5.0	50	5760	935	0.113	5490	730	0.088	4860	490	0.063
5.0	60	5120	740	0.113	4880	575	0.088	4320	385	0.063
6.0	15	5300	1055	0.540	5000	820	0.420	4400	550	0.300
6.0	20	5300	1055	0.378	5000	820	0.294	4400	550	0.210
6.0	30	5300	1055	0.378	5000	820	0.294	4400	550	0.210
6.0	32	4770	855	0.216	4500	665	0.168	3960	445	0.120
8.0	25	4000	950	0.504	3800	750	0.392	3300	500	0.280
8.0	30	4000	950	0.504	3800	750	0.392	3300	500	0.280
8.0	42	3600	770	0.288	3400	605	0.224	2950	405	0.160
10	30	3200	900	0.900	3050	680	0.700	2630	400	0.500
10	35	3200	900	0.630	3050	680	0.490	2630	400	0.350
10	45	3200	900	0.630	3050	680	0.490	2630	400	0.350
12	35	2650	800	1.080	2520	600	0.840	2180	350	0.600
12	40	2650	800	0.756	2520	600	0.588	2180	350	0.420
12	50	2650	800	0.756	2520	600	0.588	2180	350	0.420

RPM = rev / min
FEED = mm / min

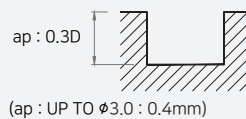


Recommended Cutting Condition

UE522 SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Hardened Steels (SKD, SKT, STAVAX)	
Hardness	~ HRC35		HRC35 ~ HRC45		HRC45~HRC55	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2		1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED
2	6,300	60	5,040	50	3,150	25
3	4,410	70	3,570	60	2,200	30
4	3,570	85	2,840	70	1,790	35
5	3,050	105	2,420	85	1,580	40
6	2,630	125	2,100	105	1,370	50
8	2,000	135	1,580	105	1,050	50
10	1,680	135	1,370	105	840	50
12	1,370	105	1,160	95	700	40
16	1,160	95	890	75	560	35
20	840	70	680	50	420	25

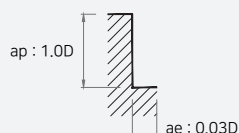
RPM = rev / min
FEED = mm / min



UE504H SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Hardened Steels (SKD, SKT, STAVAX)	
Hardness	~ HRC35		HRC35 ~ HRC45		HRC45~HRC55	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2		1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED
1	45,000	750	37,000	560	23,000	300
2	23,500	800	18,000	540	12,000	360
3	15,750	810	12,600	580	8,280	380
4	12,150	830	9,540	600	6,345	400
6	9,450	900	7,470	640	4,950	440
8	7,110	860	5,625	620	3,780	410
10	5,580	800	4,410	570	2,925	380
12	4,770	800	3,780	570	2,520	380
16	3,600	810	2,900	570	2,000	400
20	3,000	810	2,300	570	1,600	400

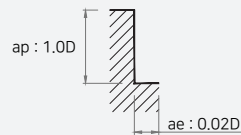
RPM = rev / min
FEED = mm / min



UE514 SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Stainless Steels (SUS)		Hardened Steels (SKD, SKT, STAVAX)	
	~ HRC35		HRC35 ~ HRC45				HRC45 ~ HRC55	
Hardness	~ HRC35		HRC35 ~ HRC45				HRC45 ~ HRC55	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2				1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1.0	22,000	310	13,500	180	10,750	140	8,500	50
1.5	17,000	320	10,700	190	8,500	150	6,500	50
2.0	13,900	330	9,070	200	7,560	165	6,000	60
2.5	12,000	350	7,600	220	6,000	180	4,500	60
3.0	10,700	380	6,670	240	5,110	200	4,030	70
4.0	9,070	680	5,540	420	4,650	330	3,530	70
5.0	7,560	720	4,530	430	3,800	360	2,780	85
6.0	6,670	790	4,030	490	3,400	390	2,400	95
8.0	5,040	850	3,020	450	2,520	420	2,010	130
10	3,910	730	2,400	360	2,010	360	1,630	105
12	3,300	620	2,010	300	1,630	280	1,400	95

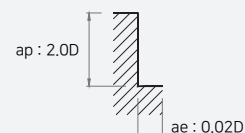
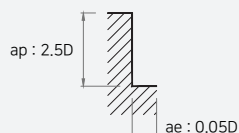
RPM = rev / min
FEED = mm / min



UE524 SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Hardened Steels (SKD, SKT, STAVAX)	
	~ HRC35		HRC35 ~ HRC45		HRC45~HRC55	
Hardness	~ HRC35		HRC35 ~ HRC45		HRC45~HRC55	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2		1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED
2	6,300	100	5,040	80	3,150	45
3	4,410	115	3,570	100	2,200	55
4	3,570	140	2,840	115	1,790	60
5	3,050	180	2,420	140	1,580	70
6	2,630	215	2,100	180	1,370	90
8	2,000	230	1,580	180	1,050	90
10	1,680	230	1,370	180	840	90
12	1,370	180	1,160	160	700	70
16	1,160	160	890	125	560	60
20	840	115	680	90	420	45

RPM = rev / min
FEED = mm / min

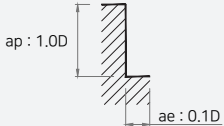


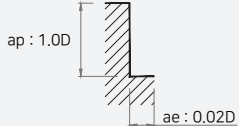
Recommended Cutting Condition

ULE504 SERIES ▶ General Processing

Workpiece	Non ferrous Steel Alloy Steel Cast Iron		Heat Treatment Steel				Stainless Steel	
	~HRC30		HRC30 ~ HRC45		HRC45 ~ HRC55			
Hardness	~1000N/mm2		1000 ~ 1500N/mm2		1500 ~ 2000N/mm2			
Strength								
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
2	12,100	320	7,900	195	2,700	47	6,600	160
3	9,400	370	5,840	230	2,000	58	4,850	195
4	7,900	655	4,850	405	1,500	58	4,070	320
5	6,600	690	3,970	415	1,300	58	3,320	345
6	5,830	760	3,530	470	1,150	58	2,980	380
8	4,410	815	2,650	435	880	58	2,200	405
10	3,420	700	2,100	345	720	46	1,760	345
12	2,880	600	1,760	290	590	46	1,430	275
16	2,310	470	1,430	230	460	29	1,150	230
20	1,760	370	1,110	185	340	29	880	175
25	1,430	290	880	150	270	23	715	140

