

U-Star Endmill

For medium hardness steel (HRC30~50)



Contents

Features	004
Application examples	006
Line-up	008
U-Star Endmill	010
Recommended Cutting Conditions	174





» **Various line-ups**

- Ball/flat/radius/roughing
- Rib type (straight and taper)

» **Enhanced wear resistance, Anti-oxidation and lubrication**

- New AlCrN series multi layered coating

» **Increased cutting performance and precision**

- Dispersion of cutting load from S-curved gash shape
- h5 level shank and high precision Endmill diameter/radius management

» **Increased chipping resistance**

- Optimized substrate for each Endmill shape
- Sharp cutting edge

For medium hardness steel (HRC30~50)

U-Star Endmill

The U-Star Endmill is launched with various shapes and line-ups for machining medium hardness steel workpieces (HRC30~50) - especially for the complicated shaped molds.

The **U-Star Endmill** ensures high cutting quality by dispersing cutting load from s-curve gash shape, reducing fracture from chipping resistance from enhanced cutting edge, and high precision tolerance management. It has good chipping resistance as it adapted optimal substrate selection per Endmill shapes for medium hardness workpiece machining and the application of new AlCrN multi layered coating grants excellent wear resistance, enhances anti oxidation, and excellent lubrication ensuring stable machining under high frictional heat condition.

KORLOY's U-Star Endmill will serve to achieve high productivity with its various line-ups for medium hardness workpiece cutting and high cutting performance.

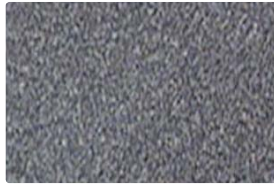
↔ Code system (inch)

U	R	52	2	A	020	060	X
U-Star Endmill	Type B: Ball BM: Miniature ball R: Radius XR: Multi helix radius E: Flat EM: Miniature flat XE: Heavy cut flat	Length/shank type 50: Standard 51: Neck 52: Long Cutting length, Long Shank 53: Lollipop 54: Taper Neck 55: Helix 15°	No. of flute 2: 2 flutes 4: 4 flutes 6: 6 flutes	Unit A: Inch none: Metric	Cutting diameter 016: Ø1/4 inch 020: Ø5/16 inch 032: Ø1/2 inch	Corner radius 010: 0.01 inch 060: 0.06 inch	S: Short length L: Long length X: Extra Length XL: Extra Long Length H: High helix

↔ Code system (metric)

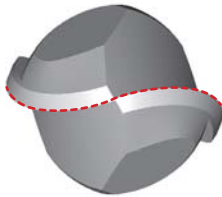
U	R	50	2	010	10	50	100	S3
U-Star Endmill	Type B: Ball SB: Staright ball E: Flat R: Radius SPM: High feed XE: Heavy cut flat XR: Multi helix radius TE: Taper flat TR: Taper radius TB: Taper ball DR: Double radius F: Roughing LE: Flat (lathe)	Length/shank type 50: Straight 51: Neck 52: Long shank 53: Lollipop 54: Taper neck	No. of flute 2: 2 flutes 3: 3 flutes 4: 4 flutes 5: 5 flutes 6: 6 flutes	Cutting diameter 010: Ø1.0 mm 060: Ø6.0 mm 250: Ø25.0 mm	Corner radius 005: 0.05 mm 010: 0.10 mm 020: 0.20 mm	Usable length 005: 0.5 mm 10: 10 mm 50: 50 mm	Overall length 50: 50 mm 100: 100 mm 150: 150 mm	Shank diameter S3: Ø3 mm S6: Ø6 mm S20: Ø20 mm

➔ Features



Applied substrate for medium hardness steel cutting

- Separated substrates (PC303W and PC315W) maximize the tool features for general purpose use.

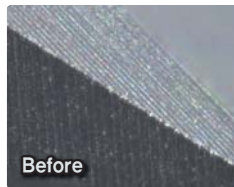


Applied S-curved gash shape

- Increased cutting performance and wear resistance due to dispersed cutting force

Edge treatment

- Enhanced chipping resistance at the beginning of cutting
- Guided stable cutting by managing the mold machining properties



After

Before

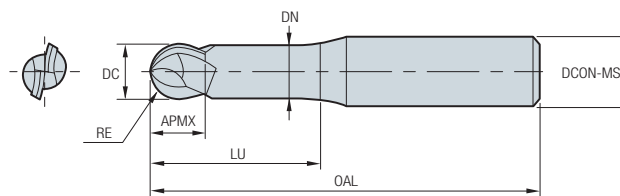
Grade PC303W

Grade PC315W

AlCrN base new coating

- Increased wear resistance and oxidation resistance by multi layer
- Enhanced lubrication with Cr containing
- Stable cutting under frictional heat

➔ ISO13399 Glossary

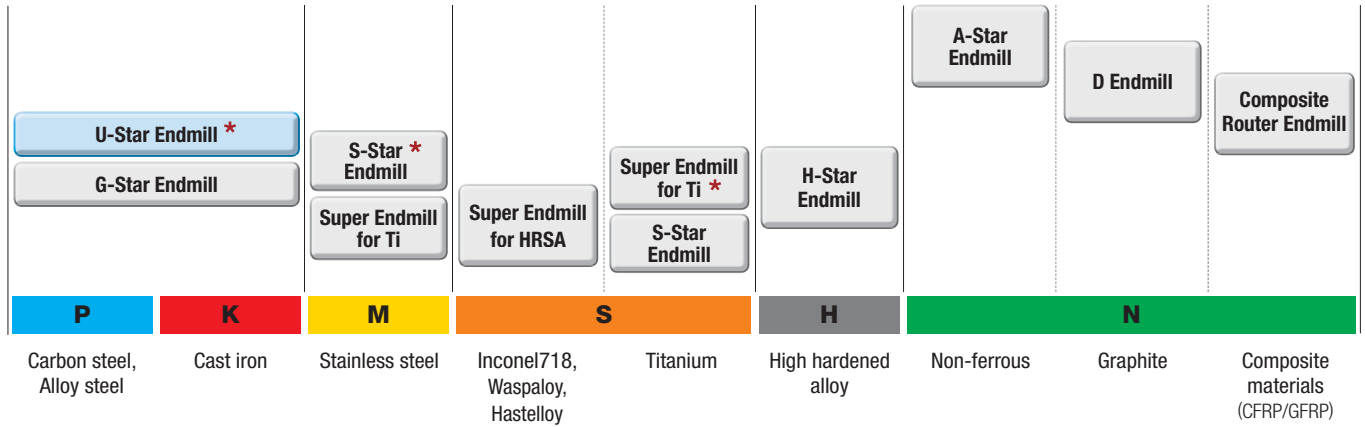


ISO13399 Property Symbols	Property Name
AP	Axial depth
APMX	Depth of cut maximum
BHTA	Body half taper angle
CA	Collision Angle
CHW	Corner chamfer width
DC	Cutting diameter
DCON-MS	Connection diameter machine side
DCX	Cutting diameter maximum
DN	Neck diameter
FHA	Flute helix angle
KCH	Corner chamfer

ISO13399 Property Symbols	Property Name
L	Length
LF	Functional length
LS	Shank length
LU	Usable length / max. recommended
LUX	Usable length maximum
NOF	Flute count
OAL	Overall length
PSIR	Tool lead angle
RE	Corner radius
WT	Weight of item

↪ Tool selection guide

*: 1st recommendation



↪ Application examples

Pre-hardened steel (STAVAX)

Cutting condition vc (sfm) = 400, fz (ipt) = 0.001, ap (inch) = 0.007, ae (inch) = 0.012, wet

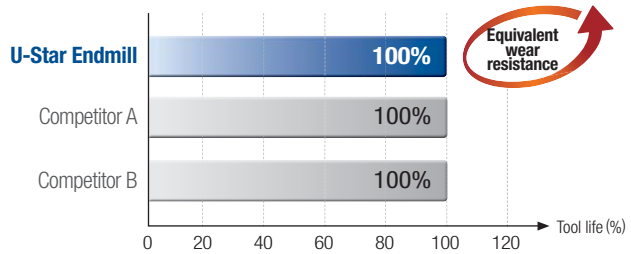
Tool UB502A016 (Diameter = Ø1/4, PC303W)



[U-Star Endmill]

[Competitor A]

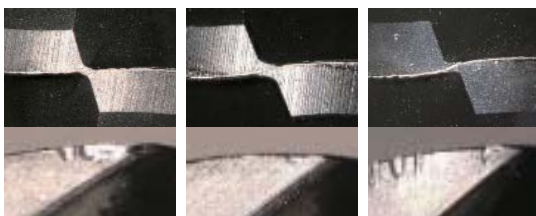
[Competitor B]



Pre-hardened steel (KP4M)

Cutting condition vc (sfm) = 173, fz (ipt) = 0.001, ap (inch) = 0.01, ae (inch) = 0.012, wet

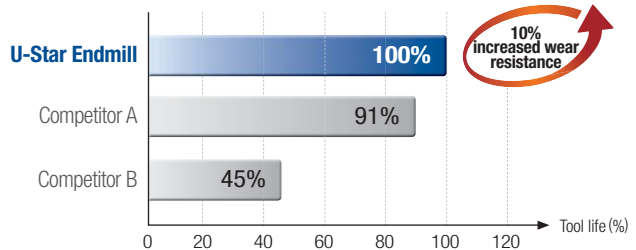
Tool UE504A020 (Diameter = Ø5/16, PC315W)



[U-Star Endmill]

[Competitor A]

[Competitor B]

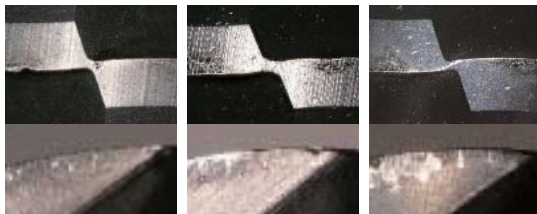


↻ Application examples

Pre-hardened steel (NAK80)

Cutting condition $vc(m/min) = 134$, $fz(mm/t) = 0.17$, $ap(mm) = 0.18$, $ae(mm) = 0.3$, wet

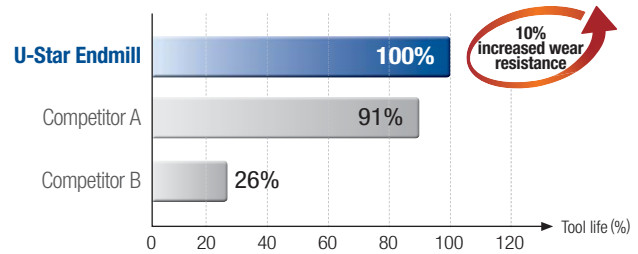
Tool UB502060 (Diameter = $\varnothing 6$, PC303W)



[U-Star Endmill]

[Competitor A]

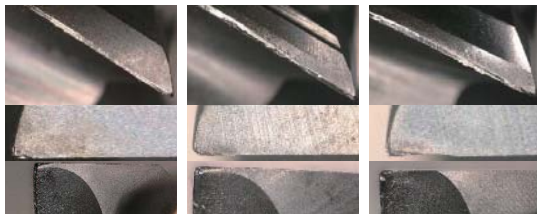
[Competitor B]



Pre-hardened steel (STAVAX)

Cutting condition $vc(m/min) = 54$, $fz(mm/t) = 0.03$, $ap(mm) = 6.0$, $ae(mm) = 0.3$, wet

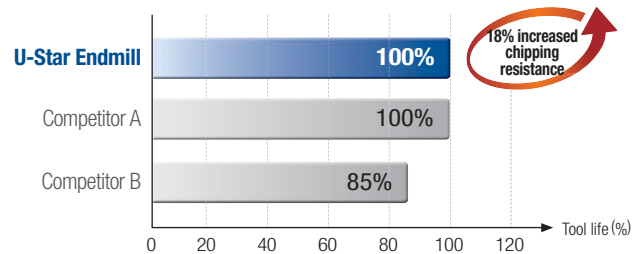
Tool UF504060 (Diameter = $\varnothing 6$, PC315W)



[U-Star Endmill]

[Competitor A]

[Competitor B]



Pre-hardened steel (KP4M)

Cutting condition $vc(m/min) = 105$, $fz(mm/t) = 0.03$, $ap(mm) = 6.0$, $ae(mm) = 0.3$, wet

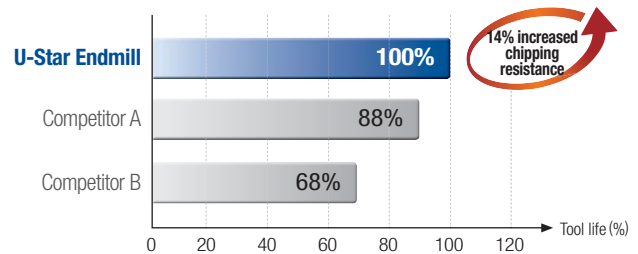
Tool UF504060 (Diameter = $\varnothing 6$, PC315W)



[U-Star Endmill]

[Competitor A]

[Competitor B]



Pre-hardened steel (NAK80)

Cutting condition $vc(m/min) = 63$, $fz(mm/t) = 0.03$, $ap(mm) = 6.0$, $ae(mm) = 0.3$, wet

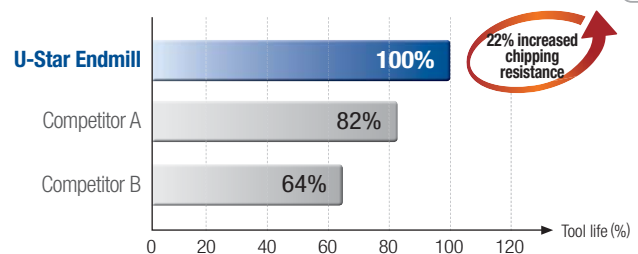
Tool UF504060 (Diameter = $\varnothing 6$, PC315W)









































































[U-Star Endmill]

[Competitor A]





















































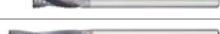



[Competitor B]



↪ Line-up

Designation	Picture	Product name	Unit	Range	Irregular flute spacing	Page
UEM502A		2 flutes miniature flat Endmill		Ø0.016 ~ 0.062		B10
UE502A		2 flutes flat Endmill		Ø1/32 ~ 1		B11
UE502		2 flutes flat Endmill		Ø0.1 ~ 25		B12~B14
UXE502		2 flutes flat for heavy cuts		Ø0.1 ~ 20		B15~B17
UTE502		2 flutes tapered flat Endmill		Ø0.3 ~ 10		B18~B21
UE512A		2 flutes neck type flat Endmill		Ø1/32 ~ 1/2		B22
UE512		2 flutes neck type flat Endmill		Ø0.1 ~ 12		B23~B28
UE522A		2 flutes flat Endmill (Long length)		Ø3/64 ~ 1		B29
UE522		2 flutes flat Endmill (Long length)		Ø1 ~ 25		B30~B33
UE504A		4 flutes flat Endmill		Ø1/32 ~ 1	●	B34
UE504		4 flutes flat Endmill		Ø0.8 ~ 25	●	B35
UE504AH		4 flutes 45° helix flat Endmill		Ø1/32 ~ 1		B36
UE504H		4 flutes 45° helix flat Endmill		Ø1 ~ 20		B37
ULE504		4 flutes automatic cnc flat Endmill		Ø3 ~ 16		B38
UXE504A		4 flutes flat Endmill		Ø1/32 ~ 1	●	B39
UXE504		4 flutes flat Endmill for heavy cuts		Ø1 ~ 20	●	B40~B41
UTE504		4 flutes tapered flat Endmill		Ø0.8 ~ 10		B42~B47
UE514A		4 flutes neck type flat Endmill		Ø3/64 ~ 1/2		B48
UE514		4 flutes neck type flat Endmill		Ø1 ~ 12		B49~B52
UE524A		4 flutes flat Endmill (Long length)		Ø3/64 ~ 1		B53
UE524		4 flutes flat Endmill (Long length)		Ø1 ~ 25		B54~B57
UE506A		6 flutes flat Endmill		Ø1/4 ~ 5/8		B58
UE506		6 flutes flat Endmill		Ø6 ~ 25		B59
UE526A		6 flutes flat Endmill (Long length)		Ø1/4 ~ 5/8		B60
UR502A		2 flutes radius Endmill		Ø1/16 ~ 1/2		B61~B62
UR502		2 flutes radius Endmill		Ø0.2 ~ 20		B63~B67
UR512		2 flutes neck type radius Endmill		Ø0.2 ~ 20		B68~B79
UR522A		2 flutes radius Endmill (Long length)		Ø1/16 ~ 1/2		B80
UR542A		2 flutes tapered neck radius Endmill		Ø3/64 ~ 1/2		B81
UR542		2 flutes tapered neck radius Endmill		Ø0.2 ~ 4		B82~B91
UDR503		3 flutes double radius Endmill		Ø6 ~ 20		B92
UR504		4 flutes radius Endmill		Ø3 ~ 20	●	B93~B94
UXR504A		4 flutes radius Endmill		Ø1/16 ~ 1/2	●	B95~B96
UXR504		4 flutes multi helix radius Endmill		Ø1 ~ 20	●	B97~B101
UTR504		4 flutes tapered radius Endmill		Ø0.8 ~ 2.5		B102~B109

↪ Line-up

Designation	Picture	Product name	Unit	Range	Irregular flute spacing	Page
UXR514A		4 flutes neck type radius Endmill		Ø3/64 ~ 1/2	●	B110~111
UXR514		4 flutes multi helix neck radius Endmill		Ø1 ~ 20	●	B112~B121
UXR524A		4 flutes radius Endmill (Long length)		Ø1/16 ~ 1/2		B122
UR544A		4 flutes tapered neck radius Endmill		Ø3/64 ~ 1/2		B123
UR544		4 flutes tapered neck radius Endmill		Ø1 ~ 4		B124~B130
USPM4		4 flutes radius for high speed machining		Ø1 ~ 20		B131~B132
UR506A		6 flutes radius Endmill		Ø1/4 ~ 5/8		B133
UR506		6 flutes radius Endmill		Ø6 ~ 20		B134
UBM502A		2 flutes miniature ball Endmill		Ø0.024 ~ 0.062		B135
UB502A		2 flutes ball Endmill		Ø1/32 ~ 1		B136
UB502		2 flutes ball Endmill		Ø1 ~ 25		B137~B140
UB502P		2 flutes high precision ball Endmill		Ø0.1 ~ 12		B141
USB502		2 flutes straight ball Endmill		Ø3 ~ 20		B142
UTB502		2 flutes tapered ball Endmill		Ø0.3 ~ 2		B143~B144
UB512A		2 flutes neck type ball Endmill		Ø1/32 ~ 1		B145
UB512		2 flutes neck type ball Endmill		Ø0.1 ~ 12		B146~B151
UB512S6		2 flutes neck type ball Endmill (shank 6)		Ø0.5 ~ 2		B152~B153
UB532A		2 flutes lollipop type ball Endmill		Ø1/8 ~ 1/2		B154
UB532		2 flutes lollipop type ball Endmill		Ø3 ~ 12		B154
UB542A		2 flutes tapered neck ball Endmill		Ø1/16 ~ 1/2		B155
UB542		2 flutes tapered neck ball Endmill		Ø0.1 ~ 12		B156~B167
UB552A		2 flutes 15° helix ball Endmill		Ø1/32 ~ 1/2		B168
UB503		3 flutes ball Endmill		Ø1 ~ 12		B168
UB504A		4 flutes ball Endmill		Ø1/32 ~ 1		B169
UB504		4 flutes ball Endmill		Ø1 ~ 12		B170
UF50		3~5 flutes chamfer pitch roughing Endmill		Ø3 ~ 25		B171
UF51		3~5 flutes fine pitch roughing Endmill		Ø3 ~ 25		B172
UF51H		3~5 flutes 45° helix fine pitch roughing Endmill		Ø3 ~ 25		B173

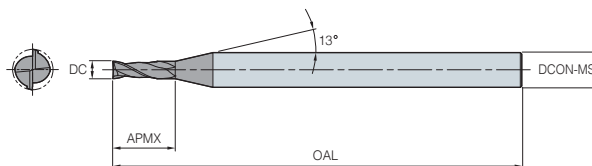
UEM502A

2 flutes miniature flat



p.176

DC	Tolerance
ALL	0 ~ -0.001



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-084955	UEM502A016	0.016	1/8	0.032	1 1/2
6-01-084956	UEM502A020	0.02	1/8	0.038	1 1/2
6-01-084957	UEM502A024	0.024	1/8	0.043	1 1/2
6-01-084958	UEM502A028	0.028	1/8	0.06	1 1/2
6-01-084959	UEM502A031	0.031	1/8	0.08	1 1/2
6-01-084960	UEM502A035	0.035	1/8	0.087	1 1/2
6-01-084961	UEM502A040	0.04	1/8	0.1	1 1/2
6-01-084962	UEM502A043	0.043	1/8	0.118	1 1/2
6-01-084963	UEM502A047	0.047	1/8	0.118	1 1/2
6-01-084964	UEM502A052	0.052	1/8	0.138	1 1/2
6-01-084965	UEM502A055	0.055	1/8	0.138	1 1/2
6-01-084966	UEM502A062	0.062	1/8	0.157	1 1/2

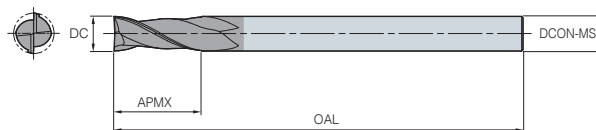
UE502A

2 flutes flat



DC	Tolerance
ALL	0 ~ -0.0012

p.176



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-084967	UE502A002	1/32	1/8	3/16	1 1/2
6-01-084968	UE502A004	1/16	1/4	5/32	2
6-01-084969	UE502A004L	1/16	1/8	3/16	2
6-01-084970	UE502A005	5/64	1/4	1/4	2
6-01-084971	UE502A006	3/32	1/8	5/16	2
6-01-084972	UE502A008	1/8	1/4	5/16	2
6-01-084973	UE502A008L	1/8	1/8	1/2	2
6-01-084974	UE502A010	5/32	3/16	9/16	2
6-01-084975	UE502A012	3/16	1/4	3/8	2
6-01-084976	UE502A012L	3/16	3/16	5/8	2
6-01-084977	UE502A013	13/64	1/4	5/8	2 3/8
6-01-084979	UE502A016	1/4	1/4	5/8	2 3/8
6-01-084980	UE502A016L	1/4	1/4	3/4	2 1/2
6-01-084981	UE502A018	9/32	5/16	3/4	2 3/8
6-01-084982	UE502A018L	9/32	5/16	3/4	2 1/2
6-01-084983	UE502A020	5/16	5/16	3/4	2 3/4
6-01-084984	UE502A020L	5/16	5/16	13/16	2 3/4
6-01-084986	UE502A024L	3/8	3/8	1	3
6-01-084985	UE502A024	3/8	3/8	1	2 3/4
6-01-084987	UE502A026	13/32	7/16	1	2 3/4
6-01-084978	UE502A014	7/32	1/4	5/8	2 3/8
6-01-084988	UE502A028	7/16	7/16	1	2 3/4
6-01-084989	UE502A032	1/2	1/2	1	3
6-01-084990	UE502A032L	1/2	1/2	1 3/16	3 1/8
6-01-084991	UE502A036	9/16	9/16	1 1/8	3 1/2
6-01-084992	UE502A040	5/8	5/8	1 1/4	3 1/2
6-01-084993	UE502A048	3/4	3/4	1 1/2	4
6-01-084994	UE502A064	1	1	1 1/2	4

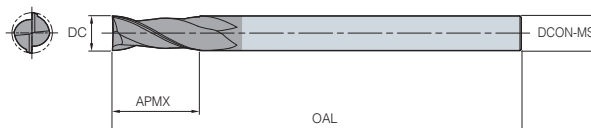
UE502

2 flutes flat



p.177

DC	Tolerance
∅0.1 ~ ∅6	0.000 ~ -0.012
∅6.5 ~ ∅25	0.000 ~ -0.015



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-076254	UE502001S3	0.1	3	0.2	40
6-01-076172	UE502001	0.1	4	0.2	40
6-01-076173	UE5020015	0.15	4	0.3	40
6-01-076255	UE502002S3	0.2	3	0.4	40
6-01-076174	UE502002	0.2	4	0.4	40
6-01-076175	UE5020025	0.25	4	0.5	40
6-01-076256	UE502003S3	0.3	3	0.6	40
6-01-076176	UE502003	0.3	4	0.6	40
6-01-076177	UE5020035	0.35	4	0.7	40
6-01-076257	UE502004S3	0.4	3	0.8	40
6-01-076178	UE502004	0.4	4	0.8	40
6-01-076179	UE5020045	0.45	4	0.9	40
6-01-076258	UE502005S3	0.5	3	1	40
6-01-076180	UE502005	0.5	4	1	40
6-01-076181	UE5020055	0.55	4	1.1	40
6-01-076259	UE502006S3	0.6	3	1.2	40
6-01-076182	UE502006	0.6	4	1.2	40
6-01-076183	UE5020065	0.65	4	1.3	40
6-01-076260	UE502007S3	0.7	3	1.4	40
6-01-076184	UE502007	0.7	4	1.4	40
6-01-076185	UE5020075	0.75	4	1.5	40
6-01-076261	UE502008S3	0.8	3	1.6	40
6-01-076186	UE502008	0.8	4	1.6	40
6-01-076187	UE5020085	0.85	4	1.7	40
6-01-076262	UE502009S3	0.9	3	1.8	40
6-01-076188	UE502009	0.9	4	1.8	40
6-01-076189	UE5020095	0.95	4	2	40
6-01-076263	UE502010S3	1	3	2.5	50
6-01-076230	UE502010S4	1	4	2.5	50
6-01-076190	UE502010	1	6	2.5	50
6-01-076231	UE502011S4	1.1	4	3	50
6-01-076264	UE502012S3	1.2	3	3	50
6-01-076232	UE502012S4	1.2	4	3	50
6-01-076191	UE502012	1.2	6	3	50
6-01-076233	UE502013S4	1.3	4	3	50
6-01-076234	UE502014S4	1.4	4	4	50

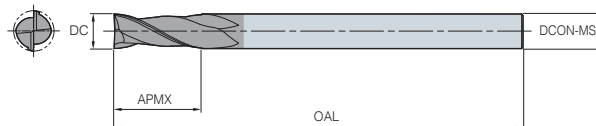
UE502

2 flutes flat



DC	Tolerance
Ø0.1 ~ Ø6	0.000 ~ -0.012
Ø6.5 ~ Ø25	0.000 ~ -0.015

p.177



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-076265	UE502015S3	1.5	3	4	50
6-01-076235	UE502015S4	1.5	4	4	50
6-01-076192	UE502015	1.5	6	4	50
6-01-076236	UE502016S4	1.6	4	4	50
6-01-076237	UE502017S4	1.7	4	4	50
6-01-076238	UE502018S4	1.8	4	5	50
6-01-076239	UE502019S4	1.9	4	5	50
6-01-076266	UE502020S3	2	3	6	50
6-01-076240	UE502020S4	2	4	6	50
6-01-076193	UE502020	2	6	6	50
6-01-076241	UE502021S4	2.1	4	6	50
6-01-076242	UE502022S4	2.2	4	6	50
6-01-076243	UE502023S4	2.3	4	6	50
6-01-076244	UE502024S4	2.4	4	6	50
6-01-076267	UE502025S3	2.5	3	7	50
6-01-076194	UE502025	2.5	6	7	50
6-01-076245	UE502025S4	2.5	4	8	50
6-01-076246	UE502026S4	2.6	4	8	50
6-01-076247	UE502027S4	2.7	4	8	50
6-01-076248	UE502028S4	2.8	4	8	50
6-01-076249	UE502029S4	2.9	4	8	50
6-01-076268	UE502030S3	3	3	8	50
6-01-076250	UE502030S4	3	4	8	50
6-01-076195	UE502030	3	6	8	50
6-01-076251	UE502035S4	3.5	4	10	50
6-01-076196	UE502035	3.5	6	10	50
6-01-076253	UE502040080S4	4	4	10	80
6-01-076252	UE502040S4	4	4	10	50
6-01-076197	UE502040	4	6	10	50
6-01-076198	UE502045	4.5	6	14	50
6-01-076199	UE502050	5	6	15	60
6-01-076200	UE502055	5.5	6	15	60
6-01-076201	UE502060	6	6	15	60
6-01-076202	UE502065	6.5	8	18	60
6-01-076203	UE502070	7	8	20	60
6-01-076204	UE502075	7.5	8	20	60

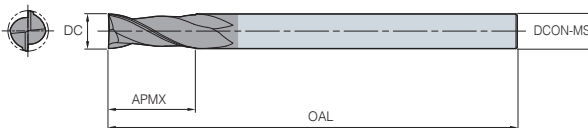
UE502

2 flutes flat



p.177

DC	Tolerance
Ø0.1 ~ Ø6	0.000 ~ -0.012
Ø6.5 ~ Ø25	0.000 ~ -0.015



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-076205	UE502080	8	8	20	70
6-01-076206	UE502085	8.5	10	22	70
6-01-076207	UE502090	9	10	22	70
6-01-076208	UE502095	9.5	10	24	70
6-01-076209	UE502100	10	10	25	75
6-01-076210	UE502105	10.5	12	26	75
6-01-076211	UE502110	11	12	30	75
6-01-076212	UE502115	11.5	12	30	80
6-01-076213	UE502120	12	12	30	80
6-01-076214	UE502130	13	12	35	100
6-01-076217	UE502140S16	14	16	35	100
6-01-076216	UE502140	14	14	35	100
6-01-076215	UE502140S12	14	12	35	100
6-01-076218	UE502150	15	16	38	100
6-01-076219	UE502160	16	16	40	100
6-01-076220	UE502170	17	16	42	100
6-01-076222	UE502180	18	18	45	100
6-01-076221	UE502180S16	18	16	45	100
6-01-076223	UE502190	19	20	45	100
6-01-076224	UE502200	20	20	45	100
6-01-076225	UE502210	21	20	45	100
6-01-076226	UE502220	22	20	45	100
6-01-076227	UE502230	23	25	50	120
6-01-076228	UE502240	24	25	50	120
6-01-076229	UE502250	25	25	50	120

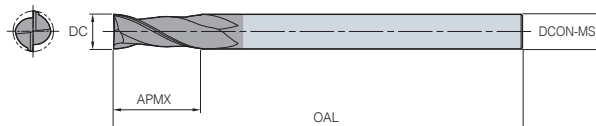
UXE502

2 flutes flat for heavy cuts



DC	Tolerance
Ø0.1 ~ Ø7	0.000 ~ -0.012
Ø8 ~ Ø20	0.000 ~ -0.015

p.177



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-076269	UXE502001001	0.1	4	0.1	40
6-01-076270	UXE502001	0.1	4	0.2	40
6-01-076271	UXE502001003	0.1	4	0.3	40
6-01-076272	UXE502002002	0.2	4	0.2	40
6-01-076273	UXE502002	0.2	4	0.4	40
6-01-076274	UXE502002006	0.2	4	0.6	40
6-01-076275	UXE502003003	0.3	4	0.3	40
6-01-076276	UXE502003	0.3	4	0.6	40
6-01-076277	UXE502003009	0.3	4	0.9	40
6-01-076278	UXE502004004	0.4	4	0.4	40
6-01-076279	UXE502004	0.4	4	0.8	40
6-01-076280	UXE502004012	0.4	4	1.2	40
6-01-076281	UXE502005005	0.5	4	0.5	40
6-01-076282	UXE502005	0.5	4	1	40
6-01-076283	UXE502005015	0.5	4	1.5	40
6-01-076284	UXE502006006	0.6	4	0.6	40
6-01-076285	UXE502006	0.6	4	1.2	40
6-01-076286	UXE502006018	0.6	4	1.8	40
6-01-076287	UXE502007007	0.7	4	0.7	40
6-01-076288	UXE502007	0.7	4	1.4	40
6-01-076289	UXE502007021	0.7	4	2.1	40
6-01-076290	UXE502008008	0.8	4	0.8	40
6-01-076291	UXE502008	0.8	4	1.6	40
6-01-076292	UXE502008024	0.8	4	2.4	40
6-01-076293	UXE502009009	0.9	4	0.9	40
6-01-076294	UXE502009	0.9	4	1.8	40
6-01-076295	UXE502009027	0.9	4	2.7	40
6-01-076296	UXE50201001	1	6	1	40
6-01-076297	UXE50201002	1	6	2	40
6-01-076298	UXE502010	1	6	2.5	50
6-01-076299	UXE50201003	1	6	3	50
6-01-076300	UXE50201004	1	6	4	50
6-01-076301	UXE50201006	1	6	6	50
6-01-076302	UXE50201202	1.2	6	2	40
6-01-076303	UXE502012	1.2	6	3	50
6-01-076304	UXE50201204	1.2	6	4	50

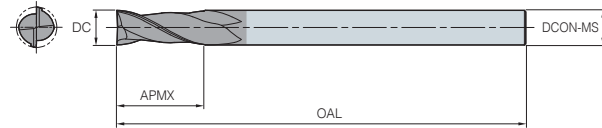
UXE502

2 flutes flat for heavy cuts



DC	Tolerance
Ø0.1 ~ Ø7	0.000 ~ -0.012
Ø8 ~ Ø20	0.000 ~ -0.015

p.177



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-076305	UXE50201206	1.2	6	6	50
6-01-076306	UXE502015015	1.5	6	1.5	40
6-01-076307	UXE50201503	1.5	6	3	40
6-01-076308	UXE502015	1.5	6	4	50
6-01-076309	UXE50201506	1.5	6	6	50
6-01-076310	UXE50201508	1.5	6	8	50
6-01-076311	UXE50201510	1.5	6	10	50
6-01-076312	UXE50202002	2	6	2	40
6-01-076313	UXE50202004	2	6	4	40
6-01-076314	UXE502020	2	6	6	50
6-01-076315	UXE50202008	2	6	8	50
6-01-076316	UXE50202010	2	6	10	50
6-01-076317	UXE50202012	2	6	12	50
6-01-076318	UXE502025025	2.5	6	2.5	40
6-01-076319	UXE50202505	2.5	6	5	40
6-01-076320	UXE502025	2.5	6	7	50
6-01-076321	UXE50202510	2.5	6	10	50
6-01-076322	UXE50202512	2.5	6	12	50
6-01-076323	UXE50203003	3	6	3	40
6-01-076324	UXE50203006	3	6	6	40
6-01-076325	UXE502030	3	6	8	50
6-01-076326	UXE50203010	3	6	10	50
6-01-076327	UXE50203012	3	6	12	50
6-01-076328	UXE50203014	3	6	14	50
6-01-076329	UXE50203510	3.5	6	10	50
6-01-076330	UXE50204004	4	6	4	40
6-01-076331	UXE50204008	4	6	8	40
6-01-076332	UXE502040	4	6	10	50
6-01-076333	UXE50204012	4	6	12	50
6-01-076334	UXE50204014	4	6	14	50
6-01-076335	UXE50204016	4	6	16	50
6-01-076336	UXE50204511	4.5	6	11	50
6-01-076337	UXE50205005	5	6	5	50
6-01-076338	UXE50205010	5	6	10	50
6-01-076339	UXE502050	5	6	15	60
6-01-076340	UXE50205020	5	6	20	60

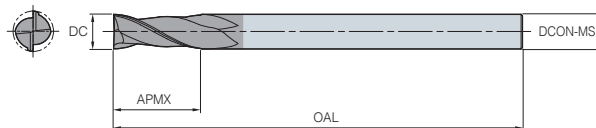
UXE502

2 flutes flat for heavy cuts



DC	Tolerance
Ø0.1 ~ Ø7	0.000 ~ -0.012
Ø8 ~ Ø20	0.000 ~ -0.015

p.177



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-076341	UXE50205025	5	6	25	60
6-01-076342	UXE50205513	5.5	6	13	50
6-01-076343	UXE50206006	6	6	6	50
6-01-076344	UXE50206012	6	6	12	50
6-01-076345	UXE502060	6	6	15	60
6-01-076346	UXE50206020	6	6	20	60
6-01-076347	UXE50206025	6	6	25	60
6-01-076348	UXE50206513	6.5	8	13	60
6-01-076349	UXE50207018	7	8	18	60
6-01-076350	UXE50208016	8	8	16	60
6-01-076351	UXE502080	8	8	20	70
6-01-076352	UXE50208025	8	8	25	70
6-01-076353	UXE50208030	8	8	30	70
6-01-076354	UXE50210022	10	10	22	65
6-01-076355	UXE502100	10	10	25	75
6-01-076356	UXE50210030	10	10	30	75
6-01-076357	UXE50210035	10	10	35	75
6-01-076358	UXE50212026	12	12	26	70
6-01-076359	UXE502120	12	12	30	80
6-01-076360	UXE50212035	12	12	35	80
6-01-076361	UXE50212040	12	12	40	80
6-01-076362	UXE502140	14	16	35	100
6-01-076363	UXE502160	16	16	32	100
6-01-076364	UXE50216040	16	16	40	100
6-01-076365	UXE502180	18	20	45	100
6-01-076366	UXE502200	20	20	45	100

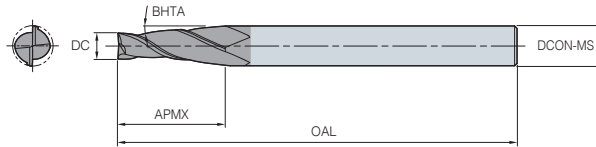
UTE502

2 flutes tapered flat



p.177

DC	Tolerance
Ø0.3 ~ Ø10	0.000 ~ -0.030



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	BHTA(°)	OAL
6-01-077244	UTE502003005	0.3	4	1.2	0.5	40
6-01-077245	UTE50200301	0.3	4	1.2	1	40
6-01-077246	UTE502003015	0.3	4	1.2	1.5	40
6-01-077247	UTE50200302	0.3	4	1.2	2	40
6-01-077248	UTE50200303	0.3	4	1.5	3	40
6-01-077249	UTE50200305	0.3	4	1.5	5	40
6-01-077250	UTE50200307	0.3	4	1.5	7	40
6-01-077251	UTE50200310	0.3	4	1.5	10	40
6-01-077252	UTE502004005	0.4	4	1.6	0.5	40
6-01-077253	UTE50200401	0.4	4	1.6	1	40
6-01-077254	UTE502004015	0.4	4	1.6	1.5	40
6-01-077255	UTE50200402	0.4	4	1.6	2	40
6-01-077256	UTE50200403	0.4	4	1.6	3	40
6-01-077257	UTE50200405	0.4	4	2	5	40
6-01-077258	UTE50200407	0.4	4	2	7	40
6-01-077259	UTE50200410	0.4	4	2	10	40
6-01-077260	UTE502005005	0.5	4	2	0.5	45
6-01-077261	UTE50200501	0.5	4	2	1	45
6-01-077262	UTE502005015	0.5	4	2	1.5	45
6-01-077263	UTE50200502	0.5	4	2	2	45
6-01-077264	UTE50200503	0.5	4	2	3	45
6-01-077265	UTE50200505	0.5	4	2.5	5	45
6-01-077266	UTE50200507	0.5	4	2.5	7	45
6-01-077267	UTE50200510	0.5	4	2.5	10	45
6-01-077268	UTE502006005	0.6	4	2.4	0.5	45
6-01-077269	UTE50200601	0.6	4	2.4	1	45
6-01-077270	UTE502006015	0.6	4	2.4	1.5	45
6-01-077271	UTE50200602	0.6	4	2.4	2	45
6-01-077272	UTE50200603	0.6	4	2.4	3	45
6-01-077273	UTE50200605	0.6	4	3	5	45
6-01-077274	UTE50200607	0.6	4	3	7	45
6-01-077275	UTE50200610	0.6	4	3	10	45
6-01-077276	UTE502007005	0.7	4	2.8	0.5	45
6-01-077277	UTE50200701	0.7	4	2.8	1	45
6-01-077278	UTE502007015	0.7	4	2.8	1.5	45
6-01-077279	UTE50200702	0.7	4	2.8	2	45

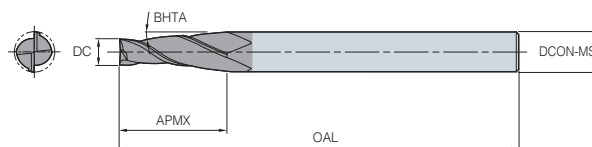
UTE502

2 flutes tapered flat



p.177

DC	Tolerance
Ø0.3 ~ Ø10	0.000 ~ -0.030



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	BHTA(°)	OAL
6-01-077280	UTE50200703	0.7	4	2.8	3	45
6-01-077281	UTE50200705	0.7	4	3.5	5	45
6-01-077282	UTE50200707	0.7	4	3.5	7	45
6-01-077283	UTE50200710	0.7	4	3.5	10	45
6-01-077284	UTE502008005	0.8	4	3.2	0.5	45
6-01-077285	UTE50200801	0.8	4	3.2	1	45
6-01-077286	UTE502008015	0.8	4	3.2	1.5	45
6-01-077287	UTE50200802	0.8	4	3.2	2	45
6-01-077288	UTE50200803	0.8	4	3.2	3	45
6-01-077289	UTE50200805	0.8	4	4	5	45
6-01-077290	UTE50200807	0.8	4	4	7	45
6-01-077291	UTE50200810	0.8	4	4	10	45
6-01-077292	UTE502010005	1	4	4	0.5	50
6-01-077293	UTE50201001	1	4	4	1	50
6-01-077294	UTE502010015	1	4	4	1.5	50
6-01-077295	UTE50201002	1	4	6	2	50
6-01-077296	UTE50201003	1	4	6	3	50
6-01-077297	UTE50201005	1	4	8	5	50
6-01-077298	UTE50201007	1	4	8	7	50
6-01-077299	UTE50201010	1	4	8	10	50
6-01-077300	UTE502015005	1.5	4	6	0.5	50
6-01-077301	UTE50201501	1.5	4	6	1	50
6-01-077302	UTE502015015	1.5	4	6	1.5	50
6-01-077303	UTE50201502	1.5	4	8	2	50
6-01-077304	UTE50201503	1.5	4	8	3	50
6-01-077305	UTE50201505	1.5	4	10	5	50
6-01-077306	UTE50201507	1.5	4	10	7	50
6-01-077307	UTE50201510	1.5	6	10	10	50
6-01-077308	UTE502020005	2	4	8	0.5	50
6-01-077309	UTE50202001	2	4	8	1	50
6-01-077310	UTE502020015	2	4	8	1.5	50
6-01-077311	UTE50202002	2	4	10	2	50
6-01-077312	UTE50202003	2	4	10	3	50
6-01-077313	UTE50202005	2	6	12	5	50
6-01-077314	UTE50202007	2	6	12	7	50
6-01-077315	UTE50202010	2	8	12	10	50

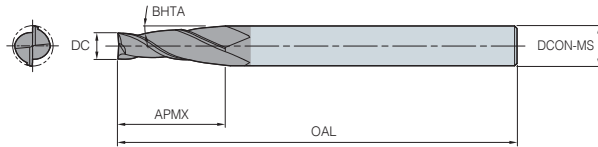
UTE502

2 flutes tapered flat



p.177

DC	Tolerance
Ø0.3 ~ Ø10	0.000 ~ -0.030



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	BHTA(°)	OAL
6-01-077316	UTE502025005	2.5	6	10	0.5	50
6-01-077317	UTE50202501	2.5	6	10	1	50
6-01-077318	UTE502025015	2.5	6	10	1.5	50
6-01-077319	UTE50202502	2.5	6	12	2	50
6-01-077320	UTE50202503	2.5	6	12	3	50
6-01-077321	UTE50202505	2.5	6	14	5	50
6-01-077322	UTE50202507	2.5	6	14	7	50
6-01-077323	UTE50202510	2.5	8	14	10	50
6-01-077324	UTE502030005	3	6	12	0.5	50
6-01-077325	UTE50203001	3	6	12	1	50
6-01-077326	UTE502030015	3	6	12	1.5	50
6-01-077327	UTE50203002	3	6	14	2	50
6-01-077328	UTE50203003	3	6	14	3	50
6-01-077329	UTE50203005	3	6	16	5	50
6-01-077330	UTE50203007	3	8	16	7	50
6-01-077331	UTE50203010	3	10	16	10	50
6-01-077332	UTE502040005	4	6	16	0.5	60
6-01-077333	UTE50204001	4	6	16	1	60
6-01-077334	UTE502040015	4	6	16	1.5	60
6-01-077335	UTE50204002	4	6	16	2	60
6-01-077336	UTE50204003	4	6	19	3	60
6-01-077337	UTE50204005	4	8	22	5	65
6-01-077338	UTE50204007	4	8	16	7	65
6-01-077339	UTE50204010	4	10	17	10	65
6-01-077340	UTE502060005	6	8	20	0.5	65
6-01-077341	UTE50206001	6	8	20	1	65
6-01-077342	UTE502060015	6	8	20	1.5	65
6-01-077343	UTE50206002	6	8	20	2	65
6-01-077344	UTE50206003	6	8	19	3	65
6-01-077345	UTE50206005	6	10	22	5	75
6-01-077346	UTE50206007	6	12	24	7	75
6-01-077347	UTE50206010	6	12	17	10	75
6-01-077348	UTE502070005	7	8	28	0.5	70
6-01-077349	UTE50207001	7	8	28	1	70
6-01-077350	UTE502070015	7	10	28	1.5	70
6-01-077351	UTE50207002	7	10	28	2	80

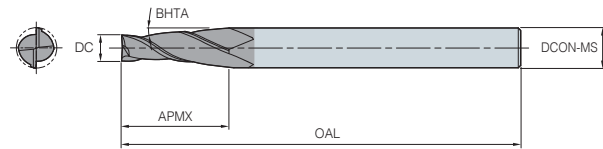
UTE502

2 flutes tapered flat



p.177

DC	Tolerance
Ø0.3 ~ Ø10	0.000 ~ -0.030



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	BHTA(°)	OAL
6-01-077352	UTE50207003	7	10	28	3	80
6-01-077353	UTE50207005	7	12	28	5	80
6-01-077354	UTE502080005	8	10	35	0.5	90
6-01-077355	UTE50208001	8	10	35	1	90
6-01-077356	UTE502080015	8	10	35	1.5	90
6-01-077357	UTE50208002	8	10	28	2	90
6-01-077358	UTE50208003	8	12	38	3	90
6-01-077359	UTE50208005	8	16	45	5	100
6-01-077360	UTE50208007	8	16	32	7	90
6-01-077361	UTE50208010	8	20	34	10	100
6-01-077362	UTE50208010S25	8	25	48	10	150
6-01-077363	UTE502100005	10	12	40	0.5	90
6-01-077364	UTE50210001	10	12	40	1	90
6-01-077365	UTE502100015	10	12	38	1.5	90
6-01-077366	UTE50210002	10	16	40	2	75
6-01-077367	UTE50210003	10	16	40	3	100
6-01-077368	UTE50210005	10	16	34	5	100
6-01-077369	UTE50210007	10	20	40	7	90
6-01-077370	UTE50210010	10	25	42	10	100

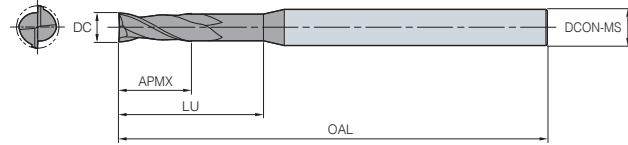
UE512A

2 flutes neck type flat



p.178

DC	Tolerance
ALL	0 ~ -0.0012



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL
6-01-084995	UE512A002S	1/32	3/16	3/64	5/64	1 3/4
6-01-084996	UE512A002	1/32	3/16	3/64	1/8	1 3/4
6-01-084997	UE512A003S	3/64	3/16	1/16	1/8	2
6-01-084998	UE512A003	3/64	3/16	1/16	5/32	2
6-01-084999	UE512A004S	1/16	3/16	3/32	5/32	2
6-01-085000	UE512A004	1/16	3/16	3/32	1/4	2
6-01-085001	UE512A005S	5/64	3/16	1/8	1/4	2
6-01-085002	UE512A005	5/64	3/16	1/8	5/16	2
6-01-085003	UE512A008S	1/8	1/4	3/16	5/16	2
6-01-085004	UE512A008	1/8	1/4	3/16	3/8	2
6-01-085005	UE512A012S	3/16	1/4	1/4	3/8	2
6-01-085006	UE512A012	3/16	1/4	1/4	1/2	2
6-01-085007	UE512A013S	13/64	1/4	5/16	3/4	2 3/8
6-01-085008	UE512A013	13/64	1/4	5/16	1 3/16	2 3/4
6-01-085009	UE512A016S	1/4	1/4	3/8	5/8	2 3/8
6-01-085010	UE512A016	1/4	1/4	3/8	3/4	2 3/8
6-01-085011	UE512A020	5/16	5/16	1/2	1	2 3/4
6-01-085012	UE512A024S	3/8	3/8	5/8	1 3/16	3
6-01-085013	UE512A024	3/8	3/8	5/8	1 3/4	4
6-01-085014	UE512A032S	1/2	1/2	3/4	1 3/8	3 1/8
6-01-085015	UE512A032	1/2	1/2	3/4	2	4 1/4

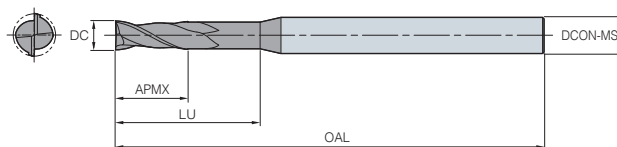
UE512

2 flutes neck type flat



p.179~183

DC	Tolerance
Ø0.1 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø12	0.000 ~ -0.015



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL
6-01-076505	UE512001003	0.1	4	0.15	0.3	40
6-01-076506	UE512001005	0.1	4	0.15	0.5	40
6-01-076507	UE51200101	0.1	4	0.15	1	40
6-01-076508	UE512002005	0.2	4	0.3	0.5	40
6-01-076509	UE51200201	0.2	4	0.3	1	40
6-01-076510	UE512002015	0.2	4	0.3	1.5	40
6-01-076511	UE51200202	0.2	4	0.3	2	40
6-01-076512	UE51200301	0.3	4	0.5	1	40
6-01-076513	UE512003015	0.3	4	0.5	1.5	40
6-01-076514	UE51200302	0.3	4	0.5	2	40
6-01-076515	UE512003025	0.3	4	0.5	2.5	40
6-01-076516	UE51200303	0.3	4	0.5	3	40
6-01-076517	UE51200304	0.3	4	0.5	4	40
6-01-076518	UE51200305	0.3	4	0.5	5	40
6-01-076519	UE51200401	0.4	4	0.6	1	40
6-01-076520	UE512004015	0.4	4	0.6	1.5	40
6-01-076521	UE51200402	0.4	4	0.6	2	40
6-01-076522	UE512004025	0.4	4	0.6	2.5	40
6-01-076523	UE51200403	0.4	4	0.6	3	40
6-01-076524	UE51200404	0.4	4	0.6	4	40
6-01-076525	UE51200405	0.4	4	0.6	5	40
6-01-076526	UE51200406	0.4	4	0.6	6	40
6-01-076527	UE51200408	0.4	4	0.6	8	40
6-01-076528	UE51200410	0.4	4	0.6	10	40
6-01-076529	UE51200501	0.5	4	0.7	1	45
6-01-076530	UE512005015	0.5	4	0.7	1.5	45
6-01-076531	UE51200502	0.5	4	0.7	2	45
6-01-076532	UE512005025	0.5	4	0.7	2.5	45
6-01-076533	UE51200503	0.5	4	0.7	3	45
6-01-076534	UE51200504	0.5	4	0.7	4	45
6-01-076535	UE51200505	0.5	4	0.7	5	45
6-01-076536	UE51200506	0.5	4	0.7	6	45
6-01-076537	UE51200508	0.5	4	0.7	8	45
6-01-076538	UE51200510	0.5	4	0.7	10	45
6-01-076539	UE51200512	0.5	4	0.7	12	45
6-01-076540	UE51200514	0.5	4	0.7	14	45

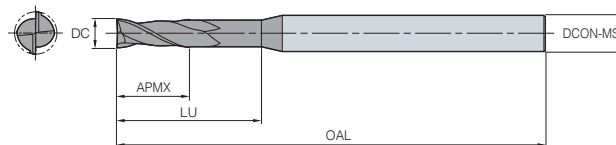
UE512

2 flutes neck type flat



DC	Tolerance
Ø0.1 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø12	0.000 ~ -0.015

p.179-183



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL
6-01-076541	UE51200516	0.5	4	0.7	16	45
6-01-076542	UE51200602	0.6	4	0.9	2	45
6-01-076543	UE51200603	0.6	4	0.9	3	45
6-01-076544	UE51200604	0.6	4	0.9	4	45
6-01-076545	UE51200605	0.6	4	0.9	5	45
6-01-076546	UE51200606	0.6	4	0.9	6	45
6-01-076547	UE51200608	0.6	4	0.9	8	45
6-01-076548	UE51200610	0.6	4	0.9	10	45
6-01-076549	UE51200612	0.6	4	0.9	12	45
6-01-076550	UE51200614	0.6	4	0.9	14	45
6-01-076551	UE51200616	0.6	4	0.9	16	45
6-01-076552	UE51200702	0.7	4	1.2	2	45
6-01-076553	UE51200704	0.7	4	1.2	4	45
6-01-076554	UE51200706	0.7	4	1.2	6	45
6-01-076555	UE51200708	0.7	4	1.2	8	45
6-01-076556	UE51200710	0.7	4	1.2	10	45
6-01-076557	UE51200712	0.7	4	1.2	12	45
6-01-076558	UE51200802	0.8	4	1.2	2	45
6-01-076559	UE51200803	0.8	4	1.2	3	45
6-01-076560	UE51200804	0.8	4	1.2	4	45
6-01-076561	UE51200805	0.8	4	1.2	5	45
6-01-076562	UE51200806	0.8	4	1.2	6	45
6-01-076563	UE51200808	0.8	4	1.2	8	45
6-01-076564	UE51200810	0.8	4	1.2	10	45
6-01-076565	UE51200812	0.8	4	1.2	12	45
6-01-076566	UE51200814	0.8	4	1.2	14	45
6-01-076567	UE51200816	0.8	4	1.2	16	45
6-01-076568	UE51200820	0.8	4	1.2	20	45
6-01-076569	UE51200906	0.9	4	1.3	6	45
6-01-076570	UE51200908	0.9	4	1.3	8	45
6-01-076571	UE51200910	0.9	4	1.3	10	45
6-01-076572	UE51201002	1	4	1.5	2	50
6-01-076573	UE51201003	1	4	1.5	3	50
6-01-076574	UE51201004	1	4	1.5	4	50
6-01-076575	UE51201005	1	4	1.5	5	50
6-01-076576	UE51201006	1	4	1.5	6	50

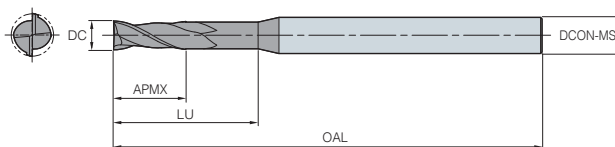
UE512

2 flutes neck type flat



p.179~183

DC	Tolerance
Ø0.1 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø12	0.000 ~ -0.015



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL
6-01-076577	UE51201007	1	4	1.5	7	50
6-01-076578	UE51201008	1	4	1.5	8	50
6-01-076579	UE51201010	1	4	1.5	10	50
6-01-076580	UE51201012	1	4	1.5	12	50
6-01-076581	UE51201014	1	4	1.5	14	50
6-01-076582	UE51201016	1	4	1.5	16	50
6-01-076583	UE51201018	1	4	1.5	18	50
6-01-076584	UE51201020	1	4	1.5	20	50
6-01-076585	UE51201022	1	4	1.5	22	60
6-01-076586	UE51201026	1	4	1.5	26	60
6-01-076587	UE51201030	1	4	1.5	30	70
6-01-076588	UE51201040	1	4	1.5	40	80
6-01-076589	UE51201050	1	4	1.5	50	100
6-01-076590	UE51201204	1.2	4	1.8	4	50
6-01-076591	UE51201206	1.2	4	1.8	6	50
6-01-076592	UE51201208	1.2	4	1.8	8	50
6-01-076593	UE51201210	1.2	4	1.8	10	50
6-01-076594	UE51201212	1.2	4	1.8	12	50
6-01-076595	UE51201214	1.2	4	1.8	14	50
6-01-076596	UE51201216	1.2	4	1.8	16	50
6-01-076597	UE51201220	1.2	4	1.8	20	50
6-01-076598	UE51201226	1.2	4	1.8	26	60
6-01-076599	UE51201230	1.2	4	1.8	30	70
6-01-076600	UE51201406	1.4	4	2.1	6	50
6-01-076601	UE51201408	1.4	4	2.1	8	50
6-01-076602	UE51201410	1.4	4	2.1	10	50
6-01-076603	UE51201414	1.4	4	2.1	14	50
6-01-076604	UE51201416	1.4	4	2.1	16	50
6-01-076605	UE51201420	1.4	4	2.1	20	50
6-01-076606	UE51201504	1.5	4	2.3	4	50
6-01-076607	UE51201505	1.5	4	2.3	5	50
6-01-076608	UE51201506	1.5	4	2.3	6	50
6-01-076609	UE51201507	1.5	4	2.3	7	50
6-01-076610	UE51201508	1.5	4	2.3	8	50
6-01-076611	UE51201510	1.5	4	2.3	10	50
6-01-076612	UE51201512	1.5	4	2.3	12	50

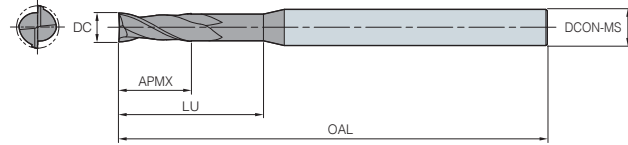
UE512

2 flutes neck type flat



p.179-183

DC	Tolerance
∅0.1 ~ ∅6	0.000 ~ -0.012
∅8 ~ ∅12	0.000 ~ -0.015



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL
6-01-076613	UE51201514	1.5	4	2.3	14	50
6-01-076614	UE51201516	1.5	4	2.3	16	50
6-01-076615	UE51201518	1.5	4	2.3	18	50
6-01-076616	UE51201520	1.5	4	2.3	20	50
6-01-076617	UE51201522	1.5	4	2.3	22	60
6-01-076618	UE51201526	1.5	4	2.3	26	60
6-01-076619	UE51201530	1.5	4	2.3	30	70
6-01-076620	UE51201608	1.6	4	2.3	8	50
6-01-076621	UE51201610	1.6	4	2.3	10	50
6-01-076622	UE51201612	1.6	4	2.3	12	50
6-01-076623	UE51201616	1.6	4	2.3	16	50
6-01-076624	UE51201620	1.6	4	2.3	20	50
6-01-076625	UE51201808	1.8	4	2.7	8	50
6-01-076626	UE51201810	1.8	4	2.7	10	50
6-01-076627	UE51201812	1.8	4	2.7	12	50
6-01-076628	UE51201816	1.8	4	2.7	16	50
6-01-076629	UE51201820	1.8	4	2.7	20	50
6-01-076630	UE51202006	2	4	3	6	50
6-01-076631	UE51202008	2	4	3	8	50
6-01-076632	UE51202010	2	4	3	10	50
6-01-076633	UE51202012	2	4	3	12	50
6-01-076634	UE51202014	2	4	3	14	50
6-01-076635	UE51202016	2	4	3	16	50
6-01-076636	UE51202018	2	4	3	18	50
6-01-076637	UE51202020	2	4	3	20	50
6-01-076638	UE51202022	2	4	3	22	60
6-01-076639	UE51202026	2	4	3	26	60
6-01-076640	UE51202030	2	4	3	30	70
6-01-076641	UE51202035	2	4	3	35	70
6-01-076642	UE51202040	2	4	3	40	80
6-01-076643	UE51202045	2	4	3	45	90
6-01-076644	UE51202050	2	4	3	50	100
6-01-076645	UE51202060	2	4	3	60	110
6-01-076646	UE51202508	2.5	4	4	8	50
6-01-076647	UE51202510	2.5	4	4	10	50
6-01-076648	UE51202512	2.5	4	4	12	50

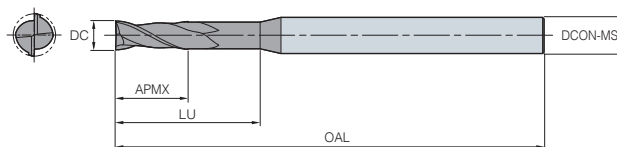
UE512

2 flutes neck type flat



p.179-183

DC	Tolerance
Ø0.1 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø12	0.000 ~ -0.015



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL
6-01-076649	UE51202514	2.5	4	4	14	50
6-01-076650	UE51202516	2.5	4	4	16	50
6-01-076651	UE51202518	2.5	4	4	18	50
6-01-076652	UE51202520	2.5	4	4	20	50
6-01-076653	UE51202522	2.5	4	4	22	60
6-01-076654	UE51202526	2.5	4	4	26	60
6-01-076655	UE51202530	2.5	4	4	30	70
6-01-076656	UE51202535	2.5	4	4	35	70
6-01-076657	UE51202540	2.5	4	4	40	80
6-01-076658	UE51202545	2.5	4	4	45	90
6-01-076659	UE51202550	2.5	4	4	50	100
6-01-076660	UE51203006	3	6	4.5	6	50
6-01-076661	UE51203008	3	6	4.5	8	50
6-01-076662	UE51203010	3	6	4.5	10	50
6-01-076663	UE51203012	3	6	4.5	12	50
6-01-076664	UE51203014	3	6	4.5	14	60
6-01-076665	UE51203016	3	6	4.5	16	60
6-01-076666	UE51203018	3	6	4.5	18	60
6-01-076667	UE51203020	3	6	4.5	20	60
6-01-076668	UE51203022	3	6	4.5	22	65
6-01-076669	UE51203026	3	6	4.5	26	65
6-01-076670	UE51203030	3	6	4.5	30	70
6-01-076671	UE51203035	3	6	4.5	35	70
6-01-076672	UE51203040	3	6	4.5	40	80
6-01-076673	UE51203045	3	6	4.5	45	90
6-01-076674	UE51203050	3	6	4.5	50	100
6-01-076675	UE51203060	3	6	4.5	60	100
6-01-076676	UE51204008	4	6	6	8	50
6-01-076677	UE51204010	4	6	6	10	50
6-01-076678	UE51204012	4	6	6	12	50
6-01-076679	UE51204014	4	6	6	14	60
6-01-076680	UE51204016	4	6	6	16	60
6-01-076681	UE51204018	4	6	6	18	60
6-01-076682	UE51204020	4	6	6	20	60
6-01-076683	UE51204022	4	6	6	22	65
6-01-076684	UE51204026	4	6	6	26	65

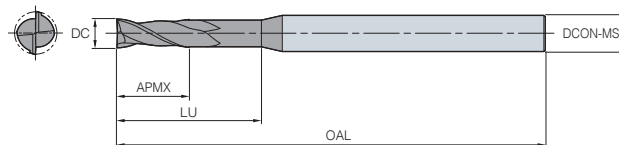
UE512

2 flutes neck type flat



p.179-183

DC	Tolerance
Ø0.1 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø12	0.000 ~ -0.015

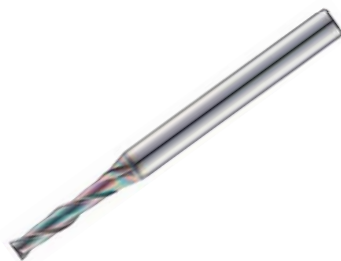


(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL
6-01-076685	UE51204030	4	6	6	30	70
6-01-076686	UE51204035	4	6	6	35	70
6-01-076687	UE51204040	4	6	6	40	80
6-01-076688	UE51204045	4	6	6	45	90
6-01-076689	UE51204050	4	6	6	50	100
6-01-076690	UE51204060	4	6	6	60	100
6-01-076691	UE51205016	5	6	8	16	60
6-01-076692	UE51205020	5	6	8	20	60
6-01-076693	UE51205026	5	6	8	26	65
6-01-076694	UE51205030	5	6	8	30	70
6-01-076695	UE51205035	5	6	8	35	75
6-01-076696	UE51205040	5	6	8	40	80
6-01-076697	UE51205050	5	6	8	50	90
6-01-076698	UE51205060	5	6	8	60	100
6-01-076699	UE51206015	6	6	9	15	60
6-01-076700	UE51206020	6	6	9	20	60
6-01-076701	UE51206030	6	6	9	30	70
6-01-076702	UE51206032	6	6	9	32	90
6-01-076703	UE51208025	8	8	12	25	70
6-01-076704	UE51208030	8	8	12	30	80
6-01-076705	UE51208042	8	8	12	42	100
6-01-076706	UE51210030	10	10	15	30	75
6-01-076707	UE51210035	10	10	15	35	80
6-01-076708	UE51210045	10	10	15	45	100
6-01-076709	UE51212035	12	12	20	35	80
6-01-076710	UE51212040	12	12	20	40	90
6-01-076711	UE51212050	12	12	20	50	110

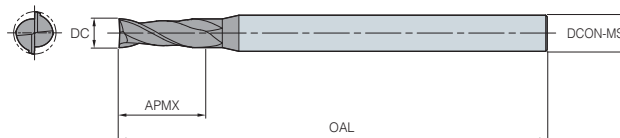
UE522A

2 flutes flat (Long length)



p.184

DC	Tolerance
ALL	0 ~ -0.0012



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-085016	UE522A003	3/64	1/4	1/8	2 3/8
6-01-085017	UE522A004	1/16	1/4	1/4	2 3/8
6-01-085018	UE522A005	5/64	1/4	5/16	2 3/8
6-01-085019	UE522A006	3/32	1/4	5/8	2 3/8
6-01-085020	UE522A008	1/8	1/4	1/2	2 3/4
6-01-085021	UE522A008L	1/8	1/4	3/4	2 3/4
6-01-085022	UE522A008X	1/8	1/4	1	2 3/4
6-01-085023	UE522A012	3/16	1/4	5/8	2 3/4
6-01-085024	UE522A012L	3/16	1/4	3/4	2 3/4
6-01-085025	UE522A013	13/64	1/4	3/4	2 3/4
6-01-085026	UE522A016	1/4	1/4	3/4	2 3/4
6-01-085027	UE522A016L	1/4	1/4	1 1/8	3
6-01-085028	UE522A016X	1/4	1/4	1 1/2	3 1/2
6-01-085029	UE522A020	5/16	5/16	1	3 1/8
6-01-085030	UE522A020L	5/16	5/16	1 1/8	3
6-01-085031	UE522A024S	3/8	3/8	1 1/8	3
6-01-085032	UE522A024	3/8	3/8	1 3/16	3 1/8
6-01-085033	UE522A024X	3/8	3/8	1 3/4	4
6-01-085034	UE522A024LS	3/8	3/8	2	4
6-01-085035	UE522A032	1/2	1/2	1 3/8	3 1/2
6-01-085036	UE522A032L	1/2	1/2	1 1/2	4
6-01-085037	UE522A032X	1/2	1/2	2	4
6-01-085038	UE522A040L	5/8	5/8	2 1/4	5
6-01-085039	UE522A048	3/4	3/4	2 1/4	5
6-01-085040	UE522A064	1	1	2 1/4	5

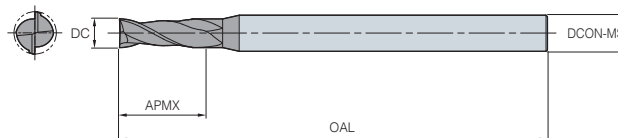
UE522

2 flutes flat



DC	Tolerance
Ø1 ~ Ø6	0.000 ~ -0.012
Ø6.5 ~ Ø25	0.000 ~ -0.015

p.185

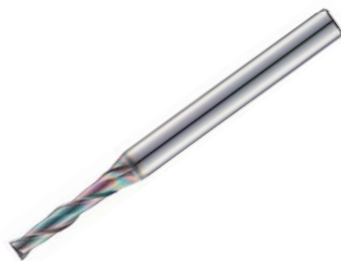


(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-076367	UE52201003	1	6	3	60
6-01-076368	UE52201004	1	6	4	60
6-01-076369	UE52201005	1	6	5	60
6-01-076370	UE52201006	1	6	6	60
6-01-076371	UE52201007	1	6	7	60
6-01-076372	UE52201008	1	6	8	60
6-01-076373	UE52201010	1	6	10	60
6-01-076374	UE52201012	1	6	12	60
6-01-076375	UE52201204	1.2	6	4	60
6-01-076376	UE52201206	1.2	6	6	60
6-01-076377	UE52201208	1.2	6	8	60
6-01-076378	UE52201210	1.2	6	10	60
6-01-076379	UE52201212	1.2	6	12	60
6-01-076380	UE52201506	1.5	6	6	60
6-01-076381	UE52201508	1.5	6	8	60
6-01-076382	UE52201510	1.5	6	10	60
6-01-076383	UE52201512	1.5	6	12	60
6-01-076384	UE52201514	1.5	6	14	60
6-01-076385	UE52201516	1.5	6	16	60
6-01-076386	UE52202008	2	6	8	60
6-01-076387	UE52202010	2	6	10	60
6-01-076388	UE52202012	2	6	12	60
6-01-076389	UE52202014	2	6	14	60
6-01-076390	UE52202016	2	6	16	60
6-01-076391	UE52202510	2.5	6	10	60
6-01-076392	UE52202512	2.5	6	12	60
6-01-076393	UE52202516	2.5	6	16	60
6-01-076394	UE52202520	2.5	6	20	60
6-01-076395	UE52202526	2.5	6	26	60
6-01-076397	UE52203010	3	6	10	70
6-01-076398	UE52203012	3	6	12	70
6-01-076399	UE52203014	3	6	14	70
6-01-076400	UE52203016	3	6	16	70
6-01-076396	UE52203016S3	3	3	16	100
6-01-076401	UE52203020	3	6	20	70
6-01-076402	UE52203026	3	6	26	70

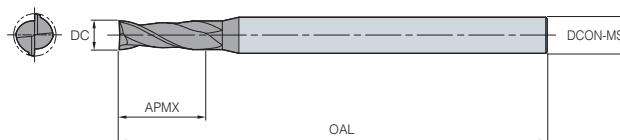
UE522

2 flutes flat (Long length)



DC	Tolerance
Ø1 ~ Ø6	0.000 ~ -0.012
Ø6.5 ~ Ø25	0.000 ~ -0.015

p.185

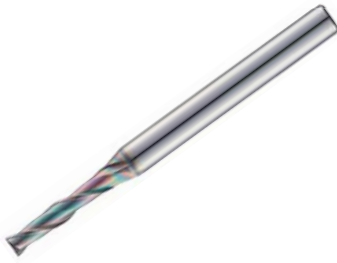


(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-076403	UE52203030	3	6	30	70
6-01-076405	UE52204012	4	6	12	70
6-01-076406	UE52204016	4	6	16	70
6-01-076407	UE52204020	4	6	20	70
6-01-076404	UE52204020S4	4	4	20	100
6-01-076408	UE52204026	4	6	26	70
6-01-076409	UE52204030	4	6	30	70
6-01-076410	UE52205015	5	6	15	70
6-01-076411	UE52205020	5	6	20	70
6-01-076413	UE52205025100	5	6	25	100
6-01-076412	UE52205025	5	6	25	70
6-01-076414	UE52205030	5	6	30	80
6-01-076415	UE52205035	5	6	35	90
6-01-076416	UE52205040	5	6	40	100
6-01-076418	UE52206015080	6	6	15	80
6-01-076417	UE52206015	6	6	15	60
6-01-076420	UE52206020090	6	6	20	90
6-01-076419	UE52206020	6	6	20	70
6-01-076421	UE52206025	6	6	25	75
6-01-076424	UE52206030150	6	6	30	150
6-01-076423	UE52206030100	6	6	30	100
6-01-076422	UE52206030	6	6	30	80
6-01-076425	UE52206035	6	6	35	90
6-01-076427	UE52206040120	6	6	40	120
6-01-076426	UE52206040	6	6	40	90
6-01-076428	UE52206045	6	6	45	150
6-01-076429	UE52207035	7	8	35	85
6-01-076430	UE52208020	8	8	20	100
6-01-076431	UE52208025	8	8	25	80
6-01-076433	UE52208030100	8	8	30	100
6-01-076432	UE52208030	8	8	30	80
6-01-076434	UE52208035	8	8	35	90
6-01-076437	UE52208040150	8	8	40	150
6-01-076436	UE52208040120	8	8	40	120
6-01-076435	UE52208040	8	8	40	90
6-01-076438	UE52208045	8	8	45	100

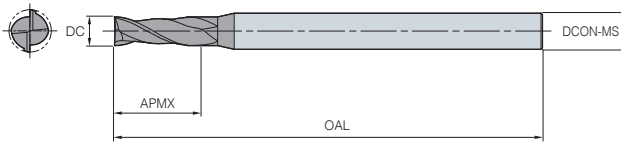
UE522

2 flutes flat (Long length)



DC	Tolerance
Ø1 ~ Ø6	0.000 ~ -0.012
Ø6.5 ~ Ø25	0.000 ~ -0.015

p.185

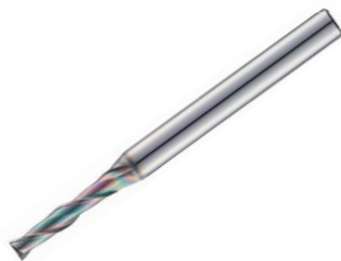


(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-076440	UE52208050150	8	8	50	150
6-01-076439	UE52208050	8	8	50	100
6-01-076441	UE52209045	9	10	45	100
6-01-076442	UE52210025	10	10	25	100
6-01-076444	UE52210030100	10	10	30	100
6-01-076443	UE52210030	10	10	30	80
6-01-076445	UE52210035	10	10	35	90
6-01-076447	UE52210040120	10	10	40	120
6-01-076446	UE52210040	10	10	40	90
6-01-076448	UE52210045	10	10	45	100
6-01-076451	UE52210050200	10	10	50	200
6-01-076450	UE52210050150	10	10	50	150
6-01-076449	UE52210050	10	10	50	100
6-01-076452	UE52210055	10	10	55	150
6-01-076455	UE52210060200	10	10	60	200
6-01-076454	UE52210060155	10	10	60	155
6-01-076453	UE52210060	10	10	60	110
6-01-076456	UE52211050	11	12	50	110
6-01-076457	UE52212035	12	12	35	90
6-01-076459	UE52212040120	12	12	40	120
6-01-076458	UE52212040	12	12	40	100
6-01-076460	UE52212045	12	12	45	130
6-01-076462	UE52212050150	12	12	50	150
6-01-076461	UE52212050	12	12	50	100
6-01-076463	UE52212055	12	12	55	110
6-01-076466	UE52212060200	12	12	60	200
6-01-076465	UE52212060150	12	12	60	150
6-01-076464	UE52212060	12	12	60	110
6-01-076467	UE52212065	12	12	65	150
6-01-076469	UE52212070200	12	12	70	200
6-01-076468	UE52212070	12	12	70	120
6-01-076470	UE52214040	14	16	40	110
6-01-076471	UE52214050	14	16	50	110
6-01-076473	UE52214060150	14	16	60	150
6-01-076472	UE52214060	14	16	60	120
6-01-076475	UE52216040150	16	16	40	150

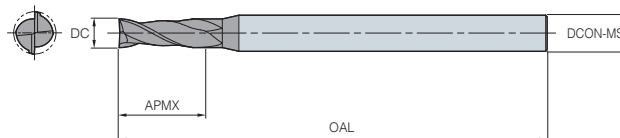
UE522

2 flutes flat (Long length)



DC	Tolerance
Ø1 ~ Ø6	0.000 ~ -0.012
Ø6.5 ~ Ø25	0.000 ~ -0.015

p.185



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-076474	UE52216040	16	16	40	120
6-01-076477	UE52216050150	16	16	50	150
6-01-076476	UE52216050	16	16	50	110
6-01-076478	UE52216060	16	16	60	120
6-01-076481	UE52216070200	16	16	70	200
6-01-076480	UE52216070150	16	16	70	150
6-01-076479	UE52216070	16	16	70	130
6-01-076482	UE52216080	16	16	80	150
6-01-076483	UE52216090	16	16	90	150
6-01-076484	UE522160110	16	16	110	200
6-01-076485	UE522160120	16	16	120	250
6-01-076486	UE52218050	18	20	50	120
6-01-076487	UE52218060	18	18	60	120
6-01-076488	UE52218070	18	20	70	130
6-01-076489	UE522180100	18	20	100	200
6-01-076491	UE52220050150	20	20	50	150
6-01-076490	UE52220050	20	20	50	110
6-01-076492	UE52220060	20	20	60	130
6-01-076493	UE52220070	20	20	70	130
6-01-076494	UE52220080	20	20	80	150
6-01-076496	UE52220090200	20	20	90	200
6-01-076495	UE52220090	20	20	90	150
6-01-076497	UE522200110	20	20	110	200
6-01-076498	UE522200120	20	20	120	250
6-01-076499	UE52222075	22	20	75	150
6-01-076500	UE522220110	22	20	110	200
6-01-076501	UE52225070	25	25	70	150
6-01-076502	UE52225090	25	25	90	150
6-01-076503	UE522250110	25	25	110	200
6-01-076504	UE522250120	25	25	120	250

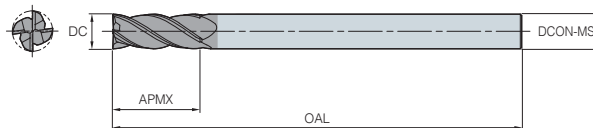
UE504A

4 flutes flat



p.185

DC	Tolerance
ALL	0 ~ -0.0012



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-085041	UE504A002	1/32	1/8	0.079	1 1/2
6-01-085042	UE504A003	3/64	1/4	3/32	2
6-01-085043	UE504A004	1/16	1/4	5/32	2
6-01-085044	UE504A004L	1/16	1/8	3/16	2
6-01-085045	UE504A005	5/64	1/4	1/4	2
6-01-085046	UE504A006	3/32	1/8	5/16	2
6-01-085047	UE504A008	1/8	1/4	5/16	2
6-01-085048	UE504A008L	1/8	1/8	1/2	2
6-01-085049	UE504A010	5/32	3/16	9/16	2
6-01-085050	UE504A012	3/16	1/4	3/8	2
6-01-085051	UE504A012L	3/16	3/16	5/8	2
6-01-085052	UE504A013	13/64	1/4	5/8	2 3/8
6-01-085053	UE504A016	1/4	1/4	5/8	2 3/8
6-01-085054	UE504A016L	1/4	1/4	3/4	2 1/2
6-01-085055	UE504A018	9/32	5/16	3/4	2 3/8
6-01-085056	UE504A020	5/16	5/16	3/4	2 3/4
6-01-085057	UE504A020L	5/16	5/16	13/16	2 3/4
6-01-085058	UE504A024	3/8	3/8	1	3
6-01-085059	UE504A028	7/16	7/16	1	3
6-01-085060	UE504A032	1/2	1/2	1 3/16	3 1/8
6-01-085061	UE504A040	5/8	5/8	1 1/4	3 1/2
6-01-085062	UE504A048	3/4	3/4	1 1/2	4
6-01-085063	UE504A064	1	1	1 1/2	4

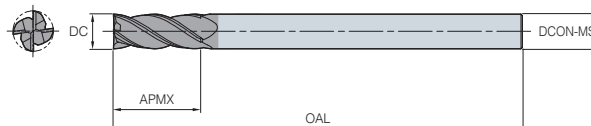
UE504

4 flutes flat



DC	Tolerance
Ø0.8 ~ Ø25	0.000 ~ -0.030

p.186



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-076712	UE504008	0.8	4	1.6	40
6-01-076713	UE504009	0.9	4	1.8	40
6-01-076714	UE504010	1	6	2.5	50
6-01-076715	UE504012	1.2	6	3	50
6-01-076716	UE504015	1.5	6	4	50
6-01-076717	UE504020	2	6	6	50
6-01-076718	UE504025	2.5	6	7	50
6-01-076719	UE504030	3	6	8	50
6-01-076720	UE504035	3.5	6	10	50
6-01-076721	UE504040	4	6	10	50
6-01-076722	UE504045	4.5	6	14	50
6-01-076723	UE504050	5	6	15	60
6-01-076724	UE504055	5.5	6	15	60
6-01-076725	UE504060	6	6	15	60
6-01-076726	UE504065	6.5	8	18	60
6-01-076727	UE504070	7	8	20	60
6-01-076728	UE504075	7.5	8	20	60
6-01-076729	UE504080	8	8	20	70
6-01-076730	UE504085	8.5	10	22	70
6-01-076731	UE504090	9	10	22	70
6-01-076732	UE504095	9.5	10	24	70
6-01-076733	UE504100	10	10	25	75
6-01-076734	UE504105	10.5	12	26	75
6-01-076735	UE504110	11	12	30	75
6-01-076736	UE504115	11.5	12	30	80
6-01-076737	UE504120	12	12	30	80
6-01-076738	UE504125	12.5	12	30	80
6-01-076739	UE504130	13	12	35	100
6-01-076742	UE504140	14	16	35	100
6-01-076741	UE504140S14	14	14	35	100
6-01-076740	UE504140S12	14	12	35	100
6-01-076743	UE504150	15	16	38	100
6-01-076744	UE504160	16	16	40	100
6-01-076745	UE504170	17	16	42	100
6-01-076747	UE504180	18	18	45	100
6-01-076746	UE504180S16	18	16	45	100
6-01-076748	UE504190	19	20	45	100
6-01-076749	UE504200	20	20	45	100
6-01-076750	UE504210	21	20	45	100
6-01-076751	UE504220	22	20	45	100
6-01-076752	UE504230	23	25	50	120
6-01-076753	UE504240	24	25	50	120
6-01-076754	UE504250	25	25	50	120

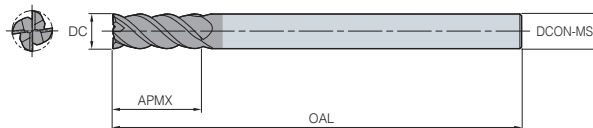
UE504AH

4 flutes 45° helix flat



p.186

DC	Tolerance
ALL	0 ~ -0.0012



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-085064	UE504A002H	1/32	1/8	0.079	1 1/2
6-01-085065	UE504A003H	3/64	1/4	3/32	2
6-01-085066	UE504A004H	1/16	1/4	5/32	2
6-01-085067	UE504A004LH	1/16	1/8	3/16	2
6-01-085068	UE504A005H	5/64	1/4	1/4	2
6-01-085069	UE504A006H	3/32	1/8	5/16	2
6-01-085070	UE504A008H	1/8	1/4	5/16	2
6-01-085071	UE504A008LH	1/8	1/8	1/2	2
6-01-085072	UE504A010H	5/32	3/16	9/16	2
6-01-085073	UE504A012H	3/16	1/4	3/8	2
6-01-085074	UE504A012LH	3/16	3/16	5/8	2
6-01-085075	UE504A013H	13/64	1/4	5/8	2 3/8
6-01-085076	UE504A016H	1/4	1/4	5/8	2 3/8
6-01-085077	UE504A016LH	1/4	1/4	3/4	2 1/2
6-01-085078	UE504A018H	9/32	5/16	3/4	2 3/8
6-01-085079	UE504A020H	5/16	5/16	3/4	2 3/4
6-01-085080	UE504A020LH	5/16	5/16	13/16	2 3/4
6-01-085081	UE504A024H	3/8	3/8	1	3
6-01-085082	UE504A028H	7/16	7/16	1	3
6-01-085083	UE504A032H	1/2	1/2	1 3/16	3 1/8
6-01-085084	UE504A040H	5/8	5/8	1 1/4	3 1/2
6-01-085085	UE504A048H	3/4	3/4	1 1/2	4
6-01-085086	UE504A064H	1	1	1 1/2	4

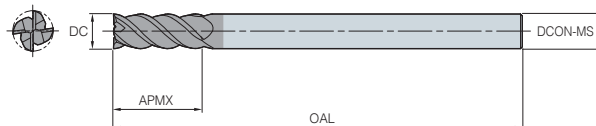
UE504H

4 flutes 45° helix flat



p.187

DC	Tolerance
Ø1 ~ Ø20	0.000 ~ -0.030



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-077094	UE504H010	1	6	2.5	50
6-01-077095	UE504H01004	1	6	4	60
6-01-077096	UE504H01006	1	6	6	60
6-01-077097	UE504H015	1.5	6	4	50
6-01-077098	UE504H01506	1.5	6	6	60
6-01-077099	UE504H01508	1.5	6	8	60
6-01-077100	UE504H020	2	6	6	50
6-01-077101	UE504H02008	2	6	8	60
6-01-077102	UE504H02010	2	6	10	60
6-01-077103	UE504H030	3	6	8	50
6-01-077104	UE504H03010	3	6	10	70
6-01-077105	UE504H03012	3	6	12	70
6-01-077106	UE504H03016	3	6	16	70
6-01-077107	UE504H040	4	6	10	50
6-01-077108	UE504H04012	4	6	12	70
6-01-077109	UE504H04016	4	6	16	70
6-01-077110	UE504H04020	4	6	20	70
6-01-077111	UE504H050	5	6	15	50
6-01-077112	UE504H05030	5	6	30	80
6-01-077113	UE504H060	6	6	15	60
6-01-077114	UE504H06020	6	6	20	70
6-01-077115	UE504H06030	6	6	30	80
6-01-077116	UE504H080	8	8	20	70
6-01-077117	UE504H08030	8	8	30	80
6-01-077118	UE504H08035	8	8	35	90
6-01-077119	UE504H08040	8	8	40	90
6-01-077120	UE504H100	10	10	25	75
6-01-077121	UE504H10030	10	10	30	80
6-01-077122	UE504H10040	10	10	40	90
6-01-077123	UE504H10050	10	10	50	100
6-01-077124	UE504H120	12	12	30	80
6-01-077125	UE504H12040	12	12	40	90
6-01-077126	UE504H12050	12	12	50	100
6-01-077127	UE504H12060	12	12	60	110
6-01-077128	UE504H160	16	16	40	100
6-01-077129	UE504H16050	16	16	50	110
6-01-077130	UE504H16060	16	16	60	120
6-01-077131	UE504H160110	16	16	110	200
6-01-077132	UE504H200	20	20	45	100
6-01-077133	UE504H20060	20	20	60	120
6-01-077134	UE504H20070	20	20	70	130
6-01-077135	UE504H200110	20	20	110	200

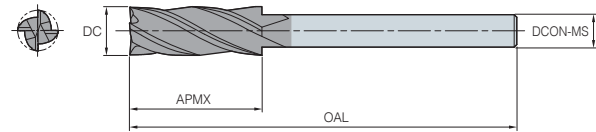
ULE504

4 flutes automatic CNC flat



DC	Tolerance
Ø3 ~ Ø16	0.000 ~ -0.020

p.187



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-077654	ULE504030S04	3	4	3	35
6-01-077655	ULE504040S04	4	4	4	35
6-01-077656	ULE504060S06	6	6	6	35
6-01-077657	ULE504070S07	7	7	20	45
6-01-077660	ULE504080S08	8	8	8	45
6-01-077658	ULE504080S06	8	6	8	35
6-01-077659	ULE504080S07	8	7	15	45
6-01-077661	ULE504090S07	9	7	15	45
6-01-077662	ULE504100S06	10	6	10	35
6-01-077664	ULE504100S10	10	10	15	45
6-01-077663	ULE504100S07	10	7	15	45
6-01-077665	ULE504110S07	11	7	15	45
6-01-077669	ULE504120S10	12	10	12	45
6-01-077667	ULE504120S06	12	6	12	35
6-01-077668	ULE504120S07	12	7	15	45
6-01-077666	ULE504120-25S10	12	10	25	55
6-01-077670	ULE504130S10	13	10	25	55
6-01-077672	ULE504140S10	14	10	25	55
6-01-077671	ULE504140S07	14	7	25	55
6-01-077673	ULE504160S10	16	10	25	60

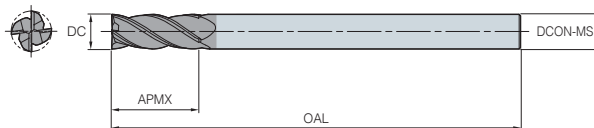
UXE504A

4 flutes flat Endmill for heavy cuts



DC	Tolerance
ALL	0 ~ -0.0012

p.188



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-085308	UXE504A002	1/32	1/8	0.079	1 1/2
6-01-085309	UXE504A003	3/64	1/4	3/32	2
6-01-085310	UXE504A004	1/16	1/4	5/32	2
6-01-085311	UXE504A004L	1/16	1/8	3/16	2
6-01-085312	UXE504A005	5/64	1/4	1/4	2
6-01-085313	UXE504A006	3/32	1/8	5/16	2
6-01-085314	UXE504A008	1/8	1/4	5/16	2
6-01-085315	UXE504A008L	1/8	1/8	1/2	2
6-01-085316	UXE504A010	5/32	3/16	9/16	2
6-01-085317	UXE504A012	3/16	1/4	3/8	2
6-01-085318	UXE504A012L	3/16	3/16	5/8	2
6-01-085319	UXE504A013	13/64	1/4	5/8	2 3/8
6-01-085320	UXE504A016	1/4	1/4	5/8	2 3/8
6-01-085321	UXE504A016L	1/4	1/4	3/4	2 1/2
6-01-085322	UXE504A018	9/32	5/16	3/4	2 3/8
6-01-085323	UXE504A020	5/16	5/16	3/4	2 3/4
6-01-085324	UXE504A020L	5/16	5/16	13/16	2 3/4
6-01-085325	UXE504A024	3/8	3/8	1	3
6-01-085326	UXE504A028	7/16	7/16	1	3
6-01-085327	UXE504A032	1/2	1/2	1 3/16	3 1/8
6-01-085328	UXE504A040	5/8	5/8	1 1/4	3 1/2
6-01-085329	UXE504A048	3/4	3/4	1 1/2	4
6-01-085330	UXE504A064	1	1	1 1/2	4

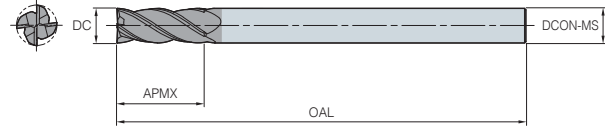
UXE504

4 flutes flat Endmill for heavy cuts



DC	Tolerance
Ø1 ~ Ø20	0.000 ~ -0.030

p.186



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-076755	UXE50401001	1	6	1	40
6-01-076756	UXE50401002	1	6	2	40
6-01-076757	UXE504010	1	6	2.5	50
6-01-076758	UXE50401003	1	6	3	50
6-01-076759	UXE50401004	1	6	4	50
6-01-076760	UXE50401006	1	6	6	50
6-01-076761	UXE50401202	1.2	6	2	40
6-01-076762	UXE504012	1.2	6	3	50
6-01-076763	UXE50401204	1.2	6	4	50
6-01-076764	UXE50401206	1.2	6	6	50
6-01-076765	UXE504015015	1.5	6	1.5	40
6-01-076766	UXE50401503	1.5	6	3	40
6-01-076767	UXE504015	1.5	6	4	50
6-01-076768	UXE50401506	1.5	6	6	50
6-01-076769	UXE50401508	1.5	6	8	50
6-01-076770	UXE50401510	1.5	6	10	50
6-01-076771	UXE50402002	2	6	2	40
6-01-076772	UXE50402004	2	6	4	40
6-01-076773	UXE504020	2	6	6	50
6-01-076774	UXE50402008	2	6	8	50
6-01-076775	UXE50402010	2	6	10	50
6-01-076776	UXE50402012	2	6	12	50
6-01-076777	UXE504025025	2.5	6	2.5	40
6-01-076778	UXE50402505	2.5	6	5	40
6-01-076779	UXE504025	2.5	6	7	50
6-01-076780	UXE50402510	2.5	6	10	50
6-01-076781	UXE50402512	2.5	6	12	50
6-01-076782	UXE50403003	3	6	3	40
6-01-076783	UXE50403006	3	6	6	40
6-01-076784	UXE504030	3	6	8	50
6-01-076785	UXE50403010	3	6	10	50
6-01-076786	UXE50403012	3	6	12	50
6-01-076787	UXE50403014	3	6	14	50
6-01-076788	UXE50404004	4	6	4	40
6-01-076789	UXE50404008	4	6	8	40
6-01-076790	UXE504040	4	6	10	50

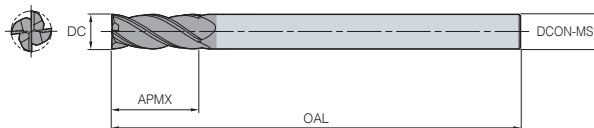
UXE504

4 flutes flat Endmill for heavy cuts



DC	Tolerance
Ø1 ~ Ø20	0.000 ~ -0.030

p.186



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-076791	UXE50404012	4	6	12	50
6-01-076792	UXE50404014	4	6	14	50
6-01-076793	UXE50404016	4	6	16	50
6-01-076794	UXE50405005	5	6	5	50
6-01-076795	UXE50405010	5	6	10	50
6-01-076796	UXE504050	5	6	15	60
6-01-076797	UXE50405020	5	6	20	60
6-01-076798	UXE50405025	5	6	25	60
6-01-076799	UXE50406006	6	6	6	50
6-01-076800	UXE50406012	6	6	12	50
6-01-076801	UXE504060	6	6	15	60
6-01-076802	UXE50406020	6	6	20	60
6-01-076803	UXE50406025	6	6	25	60
6-01-076804	UXE50408016	8	8	16	60
6-01-076805	UXE504080	8	8	20	70
6-01-076806	UXE50408025	8	8	25	70
6-01-076807	UXE50408030	8	8	30	70
6-01-076808	UXE50410022	10	10	22	65
6-01-076809	UXE504100	10	10	25	75
6-01-076810	UXE50410030	10	10	30	75
6-01-076811	UXE50410035	10	10	35	75
6-01-076812	UXE50412026	12	12	26	70
6-01-076813	UXE504120	12	12	30	80
6-01-076814	UXE50412035	12	12	35	80
6-01-076815	UXE50412040	12	12	40	80
6-01-076816	UXE504140	14	16	35	100
6-01-076817	UXE50416032	16	16	32	100
6-01-076818	UXE504160	16	16	40	100
6-01-076819	UXE504180	18	20	45	100
6-01-076820	UXE504200	20	20	45	100

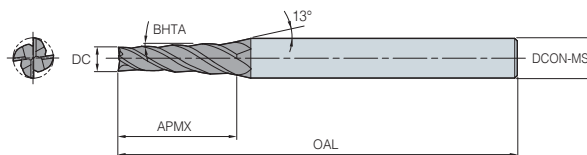
UTE504

4 flutes tapered flat



p.188

DC	Tolerance
Ø0.8 ~ Ø10	0.000 ~ -0.030



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	BHTA(°)	OAL
6-01-077417	UTE50400800504	0.8	4	4	0.5	45
6-01-077418	UTE50400800506	0.8	4	6	0.5	45
6-01-077419	UTE50400800508	0.8	4	8	0.5	45
6-01-077420	UTE50400800510	0.8	4	10	0.5	45
6-01-077421	UTE50400800512	0.8	4	12	0.5	45
6-01-077422	UTE50400801004	0.8	4	4	1	45
6-01-077423	UTE50400801006	0.8	4	6	1	45
6-01-077424	UTE50400801008	0.8	4	8	1	45
6-01-077425	UTE50400801010	0.8	4	10	1	45
6-01-077426	UTE50400801012	0.8	4	12	1	45
6-01-077427	UTE50400801504	0.8	4	4	1.5	45
6-01-077428	UTE50400801506	0.8	4	6	1.5	45
6-01-077429	UTE50400801508	0.8	4	8	1.5	45
6-01-077430	UTE50400801510	0.8	4	10	1.5	45
6-01-077431	UTE50400801512	0.8	4	12	1.5	45
6-01-077432	UTE50400802004	0.8	4	4	2	45
6-01-077433	UTE50400802006	0.8	4	6	2	45
6-01-077434	UTE50400802008	0.8	4	8	2	45
6-01-077435	UTE50400802010	0.8	4	10	2	45
6-01-077436	UTE50400802012	0.8	4	12	2	45
6-01-077437	UTE50401000504	1	4	4	0.5	50
6-01-077438	UTE50401000506	1	4	6	0.5	50
6-01-077439	UTE50401000508	1	4	8	0.5	50
6-01-077440	UTE50401000510	1	4	10	0.5	50
6-01-077441	UTE50401000512	1	4	12	0.5	50
6-01-077442	UTE50401000516	1	4	16	0.5	50
6-01-077443	UTE50401001004	1	4	4	1	50
6-01-077444	UTE50401001006	1	4	6	1	50
6-01-077445	UTE50401001008	1	4	8	1	50
6-01-077446	UTE50401001010	1	4	10	1	50
6-01-077447	UTE50401001012	1	4	12	1	50
6-01-077448	UTE50401001016	1	4	16	1	50
6-01-077449	UTE50401001504	1	4	4	1.5	50
6-01-077450	UTE50401001506	1	4	6	1.5	50
6-01-077451	UTE50401001508	1	4	8	1.5	50
6-01-077452	UTE50401001510	1	4	10	1.5	50

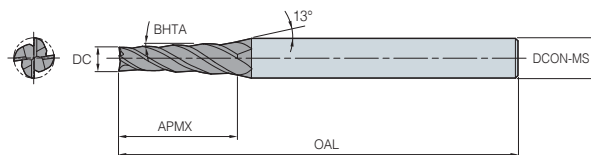
UTE504

4 flutes tapered flat



DC	Tolerance
Ø0.8 ~ Ø10	0.000 ~ -0.030

p.188



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	BHTA(°)	OAL
6-01-077453	UTE50401001512	1	4	12	1.5	50
6-01-077454	UTE50401001516	1	4	16	1.5	50
6-01-077455	UTE50401002004	1	4	4	2	50
6-01-077456	UTE50401002006	1	4	6	2	50
6-01-077457	UTE50401002008	1	4	8	2	50
6-01-077458	UTE50401002010	1	4	10	2	50
6-01-077459	UTE50401002012	1	4	12	2	50
6-01-077460	UTE50401002016	1	4	16	2	50
6-01-077461	UTE50401003004	1	4	4	3	50
6-01-077462	UTE50401003006	1	4	6	3	50
6-01-077463	UTE50401003008	1	4	8	3	50
6-01-077464	UTE50401003010	1	4	10	3	50
6-01-077465	UTE50401003012	1	4	12	3	50
6-01-077466	UTE50401003016	1	4	16	3	50
6-01-077467	UTE50401200506	1.2	4	6	0.5	50
6-01-077468	UTE50401200508	1.2	4	8	0.5	50
6-01-077469	UTE50401200510	1.2	4	10	0.5	50
6-01-077470	UTE50401200512	1.2	4	12	0.5	50
6-01-077471	UTE50401200516	1.2	4	16	0.5	50
6-01-077472	UTE50401201006	1.2	4	6	1	50
6-01-077473	UTE50401201008	1.2	4	8	1	50
6-01-077474	UTE50401201010	1.2	4	10	1	50
6-01-077475	UTE50401201012	1.2	4	12	1	50
6-01-077476	UTE50401201016	1.2	4	16	1	50
6-01-077477	UTE50401201506	1.2	4	6	1.5	50
6-01-077478	UTE50401201508	1.2	4	8	1.5	50
6-01-077479	UTE50401201510	1.2	4	10	1.5	50
6-01-077480	UTE50401201512	1.2	4	12	1.5	50
6-01-077481	UTE50401201516	1.2	4	16	1.5	50
6-01-077482	UTE50401202006	1.2	4	6	2	50
6-01-077483	UTE50401202008	1.2	4	8	2	50
6-01-077484	UTE50401202010	1.2	4	10	2	50
6-01-077485	UTE50401202012	1.2	4	12	2	50
6-01-077486	UTE50401202016	1.2	4	16	2	50
6-01-077487	UTE50401203006	1.2	4	6	3	50
6-01-077488	UTE50401203008	1.2	4	8	3	50

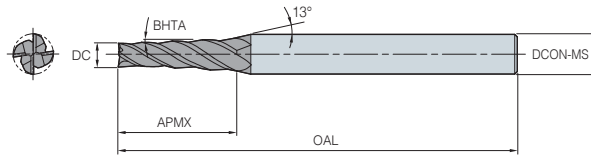
UTE504

4 flutes tapered flat



DC	Tolerance
Ø0.8 ~ Ø10	0.000 ~ -0.030

p.188



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	BHTA(°)	OAL
6-01-077489	UTE50401203010	1.2	4	10	3	50
6-01-077490	UTE50401203012	1.2	4	12	3	50
6-01-077491	UTE50401203016	1.2	4	16	3	50
6-01-077492	UTE50401500506	1.5	4	6	0.5	50
6-01-077493	UTE50401500508	1.5	4	8	0.5	50
6-01-077494	UTE50401500510	1.5	4	10	0.5	50
6-01-077495	UTE50401500512	1.5	4	12	0.5	50
6-01-077496	UTE50401500516	1.5	4	16	0.5	50
6-01-077497	UTE50401500520	1.5	4	20	0.5	60
6-01-077498	UTE50401501006	1.5	4	6	1	50
6-01-077499	UTE50401501008	1.5	4	8	1	50
6-01-077500	UTE50401501010	1.5	4	10	1	50
6-01-077501	UTE50401501012	1.5	4	12	1	50
6-01-077502	UTE50401501016	1.5	4	16	1	50
6-01-077503	UTE50401501020	1.5	4	20	1	60
6-01-077504	UTE50401501506	1.5	4	6	1.5	50
6-01-077505	UTE50401501508	1.5	4	8	1.5	50
6-01-077506	UTE50401501510	1.5	4	10	1.5	50
6-01-077507	UTE50401501512	1.5	4	12	1.5	50
6-01-077508	UTE50401501516	1.5	4	16	1.5	50
6-01-077509	UTE50401501520	1.5	4	20	1.5	60
6-01-077510	UTE50401502006	1.5	4	6	2	50
6-01-077511	UTE50401502008	1.5	4	8	2	50
6-01-077512	UTE50401502010	1.5	4	10	2	50
6-01-077513	UTE50401502012	1.5	4	12	2	50
6-01-077514	UTE50401502016	1.5	4	16	2	50
6-01-077515	UTE50401502020	1.5	4	20	2	60
6-01-077516	UTE50401503006	1.5	4	6	3	50
6-01-077517	UTE50401503008	1.5	4	8	3	50
6-01-077518	UTE50401503010	1.5	4	10	3	50
6-01-077519	UTE50401503012	1.5	4	12	3	50
6-01-077520	UTE50401503016	1.5	4	16	3	50
6-01-077521	UTE50401503020	1.5	4	20	3	60
6-01-077522	UTE50402000508	2	4	8	0.5	50
6-01-077523	UTE50402000510	2	4	10	0.5	50
6-01-077524	UTE50402000512	2	4	12	0.5	50

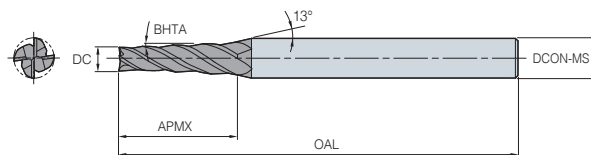
UTE504

4 flutes tapered flat



DC	Tolerance
Ø0.8 ~ Ø10	0.000 ~ -0.030

p.188



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	BHTA(°)	OAL
6-01-077525	UTE50402000516	2	4	16	0.5	50
6-01-077526	UTE50402000520	2	4	20	0.5	60
6-01-077527	UTE50402000525	2	4	25	0.5	60
6-01-077528	UTE50402001008	2	4	8	1	50
6-01-077529	UTE50402001010	2	4	10	1	50
6-01-077530	UTE50402001012	2	4	12	1	50
6-01-077531	UTE50402001016	2	4	16	1	50
6-01-077532	UTE50402001020	2	4	20	1	60
6-01-077533	UTE50402001025	2	4	25	1	60
6-01-077534	UTE50402001508	2	4	8	1.5	50
6-01-077535	UTE50402001510	2	4	10	1.5	50
6-01-077536	UTE50402001512	2	4	12	1.5	50
6-01-077537	UTE50402001516	2	4	16	1.5	50
6-01-077538	UTE50402001520	2	4	20	1.5	60
6-01-077539	UTE50402001525	2	4	25	1.5	60
6-01-077540	UTE50402002008	2	4	8	2	50
6-01-077541	UTE50402002010	2	4	10	2	50
6-01-077542	UTE50402002012	2	4	12	2	50
6-01-077543	UTE50402002016	2	4	16	2	50
6-01-077544	UTE50402002020	2	4	20	2	60
6-01-077545	UTE50402002025	2	4	25	2	60
6-01-077546	UTE50402003008	2	4	8	3	50
6-01-077547	UTE50402003010	2	4	10	3	50
6-01-077548	UTE50402003012	2	4	12	3	50
6-01-077549	UTE50402003016	2	4	16	3	50
6-01-077550	UTE50402003020	2	6	20	3	60
6-01-077551	UTE50402003025	2	6	25	3	60
6-01-077552	UTE50402500510	2.5	4	10	0.5	50
6-01-077553	UTE50402500512	2.5	4	12	0.5	50
6-01-077554	UTE50402500516	2.5	4	16	0.5	50
6-01-077555	UTE50402500520	2.5	4	20	0.5	60
6-01-077556	UTE50402500525	2.5	4	25	0.5	60
6-01-077557	UTE50402500530	2.5	4	30	0.5	60
6-01-077558	UTE50402501010	2.5	4	10	1	50
6-01-077559	UTE50402501012	2.5	4	12	1	50
6-01-077560	UTE50402501016	2.5	4	16	1	50

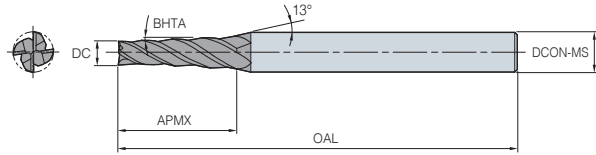
UTE504

4 flutes tapered flat



p.188

DC	Tolerance
Ø0.8 ~ Ø10	0.000 ~ -0.030



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	BHTA(°)	OAL
6-01-077561	UTE50402501020	2.5	4	20	1	60
6-01-077562	UTE50402501025	2.5	4	25	1	60
6-01-077563	UTE50402501030	2.5	4	30	1	60
6-01-077564	UTE50402501510	2.5	4	10	1.5	50
6-01-077565	UTE50402501512	2.5	4	12	1.5	50
6-01-077566	UTE50402501516	2.5	4	16	1.5	50
6-01-077567	UTE50402501520	2.5	4	20	1.5	60
6-01-077568	UTE50402501525	2.5	4	25	1.5	60
6-01-077569	UTE50402501530	2.5	6	30	1.5	60
6-01-077570	UTE50402502010	2.5	4	10	2	50
6-01-077571	UTE50402502012	2.5	4	12	2	50
6-01-077572	UTE50402502016	2.5	4	16	2	50
6-01-077573	UTE50402502020	2.5	4	20	2	60
6-01-077574	UTE50402502025	2.5	6	25	2	60
6-01-077575	UTE50402502030	2.5	6	30	2	60
6-01-077576	UTE50402503010	2.5	4	10	3	50
6-01-077577	UTE50402503012	2.5	4	12	3	50
6-01-077578	UTE50402503016	2.5	6	16	3	50
6-01-077579	UTE50402503020	2.5	6	20	3	60
6-01-077580	UTE50402503025	2.5	6	25	3	60
6-01-077581	UTE50402503030	2.5	6	30	3	60
6-01-077371	UTE504030005	3	6	12	0.5	50
6-01-077372	UTE504030001	3	6	12	1	50
6-01-077373	UTE504030015	3	6	12	1.5	50
6-01-077374	UTE504030002	3	6	14	2	50
6-01-077375	UTE504030003	3	6	14	3	50
6-01-077376	UTE504030005	3	6	16	5	50
6-01-077377	UTE504030007	3	8	16	7	50
6-01-077378	UTE504030010	3	10	16	10	50
6-01-077379	UTE504040005	4	6	16	0.5	60
6-01-077380	UTE504040001	4	6	16	1	60
6-01-077381	UTE504040015	4	6	16	1.5	60
6-01-077382	UTE504040002	4	6	16	2	60
6-01-077383	UTE504040003	4	6	19	3	60
6-01-077384	UTE504040005	4	8	22	5	65
6-01-077385	UTE504040007	4	8	16	7	65

UTE504

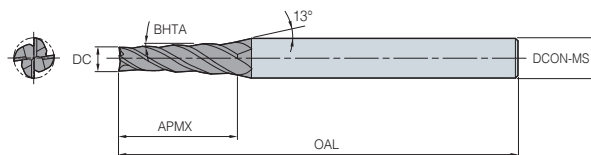
4 flutes tapered flat



DC	Tolerance
Ø0.8 ~ Ø10	0.000 ~ -0.030

DC	Tolerance
Ø0.8 ~ Ø10	0.000 ~ -0.030

p.188



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	BHTA(°)	OAL
6-01-077386	UTE50404010	4	10	17	10	65
6-01-077387	UTE504060005	6	8	20	0.5	65
6-01-077388	UTE50406001	6	8	20	1	65
6-01-077389	UTE504060015	6	8	20	1.5	65
6-01-077390	UTE50406002	6	8	20	2	65
6-01-077391	UTE50406003	6	8	19	3	65
6-01-077392	UTE50406005	6	10	22	5	75
6-01-077393	UTE50406007	6	12	24	7	75
6-01-077394	UTE50406010	6	12	17	10	75
6-01-077395	UTE504070005	7	8	28	0.5	70
6-01-077396	UTE50407001	7	8	28	1	70
6-01-077397	UTE504070015	7	10	28	1.5	70
6-01-077398	UTE50407002	7	10	28	2	80
6-01-077399	UTE50407003	7	10	28	3	80
6-01-077400	UTE50407005	7	12	28	5	80
6-01-077401	UTE504080005	8	10	35	0.5	90
6-01-077402	UTE50408001	8	10	35	1	90
6-01-077403	UTE504080015	8	10	35	1.5	90
6-01-077404	UTE50408002	8	10	28	2	90
6-01-077405	UTE50408003	8	12	38	3	90
6-01-077406	UTE50408005	8	16	45	5	100
6-01-077407	UTE50408007	8	16	32	7	90
6-01-077408	UTE50408010	8	20	34	10	100
6-01-077409	UTE504100005	10	12	40	0.5	90
6-01-077410	UTE50410001	10	12	40	1	90
6-01-077411	UTE504100015	10	12	38	1.5	90
6-01-077412	UTE50410002	10	16	40	2	90
6-01-077413	UTE50410003	10	16	40	3	100
6-01-077414	UTE50410005	10	16	34	5	100
6-01-077415	UTE50410007	10	20	40	7	90
6-01-077416	UTE50410010	10	25	42	10	100

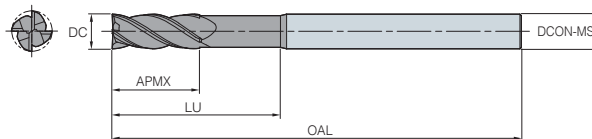
UE514A

4 flutes neck type flat



p.189

DC	Tolerance
ALL	0 ~ -0.0012



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL
6-01-085110	UE514A003S	3/64	3/16	1/16	5/32	2
6-01-085111	UE514A003	3/64	3/16	1/16	3/16	2
6-01-085112	UE514A004S	1/16	3/16	3/32	1/4	2
6-01-085113	UE514A004	1/16	3/16	3/32	5/16	2
6-01-085114	UE514A005S	5/64	3/16	1/8	5/16	2
6-01-085115	UE514A005	5/64	3/16	1/8	3/8	2
6-01-085116	UE514A008S	1/8	1/4	3/16	3/8	2
6-01-085117	UE514A008	1/8	1/4	3/16	1/2	2
6-01-085118	UE514A012S	3/16	1/4	1/4	1/2	2
6-01-085119	UE514A012	3/16	1/4	1/4	5/8	2 3/8
6-01-085120	UE514A013S	13/64	1/4	5/16	3/4	2 3/8
6-01-085121	UE514A013	13/64	1/4	5/16	1 1/2	3 1/8
6-01-085122	UE514A016S	1/4	1/4	3/8	5/8	2 3/8
6-01-085123	UE514A016	1/4	1/4	3/8	1 3/16	2 3/4
6-01-085124	UE514A020S	5/16	5/16	1/2	1	2 3/4
6-01-085125	UE514A020	5/16	5/16	1/2	1 5/8	4
6-01-085126	UE514A024S	3/8	3/8	5/8	1 3/16	3
6-01-085127	UE514A024	3/8	3/8	5/8	1 3/4	4
6-01-085128	UE514A032S	1/2	1/2	3/4	1 3/8	3 1/8
6-01-085129	UE514A032	1/2	1/2	3/4	2	4 1/4

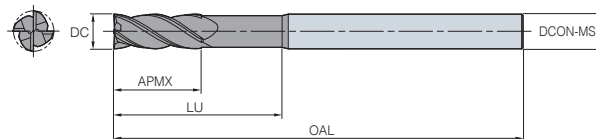
UE514

4 flutes neck type flat



p.190

DC	Tolerance
Ø1 ~ Ø12	0.000 ~ -0.030



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL
6-01-076970	UE51401002	1	4	1.5	2	50
6-01-076971	UE51401003	1	4	1.5	3	50
6-01-076972	UE51401004	1	4	1.5	4	50
6-01-076973	UE51401005	1	4	1.5	5	50
6-01-076974	UE51401006	1	4	1.5	6	50
6-01-076975	UE51401007	1	4	1.5	7	50
6-01-076976	UE51401008	1	4	1.5	8	50
6-01-076977	UE51401010	1	4	1.5	10	50
6-01-076978	UE51401012	1	4	1.5	12	50
6-01-076979	UE51401014	1	4	1.5	14	50
6-01-076980	UE51401016	1	4	1.5	16	50
6-01-076981	UE51401018	1	4	1.5	18	50
6-01-076982	UE51401020	1	4	1.5	20	50
6-01-076983	UE51401022	1	4	1.5	22	60
6-01-076984	UE51401026	1	4	1.5	26	60
6-01-076985	UE51401030	1	4	1.5	30	70
6-01-076986	UE51401040	1	4	1.5	40	80
6-01-076987	UE51401050	1	4	1.5	50	100
6-01-076988	UE51401204	1.2	4	1.8	4	50
6-01-076989	UE51401206	1.2	4	1.8	6	50
6-01-076990	UE51401208	1.2	4	1.8	8	50
6-01-076991	UE51401210	1.2	4	1.8	10	50
6-01-076992	UE51401212	1.2	4	1.8	12	50
6-01-076993	UE51401214	1.2	4	1.8	14	50
6-01-076994	UE51401216	1.2	4	1.8	16	50
6-01-076995	UE51401220	1.2	4	1.8	20	50
6-01-076996	UE51401226	1.2	4	1.8	26	60
6-01-076997	UE51401230	1.2	4	1.8	30	70
6-01-076998	UE51401504	1.5	4	2.3	4	50
6-01-076999	UE51401505	1.5	4	2.3	5	50
6-01-077000	UE51401506	1.5	4	2.3	6	50
6-01-077001	UE51401507	1.5	4	2.3	7	50
6-01-077002	UE51401508	1.5	4	2.3	8	50
6-01-077003	UE51401510	1.5	4	2.3	10	50
6-01-077004	UE51401512	1.5	4	2.3	12	50
6-01-077005	UE51401514	1.5	4	2.3	14	50

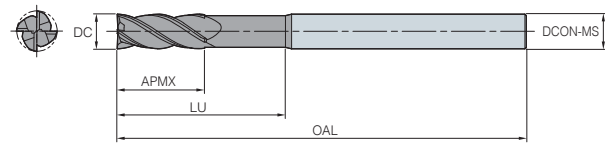
UE514

4 flutes neck type flat



p.190

DC	Tolerance
Ø1 ~ Ø12	0.000 ~ -0.030



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL
6-01-077006	UE51401516	1.5	4	2.3	16	50
6-01-077007	UE51401518	1.5	4	2.3	18	50
6-01-077008	UE51401520	1.5	4	2.3	20	50
6-01-077009	UE51401522	1.5	4	2.3	22	60
6-01-077010	UE51401526	1.5	4	2.3	26	60
6-01-077011	UE51401530	1.5	4	2.3	30	70
6-01-077012	UE51402006	2	4	3	6	50
6-01-077013	UE51402008	2	4	3	8	50
6-01-077014	UE51402010	2	4	3	10	50
6-01-077015	UE51402012	2	4	3	12	50
6-01-077016	UE51402014	2	4	3	14	50
6-01-077017	UE51402016	2	4	3	16	50
6-01-077018	UE51402018	2	4	3	18	50
6-01-077019	UE51402020	2	4	3	20	50
6-01-077020	UE51402022	2	4	3	22	60
6-01-077021	UE51402026	2	4	3	26	60
6-01-077022	UE51402030	2	4	3	30	70
6-01-077023	UE51402035	2	4	3	35	70
6-01-077024	UE51402040	2	4	3	40	80
6-01-077025	UE51402045	2	4	3	45	90
6-01-077026	UE51402050	2	4	3	50	100
6-01-077027	UE51402060	2	4	3	60	110
6-01-077028	UE51402508	2.5	4	4	8	50
6-01-077029	UE51402510	2.5	4	4	10	50
6-01-077030	UE51402512	2.5	4	4	12	50
6-01-077031	UE51402514	2.5	4	4	14	50
6-01-077032	UE51402516	2.5	4	4	16	50
6-01-077033	UE51402518	2.5	4	4	18	50
6-01-077034	UE51402520	2.5	4	4	20	50
6-01-077035	UE51402522	2.5	4	4	22	60
6-01-077036	UE51402526	2.5	4	4	26	60
6-01-077037	UE51402530	2.5	4	4	30	70
6-01-077038	UE51402535	2.5	4	4	35	70
6-01-077039	UE51402540	2.5	4	4	40	80
6-01-077040	UE51402545	2.5	4	4	45	90
6-01-077041	UE51402550	2.5	4	4	50	100