RPM = rev / min
FEED = mm / min

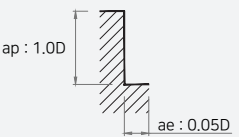




UE504, UXE504 SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Stainless Steels (SUS)		Hardened Steels (SKD, SKT, STAVAX)	
	~ HRC35		HRC35 ~ HRC45				HRC45 ~ HRC55	
Hardness	~ 1100N/mm2		1100 ~ 1500N/mm2				1500 ~ 2000N/mm2	
Strength								
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
2	11,560	280	7,560	170	6,300	140	6,300	5,040
3	8,920	320	5,560	200	4,620	170	4,620	3,360
4	7,560	570	4,620	350	3,880	280	3,880	2,940
5	6,300	600	3,780	360	3,160	300	3,160	2,320
6	5,560	660	3,360	410	2,840	330	2,840	2,000
8	4,200	710	2,520	380	2,100	350	2,100	1,680
10	3,260	610	2,000	300	1,680	300	1,680	1,360
12	2,740	520	1,680	250	1,360	240	1,360	1,160
16	2,200	410	1,360	200	1,100	300	1,100	900
20	1,680	320	1,060	160	840	150	840	680
25	1,360	250	840	130	680	120	680	540

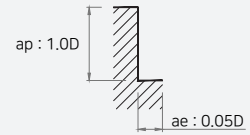
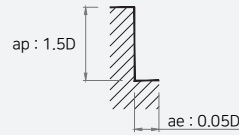
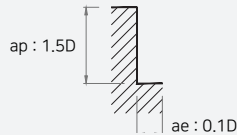
RPM = rev / min
FEED = mm / min



UE506 SERIES ▶ General Processing

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Hardened Steels (SKD, SKT, STAVAX)	
Hardness	~ HRC35		HRC35 ~ HRC45		HRC45~HRC55	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2		1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED
6	5,560	2,000	3,880	1,370	1,580	210
8	4,200	2,000	2,940	1,370	1,160	210
10	3,360	2,000	2,320	1,370	1,000	210
12	2,840	1,680	2,000	1,160	840	180
16	2,100	1,260	1,480	880	640	130
20	1,680	1,010	1,160	690	500	110
25	1,500	90	1,100	600	430	90

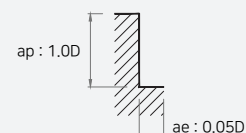
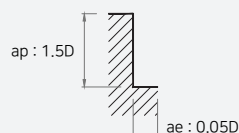
RPM = rev / min
FEED = mm / min



UE506 SERIES ▶ High Speed Processing

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Hardened Steels (SKD, SKT, STAVAX)	
Hardness	~ HRC35		HRC45~HRC55	
Strength	~ 1100N/mm2		1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED
6	16,800	6,090	8,400	3,050
8	12,600	6,090	6,300	3,050
10	9,980	5,990	5,040	3,050
12	8,400	5,040	4,200	2,520
16	6,300	3,780	3,160	1,890
20	5,040	3,050	2,520	1,470
25	4,500	2,700	2,200	1,300

RPM = rev / min
FEED = mm / min



Recommended Cutting Condition

UTE502 SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		
	~ HRC35		HRC35 ~ HRC45		
Hardness	~ 1100N/mm2		1100 ~ 1500N/mm2		
Strength	Diameter (mm)	RPM	FEED	RPM	FEED
	0.3	45,000	135	35,000	105
	0.4	36,000	144	27,900	113
	0.6	25,200	144	18,900	113
	0.8	18,000	144	13,950	108
	1	14,850	149	11,250	113
	2	7,560	153	5,670	113
	3	3,969	108	3,213	90
	4	3,213	126	2,556	104
	6	2,367	189	1,890	153
	8	1,800	225	1,422	162
	10	1,440	225	1,170	167

RPM = rev / min
FEED = mm / min



UTE504 SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		
	~ HRC35		HRC35 ~ HRC45		
Hardness	~ 1100N/mm2		1100 ~ 1500N/mm2		
Strength	Diameter (mm)	RPM	FEED	RPM	FEED
	3	3,969	216	3,213	180
	4	3,213	252	2,556	207
	6	2,367	378	1,890	306
	8	1,800	450	1,422	324
	10	1,440	450	1,170	333

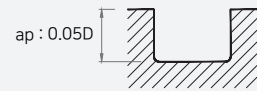
RPM = rev / min
FEED = mm / min



UR502 SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Hardened Steels (SKD, SKT, STAVAX)	
Hardness	~ HRC35		HRC35 ~ HRC45		HRC45~HRC55	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2		1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED
0.2	44,000	145	28,800	60	17,600	40
0.3	41,000	170	27,000	70	16,500	45
0.4	41,000	170	27,000	70	16,500	45
0.5	36,000	190	23,400	80	14,300	50
0.6	30,000	210	19,800	90	12,100	55
0.8	30,000	210	19,800	90	12,100	55
1	27,600	240	18,000	100	11,000	60
1.5	22,000	250	13,500	110	8,500	60
2	18,000	260	11,560	120	7,200	70
2.5	15,000	270	9,500	130	6,100	70
3	13,240	280	8,560	140	5,280	70
4	10,720	340	6,820	170	4,300	80
5	9,160	420	5,800	200	3,800	100
6	7,900	500	5,040	250	3,280	120
8	6,000	540	3,800	250	2,520	120
10	5,040	540	3,280	250	2,020	120
12	4,120	420	2,780	230	1,680	100
16	3,100	360	2,100	170	1,280	80
20	2,520	280	1,640	120	1,000	60

RPM = rev / min
FEED = mm / min

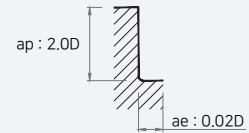
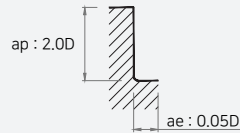


Recommended Cutting Condition

UR504, UR512 SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Hardened Steels (SKD, SKT, STAVAX)	
Hardness	~ HRC35		HRC35 ~ HRC45		HRC45~HRC55	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2		1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED
3	4,410	115	3,570	100	2,200	55
4	3,570	140	2,840	115	1,790	60
5	3,050	180	2,420	140	1,580	70
6	2,630	215	2,100	180	1,370	85
8	2,000	230	1,580	180	1,050	85
10	1,680	230	1,370	180	840	85
12	1,370	180	1,160	160	700	70
16	1,160	160	890	125	560	60
20	840	115	680	90	420	45

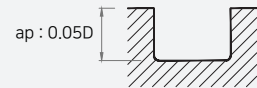
RPM = rev / min
FEED = mm / min



UR542 SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Hardened Steels (SKD, SKT, STAVAX)	
Hardness	~ HRC35		HRC35 ~ HRC45		HRC45~HRC55	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2		1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED
0.2	50,000	170	34,500	75	21,150	45
0.3	50,000	200	32,000	85	20,000	50
0.4	50,000	200	32,000	85	20,000	50
0.5	43,000	220	28,000	95	17,100	60
0.6	36,400	250	24,000	110	14,500	65
0.8	36,400	250	24,000	110	14,500	65
1	33,100	280	21,600	120	13,200	70
1.5	26,400	300	16,200	130	10,200	70
2	21,600	310	13,800	140	8,640	80
2.5	18,000	320	11,400	150	7,320	80
3	15,900	330	10,300	160	6,300	80
4	12,800	400	8,200	200	5,150	95
5	11,000	500	7,000	240	4,560	120
6	9,500	600	6,000	300	3,930	140
8	7,200	640	4,550	300	3,020	140
10	6,000	640	4,000	300	2,420	140
12	5,000	500	3,340	270	2,000	120
16	3,720	450	2,520	210	1,540	95
20	3,000	330	1,950	140	1,200	70