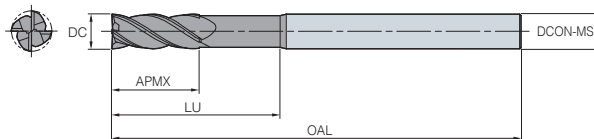
UE514

4 flutes neck type flat



p.190

DC	Tolerance
Ø1 ~ Ø12	0.000 ~ -0.030



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL
6-01-077042	UE51403006	3	6	4.5	6	50
6-01-077043	UE51403008	3	6	4.5	8	50
6-01-077044	UE51403010	3	6	4.5	10	50
6-01-077045	UE51403012	3	6	4.5	12	50
6-01-077046	UE51403014	3	6	4.5	14	60
6-01-077047	UE51403016	3	6	4.5	16	60
6-01-077048	UE51403018	3	6	4.5	18	60
6-01-077049	UE51403020	3	6	4.5	20	60
6-01-077050	UE51403022	3	6	4.5	22	65
6-01-077051	UE51403026	3	6	4.5	26	65
6-01-077052	UE51403030	3	6	4.5	30	70
6-01-077053	UE51403035	3	6	4.5	35	70
6-01-077054	UE51403040	3	6	4.5	40	80
6-01-077055	UE51403045	3	6	4.5	45	90
6-01-077056	UE51403050	3	6	4.5	50	100
6-01-077057	UE51403060	3	6	4.5	60	100
6-01-077058	UE51404008	4	6	4.5	8	50
6-01-077059	UE51404010	4	6	4.5	10	50
6-01-077060	UE51404012	4	6	4.5	12	50
6-01-077061	UE51404014	4	6	4.5	14	60
6-01-077062	UE51404016	4	6	4.5	16	60
6-01-077063	UE51404018	4	6	4.5	18	60
6-01-077064	UE51404020	4	6	4.5	20	60
6-01-077065	UE51404022	4	6	4.5	22	65
6-01-077066	UE51404026	4	6	4.5	26	65
6-01-077067	UE51404030	4	6	4.5	30	70
6-01-077068	UE51404035	4	6	4.5	35	70
6-01-077069	UE51404040	4	6	4.5	40	80
6-01-077070	UE51404045	4	6	4.5	45	90
6-01-077071	UE51404050	4	6	4.5	50	100
6-01-077072	UE51404060	4	6	4.5	60	100
6-01-077073	UE51405016	5	6	8	16	60
6-01-077074	UE51405020	5	6	8	20	60
6-01-077075	UE51405026	5	6	8	26	65
6-01-077076	UE51405030	5	6	8	30	70
6-01-077077	UE51405035	5	6	8	35	75

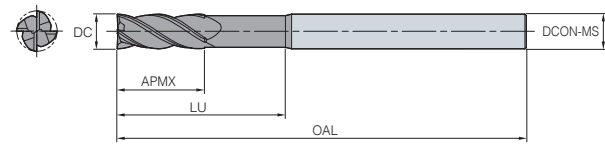
UE514

4 flutes neck type flat



p.190

DC	Tolerance
Ø1 ~ Ø12	0.000 ~ -0.030



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL
6-01-077078	UE51405040	5	6	8	40	80
6-01-077079	UE51405050	5	6	8	50	90
6-01-077080	UE51405060	5	6	8	60	100
6-01-077081	UE51406015	6	6	9	15	60
6-01-077082	UE51406020	6	6	9	20	60
6-01-077083	UE51406030	6	6	9	30	70
6-01-077084	UE51406032	6	6	9	32	90
6-01-077085	UE51408025	8	8	12	25	70
6-01-077086	UE51408030	8	8	12	30	80
6-01-077087	UE51408042	8	8	12	42	100
6-01-077088	UE51410030	10	10	15	30	75
6-01-077089	UE51410035	10	10	15	35	80
6-01-077090	UE51410045	10	10	15	45	100
6-01-077091	UE51412035	12	12	20	35	80
6-01-077092	UE51412040	12	12	20	40	90
6-01-077093	UE51412050	12	12	20	50	110

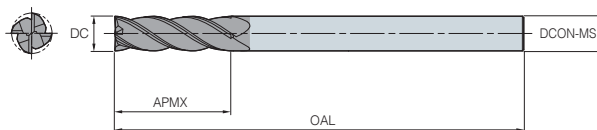
UE524A

4 flutes flat (Long length)



DC	Tolerance
ALL	0 ~ -0.0012

p.191



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-085130	UE524A003S	3/64	1/4	1/8	2 3/8
6-01-085131	UE524A003	3/64	1/4	5/32	2 3/8
6-01-085132	UE524A004S	1/16	1/8	1/4	2 3/8
6-01-085133	UE524A004	1/16	1/4	1/4	2 3/8
6-01-085134	UE524A005S	5/64	1/4	5/16	2 3/8
6-01-085135	UE524A005	5/64	1/4	3/8	2 3/8
6-01-085136	UE524A006S	3/32	1/4	3/8	2 3/8
6-01-085137	UE524A006	3/32	1/4	1/2	2 3/8
6-01-085138	UE524A008	1/8	1/4	1/2	2 3/4
6-01-085139	UE524A008L	1/8	1/8	3/4	2 3/4
6-01-085140	UE524A008X	1/8	1/4	3/4	2 3/4
6-01-085141	UE524A008LS	1/8	1/4	1	2 3/4
6-01-085142	UE524A012S	3/16	1/4	5/8	2 3/4
6-01-085143	UE524A012	3/16	3/16	3/4	2 1/2
6-01-085144	UE524A012L	3/16	1/4	3/4	2 3/4
6-01-085145	UE524A013S	13/64	1/4	3/4	2 3/4
6-01-085146	UE524A013	13/64	1/4	1	2 3/4
6-01-085147	UE524A016	1/4	1/4	3/4	2 3/4
6-01-085148	UE524A016L	1/4	1/4	1 1/8	3
6-01-085149	UE524A016X	1/4	1/4	1 1/2	3 1/2
6-01-085150	UE524A020S	5/16	5/16	1	3 1/8
6-01-085151	UE524A020	5/16	5/16	1 3/16	3 1/8
6-01-085152	UE524A024S	3/8	3/8	1 1/8	3
6-01-085153	UE524A024	3/8	3/8	1 3/16	3 1/8
6-01-085154	UE524A024X	3/8	3/8	1 3/4	4
6-01-085155	UE524A024LS	3/8	3/8	2	4
6-01-085156	UE524A032	1/2	1/2	1 3/8	3 1/2
6-01-085157	UE524A032L	1/2	1/2	1 1/2	4
6-01-085158	UE524A032X	1/2	1/2	2	4
6-01-085159	UE524A040L	5/8	5/8	2 1/4	5
6-01-085160	UE524A048	3/4	3/4	2 1/4	5
6-01-085161	UE524A064	1	1	2 1/4	5

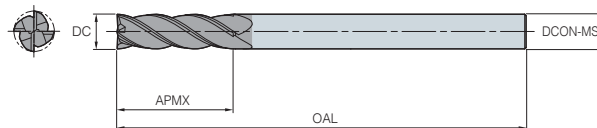
UE524

4 flutes flat (Long length)



DC	Tolerance
Ø1 ~ Ø25	0.000 ~ -0.030

p.192



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-076821	UE52401003	1	6	3	60
6-01-076822	UE52401004	1	6	4	60
6-01-076823	UE52401005	1	6	5	60
6-01-076824	UE52401006	1	6	6	60
6-01-076825	UE52401007	1	6	7	60
6-01-076826	UE52401008	1	6	8	60
6-01-076827	UE52401010	1	6	10	60
6-01-076828	UE52401012	1	6	12	60
6-01-076829	UE52401204	1.2	6	4	60
6-01-076830	UE52401206	1.2	6	6	60
6-01-076831	UE52401208	1.2	6	8	60
6-01-076832	UE52401210	1.2	6	10	60
6-01-076833	UE52401212	1.2	6	12	60
6-01-076834	UE52401506	1.5	6	6	60
6-01-076835	UE52401508	1.5	6	8	60
6-01-076836	UE52401510	1.5	6	10	60
6-01-076837	UE52401512	1.5	6	12	60
6-01-076838	UE52401514	1.5	6	14	60
6-01-076839	UE52401516	1.5	6	16	60
6-01-076851	UE52401520	1.5	6	20	60
6-01-076852	UE52401526	1.5	6	26	60
6-01-076841	UE52402008	2	6	8	60
6-01-076840	UE52402008S4	2	4	8	40
6-01-076842	UE52402010	2	6	10	60
6-01-076843	UE52402012	2	6	12	60
6-01-076844	UE52402014	2	6	14	60
6-01-076845	UE52402016	2	6	16	60
6-01-076846	UE52402510	2.5	6	10	60
6-01-076847	UE52402512	2.5	6	12	60
6-01-076848	UE52402516	2.5	6	16	60
6-01-076849	UE52402520	2.5	6	20	60
6-01-076850	UE52402526	2.5	6	26	60
6-01-076854	UE52403010	3	6	10	70
6-01-076855	UE52403012	3	6	12	70
6-01-076856	UE52403014	3	6	14	70
6-01-076857	UE52403016	3	6	16	70
6-01-076853	UE52403016S3	3	3	16	100
6-01-076858	UE52403020	3	6	20	70

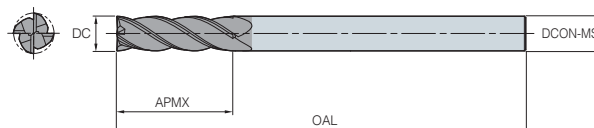
UE524

4 flutes flat (Long length)



p.192

DC	Tolerance
Ø1 ~ Ø25	0.000 ~ -0.030



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-076859	UE52403026	3	6	26	70
6-01-076860	UE52403030	3	6	30	70
6-01-076882	UE52403035	3	6	35	90
6-01-076862	UE52404012	4	6	12	70
6-01-076863	UE52404016	4	6	16	70
6-01-076864	UE52404020	4	6	20	70
6-01-076861	UE52404020S4	4	4	20	100
6-01-076865	UE52404026	4	6	26	70
6-01-076866	UE52404030	4	6	30	70
6-01-076867	UE52405015	5	6	15	70
6-01-076868	UE52405020	5	6	20	70
6-01-076870	UE52405025100	5	6	25	100
6-01-076869	UE52405025	5	6	25	70
6-01-076871	UE52405030	5	6	30	80
6-01-076872	UE52405035	5	6	35	90
6-01-076873	UE52405040	5	6	40	100
6-01-076875	UE52406015080	6	6	15	80
6-01-076874	UE52406015	6	6	15	60
6-01-076877	UE52406020090	6	6	20	90
6-01-076876	UE52406020	6	6	20	70
6-01-076878	UE52406025	6	6	25	75
6-01-076881	UE52406030150	6	6	30	150
6-01-076880	UE52406030100	6	6	30	100
6-01-076879	UE52406030	6	6	30	80
6-01-076880	UE52406030100	6	6	30	100
6-01-076879	UE52406030	6	6	30	80
6-01-076883	UE52406035	6	6	35	90
6-01-076885	UE52406040120	6	6	40	120
6-01-076884	UE52406040	6	6	40	90
6-01-076886	UE52406045	6	6	45	150
6-01-076887	UE52407035	7	8	35	85
6-01-076888	UE52408020	8	8	20	100
6-01-076889	UE52408025	8	8	25	80
6-01-076891	UE52408030100	8	8	30	100
6-01-076890	UE52408030	8	8	30	80
6-01-076892	UE52408035	8	8	35	90
6-01-076895	UE52408040150	8	8	40	150
6-01-076894	UE52408040120	8	8	40	120

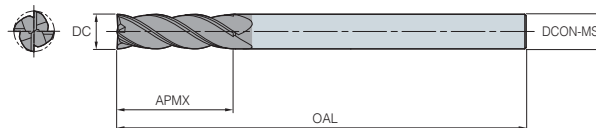
UE524

4 flutes flat (Long length)



DC	Tolerance
Ø1 ~ Ø25	0.000 ~ -0.030

p.192



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-076893	UE52408040	8	8	40	90
6-01-076896	UE52408045	8	8	45	100
6-01-076898	UE52408050150	8	8	50	150
6-01-076897	UE52408050	8	8	50	100
6-01-076899	UE52408060	8	8	60	155
6-01-076900	UE52408080	8	8	80	200
6-01-076901	UE52409045	9	10	45	100
6-01-076902	UE52410025	10	10	25	100
6-01-076904	UE524100100	10	10	30	100
6-01-076903	UE52410030	10	10	30	80
6-01-076905	UE52410035	10	10	35	90
6-01-076907	UE52410040120	10	10	40	120
6-01-076906	UE52410040	10	10	40	90
6-01-076908	UE52410045	10	10	45	100
6-01-076911	UE52410050200	10	10	50	200
6-01-076910	UE52410050150	10	10	50	150
6-01-076909	UE52410050	10	10	50	100
6-01-076912	UE52410055	10	10	55	150
6-01-076915	UE52410060200	10	10	60	200
6-01-076914	UE52410060155	10	10	60	155
6-01-076913	UE52410060	10	10	60	110
6-01-076916	UE52410080200	10	10	80	200
6-01-076917	UE52411050	11	12	50	110
6-01-076918	UE52412030	12	12	30	110
6-01-076919	UE52412035	12	12	35	90
6-01-076921	UE52412040120	12	12	40	120
6-01-076920	UE52412040	12	12	40	100
6-01-076922	UE52412045	12	12	45	130
6-01-076924	UE52412050150	12	12	50	150
6-01-076923	UE52412050	12	12	50	100
6-01-076925	UE52412055	12	12	55	110
6-01-076928	UE52412060200	12	12	60	200
6-01-076927	UE52412060150	12	12	60	150
6-01-076926	UE52412060	12	12	60	110
6-01-076929	UE52412065	12	12	65	150
6-01-076931	UE52412070200	12	12	70	200
6-01-076930	UE52412070	12	12	70	120
6-01-076932	UE52412080	12	12	80	200

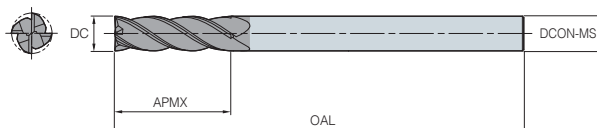
UE524

4 flutes flat (Long length)



DC	Tolerance
Ø1 ~ Ø25	0.000 ~ -0.030

p.192



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-076933	UE52414040	14	16	40	110
6-01-076934	UE52414050	14	16	50	110
6-01-076935	UE52414060	14	16	60	150
6-01-076936	UE52416040	16	16	40	150
6-01-076938	UE52416050150	16	16	50	150
6-01-076937	UE52416050	16	16	50	110
6-01-076939	UE52416060	16	16	60	120
6-01-076942	UE52416070200	16	16	70	200
6-01-076941	UE52416070150	16	16	70	150
6-01-076940	UE52416070	16	16	70	130
6-01-076943	UE52416080	16	16	80	150
6-01-076944	UE52416090	16	16	90	150
6-01-076945	UE524160100	16	16	100	200
6-01-076946	UE524160110	16	16	110	200
6-01-076947	UE524160120	16	16	120	250
6-01-076948	UE52418050	18	20	50	120
6-01-076949	UE52418070	18	20	70	130
6-01-076950	UE524180100	18	20	100	200
6-01-076952	UE52420050150	20	20	50	150
6-01-076951	UE52420050	20	20	50	110
6-01-076953	UE52420060	20	20	60	130
6-01-076954	UE52420070	20	20	70	130
6-01-076955	UE52420080	20	20	80	150
6-01-076957	UE52420090200	20	20	90	200
6-01-076956	UE52420090	20	20	90	150
6-01-076958	UE524200100	20	20	100	200
6-01-076959	UE524200110	20	20	110	200
6-01-076960	UE524200120	20	20	120	250
6-01-076961	UE524200130	20	20	130	250
6-01-076962	UE52422075	22	20	75	150
6-01-076963	UE524220110	22	20	110	200
6-01-076964	UE52425070	25	25	70	150
6-01-076965	UE52425090	25	25	90	150
6-01-076966	UE524250100	25	25	100	200
6-01-076967	UE524250110	25	25	110	200
6-01-076968	UE524250120	25	25	120	250
6-01-076969	UE524250150	25	25	150	250

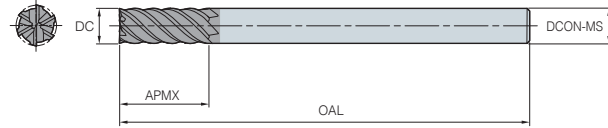
UE506A

6 flutes flat



p.193

DC	Tolerance
ALL	0 ~ -0.0012

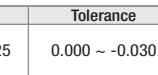


(inch)

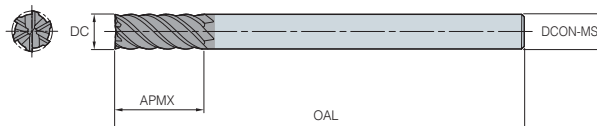
K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-085162	UE506A016S	1/4	1/4	1/2	2 1/4
6-01-085163	UE506A016	1/4	1/4	5/8	2 3/8
6-01-085164	UE506A020	5/16	5/16	3/4	2 3/4
6-01-085165	UE506A024S	3/8	3/8	7/8	2 7/8
6-01-085166	UE506A024	3/8	3/8	1	3
6-01-085167	UE506A032S	1/2	1/2	1	3 1/4
6-01-085168	UE506A032	1/2	1/2	1 3/16	3 1/8
6-01-085169	UE506A040	5/8	5/8	1 1/4	3 5/8

UE506

6 flutes flat



p.194



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-077136	UE506060	6	6	15	60
6-01-077137	UE50606020	6	6	20	70
6-01-077139	UE50606030110	6	6	30	110
6-01-077138	UE50606030	6	6	30	80
6-01-077140	UE506070	7	8	18	60
6-01-077141	UE506080	8	8	20	70
6-01-077142	UE50608030	8	8	30	80
6-01-077143	UE50608035	8	8	35	90
6-01-077145	UE50608040130	8	8	40	130
6-01-077144	UE50608040	8	8	40	90
6-01-077146	UE506090	9	10	22	70
6-01-077147	UE506100	10	10	25	75
6-01-077148	UE50610030	10	10	30	80
6-01-077149	UE50610040	10	10	40	90
6-01-077151	UE50610050150	10	10	50	150
6-01-077150	UE50610050	10	10	50	100
6-01-077152	UE506110	11	12	26	75
6-01-077153	UE506120	12	12	30	80
6-01-077154	UE50612040	12	12	40	90
6-01-077155	UE50612050	12	12	50	100
6-01-077157	UE50612060150	12	12	60	150
6-01-077156	UE50612060	12	12	60	110
6-01-077158	UE506130	13	14	32	85
6-01-077159	UE506140	14	14	32	85
6-01-077160	UE506160	16	16	40	100
6-01-077161	UE50616050	16	16	50	110
6-01-077162	UE50616060	16	16	60	120
6-01-077163	UE50616090	16	16	90	150
6-01-077165	UE506160110250	16	16	110	250
6-01-077164	UE506160110	16	16	110	200
6-01-077166	UE506180	18	18	44	100
6-01-077167	UE506200	20	20	45	100
6-01-077168	UE50620060	20	20	60	120
6-01-077169	UE50620070	20	20	70	130
6-01-077172	UE506200110300	20	20	110	300
6-01-077171	UE506200110250	20	20	110	250
6-01-077170	UE506200110	20	20	110	200
6-01-077173	UE506250	25	25	50	120
6-01-077174	UE506251	25	25	92	180

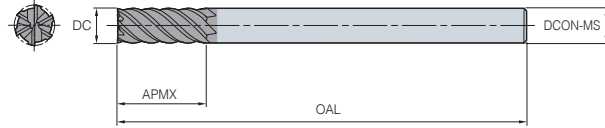
UE526A

6 flutes flat



p.195

DC	Tolerance
ALL	0 ~ -0.0012



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL
6-01-085170	UE526A016	1/4	1/4	1	2 3/4
6-01-085171	UE526A020	5/16	5/16	1 1/2	3 5/8
6-01-085172	UE526A024	3/8	3/8	1 3/4	4
6-01-085173	UE526A032	1/2	1/2	2 3/16	4 3/8
6-01-085174	UE526A040	5/8	5/8	2 5/8	5 1/8

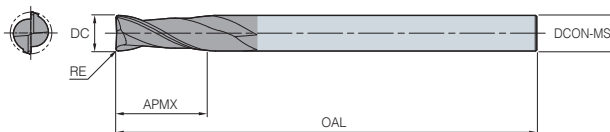
UR502A

2 flutes radius



p.196

DC	Tolerance
ALL	0 ~ -0.0012



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
6-01-084542	UR502A004008S	1/16	1/4	1/8	2	0.008
6-01-084512	UR502A004010	1/16	1/4	5/32	2	0.01
6-01-084513	UR502A004020	1/16	1/4	5/32	2	0.02
6-01-084514	UR502A008010S	1/8	1/4	1/4	2 1/4	0.01
6-01-084516	UR502A008020S	1/8	1/4	1/4	2 1/4	0.02
6-01-084518	UR502A008030S	1/8	1/4	1/4	2 1/4	0.03
6-01-084515	UR502A008010	1/8	1/4	5/16	2 3/8	0.01
6-01-084517	UR502A008020	1/8	1/4	5/16	2 3/8	0.02
6-01-084519	UR502A008030	1/8	1/4	5/16	2 3/8	0.03
6-01-084520	UR502A012010	3/16	1/4	3/8	2 1/2	0.01
6-01-084521	UR502A012020	3/16	1/4	3/8	2 1/2	0.02
6-01-084522	UR502A012030	3/16	1/4	3/8	2 1/2	0.03
6-01-084523	UR502A016010S	1/4	1/4	1/2	2 3/8	0.01
6-01-084526	UR502A016020S	1/4	1/4	1/2	2 3/8	0.02
6-01-084529	UR502A016030S	1/4	1/4	1/2	2 3/8	0.03
6-01-084524	UR502A016010	1/4	1/4	5/8	2 3/8	0.01
6-01-084525	UR502A016010L	1/4	1/4	5/8	3 1/2	0.01
6-01-084527	UR502A016020	1/4	1/4	5/8	2 3/8	0.02
6-01-084528	UR502A016020L	1/4	1/4	5/8	3 1/2	0.02
6-01-084530	UR502A016030	1/4	1/4	5/8	2 3/8	0.03
6-01-084531	UR502A016030L	1/4	1/4	5/8	3 1/2	0.03
6-01-084532	UR502A016040	1/4	1/4	5/8	2 3/8	0.04
6-01-084533	UR502A016040L	1/4	1/4	5/8	3 1/2	0.04
6-01-084534	UR502A020020S	5/16	5/16	1/2	3	0.02
6-01-084537	UR502A020030S	5/16	5/16	1/2	3	0.03
6-01-084543	UR502A020060S	5/16	5/16	1/2	3	0.06
6-01-084556	UR502A020090S	5/16	5/16	1/2	3	0.09
6-01-084535	UR502A020020	5/16	5/16	3/4	2 3/4	0.02
6-01-084536	UR502A020020L	5/16	5/16	3/4	4	0.02
6-01-084538	UR502A020030	5/16	5/16	3/4	2 3/4	0.03
6-01-084539	UR502A020030L	5/16	5/16	3/4	4	0.03
6-01-084540	UR502A020040	5/16	5/16	3/4	2 3/4	0.04
6-01-084541	UR502A020040L	5/16	5/16	3/4	4	0.04
6-01-084544	UR502A024020S	3/8	3/8	5/8	3	0.02
6-01-084547	UR502A024030S	3/8	3/8	5/8	3	0.03
6-01-084559	UR502A024060S	3/8	3/8	5/8	3	0.06

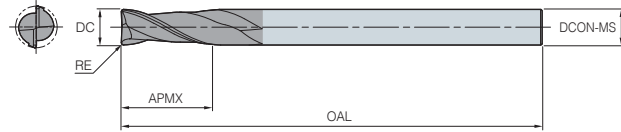
UR502A

2 flutes radius



p.196

DC	Tolerance
ALL	0 ~ -0.0012



(inch)

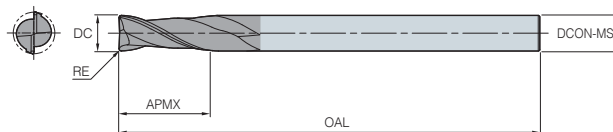
K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
6-01-084561	UR502A024090S	3/8	3/8	5/8	3	0.09
6-01-084545	UR502A024020	3/8	3/8	1	3	0.02
6-01-084546	UR502A024020L	3/8	3/8	1	4	0.02
6-01-084548	UR502A024030	3/8	3/8	1	3	0.03
6-01-084549	UR502A024030L	3/8	3/8	1	4	0.03
6-01-084550	UR502A024040	3/8	3/8	1	3	0.04
6-01-084551	UR502A024040L	3/8	3/8	1	4	0.04
6-01-084552	UR502A024060	3/8	3/8	1	3	0.06
6-01-084553	UR502A024090	3/8	3/8	1	3	0.09
6-01-084554	UR502A032020S	1/2	1/2	5/8	3 1/8	0.02
6-01-084557	UR502A032030S	1/2	1/2	5/8	3 1/8	0.03
6-01-084562	UR502A032060S	1/2	1/2	5/8	3 1/8	0.06
6-01-084588	UR502A032090S	1/2	1/2	5/8	3 1/8	0.09
6-01-084555	UR502A032020	1/2	1/2	1	4	0.02
6-01-084558	UR502A032030	1/2	1/2	1	4	0.03
6-01-084560	UR502A032060	1/2	1/2	1	4	0.06
6-01-084563	UR502A032090	1/2	1/2	1	4	0.09

UR502

2 flutes radius



	CARBIDE	2	H-A 30°	Grade PC315W	RE ±0.01	RE ±0.015	h5 shank	DATA 	DC Ø0.2 ~ Ø6 Ø7 ~ Ø20	Tolerance 0.000 ~ -0.012 0.000 ~ -0.015
					DC6 or below	Above DC6		p.196		



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
1-04-056297	UR502002002	0.2	4	0.4	40	0.02
1-04-056298	UR502002005	0.2	4	0.4	40	0.05
1-04-056299	UR502003002	0.3	4	0.6	40	0.02
1-04-056300	UR502003005	0.3	4	0.6	40	0.05
1-04-056301	UR502004005	0.4	4	0.8	40	0.05
1-04-056302	UR50200401	0.4	4	0.8	40	0.1
1-04-056303	UR502005005	0.5	4	1	40	0.05
1-04-056304	UR50200501	0.5	4	1	40	0.1
1-04-056305	UR502006005	0.6	4	1.2	40	0.05
1-04-056306	UR50200601	0.6	4	1.2	40	0.1
1-04-056307	UR50200602	0.6	4	1.2	40	0.2
1-04-056308	UR502007005	0.7	4	1.4	40	0.05
1-04-056309	UR50200701	0.7	4	1.4	40	0.1
1-04-056310	UR50200702	0.7	4	1.4	40	0.2
1-04-056311	UR502008005	0.8	4	1.6	40	0.05
1-04-056312	UR50200801	0.8	4	1.6	40	0.1
1-04-056313	UR50200802	0.8	4	1.6	40	0.2
1-04-056314	UR502009005	0.9	4	1.8	40	0.05
1-04-056315	UR50200901	0.9	4	1.8	40	0.1
1-04-056316	UR502010005	1	6	2.5	50	0.05
1-04-056317	UR50201001	1	6	2.5	50	0.1
1-04-056318	UR50201002	1	6	2.5	50	0.2
1-04-056319	UR50201003	1	6	2.5	50	0.3
1-04-056320	UR502012005	1.2	6	3	50	0.05
1-04-056321	UR50201201	1.2	6	3	50	0.1
1-04-056322	UR50201202	1.2	6	3	50	0.2
1-04-056323	UR50201203	1.2	6	3	50	0.3
1-04-056324	UR502015005	1.5	6	4	50	0.05
1-04-056325	UR50201501	1.5	6	4	50	0.1
1-04-056326	UR50201502	1.5	6	4	50	0.2
1-04-056327	UR50201503	1.5	6	4	50	0.3
1-04-056328	UR50201505	1.5	6	4	50	0.5
1-04-056329	UR50202001	2	6	6	50	0.1
1-04-056330	UR50202002	2	6	6	50	0.2
1-04-056331	UR50202003	2	6	6	50	0.3
1-04-056332	UR50202005	2	6	6	50	0.5

UR502

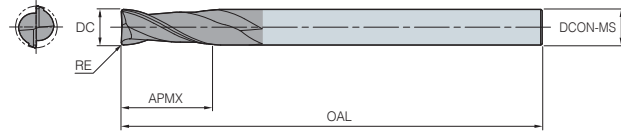
2 flutes radius



DC	Tolerance
Ø0.2 ~ Ø6	0.000 ~ -0.012
Ø7 ~ Ø20	0.000 ~ -0.015

DC6 or below Above DC6

p.196



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
1-04-056333	UR50202501	2.5	6	7	60	0.1
1-04-056334	UR50202502	2.5	6	7	60	0.2
1-04-056335	UR50202503	2.5	6	7	60	0.3
1-04-056336	UR50202505	2.5	6	7	60	0.5
1-04-056337	UR50203001	3	6	8	60	0.1
1-04-056338	UR50203002	3	6	8	60	0.2
1-04-056339	UR50203003	3	6	8	60	0.3
1-04-056340	UR50203005	3	6	8	60	0.5
1-04-056341	UR50203010	3	6	8	60	1
1-04-056342	UR50203501	3.5	6	10	70	0.1
1-04-056343	UR50203502	3.5	6	10	70	0.2
1-04-056344	UR50203503	3.5	6	10	70	0.3
1-04-056345	UR50203505	3.5	6	10	70	0.5
1-04-056346	UR50204001	4	6	10	70	0.1
1-04-056347	UR50204001100S4	4	4	10	100	0.1
1-04-056348	UR50204001S4	4	4	10	70	0.1
1-04-056349	UR50204002	4	6	10	70	0.2
1-04-056350	UR50204002100S4	4	4	10	100	0.2
1-04-056351	UR50204002S4	4	4	10	70	0.2
1-04-056352	UR50204003	4	6	10	70	0.3
1-04-056353	UR50204003100S4	4	4	10	100	0.3
1-04-056354	UR50204003S4	4	4	10	70	0.3
1-04-056355	UR50204005	4	6	10	70	0.5
1-04-056356	UR50204005100S4	4	4	10	100	0.5
1-04-056357	UR50204005S4	4	4	10	70	0.5
1-04-056358	UR50204010	4	6	10	70	1
1-04-056359	UR50204010100S4	4	4	10	100	1
1-04-056360	UR50204010S4	4	4	10	70	1
1-04-056361	UR50204501	4.5	6	11	80	0.1
1-04-056362	UR50204502	4.5	6	11	80	0.2
1-04-056363	UR50204503	4.5	6	11	80	0.3
1-04-056364	UR50204505	4.5	6	11	80	0.5
1-04-056365	UR50205001	5	6	13	90	0.1
1-04-056366	UR50205002	5	6	13	90	0.2
1-04-056367	UR50205003	5	6	13	90	0.3
1-04-056368	UR50205005	5	6	13	90	0.5

UR502

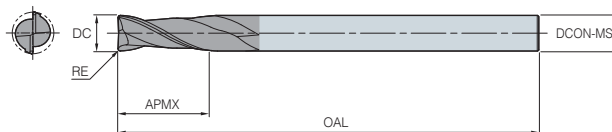
2 flutes radius



DC	Tolerance
Ø0.2 ~ Ø6	0.000 ~ -0.012
Ø7 ~ Ø20	0.000 ~ -0.015

DC6 or below Above DC6

p.196



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
1-04-056369	UR50205010	5	6	13	90	1
1-04-056370	UR50205501	5.5	6	13	90	0.1
1-04-056371	UR50205502	5.5	6	13	90	0.2
1-04-056372	UR50205503	5.5	6	13	90	0.3
1-04-056373	UR50205505	5.5	6	13	90	0.5
1-04-056374	UR50205510	5.5	6	13	90	1
1-04-056375	UR50206001	6	6	15	90	0.1
1-04-056376	UR50206002	6	6	15	90	0.2
1-04-056377	UR50206003	6	6	15	90	0.3
1-04-056378	UR5020600360	6	6	15	60	0.3
1-04-056379	UR50206005	6	6	15	90	0.5
1-04-056380	UR50206005110	6	6	15	110	0.5
1-04-056381	UR50206005130	6	6	15	130	0.5
1-04-056382	UR5020600560	6	6	15	60	0.5
1-04-056383	UR50206010	6	6	15	90	1
1-04-056384	UR50206010110	6	6	15	110	1
1-04-056385	UR50206010130	6	6	15	130	1
1-04-056386	UR5020601060	6	6	15	60	1
1-04-056387	UR50206015	6	6	15	90	1.5
1-04-056388	UR50206020	6	6	15	90	2
1-04-056389	UR50207001	7	8	16	90	0.1
1-04-056390	UR50207002	7	8	16	90	0.2
1-04-056391	UR50207003	7	8	16	90	0.3
1-04-056392	UR50207005	7	8	16	90	0.5
1-04-056393	UR50207010	7	8	16	90	1
1-04-056394	UR50207020	7	8	16	90	2
1-04-056395	UR50208001	8	8	20	100	0.1
1-04-056396	UR50208002	8	8	20	100	0.2
1-04-056397	UR50208003	8	8	20	100	0.3
1-04-056398	UR5020800370	8	8	20	70	0.3
1-04-056399	UR50208005	8	8	20	100	0.5
1-04-056400	UR50208005120	8	8	20	120	0.5
1-04-056401	UR50208005150	8	8	20	150	0.5
1-04-056402	UR5020800570	8	8	20	70	0.5
1-04-056403	UR50208010	8	8	20	100	1
1-04-056404	UR50208010120	8	8	20	120	1

UR502

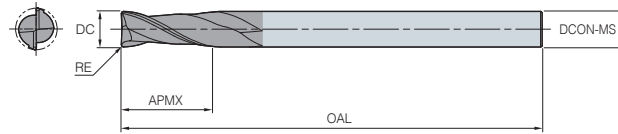
2 flutes radius



DC	Tolerance
∅0.2 ~ ∅6	0.000 ~ -0.012
∅7 ~ ∅20	0.000 ~ -0.015

DC6 or below Above DC6

p.196



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
1-04-056405	UR50208010150	8	8	20	150	1
1-04-056406	UR5020801070	8	8	20	70	1
1-04-056407	UR50208015	8	8	20	100	1.5
1-04-056408	UR50208020	8	8	20	100	2
1-04-056409	UR50208025	8	8	20	100	2.5
1-04-056410	UR50208030	8	8	20	100	3
1-04-056411	UR50210001	10	10	25	100	0.1
1-04-056412	UR50210002	10	10	25	100	0.2
1-04-056413	UR50210003	10	10	25	100	0.3
1-04-056414	UR5021000375	10	10	25	75	0.3
1-04-056415	UR50210005	10	10	25	100	0.5
1-04-056416	UR50210005130	10	10	25	130	0.5
1-04-056417	UR50210005150	10	10	25	150	0.5
1-04-056418	UR5021000575	10	10	25	75	0.5
1-04-056419	UR50210010	10	10	25	100	1
1-04-056420	UR50210010130	10	10	25	130	1
1-04-056421	UR50210010150	10	10	25	150	1
1-04-056422	UR5021001075	10	10	25	75	1
1-04-056423	UR50210015	10	10	25	100	1.5
1-04-056424	UR50210020	10	10	25	100	2
1-04-056425	UR50210025	10	10	25	100	2.5
1-04-056426	UR50210030	10	10	25	100	3
1-04-056427	UR50210040	10	10	25	100	4
1-04-056428	UR50211002	11	12	25	110	0.2
1-04-056429	UR50211003	11	12	25	110	0.3
1-04-056430	UR50211005	11	12	25	110	0.5
1-04-056431	UR50211010	11	12	25	110	1
1-04-056432	UR50211020	11	12	25	110	2
1-04-056433	UR50212001	12	12	30	110	0.1
1-04-056434	UR50212002	12	12	30	110	0.2
1-04-056435	UR50212003	12	12	30	110	0.3
1-04-056436	UR5021200380	12	12	30	80	0.3
1-04-056437	UR50212005	12	12	30	110	0.5
1-04-056438	UR50212005130	12	12	30	130	0.5
1-04-056439	UR50212005150	12	12	30	150	0.5
1-04-056440	UR5021200580	12	12	30	80	0.5

UR502

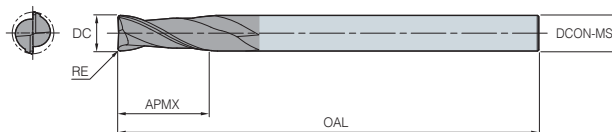
2 flutes radius



DC	Tolerance
Ø0.2 ~ Ø6	0.000 ~ -0.012
Ø7 ~ Ø20	0.000 ~ -0.015

DC6 or below Above DC6

p.196



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
1-04-056441	UR50212010	12	12	30	110	1
1-04-056442	UR50212010130	12	12	30	130	1
1-04-056443	UR50212010150	12	12	30	150	1
1-04-056444	UR5021201080	12	12	30	80	1
1-04-056445	UR50212015	12	12	30	110	1.5
1-04-056446	UR50212020	12	12	30	110	2
1-04-056447	UR50212025	12	12	30	110	2.5
1-04-056448	UR50212030	12	12	30	110	3
1-04-056449	UR50212040	12	12	30	110	4
1-04-056450	UR50212050	12	12	30	110	5
1-04-056451	UR50214005	14	16	30	150	0.5
1-04-056452	UR50214010	14	16	30	150	1
1-04-056453	UR50214020	14	16	30	150	2
1-04-056454	UR50216005	16	16	32	150	0.5
1-04-056455	UR50216010	16	16	32	150	1
1-04-056456	UR50216015	16	16	32	150	1.5
1-04-056457	UR50216020	16	2	32	150	16
1-04-056426	UR50210030	16	3	32	150	16
1-04-056459	UR50220005	20	0.5	38	150	20
1-04-056460	UR50220010	20	1	38	150	20
1-04-056461	UR50220015	20	1.5	38	150	20
1-04-056462	UR50220020	20	2	38	150	20
1-04-056463	UR50220030	20	3	38	150	20

UR512

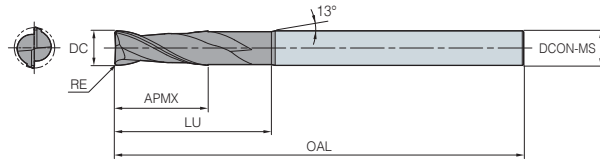
2 flutes neck type radius



DC	Tolerance
∅0.2 ~ ∅6	0.000 ~ -0.012
∅8 ~ ∅20	0.000 ~ -0.015

DC6 or below Above DC6

p.197



(mm)

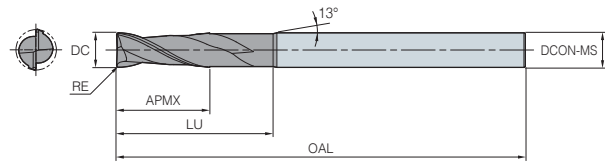
K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-056464	UR512002002005	0.2	4	0.3	0.5	40	0.02
1-04-056465	UR51200200201	0.2	4	0.3	1	40	0.02
1-04-056466	UR512002002015	0.2	4	0.3	1.5	40	0.02
1-04-056467	UR51200200202	0.2	4	0.3	2	40	0.02
1-04-056468	UR512002005005	0.2	4	0.3	0.5	40	0.05
1-04-056469	UR51200200501	0.2	4	0.3	1	40	0.05
1-04-056470	UR512002005015	0.2	4	0.3	1.5	40	0.05
1-04-056471	UR51200200502	0.2	4	0.3	2	40	0.05
1-04-056472	UR51200300201	0.3	4	0.5	1	40	0.02
1-04-056473	UR51200300202	0.3	4	0.5	2	40	0.02
1-04-056474	UR51200300203	0.3	4	0.5	3	40	0.02
1-04-056475	UR51200300501	0.3	4	0.5	1	40	0.05
1-04-056476	UR51200300502	0.3	4	0.5	2	40	0.05
1-04-056477	UR51200300503	0.3	4	0.5	3	40	0.05
1-04-056478	UR51200400501	0.4	4	0.6	1	40	0.05
1-04-056479	UR512004005015	0.4	4	0.6	1.5	40	0.05
1-04-056480	UR51200400502	0.4	4	0.6	2	40	0.05
1-04-056481	UR512004005025	0.4	4	0.6	2.5	40	0.05
1-04-056482	UR51200400503	0.4	4	0.6	3	40	0.05
1-04-056483	UR51200400504	0.4	4	0.6	4	40	0.05
1-04-056484	UR5120040101	0.4	4	0.6	1	40	0.1
1-04-056485	UR51200401015	0.4	4	0.6	1.5	40	0.1
1-04-056486	UR5120040102	0.4	4	0.6	2	40	0.1
1-04-056487	UR51200401025	0.4	4	0.6	2.5	40	0.1
1-04-056488	UR5120040103	0.4	4	0.6	3	40	0.1
1-04-056489	UR5120040104	0.4	4	0.6	4	40	0.1
1-04-056490	UR51200500501	0.5	4	0.7	1	45	0.05
1-04-056491	UR512005005015	0.5	4	0.7	1.5	45	0.05
1-04-056492	UR51200500502	0.5	4	0.7	2	45	0.05
1-04-056493	UR512005005025	0.5	4	0.7	2.5	45	0.05
1-04-056494	UR51200500503	0.5	4	0.7	3	45	0.05
1-04-056495	UR51200500504	0.5	4	0.7	4	45	0.05
1-04-056496	UR51200500505	0.5	4	0.7	5	45	0.05
1-04-056497	UR51200500506	0.5	4	0.7	6	45	0.05
1-04-056498	UR5120050101	0.5	4	0.7	1	45	0.1
1-04-056499	UR51200501015	0.5	4	0.7	1.5	45	0.1
1-04-056500	UR5120050102	0.5	4	0.7	2	45	0.1
1-04-056501	UR51200501025	0.5	4	0.7	2.5	45	0.1

UR512

2 flutes neck type radius



	CARBIDE	2	H-A 30°	Grade PC315W	RE ±0.01	RE ±0.015	h5 shank	DATA 	DC Ø0.2 ~ Ø6 Ø8 ~ Ø20	Tolerance 0.000 ~ -0.012 0.000 ~ -0.015
					DC6 or below	Above DC6		p.197		



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-056502	UR5120050103	0.5	4	0.7	3	45	0.1
1-04-056503	UR5120050104	0.5	4	0.7	4	45	0.1
1-04-056504	UR5120050105	0.5	4	0.7	5	45	0.1
1-04-056505	UR5120050106	0.5	4	0.7	6	45	0.1
1-04-056506	UR51200600502	0.6	4	0.9	2	45	0.05
1-04-056507	UR51200600503	0.6	4	0.9	3	45	0.05
1-04-056508	UR51200600504	0.6	4	0.9	4	45	0.05
1-04-056509	UR51200600506	0.6	4	0.9	6	45	0.05
1-04-056510	UR51200600508	0.6	4	0.9	8	45	0.05
1-04-056511	UR51200600510	0.6	4	0.9	10	45	0.05
1-04-056512	UR5120060102	0.6	4	0.9	2	45	0.1
1-04-056513	UR5120060103	0.6	4	0.9	3	45	0.1
1-04-056514	UR5120060104	0.6	4	0.9	4	45	0.1
1-04-056515	UR5120060106	0.6	4	0.9	6	45	0.1
1-04-056516	UR5120060108	0.6	4	0.9	8	45	0.1
1-04-056517	UR5120060110	0.6	4	0.9	10	45	0.1
1-04-056518	UR5120060202	0.6	4	0.9	2	45	0.2
1-04-056519	UR5120060203	0.6	4	0.9	3	45	0.2
1-04-056520	UR5120060204	0.6	4	0.9	4	45	0.2
1-04-056521	UR5120060206	0.6	4	0.9	6	45	0.2
1-04-056522	UR5120060208	0.6	4	0.9	8	45	0.2
1-04-056523	UR5120060210	0.6	4	0.9	10	45	0.2
1-04-056524	UR51200700502	0.7	4	1.2	2	45	0.05
1-04-056525	UR51200700504	0.7	4	1.2	4	45	0.05
1-04-056526	UR51200700506	0.7	4	1.2	6	45	0.05
1-04-056527	UR51200700508	0.7	4	1.2	8	45	0.05
1-04-056528	UR51200700510	0.7	4	1.2	10	45	0.05
1-04-056529	UR5120070102	0.7	4	1.2	2	45	0.1
1-04-056530	UR5120070104	0.7	4	1.2	4	45	0.1
1-04-056531	UR5120070106	0.7	4	1.2	6	45	0.1
1-04-056532	UR5120070108	0.7	4	1.2	8	45	0.1
1-04-056533	UR5120070110	0.7	4	1.2	10	45	0.1
1-04-056534	UR5120070202	0.7	4	1.2	2	45	0.2
1-04-056535	UR5120070204	0.7	4	1.2	4	45	0.2
1-04-056536	UR5120070206	0.7	4	1.2	6	45	0.2
1-04-056537	UR5120070208	0.7	4	1.2	8	45	0.2
1-04-056538	UR5120070210	0.7	4	1.2	10	45	0.2
1-04-056539	UR51200800502	0.8	4	1.2	2	45	0.05

UR512

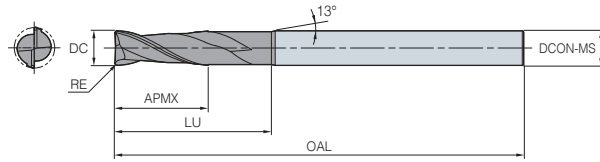
2 flutes neck type radius



DC	Tolerance
∅0.2 ~ ∅6	0.000 ~ -0.012
∅8 ~ ∅20	0.000 ~ -0.015

DC6 or below Above DC6

p.197



(mm)

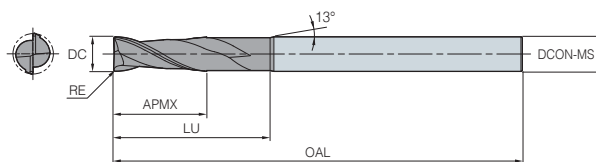
K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-056540	UR51200800503	0.8	4	1.2	3	45	0.05
1-04-056541	UR51200800504	0.8	4	1.2	4	45	0.05
1-04-056542	UR51200800506	0.8	4	1.2	6	45	0.05
1-04-056543	UR51200800508	0.8	4	1.2	8	45	0.05
1-04-056544	UR51200800510	0.8	4	1.2	10	45	0.05
1-04-056545	UR5120080102	0.8	4	1.2	2	45	0.1
1-04-056546	UR5120080103	0.8	4	1.2	3	45	0.1
1-04-056547	UR5120080104	0.8	4	1.2	4	45	0.1
1-04-056548	UR5120080106	0.8	4	1.2	6	45	0.1
1-04-056549	UR5120080108	0.8	4	1.2	8	45	0.1
1-04-056550	UR5120080110	0.8	4	1.2	10	45	0.1
1-04-056551	UR5120080202	0.8	4	1.2	2	45	0.2
1-04-056552	UR5120080203	0.8	4	1.2	3	45	0.2
1-04-056553	UR5120080204	0.8	4	1.2	4	45	0.2
1-04-056554	UR5120080206	0.8	4	1.2	6	45	0.2
1-04-056555	UR5120080208	0.8	4	1.2	8	45	0.2
1-04-056556	UR5120080210	0.8	4	1.2	10	45	0.2
1-04-056557	UR51201000503	1	4	1.5	3	50	0.05
1-04-056558	UR51201000504	1	4	1.5	4	50	0.05
1-04-056559	UR51201000506	1	4	1.5	6	50	0.05
1-04-056560	UR51201000508	1	4	1.5	8	50	0.05
1-04-056561	UR51201000510	1	4	1.5	10	50	0.05
1-04-056562	UR51201000512	1	4	1.5	12	50	0.05
1-04-056563	UR51201000514	1	4	1.5	14	50	0.05
1-04-056564	UR51201000516	1	4	1.5	16	50	0.05
1-04-056565	UR51201000520	1	4	1.5	20	50	0.05
1-04-056566	UR5120100103	1	4	1.5	3	50	0.1
1-04-056567	UR5120100104	1	4	1.5	4	50	0.1
1-04-056568	UR5120100106	1	4	1.5	6	50	0.1
1-04-056569	UR5120100108	1	4	1.5	8	50	0.1
1-04-056570	UR5120100110	1	4	1.5	10	50	0.1
1-04-056571	UR5120100112	1	4	1.5	12	50	0.1
1-04-056572	UR5120100114	1	4	1.5	14	50	0.1
1-04-056573	UR5120100116	1	4	1.5	16	50	0.1
1-04-056574	UR5120100120	1	4	1.5	20	50	0.1
1-04-056575	UR5120100203	1	4	1.5	3	50	0.2
1-04-056576	UR5120100204	1	4	1.5	4	50	0.2
1-04-056577	UR5120100206	1	4	1.5	6	50	0.2

UR512

2 flutes neck type radius



	CARBIDE	2	H-A 30°	Grade PC315W	RE ±0.01	RE ±0.015	h5 shank	DATA	DC Ø0.2 ~ Ø6 Ø8 ~ Ø20	Tolerance 0.000 ~ -0.012 0.000 ~ -0.015
					DC6 or below	Above DC6		p.197		



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-056578	UR5120100208	1	4	1.5	8	50	0.2
1-04-056579	UR5120100210	1	4	1.5	10	50	0.2
1-04-056580	UR5120100212	1	4	1.5	12	50	0.2
1-04-056581	UR5120100214	1	4	1.5	14	50	0.2
1-04-056582	UR5120100216	1	4	1.5	16	50	0.2
1-04-056583	UR5120100220	1	4	1.5	20	50	0.2
1-04-056584	UR5120100303	1	4	1.5	3	50	0.3
1-04-056585	UR5120100304	1	4	1.5	4	50	0.3
1-04-056586	UR5120100306	1	4	1.5	6	50	0.3
1-04-056587	UR5120100308	1	4	1.5	8	50	0.3
1-04-056588	UR5120100310	1	4	1.5	10	50	0.3
1-04-056589	UR5120100312	1	4	1.5	12	50	0.3
1-04-056590	UR5120100314	1	4	1.5	14	50	0.3
1-04-056591	UR5120100316	1	4	1.5	16	50	0.3
1-04-056592	UR5120100320	1	4	1.5	20	50	0.3
1-04-056593	UR51201200503	1.2	4	1.8	3	50	0.05
1-04-056594	UR51201200504	1.2	4	1.8	4	50	0.05
1-04-056595	UR51201200506	1.2	4	1.8	6	50	0.05
1-04-056596	UR51201200508	1.2	4	1.8	8	50	0.05
1-04-056597	UR51201200510	1.2	4	1.8	10	50	0.05
1-04-056598	UR51201200512	1.2	4	1.8	12	50	0.05
1-04-056599	UR51201200516	1.2	4	1.8	16	50	0.05
1-04-056600	UR51201200520	1.2	4	1.8	20	50	0.05
1-04-056601	UR5120120103	1.2	4	1.8	3	50	0.1
1-04-056602	UR5120120104	1.2	4	1.8	4	50	0.1
1-04-056603	UR5120120106	1.2	4	1.8	6	50	0.1
1-04-056604	UR5120120108	1.2	4	1.8	8	50	0.1
1-04-056605	UR5120120110	1.2	4	1.8	10	50	0.1
1-04-056606	UR5120120112	1.2	4	1.8	12	50	0.1
1-04-056607	UR5120120116	1.2	4	1.8	16	50	0.1
1-04-056608	UR5120120120	1.2	4	1.8	20	50	0.1
1-04-056609	UR5120120203	1.2	4	1.8	3	50	0.2
1-04-056610	UR5120120204	1.2	4	1.8	4	50	0.2
1-04-056611	UR5120120206	1.2	4	1.8	6	50	0.2
1-04-056612	UR5120120208	1.2	4	1.8	8	50	0.2
1-04-056613	UR5120120210	1.2	4	1.8	10	50	0.2
1-04-056614	UR5120120212	1.2	4	1.8	12	50	0.2
1-04-056615	UR5120120216	1.2	4	1.8	16	50	0.2

UR512

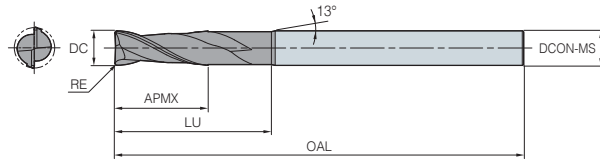
2 flutes neck type radius



DC	Tolerance
∅0.2 ~ ∅6	0.000 ~ -0.012
∅8 ~ ∅20	0.000 ~ -0.015

DC6 or below Above DC6

p.197



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-056616	UR5120120220	1.2	4	1.8	20	50	0.2
1-04-056617	UR5120120303	1.2	4	1.8	3	50	0.3
1-04-056618	UR5120120304	1.2	4	1.8	4	50	0.3
1-04-056619	UR5120120306	1.2	4	1.8	6	50	0.3
1-04-056620	UR5120120308	1.2	4	1.8	8	50	0.3
1-04-056621	UR5120120310	1.2	4	1.8	10	50	0.3
1-04-056622	UR5120120312	1.2	4	1.8	12	50	0.3
1-04-056623	UR5120120316	1.2	4	1.8	16	50	0.3
1-04-056624	UR5120120320	1.2	4	1.8	20	50	0.3
1-04-056625	UR51201500504	1.5	4	2.3	4	50	0.05
1-04-056626	UR51201500506	1.5	4	2.3	6	50	0.05
1-04-056627	UR51201500508	1.5	4	2.3	8	50	0.05
1-04-056628	UR51201500510	1.5	4	2.3	10	50	0.05
1-04-056629	UR51201500512	1.5	4	2.3	12	50	0.05
1-04-056630	UR51201500514	1.5	4	2.3	14	50	0.05
1-04-056631	UR51201500516	1.5	4	2.3	16	50	0.05
1-04-056632	UR51201500520	1.5	4	2.3	20	50	0.05
1-04-056633	UR51201500522	1.5	4	2.3	22	60	0.05
1-04-056634	UR51201500526	1.5	4	2.3	26	60	0.05
1-04-056635	UR5120150104	1.5	4	2.3	4	50	0.1
1-04-056636	UR5120150106	1.5	4	2.3	6	50	0.1
1-04-056637	UR5120150108	1.5	4	2.3	8	50	0.1
1-04-056638	UR5120150110	1.5	4	2.3	10	50	0.1
1-04-056639	UR5120150112	1.5	4	2.3	12	50	0.1
1-04-056640	UR5120150114	1.5	4	2.3	14	50	0.1
1-04-056641	UR5120150116	1.5	4	2.3	16	50	0.1
1-04-056642	UR5120150120	1.5	4	2.3	20	50	0.1
1-04-056643	UR5120150122	1.5	4	2.3	22	60	0.1
1-04-056644	UR5120150126	1.5	4	2.3	26	60	0.1
1-04-056645	UR5120150204	1.5	4	2.3	4	50	0.2
1-04-056646	UR5120150206	1.5	4	2.3	6	50	0.2
1-04-056647	UR5120150208	1.5	4	2.3	8	50	0.2
1-04-056648	UR5120150210	1.5	4	2.3	10	50	0.2
1-04-056649	UR5120150212	1.5	4	2.3	12	50	0.2
1-04-056650	UR5120150214	1.5	4	2.3	14	50	0.2
1-04-056651	UR5120150216	1.5	4	2.3	16	50	0.2
1-04-056652	UR5120150220	1.5	4	2.3	20	50	0.2
1-04-056653	UR5120150222	1.5	4	2.3	22	60	0.2

UR512

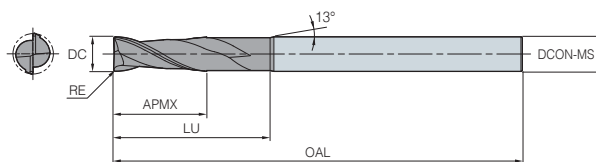
2 flutes neck type radius



DC	Tolerance
Ø0.2 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø20	0.000 ~ -0.015