RPM = rev / min
FEED = mm / min

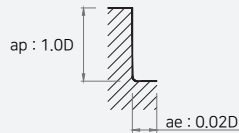


Recommended Cutting Condition

UR544, UXR514 SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Hardened Steels (SKD, SKT, STAVAX)	
Hardness	~ HRC35		HRC35 ~ HRC45		HRC45 ~ HRC55	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2		1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED
1	33,100	360	21,600	260	13,200	140
1.5	26,400	370	16,200	270	10,200	140
2	21,600	380	13,800	280	8,640	150
2.5	18,000	390	11,400	300	7,320	150
3	15,900	400	10,300	310	6,300	150
4	12,800	500	8,200	360	5,150	160
5	11,000	510	7,000	430	4,560	200
6	9,500	510	6,000	430	3,930	200
8	7,200	550	4,550	430	3,020	200
10	6,000	550	4,000	430	2,420	200
12	5,000	430	3,340	380	2,000	160
16	3,720	330	2,520	280	1,540	135
20	3,000	270	1,950	210	1,200	100

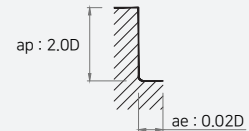
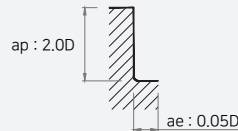
RPM = rev / min
FEED = mm / min



UXR504 SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Hardened Steels (SKD, SKT, STAVAX)	
	~ HRC25		HRC25 ~ HRC40		HRC25 ~ HRC40	
Hardness	~ 1100N/mm ²		1100 ~ 1500N/mm ²		1500 ~ 2000N/mm ²	
Strength						
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED
1	27,600	300	18,000	220	11,000	120
1.5	22,000	310	13,500	230	8,500	120
2	18,000	320	11,560	240	7,200	130
2.5	15,000	330	9,500	250	6,100	130
3	13,240	340	8,560	260	5,280	130
4	10,720	420	6,820	300	4,300	140
5	9,160	430	5,800	360	3,800	170
6	7,900	430	5,040	360	3,280	170
8	6,000	460	3,800	360	2,520	170
10	5,040	460	3,280	360	2,020	170
12	4,120	360	2,780	320	1,680	140
16	3,100	280	2,100	230	1,280	115
20	2,520	230	1,640	180	1,000	90

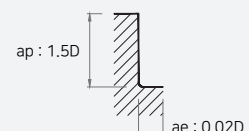
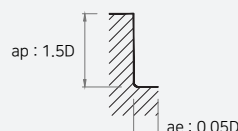
RPM = rev / min
FEED = mm / min



UR506 SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Hardened Steels (SKD, SKT, STAVAX)	
	~ HRC35		HRC35 ~ HRC45		HRC45~HRC55	
Hardness	~ 1100N/mm ²		1100 ~ 1500N/mm ²		1500 ~ 2000N/mm ²	
Strength						
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED
6	14,880	3,210	14,100	2,940	9,600	2,940
8	12,000	3,300	11,400	3,000	7,200	2,760
10	9,600	2,940	9,300	2,700	5,700	2,460
12	7,800	2,700	7,500	2,460	4,800	2,280
16	6,000	2,400	5,820	2,220	3,600	2,040
20	4,800	2,010	4,680	2,040	2,880	1,920

RPM = rev / min
FEED = mm / min

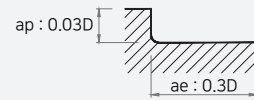
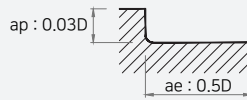


Recommended Cutting Condition

UDR503 SERIES ▶ General Processing

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Hardened Steels (SKD, SKT, STAVAX)	
	RPM	FEED	RPM	FEED	RPM	FEED
Hardness	~ HRC35		HRC35 ~ HRC45		HRC45 ~ HRC55	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2		1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED
6.0	5,100	3,500	5,500	3,750	3,850	2,700
8.0	3,800	3,400	4,150	3,700	2,850	2,550
10	3,800	3,750	3,600	3,500	2,700	2,700
12	3,200	4,200	3,250	4,250	2,250	2,300
16	2,400	3,100	2,250	2,900	1,700	1,750
20	1,900	2,500	1,800	2,350	1,350	1,400

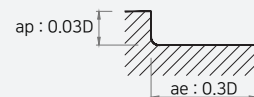
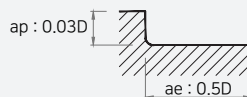
RPM = rev / min
FEED = mm / min



UDR503 SERIES ▶ High Speed Processing

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Hardened Steels (SKD, SKT, STAVAX)	
	RPM	FEED	RPM	FEED	RPM	FEED
Hardness	~ HRC35		HRC35 ~ HRC45		HRC45 ~ HRC55	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2		1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED
6.0	8,300	5,700	7,650	5,250	6,400	4,550
8.0	6,200	5,550	5,750	5,100	5,250	4,700
10	5,750	5,650	5,000	4,900	4,200	4,250
12	4,800	6,300	4,150	5,450	3,500	3,650
16	3,600	4,700	3,100	4,050	2,650	2,700
20	2,900	3,750	2,500	3,250	2,100	2,150

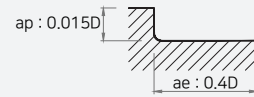
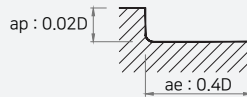
RPM = rev / min
FEED = mm / min



USPM4 SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Hardened Steels (SKD, SKT, STAVAX)	
	~ HRC35		HRC35 ~ HRC45		HRC45~HRC55	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2		1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED
1	49000	7650	40000	6500	35000	5750
1.5	37000	8550	30000	7200	27000	6400
2	29700	9000	24300	7560	21600	6750
3	19800	9900	16200	8100	14400	7650
4	15300	10800	12600	8550	10800	7920
6	9900	11700	8100	9900	7200	8640
8	7380	11700	6300	9900	5400	8640
10	5850	10800	4950	9000	4320	8550
12	4950	10800	4140	9000	3690	8100
16	3690	9000	3060	7920	2700	7020
20	2970	7200	2430	6300	2160	5670