DC6 or below Above DC6

p.197



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-056654	UR5120150226	1.5	4	2.3	26	60	0.2
1-04-056655	UR5120150304	1.5	4	2.3	4	50	0.3
1-04-056656	UR5120150306	1.5	4	2.3	6	50	0.3
1-04-056657	UR5120150308	1.5	4	2.3	8	50	0.3
1-04-056658	UR5120150310	1.5	4	2.3	10	50	0.3
1-04-056659	UR5120150312	1.5	4	2.3	12	50	0.3
1-04-056660	UR5120150314	1.5	4	2.3	14	50	0.3
1-04-056661	UR5120150316	1.5	4	2.3	16	50	0.3
1-04-056662	UR5120150320	1.5	4	2.3	20	50	0.3
1-04-056663	UR5120150322	1.5	4	2.3	22	60	0.3
1-04-056664	UR5120150326	1.5	4	2.3	26	60	0.3
1-04-056665	UR5120150504	1.5	4	2.3	4	50	0.5
1-04-056666	UR5120150506	1.5	4	2.3	6	50	0.5
1-04-056667	UR5120150508	1.5	4	2.3	8	50	0.5
1-04-056668	UR5120150510	1.5	4	2.3	10	50	0.5
1-04-056669	UR5120150512	1.5	4	2.3	12	50	0.5
1-04-056670	UR5120150514	1.5	4	2.3	14	50	0.5
1-04-056671	UR5120150516	1.5	4	2.3	16	50	0.5
1-04-056672	UR5120150520	1.5	4	2.3	20	50	0.5
1-04-056673	UR5120150522	1.5	4	2.3	22	60	0.5
1-04-056674	UR5120150526	1.5	4	2.3	26	60	0.5
1-04-056675	UR5120200106	2	4	3	6	50	0.1
1-04-056676	UR5120200108	2	4	3	8	50	0.1
1-04-056677	UR5120200110	2	4	3	10	50	0.1
1-04-056678	UR5120200112	2	4	3	12	50	0.1
1-04-056679	UR5120200114	2	4	3	14	50	0.1
1-04-056680	UR5120200116	2	4	3	16	50	0.1
1-04-056681	UR5120200120	2	4	3	20	50	0.1
1-04-056682	UR5120200122	2	4	3	22	60	0.1
1-04-056683	UR5120200126	2	4	3	26	60	0.1
1-04-056684	UR5120200130	2	4	3	30	70	0.1
1-04-056685	UR5120200206	2	4	3	6	50	0.2
1-04-056686	UR5120200208	2	4	3	8	50	0.2
1-04-056687	UR5120200210	2	4	3	10	50	0.2
1-04-056688	UR5120200212	2	4	3	12	50	0.2
1-04-056689	UR5120200214	2	4	3	14	50	0.2
1-04-056690	UR5120200216	2	4	3	16	50	0.2
1-04-056691	UR5120200220	2	4	3	20	50	0.2

UR512

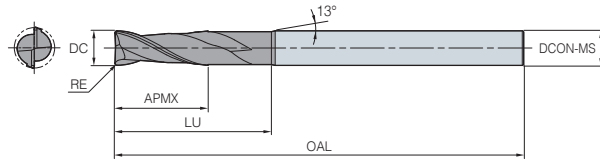
2 flutes neck type radius



DC	Tolerance
∅0.2 ~ ∅6	0.000 ~ -0.012
∅8 ~ ∅20	0.000 ~ -0.015

DC6 or below Above DC6

p.197



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-056692	UR5120200222	2	4	3	22	60	0.2
1-04-056693	UR5120200226	2	4	3	26	60	0.2
1-04-056694	UR5120200230	2	4	3	30	70	0.2
1-04-056695	UR5120200306	2	4	3	6	50	0.3
1-04-056696	UR5120200308	2	4	3	8	50	0.3
1-04-056697	UR5120200310	2	4	3	10	50	0.3
1-04-056698	UR5120200312	2	4	3	12	50	0.3
1-04-056699	UR5120200314	2	4	3	14	50	0.3
1-04-056700	UR5120200316	2	4	3	16	50	0.3
1-04-056701	UR5120200320	2	4	3	20	50	0.3
1-04-056702	UR5120200322	2	4	3	22	60	0.3
1-04-056703	UR5120200326	2	4	3	26	60	0.3
1-04-056704	UR5120200330	2	4	3	30	70	0.3
1-04-056705	UR5120200506	2	4	3	6	50	0.5
1-04-056706	UR5120200508	2	4	3	8	50	0.5
1-04-056707	UR5120200510	2	4	3	10	50	0.5
1-04-056708	UR5120200512	2	4	3	12	50	0.5
1-04-056709	UR5120200514	2	4	3	14	50	0.5
1-04-056710	UR5120200516	2	4	3	16	50	0.5
1-04-056711	UR5120200520	2	4	3	20	50	0.5
1-04-056712	UR5120200522	2	4	3	22	60	0.5
1-04-056713	UR5120200526	2	4	3	26	60	0.5
1-04-056714	UR5120200530	2	4	3	30	70	0.5
1-04-056715	UR5120250108	2.5	4	4	8	50	0.1
1-04-056716	UR5120250110	2.5	4	4	10	50	0.1
1-04-056717	UR5120250112	2.5	4	4	12	50	0.1
1-04-056718	UR5120250114	2.5	4	4	14	50	0.1
1-04-056719	UR5120250116	2.5	4	4	16	50	0.1
1-04-056720	UR5120250120	2.5	4	4	20	50	0.1
1-04-056721	UR5120250126	2.5	4	4	26	60	0.1
1-04-056722	UR5120250130	2.5	4	4	30	70	0.1
1-04-056723	UR5120250208	2.5	4	4	8	50	0.2
1-04-056724	UR5120250210	2.5	4	4	10	50	0.2
1-04-056725	UR5120250212	2.5	4	4	12	50	0.2
1-04-056726	UR5120250214	2.5	4	4	14	50	0.2
1-04-056727	UR5120250216	2.5	4	4	16	50	0.2
1-04-056728	UR5120250220	2.5	4	4	20	50	0.2
1-04-056729	UR5120250226	2.5	4	4	26	60	0.2

UR512

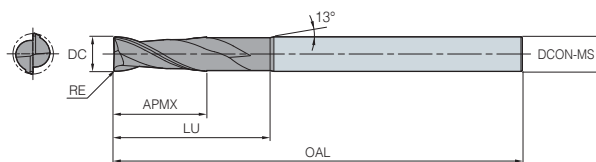
2 flutes neck type radius



DC	Tolerance
Ø0.2 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø20	0.000 ~ -0.015

DC6 or below Above DC6

p.197



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-056730	UR5120250230	2.5	4	4	30	70	0.2
1-04-056731	UR5120250308	2.5	4	4	8	50	0.3
1-04-056732	UR5120250310	2.5	4	4	10	50	0.3
1-04-056733	UR5120250312	2.5	4	4	12	50	0.3
1-04-056734	UR5120250314	2.5	4	4	14	50	0.3
1-04-056735	UR5120250316	2.5	4	4	16	50	0.3
1-04-056736	UR5120250320	2.5	4	4	20	50	0.3
1-04-056737	UR5120250326	2.5	4	4	26	60	0.3
1-04-056738	UR5120250330	2.5	4	4	30	70	0.3
1-04-056739	UR5120250508	2.5	4	4	8	50	0.5
1-04-056740	UR5120250510	2.5	4	4	10	50	0.5
1-04-056741	UR5120250512	2.5	4	4	12	50	0.5
1-04-056742	UR5120250514	2.5	4	4	14	50	0.5
1-04-056743	UR5120250516	2.5	4	4	16	50	0.5
1-04-056744	UR5120250520	2.5	4	4	20	50	0.5
1-04-056745	UR5120250526	2.5	4	4	26	60	0.5
1-04-056746	UR5120250530	2.5	4	4	30	70	0.5
1-04-056747	UR5120300108	3	6	4.5	8	50	0.1
1-04-056748	UR5120300110	3	6	4.5	10	50	0.1
1-04-056749	UR5120300112	3	6	4.5	12	50	0.1
1-04-056750	UR5120300114	3	6	4.5	14	60	0.1
1-04-056751	UR5120300116	3	6	4.5	16	60	0.1
1-04-056752	UR5120300120	3	6	4.5	20	60	0.1
1-04-056753	UR5120300126	3	6	4.5	26	65	0.1
1-04-056754	UR5120300130	3	6	4.5	30	70	0.1
1-04-056755	UR5120300135	3	6	4.5	35	70	0.1
1-04-056756	UR5120300140	3	6	4.5	40	80	0.1
1-04-056757	UR5120300208	3	6	4.5	8	50	0.2
1-04-056758	UR5120300210	3	6	4.5	10	50	0.2
1-04-056759	UR5120300212	3	6	4.5	12	50	0.2
1-04-056760	UR5120300214	3	6	4.5	14	60	0.2
1-04-056761	UR5120300216	3	6	4.5	16	60	0.2
1-04-056762	UR5120300220	3	6	4.5	20	60	0.2
1-04-056763	UR5120300226	3	6	4.5	26	65	0.2
1-04-056764	UR5120300230	3	6	4.5	30	70	0.2
1-04-056765	UR5120300235	3	6	4.5	35	70	0.2
1-04-056766	UR5120300240	3	6	4.5	40	80	0.2
1-04-056767	UR5120300308	3	6	4.5	8	50	0.3

UR512

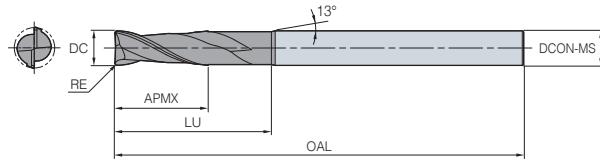
2 flutes neck type radius



DC	Tolerance
∅0.2 ~ ∅6	0.000 ~ -0.012
∅8 ~ ∅20	0.000 ~ -0.015

DC6 or below Above DC6

p.197



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-056768	UR5120300310	3	6	4.5	10	50	0.3
1-04-056769	UR5120300312	3	6	4.5	12	50	0.3
1-04-056770	UR5120300314	3	6	4.5	14	60	0.3
1-04-056771	UR5120300316	3	6	4.5	16	60	0.3
1-04-056772	UR5120300320	3	6	4.5	20	60	0.3
1-04-056773	UR5120300326	3	6	4.5	26	65	0.3
1-04-056774	UR5120300330	3	6	4.5	30	70	0.3
1-04-056775	UR5120300335	3	6	4.5	35	70	0.3
1-04-056776	UR5120300340	3	6	4.5	40	80	0.3
1-04-056777	UR5120300508	3	6	4.5	8	50	0.5
1-04-056778	UR5120300510	3	6	4.5	10	50	0.5
1-04-056779	UR5120300512	3	6	4.5	12	50	0.5
1-04-056780	UR5120300514	3	6	4.5	14	60	0.5
1-04-056781	UR5120300516	3	6	4.5	16	60	0.5
1-04-056782	UR5120300520	3	6	4.5	20	60	0.5
1-04-056783	UR5120300526	3	6	4.5	26	65	0.5
1-04-056784	UR5120300530	3	6	4.5	30	70	0.5
1-04-056785	UR5120300535	3	6	4.5	35	70	0.5
1-04-056786	UR5120300540	3	6	4.5	40	80	0.5
1-04-056787	UR5120301008	3	6	4.5	8	50	1
1-04-056788	UR5120301010	3	6	4.5	10	50	1
1-04-056789	UR5120301012	3	6	4.5	12	50	1
1-04-056790	UR5120301014	3	6	4.5	14	60	1
1-04-056791	UR5120301016	3	6	4.5	16	60	1
1-04-056792	UR5120301020	3	6	4.5	20	60	1
1-04-056793	UR5120301026	3	6	4.5	26	65	1
1-04-056794	UR5120301030	3	6	4.5	30	70	1
1-04-056795	UR5120301035	3	6	4.5	35	70	1
1-04-056796	UR5120301040	3	6	4.5	40	80	1
1-04-056797	UR5120400110	4	6	6	10	50	0.1
1-04-056798	UR5120400112	4	6	6	12	50	0.1
1-04-056799	UR5120400114	4	6	6	14	60	0.1
1-04-056800	UR5120400116	4	6	6	16	60	0.1
1-04-056801	UR5120400120	4	6	6	20	60	0.1
1-04-056802	UR5120400126	4	6	6	26	65	0.1
1-04-056803	UR5120400130	4	6	6	30	65	0.1
1-04-056804	UR5120400135	4	6	6	35	70	0.1
1-04-056805	UR5120400140	4	6	6	40	80	0.1

UR512

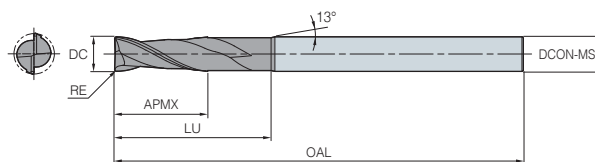
2 flutes neck type radius



DC	Tolerance
Ø0.2 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø20	0.000 ~ -0.015

DC6 or below Above DC6

p.197



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-056806	UR5120400145	4	6	6	45	90	0.1
1-04-056807	UR5120400150	4	6	6	50	100	0.1
1-04-056808	UR5120400210	4	6	6	10	50	0.2
1-04-056809	UR5120400212	4	6	6	12	50	0.2
1-04-056810	UR5120400214	4	6	6	14	60	0.2
1-04-056811	UR5120400216	4	6	6	16	60	0.2
1-04-056812	UR5120400220	4	6	6	20	60	0.2
1-04-056813	UR5120400226	4	6	6	26	65	0.2
1-04-056814	UR5120400230	4	6	6	30	65	0.2
1-04-056815	UR5120400235	4	6	6	35	70	0.2
1-04-056816	UR5120400240	4	6	6	40	80	0.2
1-04-056817	UR5120400245	4	6	6	45	90	0.2
1-04-056818	UR5120400250	4	6	6	50	100	0.2
1-04-056819	UR5120400310	4	6	6	10	50	0.3
1-04-056820	UR5120400312	4	6	6	12	50	0.3
1-04-056821	UR5120400314	4	6	6	14	60	0.3
1-04-056822	UR5120400316	4	6	6	16	60	0.3
1-04-056823	UR5120400320	4	6	6	20	60	0.3
1-04-056824	UR5120400326	4	6	6	26	65	0.3
1-04-056825	UR5120400330	4	6	6	30	65	0.3
1-04-056826	UR5120400335	4	6	6	35	70	0.3
1-04-056827	UR5120400340	4	6	6	40	80	0.3
1-04-056828	UR5120400345	4	6	6	45	90	0.3
1-04-056829	UR5120400350	4	6	6	50	100	0.3
1-04-056830	UR5120400510	4	6	6	10	50	0.5
1-04-056831	UR5120400512	4	6	6	12	50	0.5
1-04-056832	UR5120400514	4	6	6	14	60	0.5
1-04-056833	UR5120400516	4	6	6	16	60	0.5
1-04-056834	UR5120400520	4	6	6	20	60	0.5
1-04-056835	UR5120400526	4	6	6	26	65	0.5
1-04-056836	UR5120400530	4	6	6	30	65	0.5
1-04-056837	UR5120400535	4	6	6	35	70	0.5
1-04-056838	UR5120400540	4	6	6	40	80	0.5
1-04-056839	UR5120400545	4	6	6	45	90	0.5
1-04-056840	UR5120400550	4	6	6	50	100	0.5
1-04-056841	UR5120401010	4	6	6	10	50	1
1-04-056842	UR5120401012	4	6	6	12	50	1
1-04-056843	UR5120401014	4	6	6	14	60	1

UR512

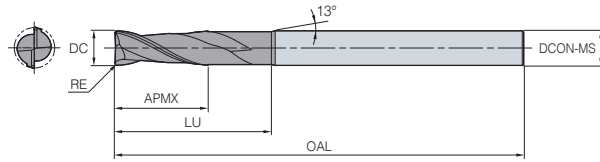
2 flutes neck type radius



DC	Tolerance
∅0.2 ~ ∅6	0.000 ~ -0.012
∅8 ~ ∅20	0.000 ~ -0.015

DC6 or below Above DC6

p.197



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-056844	UR5120401016	4	6	6	16	60	1
1-04-056845	UR5120401020	4	6	6	20	60	1
1-04-056846	UR5120401026	4	6	6	26	65	1
1-04-056847	UR5120401030	4	6	6	30	65	1
1-04-056848	UR5120401035	4	6	6	35	70	1
1-04-056849	UR5120401040	4	6	6	40	80	1
1-04-056850	UR5120401045	4	6	6	45	90	1
1-04-056851	UR5120401050	4	6	6	50	100	1
1-04-056852	UR51205001	5	6	8	15	60	0.1
1-04-056853	UR51205002	5	6	8	15	60	0.2
1-04-056854	UR51205003	5	6	8	15	60	0.3
1-04-056855	UR51205005	5	6	8	15	60	0.5
1-04-056856	UR51205010	5	6	8	15	60	1
1-04-056857	UR51205015	5	6	8	15	60	1.5
1-04-056858	UR51205020	5	6	8	15	60	2
1-04-056859	UR51206001	6	6	9	20	60	0.1
1-04-056860	UR51206002	6	6	9	20	60	0.2
1-04-056861	UR51206003	6	6	9	20	60	0.3
1-04-056866	UR5120600390	6	6	15	30	90	0.3
1-04-056862	UR51206005	6	6	9	20	60	0.5
1-04-056867	UR5120600590	6	6	15	30	90	0.5
1-04-056863	UR51206010	6	6	9	20	60	1
1-04-056868	UR5120601090	6	6	15	30	90	1
1-04-056864	UR51206015	6	6	9	20	60	1.5
1-04-056865	UR51206020	6	6	9	20	60	2
1-04-056869	UR51208001	8	8	12	25	70	0.1
1-04-056870	UR51208002	8	8	12	25	70	0.2
1-04-056871	UR51208003	8	8	12	25	70	0.3
1-04-056876	UR51208003100	8	8	20	35	100	0.3
1-04-056872	UR51208005	8	8	12	25	70	0.5
1-04-056877	UR51208005100	8	8	20	35	100	0.5
1-04-056873	UR51208010	8	8	12	25	70	1
1-04-056878	UR51208010100	8	8	20	35	100	1
1-04-056874	UR51208015	8	8	12	25	70	1.5
1-04-056875	UR51208020	8	8	12	25	70	2
1-04-056879	UR51210001	10	10	15	30	75	0.1
1-04-056880	UR51210002	10	10	15	30	75	0.2
1-04-056881	UR51210003	10	10	15	30	75	0.3

UR512

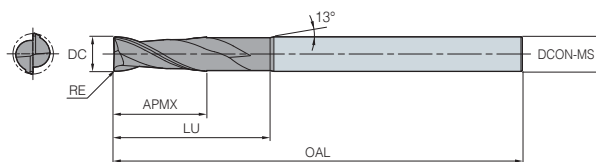
2 flutes neck type radius



DC	Tolerance
Ø0.2 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø20	0.000 ~ -0.015

DC6 or below Above DC6

p.197



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-056886	UR51210003100	10	10	25	40	100	0.3
1-04-056882	UR51210005	10	10	15	30	75	0.5
1-04-056887	UR51210005100	10	10	25	40	100	0.5
1-04-056883	UR51210010	10	10	15	30	75	1
1-04-056888	UR51210010100	10	10	25	40	100	1
1-04-056884	UR51210015	10	10	15	30	75	1.5
1-04-056885	UR51210020	10	10	15	30	75	2
1-04-056889	UR51212002	12	12	18	32	80	0.2
1-04-056890	UR51212003	12	12	18	32	80	0.3
1-04-056895	UR51212003110	12	12	30	45	110	0.3
1-04-056891	UR51212005	12	12	18	32	80	0.5
1-04-056896	UR51212005110	12	12	30	45	110	0.5
1-04-056892	UR51212010	12	12	18	32	80	1
1-04-056897	UR51212010110	12	12	30	45	110	1
1-04-056893	UR51212015	12	12	18	32	80	1.5
1-04-056894	UR51212020	12	12	18	32	80	2
1-04-056898	UR51216005	16	16	20	35	100	0.5
1-04-056900	UR51216005150	16	16	35	50	150	0.5
1-04-056899	UR51216010	16	16	20	35	100	1
1-04-056901	UR51216010150	16	16	35	50	150	1
1-04-056902	UR51220005	20	20	25	40	100	0.5
1-04-056904	UR51220005150	20	20	40	55	150	0.5
1-04-056903	UR51220010	20	20	25	40	100	1
1-04-056905	UR51220010150	20	20	40	55	150	1

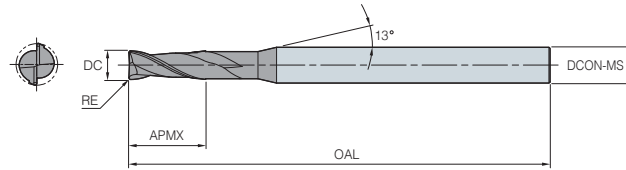
UR522A

2 flutes radius (Long length)



DC	Tolerance
ALL	0 ~ -0.0012

p.197



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
6-01-084564	UR522A004008	1/16	1/4	3/16	2 1/4	0.008
6-01-084565	UR522A008010	1/8	1/4	1/2	2 1/4	0.01
6-01-084566	UR522A008020	1/8	1/4	1/2	2 1/4	0.02
6-01-084567	UR522A008030	1/8	1/4	1/2	2 1/4	0.03
6-01-084568	UR522A012010	3/16	1/4	5/8	2 1/2	0.01
6-01-084569	UR522A012020	3/16	1/4	5/8	2 1/2	0.02
6-01-084570	UR522A012030	3/16	1/4	5/8	2 1/2	0.03
6-01-084571	UR522A016010	1/4	1/4	3/4	3	0.01
6-01-084572	UR522A016020	1/4	1/4	3/4	3	0.02
6-01-084574	UR522A016030	1/4	1/4	3/4	3	0.03
6-01-084576	UR522A016060	1/4	1/4	3/4	3	0.06
6-01-084573	UR522A016020L	1/4	1/4	1 1/8	3	0.02
6-01-084575	UR522A016030L	1/4	1/4	1 1/8	3	0.03
6-01-084577	UR522A020020	5/16	5/16	13/16	3	0.02
6-01-084579	UR522A020030	5/16	5/16	13/16	3	0.03
6-01-084581	UR522A020060	5/16	5/16	13/16	3	0.06
6-01-084583	UR522A020090	5/16	5/16	13/16	3	0.09
6-01-084578	UR522A020020L	5/16	5/16	1 1/8	3	0.02
6-01-084580	UR522A020030L	5/16	5/16	1 1/8	3	0.03
6-01-084582	UR522A020060L	5/16	5/16	1 1/8	3	0.06
6-01-084584	UR522A020090L	5/16	5/16	1 1/8	3	0.09
6-01-084585	UR522A024020	3/8	3/8	1 1/8	3	0.02
6-01-084586	UR522A024030	3/8	3/8	1 1/8	3	0.03
6-01-084587	UR522A024060	3/8	3/8	1 1/8	3	0.06
6-01-084589	UR522A024090	3/8	3/8	1 1/8	3	0.09
6-01-084591	UR522A028020	7/16	7/16	1	4	0.02
6-01-084592	UR522A028030	7/16	7/16	1	4	0.03
6-01-084593	UR522A028060	7/16	7/16	1	4	0.06
6-01-084594	UR522A028090	7/16	7/16	1	4	0.09
6-01-084590	UR522A032020S	1/2	1/2	1 3/16	3 1/8	0.02
6-01-084595	UR522A032020	1/2	1/2	1 3/16	4 1/4	0.02
6-01-084601	UR522A032030S	1/2	1/2	1 3/16	3 1/8	0.03
6-01-084597	UR522A032030	1/2	1/2	1 3/16	4 1/4	0.03
6-01-084599	UR522A032060	1/2	1/2	1 3/16	4 1/4	0.06
6-01-084813	UR522A032080	1/2	1/2	1 3/16	4 1/4	0.08
6-01-084596	UR522A032020L	1/2	1/2	2	4	0.02
6-01-084598	UR522A032030L	1/2	1/2	2	4	0.03
6-01-084600	UR522A032060L	1/2	1/2	2	4	0.06
6-01-084602	UR522A032090L	1/2	1/2	2	4	0.09

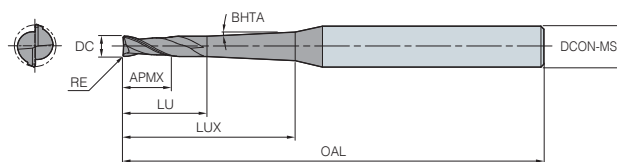
UR542A

2 flutes tapered neck radius



DC	Tolerance
ALL	0 ~ -0.0012

p.198



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
6-01-084603	UR542A003010	3/64	1/4	3/32	11/64	3/4	2	1.5	0.005
6-01-084604	UR542A004010	1/16	1/4	1/8	13/64	3/4	2	1.5	0.01
6-01-084605	UR542A004015	1/16	1/4	1/8	13/64	3/4	2	1.5	0.015
6-01-084606	UR542A004020	1/16	1/4	1/8	13/64	3/4	2	1.5	0.02
6-01-084607	UR542A005010	5/64	1/4	5/32	15/64	1	2 1/2	1.5	0.01
6-01-084608	UR542A005015	5/64	1/4	5/32	15/64	1	2 1/2	1.5	0.015
6-01-084609	UR542A005020	5/64	1/4	5/32	15/64	1	2 1/2	1.5	0.02
6-01-084610	UR542A008010	1/8	1/4	1/4	21/64	1	3	1.5	0.01
6-01-084611	UR542A008020	1/8	1/4	1/4	21/64	1	3	1.5	0.02
6-01-084612	UR542A008030	1/8	1/4	1/4	21/64	1	3	1.5	0.03
6-01-084613	UR542A012010	3/16	1/4	3/8	29/64	1 1/2	3 1/2	1.5	0.01
6-01-084614	UR542A012020	3/16	1/4	3/8	29/64	1 1/2	3 1/2	1.5	0.02
6-01-084615	UR542A012030	3/16	1/4	3/8	29/64	1 1/2	3 1/2	1.5	0.03
6-01-084616	UR542A016010	1/4	3/8	1/2	5/8	2 1/2	4 1/2	1.5	0.01
6-01-084617	UR542A016020	1/4	3/8	1/2	5/8	2 1/2	4 1/2	1.5	0.02
6-01-084618	UR542A016030	1/4	3/8	1/2	5/8	2 1/2	4 1/2	1.5	0.03
6-01-084619	UR542A016040	1/4	3/8	1/2	5/8	2 1/2	4 1/2	1.5	0.04
6-01-084620	UR542A020010	5/16	1/2	9/16	11/16	2 1/2	4 1/2	1.5	0.01
6-01-084621	UR542A020020	5/16	1/2	9/16	11/16	2 1/2	4 1/2	1.5	0.02
6-01-084622	UR542A020030	5/16	1/2	9/16	11/16	2 1/2	4 1/2	1.5	0.03
6-01-084623	UR542A020040	5/16	1/2	9/16	11/16	2 1/2	4 1/2	1.5	0.04
6-01-084624	UR542A024010	3/8	1/2	11/16	13/16	2 1/2	4 1/2	1.5	0.01
6-01-084625	UR542A024020	3/8	1/2	11/16	13/16	2 1/2	4 1/2	1.5	0.02
6-01-084626	UR542A024030	3/8	1/2	11/16	13/16	2 1/2	4 1/2	1.5	0.03
6-01-084627	UR542A024040	3/8	1/2	11/16	13/16	2 1/2	4 1/2	1.5	0.04
6-01-084628	UR542A032020	1/2	5/8	7/8	1	2 1/2	4 1/2	1.5	0.02
6-01-084629	UR542A032030	1/2	5/8	7/8	1	2 1/2	4 1/2	1.5	0.03
6-01-084630	UR542A032040	1/2	5/8	7/8	1	2 1/2	4 1/2	1.5	0.04
6-01-084631	UR542A032060	1/2	5/8	7/8	1	2 1/2	4 1/2	1.5	0.06

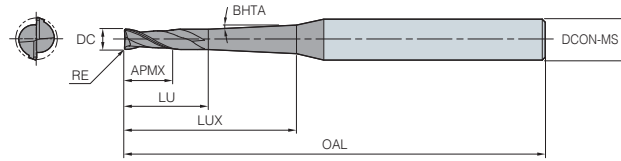
UR542

2 flutes tapered neck radius



DC	Tolerance
Ø0.2 ~ Ø4	0.000 ~ -0.012

p.198



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
1-04-056906	UR5420020050101	0.2	4	0.3	0.4	1	40	1	0.05
1-04-056907	UR5420020050102	0.2	4	0.3	0.4	2	40	1	0.05
1-04-056908	UR5420020050103	0.2	4	0.3	0.4	3	40	1	0.05
1-04-056909	UR5420020050201	0.2	4	0.3	0.4	1	40	2	0.05
1-04-056910	UR5420020050202	0.2	4	0.3	0.4	2	40	2	0.05
1-04-056911	UR5420020050203	0.2	4	0.3	0.4	3	40	2	0.05
1-04-056912	UR5420030050102	0.3	4	0.5	0.6	2	40	1	0.05
1-04-056913	UR5420030050103	0.3	4	0.5	0.6	3	40	1	0.05
1-04-056914	UR5420030050104	0.3	4	0.5	0.6	4	40	1	0.05
1-04-056915	UR5420030050105	0.3	4	0.5	0.6	5	40	1	0.05
1-04-056916	UR5420030050202	0.3	4	0.5	0.6	2	40	2	0.05
1-04-056917	UR5420030050203	0.3	4	0.5	0.6	3	40	2	0.05
1-04-056918	UR5420030050204	0.3	4	0.5	0.6	4	40	2	0.05
1-04-056919	UR5420030050205	0.3	4	0.5	0.6	5	40	2	0.05
1-04-056920	UR5420040050102	0.4	4	0.6	0.8	2	50	1	0.05
1-04-056921	UR5420040050103	0.4	4	0.6	0.8	3	50	1	0.05
1-04-056922	UR5420040050104	0.4	4	0.6	0.8	4	50	1	0.05
1-04-056923	UR5420040050105	0.4	4	0.6	0.8	5	50	1	0.05
1-04-056924	UR5420040050106	0.4	4	0.6	0.8	6	50	1	0.05
1-04-056925	UR5420040050202	0.4	4	0.6	0.8	2	50	2	0.05
1-04-056926	UR5420040050203	0.4	4	0.6	0.8	3	50	2	0.05
1-04-056927	UR5420040050204	0.4	4	0.6	0.8	4	50	2	0.05
1-04-056928	UR5420040050205	0.4	4	0.6	0.8	5	50	2	0.05
1-04-056929	UR5420040050206	0.4	4	0.6	0.8	6	50	2	0.05
1-04-056930	UR542004010102	0.4	4	0.6	0.8	2	50	1	0.1
1-04-056931	UR542004010103	0.4	4	0.6	0.8	3	50	1	0.1
1-04-056932	UR542004010104	0.4	4	0.6	0.8	4	50	1	0.1
1-04-056933	UR542004010105	0.4	4	0.6	0.8	5	50	1	0.1
1-04-056934	UR542004010106	0.4	4	0.6	0.8	6	50	1	0.1
1-04-056935	UR542004010202	0.4	4	0.6	0.8	2	50	2	0.1
1-04-056936	UR542004010203	0.4	4	0.6	0.8	3	50	2	0.1
1-04-056937	UR542004010204	0.4	4	0.6	0.8	4	50	2	0.1
1-04-056938	UR542004010205	0.4	4	0.6	0.8	5	50	2	0.1
1-04-056939	UR542004010206	0.4	4	0.6	0.8	6	50	2	0.1
1-04-056940	UR5420050050104	0.5	4	0.7	1	4	50	1	0.05
1-04-056941	UR5420050050106	0.5	4	0.7	1	6	50	1	0.05
1-04-056942	UR5420050050108	0.5	4	0.7	1	8	50	1	0.05
1-04-056943	UR5420050050110	0.5	4	0.7	1	10	50	1	0.05

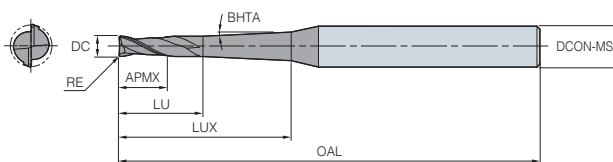
UR542

2 flutes tapered neck radius



DC	Tolerance
Ø0.2 ~ Ø4	0.000 ~ -0.012

p.198



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
1-04-056944	UR5420050050204	0.5	4	0.7	1	4	50	2	0.05
1-04-056945	UR5420050050206	0.5	4	0.7	1	6	50	2	0.05
1-04-056946	UR5420050050208	0.5	4	0.7	1	8	50	2	0.05
1-04-056947	UR5420050050210	0.5	4	0.7	1	10	50	2	0.05
1-04-056948	UR542005010104	0.5	4	0.7	1	4	50	1	0.1
1-04-056949	UR542005010106	0.5	4	0.7	1	6	50	1	0.1
1-04-056950	UR542005010108	0.5	4	0.7	1	8	50	1	0.1
1-04-056951	UR542005010110	0.5	4	0.7	1	10	50	1	0.1
1-04-056952	UR542005010204	0.5	4	0.7	1	4	50	2	0.1
1-04-056953	UR542005010206	0.5	4	0.7	1	6	50	2	0.1
1-04-056954	UR542005010208	0.5	4	0.7	1	8	50	2	0.1
1-04-056955	UR542005010210	0.5	4	0.7	1	10	50	2	0.1
1-04-056956	UR542006010104	0.6	4	0.9	1.2	4	50	1	0.1
1-04-056957	UR542006010106	0.6	4	0.9	1.2	6	50	1	0.1
1-04-056958	UR542006010108	0.6	4	0.9	1.2	8	50	1	0.1
1-04-056959	UR542006010110	0.6	4	0.9	1.2	10	50	1	0.1
1-04-056960	UR542006010112	0.6	4	0.9	1.2	12	50	1	0.1
1-04-056961	UR542006010204	0.6	4	0.9	1.2	4	50	2	0.1
1-04-056962	UR542006010206	0.6	4	0.9	1.2	6	50	2	0.1
1-04-056963	UR542006010208	0.6	4	0.9	1.2	8	50	2	0.1
1-04-056964	UR542006010210	0.6	4	0.9	1.2	10	50	2	0.1
1-04-056965	UR542006010212	0.6	4	0.9	1.2	12	50	2	0.1
1-04-056966	UR542006020104	0.6	4	0.9	1.2	4	50	1	0.2
1-04-056967	UR542006020106	0.6	4	0.9	1.2	6	50	1	0.2
1-04-056968	UR542006020108	0.6	4	0.9	1.2	8	50	1	0.2
1-04-056969	UR542006020110	0.6	4	0.9	1.2	10	50	1	0.2
1-04-056970	UR542006020112	0.6	4	0.9	1.2	12	50	1	0.2
1-04-056971	UR542006020204	0.6	4	0.9	1.2	4	50	2	0.2
1-04-056972	UR542006020206	0.6	4	0.9	1.2	6	50	2	0.2
1-04-056973	UR542006020208	0.6	4	0.9	1.2	8	50	2	0.2
1-04-056974	UR542006020210	0.6	4	0.9	1.2	10	50	2	0.2
1-04-056975	UR542006020212	0.6	4	0.9	1.2	12	50	2	0.2
1-04-056976	UR542008010104	0.8	4	1.2	1.6	4	50	1	0.1
1-04-056977	UR542008010106	0.8	4	1.2	1.6	6	50	1	0.1
1-04-056978	UR542008010108	0.8	4	1.2	1.6	8	50	1	0.1
1-04-056979	UR542008010110	0.8	4	1.2	1.6	10	50	1	0.1
1-04-056980	UR542008010112	0.8	4	1.2	1.6	12	50	1	0.1
1-04-056981	UR542008010116	0.8	4	1.2	1.6	16	50	1	0.1

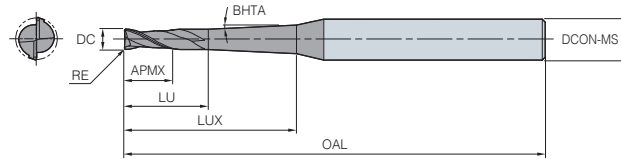
UR542

2 flutes tapered neck radius



DC	Tolerance
Ø0.2 ~ Ø4	0.000 ~ -0.012

p.198



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
1-04-056982	UR542008010204	0.8	4	1.2	1.6	4	50	2	0.1
1-04-056983	UR542008010206	0.8	4	1.2	1.6	6	50	2	0.1
1-04-056984	UR542008010208	0.8	4	1.2	1.6	8	50	2	0.1
1-04-056985	UR542008010210	0.8	4	1.2	1.6	10	50	2	0.1
1-04-056986	UR542008010212	0.8	4	1.2	1.6	12	50	2	0.1
1-04-056987	UR542008010216	0.8	4	1.2	1.6	16	50	2	0.1
1-04-056988	UR542008020104	0.8	4	1.2	1.6	4	50	1	0.2
1-04-056989	UR542008020106	0.8	4	1.2	1.6	6	50	1	0.2
1-04-056990	UR542008020108	0.8	4	1.2	1.6	8	50	1	0.2
1-04-056991	UR542008020110	0.8	4	1.2	1.6	10	50	1	0.2
1-04-056992	UR542008020112	0.8	4	1.2	1.6	12	50	1	0.2
1-04-056993	UR542008020116	0.8	4	1.2	1.6	16	50	1	0.2
1-04-056994	UR542008020204	0.8	4	1.2	1.6	4	50	2	0.2
1-04-056995	UR542008020206	0.8	4	1.2	1.6	6	50	2	0.2
1-04-056996	UR542008020208	0.8	4	1.2	1.6	8	50	2	0.2
1-04-056997	UR542008020210	0.8	4	1.2	1.6	10	50	2	0.2
1-04-056998	UR542008020212	0.8	4	1.2	1.6	12	50	2	0.2
1-04-056999	UR542008020216	0.8	4	1.2	1.6	16	50	2	0.2
1-04-057000	UR542010010106	1	4	1.5	2.5	6	50	1	0.1
1-04-057001	UR542010010108	1	4	1.5	2.5	8	50	1	0.1
1-04-057002	UR542010010110	1	4	1.5	2.5	10	50	1	0.1
1-04-057003	UR542010010112	1	4	1.5	2.5	12	50	1	0.1
1-04-057004	UR542010010116	1	4	1.5	2.5	16	50	1	0.1
1-04-057005	UR542010010120	1	4	1.5	2.5	20	50	1	0.1
1-04-057006	UR542010010125	1	4	1.5	2.5	25	60	1	0.1
1-04-057007	UR542010010130	1	4	1.5	2.5	30	70	1	0.1
1-04-057008	UR542010010140	1	4	1.5	2.5	40	80	1	0.1
1-04-057009	UR542010010150	1	6	1.5	2.5	50	90	1	0.1
1-04-057010	UR542010010206	1	4	1.5	2.5	6	50	2	0.1
1-04-057011	UR542010010208	1	4	1.5	2.5	8	50	2	0.1
1-04-057012	UR542010010210	1	4	1.5	2.5	10	50	2	0.1
1-04-057013	UR542010010212	1	4	1.5	2.5	12	50	2	0.1
1-04-057014	UR542010010216	1	4	1.5	2.5	16	50	2	0.1
1-04-057015	UR542010010220	1	4	1.5	2.5	20	50	2	0.1
1-04-057016	UR542010010225	1	4	1.5	2.5	25	60	2	0.1
1-04-057017	UR542010010230	1	4	1.5	2.5	30	70	2	0.1
1-04-057018	UR542010010240	1	4	1.5	2.5	40	80	2	0.1
1-04-057019	UR542010010250	1	6	1.5	2.5	50	90	2	0.1

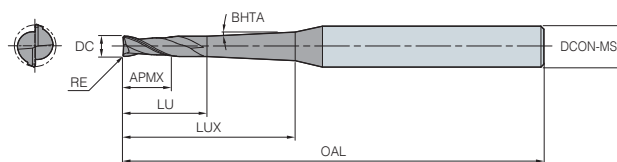
UR542

2 flutes tapered neck radius



DC	Tolerance
Ø0.2 ~ Ø4	0.000 ~ -0.012

p.198



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
1-04-057020	UR542010020106	1	4	1.5	2.5	6	50	1	0.2
1-04-057021	UR542010020108	1	4	1.5	2.5	8	50	1	0.2
1-04-057022	UR542010020110	1	4	1.5	2.5	10	50	1	0.2
1-04-057023	UR542010020112	1	4	1.5	2.5	12	50	1	0.2
1-04-057024	UR542010020116	1	4	1.5	2.5	16	50	1	0.2
1-04-057025	UR542010020120	1	4	1.5	2.5	20	50	1	0.2
1-04-057026	UR542010020125	1	4	1.5	2.5	25	60	1	0.2
1-04-057027	UR542010020130	1	4	1.5	2.5	30	70	1	0.2
1-04-057028	UR542010020140	1	4	1.5	2.5	40	80	1	0.2
1-04-057029	UR542010020150	1	6	1.5	2.5	50	90	1	0.2
1-04-057030	UR542010020206	1	4	1.5	2.5	6	50	2	0.2
1-04-057031	UR542010020208	1	4	1.5	2.5	8	50	2	0.2
1-04-057032	UR542010020210	1	4	1.5	2.5	10	50	2	0.2
1-04-057033	UR542010020212	1	4	1.5	2.5	12	50	2	0.2
1-04-057034	UR542010020216	1	4	1.5	2.5	16	50	2	0.2
1-04-057035	UR542010020220	1	4	1.5	2.5	20	50	2	0.2
1-04-057036	UR542010020225	1	4	1.5	2.5	25	60	2	0.2
1-04-057037	UR542010020230	1	4	1.5	2.5	30	70	2	0.2
1-04-057038	UR542010020240	1	4	1.5	2.5	40	80	2	0.2
1-04-057039	UR542010020250	1	6	1.5	2.5	50	90	2	0.2
1-04-057040	UR542012010108	1.2	4	1.8	3	8	50	1	0.1
1-04-057041	UR542012010112	1.2	4	1.8	3	12	50	1	0.1
1-04-057042	UR542012010116	1.2	4	1.8	3	16	50	1	0.1
1-04-057043	UR542012010120	1.2	4	1.8	3	20	50	1	0.1
1-04-057044	UR542012010125	1.2	4	1.8	3	25	60	1	0.1
1-04-057045	UR542012010130	1.2	4	1.8	3	30	70	1	0.1
1-04-057046	UR542012010208	1.2	4	1.8	3	8	50	2	0.1
1-04-057047	UR542012010212	1.2	4	1.8	3	12	50	2	0.1
1-04-057048	UR542012010216	1.2	4	1.8	3	16	50	2	0.1
1-04-057049	UR542012010220	1.2	4	1.8	3	20	50	2	0.1
1-04-057050	UR542012010225	1.2	4	1.8	3	25	60	2	0.1
1-04-057051	UR542012010230	1.2	4	1.8	3	30	70	2	0.1
1-04-057052	UR542012020108	1.2	4	1.8	3	8	50	1	0.2
1-04-057053	UR542012020112	1.2	4	1.8	3	12	50	1	0.2
1-04-057054	UR542012020116	1.2	4	1.8	3	16	50	1	0.2
1-04-057055	UR542012020120	1.2	4	1.8	3	20	50	1	0.2
1-04-057056	UR542012020125	1.2	4	1.8	3	25	60	1	0.2
1-04-057057	UR542012020130	1.2	4	1.8	3	30	70	1	0.2

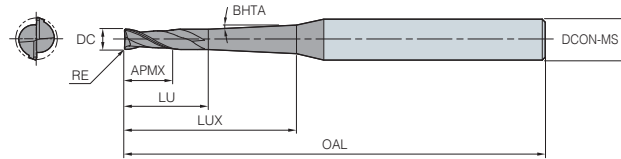
UR542

2 flutes tapered neck radius



DC	Tolerance
∅0.2 ~ ∅4	0.000 ~ -0.012

p.198



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
1-04-057058	UR542012020208	1.2	4	1.8	3	8	50	2	0.2
1-04-057059	UR542012020212	1.2	4	1.8	3	12	50	2	0.2
1-04-057060	UR542012020216	1.2	4	1.8	3	16	50	2	0.2
1-04-057061	UR542012020220	1.2	4	1.8	3	20	50	2	0.2
1-04-057062	UR542012020225	1.2	4	1.8	3	25	60	2	0.2
1-04-057063	UR542012020230	1.2	4	1.8	3	30	70	2	0.2
1-04-057064	UR542015010108	1.5	4	2.3	3	8	50	1	0.1
1-04-057065	UR542015010110	1.5	4	2.3	3	10	50	1	0.1
1-04-057066	UR542015010112	1.5	4	2.3	3	12	50	1	0.1
1-04-057067	UR542015010116	1.5	4	2.3	3	16	50	1	0.1
1-04-057068	UR542015010120	1.5	4	2.3	3	20	50	1	0.1
1-04-057069	UR542015010125	1.5	4	2.3	3	25	60	1	0.1
1-04-057070	UR542015010130	1.5	4	2.3	3	30	70	1	0.1
1-04-057071	UR542015010140	1.5	4	2.3	3	40	80	1	0.1
1-04-057072	UR542015010150	1.5	4	2.3	3	50	90	1	0.1
1-04-057073	UR542015010208	1.5	4	2.3	3	8	50	2	0.1
1-04-057074	UR542015010210	1.5	4	2.3	3	10	50	2	0.1
1-04-057075	UR542015010212	1.5	4	2.3	3	12	50	2	0.1
1-04-057076	UR542015010216	1.5	4	2.3	3	16	50	2	0.1
1-04-057077	UR542015010220	1.5	4	2.3	3	20	50	2	0.1
1-04-057078	UR542015010225	1.5	4	2.3	3	25	60	2	0.1
1-04-057079	UR542015010230	1.5	4	2.3	3	30	70	2	0.1
1-04-057080	UR542015010240	1.5	6	2.3	3	40	80	2	0.1
1-04-057081	UR542015010250	1.5	6	2.3	3	50	90	2	0.1
1-04-057082	UR542015020108	1.5	4	2.3	3	8	50	1	0.2
1-04-057083	UR542015020110	1.5	4	2.3	3	10	50	1	0.2
1-04-057084	UR542015020112	1.5	4	2.3	3	12	50	1	0.2
1-04-057085	UR542015020116	1.5	4	2.3	3	16	50	1	0.2
1-04-057086	UR542015020120	1.5	4	2.3	3	20	50	1	0.2
1-04-057087	UR542015020125	1.5	4	2.3	3	25	60	1	0.2
1-04-057088	UR542015020130	1.5	4	2.3	3	30	70	1	0.2
1-04-057089	UR542015020140	1.5	4	2.3	3	40	80	1	0.2
1-04-057090	UR542015020150	1.5	4	2.3	3	50	90	1	0.2
1-04-057091	UR542015020208	1.5	4	2.3	3	8	50	2	0.2
1-04-057092	UR542015020210	1.5	4	2.3	3	10	50	2	0.2
1-04-057093	UR542015020212	1.5	4	2.3	3	12	50	2	0.2
1-04-057094	UR542015020216	1.5	4	2.3	3	16	50	2	0.2
1-04-057095	UR542015020220	1.5	4	2.3	3	20	50	2	0.2

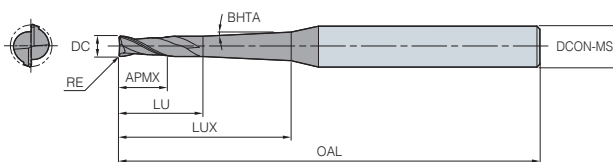
UR542

2 flutes tapered neck radius



DC	Tolerance
Ø0.2 ~ Ø4	0.000 ~ -0.012

p.198



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
1-04-057096	UR542015020225	1.5	4	2.3	3	25	60	2	0.2
1-04-057097	UR542015020230	1.5	4	2.3	3	30	70	2	0.2
1-04-057098	UR542015020240	1.5	6	2.3	3	40	80	2	0.2
1-04-057099	UR542015020250	1.5	6	2.3	3	50	90	2	0.2
1-04-057100	UR542015030108	1.5	4	2.3	3	8	50	1	0.3
1-04-057101	UR542015030110	1.5	4	2.3	3	10	50	1	0.3
1-04-057102	UR542015030112	1.5	4	2.3	3	12	50	1	0.3
1-04-057103	UR542015030116	1.5	4	2.3	3	16	50	1	0.3
1-04-057104	UR542015030120	1.5	4	2.3	3	20	50	1	0.3
1-04-057105	UR542015030125	1.5	4	2.3	3	25	60	1	0.3
1-04-057106	UR542015030130	1.5	4	2.3	3	30	70	1	0.3
1-04-057107	UR542015030140	1.5	4	2.3	3	40	80	1	0.3
1-04-057108	UR542015030150	1.5	4	2.3	3	50	90	1	0.3
1-04-057109	UR542015030208	1.5	4	2.3	3	8	50	2	0.3
1-04-057110	UR542015030210	1.5	4	2.3	3	10	50	2	0.3
1-04-057111	UR542015030212	1.5	4	2.3	3	12	50	2	0.3
1-04-057112	UR542015030216	1.5	4	2.3	3	16	50	2	0.3
1-04-057113	UR542015030220	1.5	4	2.3	3	20	50	2	0.3
1-04-057114	UR542015030225	1.5	4	2.3	3	25	60	2	0.3
1-04-057115	UR542015030230	1.5	4	2.3	3	30	70	2	0.3
1-04-057116	UR542015030240	1.5	6	2.3	3	40	80	2	0.3
1-04-057117	UR542015030250	1.5	6	2.3	3	50	90	2	0.3
1-04-057118	UR542020010110	2	4	2	5	10	50	1	0.1
1-04-057119	UR542020010112	2	4	2	5	12	50	1	0.1
1-04-057120	UR542020010116	2	4	2	5	16	50	1	0.1
1-04-057121	UR542020010120	2	4	2	5	20	50	1	0.1
1-04-057122	UR542020010125	2	4	2	5	25	60	1	0.1
1-04-057123	UR542020010130	2	4	2	5	30	70	1	0.1
1-04-057124	UR542020010140	2	6	2	5	40	80	1	0.1
1-04-057125	UR542020010150	2	6	2	5	50	100	1	0.1
1-04-057126	UR542020010160	2	6	2	5	60	100	1	0.1
1-04-057127	UR542020010180	2	6	2	5	80	140	1	0.1
1-04-057128	UR542020010210	2	4	2	5	10	50	2	0.1
1-04-057129	UR542020010212	2	4	2	5	12	50	2	0.1
1-04-057130	UR542020010216	2	4	2	5	16	50	2	0.1
1-04-057131	UR542020010220	2	4	2	5	20	50	2	0.1
1-04-057132	UR542020010225	2	4	2	5	25	60	2	0.1
1-04-057133	UR542020010230	2	4	2	5	30	70	2	0.1

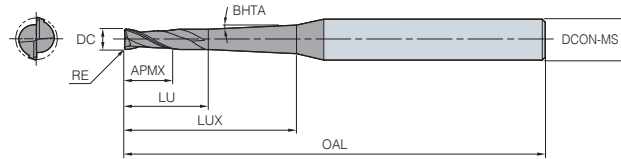
UR542

2 flutes tapered neck radius



DC	Tolerance
Ø0.2 ~ Ø4	0.000 ~ -0.012

p.198



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
1-04-057134	UR542020010240	2	6	2	5	40	80	2	0.1
1-04-057135	UR542020010250	2	6	2	5	50	100	2	0.1
1-04-057136	UR542020010260	2	6	2	5	60	100	2	0.1
1-04-057137	UR542020010280	2	8	2	5	80	140	2	0.1
1-04-057138	UR542020020110	2	4	2	5	10	50	1	0.2
1-04-057139	UR542020020112	2	4	2	5	12	50	1	0.2
1-04-057140	UR542020020116	2	4	2	5	16	50	1	0.2
1-04-057141	UR542020020120	2	4	2	5	20	50	1	0.2
1-04-057142	UR542020020125	2	4	2	5	25	60	1	0.2
1-04-057143	UR542020020130	2	4	2	5	30	70	1	0.2
1-04-057144	UR542020020140	2	6	2	5	40	80	1	0.2
1-04-057145	UR542020020150	2	6	2	5	50	100	1	0.2
1-04-057146	UR542020020160	2	6	2	5	60	100	1	0.2
1-04-057147	UR542020020180	2	6	2	5	80	140	1	0.2
1-04-057148	UR542020020210	2	4	2	5	10	50	2	0.2
1-04-057149	UR542020020212	2	4	2	5	12	50	2	0.2
1-04-057150	UR542020020216	2	4	2	5	16	50	2	0.2
1-04-057151	UR542020020220	2	4	2	5	20	50	2	0.2
1-04-057152	UR542020020225	2	4	2	5	25	60	2	0.2
1-04-057153	UR542020020230	2	4	2	5	30	70	2	0.2
1-04-057154	UR542020020240	2	6	2	5	40	80	2	0.2
1-04-057155	UR542020020250	2	6	2	5	50	100	2	0.2
1-04-057156	UR542020020260	2	6	2	5	60	100	2	0.2
1-04-057157	UR542020020280	2	8	2	5	80	140	2	0.2
1-04-057158	UR542020030110	2	4	2	5	10	50	1	0.3
1-04-057159	UR542020030112	2	4	2	5	12	50	1	0.3
1-04-057160	UR542020030116	2	4	2	5	16	50	1	0.3
1-04-057161	UR542020030120	2	4	2	5	20	50	1	0.3
1-04-057162	UR542020030125	2	4	2	5	25	60	1	0.3
1-04-057163	UR542020030130	2	4	2	5	30	70	1	0.3
1-04-057164	UR542020030140	2	6	2	5	40	80	1	0.3
1-04-057165	UR542020030150	2	6	2	5	50	100	1	0.3
1-04-057166	UR542020030160	2	6	2	5	60	100	1	0.3
1-04-057167	UR542020030180	2	6	2	5	80	140	1	0.3
1-04-057168	UR542020030210	2	4	2	5	10	50	2	0.3
1-04-057169	UR542020030212	2	4	2	5	12	50	2	0.3
1-04-057170	UR542020030216	2	4	2	5	16	50	2	0.3
1-04-057171	UR542020030220	2	4	2	5	20	50	2	0.3

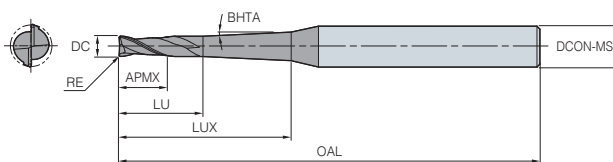
UR542

2 flutes tapered neck radius



DC	Tolerance
Ø0.2 ~ Ø4	0.000 ~ -0.012

p.198



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
1-04-057172	UR542020030225	2	4	2	5	25	60	2	0.3
1-04-057235	UR542030050260	3	8	4.5	6	60	100	2	0.5
1-04-057236	UR542030050270	3	8	4.5	6	70	120	2	0.5
1-04-057237	UR542040020140	4	6	6	8	40	90	1	0.2
1-04-057238	UR542040020150	4	6	6	8	50	100	1	0.2
1-04-057173	UR542020030230	2	4	2	5	30	70	2	0.3
1-04-057174	UR542020030240	2	6	2	5	40	80	2	0.3
1-04-057175	UR542020030250	2	6	2	5	50	100	2	0.3
1-04-057176	UR542020030260	2	6	2	5	60	100	2	0.3
1-04-057177	UR542020030280	2	8	2	5	80	140	2	0.3
1-04-057178	UR542020050110	2	4	2	5	10	50	1	0.5
1-04-057179	UR542020050112	2	4	2	5	12	50	1	0.5
1-04-057180	UR542020050116	2	4	2	5	16	50	1	0.5
1-04-057181	UR542020050120	2	4	2	5	20	50	1	0.5
1-04-057182	UR542020050125	2	4	2	5	25	60	1	0.5
1-04-057183	UR542020050130	2	4	2	5	30	70	1	0.5
1-04-057184	UR542020050140	2	6	2	5	40	80	1	0.5
1-04-057185	UR542020050150	2	6	2	5	50	100	1	0.5
1-04-057186	UR542020050160	2	6	2	5	60	100	1	0.5
1-04-057187	UR542020050180	2	6	2	5	80	140	1	0.5
1-04-057188	UR542020050210	2	4	2	5	10	50	2	0.5
1-04-057189	UR542020050212	2	4	2	5	12	50	2	0.5
1-04-057190	UR542020050216	2	4	2	5	16	50	2	0.5
1-04-057191	UR542020050220	2	4	2	5	20	50	2	0.5
1-04-057192	UR542020050225	2	4	2	5	25	60	2	0.5
1-04-057193	UR542020050230	2	4	2	5	30	70	2	0.5
1-04-057194	UR542020050240	2	6	2	5	40	80	2	0.5
1-04-057195	UR542020050250	2	6	2	5	50	100	2	0.5
1-04-057196	UR542020050260	2	6	2	5	60	100	2	0.5
1-04-057197	UR542020050280	2	8	2	5	80	140	2	0.5
1-04-057198	UR542030020116	3	6	4.5	6	16	60	1	0.2
1-04-057199	UR542030020120	3	6	4.5	6	20	65	1	0.2
1-04-057200	UR542030020130	3	6	4.5	6	30	70	1	0.2
1-04-057201	UR542030020140	3	6	4.5	6	40	80	1	0.2
1-04-057202	UR542030020150	3	6	4.5	6	50	90	1	0.2
1-04-057203	UR542030020160	3	6	4.5	6	60	100	1	0.2
1-04-057204	UR542030020216	3	6	4.5	6	16	60	2	0.2
1-04-057205	UR542030020220	3	6	4.5	6	20	65	2	0.2

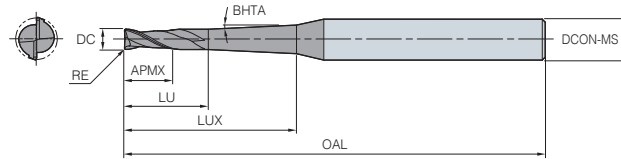
UR542

2 flutes tapered neck radius



DC	Tolerance
Ø0.2 ~ Ø4	0.000 ~ -0.012

p.198



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
1-04-057206	UR542030020230	3	6	4.5	6	30	70	2	0.2
1-04-057207	UR542030020240	3	6	4.5	6	40	80	2	0.2
1-04-057208	UR542030020250	3	8	4.5	6	50	90	2	0.2
1-04-057209	UR542030020260	3	8	4.5	6	60	100	2	0.2
1-04-057210	UR542030020270	3	8	4.5	6	70	120	2	0.2
1-04-057211	UR542030030116	3	6	4.5	6	16	60	1	0.3
1-04-057212	UR542030030120	3	6	4.5	6	20	65	1	0.3
1-04-057213	UR542030030130	3	6	4.5	6	30	70	1	0.3
1-04-057214	UR542030030140	3	6	4.5	6	40	80	1	0.3
1-04-057215	UR542030030150	3	6	4.5	6	50	90	1	0.3
1-04-057216	UR542030030160	3	6	4.5	6	60	100	1	0.3
1-04-057217	UR542030030216	3	6	4.5	6	16	60	2	0.3
1-04-057218	UR542030030220	3	6	4.5	6	20	65	2	0.3
1-04-057219	UR542030030230	3	6	4.5	6	30	70	2	0.3
1-04-057220	UR542030030240	3	6	4.5	6	40	80	2	0.3
1-04-057221	UR542030030250	3	8	4.5	6	50	90	2	0.3
1-04-057222	UR542030030260	3	8	4.5	6	60	100	2	0.3
1-04-057223	UR542030030270	3	8	4.5	6	70	120	2	0.3
1-04-057224	UR542030050116	3	6	4.5	6	16	60	1	0.5
1-04-057225	UR542030050120	3	6	4.5	6	20	65	1	0.5
1-04-057226	UR542030050130	3	6	4.5	6	30	70	1	0.5
1-04-057227	UR542030050140	3	6	4.5	6	40	80	1	0.5
1-04-057228	UR542030050150	3	6	4.5	6	50	90	1	0.5
1-04-057229	UR542030050160	3	6	4.5	6	60	100	1	0.5
1-04-057230	UR542030050216	3	6	4.5	6	16	60	2	0.5
1-04-057231	UR542030050220	3	6	4.5	6	20	65	2	0.5
1-04-057232	UR542030050230	3	6	4.5	6	30	70	2	0.5
1-04-057233	UR542030050240	3	6	4.5	6	40	80	2	0.5
1-04-057234	UR542030050250	3	8	4.5	6	50	90	2	0.5
1-04-057239	UR542040020160	4	6	6	8	60	110	1	0.2
1-04-057240	UR542040020170	4	8	6	8	70	120	1	0.2
1-04-057241	UR542040020240	4	8	6	8	40	90	2	0.2
1-04-057242	UR542040020250	4	8	6	8	50	100	2	0.2
1-04-057243	UR542040020260	4	8	6	8	60	110	2	0.2
1-04-057244	UR542040020270	4	10	6	8	70	120	2	0.2
1-04-057245	UR542040030140	4	6	6	8	40	90	1	0.3
1-04-057246	UR542040030150	4	6	6	8	50	100	1	0.3
1-04-057247	UR542040030160	4	6	6	8	60	110	1	0.3