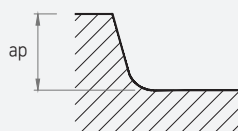
RPM = rev / min
FEED = mm / min



UTR504 SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)			Prehardened Steels (NAK, CENA, KP4)			Hardened Steels (SKD, SKT, STAVAX)		
	~ HRC35			HRC35 ~ HRC45			HRC45 ~ HRC55		
Strength	~ 1100N/mm2			1100 ~ 1500N/mm2			1500 ~ 2000N/mm2		
Diameter (mm)	RPM	FEED	Ap(mm)	RPM	FEED	Ap(mm)	RPM	FEED	Ap(mm)
0.4	40,000	630	0.008~0.016	32,000	450	0.008~0.012	22,000	270	0.004~0.008
0.6	30,000	630	0.012~0.024	23,000	450	0.012~0.018	15,000	270	0.006~0.012
0.8	22,500	630	0.016~0.032	17,000	450	0.016~0.024	11,500	270	0.008~0.016
1	18,000	630	0.020~0.040	13,500	450	0.020~0.030	9,000	270	0.010~0.020
1.2	14,400	630	0.025~0.050	11,700	450	0.025~0.040	7,200	270	0.012~0.025
1.5	11,700	630	0.030~0.060	9,000	450	0.030~0.050	5,850	270	0.015~0.030
2	9,000	630	0.040~0.080	7,200	450	0.040~0.060	4,500	270	0.020~0.040

RPM = rev / min
FEED = mm / min

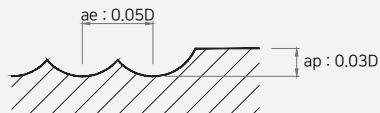


Recommended Cutting Condition

WB502, UB502---P SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Hardened Steels (SKD, SKT, STAVAX)	
Hardness	~ HRC35		HRC35 ~ HRC45		HRC45~HRC55	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2		1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED
0.1	40,000	550	40,000	500	33,000	400
0.2	30,000	720	30,000	630	27,000	575
0.3	30,000	900	30,000	810	27,000	720
0.4	30,000	1,140	30,000	1,020	27,000	900
0.5	30,000	1,440	30,000	1,260	27,000	1,140
0.6	30,000	1,740	30,000	1,500	27,000	1,320
0.8	30,000	2,340	30,000	1,980	27,000	1,800
1	30,000	2,880	30,000	2,520	27,000	2,280
1.2	30,000	3,060	28,800	2,580	25,800	2,310
1.5	30,000	3,240	28,800	2,700	25,800	2,400
2	29,820	3,420	28,680	2,880	24,000	2,400
3	19,860	3,600	19,080	3,180	15,900	2,400
4	14,940	3,600	14,340	3,180	12,000	2,400
5	11,160	3,480	10,680	2,940	9,000	2,250
6	8,340	2,910	8,040	2,460	6,600	1,860
8	6,660	2,520	6,420	2,100	5,400	1,620
10	5,580	2,220	5,340	1,860	4,500	1,440
12	4,170	1,770	4,008	1,500	3,360	1,140
16	3,340	1,590	3,210	1,320	2,700	1,020
20	2,670	1,410	2,580	1,170	2,160	900
25	2,130	1,150	2,060	950	1,730	730

RPM = rev / min
FEED = mm / min



UB512, UB512S6 SERIES

Workpiece		Alloy Steels Carbon Steels (SCM, SNCM, S45C)			Prehardened Steels (NAK, CENA, KP4)			Hardened Steels (SKD, SKT, STAVAX)		
Hardness		~ HRC35			HRC35 ~ HRC45			HRC45 ~ HRC55		
Strength		~ 1100N/mm2			1100 ~ 1500N/mm2			1500 ~ 2000N/mm2		
Diameter (mm)	Effective Length (mm)	RPM	FEED	ap(mm)	RPM	FEED	ap(mm)	RPM	FEED	ap(mm)
0.1	0.2	50000	240	0.009	50000	215	0.007	50000	190	0.005
0.1	0.3	50000	240	0.009	50000	215	0.007	50000	190	0.005
0.1	0.5	50000	240	0.006	50000	215	0.005	50000	190	0.004
0.1	1	45000	195	0.002	45000	175	0.002	45000	155	0.001
0.2	0.5	50000	335	0.018	50000	310	0.014	43200	260	0.010
0.2	1	50000	335	0.013	50000	310	0.010	43200	260	0.007
0.2	1.5	45000	270	0.007	45000	250	0.006	38880	210	0.004
0.2	2	45000	270	0.005	45000	250	0.004	38880	210	0.003
0.2	3	45000	270	0.003	45000	250	0.003	38880	210	0.002
0.3	1	50000	475	0.019	50000	430	0.015	42800	365	0.011
0.3	1.5	50000	475	0.019	50000	430	0.015	42800	365	0.011
0.3	2	45000	385	0.011	45000	350	0.008	38520	295	0.006
0.3	2.5	45000	385	0.007	45000	350	0.005	38520	295	0.004
0.3	3	45000	385	0.007	45000	350	0.005	38520	295	0.004
0.3	4	40000	305	0.004	40000	275	0.003	34240	235	0.002
0.3	5	30000	200	0.003	30000	180	0.002	25680	155	0.002
0.4	1	41000	490	0.036	38800	425	0.028	34200	340	0.020
0.4	1.5	41000	490	0.025	38800	425	0.020	34200	340	0.014
0.4	2	41000	490	0.025	38800	425	0.020	34200	340	0.014
0.4	2.5	36900	395	0.014	34920	345	0.011	30780	275	0.008
0.4	3	36900	395	0.014	34920	345	0.011	30780	275	0.008
0.4	4	36900	395	0.009	34920	345	0.007	30780	275	0.005
0.4	5	32800	315	0.009	31040	270	0.007	27360	220	0.005
0.4	6	32800	315	0.005	31040	270	0.004	27360	220	0.003
0.4	8	24600	205	0.004	23280	180	0.003	20520	145	0.002
0.4	10	12300	90	0.004	11640	75	0.003	10260	60	0.002
0.5	1	34200	685	0.045	32300	580	0.035	28500	515	0.025
0.5	1.5	34200	685	0.045	32300	580	0.035	28500	515	0.025
0.5	2	34200	685	0.032	32300	580	0.025	28500	515	0.018
0.5	2.5	34200	685	0.032	32300	580	0.025	28500	515	0.018
0.5	3	30780	555	0.018	29070	470	0.014	25650	415	0.010
0.5	4	30780	555	0.018	29070	470	0.014	25650	415	0.010
0.5	5	30780	555	0.011	29070	470	0.009	25650	415	0.006
0.5	6	27360	440	0.011	25840	370	0.009	22800	330	0.006
0.5	8	20520	290	0.007	19380	245	0.005	17100	215	0.004
0.5	10	20520	290	0.005	19380	245	0.004	17100	215	0.003
0.5	12	10260	125	0.005	9690	105	0.004	8550	95	0.003
0.5	14	10260	125	0.005	9690	105	0.004	8550	95	0.003
0.5	16	3420	35	0.005	3230	30	0.004	2850	25	0.003
0.6	1	34200	1025	0.038	32300	840	0.029	28500	685	0.021
0.6	2	34200	1025	0.038	32300	840	0.029	28500	685	0.021
0.6	3	34200	1025	0.038	32300	840	0.029	28500	685	0.021
0.6	4	30780	830	0.022	29070	680	0.017	25650	555	0.012
0.6	5	30780	830	0.014	29070	680	0.011	25650	555	0.008
0.6	6	30780	830	0.014	29070	680	0.011	25650	555	0.008
0.6	8	27360	655	0.008	25840	540	0.006	22800	440	0.005

Recommended Cutting Condition

UB512, UB512S6 SERIES

Workpiece		Alloy Steels Carbon Steels (SCM, SNCM, S45C)			Prehardened Steels (NAK, CENA, KP4)			Hardened Steels (SKD, SKT, STAVAX)		
Hardness		~ HRC35			HRC35 ~ HRC45			HRC45 ~ HRC55		
Strength		~ 1100N/mm2			1100 ~ 1500N/mm2			1500 ~ 2000N/mm2		
Diameter (mm)	Effective Length (mm)	RPM	FEED	ap(mm)	RPM	FEED	ap(mm)	RPM	FEED	ap(mm)
0.6	10	20520	430	0.005	19380	355	0.004	17100	290	0.003
0.6	12	20520	430	0.005	19380	355	0.004	17100	290	0.003
0.6	14	10260	185	0.005	9690	150	0.004	8550	125	0.003
0.6	16	10260	185	0.005	9690	150	0.004	8550	125	0.003
0.7	2	34200	1130	0.063	32300	930	0.049	28500	765	0.035
0.7	4	30780	915	0.025	29070	755	0.020	25650	620	0.014
0.7	6	30780	915	0.016	29070	755	0.012	25650	620	0.009
0.7	8	27360	725	0.016	25840	595	0.012	22800	490	0.009
0.7	10	27360	725	0.009	25840	595	0.007	22800	490	0.005
0.7	12	20520	475	0.006	19380	390	0.005	17100	320	0.004
0.8	2	34200	1230	0.072	32300	1035	0.056	28500	855	0.040
0.8	3	34200	1230	0.050	32300	1035	0.039	28500	855	0.028
0.8	4	34200	1230	0.050	32300	1035	0.039	28500	855	0.028
0.8	5	30780	995	0.029	29070	840	0.022	25650	695	0.016
0.8	6	30780	995	0.029	29070	840	0.022	25650	695	0.016
0.8	8	30780	995	0.018	29070	840	0.014	25650	695	0.010
0.8	10	27360	785	0.018	25840	660	0.014	22800	545	0.010
0.8	12	27360	785	0.011	25840	660	0.008	22800	545	0.006
0.8	14	20520	515	0.007	19380	435	0.006	17100	360	0.004
0.8	16	20520	515	0.007	19380	435	0.006	17100	360	0.004
0.8	20	10260	220	0.007	9690	185	0.006	8550	155	0.004
0.9	4	29250	1120	0.032	27630	935	0.025	24390	775	0.018
0.9	6	29250	1120	0.032	27630	935	0.025	24390	775	0.018
0.9	8	29250	1120	0.020	27630	935	0.016	24390	775	0.011
0.9	10	26000	885	0.020	24560	740	0.016	21680	610	0.011
1.0	2	30800	1540	0.090	29100	1310	0.070	25700	1075	0.050
1.0	3	30800	1540	0.090	29100	1310	0.070	25700	1075	0.050
1.0	4	30800	1540	0.063	29100	1310	0.049	25700	1075	0.035
1.0	5	30800	1540	0.063	29100	1310	0.049	25700	1075	0.035
1.0	6	27720	1245	0.036	26190	1060	0.028	23130	870	0.020
1.0	7	27720	1245	0.036	26190	1060	0.028	23130	870	0.020
1.0	8	27720	1245	0.036	26190	1060	0.028	23130	870	0.020
1.0	10	27720	1245	0.023	26190	1060	0.018	23130	870	0.013
1.0	12	24640	985	0.023	23280	840	0.018	20560	690	0.013
1.0	14	24640	985	0.014	23280	840	0.011	20560	690	0.008
1.0	16	18480	645	0.014	17460	550	0.011	15420	450	0.008
1.0	18	18480	645	0.009	17460	550	0.007	15420	450	0.005
1.0	20	18480	645	0.009	17460	550	0.007	15420	450	0.005
1.0	22	9240	275	0.009	8730	235	0.007	7710	195	0.005
1.0	26	9240	275	0.009	8730	235	0.007	7710	195	0.005
1.0	30	9240	275	0.009	8730	235	0.007	7710	195	0.005
1.0	40	3080	75	0.009	2910	65	0.007	2570	55	0.005
1.0	50	3080	75	0.006	2910	65	0.005	2570	55	0.003
1.2	4	26300	1375	0.076	24800	1150	0.059	21900	950	0.042
1.2	6	26300	1375	0.076	24800	1150	0.059	21900	950	0.042
1.2	8	23670	1115	0.043	22320	930	0.034	19710	770	0.024