UR542

2 flutes tapered neck radius

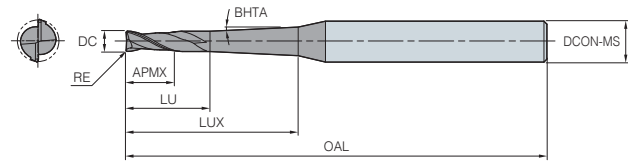


CARBIDE



p.198

DC	Tolerance
Ø0.2 ~ Ø4	0.000 ~ -0.012



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
1-04-057248	UR542040030170	4	8	6	8	70	120	1	0.3
1-04-057249	UR542040030240	4	8	6	8	40	90	2	0.3
1-04-057250	UR542040030250	4	8	6	8	50	100	2	0.3
1-04-057251	UR542040030260	4	8	6	8	60	110	2	0.3
1-04-057252	UR542040030270	4	10	6	8	70	120	2	0.3
1-04-057253	UR542040050140	4	6	6	8	40	90	1	0.5
1-04-057254	UR542040050150	4	6	6	8	50	100	1	0.5
1-04-057255	UR542040050160	4	6	6	8	60	110	1	0.5
1-04-057256	UR542040050170	4	8	6	8	70	120	1	0.5
1-04-057257	UR542040050240	4	8	6	8	40	90	2	0.5
1-04-057258	UR542040050250	4	8	6	8	50	100	2	0.5
1-04-057259	UR542040050260	4	8	6	8	60	110	2	0.5
1-04-057260	UR542040050270	4	10	6	8	70	120	2	0.5

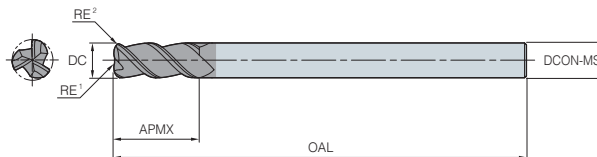
UDR503

3 flutes double radius



DC	Tolerance
Ø6 ~ Ø20	0.000 ~ -0.020

p.199



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE1	RE2
1-04-057261	UDR50306005	6	6	10	90	0.5	6
1-04-057262	UDR50306010	6	6	10	90	1	6
1-04-057263	UDR50306020	6	6	10	90	2	6
1-04-057264	UDR50308005	8	8	16	100	0.5	8
1-04-057265	UDR50308010	8	8	16	100	1	8
1-04-057266	UDR50308020	8	8	16	100	2	8
1-04-057267	UDR50310005	10	10	20	100	0.5	10
1-04-057268	UDR50310010	10	10	20	100	1	10
1-04-057269	UDR50310020	10	10	20	100	2	10
1-04-057270	UDR50312005	12	12	24	110	0.5	12
1-04-057271	UDR50312010	12	12	24	110	1	12
1-04-057272	UDR50312020	12	12	24	110	2	12
1-04-057273	UDR50316005	16	16	32	150	0.5	16
1-04-057274	UDR50316010	16	16	32	150	1	16
1-04-057275	UDR50320005	20	20	40	150	0.5	20
1-04-057276	UDR50320010	20	20	40	150	1	20

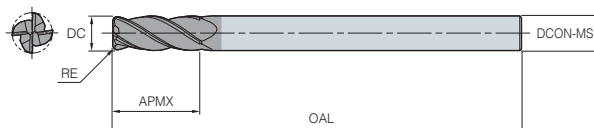
UR504

4 flutes radius



DC	Tolerance
Ø3 ~ Ø20	0.000 ~ -0.030

p.197



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
1-04-057441	UR50403002	3	6	8	60	0.2
1-04-057440	UR50403002S4	3	4	8	60	0.2
1-04-057442	UR50403003	3	6	8	60	0.3
1-04-057444	UR50403005	3	6	8	60	0.5
1-04-057443	UR50403005S4	3	4	8	60	0.5
1-04-057446	UR50404002	4	6	10	70	0.2
1-04-057445	UR50404002S4	4	4	10	70	0.2
1-04-057447	UR50404003	4	6	10	70	0.3
1-04-057449	UR50404005	4	6	10	70	0.5
1-04-057448	UR50404005S4	4	4	10	70	0.5
1-04-057451	UR50404010	4	6	10	70	1
1-04-057450	UR50404010S4	4	4	10	70	1
1-04-057452	UR50405002	5	6	13	90	0.2
1-04-057455	UR50405003	5	6	13	90	0.3
1-04-057453	UR50405003060	5	6	13	60	0.3
1-04-057456	UR50405005	5	6	13	90	0.5
1-04-057454	UR50405005060	5	6	13	60	0.5
1-04-057457	UR50405010	5	6	13	90	1
1-04-057461	UR50406002	6	6	13	90	0.2
1-04-057462	UR50406003	6	6	15	90	0.3
1-04-057458	UR50406003060	6	6	15	60	0.3
1-04-057463	UR50406005	6	6	15	90	0.5
1-04-057459	UR50406005060	6	6	15	60	0.5
1-04-057464	UR50406010	6	6	15	90	1
1-04-057460	UR50406010060	6	6	15	60	1
1-04-057468	UR50408003	8	8	20	100	0.3
1-04-057465	UR50408003070	8	8	20	70	0.3
1-04-057469	UR50408005	8	8	20	100	0.5
1-04-057466	UR50408005070	8	8	20	70	0.5
1-04-057470	UR50408010	8	8	20	100	1
1-04-057467	UR50408010070	8	8	20	70	1
1-04-057471	UR50408015	8	8	20	100	1.5
1-04-057472	UR50408020	8	8	20	100	2
1-04-057476	UR50410003	10	10	25	100	0.3
1-04-057473	UR50410003075	10	10	25	75	0.3
1-04-057477	UR50410005	10	10	25	100	0.5

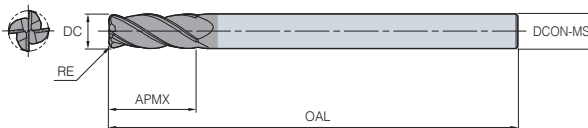
UR504

4 flutes radius



p.197

DC	Tolerance
Ø3 ~ Ø20	0.000 ~ -0.030



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
1-04-057474	UR50410005075	10	10	25	75	0.5
1-04-057478	UR50410010	10	10	25	100	1
1-04-057475	UR50410010075	10	10	25	75	1
1-04-057479	UR50410015	10	10	25	100	1.5
1-04-057480	UR50410020	10	10	25	100	2
1-04-057481	UR50410025	10	10	25	100	2.5
1-04-057485	UR50412003	12	12	30	110	0.3
1-04-057482	UR50412003080	12	12	30	80	0.3
1-04-057486	UR50412005	12	12	30	110	0.5
1-04-057483	UR50412005080	12	12	30	80	0.5
1-04-057487	UR50412010	12	12	30	110	1
1-04-057484	UR50412010080	12	12	30	80	1
1-04-057488	UR50412015	12	12	30	110	1.5
1-04-057489	UR50412020	12	12	30	110	2
1-04-057490	UR50412025	12	12	30	110	2.5
1-04-057491	UR50412030	12	12	30	110	3
1-04-057496	UR50416005	16	16	32	150	0.5
1-04-057492	UR50416005100	16	16	32	100	0.5
1-04-057497	UR50416010	16	16	32	150	1
1-04-057493	UR50416010100	16	16	32	100	1
1-04-057498	UR50416015	16	16	32	150	1.5
1-04-057494	UR50416015100	16	16	32	100	1.5
1-04-057499	UR50416020	16	16	32	150	2
1-04-057495	UR50416020100	16	16	32	100	2
1-04-057504	UR50420005	20	20	38	150	0.5
1-04-057500	UR50420005100	20	20	38	100	0.5
1-04-057505	UR50420010	20	20	38	150	1
1-04-057501	UR50420010100	20	20	38	100	1
1-04-057506	UR50420015	20	20	38	150	1.5
1-04-057502	UR50420015100	20	20	38	100	1.5
1-04-057507	UR50420020	20	20	38	150	2
1-04-057503	UR50420020100	20	20	38	100	2

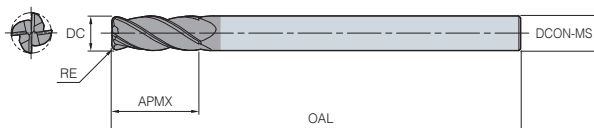
UXR504A

4 flutes multi helix radius



DC	Tolerance
ALL	0 ~ -0.0012

p.200



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
6-01-084632	UXR504A004008	1/16	1/4	1/8	2 1/4	0.008
6-01-084633	UXR504A008010S	1/8	1/4	1/4	2 1/4	0.01
6-01-084635	UXR504A008020S	1/8	1/4	1/4	2 1/4	0.02
6-01-084637	UXR504A008030S	1/8	1/4	1/4	2 1/4	0.03
6-01-084634	UXR504A008010	1/8	1/4	5/16	2 3/8	0.01
6-01-084636	UXR504A008020	1/8	1/4	5/16	2 3/8	0.02
6-01-084638	UXR504A008030	1/8	1/4	5/16	2 3/8	0.03
6-01-084639	UXR504A012010S	3/16	1/4	3/8	2 1/2	0.01
6-01-084640	UXR504A012010	3/16	1/4	3/8	2 3/4	0.01
6-01-084641	UXR504A012020S	3/16	1/4	3/8	2 1/2	0.02
6-01-084642	UXR504A012020	3/16	1/4	3/8	2 3/4	0.02
6-01-084643	UXR504A012030S	3/16	1/4	3/8	2 1/2	0.03
6-01-084644	UXR504A012030	3/16	1/4	3/8	2 3/4	0.03
6-01-084645	UXR504A013010	13/64	1/4	1/2	3 1/2	0.01
6-01-084646	UXR504A013020	13/64	1/4	1/2	3 1/2	0.02
6-01-084647	UXR504A013030	13/64	1/4	1/2	3 1/2	0.03
6-01-084648	UXR504A016010S	1/4	1/4	1/2	3	0.01
6-01-084816	UXR504A016020S	1/4	1/4	1/2	3	0.02
6-01-084786	UXR504A016030S	1/4	1/4	1/2	3	0.03
6-01-084789	UXR504A016060S	1/4	1/4	1/2	3	0.06
6-01-084649	UXR504A016010	1/4	1/4	5/8	3 1/2	0.01
6-01-084785	UXR504A016020	1/4	1/4	5/8	3 1/2	0.02
6-01-084787	UXR504A016030	1/4	1/4	5/8	3 1/2	0.03
6-01-084788	UXR504A016040	1/4	1/4	5/8	3 1/2	0.04
6-01-084792	UXR504A020020S	5/16	5/16	1/2	2 3/4	0.02
6-01-084795	UXR504A020030S	5/16	5/16	1/2	2 3/4	0.03
6-01-084800	UXR504A020060S	5/16	5/16	1/2	2 3/4	0.06
6-01-084801	UXR504A020090S	5/16	5/16	1/2	2 3/4	0.09
6-01-084790	UXR504A020010	5/16	5/16	3/4	2 3/4	0.01
6-01-084791	UXR504A020010L	5/16	5/16	3/4	4	0.01
6-01-084793	UXR504A020020	5/16	5/16	3/4	2 3/4	0.02
6-01-084794	UXR504A020020L	5/16	5/16	3/4	4	0.02
6-01-084796	UXR504A020030	5/16	5/16	3/4	2 3/4	0.03
6-01-084797	UXR504A020030L	5/16	5/16	3/4	4	0.03
6-01-084798	UXR504A020040	5/16	5/16	3/4	2 3/4	0.04
6-01-084799	UXR504A020040L	5/16	5/16	3/4	4	0.04

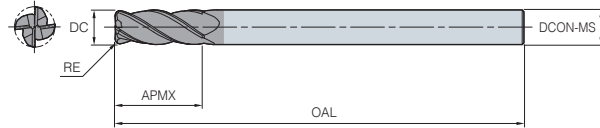
UXR504A

4 flutes multi helix radius



p.200

DC	Tolerance
ALL	0 ~ -0.0012



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
6-01-084803	UXR504A024020S	3/8	3/8	5/8	3	0.02
6-01-084806	UXR504A024030S	3/8	3/8	5/8	3	0.03
6-01-084810	UXR504A024060S	3/8	3/8	5/8	3	0.06
6-01-084811	UXR504A024090S	3/8	3/8	5/8	3	0.09
6-01-084802	UXR504A024010L	3/8	3/8	1	4	0.01
6-01-084804	UXR504A024020	3/8	3/8	1	3	0.02
6-01-084805	UXR504A024020L	3/8	3/8	1	4	0.02
6-01-084807	UXR504A024030	3/8	3/8	1	3	0.03
6-01-084808	UXR504A024030L	3/8	3/8	1	4	0.03
6-01-084809	UXR504A024040L	3/8	3/8	1	4	0.04
6-01-084817	UXR504A024060	3/8	3/8	1	3	0.06
6-01-084818	UXR504A024090	3/8	3/8	1	3	0.09
6-01-084820	UXR504A032020S	1/2	1/2	5/8	4	0.02
6-01-084814	UXR504A032030S	1/2	1/2	5/8	4	0.03
6-01-084819	UXR504A032060S	1/2	1/2	5/8	4	0.06
6-01-084822	UXR504A032090S	1/2	1/2	5/8	4	0.09
6-01-084812	UXR504A032020	1/2	1/2	1	4	0.02
6-01-084815	UXR504A032030	1/2	1/2	1	4	0.03
6-01-084821	UXR504A032060	1/2	1/2	1	4	0.06
6-01-084874	UXR504A032090	1/2	1/2	1	4	0.09

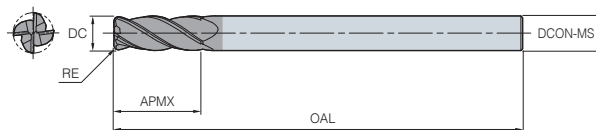
UXR504

4 flutes multi helix radius



p.200

DC	Tolerance
Ø1 ~ Ø20	0.000 ~ -0.030



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
1-04-057277	UXR504010005	1	6	2.5	50	0.05
1-04-057278	UXR50401001	1	6	2.5	50	0.1
1-04-057279	UXR50401002	1	6	2.5	50	0.2
1-04-057280	UXR50401003	1	6	2.5	50	0.3
1-04-057281	UXR504012005	1.2	6	3	50	0.05
1-04-057282	UXR50401201	1.2	6	3	50	0.1
1-04-057283	UXR50401202	1.2	6	3	50	0.2
1-04-057284	UXR50401203	1.2	6	3	50	0.3
1-04-057285	UXR504015005	1.5	6	4	50	0.05
1-04-057286	UXR50401501	1.5	6	4	50	0.1
1-04-057287	UXR50401502	1.5	6	4	50	0.2
1-04-057288	UXR50401503	1.5	6	4	50	0.3
1-04-057289	UXR50401505	1.5	6	4	50	0.5
1-04-057290	UXR50402001	2	6	6	50	0.1
1-04-057291	UXR50402002	2	6	6	50	0.2
1-04-057292	UXR50402003	2	6	6	50	0.3
1-04-057293	UXR50402005	2	6	6	50	0.5
1-04-057294	UXR50402501	2.5	6	7	60	0.1
1-04-057295	UXR50402502	2.5	6	7	60	0.2
1-04-057296	UXR50402503	2.5	6	7	60	0.3
1-04-057297	UXR50402505	2.5	6	7	60	0.5
1-04-057298	UXR50403001	3	6	8	60	0.1
1-04-057299	UXR50403002	3	6	8	60	0.2
1-04-057300	UXR50403003	3	6	8	60	0.3
1-04-057301	UXR50403005	3	6	8	60	0.5
1-04-057302	UXR50403010	3	6	8	60	1
1-04-057303	UXR50403501	3.5	6	10	70	0.1
1-04-057304	UXR50403502	3.5	6	10	70	0.2
1-04-057305	UXR50403503	3.5	6	10	70	0.3
1-04-057306	UXR50403505	3.5	6	10	70	0.5
1-04-057317	UXR50404001	4	6	10	70	0.1
1-04-057312	UXR50404001100S4	4	4	10	100	0.1
1-04-057307	UXR50404001S4	4	4	10	70	0.1
1-04-057318	UXR50404002	4	6	10	70	0.2
1-04-057313	UXR50404002100S4	4	4	10	100	0.2
1-04-057308	UXR50404002S4	4	4	10	70	0.2

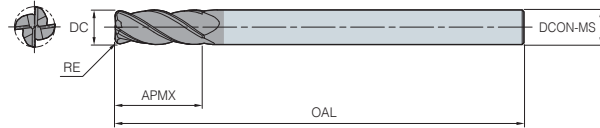
UXR504

4 flutes multi helix radius



DC	Tolerance
Ø1 ~ Ø20	0.000 ~ -0.030

p.200



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
1-04-057319	UXR50404003	4	6	10	70	0.3
1-04-057314	UXR50404003100S4	4	4	10	100	0.3
1-04-057309	UXR50404003S4	4	4	10	70	0.3
1-04-057320	UXR50404005	4	6	10	70	0.5
1-04-057315	UXR50404005100S4	4	4	10	100	0.5
1-04-057310	UXR50404005S4	4	4	10	70	0.5
1-04-057321	UXR50404010	4	6	10	70	1
1-04-057316	UXR50404010100S4	4	4	10	100	1
1-04-057311	UXR50404010S4	4	4	10	70	1
1-04-057322	UXR50404501	4.5	6	11	80	0.1
1-04-057323	UXR50404502	4.5	6	11	80	0.2
1-04-057324	UXR50404503	4.5	6	11	80	0.3
1-04-057325	UXR50404505	4.5	6	11	80	0.5
1-04-057326	UXR50405001	5	6	13	90	0.1
1-04-057327	UXR50405002	5	6	13	90	0.2
1-04-057328	UXR50405003	5	6	13	90	0.3
1-04-057329	UXR50405005	5	6	13	90	0.5
1-04-057330	UXR50405010	5	6	13	90	1
1-04-057331	UXR50405501	5.5	6	13	90	0.1
1-04-057332	UXR50405502	5.5	6	13	90	0.2
1-04-057333	UXR50405503	5.5	6	13	90	0.3
1-04-057334	UXR50405505	5.5	6	13	90	0.5
1-04-057335	UXR50405510	5.5	6	13	90	1
1-04-057340	UXR50406001	6	6	15	90	0.1
1-04-057336	UXR50406001060	6	6	15	60	0.1
1-04-057341	UXR50406002	6	6	15	90	0.2
1-04-057337	UXR50406002060	6	6	15	60	0.2
1-04-057342	UXR50406003	6	6	15	90	0.3
1-04-057343	UXR50406005	6	6	15	90	0.5
1-04-057338	UXR50406005060	6	6	15	60	0.5
1-04-057347	UXR50406005110	6	6	15	110	0.5
1-04-057349	UXR50406005130	6	6	15	130	0.5
1-04-057344	UXR50406010	6	6	15	90	1
1-04-057339	UXR50406010060	6	6	15	60	1
1-04-057348	UXR50406010110	6	6	15	110	1
1-04-057350	UXR50406010130	6	6	15	130	1

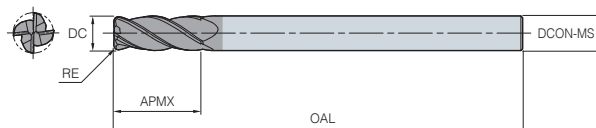
UXR504

4 flutes multi helix radius



DC	Tolerance
Ø1 ~ Ø20	0.000 ~ -0.030

p.200



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
1-04-057345	UXR50406015	6	6	15	90	1.5
1-04-057346	UXR50406020	6	6	15	90	2
1-04-057351	UXR50407001	7	8	16	90	0.1
1-04-057352	UXR50407002	7	8	16	90	0.2
1-04-057353	UXR50407003	7	8	16	90	0.3
1-04-057354	UXR50407005	7	8	16	90	0.5
1-04-057355	UXR50407010	7	8	16	90	1
1-04-057356	UXR50407020	7	8	16	90	2
1-04-057362	UXR50408001	8	8	20	100	0.1
1-04-057363	UXR50408002	8	8	20	100	0.2
1-04-057364	UXR50408003	8	8	20	100	0.3
1-04-057357	UXR50408003070	8	8	20	70	0.3
1-04-057365	UXR50408005	8	8	20	100	0.5
1-04-057358	UXR50408005070	8	8	20	70	0.5
1-04-057371	UXR50408005120	8	8	20	120	0.5
1-04-057373	UXR50408005150	8	8	20	150	0.5
1-04-057366	UXR50408010	8	8	20	100	1
1-04-057359	UXR50408010070	8	8	20	70	1
1-04-057372	UXR50408010120	8	8	20	120	1
1-04-057374	UXR50408010150	8	8	20	150	1
1-04-057367	UXR50408015	8	8	20	100	1.5
1-04-057360	UXR50408015070	8	8	20	70	1.5
1-04-057368	UXR50408020	8	8	20	100	2
1-04-057361	UXR50408020070	8	8	20	70	2
1-04-057369	UXR50408025	8	8	20	100	2.5
1-04-057370	UXR50408030	8	8	20	100	3
1-04-057378	UXR50410001	10	10	25	100	0.1
1-04-057379	UXR50410002	10	10	25	100	0.2
1-04-057380	UXR50410003	10	10	25	100	0.3
1-04-057375	UXR50410003075	10	10	25	75	0.3
1-04-057381	UXR50410005	10	10	25	100	0.5
1-04-057376	UXR50410005075	10	10	25	75	0.5
1-04-057388	UXR50410005130	10	10	22	130	0.5
1-04-057390	UXR50410005150	10	10	22	150	0.5
1-04-057382	UXR50410010	10	10	25	100	1
1-04-057377	UXR50410010075	10	10	25	75	1

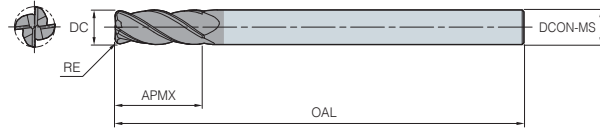
UXR504

4 flutes multi helix radius



DC	Tolerance
Ø1 ~ Ø20	0.000 ~ -0.030

p.200



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
1-04-057389	UXR50410010130	10	10	22	130	1
1-04-057391	UXR50410010150	10	10	22	150	1
1-04-057383	UXR50410015	10	10	25	100	1.5
1-04-057384	UXR50410020	10	10	25	100	2
1-04-057385	UXR50410025	10	10	25	100	2.5
1-04-057386	UXR50410030	10	10	25	100	3
1-04-057387	UXR50410040	10	10	25	100	4
1-04-057392	UXR50411002	11	12	25	110	0.2
1-04-057393	UXR50411003	11	12	25	110	0.3
1-04-057394	UXR50411005	11	12	25	110	0.5
1-04-057395	UXR50411010	11	12	25	110	1
1-04-057396	UXR50411020	11	12	25	110	2
1-04-057404	UXR50412001	12	12	30	110	0.1
1-04-057405	UXR50412002	12	12	30	110	0.2
1-04-057406	UXR50412003	12	12	30	110	0.3
1-04-057397	UXR50412003080	12	12	30	80	0.3
1-04-057407	UXR50412005	12	12	30	110	0.5
1-04-057398	UXR50412005080	12	12	30	80	0.5
1-04-057415	UXR50412005130	12	12	30	130	0.5
1-04-057417	UXR50412005150	12	12	30	150	0.5
1-04-057408	UXR50412010	12	12	30	110	1
1-04-057399	UXR50412010080	12	12	30	80	1
1-04-057416	UXR50412010130	12	12	30	130	1
1-04-057418	UXR50412010150	12	12	30	150	1
1-04-057409	UXR50412015	12	12	30	110	1.5
1-04-057400	UXR50412015080	12	12	30	80	1.5
1-04-057410	UXR50412020	12	12	30	110	2
1-04-057401	UXR50412020080	12	12	30	80	2
1-04-057411	UXR50412025	12	12	30	110	2.5
1-04-057402	UXR50412025080	12	12	30	80	2.5
1-04-057412	UXR50412030	12	12	30	110	3
1-04-057403	UXR50412030080	12	12	30	80	3
1-04-057413	UXR50412040	12	12	30	110	4
1-04-057414	UXR50412050	12	12	30	110	5
1-04-057419	UXR50414005	14	16	35	150	0.5
1-04-057420	UXR50414010	14	16	35	150	1

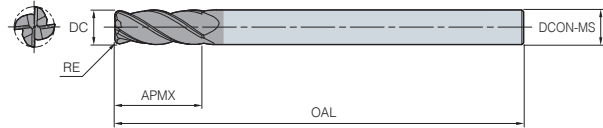
UXR504

4 flutes multi helix radius



DC	Tolerance
Ø1 ~ Ø20	0.000 ~ -0.030

p.200



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
1-04-057421	UXR50414020	14	16	35	150	2
1-04-057422	UXR50416005	16	16	40	100	0.5
1-04-057423	UXR50416005150	16	16	40	150	0.5
1-04-057424	UXR50416010	16	16	40	100	1
1-04-057425	UXR50416010150	16	16	40	150	1
1-04-057426	UXR50416015	16	16	40	100	1.5
1-04-057427	UXR50416015150	16	16	40	150	1.5
1-04-057428	UXR50416020	16	16	40	100	2
1-04-057429	UXR50416020150	16	16	40	150	2
1-04-057430	UXR50416030	16	16	40	100	3
1-04-057431	UXR50420005	20	20	45	110	0.5
1-04-057432	UXR50420005150	20	20	45	150	0.5
1-04-057433	UXR50420010	20	20	45	110	1
1-04-057434	UXR50420010150	20	20	45	150	1
1-04-057435	UXR50420015	20	20	45	110	1.5
1-04-057436	UXR50420015150	20	20	45	150	1.5
1-04-057437	UXR50420020	20	20	45	110	2
1-04-057438	UXR50420020150	20	20	45	150	2
1-04-057439	UXR50420030	20	20	45	110	3

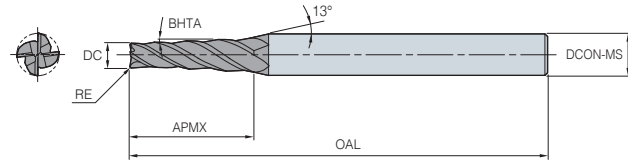
UTR504

4 flutes tapered radius



DC	Tolerance
Ø0.8 ~ Ø2.5	0.000 ~ -0.030

p.201

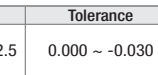


(mm)

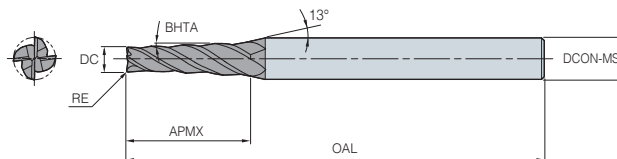
K.P. Code	Designation	DC	DCON-MS	APMX	BHTA(°)	OAL	RE
1-04-058210	UTR504008010104	0.8	4	4	1	45	0.1
1-04-058211	UTR504008010106	0.8	4	6	1	45	0.1
1-04-058212	UTR504008010108	0.8	4	8	1	45	0.1
1-04-058213	UTR5040080101504	0.8	4	4	1.5	45	0.1
1-04-058214	UTR5040080101506	0.8	4	6	1.5	45	0.1
1-04-058215	UTR5040080101508	0.8	4	8	1.5	45	0.1
1-04-058216	UTR504008020104	0.8	4	4	1	45	0.2
1-04-058217	UTR504008020106	0.8	4	6	1	45	0.2
1-04-058218	UTR504008020108	0.8	4	8	1	45	0.2
1-04-058219	UTR5040080201504	0.8	4	4	1.5	45	0.2
1-04-058220	UTR5040080201506	0.8	4	6	1.5	45	0.2
1-04-058221	UTR5040080201508	0.8	4	8	1.5	45	0.2
1-04-058222	UTR504010010104	1	4	4	1	50	0.1
1-04-058223	UTR504010010106	1	4	6	1	50	0.1
1-04-058224	UTR504010010108	1	4	8	1	50	0.1
1-04-058225	UTR504010010110	1	4	10	1	50	0.1
1-04-058226	UTR504010010112	1	4	12	1	50	0.1
1-04-058227	UTR5040100101504	1	4	4	1.5	50	0.1
1-04-058228	UTR5040100101506	1	4	6	1.5	50	0.1
1-04-058229	UTR5040100101508	1	4	8	1.5	50	0.1
1-04-058230	UTR5040100101510	1	4	10	1.5	50	0.1
1-04-058231	UTR5040100101512	1	4	12	1.5	50	0.1
1-04-058232	UTR504010010204	1	4	4	2	50	0.1
1-04-058233	UTR504010010206	1	4	6	2	50	0.1
1-04-058234	UTR504010010208	1	4	8	2	50	0.1
1-04-058235	UTR504010010210	1	4	10	2	50	0.1
1-04-058236	UTR504010010212	1	4	12	2	50	0.1
1-04-058237	UTR504010010304	1	4	4	3	50	0.1
1-04-058238	UTR504010010306	1	4	6	3	50	0.1
1-04-058239	UTR504010010308	1	4	8	3	50	0.1
1-04-058240	UTR504010010310	1	4	10	3	50	0.1
1-04-058241	UTR504010010312	1	4	12	3	50	0.1
1-04-058242	UTR504010020104	1	4	4	1	50	0.2
1-04-058243	UTR504010020106	1	4	6	1	50	0.2
1-04-058244	UTR504010020108	1	4	8	1	50	0.2
1-04-058245	UTR504010020110	1	4	10	1	50	0.2

UTR504

4 flutes tapered radius



p.201



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	BHTA(°)	OAL	RE
1-04-058246	UTR504010020112	1	4	12	1	50	0.2
1-04-058247	UTR5040100201504	1	4	4	1.5	50	0.2
1-04-058248	UTR5040100201506	1	4	6	1.5	50	0.2
1-04-058249	UTR5040100201508	1	4	8	1.5	50	0.2
1-04-058250	UTR5040100201510	1	4	10	1.5	50	0.2
1-04-058251	UTR5040100201512	1	4	12	1.5	50	0.2
1-04-058252	UTR504010020204	1	4	4	2	50	0.2
1-04-058253	UTR504010020206	1	4	6	2	50	0.2
1-04-058254	UTR504010020208	1	4	8	2	50	0.2
1-04-058255	UTR504010020210	1	4	10	2	50	0.2
1-04-058256	UTR504010020212	1	4	12	2	50	0.2
1-04-058257	UTR504010020304	1	4	4	3	50	0.2
1-04-058258	UTR504010020306	1	4	6	3	50	0.2
1-04-058259	UTR504010020308	1	4	8	3	50	0.2
1-04-058260	UTR504010020310	1	4	10	3	50	0.2
1-04-058261	UTR504010020312	1	4	12	3	50	0.2
1-04-058262	UTR504010030104	1	4	4	1	50	0.3
1-04-058263	UTR504010030106	1	4	6	1	50	0.3
1-04-058264	UTR504010030108	1	4	8	1	50	0.3
1-04-058265	UTR504010030110	1	4	10	1	50	0.3
1-04-058266	UTR504010030112	1	4	12	1	50	0.3
1-04-058267	UTR5040100301504	1	4	4	1.5	50	0.3
1-04-058268	UTR5040100301506	1	4	6	1.5	50	0.3
1-04-058269	UTR5040100301508	1	4	8	1.5	50	0.3
1-04-058270	UTR5040100301510	1	4	10	1.5	50	0.3
1-04-058271	UTR5040100301512	1	4	12	1.5	50	0.3
1-04-058272	UTR504010030204	1	4	4	2	50	0.3
1-04-058273	UTR504010030206	1	4	6	2	50	0.3
1-04-058274	UTR504010030208	1	4	8	2	50	0.3
1-04-058275	UTR504010030210	1	4	10	2	50	0.3
1-04-058276	UTR504010030212	1	4	12	2	50	0.3
1-04-058277	UTR504010030304	1	4	4	3	50	0.3
1-04-058278	UTR504010030306	1	4	6	3	50	0.3
1-04-058279	UTR504010030308	1	4	8	3	50	0.3
1-04-058280	UTR504010030310	1	4	10	3	50	0.3
1-04-058281	UTR504010030312	1	4	12	3	50	0.3

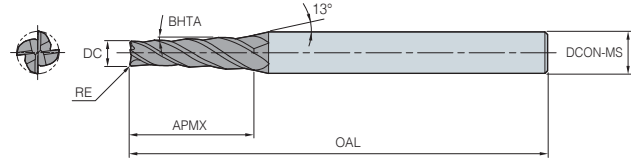
UTR504

4 flutes tapered radius



DC	Tolerance
Ø0.8 ~ Ø2.5	0.000 ~ -0.030

p.201

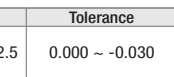


(mm)

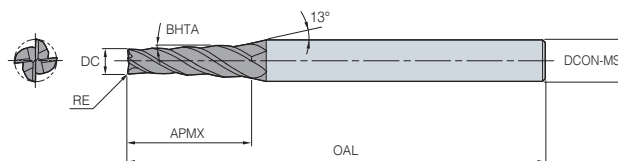
K.P. Code	Designation	DC	DCON-MS	APMX	BHTA(°)	OAL	RE
1-04-058282	UTR504012010106	1.2	4	6	1	50	0.1
1-04-058283	UTR504012010108	1.2	4	8	1	50	0.1
1-04-058284	UTR504012010110	1.2	4	10	1	50	0.1
1-04-058285	UTR504012010112	1.2	4	12	1	50	0.1
1-04-058286	UTR504012010206	1.2	4	6	2	50	0.1
1-04-058287	UTR504012010208	1.2	4	8	2	50	0.1
1-04-058288	UTR504012010210	1.2	4	10	2	50	0.1
1-04-058289	UTR504012010212	1.2	4	12	2	50	0.1
1-04-058290	UTR504012010306	1.2	4	6	3	50	0.1
1-04-058291	UTR504012010308	1.2	4	8	3	50	0.1
1-04-058292	UTR504012010310	1.2	4	10	3	50	0.1
1-04-058293	UTR504012010312	1.2	4	12	3	50	0.1
1-04-058294	UTR504012020106	1.2	4	6	1	50	0.2
1-04-058295	UTR504012020108	1.2	4	8	1	50	0.2
1-04-058296	UTR504012020110	1.2	4	10	1	50	0.2
1-04-058297	UTR504012020112	1.2	4	12	1	50	0.2
1-04-058298	UTR504012020206	1.2	4	6	2	50	0.2
1-04-058299	UTR504012020208	1.2	4	8	2	50	0.2
1-04-058300	UTR504012020210	1.2	4	10	2	50	0.2
1-04-058301	UTR504012020212	1.2	4	12	2	50	0.2
1-04-058302	UTR504012020306	1.2	4	6	3	50	0.2
1-04-058303	UTR504012020308	1.2	4	8	3	50	0.2
1-04-058304	UTR504012020310	1.2	4	10	3	50	0.2
1-04-058305	UTR504012020312	1.2	4	12	3	50	0.2
1-04-058306	UTR504012030106	1.2	4	6	1	50	0.3
1-04-058307	UTR504012030108	1.2	4	8	1	50	0.3
1-04-058308	UTR504012030110	1.2	4	10	1	50	0.3
1-04-058309	UTR504012030112	1.2	4	12	1	50	0.3
1-04-058310	UTR504012030206	1.2	4	6	2	50	0.3
1-04-058311	UTR504012030208	1.2	4	8	2	50	0.3
1-04-058312	UTR504012030210	1.2	4	10	2	50	0.3
1-04-058313	UTR504012030212	1.2	4	12	2	50	0.3
1-04-058314	UTR504012030306	1.2	4	6	3	50	0.3
1-04-058315	UTR504012030308	1.2	4	8	3	50	0.3
1-04-058316	UTR504012030310	1.2	4	10	3	50	0.3
1-04-058317	UTR504012030312	1.2	4	12	3	50	0.3

UTR504

4 flutes tapered radius



p.201



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	BHTA(°)	OAL	RE
1-04-058318	UTR504015010106	1.5	4	6	1	50	0.1
1-04-058319	UTR504015010108	1.5	4	8	1	50	0.1
1-04-058320	UTR504015010110	1.5	4	10	1	50	0.1
1-04-058321	UTR504015010112	1.5	4	12	1	50	0.1
1-04-058322	UTR504015010116	1.5	4	16	1	50	0.1
1-04-058323	UTR504015010120	1.5	4	20	1	60	0.1
1-04-058324	UTR504015010206	1.5	4	6	2	50	0.1
1-04-058325	UTR504015010208	1.5	4	8	2	50	0.1
1-04-058326	UTR504015010210	1.5	4	10	2	50	0.1
1-04-058327	UTR504015010212	1.5	4	12	2	50	0.1
1-04-058328	UTR504015010216	1.5	4	16	2	50	0.1
1-04-058329	UTR504015010220	1.5	4	20	2	60	0.1
1-04-058330	UTR504015010306	1.5	4	6	3	50	0.1
1-04-058331	UTR504015010308	1.5	4	8	3	50	0.1
1-04-058332	UTR504015010310	1.5	4	10	3	50	0.1
1-04-058333	UTR504015010312	1.5	4	12	3	50	0.1
1-04-058334	UTR504015010316	1.5	4	16	3	50	0.1
1-04-058335	UTR504015010320	1.5	4	20	3	60	0.1
1-04-058336	UTR504015020106	1.5	4	6	1	50	0.2
1-04-058337	UTR504015020108	1.5	4	8	1	50	0.2
1-04-058338	UTR504015020110	1.5	4	10	1	50	0.2
1-04-058339	UTR504015020112	1.5	4	12	1	50	0.2
1-04-058340	UTR504015020116	1.5	4	16	1	50	0.2
1-04-058341	UTR504015020120	1.5	4	20	1	60	0.2
1-04-058342	UTR504015020206	1.5	4	6	2	50	0.2
1-04-058343	UTR504015020208	1.5	4	8	2	50	0.2
1-04-058344	UTR504015020210	1.5	4	10	2	50	0.2
1-04-058345	UTR504015020212	1.5	4	12	2	50	0.2
1-04-058346	UTR504015020216	1.5	4	16	2	50	0.2
1-04-058347	UTR504015020220	1.5	4	20	2	60	0.2
1-04-058348	UTR504015020306	1.5	4	6	3	50	0.2
1-04-058349	UTR504015020308	1.5	4	8	3	50	0.2
1-04-058350	UTR504015020310	1.5	4	10	3	50	0.2
1-04-058351	UTR504015020312	1.5	4	12	3	50	0.2
1-04-058352	UTR504015020316	1.5	4	16	3	50	0.2
1-04-058353	UTR504015020320	1.5	4	20	3	60	0.2

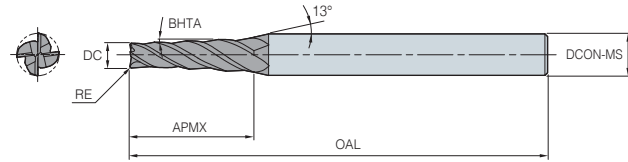
UTR504

4 flutes tapered radius



DC	Tolerance
Ø0.8 ~ Ø2.5	0.000 ~ -0.030

p.201



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	BHTA(°)	OAL	RE
1-04-058354	UTR504015030106	1.5	4	6	1	50	0.3
1-04-058355	UTR504015030108	1.5	4	8	1	50	0.3
1-04-058356	UTR504015030110	1.5	4	10	1	50	0.3
1-04-058357	UTR504015030112	1.5	4	12	1	50	0.3
1-04-058358	UTR504015030116	1.5	4	16	1	50	0.3
1-04-058359	UTR504015030120	1.5	4	20	1	60	0.3
1-04-058360	UTR504015030206	1.5	4	6	2	50	0.3
1-04-058361	UTR504015030208	1.5	4	8	2	50	0.3
1-04-058362	UTR504015030210	1.5	4	10	2	50	0.3
1-04-058363	UTR504015030212	1.5	4	12	2	50	0.3
1-04-058364	UTR504015030216	1.5	4	16	2	50	0.3
1-04-058365	UTR504015030220	1.5	4	20	2	60	0.3
1-04-058366	UTR504015030306	1.5	4	6	3	50	0.3
1-04-058367	UTR504015030308	1.5	4	8	3	50	0.3
1-04-058368	UTR504015030310	1.5	4	10	3	50	0.3
1-04-058369	UTR504015030312	1.5	4	12	3	50	0.3
1-04-058370	UTR504015030316	1.5	4	16	3	50	0.3
1-04-058371	UTR504015030320	1.5	4	20	3	60	0.3
1-04-058372	UTR504020010108	2	4	8	1	50	0.1
1-04-058373	UTR504020010110	2	4	10	1	50	0.1
1-04-058374	UTR504020010112	2	4	12	1	50	0.1
1-04-058375	UTR504020010116	2	4	16	1	50	0.1
1-04-058376	UTR504020010120	2	4	20	1	60	0.1
1-04-058377	UTR504020010125	2	4	25	1	60	0.1
1-04-058378	UTR504020010208	2	4	8	2	50	0.1
1-04-058379	UTR504020010210	2	4	10	2	50	0.1
1-04-058380	UTR504020010212	2	4	12	2	50	0.1
1-04-058381	UTR504020010216	2	4	16	2	50	0.1
1-04-058382	UTR504020010220	2	4	20	2	60	0.1
1-04-058383	UTR504020010225	2	4	25	2	60	0.1
1-04-058384	UTR504020010308	2	4	8	3	50	0.1
1-04-058385	UTR504020010310	2	4	10	3	50	0.1
1-04-058386	UTR504020010312	2	4	12	3	50	0.1
1-04-058387	UTR504020010316	2	4	16	3	50	0.1
1-04-058388	UTR504020010320	2	6	20	3	60	0.1
1-04-058389	UTR504020010325	2	6	25	3	60	0.1

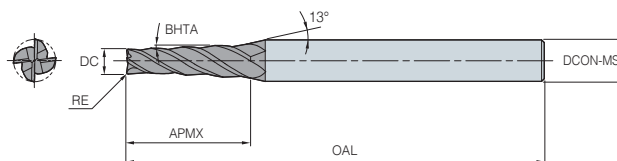
UTR504

4 flutes tapered radius



DC	Tolerance
Ø0.8 ~ Ø2.5	0.000 ~ -0.030

p.201



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	BHTA(°)	OAL	RE
1-04-058390	UTR504020020108	2	4	8	1	50	0.2
1-04-058391	UTR504020020110	2	4	10	1	50	0.2
1-04-058392	UTR504020020112	2	4	12	1	50	0.2
1-04-058393	UTR504020020116	2	4	16	1	50	0.2
1-04-058394	UTR504020020120	2	4	20	1	60	0.2
1-04-058395	UTR504020020125	2	4	25	1	60	0.2
1-04-058396	UTR504020020208	2	4	8	2	50	0.2
1-04-058397	UTR504020020210	2	4	10	2	50	0.2
1-04-058398	UTR504020020212	2	4	12	2	50	0.2
1-04-058399	UTR504020020216	2	4	16	2	50	0.2
1-04-058400	UTR504020020220	2	4	20	2	60	0.2
1-04-058401	UTR504020020225	2	4	25	2	60	0.2
1-04-058402	UTR504020020308	2	4	8	3	50	0.2
1-04-058403	UTR504020020310	2	4	10	3	50	0.2
1-04-058404	UTR504020020312	2	4	12	3	50	0.2
1-04-058405	UTR504020020316	2	4	16	3	50	0.2
1-04-058406	UTR504020020320	2	6	20	3	60	0.2
1-04-058407	UTR504020020325	2	6	25	3	60	0.2
1-04-058408	UTR504020030108	2	4	8	1	50	0.3
1-04-058409	UTR504020030110	2	4	10	1	50	0.3
1-04-058410	UTR504020030112	2	4	12	1	50	0.3
1-04-058411	UTR504020030116	2	4	16	1	50	0.3
1-04-058412	UTR504020030120	2	4	20	1	60	0.3
1-04-058413	UTR504020030125	2	4	25	1	60	0.3
1-04-058414	UTR504020030208	2	4	8	2	50	0.3
1-04-058415	UTR504020030210	2	4	10	2	50	0.3
1-04-058416	UTR504020030212	2	4	12	2	50	0.3
1-04-058417	UTR504020030216	2	4	16	2	50	0.3
1-04-058418	UTR504020030220	2	4	20	2	60	0.3
1-04-058419	UTR504020030225	2	4	25	2	60	0.3
1-04-058420	UTR504020030308	2	4	8	3	50	0.3
1-04-058421	UTR504020030310	2	4	10	3	50	0.3
1-04-058422	UTR504020030312	2	4	12	3	50	0.3
1-04-058423	UTR504020030316	2	4	16	3	50	0.3
1-04-058424	UTR504020030320	2	6	20	3	60	0.3
1-04-058425	UTR504020030325	2	6	25	3	60	0.3

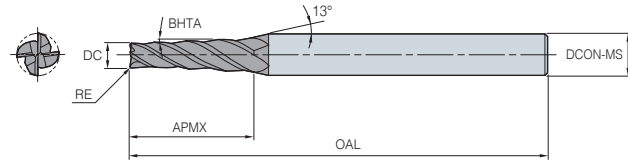
UTR504

4 flutes tapered radius



DC	Tolerance
Ø0.8 ~ Ø2.5	0.000 ~ -0.030

p.201

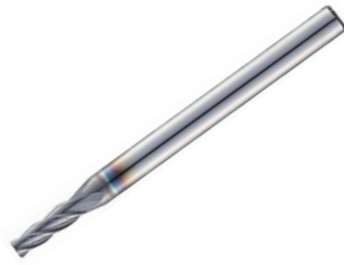


(mm)

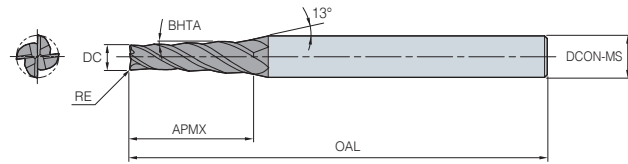
K.P. Code	Designation	DC	DCON-MS	APMX	BHTA(°)	OAL	RE
1-04-058426	UTR504025010110	2.5	4	10	1	50	0.1
1-04-058427	UTR504025010112	2.5	4	12	1	50	0.1
1-04-058428	UTR504025010116	2.5	4	16	1	50	0.1
1-04-058429	UTR504025010120	2.5	4	20	1	60	0.1
1-04-058430	UTR504025010125	2.5	4	25	1	60	0.1
1-04-058431	UTR504025010130	2.5	4	30	1	60	0.1
1-04-058432	UTR504025010210	2.5	4	10	2	50	0.1
1-04-058433	UTR504025010212	2.5	4	12	2	50	0.1
1-04-058434	UTR504025010216	2.5	4	16	2	50	0.1
1-04-058435	UTR504025010220	2.5	4	20	2	60	0.1
1-04-058436	UTR504025010225	2.5	6	25	2	60	0.1
1-04-058437	UTR504025010230	2.5	6	30	2	60	0.1
1-04-058438	UTR504025010310	2.5	4	10	3	50	0.1
1-04-058439	UTR504025010312	2.5	4	12	3	50	0.1
1-04-058440	UTR504025010316	2.5	6	16	3	50	0.1
1-04-058441	UTR504025010320	2.5	6	20	3	60	0.1
1-04-058442	UTR504025010325	2.5	6	25	3	60	0.1
1-04-058443	UTR504025010330	2.5	6	30	3	60	0.1
1-04-058444	UTR504025020110	2.5	4	10	1	50	0.2
1-04-058445	UTR504025020112	2.5	4	12	1	50	0.2
1-04-058446	UTR504025020116	2.5	4	16	1	50	0.2
1-04-058447	UTR504025020120	2.5	4	20	1	60	0.2
1-04-058448	UTR504025020125	2.5	4	25	1	60	0.2
1-04-058449	UTR504025020130	2.5	4	30	1	60	0.2
1-04-058450	UTR504025020210	2.5	4	10	2	50	0.2
1-04-058451	UTR504025020212	2.5	4	12	2	50	0.2
1-04-058452	UTR504025020216	2.5	4	16	2	50	0.2
1-04-058453	UTR504025020220	2.5	4	20	2	60	0.2
1-04-058454	UTR504025020225	2.5	6	25	2	60	0.2
1-04-058455	UTR504025020230	2.5	6	30	2	60	0.2
1-04-058456	UTR504025020310	2.5	4	10	3	50	0.2
1-04-058457	UTR504025020312	2.5	4	12	3	50	0.2
1-04-058458	UTR504025020316	2.5	6	16	3	50	0.2
1-04-058459	UTR504025020320	2.5	6	20	3	60	0.2
1-04-058460	UTR504025020325	2.5	6	25	3	60	0.2
1-04-058461	UTR504025020330	2.5	6	30	3	60	0.2

UTR504

4 flutes tapered radius



p.201



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	BHTA(°)	OAL	RE
1-04-058462	UTR504025030110	2.5	4	10	1	50	0.3
1-04-058463	UTR504025030112	2.5	4	12	1	50	0.3
1-04-058464	UTR504025030116	2.5	4	16	1	50	0.3
1-04-058465	UTR504025030120	2.5	4	20	1	60	0.3
1-04-058466	UTR504025030125	2.5	4	25	1	60	0.3
1-04-058467	UTR504025030130	2.5	4	30	1	60	0.3
1-04-058469	UTR504025030212	2.5	4	12	2	50	0.3
1-04-058470	UTR504025030216	2.5	4	16	2	50	0.3
1-04-058471	UTR504025030220	2.5	4	20	2	60	0.3
1-04-058472	UTR504025030225	2.5	6	25	2	60	0.3
1-04-058473	UTR504025030230	2.5	6	30	2	60	0.3
1-04-058474	UTR504025030310	2.5	4	10	3	50	0.3
1-04-058475	UTR504025030312	2.5	4	12	3	50	0.3
1-04-058476	UTR504025030316	2.5	6	16	3	50	0.3
1-04-058477	UTR504025030320	2.5	6	20	3	60	0.3
1-04-058478	UTR504025030325	2.5	6	25	3	60	0.3
1-04-058479	UTR504025030330	2.5	6	30	3	60	0.3

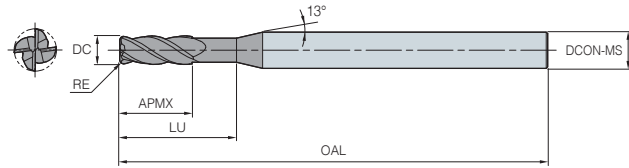
UXR514A

4 flutes multi helix neck radius



DC	Tolerance
ALL	0 ~ -0.0012

p.201



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
6-01-084823	UXR514A003010S	3/64	3/16	1/16	5/32	2	0.01
6-01-084824	UXR514A003010	3/64	3/16	1/16	1/4	2	0.01
6-01-084825	UXR514A004010S	1/16	3/16	3/32	1/4	2	0.01
6-01-084826	UXR514A004010	1/16	3/16	3/32	5/16	2	0.01
6-01-084827	UXR514A004020S	1/16	3/16	3/32	1/4	2	0.02
6-01-084828	UXR514A004020	1/16	3/16	3/32	5/16	2	0.02
6-01-084829	UXR514A005010S	5/64	3/16	1/8	1/4	2	0.01
6-01-084830	UXR514A005010	5/64	3/16	1/8	5/16	2	0.01
6-01-084831	UXR514A005020S	5/64	3/16	1/8	1/4	2	0.02
6-01-084832	UXR514A005020	5/64	3/16	1/8	5/16	2	0.02
6-01-084833	UXR514A008010S	1/8	1/4	3/16	5/16	2	0.01
6-01-084834	UXR514A008010	1/8	1/4	3/16	3/8	2	0.01
6-01-084835	UXR514A008020S	1/8	1/4	3/16	5/16	2	0.02
6-01-084836	UXR514A008020	1/8	1/4	3/16	3/8	2	0.02
6-01-084837	UXR514A008030S	1/8	1/4	3/16	5/16	2	0.03
6-01-084838	UXR514A008030	1/8	1/4	3/16	3/8	2	0.03
6-01-084839	UXR514A012010S	3/16	1/4	1/4	3/8	2	0.01
6-01-084840	UXR514A012010	3/16	1/4	1/4	1/2	2	0.01
6-01-084841	UXR514A012020S	3/16	1/4	1/4	3/8	2	0.02
6-01-084842	UXR514A012020	3/16	1/4	1/4	1/2	2	0.02
6-01-084843	UXR514A012030S	3/16	1/4	1/4	3/8	2	0.03
6-01-084844	UXR514A012030	3/16	1/4	1/4	1/2	2	0.03
6-01-084845	UXR514A016010	1/4	1/4	3/8	3/4	2 3/8	0.01
6-01-084846	UXR514A016020	1/4	1/4	3/8	3/4	2 3/8	0.02
6-01-084847	UXR514A016030	1/4	1/4	3/8	3/4	2 3/8	0.03
6-01-084848	UXR514A016040	1/4	1/4	3/8	3/4	2 3/8	0.04
6-01-084849	UXR514A020010	5/16	5/16	1/2	1	2 3/4	0.01
6-01-084850	UXR514A020020	5/16	5/16	1/2	1	2 3/4	0.02
6-01-084851	UXR514A020030	5/16	5/16	1/2	1	2 3/4	0.03
6-01-084852	UXR514A020040	5/16	5/16	1/2	1	2 3/4	0.04
6-01-084853	UXR514A020020L	5/16	5/16	3/4	1 3/8	4	0.02
6-01-084854	UXR514A020030L	5/16	5/16	3/4	1 3/8	4	0.03
6-01-084855	UXR514A024020	3/8	3/8	5/8	1 3/16	3	0.02
6-01-084856	UXR514A024030	3/8	3/8	5/8	1 3/16	3	0.03
6-01-084857	UXR514A024040	3/8	3/8	5/8	1 3/16	3	0.04
6-01-084858	UXR514A024020L	3/8	3/8	1	1 1/2	4	0.02

UXR514A

4 flutes multi helix neck radius



CARBIDE



H·A
34°/36°

Grade
PC315W

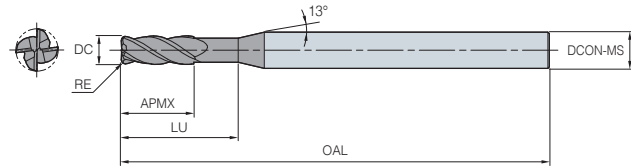
RE
±0.004

h5
shank



p.201

DC	Tolerance
ALL	0 ~ -0.0012



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
6-01-084859	UXR514A024030L	3/8	3/8	1	1 1/2	4	0.03
6-01-084860	UXR514A032020	1/2	1/2	11/16	1 1/4	3 1/8	0.02
6-01-084861	UXR514A032030	1/2	1/2	11/16	1 1/4	3 1/8	0.03
6-01-084862	UXR514A032040	1/2	1/2	11/16	1 1/4	3 1/8	0.04
6-01-084863	UXR514A032060	1/2	1/2	11/16	1 1/4	3 1/8	0.06
6-01-084864	UXR514A032080	1/2	1/2	11/16	1 1/4	3 1/8	0.08
6-01-084865	UXR514A032020L	1/2	1/2	1 3/16	1 3/4	4 1/4	0.02
6-01-084866	UXR514A032030L	1/2	1/2	1 3/16	1 3/4	4 1/4	0.03

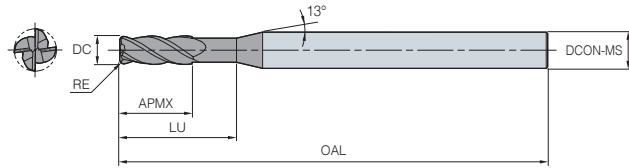
UXR514

4 flutes multi helix neck radius



DC	Tolerance
Ø1 ~ Ø20	0.000 ~ -0.030

p.202



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-057508	UXR51401000503	1	4	1.5	3	50	0.05
1-04-057509	UXR51401000504	1	4	1.5	4	50	0.05
1-04-057510	UXR51401000506	1	4	1.5	6	50	0.05
1-04-057511	UXR51401000508	1	4	1.5	8	50	0.05
1-04-057512	UXR51401000510	1	4	1.5	10	50	0.05
1-04-057513	UXR51401000512	1	4	1.5	12	50	0.05
1-04-057514	UXR51401000514	1	4	1.5	14	50	0.05
1-04-057515	UXR51401000516	1	4	1.5	16	50	0.05
1-04-057516	UXR51401000520	1	4	1.5	20	50	0.05
1-04-057517	UXR5140100103	1	4	1.5	3	50	0.1
1-04-057518	UXR5140100104	1	4	1.5	4	50	0.1
1-04-057519	UXR5140100106	1	4	1.5	6	50	0.1
1-04-057520	UXR5140100108	1	4	1.5	8	50	0.1
1-04-057521	UXR5140100110	1	4	1.5	10	50	0.1
1-04-057522	UXR5140100112	1	4	1.5	12	50	0.1
1-04-057523	UXR5140100114	1	4	1.5	14	50	0.1
1-04-057524	UXR5140100116	1	4	1.5	16	50	0.1
1-04-057525	UXR5140100120	1	4	1.5	20	50	0.1
1-04-057526	UXR5140100203	1	4	1.5	3	50	0.2
1-04-057527	UXR5140100204	1	4	1.5	4	50	0.2
1-04-057528	UXR5140100206	1	4	1.5	6	50	0.2
1-04-057529	UXR5140100208	1	4	1.5	8	50	0.2
1-04-057530	UXR5140100210	1	4	1.5	10	50	0.2
1-04-057531	UXR5140100212	1	4	1.5	12	50	0.2
1-04-057532	UXR5140100214	1	4	1.5	14	50	0.2
1-04-057533	UXR5140100216	1	4	1.5	16	50	0.2
1-04-057534	UXR5140100220	1	4	1.5	20	50	0.2
1-04-057535	UXR5140100303	1	4	1.5	3	50	0.3
1-04-057536	UXR5140100304	1	4	1.5	4	50	0.3
1-04-057537	UXR5140100306	1	4	1.5	6	50	0.3
1-04-057538	UXR5140100308	1	4	1.5	8	50	0.3
1-04-057539	UXR5140100310	1	4	1.5	10	50	0.3
1-04-057540	UXR5140100312	1	4	1.5	12	50	0.3
1-04-057541	UXR5140100314	1	4	1.5	14	50	0.3
1-04-057542	UXR5140100316	1	4	1.5	16	50	0.3
1-04-057543	UXR5140100320	1	4	1.5	20	50	0.3