UB512, UB512S6 SERIES

Workpiece		Alloy Steels Carbon Steels (SCM, SNCM, S45C)			Prehardened Steels (NAK, CENA, KP4)			Hardened Steels (SKD, SKT, STAVAX)		
Hardness		~ HRC35			HRC35 ~ HRC45			HRC45 ~ HRC55		
Strength		~ 1100N/mm2			1100 ~ 1500N/mm2			1500 ~ 2000N/mm2		
Diameter (mm)	Effective Length (mm)	RPM	FEED	ap(mm)	RPM	FEED	ap(mm)	RPM	FEED	ap(mm)
1.2	10	23670	1115	0.027	22320	930	0.021	19710	770	0.015
1.2	12	23670	1115	0.027	22320	930	0.021	19710	770	0.015
1.2	16	21040	880	0.016	19840	735	0.013	17520	610	0.009
1.2	20	15780	580	0.011	14880	485	0.008	13140	400	0.006
1.2	26	7890	245	0.011	7440	205	0.008	6570	170	0.006
1.4	6	21500	1295	0.088	20300	1100	0.069	18000	935	0.049
1.4	8	19350	1050	0.050	18270	890	0.039	16200	755	0.028
1.4	10	19350	1050	0.050	18270	890	0.039	16200	755	0.028
1.4	16	17200	830	0.032	16240	705	0.025	14400	600	0.018
1.5	4	23900	1580	0.135	22600	1355	0.105	20000	1075	0.075
1.5	5	23900	1580	0.095	22600	1355	0.074	20000	1075	0.053
1.5	6	23900	1580	0.095	22600	1355	0.074	20000	1075	0.053
1.5	7	23900	1580	0.095	22600	1355	0.074	20000	1075	0.053
1.5	8	21510	1280	0.054	20340	1100	0.042	18000	870	0.030
1.5	10	21510	1280	0.054	20340	1100	0.042	18000	870	0.030
1.5	12	21510	1280	0.054	20340	1100	0.042	18000	870	0.030
1.5	14	21510	1280	0.034	20340	1100	0.026	18000	870	0.019
1.5	16	19120	1010	0.034	18080	865	0.026	16000	690	0.019
1.5	18	19120	1010	0.034	18080	865	0.026	16000	690	0.019
1.5	20	19120	1010	0.020	18080	865	0.016	16000	690	0.011
1.5	22	19120	1010	0.020	18080	865	0.016	16000	690	0.011
1.5	26	14340	665	0.014	13560	570	0.011	12000	450	0.008
1.5	30	14340	665	0.014	13560	570	0.011	12000	450	0.008
1.5	35	7170	285	0.010	6780	245	0.008	6000	195	0.005
1.5	40	7170	285	0.010	6780	245	0.008	6000	195	0.005
1.6	4	22200	1555	0.101	21000	1300	0.078	18500	1110	0.056
1.6	6	22200	1555	0.101	21000	1300	0.078	18500	1110	0.056
1.6	8	22200	1555	0.101	21000	1300	0.078	18500	1110	0.056
1.6	10	19980	1260	0.058	18900	1055	0.045	16650	900	0.032
1.6	12	19980	1260	0.058	18900	1055	0.045	16650	900	0.032
1.6	16	19980	1260	0.036	18900	1055	0.028	16650	900	0.020
1.6	20	17760	995	0.036	16800	830	0.028	14800	710	0.020
1.8	4	22200	1780	0.113	21000	1470	0.088	18500	1225	0.063
1.8	6	22200	1780	0.113	21000	1470	0.088	18500	1225	0.063
1.8	8	22200	1780	0.113	21000	1470	0.088	18500	1225	0.063
1.8	10	19980	1440	0.065	18900	1190	0.050	16650	990	0.036
1.8	12	19980	1440	0.065	18900	1190	0.050	16650	990	0.036
1.8	16	19980	1440	0.041	18900	1190	0.032	16650	990	0.023
1.8	20	17760	1140	0.041	16800	940	0.032	14800	785	0.023
2.0	6	18000	1795	0.18	17000	1525	0.140	15000	1285	0.100
2.0	8	18000	1795	0.126	17000	1525	0.098	15000	1285	0.070
2.0	10	18000	1795	0.126	17000	1525	0.098	15000	1285	0.070
2.0	12	16200	1455	0.072	15300	1235	0.056	13500	1040	0.040
2.0	14	16200	1455	0.072	15300	1235	0.056	13500	1040	0.040
2.0	16	16200	1455	0.072	15300	1235	0.056	13500	1040	0.040
2.0	18	16200	1455	0.045	15300	1235	0.035	13500	1040	0.025

Recommended Cutting Condition

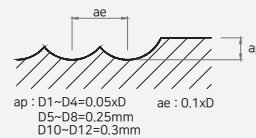
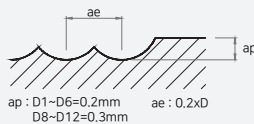
UB512, UB512S6 SERIES

Workpiece		Alloy Steels Carbon Steels (SCM, SNCM, S45C)			Prehardened Steels (NAK, CENA, KP4)			Hardened Steels (SKD, SKT, STAVAX)		
Hardness		~ HRC35			HRC35 ~ HRC45			HRC45 ~ HRC55		
Strength		~ 1100N/mm2			1100 ~ 1500N/mm2			1500 ~ 2000N/mm2		
Diameter (mm)	Effective Length (mm)	RPM	FEED	ap(mm)	RPM	FEED	ap(mm)	RPM	FEED	ap(mm)
2.0	20	16200	1455	0.045	15300	1235	0.035	13500	1040	0.025
2.0	22	14400	1150	0.045	13600	975	0.035	12000	820	0.025
2.0	26	14400	1150	0.045	13600	975	0.035	12000	820	0.025
2.0	30	14400	1150	0.027	13600	975	0.021	12000	820	0.015
2.0	35	10800	755	0.018	10200	640	0.014	9000	540	0.010
2.0	40	10800	755	0.018	10200	640	0.014	9000	540	0.010
2.0	45	5400	325	0.018	5100	275	0.014	4500	230	0.010
2.0	50	5400	325	0.018	5100	275	0.014	4500	230	0.010
2.0	60	5400	325	0.018	5100	275	0.014	4500	230	0.010
2.5	8	15800	1925	0.158	14900	1605	0.123	13200	1305	0.088
2.5	10	15800	1925	0.158	14900	1605	0.123	13200	1305	0.088
2.5	12	15800	1925	0.158	14900	1605	0.123	13200	1305	0.088
2.5	16	14220	1560	0.090	13410	1300	0.070	11880	1055	0.050
2.5	20	14220	1560	0.090	13410	1300	0.070	11880	1055	0.050
2.5	22	14220	1560	0.056	13410	1300	0.044	11880	1055	0.031
2.5	26	12640	1230	0.056	11920	1025	0.044	10560	835	0.031
2.5	30	12640	1230	0.056	11920	1025	0.044	10560	835	0.031
2.5	35	12640	1230	0.034	11920	1025	0.026	10560	835	0.019
2.5	40	9480	810	0.034	8940	675	0.026	7920	550	0.019
2.5	45	9480	810	0.023	8940	675	0.018	7920	550	0.013
2.5	50	9480	810	0.023	8940	675	0.018	7920	550	0.013
3.0	6	13700	2050	0.270	12900	1730	0.21	11400	1435	0.150
3.0	8	13700	2050	0.270	12900	1730	0.21	11400	1435	0.150
3.0	10	13700	2050	0.189	12900	1730	0.147	11400	1435	0.105
3.0	12	13700	2050	0.189	12900	1730	0.147	11400	1435	0.105
3.0	14	13700	2050	0.189	12900	1730	0.147	11400	1435	0.105
3.0	16	12330	1660	0.108	11610	1400	0.084	10260	1160	0.060
3.0	18	12330	1660	0.108	11610	1400	0.084	10260	1160	0.060
3.0	20	12330	1660	0.108	11610	1400	0.084	10260	1160	0.060
3.0	22	12330	1660	0.108	11610	1400	0.084	10260	1160	0.060
3.0	26	12330	1660	0.068	11610	1400	0.053	10260	1160	0.038
3.0	30	12330	1660	0.068	11610	1400	0.053	10260	1160	0.038
3.0	35	10960	1310	0.068	10320	1105	0.053	9120	920	0.038
3.0	40	10960	1310	0.041	10320	1105	0.032	9120	920	0.023
3.0	45	10960	1310	0.041	10320	1105	0.032	9120	920	0.023
3.0	50	8220	860	0.027	7740	725	0.021	6840	605	0.015
3.0	60	8220	860	0.027	7740	725	0.021	6840	605	0.015
4.0	8	9800	1965	0.360	9300	1670	0.28	8200	1395	0.200
4.0	10	9800	1965	0.360	9300	1670	0.28	8200	1395	0.200
4.0	12	9800	1965	0.360	9300	1670	0.28	8200	1395	0.200
4.0	14	9800	1965	0.252	9300	1670	0.196	8200	1395	0.140
4.0	16	9800	1965	0.252	9300	1670	0.196	8200	1395	0.140
4.0	18	9800	1965	0.252	9300	1670	0.196	8200	1395	0.140
4.0	20	9800	1965	0.252	9300	1670	0.196	8200	1395	0.140
4.0	22	8820	1590	0.144	8370	1355	0.112	7380	1130	0.080
4.0	26	8820	1590	0.144	8370	1355	0.112	7380	1130	0.080

UB512, UB512S6 SERIES

Workpiece		Alloy Steels Carbon Steels (SCM, SNCM, S45C)			Prehardened Steels (NAK, CENA, KP4)			Hardened Steels (SKD, SKT, STAVAX)		
Hardness		~ HRC35			HRC35 ~ HRC45			HRC45 ~ HRC55		
Strength		~ 1100N/mm2			1100 ~ 1500N/mm2			1500 ~ 2000N/mm2		
Diameter (mm)	Effective Length (mm)	RPM	FEED	ap(mm)	RPM	FEED	ap(mm)	RPM	FEED	ap(mm)
4.0	30	8820	1590	0.144	8370	1355	0.112	7380	1130	0.080
4.0	35	8820	1590	0.090	8370	1355	0.07	7380	1130	0.050
4.0	40	8820	1590	0.090	8370	1355	0.07	7380	1130	0.050
4.0	45	7840	1260	0.090	7440	1070	0.07	6560	895	0.050
4.0	50	7840	1260	0.090	7440	1070	0.07	6560	895	0.050
4.0	60	7840	1260	0.054	7440	1070	0.042	6560	895	0.030
5.0	15	7700	1845	0.315	7300	1455	0.245	6400	1285	0.175
5.0	20	7700	1845	0.315	7300	1455	0.245	6400	1285	0.175
5.0	26	6930	1495	0.180	6570	1180	0.14	5760	1040	0.100
5.0	30	6930	1495	0.180	6570	1180	0.14	5760	1040	0.100
5.0	35	6930	1495	0.180	6570	1180	0.14	5760	1040	0.100
5.0	40	6930	1495	0.180	6570	1180	0.14	5760	1040	0.100
5.0	50	6930	1495	0.113	6570	1180	0.088	5760	1040	0.063
5.0	60	6160	1180	0.113	5840	930	0.088	5120	820	0.063
6.0	20	6500	1900	0.378	6200	1600	0.294	5500	1330	0.210
6.0	30	6500	1900	0.378	6200	1600	0.294	5500	1330	0.210
8.0	25	4850	1800	0.504	4600	1500	0.392	4000	1280	0.280
8.0	30	4850	1800	0.504	4600	1500	0.392	4000	1280	0.280
10.0	30	3850	1650	0.900	3680	1400	0.7	3200	1200	0.500
10.0	40	3850	1650	0.630	3680	1400	0.49	3200	1200	0.350
12.0	32	3200	1520	1.080	3050	1300	0.84	2650	1100	0.600
12.0	45	3200	1520	0.756	3050	1300	0.588	2650	1100	0.420

RPM = rev / min
FEED = mm / min

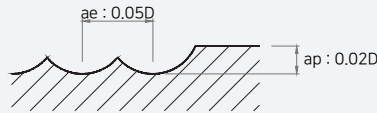


Recommended Cutting Condition

UB532 SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Hardened Steels (SKD, SKT, STAVAX)	
	~ HRC35		HRC35 ~ HRC45		HRC45~HRC55	
Hardness	~ 1100N/mm2		1100 ~ 1500N/mm2		1500 ~ 2000N/mm2	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2		1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED
3	35,000	2,800	33,000	2,600	12,000	900
4	26,000	2,300	25,000	2,200	9,000	800
5	21,000	2,100	20,000	2,000	7,000	700
6	17,000	1,900	16,000	1,800	6,000	650
8	13,000	1,700	12,000	1,600	4,500	550
10	10,500	1,450	10,000	1,400	3,500	500
12	9,000	1,400	8,000	1,300	3,000	450

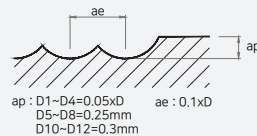
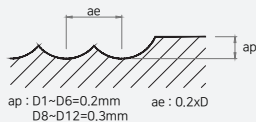
RPM = rev / min
FEED = mm / min



UB542 SERIES ▶ 일반가공

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Hardened Steels (SKD, SKT, STAVAX)	
	~ HRC35		HRC35 ~ HRC45		HRC45~HRC55	
Hardness	~ 1100N/mm2		1100 ~ 1500N/mm2		1500 ~ 2000N/mm2	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2		1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED
0.1	16,500	80	25,500	185	25,500	160
0.2	16,500	90	25,500	220	25,500	200
0.3	15,300	112	24,000	260	24,000	220
0.4	15,300	112	24,000	260	24,000	220
0.5	13,300	128	20,800	300	20,800	250
0.6	11,200	144	17,600	330	17,600	280
0.8	11,200	144	17,600	330	17,600	280
1.0	10,180	160	16,000	370	16,000	320
1.5	9,500	220	13,000	500	12,800	400
2.0	9,250	260	11,500	640	11,300	590
3.0	8,000	370	10,200	880	9,800	850
4.0	6,720	420	8,500	880	8,200	850
5.0	5,840	460	7,500	880	7,200	850
6.0	5,500	660	6,900	920	6,500	880
8.0	4,600	740	5,600	840	5,300	800
10	4,070	820	4,850	800	4,650	770
12	3,700	890	4,350	800	4,150	770

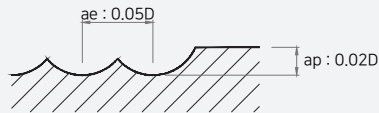
RPM = rev / min
FEED = mm / min



USB502 SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Hardened Steels (SKD, SKT, STAVAX)	
Hardness	~ HRC35		HRC35 ~ HRC45		HRC45~HRC55	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2		1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED
3	13,500	1,700	13,200	1,620	12,500	860
4	10,600	1,700	10,300	1,620	9,800	860
5	9,400	1,650	9,050	1,570	8,600	860
6	8,600	1,750	8,250	1,670	7,850	865
8	7,000	1,550	6,700	1,460	6,350	890
10	6,050	1,450	5,800	1,360	5,450	870
12	5,450	1,420	5,200	1,330	4,900	785
16	4,300	1,200	4,000	1,100	3,700	650
20	3,600	1,050	3,200	900	3,000	550