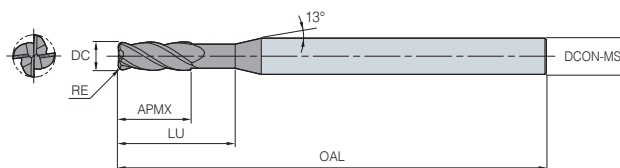
UXR514

4 flutes multi helix neck radius



DC	Tolerance
Ø1 ~ Ø20	0.000 ~ -0.030

p.202



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-057544	UXR51401200503	1.2	4	1.8	3	50	0.05
1-04-057545	UXR51401200504	1.2	4	1.8	4	50	0.05
1-04-057546	UXR51401200506	1.2	4	1.8	6	50	0.05
1-04-057547	UXR51401200508	1.2	4	1.8	8	50	0.05
1-04-057548	UXR51401200510	1.2	4	1.8	10	50	0.05
1-04-057549	UXR51401200512	1.2	4	1.8	12	50	0.05
1-04-057550	UXR51401200516	1.2	4	1.8	16	50	0.05
1-04-057551	UXR51401200520	1.2	4	1.8	20	50	0.05
1-04-057552	UXR5140120103	1.2	4	1.8	3	50	0.1
1-04-057553	UXR5140120104	1.2	4	1.8	4	50	0.1
1-04-057554	UXR5140120106	1.2	4	1.8	6	50	0.1
1-04-057555	UXR5140120108	1.2	4	1.8	8	50	0.1
1-04-057556	UXR5140120110	1.2	4	1.8	10	50	0.1
1-04-057557	UXR5140120112	1.2	4	1.8	12	50	0.1
1-04-057558	UXR5140120116	1.2	4	1.8	16	50	0.1
1-04-057559	UXR5140120120	1.2	4	1.8	20	50	0.1
1-04-057560	UXR5140120203	1.2	4	1.8	3	50	0.2
1-04-057561	UXR5140120204	1.2	4	1.8	4	50	0.2
1-04-057562	UXR5140120206	1.2	4	1.8	6	50	0.2
1-04-057563	UXR5140120208	1.2	4	1.8	8	50	0.2
1-04-057564	UXR5140120210	1.2	4	1.8	10	50	0.2
1-04-057565	UXR5140120212	1.2	4	1.8	12	50	0.2
1-04-057566	UXR5140120216	1.2	4	1.8	16	50	0.2
1-04-057567	UXR5140120220	1.2	4	1.8	20	50	0.2
1-04-057568	UXR5140120303	1.2	4	1.8	3	50	0.3
1-04-057569	UXR5140120304	1.2	4	1.8	4	50	0.3
1-04-057570	UXR5140120306	1.2	4	1.8	6	50	0.3
1-04-057571	UXR5140120308	1.2	4	1.8	8	50	0.3
1-04-057572	UXR5140120310	1.2	4	1.8	10	50	0.3
1-04-057573	UXR5140120312	1.2	4	1.8	12	50	0.3
1-04-057574	UXR5140120316	1.2	4	1.8	16	50	0.3
1-04-057575	UXR5140120320	1.2	4	1.8	20	50	0.3
1-04-057576	UXR51401500504	1.5	4	2.3	4	50	0.05
1-04-057577	UXR51401500506	1.5	4	2.3	6	50	0.05
1-04-057578	UXR51401500508	1.5	4	2.3	8	50	0.05
1-04-057579	UXR51401500510	1.5	4	2.3	10	50	0.05

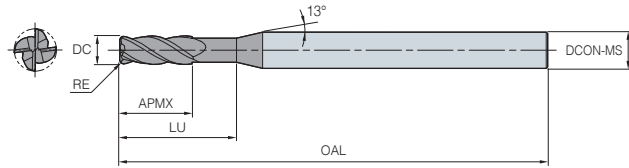
UXR514

4 flutes multi helix neck radius



DC	Tolerance
Ø1 ~ Ø20	0.000 ~ -0.030

p.202

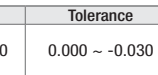


(mm)

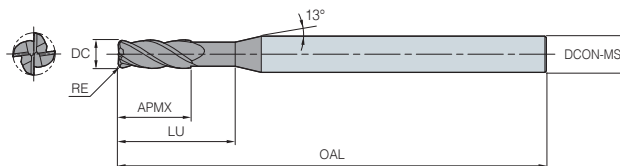
K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-057580	UXR51401500512	1.5	4	2.3	12	50	0.05
1-04-057581	UXR51401500514	1.5	4	2.3	14	50	0.05
1-04-057582	UXR51401500516	1.5	4	2.3	16	50	0.05
1-04-057583	UXR51401500520	1.5	4	2.3	20	50	0.05
1-04-057584	UXR51401500522	1.5	4	2.3	22	60	0.05
1-04-057585	UXR51401500526	1.5	4	2.3	26	60	0.05
1-04-057586	UXR5140150104	1.5	4	2.3	4	50	0.1
1-04-057587	UXR5140150106	1.5	4	2.3	6	50	0.1
1-04-057588	UXR5140150108	1.5	4	2.3	8	50	0.1
1-04-057589	UXR5140150110	1.5	4	2.3	10	50	0.1
1-04-057590	UXR5140150112	1.5	4	2.3	12	50	0.1
1-04-057591	UXR5140150114	1.5	4	2.3	14	50	0.1
1-04-057592	UXR5140150116	1.5	4	2.3	16	50	0.1
1-04-057593	UXR5140150120	1.5	4	2.3	20	50	0.1
1-04-057594	UXR5140150122	1.5	4	2.3	22	60	0.1
1-04-057595	UXR5140150126	1.5	4	2.3	26	60	0.1
1-04-057596	UXR5140150204	1.5	4	2.3	4	50	0.2
1-04-057597	UXR5140150206	1.5	4	2.3	6	50	0.2
1-04-057598	UXR5140150208	1.5	4	2.3	8	50	0.2
1-04-057599	UXR5140150210	1.5	4	2.3	10	50	0.2
1-04-057600	UXR5140150212	1.5	4	2.3	12	50	0.2
1-04-057601	UXR5140150214	1.5	4	2.3	14	50	0.2
1-04-057602	UXR5140150216	1.5	4	2.3	16	50	0.2
1-04-057603	UXR5140150220	1.5	4	2.3	20	50	0.2
1-04-057604	UXR5140150222	1.5	4	2.3	22	60	0.2
1-04-057605	UXR5140150226	1.5	4	2.3	26	60	0.2
1-04-057606	UXR5140150304	1.5	4	2.3	4	50	0.3
1-04-057607	UXR5140150306	1.5	4	2.3	6	50	0.3
1-04-057608	UXR5140150308	1.5	4	2.3	8	50	0.3
1-04-057609	UXR5140150310	1.5	4	2.3	10	50	0.3
1-04-057610	UXR5140150312	1.5	4	2.3	12	50	0.3
1-04-057611	UXR5140150314	1.5	4	2.3	14	50	0.3
1-04-057612	UXR5140150316	1.5	4	2.3	16	50	0.3
1-04-057613	UXR5140150320	1.5	4	2.3	20	50	0.3
1-04-057614	UXR5140150322	1.5	4	2.3	22	60	0.3
1-04-057615	UXR5140150326	1.5	4	2.3	26	60	0.3

UXR514

4 flutes multi helix neck radius



p.202



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-057616	UXR5140150504	1.5	4	2.3	4	50	0.5
1-04-057617	UXR5140150506	1.5	4	2.3	6	50	0.5
1-04-057618	UXR5140150508	1.5	4	2.3	8	50	0.5
1-04-057619	UXR5140150510	1.5	4	2.3	10	50	0.5
1-04-057620	UXR5140150512	1.5	4	2.3	12	50	0.5
1-04-057621	UXR5140150514	1.5	4	2.3	14	50	0.5
1-04-057622	UXR5140150516	1.5	4	2.3	16	50	0.5
1-04-057623	UXR5140150520	1.5	4	2.3	20	50	0.5
1-04-057624	UXR5140150522	1.5	4	2.3	22	60	0.5
1-04-057625	UXR5140150526	1.5	4	2.3	26	60	0.5
1-04-057626	UXR5140200106	2	4	3	6	50	0.1
1-04-057627	UXR5140200108	2	4	3	8	50	0.1
1-04-057628	UXR5140200110	2	4	3	10	50	0.1
1-04-057629	UXR5140200112	2	4	3	12	50	0.1
1-04-057630	UXR5140200114	2	4	3	14	50	0.1
1-04-057631	UXR5140200116	2	4	3	16	50	0.1
1-04-057632	UXR5140200120	2	4	3	20	50	0.1
1-04-057633	UXR5140200122	2	4	3	22	60	0.1
1-04-057634	UXR5140200126	2	4	3	26	60	0.1
1-04-057635	UXR5140200130	2	4	3	30	70	0.1
1-04-057636	UXR5140200206	2	4	3	6	50	0.2
1-04-057637	UXR5140200208	2	4	3	8	50	0.2
1-04-057638	UXR5140200210	2	4	3	10	50	0.2
1-04-057639	UXR5140200212	2	4	3	12	50	0.2
1-04-057640	UXR5140200214	2	4	3	14	50	0.2
1-04-057641	UXR5140200216	2	4	3	16	50	0.2
1-04-057642	UXR5140200220	2	4	3	20	50	0.2
1-04-057643	UXR5140200222	2	4	3	22	60	0.2
1-04-057644	UXR5140200226	2	4	3	26	60	0.2
1-04-057645	UXR5140200230	2	4	3	30	70	0.2
1-04-057646	UXR5140200306	2	4	3	6	50	0.3
1-04-057647	UXR5140200308	2	4	3	8	50	0.3
1-04-057648	UXR5140200310	2	4	3	10	50	0.3
1-04-057649	UXR5140200312	2	4	3	12	50	0.3
1-04-057650	UXR5140200314	2	4	3	14	50	0.3
1-04-057651	UXR5140200316	2	4	3	16	50	0.3

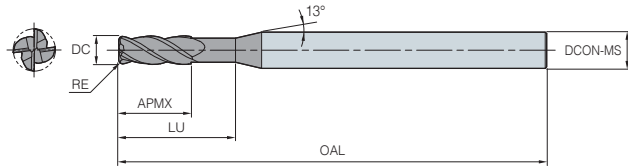
UXR514

4 flutes multi helix neck radius



DC	Tolerance
Ø1 ~ Ø20	0.000 ~ -0.030

p.202



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-057652	UXR5140200320	2	4	3	20	50	0.3
1-04-057653	UXR5140200322	2	4	3	22	60	0.3
1-04-057654	UXR5140200326	2	4	3	26	60	0.3
1-04-057655	UXR5140200330	2	4	3	30	70	0.3
1-04-057656	UXR5140200506	2	4	3	6	50	0.5
1-04-057657	UXR5140200508	2	4	3	8	50	0.5
1-04-057658	UXR5140200510	2	4	3	10	50	0.5
1-04-057659	UXR5140200512	2	4	3	12	50	0.5
1-04-057660	UXR5140200514	2	4	3	14	50	0.5
1-04-057661	UXR5140200516	2	4	3	16	50	0.5
1-04-057662	UXR5140200520	2	4	3	20	50	0.5
1-04-057663	UXR5140200522	2	4	3	22	60	0.5
1-04-057664	UXR5140200526	2	4	3	26	60	0.5
1-04-057665	UXR5140200530	2	4	3	30	70	0.5
1-04-057666	UXR5140250108	2.5	4	4	8	50	0.1
1-04-057667	UXR5140250110	2.5	4	4	10	50	0.1
1-04-057668	UXR5140250112	2.5	4	4	12	50	0.1
1-04-057669	UXR5140250114	2.5	4	4	14	50	0.1
1-04-057670	UXR5140250116	2.5	4	4	16	50	0.1
1-04-057671	UXR5140250120	2.5	4	4	20	50	0.1
1-04-057672	UXR5140250126	2.5	4	4	26	60	0.1
1-04-057673	UXR5140250130	2.5	4	4	30	70	0.1
1-04-057674	UXR5140250208	2.5	4	4	8	50	0.2
1-04-057675	UXR5140250210	2.5	4	4	10	50	0.2
1-04-057676	UXR5140250212	2.5	4	4	12	50	0.2
1-04-057677	UXR5140250214	2.5	4	4	14	50	0.2
1-04-057678	UXR5140250216	2.5	4	4	16	50	0.2
1-04-057679	UXR5140250220	2.5	4	4	20	50	0.2
1-04-057680	UXR5140250226	2.5	4	4	26	60	0.2
1-04-057681	UXR5140250230	2.5	4	4	30	70	0.2
1-04-057682	UXR5140250308	2.5	4	4	8	50	0.3
1-04-057683	UXR5140250310	2.5	4	4	10	50	0.3
1-04-057684	UXR5140250312	2.5	4	4	12	50	0.3
1-04-057685	UXR5140250314	2.5	4	4	14	50	0.3
1-04-057686	UXR5140250316	2.5	4	4	16	50	0.3
1-04-057687	UXR5140250320	2.5	4	4	20	50	0.3

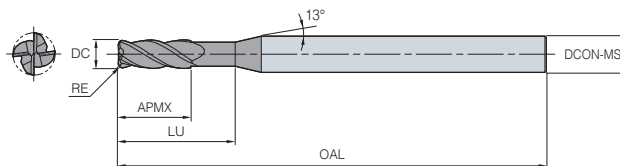
UXR514

4 flutes multi helix neck radius



DC	Tolerance
Ø1 ~ Ø20	0.000 ~ -0.030

p.202



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-057688	UXR5140250326	2.5	4	4	26	60	0.3
1-04-057689	UXR5140250330	2.5	4	4	30	70	0.3
1-04-057690	UXR5140250508	2.5	4	4	8	50	0.5
1-04-057691	UXR5140250510	2.5	4	4	10	50	0.5
1-04-057692	UXR5140250512	2.5	4	4	12	50	0.5
1-04-057693	UXR5140250514	2.5	4	4	14	50	0.5
1-04-057694	UXR5140250516	2.5	4	4	16	50	0.5
1-04-057695	UXR5140250520	2.5	4	4	20	50	0.5
1-04-057696	UXR5140250526	2.5	4	4	26	60	0.5
1-04-057697	UXR5140250530	2.5	4	4	30	70	0.5
1-04-057698	UXR5140300108	3	6	4.5	8	50	0.1
1-04-057699	UXR5140300110	3	6	4.5	10	50	0.1
1-04-057700	UXR5140300112	3	6	4.5	12	50	0.1
1-04-057701	UXR5140300114	3	6	4.5	14	60	0.1
1-04-057702	UXR5140300116	3	6	4.5	16	60	0.1
1-04-057703	UXR5140300120	3	6	4.5	20	60	0.1
1-04-057704	UXR5140300126	3	6	4.5	26	65	0.1
1-04-057705	UXR5140300130	3	6	4.5	30	70	0.1
1-04-057706	UXR5140300135	3	6	4.5	35	70	0.1
1-04-057707	UXR5140300140	3	6	4.5	40	80	0.1
1-04-057708	UXR5140300208	3	6	4.5	8	50	0.2
1-04-057709	UXR5140300210	3	6	4.5	10	50	0.2
1-04-057710	UXR5140300212	3	6	4.5	12	50	0.2
1-04-057711	UXR5140300214	3	6	4.5	14	60	0.2
1-04-057712	UXR5140300216	3	6	4.5	16	60	0.2
1-04-057713	UXR5140300220	3	6	4.5	20	60	0.2
1-04-057714	UXR5140300226	3	6	4.5	26	65	0.2
1-04-057715	UXR5140300230	3	6	4.5	30	70	0.2
1-04-057716	UXR5140300235	3	6	4.5	35	70	0.2
1-04-057717	UXR5140300240	3	6	4.5	40	80	0.2
1-04-057718	UXR5140300308	3	6	4.5	8	50	0.3
1-04-057719	UXR5140300310	3	6	4.5	10	50	0.3
1-04-057720	UXR5140300312	3	6	4.5	12	50	0.3
1-04-057721	UXR5140300314	3	6	4.5	14	60	0.3
1-04-057722	UXR5140300316	3	6	4.5	16	60	0.3
1-04-057723	UXR5140300320	3	6	4.5	20	60	0.3

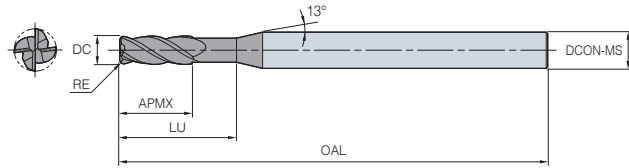
UXR514

4 flutes multi helix neck radius



DC	Tolerance
Ø1 ~ Ø20	0.000 ~ -0.030

p.202



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-057724	UXR5140300326	3	6	4.5	26	65	0.3
1-04-057725	UXR5140300330	3	6	4.5	30	70	0.3
1-04-057726	UXR5140300335	3	6	4.5	35	70	0.3
1-04-057727	UXR5140300340	3	6	4.5	40	80	0.3
1-04-057728	UXR5140300508	3	6	4.5	8	50	0.5
1-04-057729	UXR5140300510	3	6	4.5	10	50	0.5
1-04-057730	UXR5140300512	3	6	4.5	12	50	0.5
1-04-057731	UXR5140300514	3	6	4.5	14	60	0.5
1-04-057732	UXR5140300516	3	6	4.5	16	60	0.5
1-04-057733	UXR5140300520	3	6	4.5	20	60	0.5
1-04-057734	UXR5140300526	3	6	4.5	26	65	0.5
1-04-057735	UXR5140300530	3	6	4.5	30	70	0.5
1-04-057736	UXR5140300535	3	6	4.5	35	70	0.5
1-04-057737	UXR5140300540	3	6	4.5	40	80	0.5
1-04-057738	UXR5140301008	3	6	4.5	8	50	1
1-04-057739	UXR5140301010	3	6	4.5	10	50	1
1-04-057740	UXR5140301012	3	6	4.5	12	50	1
1-04-057741	UXR5140301014	3	6	4.5	14	60	1
1-04-057742	UXR5140301016	3	6	4.5	16	60	1
1-04-057743	UXR5140301020	3	6	4.5	20	60	1
1-04-057744	UXR5140301026	3	6	4.5	26	65	1
1-04-057745	UXR5140301030	3	6	4.5	30	70	1
1-04-057746	UXR5140301035	3	6	4.5	35	70	1
1-04-057747	UXR5140301040	3	6	4.5	40	80	1
1-04-057748	UXR5140400110	4	6	6	10	50	0.1
1-04-057749	UXR5140400112	4	6	6	12	50	0.1
1-04-057750	UXR5140400114	4	6	6	14	60	0.1
1-04-057751	UXR5140400116	4	6	6	16	60	0.1
1-04-057752	UXR5140400120	4	6	6	20	60	0.1
1-04-057753	UXR5140400126	4	6	6	26	65	0.1
1-04-057754	UXR5140400130	4	6	6	30	70	0.1
1-04-057755	UXR5140400135	4	6	6	35	70	0.1
1-04-057756	UXR5140400140	4	6	6	40	80	0.1
1-04-057757	UXR5140400145	4	6	6	45	90	0.1
1-04-057758	UXR5140400150	4	6	6	50	100	0.1
1-04-057759	UXR5140400210	4	6	6	10	50	0.2

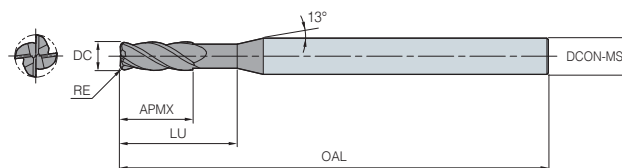
UXR514

4 flutes multi helix neck radius



DC	Tolerance
Ø1 ~ Ø20	0.000 ~ -0.030

p.202



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-057760	UXR5140400212	4	6	6	12	50	0.2
1-04-057761	UXR5140400214	4	6	6	14	60	0.2
1-04-057762	UXR5140400216	4	6	6	16	60	0.2
1-04-057763	UXR5140400220	4	6	6	20	60	0.2
1-04-057764	UXR5140400226	4	6	6	26	65	0.2
1-04-057765	UXR5140400230	4	6	6	30	70	0.2
1-04-057766	UXR5140400235	4	6	6	35	70	0.2
1-04-057767	UXR5140400240	4	6	6	40	80	0.2
1-04-057768	UXR5140400245	4	6	6	45	90	0.2
1-04-057769	UXR5140400250	4	6	6	50	100	0.2
1-04-057770	UXR5140400310	4	6	6	10	50	0.3
1-04-057771	UXR5140400312	4	6	6	12	50	0.3
1-04-057772	UXR5140400314	4	6	6	14	60	0.3
1-04-057773	UXR5140400316	4	6	6	16	60	0.3
1-04-057774	UXR5140400320	4	6	6	20	60	0.3
1-04-057775	UXR5140400326	4	6	6	26	65	0.3
1-04-057776	UXR5140400330	4	6	6	30	70	0.3
1-04-057777	UXR5140400335	4	6	6	35	70	0.3
1-04-057778	UXR5140400340	4	6	6	40	80	0.3
1-04-057779	UXR5140400345	4	6	6	45	90	0.3
1-04-057780	UXR5140400350	4	6	6	50	100	0.3
1-04-057781	UXR5140400510	4	6	6	10	50	0.5
1-04-057782	UXR5140400512	4	6	6	12	50	0.5
1-04-057783	UXR5140400514	4	6	6	14	60	0.5
1-04-057784	UXR5140400516	4	6	6	16	60	0.5
1-04-057785	UXR5140400520	4	6	6	20	60	0.5
1-04-057786	UXR5140400526	4	6	6	26	65	0.5
1-04-057787	UXR5140400530	4	6	6	30	70	0.5
1-04-057788	UXR5140400535	4	6	6	35	70	0.5
1-04-057789	UXR5140400540	4	6	6	40	80	0.5
1-04-057790	UXR5140400545	4	6	6	45	90	0.5
1-04-057791	UXR5140400550	4	6	6	50	100	0.5
1-04-057792	UXR5140401010	4	6	6	10	50	1
1-04-057793	UXR5140401012	4	6	6	12	50	1
1-04-057794	UXR5140401014	4	6	6	14	60	1
1-04-057795	UXR5140401016	4	6	6	16	60	1

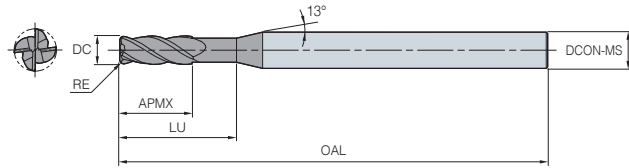
UXR514

4 flutes multi helix neck radius



DC	Tolerance
Ø1 ~ Ø20	0.000 ~ -0.030

p.202

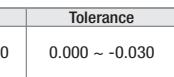


(mm)

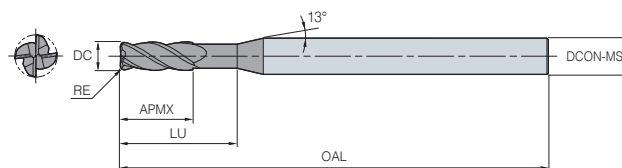
K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-057796	UXR5140401020	4	6	6	20	60	1
1-04-057797	UXR5140401026	4	6	6	26	65	1
1-04-057798	UXR5140401030	4	6	6	30	70	1
1-04-057799	UXR5140401035	4	6	6	35	70	1
1-04-057800	UXR5140401040	4	6	6	40	80	1
1-04-057801	UXR5140401045	4	6	6	45	90	1
1-04-057802	UXR5140401050	4	6	6	50	100	1
1-04-057803	UXR51405001	5	6	8	15	60	0.1
1-04-057804	UXR51405002	5	6	8	15	60	0.2
1-04-057805	UXR51405003	5	6	8	15	60	0.3
1-04-057806	UXR51405005	5	6	8	15	60	0.5
1-04-057807	UXR51405010	5	6	8	15	60	1
1-04-057808	UXR51405015	5	6	8	15	60	1.5
1-04-057809	UXR51405020	5	6	8	15	60	2
1-04-057810	UXR51406001	6	6	9	20	60	0.1
1-04-057811	UXR51406002	6	6	9	20	60	0.2
1-04-057812	UXR51406003	6	6	9	20	60	0.3
1-04-057817	UXR51406003090	6	6	15	30	90	0.3
1-04-057813	UXR51406005	6	6	9	20	60	0.5
1-04-057818	UXR51406005090	6	6	15	30	90	0.5
1-04-057814	UXR51406010	6	6	9	20	60	1
1-04-057819	UXR51406010090	6	6	15	30	90	1
1-04-057815	UXR51406015	6	6	9	20	60	1.5
1-04-057816	UXR51406020	6	6	9	20	60	2
1-04-057820	UXR51408001	8	8	12	25	70	0.1
1-04-057821	UXR51408002	8	8	12	25	70	0.2
1-04-057822	UXR51408003	8	8	12	25	70	0.3
1-04-057827	UXR51408003100	8	8	20	35	100	0.3
1-04-057823	UXR51408005	8	8	12	25	70	0.5
1-04-057828	UXR51408005100	8	8	20	35	100	0.5
1-04-057824	UXR51408010	8	8	12	25	70	1
1-04-057829	UXR51408010100	8	8	20	35	100	1
1-04-057825	UXR51408015	8	8	12	25	70	1.5
1-04-057826	UXR51408020	8	8	12	25	70	2
1-04-057830	UXR51410001	10	10	15	30	75	0.1
1-04-057831	UXR51410002	10	10	15	30	75	0.2

UXR514

4 flutes multi helix neck radius



p.202

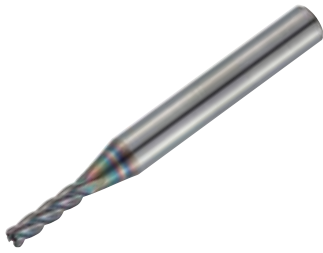


(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-057832	UXR51410003	10	10	15	30	75	0.3
1-04-057837	UXR51410003100	10	10	25	40	100	0.3
1-04-057833	UXR51410005	10	10	15	30	75	0.5
1-04-057838	UXR51410005100	10	10	25	40	100	0.5
1-04-057834	UXR51410010	10	10	15	30	75	1
1-04-057839	UXR51410010100	10	10	25	40	100	1
1-04-057835	UXR51410015	10	10	15	30	75	1.5
1-04-057836	UXR51410020	10	10	15	30	75	2
1-04-057840	UXR51412002	12	12	18	32	80	0.2
1-04-057841	UXR51412003	12	12	18	32	80	0.3
1-04-057846	UXR51412003110	12	12	30	45	110	0.3
1-04-057842	UXR51412005	12	12	18	32	80	0.5
1-04-057847	UXR51412005110	12	12	30	45	110	0.5
1-04-057843	UXR51412010	12	12	18	32	80	1
1-04-057848	UXR51412010110	12	12	30	45	110	1
1-04-057844	UXR51412015	12	12	18	32	80	1.5
1-04-057845	UXR51412020	12	12	18	32	80	2
1-04-057849	UXR51416005	16	16	20	35	100	0.5
1-04-057851	UXR51416005150	16	16	35	50	150	0.5
1-04-057850	UXR51416010	16	16	20	35	100	1
1-04-057852	UXR51416010150	16	16	35	50	150	1
1-04-057853	UXR51420005	20	20	25	40	100	0.5
1-04-057855	UXR51420005150	20	20	40	55	150	0.5
1-04-057854	UXR51420010	20	20	25	40	100	1
1-04-057856	UXR51420010150	20	20	40	55	150	1

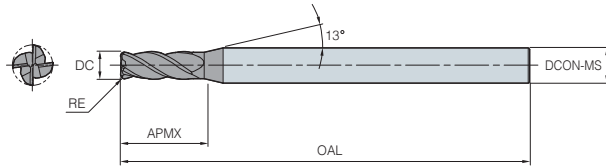
UXR524A

4 flutes radius (Long length)



DC	Tolerance
ALL	0 ~ -0.0012

p.202

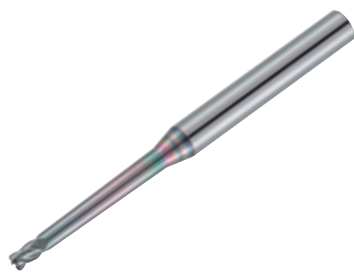


(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
6-01-084867	UXR524A004008	1/16	1/4	3/16	2 1/4	0.008
6-01-084868	UXR524A008010	1/8	1/4	1/2	2 1/4	0.01
6-01-084869	UXR524A008020	1/8	1/4	1/2	2 1/4	0.02
6-01-084870	UXR524A008030	1/8	1/4	1/2	2 1/4	0.03
6-01-084871	UXR524A012010	3/16	1/4	5/8	2 1/2	0.01
6-01-084872	UXR524A012020	3/16	1/4	5/8	2 1/2	0.02
6-01-084873	UXR524A012030	3/16	1/4	5/8	2 1/2	0.03
6-01-084891	UXR524A016010S	1/4	1/4	3/4	3	0.01
6-01-084875	UXR524A016020S	1/4	1/4	3/4	3	0.02
6-01-084877	UXR524A016030S	1/4	1/4	3/4	3	0.03
6-01-084879	UXR524A016060S	1/4	1/4	3/4	3	0.06
6-01-084876	UXR524A016020	1/4	1/4	1 1/8	3	0.02
6-01-084878	UXR524A016030	1/4	1/4	1 1/8	3	0.03
6-01-084880	UXR524A016060	1/4	1/4	1 1/8	3	0.06
6-01-084881	UXR524A020020S	5/16	5/16	13/16	3	0.02
6-01-084883	UXR524A020030S	5/16	5/16	13/16	3	0.03
6-01-084885	UXR524A020060S	5/16	5/16	13/16	3	0.06
6-01-084887	UXR524A020090S	5/16	5/16	13/16	3	0.09
6-01-084882	UXR524A020020	5/16	5/16	1 1/8	3	0.02
6-01-084884	UXR524A020030	5/16	5/16	1 1/8	3	0.03
6-01-084886	UXR524A020060	5/16	5/16	1 1/8	3	0.06
6-01-084888	UXR524A020090	5/16	5/16	1 1/8	3	0.09
6-01-084889	UXR524A024020	3/8	3/8	1 1/8	3	0.02
6-01-084890	UXR524A024030	3/8	3/8	1 1/8	3	0.03
6-01-084892	UXR524A024060	3/8	3/8	1 1/8	3	0.06
6-01-084894	UXR524A024090	3/8	3/8	1 1/8	3	0.09
6-01-084895	UXR524A028020	7/16	7/16	1	4	0.02
6-01-084896	UXR524A028030	7/16	7/16	1	4	0.03
6-01-084897	UXR524A028060	7/16	7/16	1	4	0.06
6-01-084898	UXR524A028090	7/16	7/16	1	4	0.09
6-01-084900	UXR524A032020	1/2	1/2	1 3/16	3 1/8	0.02
6-01-084893	UXR524A032020L	1/2	1/2	1 3/16	4 1/4	0.02
6-01-084901	UXR524A032030	1/2	1/2	1 3/16	3 1/8	0.03
6-01-084899	UXR524A032030L	1/2	1/2	1 3/16	4 1/4	0.03
6-01-084902	UXR524A032040	1/2	1/2	1 3/16	3 1/8	0.04
6-01-084903	UXR524A032040L	1/2	1/2	1 3/16	4 1/4	0.04
6-01-085396	UXR524A032060L	1/2	1/2	1 3/16	4 1/4	0.06
6-01-085397	UXR524A032080L	1/2	1/2	1 3/16	4 1/4	0.08

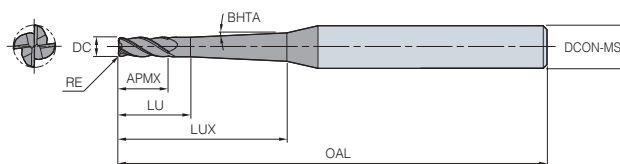
UR544A

4 flutes tapered neck radius



DC	Tolerance
ALL	0 ~ -0.0012

p.203

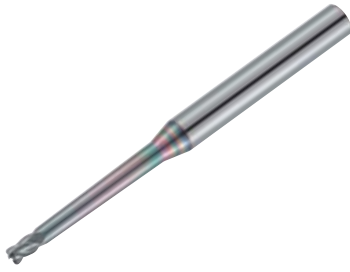


(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
6-01-084904	UR544A003005	3/64	1/4	3/32	11/64	3/4	2	1.5	0.005
6-01-084905	UR544A004005	1/16	1/4	1/8	13/64	3/4	2	1.5	0.005
6-01-084906	UR544A004010	1/16	1/4	1/8	13/64	3/4	2	1.5	0.01
6-01-084907	UR544A005010	5/64	1/4	5/32	15/64	1	2 1/2	1.5	0.01
6-01-084908	UR544A005015	5/64	1/4	5/32	15/64	1	2 1/2	1.5	0.015
6-01-084909	UR544A008010	1/8	1/4	1/4	21/64	1	3	1.5	0.01
6-01-084910	UR544A008020	1/8	1/4	1/4	21/64	1	3	1.5	0.02
6-01-084911	UR544A012010	3/16	1/4	3/8	29/64	1 1/2	3 1/2	1.5	0.01
6-01-084912	UR544A012020	3/16	1/4	3/8	29/64	1 1/2	3 1/2	1.5	0.02
6-01-084913	UR544A012030	3/16	1/4	3/8	29/64	1 1/2	3 1/2	1.5	0.03
6-01-084914	UR544A016010	1/4	3/8	1/2	5/8	2 1/2	4 1/2	1.5	0.01
6-01-084915	UR544A016020	1/4	3/8	1/2	5/8	2 1/2	4 1/2	1.5	0.02
6-01-084916	UR544A016030	1/4	3/8	1/2	5/8	2 1/2	4 1/2	1.5	0.03
6-01-084917	UR544A016040	1/4	3/8	1/2	5/8	2 1/2	4 1/2	1.5	0.04
6-01-084918	UR544A020010	5/16	1/2	9/16	11/16	2 1/2	4 1/2	1.5	0.01
6-01-084919	UR544A020020	5/16	1/2	9/16	11/16	2 1/2	4 1/2	1.5	0.02
6-01-084920	UR544A020030	5/16	1/2	9/16	11/16	2 1/2	4 1/2	1.5	0.03
6-01-084921	UR544A020040	5/16	1/2	9/16	11/16	2 1/2	4 1/2	1.5	0.04
6-01-084922	UR544A024010	3/8	1/2	11/16	13/16	2 1/2	4 1/2	1.5	0.01
6-01-084923	UR544A024020	3/8	1/2	11/16	13/16	2 1/2	4 1/2	1.5	0.02
6-01-084924	UR544A024030	3/8	1/2	11/16	13/16	2 1/2	4 1/2	1.5	0.03
6-01-084925	UR544A024040	3/8	1/2	11/16	13/16	2 1/2	4 1/2	1.5	0.04
6-01-084926	UR544A032020	1/2	5/8	7/8	1	2 1/2	4 1/2	1.5	0.02
6-01-084927	UR544A032030	1/2	5/8	7/8	1	2 1/2	4 1/2	1.5	0.03
6-01-084928	UR544A032040	1/2	5/8	7/8	1	2 1/2	4 1/2	1.5	0.04
6-01-084929	UR544A032060	1/2	5/8	7/8	1	2 1/2	4 1/2	1.5	0.06

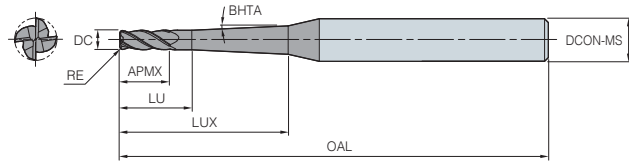
UR544

4 flutes tapered neck radius



DC	Tolerance
Ø1 ~ Ø4	0.000 ~ -0.012

p.202

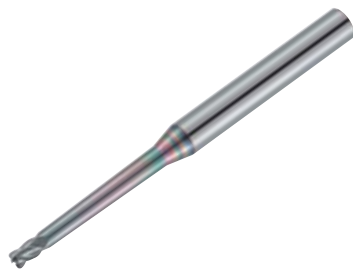


(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
1-04-057857	UR544010010106	1	4	1.5	2.5	6	50	1	0.1
1-04-057858	UR544010010108	1	4	1.5	2.5	8	50	1	0.1
1-04-057859	UR544010010110	1	4	1.5	2.5	10	50	1	0.1
1-04-057860	UR544010010112	1	4	1.5	2.5	12	50	1	0.1
1-04-057861	UR544010010116	1	4	1.5	2.5	16	50	1	0.1
1-04-057862	UR544010010120	1	4	1.5	2.5	20	50	1	0.1
1-04-057863	UR544010010125	1	4	1.5	2.5	25	60	1	0.1
1-04-057864	UR544010010130	1	4	1.5	2.5	30	70	1	0.1
1-04-057865	UR544010010140	1	4	1.5	2.5	40	80	1	0.1
1-04-057866	UR544010010150	1	4	1.5	2.5	50	90	1	0.1
1-04-057867	UR544010010206	1	4	1.5	2.5	6	50	1	0.1
1-04-057868	UR544010010208	1	4	1.5	2.5	8	50	2	0.1
1-04-057869	UR544010010210	1	4	1.5	2.5	10	50	2	0.1
1-04-057870	UR544010010212	1	4	1.5	2.5	12	50	2	0.1
1-04-057871	UR544010010216	1	4	1.5	2.5	16	50	2	0.1
1-04-057872	UR544010010220	1	4	1.5	2.5	20	50	2	0.1
1-04-057873	UR544010010225	1	4	1.5	2.5	25	60	2	0.1
1-04-057874	UR544010010230	1	4	1.5	2.5	30	70	2	0.1
1-04-057875	UR544010010240	1	4	1.5	2.5	40	80	2	0.1
1-04-057876	UR544010010250	1	6	1.5	2.5	50	90	2	0.1
1-04-057877	UR544010020106	1	4	1.5	2.5	6	50	2	0.2
1-04-057878	UR544010020108	1	4	1.5	2.5	8	50	1	0.2
1-04-057879	UR544010020110	1	4	1.5	2.5	10	50	1	0.2
1-04-057880	UR544010020112	1	4	1.5	2.5	12	50	1	0.2
1-04-057881	UR544010020116	1	4	1.5	2.5	16	50	1	0.2
1-04-057882	UR544010020120	1	4	1.5	2.5	20	50	1	0.2
1-04-057883	UR544010020125	1	4	1.5	2.5	25	60	1	0.2
1-04-057884	UR544010020130	1	4	1.5	2.5	30	70	1	0.2
1-04-057885	UR544010020140	1	4	1.5	2.5	40	80	1	0.2
1-04-057886	UR544010020150	1	4	1.5	2.5	50	90	1	0.2
1-04-057887	UR544010020206	1	4	1.5	2.5	6	50	1	0.2
1-04-057888	UR544010020208	1	4	1.5	2.5	8	50	2	0.2
1-04-057889	UR544010020210	1	4	1.5	2.5	10	50	2	0.2
1-04-057890	UR544010020212	1	4	1.5	2.5	12	50	2	0.2
1-04-057891	UR544010020216	1	4	1.5	2.5	16	50	2	0.2
1-04-057892	UR544010020220	1	4	1.5	2.5	20	50	2	0.2
1-04-057893	UR544010020225	1	4	1.5	2.5	25	60	2	0.2
1-04-057894	UR544010020230	1	4	1.5	2.5	30	70	2	0.2

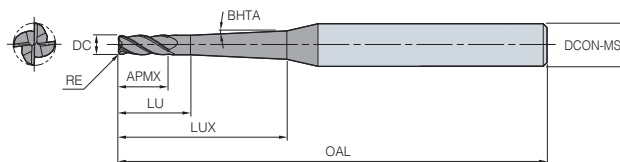
UR544

4 flutes tapered neck radius



DC	Tolerance
Ø1 ~ Ø4	0.000 ~ -0.012

p.202

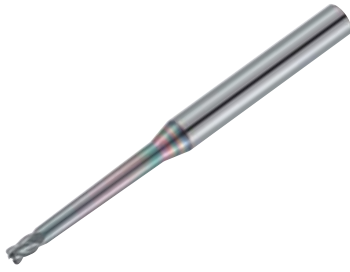


(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
1-04-057895	UR544010020240	1	4	1.5	2.5	40	80	2	0.2
1-04-057896	UR544010020250	1	6	1.5	2.5	50	90	2	0.2
1-04-057897	UR544012010108	1.2	4	1.8	3	8	50	2	0.1
1-04-057898	UR544012010112	1.2	4	1.8	3	12	50	1	0.1
1-04-057899	UR544012010116	1.2	4	1.8	3	16	50	1	0.1
1-04-057900	UR544012010120	1.2	4	1.8	3	20	50	1	0.1
1-04-057901	UR544012010125	1.2	4	1.8	3	25	60	1	0.1
1-04-057902	UR544012010130	1.2	4	1.8	3	30	70	1	0.1
1-04-057903	UR544012010208	1.2	4	1.8	3	8	50	1	0.1
1-04-057904	UR544012010212	1.2	4	1.8	3	12	50	2	0.1
1-04-057905	UR544012010216	1.2	4	1.8	3	16	50	2	0.1
1-04-057906	UR544012010220	1.2	4	1.8	3	20	50	2	0.1
1-04-057907	UR544012010225	1.2	4	1.8	3	25	60	2	0.1
1-04-057908	UR544012010230	1.2	4	1.8	3	30	70	2	0.1
1-04-057909	UR544012020108	1.2	4	1.8	3	8	50	2	0.2
1-04-057910	UR544012020112	1.2	4	1.8	3	12	50	1	0.2
1-04-057911	UR544012020116	1.2	4	1.8	3	16	50	1	0.2
1-04-057912	UR544012020120	1.2	4	1.8	3	20	50	1	0.2
1-04-057913	UR544012020125	1.2	4	1.8	3	25	60	1	0.2
1-04-057914	UR544012020130	1.2	4	1.8	3	30	70	1	0.2
1-04-057915	UR544012020208	1.2	4	1.8	3	8	50	1	0.2
1-04-057916	UR544012020212	1.2	4	1.8	3	12	50	2	0.2
1-04-057917	UR544012020216	1.2	4	1.8	3	16	50	2	0.2
1-04-057918	UR544012020220	1.2	4	1.8	3	20	50	2	0.2
1-04-057919	UR544012020225	1.2	4	1.8	3	25	60	2	0.2
1-04-057920	UR544012020230	1.2	4	1.8	3	30	70	2	0.2
1-04-057921	UR544015010108	1.5	4	2.3	3	8	50	2	0.1
1-04-057922	UR544015010110	1.5	4	2.3	3	10	50	1	0.1
1-04-057923	UR544015010112	1.5	4	2.3	3	12	50	1	0.1
1-04-057924	UR544015010116	1.5	4	2.3	3	16	50	1	0.1
1-04-057925	UR544015010120	1.5	4	2.3	3	20	50	1	0.1
1-04-057926	UR544015010125	1.5	4	2.3	3	25	60	1	0.1
1-04-057927	UR544015010130	1.5	4	2.3	3	30	70	1	0.1
1-04-057928	UR544015010140	1.5	4	2.3	3	40	80	1	0.1
1-04-057929	UR544015010150	1.5	4	2.3	3	50	90	1	0.1
1-04-057930	UR544015010208	1.5	4	2.3	3	8	50	1	0.1
1-04-057931	UR544015010210	1.5	4	2.3	3	10	50	2	0.1
1-04-057932	UR544015010212	1.5	4	2.3	3	12	50	2	0.1

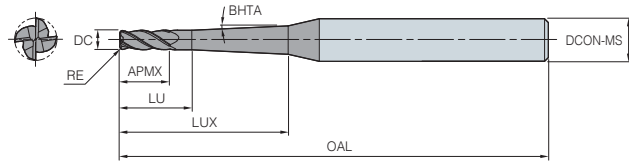
UR544

4 flutes tapered neck radius



DC	Tolerance
Ø1 ~ Ø4	0.000 ~ -0.012

p.202

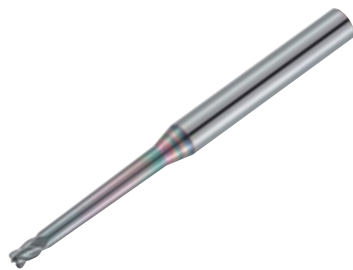


(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
1-04-057933	UR544015010216	1.5	4	2.3	3	16	50	2	0.1
1-04-057934	UR544015010220	1.5	4	2.3	3	20	50	2	0.1
1-04-057935	UR544015010225	1.5	4	2.3	3	25	60	2	0.1
1-04-057936	UR544015010230	1.5	4	2.3	3	30	70	2	0.1
1-04-057937	UR544015010240	1.5	6	2.3	3	40	80	2	0.1
1-04-057938	UR544015010250	1.5	6	2.3	3	50	90	2	0.1
1-04-057939	UR544015020108	1.5	4	2.3	3	8	50	2	0.2
1-04-057940	UR544015020110	1.5	4	2.3	3	10	50	1	0.2
1-04-057941	UR544015020112	1.5	4	2.3	3	12	50	1	0.2
1-04-057942	UR544015020116	1.5	4	2.3	3	16	50	1	0.2
1-04-057943	UR544015020120	1.5	4	2.3	3	20	50	1	0.2
1-04-057944	UR544015020125	1.5	4	2.3	3	25	60	1	0.2
1-04-057945	UR544015020130	1.5	4	2.3	3	30	70	1	0.2
1-04-057946	UR544015020140	1.5	4	2.3	3	40	80	1	0.2
1-04-057947	UR544015020150	1.5	4	2.3	3	50	90	1	0.2
1-04-057948	UR544015020208	1.5	4	2.3	3	8	50	1	0.2
1-04-057949	UR544015020210	1.5	4	2.3	3	10	50	2	0.2
1-04-057950	UR544015020212	1.5	4	2.3	3	12	50	2	0.2
1-04-057951	UR544015020216	1.5	4	2.3	3	16	50	2	0.2
1-04-057952	UR544015020220	1.5	4	2.3	3	20	50	2	0.2
1-04-057953	UR544015020225	1.5	4	2.3	3	25	60	2	0.2
1-04-057954	UR544015020230	1.5	4	2.3	3	30	70	2	0.2
1-04-057955	UR544015020240	1.5	6	2.3	3	40	80	2	0.2
1-04-057956	UR544015020250	1.5	6	2.3	3	50	90	2	0.2
1-04-057957	UR544015030108	1.5	4	2.3	3	8	50	2	0.3
1-04-057958	UR544015030110	1.5	4	2.3	3	10	50	1	0.3
1-04-057959	UR544015030112	1.5	4	2.3	3	12	50	1	0.3
1-04-057960	UR544015030116	1.5	4	2.3	3	16	50	1	0.3
1-04-057961	UR544015030120	1.5	4	2.3	3	20	50	1	0.3
1-04-057962	UR544015030125	1.5	4	2.3	3	25	60	1	0.3
1-04-057963	UR544015030130	1.5	4	2.3	3	30	70	1	0.3
1-04-057964	UR544015030140	1.5	4	2.3	3	40	80	1	0.3
1-04-057965	UR544015030150	1.5	4	2.3	3	50	90	1	0.3
1-04-057966	UR544015030208	1.5	4	2.3	3	8	50	1	0.3
1-04-057967	UR544015030210	1.5	4	2.3	3	10	50	2	0.3
1-04-057968	UR544015030212	1.5	4	2.3	3	12	50	2	0.3
1-04-057969	UR544015030216	1.5	4	2.3	3	16	50	2	0.3
1-04-057970	UR544015030220	1.5	4	2.3	3	20	50	2	0.3

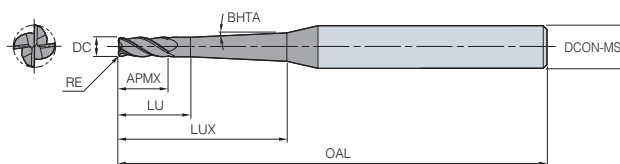
UR544

4 flutes tapered neck radius



DC	Tolerance
Ø1 ~ Ø4	0.000 ~ -0.012

p.202

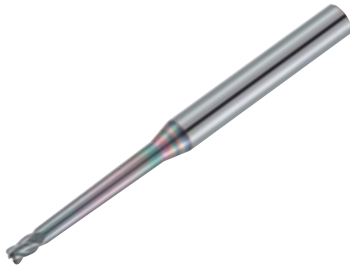


(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
1-04-057971	UR544015030225	1.5	4	2.3	3	25	60	2	0.3
1-04-057972	UR544015030230	1.5	4	2.3	3	30	70	2	0.3
1-04-057973	UR544015030240	1.5	6	2.3	3	40	80	2	0.3
1-04-057974	UR544015030250	1.5	6	2.3	3	50	90	2	0.3
1-04-057975	UR544020010110	2	4	2	5	10	50	2	0.1
1-04-057976	UR544020010112	2	4	2	5	12	50	1	0.1
1-04-057977	UR544020010116	2	4	2	5	16	50	1	0.1
1-04-057978	UR544020010120	2	4	2	5	20	50	1	0.1
1-04-057979	UR544020010125	2	4	2	5	25	60	1	0.1
1-04-057980	UR544020010130	2	4	2	5	30	70	1	0.1
1-04-057981	UR544020010140	2	6	2	5	40	80	1	0.1
1-04-057982	UR544020010150	2	6	2	5	50	100	1	0.1
1-04-057983	UR544020010160	2	6	2	5	60	100	1	0.1
1-04-057984	UR544020010180	2	6	2	5	80	140	1	0.1
1-04-057985	UR544020010210	2	4	2	5	10	50	1	0.1
1-04-057986	UR544020010212	2	4	2	5	12	50	2	0.1
1-04-057987	UR544020010216	2	4	2	5	16	50	2	0.1
1-04-057988	UR544020010220	2	4	2	5	20	50	2	0.1
1-04-057989	UR544020010225	2	4	2	5	25	60	2	0.1
1-04-057990	UR544020010230	2	4	2	5	30	70	2	0.1
1-04-057991	UR544020010240	2	6	2	5	40	80	2	0.1
1-04-057992	UR544020010250	2	6	2	5	50	100	2	0.1
1-04-057993	UR544020010260	2	6	2	5	60	100	2	0.1
1-04-057994	UR544020010280	2	8	2	5	80	140	2	0.1
1-04-057995	UR544020020110	2	4	2	5	10	50	2	0.2
1-04-057996	UR544020020112	2	4	2	5	12	50	1	0.2
1-04-057997	UR544020020116	2	4	2	5	16	50	1	0.2
1-04-057998	UR544020020120	2	4	2	5	20	50	1	0.2
1-04-057999	UR544020020125	2	4	2	5	25	60	1	0.2
1-04-058000	UR544020020130	2	4	2	5	30	70	1	0.2
1-04-058001	UR544020020140	2	6	2	5	40	80	1	0.2
1-04-058002	UR544020020150	2	6	2	5	50	100	1	0.2
1-04-058003	UR544020020160	2	6	2	5	60	100	1	0.2
1-04-058004	UR544020020180	2	6	2	5	80	140	1	0.2
1-04-058005	UR544020020210	2	4	2	5	10	50	1	0.2
1-04-058006	UR544020020212	2	4	2	5	12	50	2	0.2
1-04-058007	UR544020020216	2	4	2	5	16	50	2	0.2
1-04-058008	UR544020020220	2	4	2	5	20	50	2	0.2

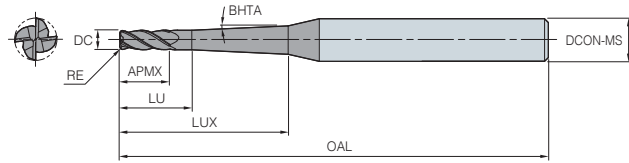
UR544

4 flutes tapered neck radius



p.202

DC	Tolerance
Ø1 ~ Ø4	0.000 ~ -0.012

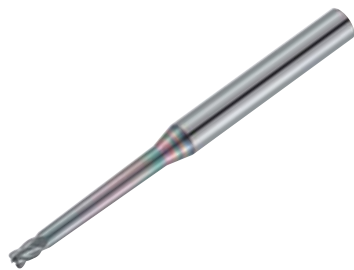


(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
1-04-058009	UR544020020225	2	4	2	5	25	60	2	0.2
1-04-058010	UR544020020230	2	4	2	5	30	70	2	0.2
1-04-058011	UR544020020240	2	6	2	5	40	80	2	0.2
1-04-058012	UR544020020250	2	6	2	5	50	100	2	0.2
1-04-058013	UR544020020260	2	6	2	5	60	100	2	0.2
1-04-058014	UR544020020280	2	8	2	5	80	140	2	0.2
1-04-058015	UR544020030110	2	4	2	5	10	50	2	0.3
1-04-058016	UR544020030112	2	4	2	5	12	50	1	0.3
1-04-058017	UR544020030116	2	4	2	5	16	50	1	0.3
1-04-058018	UR544020030120	2	4	2	5	20	50	1	0.3
1-04-058019	UR544020030125	2	4	2	5	25	60	1	0.3
1-04-058020	UR544020030130	2	4	2	5	30	70	1	0.3
1-04-058021	UR544020030140	2	6	2	5	40	80	1	0.3
1-04-058022	UR544020030150	2	6	2	5	50	100	1	0.3
1-04-058023	UR544020030160	2	6	2	5	60	100	1	0.3
1-04-058024	UR544020030180	2	6	2	5	80	140	1	0.3
1-04-058025	UR544020030210	2	4	2	5	10	50	1	0.3
1-04-058026	UR544020030212	2	4	2	5	12	50	2	0.3
1-04-058027	UR544020030216	2	4	2	5	16	50	2	0.3
1-04-058028	UR544020030220	2	4	2	5	20	50	2	0.3
1-04-058029	UR544020030225	2	4	2	5	25	60	2	0.3
1-04-058030	UR544020030230	2	4	2	5	30	70	2	0.3
1-04-058031	UR544020030240	2	6	2	5	40	80	2	0.3
1-04-058032	UR544020030250	2	6	2	5	50	100	2	0.3
1-04-058033	UR544020030260	2	6	2	5	60	100	2	0.3
1-04-058034	UR544020030280	2	8	2	5	80	140	2	0.3
1-04-058035	UR544020050110	2	4	2	5	10	50	2	0.5
1-04-058036	UR544020050112	2	4	2	5	12	50	1	0.5
1-04-058037	UR544020050116	2	4	2	5	16	50	1	0.5
1-04-058038	UR544020050120	2	4	2	5	20	50	1	0.5
1-04-058039	UR544020050125	2	4	2	5	25	60	1	0.5
1-04-058040	UR544020050130	2	4	2	5	30	70	1	0.5
1-04-058041	UR544020050140	2	6	2	5	40	80	1	0.5
1-04-058042	UR544020050150	2	6	2	5	50	100	1	0.5
1-04-058043	UR544020050160	2	6	2	5	60	100	1	0.5
1-04-058044	UR544020050180	2	6	2	5	80	140	1	0.5
1-04-058045	UR544020050210	2	4	2	5	10	50	1	0.5
1-04-058046	UR544020050212	2	4	2	5	12	50	2	0.5

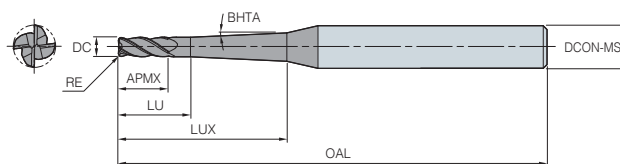
UR544

4 flutes tapered neck radius



DC	Tolerance
Ø1 ~ Ø4	0.000 ~ -0.012

p.202

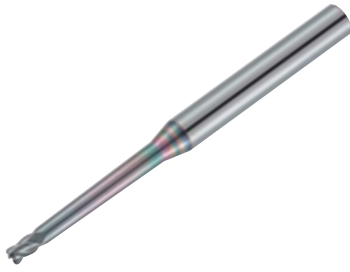


(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
1-04-058047	UR544020050216	2	4	2	5	16	50	2	0.5
1-04-058048	UR544020050220	2	4	2	5	20	50	2	0.5
1-04-058049	UR544020050225	2	4	2	5	25	60	2	0.5
1-04-058050	UR544020050230	2	4	2	5	30	70	2	0.5
1-04-058051	UR544020050240	2	6	2	5	40	80	2	0.5
1-04-058052	UR544020050250	2	6	2	5	50	100	2	0.5
1-04-058053	UR544020050260	2	6	2	5	60	100	2	0.5
1-04-058054	UR544020050280	2	8	2	5	80	140	2	0.5
1-04-058055	UR544030020116	3	6	4.5	6	16	60	2	0.2
1-04-058056	UR544030020120	3	6	4.5	6	20	65	1	0.2
1-04-058057	UR544030020130	3	6	4.5	6	30	70	1	0.2
1-04-058058	UR544030020140	3	6	4.5	6	40	80	1	0.2
1-04-058059	UR544030020150	3	6	4.5	6	50	90	1	0.2
1-04-058060	UR544030020160	3	6	4.5	6	60	100	1	0.2
1-04-058061	UR544030020216	3	6	4.5	6	16	60	1	0.2
1-04-058062	UR544030020220	3	6	4.5	6	20	65	2	0.2
1-04-058063	UR544030020230	3	6	4.5	6	30	70	2	0.2
1-04-058064	UR544030020240	3	6	4.5	6	40	80	2	0.2
1-04-058065	UR544030020250	3	8	4.5	6	50	90	2	0.2
1-04-058066	UR544030020260	3	8	4.5	6	60	100	2	0.2
1-04-058067	UR544030020270	3	8	4.5	6	70	120	2	0.2
1-04-058068	UR544030030116	3	6	4.5	6	16	60	2	0.3
1-04-058069	UR544030030120	3	6	4.5	6	20	65	1	0.3
1-04-058070	UR544030030130	3	6	4.5	6	30	70	1	0.3
1-04-058071	UR544030030140	3	6	4.5	6	40	80	1	0.3
1-04-058072	UR544030030150	3	6	4.5	6	50	90	1	0.3
1-04-058073	UR544030030160	3	6	4.5	6	60	100	1	0.3
1-04-058074	UR544030030216	3	6	4.5	6	16	60	1	0.3
1-04-058075	UR544030030220	3	6	4.5	6	20	65	2	0.3
1-04-058076	UR544030030230	3	6	4.5	6	30	70	2	0.3
1-04-058077	UR544030030240	3	6	4.5	6	40	80	2	0.3
1-04-058078	UR544030030250	3	8	4.5	6	50	90	2	0.3
1-04-058079	UR544030030260	3	8	4.5	6	60	100	2	0.3
1-04-058080	UR544030030270	3	8	4.5	6	70	120	2	0.3
1-04-058081	UR544030050116	3	6	4.5	6	16	60	2	0.5
1-04-058082	UR544030050120	3	6	4.5	6	20	65	1	0.5
1-04-058083	UR544030050130	3	6	4.5	6	30	70	1	0.5
1-04-058084	UR544030050140	3	6	4.5	6	40	80	1	0.5

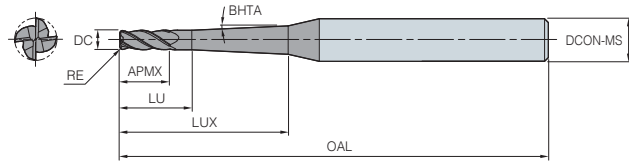
UR544

4 flutes tapered neck radius



DC	Tolerance
Ø1 ~ Ø4	0.000 ~ -0.012

p.202



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
1-04-058085	UR544030050150	3	6	4.5	6	50	90	1	0.5
1-04-058086	UR544030050160	3	6	4.5	6	60	100	1	0.5
1-04-058087	UR544030050216	3	6	4.5	6	16	60	1	0.5
1-04-058088	UR544030050220	3	6	4.5	6	20	65	2	0.5
1-04-058089	UR544030050230	3	6	4.5	6	30	70	2	0.5
1-04-058090	UR544030050240	3	6	4.5	6	40	80	2	0.5
1-04-058091	UR544030050250	3	8	4.5	6	50	90	2	0.5
1-04-058092	UR544030050260	3	8	4.5	6	60	100	2	0.5
1-04-058093	UR544030050270	3	8	4.5	6	70	120	2	0.5
1-04-058094	UR544040020140	4	6	6	8	40	90	2	0.2
1-04-058095	UR544040020150	4	6	6	8	50	100	1	0.2
1-04-058096	UR544040020160	4	6	6	8	60	110	1	0.2
1-04-058097	UR544040020170	4	8	6	8	70	120	1	0.2
1-04-058098	UR544040020240	4	8	6	8	40	90	1	0.2
1-04-058099	UR544040020250	4	8	6	8	50	100	2	0.2
1-04-058100	UR544040020260	4	8	6	8	60	110	2	0.2
1-04-058101	UR544040020270	4	10	6	8	70	120	2	0.2
1-04-058102	UR544040030140	4	6	6	8	40	90	2	0.3
1-04-058103	UR544040030150	4	6	6	8	50	100	1	0.3
1-04-058104	UR544040030160	4	6	6	8	60	110	1	0.3
1-04-058105	UR544040030170	4	8	6	8	70	120	1	0.3
1-04-058106	UR544040030240	4	8	6	8	40	90	1	0.3
1-04-058107	UR544040030250	4	8	6	8	50	100	2	0.3
1-04-058108	UR544040030260	4	8	6	8	60	110	2	0.3
1-04-058109	UR544040030270	4	10	6	8	70	120	2	0.3
1-04-058110	UR544040050140	4	6	6	8	40	90	2	0.5
1-04-058111	UR544040050150	4	6	6	8	50	100	1	0.5
1-04-058112	UR544040050160	4	6	6	8	60	110	1	0.5
1-04-058113	UR544040050170	4	8	6	8	70	120	1	0.5
1-04-058114	UR544040050240	4	8	6	8	40	90	1	0.5
1-04-058115	UR544040050250	4	8	6	8	50	100	2	0.5
1-04-058116	UR544040050260	4	8	6	8	60	110	2	0.5
1-04-058117	UR544040050270	4	10	6	8	70	120	2	0.5

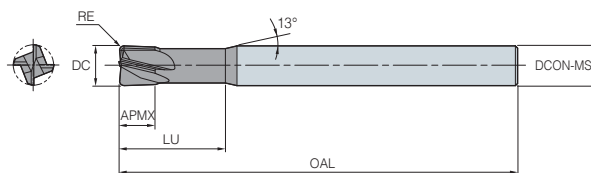
USPM4

4 flutes radius Endmill for high speed machining



DC	Tolerance
Ø1 ~ Ø20	0.000 ~ -0.030

p.203



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-058118	USPM4010-01	1	6	1	2.5	50	0.1
1-04-058119	USPM4010-02	1	6	1	2.5	50	0.2
1-04-058120	USPM4010-03	1	6	1	2.5	50	0.3
1-04-058121	USPM4015-02	1.5	6	1.5	4	50	0.2
1-04-058122	USPM4015-03	1.5	6	1.5	4	50	0.3
1-04-058123	USPM4015-05	1.5	6	1.5	4	50	0.5
1-04-058124	USPM4020-02	2	6	2	6	50	0.2
1-04-058125	USPM4020-03	2	6	2	6	50	0.3
1-04-058126	USPM4020-05	2	6	2	6	50	0.5
1-04-058127	USPM4030-02	3	6	3	8	50	0.2
1-04-058128	USPM4030-03	3	6	3	8	50	0.3
1-04-058129	USPM4030-05	3	6	3	8	50	0.5
1-04-058130	USPM4040-02	4	6	4	10	50	0.2
1-04-058131	USPM4040-03	4	6	4	10	50	0.3
1-04-058132	USPM4040-05	4	6	4	10	50	0.5
1-04-058133	USPM4040-10	4	6	4	10	50	1
1-04-058134	USPM4060-02	6	6	6	15	60	0.2
1-04-058139	USPM4060-02L	6	6	6	15	90	0.2
1-04-058135	USPM4060-03	6	6	6	15	60	0.3
1-04-058140	USPM4060-03L	6	6	6	15	90	0.3
1-04-058136	USPM4060-05	6	6	6	15	60	0.5
1-04-058141	USPM4060-05L	6	6	6	15	90	0.5
1-04-058137	USPM4060-10	6	6	6	15	60	1
1-04-058142	USPM4060-10L	6	6	6	15	90	1
1-04-058138	USPM4060-20	6	6	6	15	60	2
1-04-058143	USPM4060-20L	6	6	6	15	90	2
1-04-058144	USPM4080-02	8	8	8	20	70	0.2
1-04-058149	USPM4080-02L	8	8	8	20	100	0.2
1-04-058145	USPM4080-03	8	8	8	20	70	0.3
1-04-058150	USPM4080-03L	8	8	8	20	100	0.3
1-04-058146	USPM4080-05	8	8	8	20	70	0.5
1-04-058151	USPM4080-05L	8	8	8	20	100	0.5
1-04-058147	USPM4080-10	8	8	8	20	70	1
1-04-058152	USPM4080-10L	8	8	8	20	100	1
1-04-058148	USPM4080-20	8	8	8	20	70	2
1-04-058153	USPM4080-20L	8	8	8	20	100	2

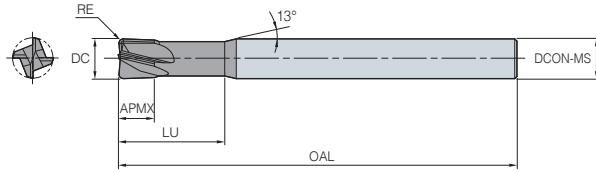
USPM4

4 flutes radius Endmill for high speed machining



DC	Tolerance
Ø1 ~ Ø20	0.000 ~ -0.030

p.203



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
1-04-058154	USPM4100-02	10	10	10	25	75	0.2
1-04-058160	USPM4100-02L	10	10	10	25	100	0.2
1-04-058155	USPM4100-03	10	10	10	25	75	0.3
1-04-058161	USPM4100-03L	10	10	10	25	100	0.3
1-04-058156	USPM4100-05	10	10	10	25	75	0.5
1-04-058162	USPM4100-05L	10	10	10	25	100	0.5
1-04-058157	USPM4100-10	10	10	10	25	75	1
1-04-058163	USPM4100-10L	10	10	10	25	100	1
1-04-058158	USPM4100-15	10	10	10	25	75	1.5
1-04-058164	USPM4100-15L	10	10	10	25	100	1.5
1-04-058159	USPM4100-20	10	10	10	25	75	2
1-04-058165	USPM4100-20L	10	10	10	25	100	2
1-04-058166	USPM4120-03	12	12	12	30	80	0.3
1-04-058172	USPM4120-03L	12	12	12	30	110	0.3
1-04-058167	USPM4120-05	12	12	12	30	80	0.5
1-04-058173	USPM4120-05L	12	12	12	30	110	0.5
1-04-058168	USPM4120-10	12	12	12	30	80	1
1-04-058174	USPM4120-10L	12	12	12	30	110	1
1-04-058169	USPM4120-15	12	12	12	30	80	1.5
1-04-058175	USPM4120-15L	12	12	12	30	110	1.5
1-04-058170	USPM4120-20	12	12	12	30	80	2
1-04-058176	USPM4120-20L	12	12	12	30	110	2
1-04-058171	USPM4120-30	12	12	12	30	80	3
1-04-058177	USPM4120-30L	12	12	12	30	110	3
1-04-058178	USPM4160-05	16	16	16	35	100	0.5
1-04-058181	USPM4160-05L	16	16	16	35	150	0.5
1-04-058179	USPM4160-10	16	16	16	35	100	1
1-04-058182	USPM4160-10L	16	16	16	35	150	1
1-04-058180	USPM4160-20	16	16	16	35	100	2
1-04-058183	USPM4160-20L	16	16	16	35	150	2
1-04-058184	USPM4200-05	20	20	20	40	100	0.5
1-04-058187	USPM4200-05L	20	20	20	40	150	0.5
1-04-058185	USPM4200-10	20	20	20	40	100	1
1-04-058188	USPM4200-10L	20	20	20	40	150	1
1-04-058186	USPM4200-20	20	20	20	40	100	2
1-04-058189	USPM4200-20L	20	20	20	40	150	2

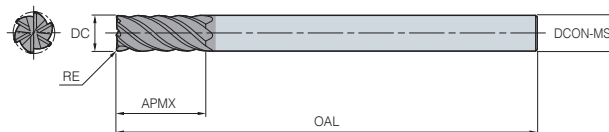
UR506A

6 flutes radius



DC	Tolerance
ALL	0 ~ -0.0012

p.204



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
6-01-084931	UR506A016020S	1/4	1/4	1/2	2 1/4	0.02
6-01-084930	UR506A016010	1/4	1/4	5/8	3	0.01
6-01-084932	UR506A016020	1/4	1/4	5/8	3	0.02
6-01-084933	UR506A016030	1/4	1/4	5/8	3	0.03
6-01-084934	UR506A020010	5/16	5/16	3/4	3.5	0.01
6-01-084935	UR506A020020S	5/16	5/16	3/4	2 1/2	0.02
6-01-084936	UR506A020020	5/16	5/16	3/4	3.5	0.02
6-01-084937	UR506A020030	5/16	5/16	3/4	3.5	0.03
6-01-084939	UR506A024020S	3/8	3/8	7/8	2 7/8	0.02
6-01-084941	UR506A024030S	3/8	3/8	7/8	2 7/8	0.03
6-01-084938	UR506A024010	3/8	3/8	1	4	0.01
6-01-084940	UR506A024020	3/8	3/8	1	4	0.02
6-01-084942	UR506A024030	3/8	3/8	1	4	0.03
6-01-084943	UR506A028010	7/16	7/16	1 1/4	4 1/4	0.01
6-01-084944	UR506A028020	7/16	7/16	1 1/4	4 1/4	0.02
6-01-084945	UR506A028030	7/16	7/16	1 1/4	4 1/4	0.03
6-01-084946	UR506A028040	7/16	7/16	1 1/4	4 1/4	0.04
6-01-084948	UR506A032020S	1/2	1/2	1	3 1/4	0.02
6-01-084950	UR506A032030S	1/2	1/2	1	3 1/4	0.03
6-01-084947	UR506A032010	1/2	1/2	1 1/2	4 1/2	0.01
6-01-084949	UR506A032020	1/2	1/2	1 1/2	4 1/2	0.02
6-01-084951	UR506A032030	1/2	1/2	1 1/2	4 1/2	0.03
6-01-084952	UR506A032040	1/2	1/2	1 1/2	4 1/2	0.04
6-01-084953	UR506A040030	5/8	5/8	1 1/4	3 5/8	0.03
6-01-084954	UR506A040060	5/8	5/8	1 1/4	3 5/8	0.06

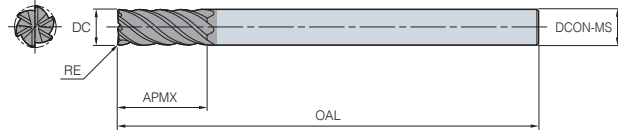
UR506

6 flutes radius



p.204

DC	Tolerance
Ø6 ~ Ø20	0.000 ~ -0.030



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
1-04-058190	UR50606003	6	6	15	90	0.3
1-04-058191	UR50606005	6	6	15	90	0.5
1-04-058192	UR50606010	6	6	15	90	1
1-04-058193	UR50608003	8	8	20	100	0.3
1-04-058194	UR50608005	8	8	20	100	0.5
1-04-058195	UR50608010	8	8	20	100	1
1-04-058196	UR50610003	10	10	25	100	0.3
1-04-058197	UR50610005	10	10	25	100	0.5
1-04-058198	UR50610010	10	10	25	100	1
1-04-058199	UR50612003	12	12	30	110	0.3
1-04-058200	UR50612005	12	12	30	110	0.5
1-04-058201	UR50612010	12	12	30	110	1
1-04-058202	UR50616005	16	16	32	150	0.5
1-04-058203	UR50616010	16	16	32	150	1
1-04-058204	UR50616015	16	16	32	150	1.5
1-04-058205	UR50616020	16	16	32	150	2
1-04-058206	UR50620005	20	20	38	150	0.5
1-04-058207	UR50620010	20	20	38	150	1
1-04-058208	UR50620015	20	20	38	150	1.5
1-04-058209	UR50620020	20	20	38	150	2

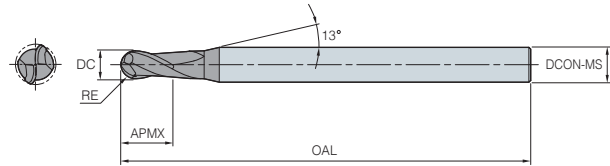
UBM502A

2 flutes miniature ball



DC	Tolerance
ALL	0 ~ -0.001

p.205



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
6-01-084395	UBM502A024	0.024	1/8	0.043	1 1/2	0.012
6-01-084396	UBM502A028	0.028	1/8	0.06	1 1/2	0.014
6-01-084397	UBM502A031	0.031	1/8	0.08	1 1/2	0.0155
6-01-084398	UBM502A035	0.035	1/8	0.087	1 1/2	0.0175
6-01-084399	UBM502A040	0.04	1/8	0.1	1 1/2	0.02
6-01-084400	UBM502A043	0.043	1/8	0.118	1 1/2	0.0215
6-01-084401	UBM502A047	0.047	1/8	0.118	1 1/2	0.0235
6-01-084402	UBM502A052	0.052	1/8	0.138	1 1/2	0.026
6-01-084403	UBM502A055	0.055	1/8	0.138	1 1/2	0.0275
6-01-084404	UBM502A062	0.062	1/8	0.157	1 1/2	0.031

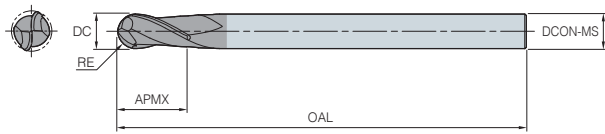
UB502A

2 flutes ball



p.205

DC	Tolerance
ALL	0 ~ -0.0012



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
6-01-084405	UB502A002	1/32	1/4	1/32	2	1/64
6-01-084406	UB502A003	3/64	3/16	3/32	2	0.0234
6-01-084407	UB502A004S	1/16	1/4	1/16	2	1/32
6-01-084408	UB502A004	1/16	3/16	5/32	2	1/32
6-01-084409	UB502A005	5/64	3/16	3/16	2	0.0391
6-01-084410	UB502A006S	3/32	1/4	3/32	2 3/8	3/64
6-01-084411	UB502A006	3/32	1/4	1/4	2 3/8	3/64
6-01-084412	UB502A008	1/8	3/16	1/4	2 3/8	1/16
6-01-084413	UB502A008L	1/8	1/8	5/16	2 3/8	1/16
6-01-084414	UB502A008X	1/8	1/4	5/16	2 3/4	1/16
6-01-084415	UB502A012	3/16	3/16	5/16	2 3/4	3/32
6-01-084416	UB502A012L	3/16	3/16	3/8	3 1/8	3/32
6-01-084417	UB502A012X	3/16	1/4	1/2	3 1/8	3/32
6-01-084418	UB502A013	13/64	1/4	5/16	2 3/8	0.102
6-01-084419	UB502A016	1/4	1/4	1/2	3 1/2	1/8
6-01-084420	UB502A018	9/32	5/16	9/16	3 1/2	9/64
6-01-084421	UB502A020	5/16	5/16	9/16	4	5/32
6-01-084422	UB502A024	3/8	3/8	5/8	2 3/8	3/16
6-01-084423	UB502A024L	3/8	3/8	3/4	4	3/16
6-01-084424	UB502A032	1/2	1/2	7/8	4 1/4	1/4
6-01-084425	UB502A040	5/8	5/8	1 1/4	5 1/2	5/16
6-01-084426	UB502A048	3/4	3/4	1 1/2	6 1/2	3/8
6-01-084427	UB502A064	1	1	2	7 1/8	1/2

UB502

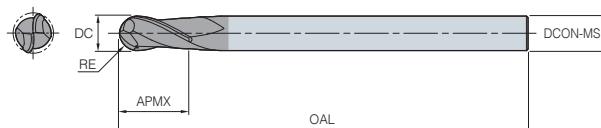
2 flutes ball



DC	Tolerance
∅0.1 ~ ∅6	0.000 ~ -0.012
∅6.5 ~ ∅25	0.000 ~ -0.015

DC6 or below Above DC6

p.206



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
6-01-075272	UB502001S	0.1	4	0.1	40	0.05
6-01-075273	UB502001	0.1	4	0.2	40	0.05
6-01-075274	UB502001S3	0.1	3	0.2	40	0.05
6-01-075275	UB5020015S	0.15	4	0.15	40	0.075
6-01-075276	UB5020015	0.15	4	0.3	40	0.075
6-01-075277	UB5020015S3	0.15	3	0.3	40	0.075
6-01-075278	UB502002S	0.2	4	0.2	40	0.1
6-01-075279	UB502002	0.2	4	0.4	40	0.1
6-01-075280	UB502002S3	0.2	3	0.4	40	0.1
6-01-075281	UB502003S	0.3	4	0.3	40	0.15
6-01-075282	UB502003	0.3	4	0.6	40	0.15
6-01-075283	UB502003S3	0.3	3	0.6	40	0.15
6-01-075284	UB502004S	0.4	4	0.4	40	0.2
6-01-075285	UB502004	0.4	4	0.8	40	0.2
6-01-075286	UB502004S3	0.4	3	0.8	40	0.2
6-01-075287	UB502005S	0.5	4	0.5	40	0.25
6-01-075288	UB502005	0.5	4	1	40	0.25
6-01-075289	UB502005S3	0.5	3	1	40	0.25
6-01-075290	UB502006S	0.6	4	0.6	40	0.3
6-01-075291	UB502006	0.6	4	1.2	40	0.3
6-01-075292	UB502006S3	0.6	3	1.2	40	0.3
6-01-075293	UB502007S	0.7	4	0.7	40	0.35
6-01-075294	UB502007	0.7	4	1.4	40	0.35
6-01-075295	UB502007S3	0.7	3	1.4	40	0.35
6-01-075296	UB502008S	0.8	4	0.8	40	0.4
6-01-075297	UB502008	0.8	4	1.6	40	0.4
6-01-075298	UB502008S3	0.8	3	1.6	40	0.4
6-01-075299	UB502009S	0.9	4	0.9	40	0.45
6-01-075300	UB502009	0.9	4	1.8	40	0.45
6-01-075301	UB502009S3	0.9	3	1.8	40	0.45
6-01-075302	UB502010S	1	6	1.5	40	0.5
6-01-075303	UB502010S3	1	3	2.5	50	0.5
6-01-075304	UB502010S4	1	4	2.5	50	0.5
6-01-075305	UB502010	1	6	2.5	50	0.5
6-01-075306	UB502010070	1	6	2.5	70	0.5
6-01-075307	UB502010100	1	6	2.5	100	0.5

UB502

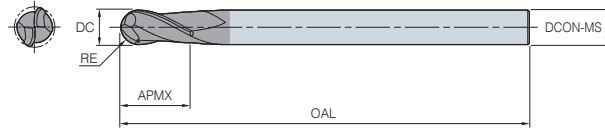
2 flutes ball



DC	Tolerance
∅0.1 ~ ∅6	0.000 ~ -0.012
∅6.5 ~ ∅25	0.000 ~ -0.015

DC6 or below Above DC6

p.206



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
6-01-075308	UB502012S	1.2	6	2	40	0.6
6-01-075309	UB502012S3	1.2	3	3	50	0.6
6-01-075310	UB502012S4	1.2	4	3	50	0.6
6-01-075311	UB502012	1.2	6	3	50	0.6
6-01-075312	UB502012070	1.2	6	3	70	0.6
6-01-075313	UB502012100	1.2	6	3	100	0.6
6-01-075314	UB502015S	1.5	6	2.5	40	0.75
6-01-075315	UB502015S3	1.5	3	4	50	0.75
6-01-075316	UB502015S4	1.5	4	4	50	0.75
6-01-075317	UB502015	1.5	6	4	50	0.75
6-01-075318	UB502015070	1.5	6	4	70	0.75
6-01-075319	UB502015100	1.5	6	4	100	0.75
6-01-075320	UB502020S	2	6	3	40	1
6-01-075321	UB502020S3	2	3	5	50	1
6-01-075322	UB502020S4	2	4	5	50	1
6-01-075323	UB502020	2	6	5	50	1
6-01-075324	UB502020080	2	6	5	80	1
6-01-075325	UB502020100	2	6	5	100	1
6-01-075326	UB502025S	2.5	6	4	40	1.25
6-01-075327	UB502025S3	2.5	3	6	60	1.25
6-01-075328	UB502025S4	2.5	4	6	60	1.25
6-01-075329	UB502025	2.5	6	6	60	1.25
6-01-075330	UB502025080	2.5	6	6	80	1.25
6-01-075331	UB502025100	2.5	6	6	100	1.25
6-01-075332	UB502030S	3	6	4.5	40	1.5
6-01-075333	UB502030S3	3	3	6	60	1.5
6-01-075334	UB502030S4	3	4	6	60	1.5
6-01-075335	UB502030	3	6	6	60	1.5
6-01-075336	UB502030080	3	6	6	80	1.5
6-01-075337	UB502030100	3	6	6	100	1.5
6-01-075338	UB502035	3.5	6	8	70	1.75
6-01-075339	UB502040S	4	6	6	50	2
6-01-075340	UB502040S4	4	4	8	70	2
6-01-075341	UB502040	4	6	8	70	2
6-01-075342	UB502040100S4	4	4	8	100	2
6-01-075343	UB502040120S4	4	4	8	120	2

UB502

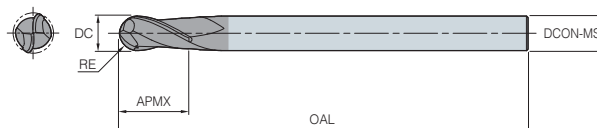
2 flutes ball



DC	Tolerance
∅0.1 ~ ∅6	0.000 ~ -0.012
∅6.5 ~ ∅25	0.000 ~ -0.015

DC6 or below Above DC6

p.206



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
6-01-075344	UB502040100	4	6	8	100	2
6-01-075345	UB502040120	4	6	8	120	2
6-01-075346	UB502045	4.5	6	9	80	2.25
6-01-075347	UB502050S	5	6	7.5	60	2.5
6-01-075348	UB502050	5	6	10	80	2.5
6-01-075349	UB502050S5	5	5	10	80	2.5
6-01-075350	UB502055	5.5	6	11	90	2.75
6-01-075351	UB502060S	6	6	9	50	3
6-01-075352	UB502060060	6	6	9	60	3
6-01-075353	UB502060080	6	6	9	80	3
6-01-075354	UB502060	6	6	12	90	3
6-01-075355	UB502060110	6	6	12	110	3
6-01-075356	UB502060130	6	6	12	130	3
6-01-075357	UB502060150	6	6	12	150	3
6-01-075358	UB502065	6.5	8	13	90	3.25
6-01-075359	UB502070	7	8	14	90	3.5
6-01-075360	UB502080S	8	8	12	50	4
6-01-075361	UB502080060	8	8	12	60	4
6-01-075362	UB502080080	8	8	12	80	4
6-01-075363	UB502080090	8	8	12	90	4
6-01-075364	UB502080	8	8	14	100	4
6-01-075365	UB502080130	8	8	14	130	4
6-01-075366	UB502080150	8	8	14	150	4
6-01-075367	UB502085	8.5	10	16	100	4.25
6-01-075368	UB502090	9	10	18	100	4.5
6-01-075369	UB502100S	10	10	15	50	5
6-01-075370	UB502100060	10	10	15	60	5
6-01-075371	UB502100080	10	10	15	80	5
6-01-075372	UB502100090	10	10	15	90	5
6-01-075373	UB502100	10	10	18	100	5
6-01-075374	UB502100130	10	10	18	130	5
6-01-075375	UB502100150	10	10	18	150	5
6-01-075376	UB502100180	10	10	18	180	5
6-01-075377	UB502100200	10	10	18	200	5
6-01-075378	UB502110	11	12	20	100	5.5
6-01-075379	UB502120S	12	12	18	60	6

UB502

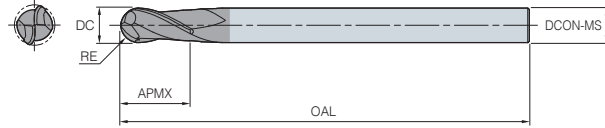
2 flutes ball



DC	Tolerance
Ø0.1 ~ Ø6	0.000 ~ -0.012
Ø6.5 ~ Ø25	0.000 ~ -0.015

DC6 or below Above DC6

p.206



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
6-01-075380	UB502120080	12	12	18	80	6
6-01-075381	UB502120090	12	12	18	90	6
6-01-075382	UB502120100	12	12	18	100	6
6-01-075383	UB502120	12	12	24	110	6
6-01-075384	UB502120130	12	12	24	130	6
6-01-075385	UB502120150	12	12	24	150	6
6-01-075386	UB502120180	12	12	24	180	6
6-01-075387	UB502120200	12	12	24	200	6
6-01-075388	UB502130	13	12	24	100	6.5
6-01-075389	UB502140S12	14	12	26	100	7
6-01-075390	UB502140	14	14	26	100	7
6-01-075391	UB502140S16	14	16	26	100	7
6-01-075392	UB502150	15	16	28	140	7.5
6-01-075393	UB502160100	16	16	24	100	8
6-01-075394	UB502160130	16	16	24	130	8
6-01-075395	UB502160	16	16	30	150	8
6-01-075396	UB502160180	16	16	30	180	8
6-01-075397	UB502160200	16	16	30	200	8
6-01-075398	UB502180S16	18	16	34	150	9
6-01-075399	UB502180	18	18	34	150	9
6-01-075400	UB502200100	20	20	30	100	10
6-01-075401	UB502200130	20	20	30	130	10
6-01-075402	UB502200	20	20	38	150	10
6-01-075403	UB502200200	20	20	38	200	10
6-01-075404	UB502250120	25	25	50	120	12.5
6-01-075405	UB502250180	25	25	50	180	12.5

UB502P

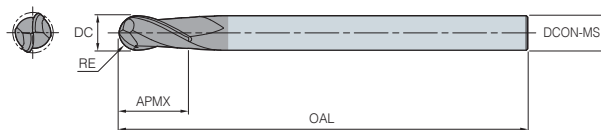
2 flutes high precision ball



DC	Tolerance
∅0.1 ~ ∅6	0.000 ~ -0.012
∅8 ~ ∅12	0.000 ~ -0.015

DC6 or below Above DC6

p.206



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
6-01-075406	UB502001P	0.1	4	0.2	40	0.05
6-01-075407	UB5020015P	0.15	4	0.3	40	0.075
6-01-075408	UB502002P	0.2	4	0.4	40	0.1
6-01-075409	UB502003P	0.3	4	0.6	40	0.15
6-01-075410	UB502004P	0.4	4	0.8	40	0.2
6-01-075411	UB502005P	0.5	4	1	40	0.25
6-01-075412	UB502006P	0.6	4	1.2	40	0.3
6-01-075413	UB502007P	0.7	4	1.4	40	0.35
6-01-075414	UB502008P	0.8	4	1.6	40	0.4
6-01-075415	UB502009P	0.9	4	1.8	40	0.45
6-01-075416	UB502010P	1	6	2.5	50	0.5
6-01-075417	UB502012P	1.2	6	3	50	0.6
6-01-075418	UB502015P	1.5	6	4	50	0.75
6-01-075419	UB502020P	2	6	5	50	1
6-01-075420	UB502025P	2.5	6	6	60	1.25
6-01-075421	UB502030P	3	6	6	60	1.5
6-01-075422	UB502040P	4	6	8	70	2
6-01-075423	UB502050P	5	6	10	80	2.5
6-01-075424	UB502060P	6	6	12	90	3
6-01-075425	UB502080P	8	8	14	100	4
6-01-075426	UB502100P	10	10	18	100	5
6-01-075427	UB502120P	12	12	24	110	6

USB502

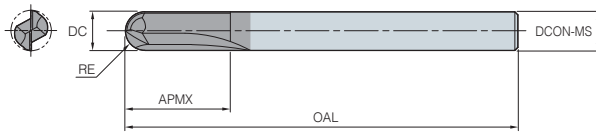
2 flutes straight ball



DC	Tolerance
Ø3 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø20	0.000 ~ -0.015

DC6 or below Above DC6

p.206



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
6-01-076143	USB502030	3	6	10	70	1.5
6-01-076144	USB502040	4	6	12	70	2
6-01-076145	USB502050	5	6	18	90	2.5
6-01-076146	USB502060	6	6	20	90	3
6-01-076147	USB502080	8	8	25	100	4
6-01-076148	USB502100	10	10	30	100	5
6-01-076149	USB502120	12	12	32	110	6
6-01-076150	USB502160	16	16	35	150	8
6-01-076151	USB502200	20	20	40	150	10

UTB502

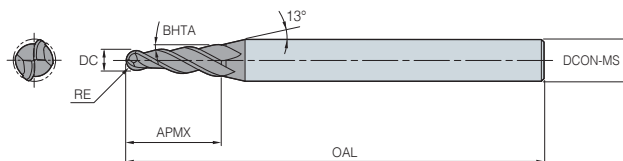
2 flutes tapered ball



DC	Tolerance
Ø0.3 ~ Ø2	0.000 ~ -0.030

Above DC6

p.207



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	BHTA(°)	OAL	RE
6-01-077582	UTB502003005	0.3	4	1.2	0.5	40	0.15
6-01-077583	UTB50200301	0.3	4	1.2	1	40	0.15
6-01-077584	UTB502003015	0.3	4	1.2	1.5	40	0.15
6-01-077585	UTB50200302	0.3	4	1.2	2	40	0.15
6-01-077586	UTB50200303	0.3	4	1.2	3	40	0.15
6-01-077587	UTB50200305	0.3	4	1.2	5	40	0.15
6-01-077588	UTB50200307	0.3	4	1.5	7	40	0.15
6-01-077589	UTB50200310	0.3	4	1.5	10	40	0.15
6-01-077590	UTB502004005	0.4	4	1.6	0.5	40	0.2
6-01-077591	UTB50200401	0.4	4	1.6	1	40	0.2
6-01-077592	UTB502004015	0.4	4	1.6	1.5	40	0.2
6-01-077593	UTB50200402	0.4	4	1.6	2	40	0.2
6-01-077594	UTB50200403	0.4	4	1.6	3	40	0.2
6-01-077595	UTB50200405	0.4	4	1.6	5	40	0.2
6-01-077596	UTB50200407	0.4	4	2	7	40	0.2
6-01-077597	UTB50200410	0.4	4	2	10	40	0.2
6-01-077598	UTB502005005	0.5	4	2	0.5	45	0.25
6-01-077599	UTB50200501	0.5	4	2	1	45	0.25
6-01-077600	UTB502005015	0.5	4	2	1.5	45	0.25
6-01-077601	UTB50200502	0.5	4	2	2	45	0.25
6-01-077602	UTB50200503	0.5	4	2	3	45	0.25
6-01-077603	UTB50200505	0.5	4	2	5	45	0.25
6-01-077604	UTB50200507	0.5	4	2.5	7	45	0.25
6-01-077605	UTB50200510	0.5	4	2.5	10	45	0.25
6-01-077606	UTB502006005	0.6	4	2	0.5	45	0.3
6-01-077607	UTB50200601	0.6	4	2	1	45	0.3
6-01-077608	UTB502006015	0.6	4	2	1.5	45	0.3
6-01-077609	UTB50200602	0.6	4	2	2	45	0.3
6-01-077610	UTB50200603	0.6	4	2	3	45	0.3
6-01-077611	UTB50200605	0.6	4	2	5	45	0.3
6-01-077612	UTB50200607	0.6	4	2.5	7	45	0.3
6-01-077613	UTB50200610	0.6	4	2.5	10	45	0.3
6-01-077614	UTB502007005	0.7	4	2.5	0.5	45	0.35
6-01-077615	UTB50200701	0.7	4	2.5	1	45	0.35
6-01-077616	UTB502007015	0.7	4	2.5	1.5	45	0.35
6-01-077617	UTB50200702	0.7	4	2.5	2	45	0.35

UTB502

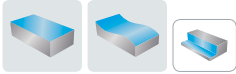
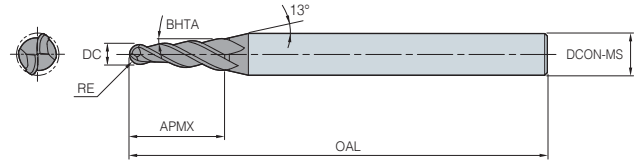
2 flutes tapered ball



DC	Tolerance
Ø0.3 ~ Ø2	0.000 ~ -0.030

Above DC6

p.207



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	BHTA(°)	OAL	RE
6-01-077618	UTB50200703	0.7	4	2.5	3	45	0.35
6-01-077619	UTB50200705	0.7	4	2.5	5	45	0.35
6-01-077620	UTB50200707	0.7	4	3	7	45	0.35
6-01-077621	UTB50200710	0.7	4	3	10	45	0.35
6-01-077622	UTB502008005	0.8	4	3.2	0.5	45	0.4
6-01-077623	UTB50200801	0.8	4	3.2	1	45	0.4
6-01-077624	UTB502008015	0.8	4	3.2	1.5	45	0.4
6-01-077625	UTB50200802	0.8	4	3.2	2	45	0.4
6-01-077626	UTB50200803	0.8	4	3.2	3	45	0.4
6-01-077627	UTB50200805	0.8	4	3.2	5	45	0.4
6-01-077628	UTB50200807	0.8	4	3.2	7	45	0.4
6-01-077629	UTB50200810	0.8	4	3.2	10	45	0.4
6-01-077630	UTB502010005	1	4	4	0.5	50	0.5
6-01-077631	UTB50201001	1	4	4	1	50	0.5
6-01-077632	UTB502010015	1	4	4	1.5	50	0.5
6-01-077633	UTB50201002	1	4	4	2	50	0.5
6-01-077634	UTB50201003	1	4	4	3	50	0.5
6-01-077635	UTB50201005	1	4	4	5	50	0.5
6-01-077636	UTB50201007	1	4	4	7	50	0.5
6-01-077637	UTB50201010	1	4	4	10	50	0.5
6-01-077638	UTB502015005	1.5	4	6	0.5	50	0.75
6-01-077639	UTB50201501	1.5	4	6	1	50	0.75
6-01-077640	UTB502015015	1.5	4	6	1.5	50	0.75
6-01-077641	UTB50201502	1.5	4	7	2	50	0.75
6-01-077642	UTB50201503	1.5	4	8	3	50	0.75
6-01-077643	UTB50201505	1.5	4	10	5	50	0.75
6-01-077644	UTB50201507	1.5	4	10	7	50	0.75
6-01-077645	UTB50201510	1.5	6	10	10	50	0.75
6-01-077646	UTB502020005	2	4	6	0.5	50	1
6-01-077647	UTB50202001	2	4	6	1	50	1
6-01-077648	UTB502020015	2	4	6	1.5	50	1
6-01-077649	UTB50202002	2	4	10	2	50	1
6-01-077650	UTB50202003	2	4	10	3	50	1
6-01-077651	UTB50202005	2	4	10	5	50	1
6-01-077652	UTB50202007	2	6	10	7	50	1
6-01-077653	UTB50202010	2	6	11	10	50	1

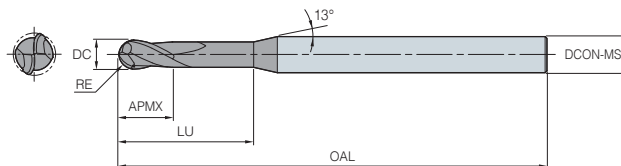
UB512A

2 flutes neck type ball



DC	Tolerance
ALL	0 ~ -0.0012

p.208



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
6-01-084428	UB512A002S	1/32	3/16	1/32	5/64	1 3/4	1/64
6-01-084429	UB512A002	1/32	3/16	1/32	1/8	1 3/4	1/64
6-01-084430	UB512A003S	3/64	3/16	3/64	1/8	2	0.0234
6-01-084431	UB512A003	3/64	3/16	3/64	5/32	2	0.0234
6-01-084432	UB512A004S	1/16	3/16	1/16	5/32	2	1/32
6-01-084433	UB512A004	1/16	3/16	1/16	1/4	2	1/32
6-01-084511	UB512A005S	5/64	3/16	5/64	1/4	2	0.0391
6-01-084435	UB512A005	5/64	3/16	5/64	5/16	2	0.0391
6-01-084436	UB512A008S	1/8	1/4	1/8	5/16	2	1/16
6-01-084437	UB512A008	1/8	1/4	1/8	3/8	2	1/16
6-01-084438	UB512A012S	3/16	1/4	5/32	3/8	2	3/32
6-01-084439	UB512A012	3/16	1/4	5/32	1/2	2	3/32
6-01-084440	UB512A013	13/64	1/4	1/4	1 3/16	2 3/4	0.102
6-01-084441	UB512A016S	1/4	1/4	5/16	3/4	2 3/8	1/8
6-01-084442	UB512A016	1/4	1/4	5/16	1 3/16	2 3/8	1/8
6-01-084443	UB512A016L	1/4	1/4	1/2	7/8	3 1/8	1/8
6-01-084444	UB512A020S	5/16	5/16	3/8	1	2 3/4	5/32
6-01-084445	UB512A020	5/16	5/16	9/16	1 1/16	3 1/2	5/32
6-01-084446	UB512A020L	5/16	5/16	9/16	1 3/8	4	5/32
6-01-084447	UB512A024S	3/8	3/8	1/2	1 3/16	3	3/16
6-01-084448	UB512A024	3/8	3/8	11/16	1 3/16	4	3/16
6-01-084449	UB512A024L	3/8	3/8	3/4	1 1/4	4	3/16
6-01-084450	UB512A032S	1/2	1/2	9/16	1 1/4	3 1/8	1/4
6-01-084451	UB512A032	1/2	1/2	7/8	1 1/4	4 1/4	1/4
6-01-084452	UB512A032L	1/2	1/2	7/8	1 3/8	4 1/4	1/4
6-01-084453	UB512A040	5/8	5/8	1 1/4	2	5 1/2	5/16
6-01-084454	UB512A048	3/4	3/4	1 1/2	2 1/4	6 1/4	3/8
6-01-084455	UB512A064	1	1	2 1/8	3	7	1/2

UB512

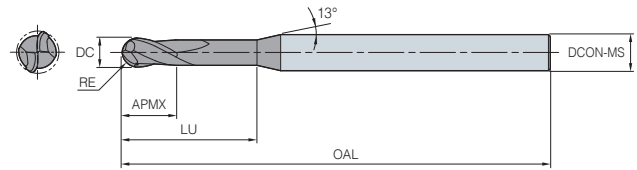
2 flutes neck type ball



DC	Tolerance
Ø0.1 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø12	0.000 ~ -0.015

DC6 or below Above DC6

p.209~213



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
6-01-075428	UB512001002	0.1	4	0.1	0.2	40	0.05
6-01-075429	UB512001003	0.1	4	0.1	0.3	40	0.05
6-01-075430	UB512001005	0.1	4	0.1	0.5	40	0.05
6-01-075431	UB51200101	0.1	4	0.1	1	40	0.05
6-01-075432	UB512002005	0.2	4	0.2	0.5	40	0.1
6-01-075433	UB51200201	0.2	4	0.2	1	40	0.1
6-01-075434	UB512002015	0.2	4	0.2	1.5	40	0.1
6-01-075435	UB51200202	0.2	4	0.2	2	40	0.1
6-01-075436	UB51200203	0.2	4	0.2	3	40	0.1
6-01-075437	UB51200301	0.3	4	0.3	1	40	0.15
6-01-075438	UB512003015	0.3	4	0.3	1.5	40	0.15
6-01-075439	UB51200302	0.3	4	0.3	2	40	0.15
6-01-075440	UB512003025	0.3	4	0.3	2.5	40	0.15
6-01-075441	UB51200303	0.3	4	0.3	3	40	0.15
6-01-075442	UB51200304	0.3	4	0.3	4	40	0.15
6-01-075443	UB51200305	0.3	4	0.3	5	40	0.15
6-01-075444	UB51200401	0.4	4	0.4	1	40	0.2
6-01-075445	UB512004015	0.4	4	0.4	1.5	40	0.2
6-01-075446	UB51200402	0.4	4	0.4	2	40	0.2
6-01-075447	UB512004025	0.4	4	0.4	2.5	40	0.2
6-01-075448	UB51200403	0.4	4	0.4	3	40	0.2
6-01-075449	UB51200404	0.4	4	0.4	4	40	0.2
6-01-075450	UB51200405	0.4	4	0.4	5	40	0.2
6-01-075451	UB51200406	0.4	4	0.4	6	40	0.2
6-01-075452	UB51200408	0.4	4	0.4	8	40	0.2
6-01-075453	UB51200410	0.4	4	0.4	10	40	0.2
6-01-075454	UB51200501	0.5	4	0.5	1	45	0.25
6-01-075455	UB512005015	0.5	4	0.5	1.5	45	0.25
6-01-075456	UB51200502	0.5	4	0.5	2	45	0.25
6-01-075457	UB512005025	0.5	4	0.5	2.5	45	0.25
6-01-075458	UB51200503	0.5	4	0.5	3	45	0.25
6-01-075459	UB51200504	0.5	4	0.5	4	45	0.25
6-01-075460	UB51200505	0.5	4	0.5	5	45	0.25
6-01-075461	UB51200506	0.5	4	0.5	6	45	0.25
6-01-075462	UB51200508	0.5	4	0.5	8	45	0.25
6-01-075463	UB51200510	0.5	4	0.5	10	45	0.25
6-01-075464	UB51200512	0.5	4	0.5	12	45	0.25
6-01-075465	UB51200514	0.5	4	0.5	14	45	0.25

UB512

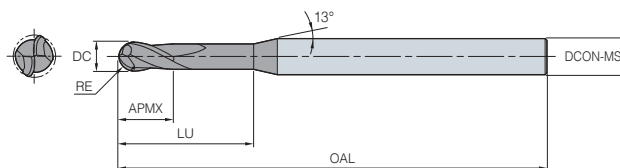
2 flutes neck type ball



DC	Tolerance
∅0.1 ~ ∅6	0.000 ~ -0.012
∅8 ~ ∅12	0.000 ~ -0.015

DC6 or below Above DC6

p.209-213



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
6-01-075466	UB51200516	0.5	4	0.5	16	45	0.25
6-01-075467	UB51200601	0.6	4	0.6	1	45	0.3
6-01-075468	UB51200602	0.6	4	0.6	2	45	0.3
6-01-075469	UB51200603	0.6	4	0.6	3	45	0.3
6-01-075470	UB51200604	0.6	4	0.6	4	45	0.3
6-01-075471	UB51200605	0.6	4	0.6	5	45	0.3
6-01-075472	UB51200606	0.6	4	0.6	6	45	0.3
6-01-075473	UB51200608	0.6	4	0.6	8	45	0.3
6-01-075474	UB51200610	0.6	4	0.6	10	45	0.3
6-01-075475	UB51200612	0.6	4	0.6	12	45	0.3
6-01-075476	UB51200614	0.6	4	0.6	14	45	0.3
6-01-075477	UB51200616	0.6	4	0.6	16	45	0.3
6-01-075478	UB51200702	0.7	4	0.7	2	45	0.35
6-01-075479	UB51200704	0.7	4	0.7	4	45	0.35
6-01-075480	UB51200706	0.7	4	0.7	6	45	0.35
6-01-075481	UB51200708	0.7	4	0.7	8	45	0.35
6-01-075482	UB51200710	0.7	4	0.7	10	45	0.35
6-01-075483	UB51200712	0.7	4	0.7	12	45	0.35
6-01-075484	UB51200801	0.8	4	0.8	1	45	0.4
6-01-075485	UB51200802	0.8	4	0.8	2	45	0.4
6-01-075486	UB51200803	0.8	4	0.8	3	45	0.4
6-01-075487	UB51200804	0.8	4	0.8	4	45	0.4
6-01-075488	UB51200805	0.8	4	0.8	5	45	0.4
6-01-075489	UB51200806	0.8	4	0.8	6	45	0.4
6-01-075490	UB51200807	0.8	4	0.8	7	45	0.4
6-01-075491	UB51200808	0.8	4	0.8	8	45	0.4
6-01-075492	UB51200810	0.8	4	0.8	10	45	0.4
6-01-075493	UB51200812	0.8	4	0.8	12	45	0.4
6-01-075494	UB51200814	0.8	4	0.8	14	45	0.4
6-01-075495	UB51200816	0.8	4	0.8	16	45	0.4
6-01-075496	UB51200820	0.8	4	0.8	20	45	0.4
6-01-075497	UB51200904	0.9	4	0.9	4	45	0.45
6-01-075498	UB51200906	0.9	4	0.9	6	45	0.45
6-01-075499	UB51200908	0.9	4	0.9	8	45	0.45
6-01-075500	UB51200910	0.9	4	0.9	10	45	0.45
6-01-075501	UB51201002	1	4	1	2	50	0.5
6-01-075502	UB512010025	1	4	1	2.5	50	0.5
6-01-075503	UB51201003	1	4	1	3	50	0.5

UB512

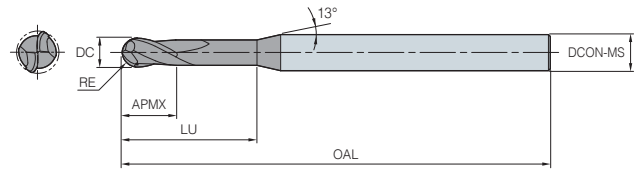
2 flutes neck type ball



DC	Tolerance
Ø0.1 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø12	0.000 ~ -0.015

DC6 or below Above DC6

p.209~213



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
6-01-075504	UB51201004	1	4	1	4	50	0.5
6-01-075505	UB51201005	1	4	1	5	50	0.5
6-01-075506	UB51201006	1	4	1	6	50	0.5
6-01-075507	UB51201007	1	4	1	7	50	0.5
6-01-075508	UB51201008	1	4	1	8	50	0.5
6-01-075509	UB51201009	1	4	1	9	50	0.5
6-01-075510	UB51201010	1	4	1	10	50	0.5
6-01-075511	UB51201012	1	4	1	12	50	0.5
6-01-075512	UB51201014	1	4	1	14	50	0.5
6-01-075513	UB51201016	1	4	1	16	50	0.5
6-01-075514	UB51201018	1	4	1	18	50	0.5
6-01-075515	UB51201020	1	4	1	20	55	0.5
6-01-075516	UB51201022	1	4	1	22	60	0.5
6-01-075517	UB51201026	1	4	1	26	60	0.5
6-01-075518	UB51201030	1	4	1	30	70	0.5
6-01-075519	UB51201040	1	4	1	40	80	0.5
6-01-075520	UB51201050	1	4	1	50	100	0.5
6-01-075521	UB51201204	1.2	4	1.2	4	50	0.6
6-01-075522	UB51201206	1.2	4	1.2	6	50	0.6
6-01-075523	UB51201208	1.2	4	1.2	8	50	0.6
6-01-075524	UB51201210	1.2	4	1.2	10	50	0.6
6-01-075525	UB51201212	1.2	4	1.2	12	50	0.6
6-01-075526	UB51201214	1.2	4	1.2	14	50	0.6
6-01-075527	UB51201216	1.2	4	1.2	16	50	0.6
6-01-075528	UB51201220	1.2	4	1.2	20	55	0.6
6-01-075529	UB51201226	1.2	4	1.2	26	60	0.6
6-01-075530	UB51201406	1.4	4	1.4	6	50	0.7
6-01-075531	UB51201408	1.4	4	1.4	8	50	0.7
6-01-075532	UB51201410	1.4	4	1.4	10	50	0.7
6-01-075533	UB51201412	1.4	4	1.4	12	50	0.7
6-01-075534	UB51201416	1.4	4	1.4	16	50	0.7
6-01-075535	UB51201503	1.5	4	1.5	3	50	0.75
6-01-075536	UB51201504	1.5	4	1.5	4	50	0.75
6-01-075537	UB51201505	1.5	4	1.5	5	50	0.75
6-01-075538	UB51201506	1.5	4	1.5	6	50	0.75
6-01-075539	UB51201507	1.5	4	1.5	7	50	0.75
6-01-075540	UB51201508	1.5	4	1.5	8	50	0.75
6-01-075541	UB51201510	1.5	4	1.5	10	50	0.75

UB512

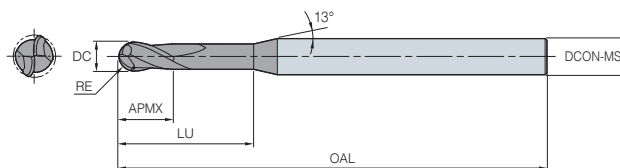
2 flutes neck type ball



DC	Tolerance
Ø0.1 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø12	0.000 ~ -0.015

DC6 or below Above DC6

p.209-213



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
6-01-075542	UB51201512	1.5	4	1.5	12	50	0.75
6-01-075543	UB51201514	1.5	4	1.5	14	50	0.75
6-01-075544	UB51201516	1.5	4	1.5	16	50	0.75
6-01-075545	UB51201518	1.5	4	1.5	18	50	0.75
6-01-075546	UB51201520	1.5	4	1.5	20	55	0.75
6-01-075547	UB51201522	1.5	4	1.5	22	60	0.75
6-01-075548	UB51201526	1.5	4	1.5	26	60	0.75
6-01-075549	UB51201530	1.5	4	1.5	30	70	0.75
6-01-075550	UB51201535	1.5	4	1.5	35	70	0.75
6-01-075551	UB51201540	1.5	4	1.5	40	80	0.75
6-01-075552	UB51201604	1.6	4	1.6	4	50	0.8
6-01-075553	UB51201606	1.6	4	1.6	6	50	0.8
6-01-075554	UB51201608	1.6	4	1.6	8	50	0.8
6-01-075555	UB51201610	1.6	4	1.6	10	50	0.8
6-01-075556	UB51201612	1.6	4	1.6	12	50	0.8
6-01-075557	UB51201616	1.6	4	1.6	16	50	0.8
6-01-075558	UB51201620	1.6	4	1.6	20	50	0.8
6-01-075559	UB51201804	1.8	4	1.8	4	50	0.9
6-01-075560	UB51201806	1.8	4	1.8	6	50	0.9
6-01-075561	UB51201808	1.8	4	1.8	8	50	0.9
6-01-075562	UB51201810	1.8	4	1.8	10	50	0.9
6-01-075563	UB51201812	1.8	4	1.8	12	50	0.9
6-01-075564	UB51201816	1.8	4	1.8	16	50	0.9
6-01-075565	UB51201820	1.8	4	1.8	20	50	0.9
6-01-075566	UB51202004	2	4	2	4	50	1
6-01-075567	UB51202005	2	4	2	5	50	1
6-01-075568	UB51202006	2	4	2	6	50	1
6-01-075569	UB51202008	2	4	2	8	50	1
6-01-075570	UB51202010	2	4	2	10	50	1
6-01-075571	UB51202012	2	4	2	12	50	1
6-01-075572	UB51202014	2	4	2	14	50	1
6-01-075573	UB51202016	2	4	2	16	50	1
6-01-075574	UB51202018	2	4	2	18	55	1
6-01-075575	UB51202020	2	4	2	20	55	1
6-01-075576	UB51202022	2	4	2	22	60	1
6-01-075577	UB51202026	2	4	2	26	60	1
6-01-075578	UB51202030	2	4	2	30	70	1
6-01-075579	UB51202035	2	4	2	35	70	1

UB512

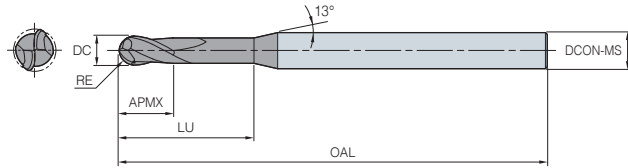
2 flutes neck type ball



DC	Tolerance
Ø0.1 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø12	0.000 ~ -0.015

DC6 or below Above DC6

p.209~213



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
6-01-075580	UB51202040	2	4	2	40	80	1
6-01-075581	UB51202045	2	4	2	45	90	1
6-01-075582	UB51202050	2	4	2	50	100	1
6-01-075583	UB51202060	2	4	2	60	110	1
6-01-075584	UB51202508	2.5	4	2.5	8	50	1.25
6-01-075585	UB51202510	2.5	4	2.5	10	50	1.25
6-01-075586	UB51202512	2.5	4	2.5	12	50	1.25
6-01-075587	UB51202516	2.5	4	2.5	16	50	1.25
6-01-075588	UB51202520	2.5	4	2.5	20	50	1.25
6-01-075589	UB51202522	2.5	4	2.5	22	60	1.25
6-01-075590	UB51202526	2.5	4	2.5	26	60	1.25
6-01-075591	UB51202530	2.5	4	2.5	30	70	1.25
6-01-075592	UB51202535	2.5	4	2.5	35	70	1.25
6-01-075593	UB51202540	2.5	4	2.5	40	80	1.25
6-01-075594	UB51202545	2.5	4	2.5	45	90	1.25
6-01-075595	UB51202550	2.5	4	2.5	50	100	1.25
6-01-075596	UB51203006	3	6	3	6	50	1.5
6-01-075597	UB51203008	3	6	3	8	50	1.5
6-01-075598	UB51203010	3	6	3	10	50	1.5
6-01-075599	UB51203012	3	6	3	12	50	1.5
6-01-075600	UB51203014	3	6	3	14	60	1.5
6-01-075601	UB51203016	3	6	3	16	60	1.5
6-01-075602	UB51203018	3	6	3	18	60	1.5
6-01-075603	UB51203020	3	6	3	20	60	1.5
6-01-075604	UB51203022	3	6	3	22	65	1.5
6-01-075605	UB51203026	3	6	3	26	65	1.5
6-01-075606	UB51203030	3	6	3	30	70	1.5
6-01-075607	UB51203035	3	6	3	35	70	1.5
6-01-075608	UB51203040	3	6	3	40	80	1.5
6-01-075609	UB51203045	3	6	3	45	90	1.5
6-01-075610	UB51203050	3	6	3	50	100	1.5
6-01-075611	UB51203060	3	6	3	60	100	1.5
6-01-075612	UB51204008	4	6	4	8	50	2
6-01-075613	UB51204010	4	6	4	10	50	2
6-01-075614	UB51204012	4	6	4	12	50	2
6-01-075615	UB51204014	4	6	4	14	60	2
6-01-075616	UB51204016	4	6	4	16	60	2
6-01-075617	UB51204018	4	6	4	18	60	2