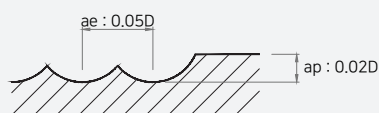
RPM = rev / min
FEED = mm / min



UB503 SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Hardened Steels (SKD, SKT, STAVAX)	
Hardness	~ HRC35		HRC35 ~ HRC45		HRC45~HRC55	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2		1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED
1	50,000	4,150	44,000	3,000	33,000	2100
1.5	40,000	5,100	35,000	3,660	36,400	2600
2	33,000	5,890	29,000	4,150	21,700	3000
3	25,000	6,930	22,000	4,880	16,500	3490
4	21,670	6,930	18,120	4,880	13,400	3490
5	18,000	6,520	15,100	4,880	11,160	3320
6	16,200	7,710	13,680	5,590	10,980	4050
8	12,150	6,610	10,170	4,720	8,280	3580
10	9,720	5,870	8,190	4,130	6,620	3100
12	8,150	5,490	4,130	3,830	5,520	2870

RPM = rev / min
FEED = mm / min

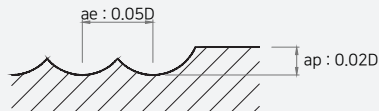


Recommended Cutting Condition

UB504 SERIES

Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Hardened Steels (SKD, SKT, STAVAX)	
	~ HRC35		HRC35 ~ HRC45		HRC45~HRC55	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2		1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED
1	48,000	3,300	35,000	2,350	32,000	2,200
1.5	38,400	4,100	28,000	2,900	25,600	2,700
2	31,680	4,600	23,100	3,300	21,000	3,100
3	24,000	5,430	17,500	3,880	16,000	3,650
4	20,130	5,430	14,880	3,880	14,220	3,650
5	16,780	5,430	12,400	3,690	11,670	3,470
6	15,200	6,220	12,200	4,500	11,100	3,830
8	11,300	5,250	9,200	3,980	8,320	3,350
10	9,100	4,590	7,350	3,450	6,660	2,870
12	7,590	4,260	6,130	3,190	5,530	2,400

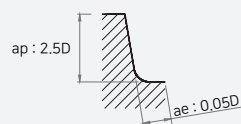
RPM = rev / min
FEED = mm / min



UTB502 SERIES

Workpiece	Alloy Steels Carbon Steels [SCM, SNCM, S45C]		Prehardened Steels (NAK, CENA, KP4)	
	~ HRC35		HRC35 ~ HRC45	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED
0.4	36,000	144	27,900	113
0.6	25,200	144	18,900	113
0.8	18,000	144	13,950	108
1	14,850	149	11,250	113
2	7,560	153	5,670	113
3	3,969	108	3,213	90
4	3,213	126	2,556	104

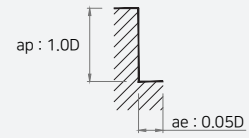
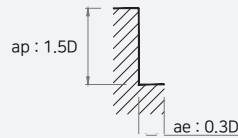
RPM = rev / min
FEED = mm / min



UF50 SERIES

Workpiece	Non ferrous Steel Alloy Steel Cast Iron		Alloy Steel Heat resisting steel		Stainless Steel		Heat Treatment Steel			
	~HRC30		HRC30 ~ HRC38		HRC38 ~ HRC45		HRC45 ~ HRC55		HRC55 ~ HRC65	
Strength	~ 1000N/mm2		1000 ~ 1200N/mm2		1200 ~ 1400N/mm2		1400 ~ 2000N/mm2		2000N/mm2~	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
6	15,600	2,320	12,400	840	8,400	570	3,400	260	2,400	190
8	11,600	2,320	9,200	840	6,300	570	2,400	240	1,800	180
10	9,200	2,320	7,600	840	5,100	570	2,000	290	1,300	190
12	8,000	2,400	6,000	800	4,200	570	1,680	260	1,200	190
14	6,800	2,400	5,200	840	3,600	570	1,400	200	900	130
16	6,000	2,400	4,800	760	3,300	510	1,200	160	800	110
18	5,200	2,320	4,400	720	2,700	420	1,100	150	700	100
20	4,800	2,160	3,600	560	2,400	360	1,000	150	660	100
25	4,300	2,150	3,200	620	2,160	410	900	160	600	100

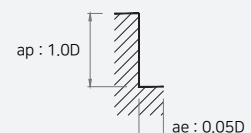
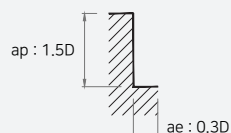
RPM = rev / min
FEED = mm / min



UF51 SERIES

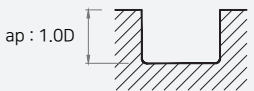
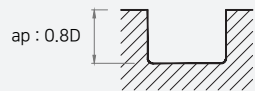
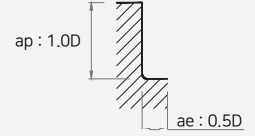
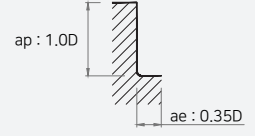
Workpiece	Alloy Steels Carbon Steels (SCM, SNCM, S45C)		Prehardened Steels (NAK, CENA, KP4)		Hardened Steels (SKD, SKT, STAVAX)	
	~ HRC35		HRC35 ~ HRC45		HRC45 ~ HRC55	
Strength	~ 1100N/mm2		1100 ~ 1500N/mm2		1500 ~ 2000N/mm2	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED
6	12,400	840	8,400	570	3,400	260
8	9,200	840	6,300	570	2,400	240
10	7,600	840	5,100	570	2,000	290
12	6,000	800	4,200	570	1,680	260
14	5,200	840	3,600	570	1,400	200
16	4,800	760	3,300	510	1,200	160
18	4,400	720	2,700	420	1,100	150
20	3,600	560	2,400	360	1,000	150
25	3,200	620	2,160	410	900	160

RPM = rev / min
FEED = mm / min



UF51---H SERIES

Workpiece	Alloy Steels Carbon Steels		Alloy Steels Carbon Steels Prehardened Steels		Alloy Steels Carbon Steels		Alloy Steels Carbon Steels Prehardened Steels	
Hardness	(SCM, S45C, S50C)		(SCM, SKD, NAK, KP4)		(SCM, S45C, S50C)		(SCM, SKD, NAK, KP4)	
Strength	~ HRC25		HRC25 ~ HRC40		~ HRC25		HRC25 ~ HRC40	
Diameter (mm)	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
6	12,000	1,550	10,600	1,100	15,800	2,570	14,300	1,850
8	9,000	1,650	8,100	1,180	11,900	2,700	10,700	1,950
10	7,200	1,650	6,400	1,180	9,500	2,700	8,500	1,950
12	6,000	1,540	5,400	1,140	8,000	2,570	7,100	1,850
16	4,500	1,500	4,100	1,050	6,000	2,450	5,400	1,750
20	3,600	1,330	3,200	900	4,800	2,140	4,300	1,500

<p>RPM = rev / min FEED = mm / min</p>  <p>ap : 1.0D</p>	 <p>ap : 0.8D</p>	 <p>ap : 1.0D ae : 0.5D</p>	 <p>ap : 1.0D ae : 0.35D</p>
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WD2022.08-ENG-B05



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