UB512

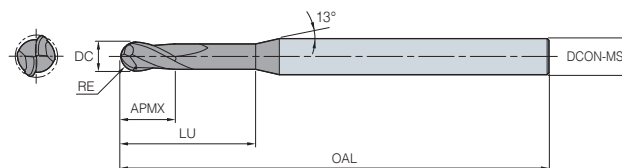
2 flutes neck type ball



DC	Tolerance
∅0.1 ~ ∅6	0.000 ~ -0.012
∅8 ~ ∅12	0.000 ~ -0.015

DC6 or below Above DC6

p.209-213



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
6-01-075618	UB51204020	4	6	4	20	60	2
6-01-075619	UB51204022	4	6	4	22	65	2
6-01-075620	UB51204026	4	6	4	26	65	2
6-01-075621	UB51204030	4	6	4	30	70	2
6-01-075622	UB51204035	4	6	4	35	70	2
6-01-075623	UB51204040	4	6	4	40	80	2
6-01-075624	UB51204045	4	6	4	45	90	2
6-01-075625	UB51204050	4	6	4	50	100	2
6-01-075626	UB51204055	4	6	4	55	100	2
6-01-075627	UB51204060	4	6	4	60	100	2
6-01-075628	UB51205015	5	6	6	15	60	2.5
6-01-075629	UB51205020	5	6	6	20	60	2.5
6-01-075630	UB51205026	5	6	6	26	65	2.5
6-01-075631	UB51205030	5	6	6	30	70	2.5
6-01-075632	UB51205035	5	6	6	35	70	2.5
6-01-075633	UB51205040	5	6	6	40	80	2.5
6-01-075634	UB51205045	5	6	6	45	90	2.5
6-01-075635	UB51205050	5	6	6	50	100	2.5
6-01-075636	UB51205055	5	6	6	55	100	2.5
6-01-075637	UB51205060	5	6	6	60	100	2.5
6-01-075638	UB51206020	6	6	8	20	60	3
6-01-075640	UB5120602090	6	6	12	20	90	3
6-01-075639	UB51206030	6	6	8	30	60	3
6-01-075641	UB5120603090	6	6	12	30	90	3
6-01-075642	UB51208025	8	8	10	25	70	4
6-01-075644	UB51208025100	8	8	14	25	100	4
6-01-075643	UB51208035	8	8	10	35	70	4
6-01-075645	UB51208035100	8	8	14	35	100	4
6-01-075646	UB51210030	10	10	12	30	75	5
6-01-075648	UB51210030100	10	10	18	30	100	5
6-01-075647	UB51210040	10	10	12	40	75	5
6-01-075649	UB51210040100	10	10	18	40	100	5
6-01-075650	UB51212032	12	12	14	32	80	6
6-01-075652	UB51212032110	12	12	22	32	110	6
6-01-075651	UB51212045	12	12	14	45	80	6
6-01-075653	UB51212045110	12	12	22	45	110	6

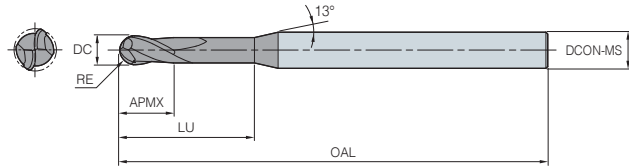
UB512S6

2 flutes neck type ball (shank 6)



DC	Tolerance
Ø0.5 ~ Ø2	0.000 ~ -0.012

p.209-213



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
6-01-075654	UB51200501S6	0.5	6	0.5	1	45	0.25
6-01-075655	UB51200502S6	0.5	6	0.5	2	45	0.25
6-01-075656	UB51200504S6	0.5	6	0.5	4	45	0.25
6-01-075657	UB51200601S6	0.6	6	0.6	1	45	0.3
6-01-075658	UB51200602S6	0.6	6	0.6	2	45	0.3
6-01-075659	UB51200603S6	0.6	6	0.6	3	45	0.3
6-01-075660	UB51200604S6	0.6	6	0.6	4	45	0.3
6-01-075661	UB51200605S6	0.6	6	0.6	5	45	0.3
6-01-075662	UB51200606S6	0.6	6	0.6	6	45	0.3
6-01-075663	UB51200608S6	0.6	6	0.6	8	45	0.3
6-01-075664	UB51200610S6	0.6	6	0.6	10	45	0.3
6-01-075665	UB51200612S6	0.6	6	0.6	12	45	0.3
6-01-075666	UB51200614S6	0.6	6	0.6	14	45	0.3
6-01-075667	UB51200616S6	0.6	6	0.6	16	45	0.3
6-01-075668	UB51200801S6	0.8	6	0.8	1	45	0.4
6-01-075669	UB51200802S6	0.8	6	0.8	2	45	0.4
6-01-075670	UB51200803S6	0.8	6	0.8	3	45	0.4
6-01-075671	UB51200804S6	0.8	6	0.8	4	45	0.4
6-01-075672	UB51200805S6	0.8	6	0.8	5	45	0.4
6-01-075673	UB51200806S6	0.8	6	0.8	6	45	0.4
6-01-075674	UB51200808S6	0.8	6	0.8	8	45	0.4
6-01-075675	UB51200810S6	0.8	6	0.8	10	45	0.4
6-01-075676	UB51200812S6	0.8	6	0.8	12	45	0.4
6-01-075677	UB51200814S6	0.8	6	0.8	14	45	0.4
6-01-075678	UB51200816S6	0.8	6	0.8	16	45	0.4
6-01-075679	UB51200820S6	0.8	6	0.8	20	55	0.4
6-01-075680	UB51201002S6	1	6	1	2	50	0.5
6-01-075681	UB51201003S6	1	6	1	3	50	0.5
6-01-075682	UB51201004S6	1	6	1	4	50	0.5
6-01-075683	UB51201005S6	1	6	1	5	50	0.5
6-01-075684	UB51201006S6	1	6	1	6	50	0.5
6-01-075685	UB51201007S6	1	6	1	7	50	0.5
6-01-075686	UB51201008S6	1	6	1	8	50	0.5
6-01-075687	UB51201009S6	1	6	1	9	50	0.5
6-01-075688	UB51201010S6	1	6	1	10	50	0.5
6-01-075689	UB51201012S6	1	6	1	12	50	0.5
6-01-075690	UB51201014S6	1	6	1	14	50	0.5
6-01-075691	UB51201016S6	1	6	1	16	50	0.5

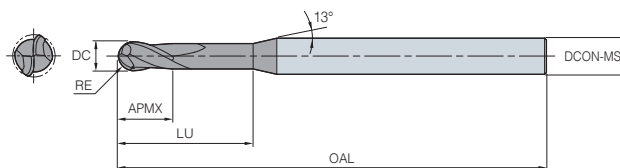
UB512S6

2 flutes neck type ball (shank 6)



DC	Tolerance
Ø0.5 ~ Ø2	0.000 ~ -0.012

p.209-213



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
6-01-075692	UB51201018S6	1	6	1	18	50	0.5
6-01-075693	UB51201020S6	1	6	1	20	55	0.5
6-01-075694	UB51201022S6	1	6	1	22	60	0.5
6-01-075695	UB51201026S6	1	6	1	26	60	0.5
6-01-075696	UB51201030S6	1	6	1	30	70	0.5
6-01-075697	UB51201503S6	1.5	6	1.5	3	50	0.75
6-01-075698	UB51201504S6	1.5	6	1.5	4	50	0.75
6-01-075699	UB51201506S6	1.5	6	1.5	6	50	0.75
6-01-075700	UB51201508S6	1.5	6	1.5	8	50	0.75
6-01-075701	UB51201510S6	1.5	6	1.5	10	50	0.75
6-01-075702	UB51201512S6	1.5	6	1.5	12	50	0.75
6-01-075703	UB51201514S6	1.5	6	1.5	14	50	0.75
6-01-075704	UB51201516S6	1.5	6	1.5	16	50	0.75
6-01-075705	UB51201518S6	1.5	6	1.5	18	50	0.75
6-01-075706	UB51201520S6	1.5	6	1.5	20	55	0.75
6-01-075707	UB51201522S6	1.5	6	1.5	22	60	0.75
6-01-075708	UB51201526S6	1.5	6	1.5	26	60	0.75
6-01-075709	UB51201530S6	1.5	6	1.5	30	70	0.75
6-01-075710	UB51201535S6	1.5	6	1.5	35	70	0.75
6-01-075711	UB51201540S6	1.5	6	1.5	40	80	0.75
6-01-075712	UB51202004S6	2	6	2	4	50	1
6-01-075713	UB51202006S6	2	6	2	6	50	1
6-01-075714	UB51202008S6	2	6	2	8	50	1
6-01-075715	UB51202010S6	2	6	2	10	50	1
6-01-075716	UB51202012S6	2	6	2	12	50	1
6-01-075717	UB51202014S6	2	6	2	14	50	1
6-01-075718	UB51202016S6	2	6	2	16	50	1
6-01-075719	UB51202018S6	2	6	2	18	50	1
6-01-075720	UB51202020S6	2	6	2	20	50	1
6-01-075721	UB51202022S6	2	6	2	22	60	1
6-01-075722	UB51202026S6	2	6	2	26	60	1
6-01-075723	UB51202030S6	2	6	2	30	70	1
6-01-075724	UB51202035S6	2	6	2	35	70	1
6-01-075725	UB51202040S6	2	6	2	40	80	1
6-01-075726	UB51202045S6	2	6	2	45	90	1
6-01-075727	UB51202050S6	2	6	2	50	100	1

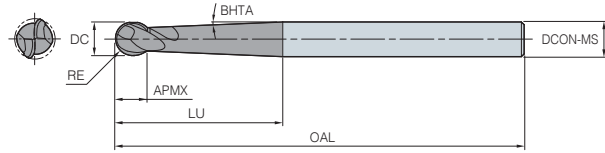
UB532A

2 flutes lollipop type ball



p.214

DC	Tolerance
ALL	0 ~ -0.0012



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	BHTA(°)	RE
6-01-084456	UB532A008	1/8	1/4	0.098	1.5	3	1.5	1/16
6-01-084457	UB532A012	3/16	1/4	0.148	1.5	3	1.5	3/32
6-01-084458	UB532A013	13/64	1/4	0.172	1.5	3	1.5	7/64
6-01-084459	UB532A016	1/4	3/8	0.197	2.5	4	1.5	1/8
6-01-084460	UB532A020	5/16	3/8	0.246	2.47	4	1.5	5/32
6-01-084461	UB532A024	3/8	1/2	0.295	2.5	4	1.5	3/16
6-01-084462	UB532A032	1/2	1/2	0.393	2	4	1.5	1/4

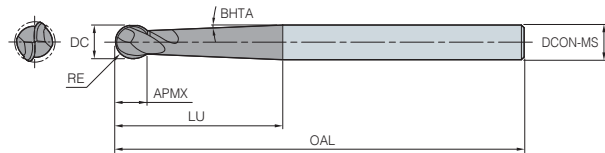
UB532

2 flutes lollipop type ball



p.214

DC	Tolerance
Ø3 ~ Ø12	0.000 ~ -0.030



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	BHTA(°)	RE
6-01-076136	UB532030	3	6	2.3	16	80	1.5	1.5
6-01-076137	UB532040	4	6	3.1	20	80	1.5	2
6-01-076138	UB532050	5	6	3.9	25	80	1.5	2.5
6-01-076139	UB532060	6	6	4.9	30	100	1.5	3
6-01-076140	UB532080	8	8	6.3	35	100	1.5	4
6-01-076141	UB532100	10	10	7.9	40	100	1.5	5
6-01-076142	UB532120	12	12	9.5	50	100	1.5	6

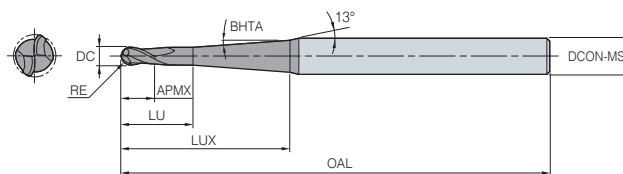
UB542A

2 flutes tapered neck ball



DC	Tolerance
ALL	0 ~ -0.0012

p.215



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
6-01-084463	UB542A00415	1/16	1/4	5/32	15/64	7/8	2 3/8	1°30'	1/32
6-01-084464	UB542A00430	1/16	1/4	5/32	15/64	1 5/8	3 1/8	3°	1/32
6-01-084465	UB542A00815	1/8	1/4	1/4	21/64	2 1/16	3 5/8	1°30'	1/16
6-01-084466	UB542A01215	3/16	3/8	3/8	29/64	2 3/8	4 3/8	1°30'	3/32
6-01-084467	UB542A01215L	3/16	3/8	9/16	0.667	2 13/16	6	1°30'	3/32
6-01-084468	UB542A01220	3/16	3/8	9/16	0.659	3 11/32	7 3/4	2°	3/32
6-01-084469	UB542A01615	1/4	3/8	1/2	5/8	2 1/16	4 3/8	1°30'	1/8
6-01-084470	UB542A01620	1/4	1/2	3/4	0.859	4 7/16	7 3/4	2°	1/8
6-01-084471	UB542A01625	1/4	1/2	3/4	0.857	3 23/32	6	2°30'	1/8
6-01-084473	UB542A02015	5/16	1/2	9/16	11/16	2 1/16	4 3/4	1°30'	5/32
6-01-084472	UB542A020133	5/16	1/2	3/4	0.868	4 29/32	7 3/4	1°20'	5/32
6-01-084474	UB542A020175	5/16	1/2	3/4	0.871	3 15/16	6	1°45'	5/32
6-01-084475	UB542A02415	3/8	1/2	11/16	13/16	2 3/8	5 1/16	1°30'	3/16
6-01-084476	UB542A02420	3/8	5/8	1 3/16	1.326	4 29/32	7 3/4	2°	3/16
6-01-084477	UB542A02425	3/8	5/8	1 3/16	1.325	4 3/16	6	2°30'	3/16
6-01-084479	UB542A03215	1/2	3/4	7/8	1	3 1/4	6 3/8	1°30'	1/4
6-01-084478	UB542A032133	1/2	5/8	1 3/16	1.309	4	7 3/4	1°20'	1/4
6-01-084480	UB542A032175	1/2	5/8	1 3/16	1.329	3 3/8	6	1°45'	1/4

UB542

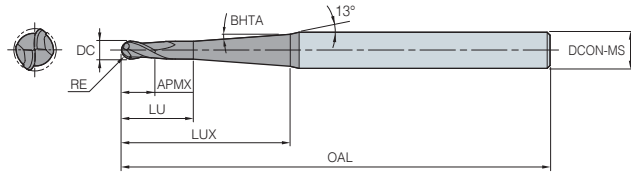
2 flutes tapered neck ball



DC	Tolerance
Ø0.1 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø12	0.000 ~ -0.015

DC6 or below Above DC6

p.215



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
6-01-075728	UB54200105005	0.1	4	0.1	-	0.5	40	0.5	0.05
6-01-075729	UB5420010501	0.1	4	0.1	-	1	40	0.5	0.05
6-01-075730	UB54200110005	0.1	4	0.1	-	0.5	40	1	0.05
6-01-075731	UB5420011001	0.1	4	0.1	-	1	40	1	0.05
6-01-075732	UB54200115005	0.1	4	0.1	-	0.5	40	1.5	0.05
6-01-075733	UB5420011501	0.1	4	0.1	-	1	40	1.5	0.05
6-01-075734	UB54200120005	0.1	4	0.1	-	0.5	40	2	0.05
6-01-075735	UB5420012001	0.1	4	0.1	-	1	40	2	0.05
6-01-075736	UB54200130005	0.1	4	0.1	-	0.5	40	3	0.05
6-01-075737	UB5420013001	0.1	4	0.1	-	1	40	3	0.05
6-01-075738	UB5420020501	0.2	4	0.2	0.4	1	40	0.5	0.1
6-01-075739	UB5420020502	0.2	4	0.2	0.4	2	40	0.5	0.1
6-01-075740	UB5420020503	0.2	4	0.2	0.4	3	40	0.5	0.1
6-01-075741	UB5420021001	0.2	4	0.2	0.4	1	40	1	0.1
6-01-075742	UB5420021002	0.2	4	0.2	0.4	2	40	1	0.1
6-01-075743	UB5420021003	0.2	4	0.2	0.4	3	40	1	0.1
6-01-075744	UB5420021501	0.2	4	0.2	0.4	1	40	1.5	0.1
6-01-075745	UB5420021502	0.2	4	0.2	0.4	2	40	1.5	0.1
6-01-075746	UB5420021503	0.2	4	0.2	0.4	3	40	1.5	0.1
6-01-075747	UB5420022001	0.2	4	0.2	0.4	1	40	2	0.1
6-01-075748	UB5420022002	0.2	4	0.2	0.4	2	40	2	0.1
6-01-075749	UB5420022003	0.2	4	0.2	0.4	3	40	2	0.1
6-01-075750	UB5420023001	0.2	4	0.2	0.4	1	40	3	0.1
6-01-075751	UB5420023002	0.2	4	0.2	0.4	2	40	3	0.1
6-01-075752	UB5420023003	0.2	4	0.2	0.4	3	40	3	0.1
6-01-075753	UB5420025002	0.2	4	0.2	0.4	2	40	5	0.1
6-01-075754	UB5420025003	0.2	4	0.2	0.4	3	40	5	0.1
6-01-075755	UB5420030502	0.3	4	0.3	0.6	2	40	0.5	0.15
6-01-075756	UB5420030503	0.3	4	0.3	0.6	3	40	0.5	0.15
6-01-075757	UB5420030504	0.3	4	0.3	0.6	4	40	0.5	0.15
6-01-075758	UB5420030505	0.3	4	0.3	0.6	5	40	0.5	0.15
6-01-075759	UB5420031002	0.3	4	0.3	0.6	2	40	1	0.15
6-01-075760	UB5420031003	0.3	4	0.3	0.6	3	40	1	0.15
6-01-075761	UB5420031004	0.3	4	0.3	0.6	4	40	1	0.15
6-01-075762	UB5420031005	0.3	4	0.3	0.6	5	40	1	0.15
6-01-075763	UB5420031502	0.3	4	0.3	0.6	2	40	1.5	0.15
6-01-075764	UB5420031503	0.3	4	0.3	0.6	3	40	1.5	0.15
6-01-075765	UB5420031504	0.3	4	0.3	0.6	4	40	1.5	0.15

UB542

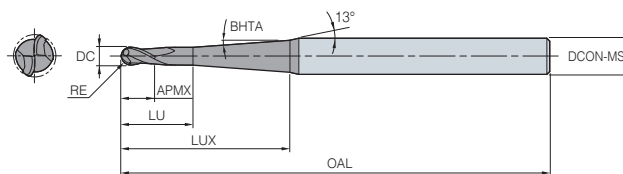
2 flutes tapered neck ball



DC	Tolerance
Ø0.1 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø12	0.000 ~ -0.015

DC6 or below Above DC6

p.215



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
6-01-075766	UB5420031505	0.3	4	0.3	0.6	5	40	1.5	0.15
6-01-075767	UB5420032002	0.3	4	0.3	0.6	2	40	2	0.15
6-01-075768	UB5420032003	0.3	4	0.3	0.6	3	40	2	0.15
6-01-075769	UB5420032004	0.3	4	0.3	0.6	4	40	2	0.15
6-01-075770	UB5420032005	0.3	4	0.3	0.6	5	40	2	0.15
6-01-075771	UB5420033002	0.3	4	0.3	0.6	2	40	3	0.15
6-01-075772	UB5420033003	0.3	4	0.3	0.6	3	40	3	0.15
6-01-075773	UB5420033004	0.3	4	0.3	0.6	4	40	3	0.15
6-01-075774	UB5420033005	0.3	4	0.3	0.6	5	40	3	0.15
6-01-075775	UB5420035005	0.3	4	0.3	0.6	5	40	5	0.15
6-01-075776	UB5420040502	0.4	4	0.4	0.8	2	50	0.5	0.2
6-01-075777	UB5420040503	0.4	4	0.4	0.8	3	50	0.5	0.2
6-01-075778	UB5420040504	0.4	4	0.4	0.8	4	50	0.5	0.2
6-01-075779	UB5420040505	0.4	4	0.4	0.8	5	50	0.5	0.2
6-01-075780	UB5420040506	0.4	4	0.4	0.8	6	50	0.5	0.2
6-01-075781	UB5420041002	0.4	4	0.4	0.8	2	50	1	0.2
6-01-075782	UB5420041003	0.4	4	0.4	0.8	3	50	1	0.2
6-01-075783	UB5420041004	0.4	4	0.4	0.8	4	50	1	0.2
6-01-075784	UB5420041005	0.4	4	0.4	0.8	5	50	1	0.2
6-01-075785	UB5420041006	0.4	4	0.4	0.8	6	50	1	0.2
6-01-075786	UB5420041502	0.4	4	0.4	0.8	2	50	1.5	0.2
6-01-075787	UB5420041503	0.4	4	0.4	0.8	3	50	1.5	0.2
6-01-075788	UB5420041504	0.4	4	0.4	0.8	4	50	1.5	0.2
6-01-075789	UB5420041505	0.4	4	0.4	0.8	5	50	1.5	0.2
6-01-075790	UB5420041506	0.4	4	0.4	0.8	6	50	1.5	0.2
6-01-075791	UB5420042002	0.4	4	0.4	0.8	2	50	2	0.2
6-01-075792	UB5420042003	0.4	4	0.4	0.8	3	50	2	0.2
6-01-075793	UB5420042004	0.4	4	0.4	0.8	4	50	2	0.2
6-01-075794	UB5420042005	0.4	4	0.4	0.8	5	50	2	0.2
6-01-075795	UB5420042006	0.4	4	0.4	0.8	6	50	2	0.2
6-01-075796	UB5420043002	0.4	4	0.4	0.8	2	50	3	0.2
6-01-075797	UB5420043003	0.4	4	0.4	0.8	3	50	3	0.2
6-01-075798	UB5420043004	0.4	4	0.4	0.8	4	50	3	0.2
6-01-075799	UB5420043005	0.4	4	0.4	0.8	5	50	3	0.2
6-01-075800	UB5420043006	0.4	4	0.4	0.8	6	50	3	0.2
6-01-075801	UB5420045004	0.4	4	0.4	0.8	4	50	5	0.2
6-01-075802	UB5420045006	0.4	4	0.4	0.8	6	50	5	0.2
6-01-075803	UB5420050504	0.5	4	0.5	1	4	50	0.5	0.25

UB542

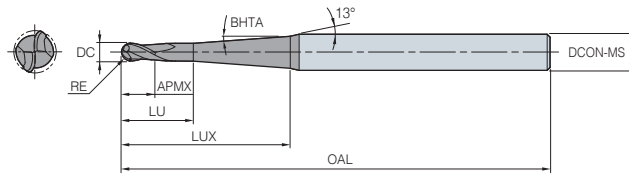
2 flutes tapered neck ball



DC	Tolerance
Ø0.1 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø12	0.000 ~ -0.015

DC6 or below Above DC6

p.215



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
6-01-075804	UB5420050506	0.5	4	0.5	1	6	50	0.5	0.25
6-01-075805	UB5420050508	0.5	4	0.5	1	8	50	0.5	0.25
6-01-075806	UB5420050510	0.5	4	0.5	1	10	50	0.5	0.25
6-01-075807	UB5420051004	0.5	4	0.5	1	4	50	1	0.25
6-01-075808	UB5420051006	0.5	4	0.5	1	6	50	1	0.25
6-01-075809	UB5420051008	0.5	4	0.5	1	8	50	1	0.25
6-01-075810	UB5420051010	0.5	4	0.5	1	10	50	1	0.25
6-01-075811	UB5420051504	0.5	4	0.5	1	4	50	1.5	0.25
6-01-075812	UB5420051506	0.5	4	0.5	1	6	50	1.5	0.25
6-01-075813	UB5420051508	0.5	4	0.5	1	8	50	1.5	0.25
6-01-075814	UB5420051510	0.5	4	0.5	1	10	50	1.5	0.25
6-01-075815	UB5420052004	0.5	4	0.5	1	4	50	2	0.25
6-01-075816	UB5420052006	0.5	4	0.5	1	6	50	2	0.25
6-01-075817	UB5420052008	0.5	4	0.5	1	8	50	2	0.25
6-01-075818	UB5420052010	0.5	4	0.5	1	10	50	2	0.25
6-01-075819	UB5420053004	0.5	4	0.5	1	4	50	3	0.25
6-01-075820	UB5420053006	0.5	4	0.5	1	6	50	3	0.25
6-01-075821	UB5420053008	0.5	4	0.5	1	8	50	3	0.25
6-01-075822	UB5420053010	0.5	4	0.5	1	10	50	3	0.25
6-01-075823	UB5420060504	0.6	4	0.6	1.2	4	50	0.5	0.3
6-01-075824	UB5420060506	0.6	4	0.6	1.2	6	50	0.5	0.3
6-01-075825	UB5420060508	0.6	4	0.6	1.2	8	50	0.5	0.3
6-01-075826	UB5420060510	0.6	4	0.6	1.2	10	50	0.5	0.3
6-01-075827	UB5420060512	0.6	4	0.6	1.2	12	50	0.5	0.3
6-01-075828	UB5420061004	0.6	4	0.6	1.2	4	50	1	0.3
6-01-075829	UB5420061006	0.6	4	0.6	1.2	6	50	1	0.3
6-01-075830	UB5420061008	0.6	4	0.6	1.2	8	50	1	0.3
6-01-075831	UB5420061010	0.6	4	0.6	1.2	10	50	1	0.3
6-01-075832	UB5420061012	0.6	4	0.6	1.2	12	50	1	0.3
6-01-075833	UB5420061504	0.6	4	0.6	1.2	4	50	1.5	0.3
6-01-075834	UB5420061506	0.6	4	0.6	1.2	6	50	1.5	0.3
6-01-075835	UB5420061508	0.6	4	0.6	1.2	8	50	1.5	0.3
6-01-075836	UB5420061510	0.6	4	0.6	1.2	10	50	1.5	0.3
6-01-075837	UB5420061512	0.6	4	0.6	1.2	12	50	1.5	0.3
6-01-075838	UB5420062004	0.6	4	0.6	1.2	4	50	2	0.3
6-01-075839	UB5420062006	0.6	4	0.6	1.2	6	50	2	0.3
6-01-075840	UB5420062008	0.6	4	0.6	1.2	8	50	2	0.3
6-01-075841	UB5420062010	0.6	4	0.6	1.2	10	50	2	0.3

UB542

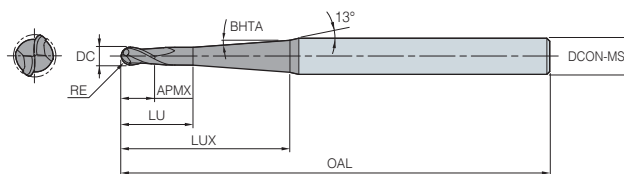
2 flutes tapered neck ball



DC	Tolerance
∅0.1 ~ ∅6	0.000 ~ -0.012
∅8 ~ ∅12	0.000 ~ -0.015

DC6 or below Above DC6

p.215



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
6-01-075842	UB5420062012	0.6	4	0.6	1.2	12	50	2	0.3
6-01-075843	UB5420063004	0.6	4	0.6	1.2	4	50	3	0.3
6-01-075844	UB5420063006	0.6	4	0.6	1.2	6	50	3	0.3
6-01-075845	UB5420063008	0.6	4	0.6	1.2	8	50	3	0.3
6-01-075846	UB5420063010	0.6	4	0.6	1.2	10	50	3	0.3
6-01-075847	UB5420063012	0.6	4	0.6	1.2	12	50	3	0.3
6-01-075848	UB5420080504	0.8	4	0.8	1.6	4	50	0.5	0.4
6-01-075849	UB5420080506	0.8	4	0.8	1.6	6	50	0.5	0.4
6-01-075850	UB5420080508	0.8	4	0.8	1.6	8	50	0.5	0.4
6-01-075851	UB5420080510	0.8	4	0.8	1.6	10	50	0.5	0.4
6-01-075852	UB5420080512	0.8	4	0.8	1.6	12	50	0.5	0.4
6-01-075853	UB5420080516	0.8	4	0.8	1.6	16	50	0.5	0.4
6-01-075854	UB5420081004	0.8	4	0.8	1.6	4	50	1	0.4
6-01-075855	UB5420081006	0.8	4	0.8	1.6	6	50	1	0.4
6-01-075856	UB5420081008	0.8	4	0.8	1.6	8	50	1	0.4
6-01-075857	UB5420081010	0.8	4	0.8	1.6	10	50	1	0.4
6-01-075858	UB5420081012	0.8	4	0.8	1.6	12	50	1	0.4
6-01-075859	UB5420081016	0.8	4	0.8	1.6	16	50	1	0.4
6-01-075860	UB5420081504	0.8	4	0.8	1.6	4	50	1.5	0.4
6-01-075861	UB5420081506	0.8	4	0.8	1.6	6	50	1.5	0.4
6-01-075862	UB5420081508	0.8	4	0.8	1.6	8	50	1.5	0.4
6-01-075863	UB5420081510	0.8	4	0.8	1.6	10	50	1.5	0.4
6-01-075864	UB5420081512	0.8	4	0.8	1.6	12	50	1.5	0.4
6-01-075865	UB5420081516	0.8	4	0.8	1.6	16	50	1.5	0.4
6-01-075866	UB5420082004	0.8	4	0.8	1.6	4	50	2	0.4
6-01-075867	UB5420082006	0.8	4	0.8	1.6	6	50	2	0.4
6-01-075868	UB5420082008	0.8	4	0.8	1.6	8	50	2	0.4
6-01-075869	UB5420082010	0.8	4	0.8	1.6	10	50	2	0.4
6-01-075870	UB5420082012	0.8	4	0.8	1.6	12	50	2	0.4
6-01-075871	UB5420082016	0.8	4	0.8	1.6	16	50	2	0.4
6-01-075872	UB5420083004	0.8	4	0.8	1.6	4	50	3	0.4
6-01-075873	UB5420083006	0.8	4	0.8	1.6	6	50	3	0.4
6-01-075874	UB5420083008	0.8	4	0.8	1.6	8	50	3	0.4
6-01-075875	UB5420083010	0.8	4	0.8	1.6	10	50	3	0.4
6-01-075876	UB5420083012	0.8	4	0.8	1.6	12	50	3	0.4
6-01-075877	UB5420083016	0.8	4	0.8	1.6	16	50	3	0.4
6-01-075878	UB5420100506	1	4	1	2.5	6	50	0.5	0.5
6-01-075879	UB5420100508	1	4	1	2.5	8	50	0.5	0.5

UB542

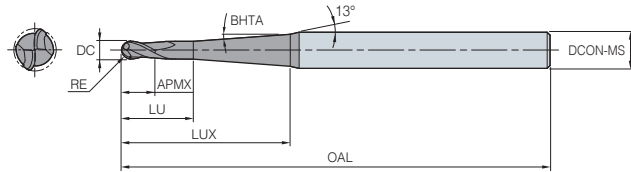
2 flutes tapered neck ball



DC	Tolerance
∅0.1 ~ ∅6	0.000 ~ -0.012
∅8 ~ ∅12	0.000 ~ -0.015

DC6 or below Above DC6

p.215



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
6-01-075880	UB5420100510	1	4	1	2.5	10	50	0.5	0.5
6-01-075881	UB5420100512	1	4	1	2.5	12	50	0.5	0.5
6-01-075882	UB5420100516	1	4	1	2.5	16	50	0.5	0.5
6-01-075883	UB5420100520	1	4	1	2.5	20	50	0.5	0.5
6-01-075884	UB5420100525	1	4	1	2.5	25	60	0.5	0.5
6-01-075885	UB5420100530	1	4	1	2.5	30	70	0.5	0.5
6-01-075886	UB5420100540	1	4	1	2.5	40	80	0.5	0.5
6-01-075887	UB5420100550	1	4	1	2.5	50	90	0.5	0.5
6-01-075888	UB5420101006	1	4	1	2.5	6	50	1	0.5
6-01-075889	UB5420101008	1	4	1	2.5	8	50	1	0.5
6-01-075890	UB5420101010	1	4	1	2.5	10	50	1	0.5
6-01-075891	UB5420101012	1	4	1	2.5	12	50	1	0.5
6-01-075892	UB5420101016	1	4	1	2.5	16	50	1	0.5
6-01-075893	UB5420101020	1	4	1	2.5	20	50	1	0.5
6-01-075894	UB5420101025	1	4	1	2.5	25	60	1	0.5
6-01-075895	UB5420101030	1	4	1	2.5	30	70	1	0.5
6-01-075896	UB5420101040	1	4	1	2.5	40	80	1	0.5
6-01-075897	UB5420101050	1	4	1	2.5	50	90	1	0.5
6-01-075898	UB5420101506	1	4	1	2.5	6	50	1.5	0.5
6-01-075899	UB5420101508	1	4	1	2.5	8	50	1.5	0.5
6-01-075900	UB5420101510	1	4	1	2.5	10	50	1.5	0.5
6-01-075901	UB5420101512	1	4	1	2.5	12	50	1.5	0.5
6-01-075902	UB5420101516	1	4	1	2.5	16	50	1.5	0.5
6-01-075903	UB5420101520	1	4	1	2.5	20	50	1.5	0.5
6-01-075904	UB5420101525	1	4	1	2.5	25	60	1.5	0.5
6-01-075905	UB5420101530	1	4	1	2.5	30	70	1.5	0.5
6-01-075906	UB5420101540	1	4	1	2.5	40	80	1.5	0.5
6-01-075907	UB5420101550	1	4	1	2.5	50	90	1.5	0.5
6-01-075908	UB5420102006	1	4	1	2.5	6	50	2	0.5
6-01-075909	UB5420102008	1	4	1	2.5	8	50	2	0.5
6-01-075910	UB5420102010	1	4	1	2.5	10	50	2	0.5
6-01-075911	UB5420102012	1	4	1	2.5	12	50	2	0.5
6-01-075912	UB5420102016	1	4	1	2.5	16	50	2	0.5
6-01-075913	UB5420102020	1	4	1	2.5	20	50	2	0.5
6-01-075914	UB5420102025	1	4	1	2.5	25	60	2	0.5
6-01-075915	UB5420102030	1	4	1	2.5	30	70	2	0.5
6-01-075916	UB5420102040	1	4	1	2.5	40	80	2	0.5
6-01-075917	UB5420102050	1	6	1	2.5	50	90	2	0.5

UB542

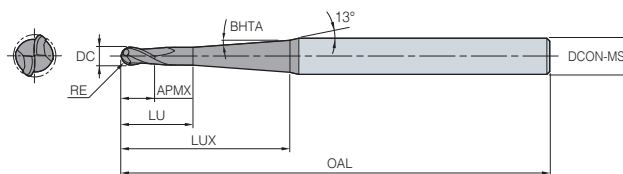
2 flutes tapered neck ball



DC	Tolerance
∅0.1 ~ ∅6	0.000 ~ -0.012
∅8 ~ ∅12	0.000 ~ -0.015

DC6 or below Above DC6

p.215



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
6-01-075918	UB5420103006	1	4	1	2.5	6	50	3	0.5
6-01-075919	UB5420103008	1	4	1	2.5	8	50	3	0.5
6-01-075920	UB5420103010	1	4	1	2.5	10	50	3	0.5
6-01-075921	UB5420103012	1	4	1	2.5	12	50	3	0.5
6-01-075922	UB5420103016	1	4	1	2.5	16	50	3	0.5
6-01-075923	UB5420103020	1	4	1	2.5	20	50	3	0.5
6-01-075924	UB5420103025	1	4	1	2.5	25	60	3	0.5
6-01-075925	UB5420103030	1	6	1	2.5	30	70	3	0.5
6-01-075926	UB5420103040	1	6	1	2.5	40	80	3	0.5
6-01-075927	UB5420103050	1	6	1	2.5	50	90	3	0.5
6-01-075928	UB5420105030	1	6	1	2.5	30	70	5	0.5
6-01-075929	UB5420120508	1.2	4	1.2	3	8	50	0.5	0.6
6-01-075930	UB5420120512	1.2	4	1.2	3	12	50	0.5	0.6
6-01-075931	UB5420120516	1.2	4	1.2	3	16	50	0.5	0.6
6-01-075932	UB5420120520	1.2	4	1.2	3	20	50	0.5	0.6
6-01-075933	UB5420120525	1.2	4	1.2	3	25	60	0.5	0.6
6-01-075934	UB5420120530	1.2	4	1.2	3	30	70	0.5	0.6
6-01-075935	UB5420121008	1.2	4	1.2	3	8	50	1	0.6
6-01-075936	UB5420121012	1.2	4	1.2	3	12	50	1	0.6
6-01-075937	UB5420121016	1.2	4	1.2	3	16	50	1	0.6
6-01-075938	UB5420121020	1.2	4	1.2	3	20	50	1	0.6
6-01-075939	UB5420121025	1.2	4	1.2	3	25	60	1	0.6
6-01-075940	UB5420121030	1.2	4	1.2	3	30	70	1	0.6
6-01-075941	UB5420121508	1.2	4	1.2	3	8	50	1.5	0.6
6-01-075942	UB5420121512	1.2	4	1.2	3	12	50	1.5	0.6
6-01-075943	UB5420121516	1.2	4	1.2	3	16	50	1.5	0.6
6-01-075944	UB5420121520	1.2	4	1.2	3	20	50	1.5	0.6
6-01-075945	UB5420121525	1.2	4	1.2	3	25	60	1.5	0.6
6-01-075946	UB5420121530	1.2	4	1.2	3	30	70	1.5	0.6
6-01-075947	UB5420122008	1.2	4	1.2	3	8	50	2	0.6
6-01-075948	UB5420122012	1.2	4	1.2	3	12	50	2	0.6
6-01-075949	UB5420122016	1.2	4	1.2	3	16	50	2	0.6
6-01-075950	UB5420122020	1.2	4	1.2	3	20	50	2	0.6
6-01-075951	UB5420122025	1.2	4	1.2	3	25	60	2	0.6
6-01-075952	UB5420122030	1.2	4	1.2	3	30	70	2	0.6
6-01-075953	UB5420123008	1.2	4	1.2	3	8	50	3	0.6
6-01-075954	UB5420123012	1.2	4	1.2	3	12	50	3	0.6
6-01-075955	UB5420123016	1.2	4	1.2	3	16	50	3	0.6

UB542

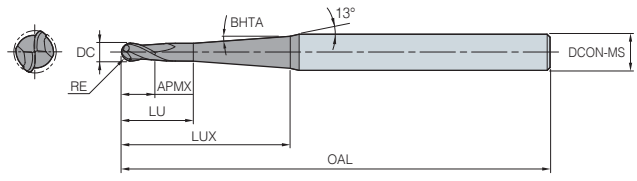
2 flutes tapered neck ball



DC	Tolerance
Ø0.1 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø12	0.000 ~ -0.015

DC6 or below Above DC6

p.215



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
6-01-075956	UB5420123020	1.2	4	1.2	3	20	50	3	0.6
6-01-075957	UB5420123025	1.2	4	1.2	3	25	60	3	0.6
6-01-075958	UB5420123030	1.2	6	1.2	3	30	70	5	0.6
6-01-075959	UB5420150508	1.5	4	1.5	4	8	50	0.5	0.75
6-01-075960	UB5420150510	1.5	4	1.5	4	10	50	0.5	0.75
6-01-075961	UB5420150512	1.5	4	1.5	4	12	50	0.5	0.75
6-01-075962	UB5420150516	1.5	4	1.5	4	16	50	0.5	0.75
6-01-075963	UB5420150520	1.5	4	1.5	4	20	50	0.5	0.75
6-01-075964	UB5420150525	1.5	4	1.5	4	25	60	0.5	0.75
6-01-075965	UB5420150530	1.5	4	1.5	4	30	70	0.5	0.75
6-01-075966	UB5420150540	1.5	4	1.5	4	40	80	0.5	0.75
6-01-075967	UB5420150550	1.5	4	1.5	4	50	90	0.5	0.75
6-01-075968	UB5420151008	1.5	4	1.5	4	8	50	1	0.75
6-01-075969	UB5420151010	1.5	4	1.5	4	10	50	1	0.75
6-01-075970	UB5420151012	1.5	4	1.5	4	12	50	1	0.75
6-01-075971	UB5420151016	1.5	4	1.5	4	16	50	1	0.75
6-01-075972	UB5420151020	1.5	4	1.5	4	20	50	1	0.75
6-01-075973	UB5420151025	1.5	4	1.5	4	25	60	1	0.75
6-01-075974	UB5420151030	1.5	4	1.5	4	30	70	1	0.75
6-01-075975	UB5420151040	1.5	4	1.5	4	40	80	1	0.75
6-01-075976	UB5420151050	1.5	4	1.5	4	50	90	1	0.75
6-01-075977	UB5420151508	1.5	4	1.5	4	8	50	1.5	0.75
6-01-075978	UB5420151510	1.5	4	1.5	4	10	50	1.5	0.75
6-01-075979	UB5420151512	1.5	4	1.5	4	12	50	1.5	0.75
6-01-075980	UB5420151516	1.5	4	1.5	4	16	50	1.5	0.75
6-01-075981	UB5420151520	1.5	4	1.5	4	20	50	1.5	0.75
6-01-075982	UB5420151525	1.5	4	1.5	4	25	60	1.5	0.75
6-01-075983	UB5420151530	1.5	4	1.5	4	30	70	1.5	0.75
6-01-075984	UB5420151540	1.5	4	1.5	4	40	80	1.5	0.75
6-01-075985	UB5420151550	1.5	4	1.5	4	50	90	1.5	0.75
6-01-075937	UB5420121016	1.2	4	1.2	3	16	50	1	0.6
6-01-075938	UB5420121020	1.2	4	1.2	3	20	50	1	0.6
6-01-075939	UB5420121025	1.2	4	1.2	3	25	60	1	0.6
6-01-075940	UB5420121030	1.2	4	1.2	3	30	70	1	0.6
6-01-075941	UB5420121508	1.2	4	1.2	3	8	50	1.5	0.6
6-01-075942	UB5420121512	1.2	4	1.2	3	12	50	1.5	0.6
6-01-075943	UB5420121516	1.2	4	1.2	3	16	50	1.5	0.6
6-01-075944	UB5420121520	1.2	4	1.2	3	20	50	1.5	0.6

UB542

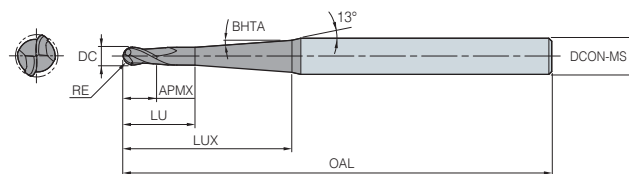
2 flutes tapered neck ball



DC	Tolerance
∅0.1 ~ ∅6	0.000 ~ -0.012
∅8 ~ ∅12	0.000 ~ -0.015

DC6 or below Above DC6

p.215



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
6-01-075945	UB5420121525	1.2	4	1.2	3	25	60	1.5	0.6
6-01-075946	UB5420121530	1.2	4	1.2	3	30	70	1.5	0.6
6-01-075947	UB5420122008	1.2	4	1.2	3	8	50	2	0.6
6-01-075948	UB5420122012	1.2	4	1.2	3	12	50	2	0.6
6-01-075949	UB5420122016	1.2	4	1.2	3	16	50	2	0.6
6-01-075950	UB5420122020	1.2	4	1.2	3	20	50	2	0.6
6-01-075951	UB5420122025	1.2	4	1.2	3	25	60	2	0.6
6-01-075952	UB5420122030	1.2	4	1.2	3	30	70	2	0.6
6-01-075953	UB5420123008	1.2	4	1.2	3	8	50	3	0.6
6-01-075954	UB5420123012	1.2	4	1.2	3	12	50	3	0.6
6-01-075955	UB5420123016	1.2	4	1.2	3	16	50	3	0.6
6-01-075956	UB5420123020	1.2	4	1.2	3	20	50	3	0.6
6-01-075957	UB5420123025	1.2	4	1.2	3	25	60	3	0.6
6-01-075958	UB5420123030	1.2	6	1.2	3	30	70	5	0.6
6-01-075959	UB5420150508	1.5	4	1.5	4	8	50	0.5	0.75
6-01-075960	UB5420150510	1.5	4	1.5	4	10	50	0.5	0.75
6-01-075961	UB5420150512	1.5	4	1.5	4	12	50	0.5	0.75
6-01-075962	UB5420150516	1.5	4	1.5	4	16	50	0.5	0.75
6-01-075963	UB5420150520	1.5	4	1.5	4	20	50	0.5	0.75
6-01-075964	UB5420150525	1.5	4	1.5	4	25	60	0.5	0.75
6-01-075965	UB5420150530	1.5	4	1.5	4	30	70	0.5	0.75
6-01-075966	UB5420150540	1.5	4	1.5	4	40	80	0.5	0.75
6-01-075967	UB5420150550	1.5	4	1.5	4	50	90	0.5	0.75
6-01-075968	UB5420151008	1.5	4	1.5	4	8	50	1	0.75
6-01-075969	UB5420151010	1.5	4	1.5	4	10	50	1	0.75
6-01-075970	UB5420151012	1.5	4	1.5	4	12	50	1	0.75
6-01-075971	UB5420151016	1.5	4	1.5	4	16	50	1	0.75
6-01-075972	UB5420151020	1.5	4	1.5	4	20	50	1	0.75
6-01-075973	UB5420151025	1.5	4	1.5	4	25	60	1	0.75
6-01-075974	UB5420151030	1.5	4	1.5	4	30	70	1	0.75
6-01-075975	UB5420151040	1.5	4	1.5	4	40	80	1	0.75
6-01-075976	UB5420151050	1.5	4	1.5	4	50	90	1	0.75
6-01-075977	UB5420151508	1.5	4	1.5	4	8	50	1.5	0.75
6-01-075978	UB5420151510	1.5	4	1.5	4	10	50	1.5	0.75
6-01-075979	UB5420151512	1.5	4	1.5	4	12	50	1.5	0.75
6-01-075980	UB5420151516	1.5	4	1.5	4	16	50	1.5	0.75
6-01-075981	UB5420151520	1.5	4	1.5	4	20	50	1.5	0.75
6-01-075982	UB5420151525	1.5	4	1.5	4	25	60	1.5	0.75

UB542

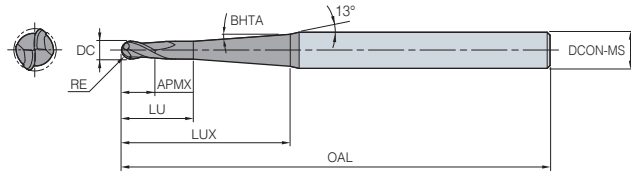
2 flutes tapered neck ball



DC	Tolerance
Ø0.1 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø12	0.000 ~ -0.015

DC6 or below Above DC6

p.215



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
6-01-075983	UB5420151530	1.5	4	1.5	4	30	70	1.5	0.75
6-01-075984	UB5420151540	1.5	4	1.5	4	40	80	1.5	0.75
6-01-075985	UB5420151550	1.5	4	1.5	4	50	90	1.5	0.75
6-01-075986	UB5420152008	1.5	4	1.5	4	8	50	2	0.75
6-01-075987	UB5420152010	1.5	4	1.5	4	10	50	2	0.75
6-01-075988	UB5420152012	1.5	4	1.5	4	12	50	2	0.75
6-01-075989	UB5420152016	1.5	4	1.5	4	16	50	2	0.75
6-01-075990	UB5420152020	1.5	4	1.5	4	20	50	2	0.75
6-01-075991	UB5420152025	1.5	4	1.5	4	25	60	2	0.75
6-01-075992	UB5420152030	1.5	4	1.5	4	30	70	2	0.75
6-01-075993	UB5420152040	1.5	6	1.5	4	40	80	2	0.75
6-01-075994	UB5420152050	1.5	6	1.5	4	50	90	2	0.75
6-01-075995	UB5420153020	1.5	6	1.5	4	20	50	3	0.75
6-01-075996	UB5420153030	1.5	6	1.5	4	30	70	3	0.75
6-01-075997	UB5420153040	1.5	6	1.5	4	40	80	3	0.75
6-01-075998	UB5420153050	1.5	8	1.5	4	50	90	3	0.75
6-01-075999	UB5420155030	1.5	8	1.5	4	30	70	5	0.75
6-01-076000	UB5420200510	2	4	2	5	10	50	0.5	1
6-01-076001	UB5420200512	2	4	2	5	12	50	0.5	1
6-01-076002	UB5420200516	2	4	2	5	16	50	0.5	1
6-01-076003	UB5420200520	2	4	2	5	20	50	0.5	1
6-01-076004	UB5420200525	2	4	2	5	25	60	0.5	1
6-01-076005	UB5420200530	2	4	2	5	30	70	0.5	1
6-01-076006	UB5420200540	2	4	2	5	40	80	0.5	1
6-01-076007	UB5420200550	2	6	2	5	50	100	0.5	1
6-01-076008	UB5420200560	2	6	2	5	60	100	0.5	1
6-01-076009	UB5420200580	2	6	2	5	80	140	0.5	1
6-01-076010	UB5420201010	2	4	2	5	10	50	1	1
6-01-076011	UB5420201012	2	4	2	5	12	50	1	1
6-01-076012	UB5420201016	2	4	2	5	16	50	1	1
6-01-076013	UB5420201020	2	4	2	5	20	50	1	1
6-01-076014	UB5420201025	2	4	2	5	25	60	1	1
6-01-076015	UB5420201030	2	4	2	5	30	70	1	1
6-01-076016	UB5420201040	2	6	2	5	40	80	1	1
6-01-076017	UB5420201050	2	6	2	5	50	100	1	1
6-01-076018	UB5420201060	2	6	2	5	60	100	1	1
6-01-076019	UB5420201080	2	6	2	5	80	140	1	1
6-01-076020	UB5420201510	2	4	2	5	10	50	1.5	1

UB542

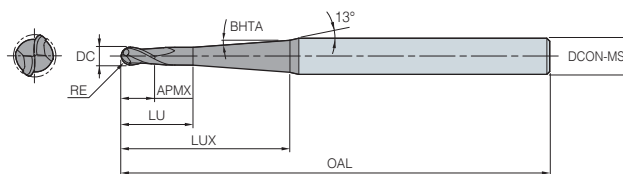
2 flutes tapered neck ball



DC	Tolerance
Ø0.1 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø12	0.000 ~ -0.015

DC6 or below Above DC6

p.215



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
6-01-076021	UB5420201512	2	4	2	5	12	50	1.5	1
6-01-076022	UB5420201516	2	4	2	5	16	50	1.5	1
6-01-076023	UB5420201520	2	4	2	5	20	50	1.5	1
6-01-076024	UB5420201525	2	4	2	5	25	60	1.5	1
6-01-076025	UB5420201530	2	6	2	5	30	70	1.5	1
6-01-076026	UB5420201540	2	6	2	5	40	80	1.5	1
6-01-076027	UB5420201550	2	6	2	5	50	100	1.5	1
6-01-076028	UB5420201560	2	6	2	5	60	100	1.5	1
6-01-076029	UB5420201580	2	6	2	5	80	140	1.5	1
6-01-076030	UB5420202010	2	4	2	5	10	50	2	1
6-01-076031	UB5420202012	2	4	2	5	12	50	2	1
6-01-076032	UB5420202016	2	4	2	5	16	50	2	1
6-01-076033	UB5420202020	2	4	2	5	20	55	2	1
6-01-076034	UB5420202025	2	4	2	5	25	60	2	1
6-01-076035	UB5420202030	2	4	2	5	30	70	2	1
6-01-076036	UB5420202040	2	6	2	5	40	80	2	1
6-01-076037	UB5420202050	2	6	2	5	50	90	2	1
6-01-076038	UB5420202060	2	6	2	5	60	100	2	1
6-01-076039	UB5420202080	2	8	2	5	80	140	2	1
6-01-076040	UB5420203030	2	6	2	5	30	70	3	1
6-01-076041	UB5420203040	2	6	2	5	40	80	3	1
6-01-076042	UB5420203050	2	8	2	5	50	90	3	1
6-01-076043	UB5420203060	2	8	2	5	60	100	3	1
6-01-076044	UB5420203080	2	10	2	5	80	140	3	1
6-01-076045	UB5420205030	2	8	2	5	30	70	5	1
6-01-076046	UB5420205040	2	10	2	5	40	90	5	1
6-01-076047	UB5420300516	3	6	4.5	6	16	60	0.5	1.5
6-01-076048	UB5420300520	3	6	4.5	6	20	65	0.5	1.5
6-01-076049	UB5420300530	3	6	4.5	6	30	70	0.5	1.5
6-01-076050	UB5420300540	3	6	4.5	6	40	80	0.5	1.5
6-01-076051	UB5420300550	3	6	4.5	6	50	90	0.5	1.5
6-01-076052	UB5420300560	3	6	4.5	6	60	100	0.5	1.5
6-01-076053	UB5420301016	3	6	4.5	6	16	60	1	1.5
6-01-076054	UB5420301020	3	6	4.5	6	20	65	1	1.5
6-01-076055	UB5420301030	3	6	4.5	6	30	70	1	1.5
6-01-076056	UB5420301040	3	6	4.5	6	40	80	1	1.5
6-01-076057	UB5420301050	3	6	4.5	6	50	90	1	1.5
6-01-076058	UB5420301060	3	6	4.5	6	60	100	1	1.5

UB542

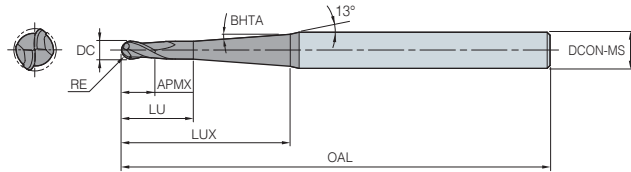
2 flutes tapered neck ball



DC	Tolerance
Ø0.1 ~ Ø6	0.000 ~ -0.012
Ø8 ~ Ø12	0.000 ~ -0.015

DC6 or below Above DC6

p.215



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
6-01-076059	UB5420301070	3	6	4.5	6	70	120	1	1.5
6-01-076060	UB5420301516	3	6	4.5	6	16	60	1.5	1.5
6-01-076061	UB5420301520	3	6	4.5	6	20	65	1.5	1.5
6-01-076062	UB5420301530	3	6	4.5	6	30	70	1.5	1.5
6-01-076063	UB5420301540	3	6	4.5	6	40	80	1.5	1.5
6-01-076064	UB5420301550	3	6	4.5	6	50	90	1.5	1.5
6-01-076065	UB5420301560	3	6	4.5	6	60	100	1.5	1.5
6-01-076066	UB5420302016	3	6	4.5	6	16	60	2	1.5
6-01-076067	UB5420302020	3	6	4.5	6	20	65	2	1.5
6-01-076068	UB5420302030	3	6	4.5	6	30	70	2	1.5
6-01-076069	UB5420302040	3	6	4.5	6	40	80	2	1.5
6-01-076070	UB5420302050	3	8	4.5	6	50	90	2	1.5
6-01-076071	UB5420303030	3	6	4.5	6	30	70	3	1.5
6-01-076072	UB5420303040	3	8	4.5	6	40	90	3	1.5
6-01-076073	UB5420305030	3	8	4.5	6	30	70	5	1.5
6-01-076074	UB5420305040	3	10	4.5	6	40	90	5	1.5
6-01-076075	UB5420400540	4	6	6	8	40	90	0.5	2
6-01-076076	UB5420400550	4	6	6	8	50	100	0.5	2
6-01-076077	UB5420400560	4	6	6	8	60	110	0.5	2
6-01-076078	UB5420400570	4	6	6	8	70	120	0.5	2
6-01-076079	UB5420401040	4	6	6	8	40	90	1	2
6-01-076080	UB5420401050	4	6	6	8	50	100	1	2
6-01-076081	UB5420401060	4	8	6	8	60	110	1	2
6-01-076082	UB5420401070	4	8	6	8	70	120	1	2
6-01-076083	UB5420401540	4	6	6	8	40	90	1.5	2
6-01-076084	UB5420401550	4	8	6	8	50	100	1.5	2
6-01-076085	UB5420401560	4	8	6	8	60	110	1.5	2
6-01-076086	UB5420401570	4	8	6	8	70	120	1.5	2
6-01-076087	UB5420403050	4	10	6	8	50	100	3	2
6-01-076088	UB5420405050	4	12	6	8	50	100	5	2
6-01-076089	UB5420501060	5	8	10	13	60	120	1	2.5
6-01-076090	UB5420501560	5	8	10	13	60	120	1.5	2.5
6-01-076091	UB5420503040	5	8	10	13	40	120	3	2.5
6-01-076092	UB5420601060	6	8	12	15	60	120	1	3
6-01-076093	UB5420601090	6	10	12	15	90	150	1	3
6-01-076094	UB5420601560	6	10	12	15	60	120	1.5	3
6-01-076095	UB5420601590	6	10	12	15	90	150	1.5	3
6-01-076096	UB5420602060	6	10	12	15	60	120	2	3

UB542

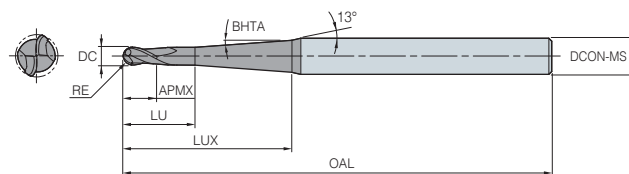
2 flutes tapered neck ball



DC	Tolerance
∅0.1 ~ ∅6	0.000 ~ -0.012
∅8 ~ ∅12	0.000 ~ -0.015

DC6 or below Above DC6

p.215



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	LUX	OAL	BHTA(°)	RE
6-01-076097	UB5420602090	6	12	12	15	90	150	2	3
6-01-076098	UB5420603060	6	12	12	15	60	120	3	3
6-01-076099	UB5420603090	6	14	12	15	90	150	3	3
6-01-076101	UB54208010100	8	12	14	18	100	150	1	4
6-01-076100	UB5420801070	8	10	14	18	70	130	1	4
6-01-076103	UB54208015100	8	14	14	18	100	150	1.5	4
6-01-076102	UB5420801570	8	12	14	18	70	130	1.5	4
6-01-076105	UB54208020100	8	14	14	18	100	150	2	4
6-01-076104	UB5420802070	8	12	14	18	70	130	2	4
6-01-076107	UB54208030100	8	18	14	18	100	150	3	4
6-01-076106	UB5420803070	8	14	14	18	70	130	3	4
6-01-076110	UB54210010100	10	14	18	22	100	200	1	5
6-01-076108	UB5421001070	10	12	18	22	70	130	1	5
6-01-076109	UB5421001080	10	14	18	22	80	150	1	5
6-01-076113	UB54210015100	10	16	18	22	100	200	1.5	5
6-01-076111	UB5421001570	10	14	18	22	70	130	1.5	5
6-01-076112	UB5421001580	10	14	18	22	80	150	1.5	5
6-01-076116	UB54210020100	10	16	18	22	100	200	2	5
6-01-076114	UB5421002070	10	14	18	22	70	130	2	5
6-01-076115	UB5421002080	10	16	18	22	80	150	2	5
6-01-076119	UB54210030100	10	20	18	22	100	200	3	5
6-01-076117	UB5421003070	10	16	18	22	70	130	3	5
6-01-076118	UB5421003080	10	18	18	22	80	150	3	5
6-01-076123	UB54212010100	12	16	22	25	100	200	1	6
6-01-076120	UB5421201060	12	14	22	25	60	130	1	6
6-01-076121	UB5421201080	12	14	22	25	80	150	1	6
6-01-076122	UB5421201090	12	16	22	25	90	180	1	6
6-01-076127	UB54212015100	12	16	22	25	100	200	1.5	6
6-01-076124	UB5421201560	12	14	22	25	60	130	1.5	6
6-01-076125	UB5421201580	12	16	22	25	80	150	1.5	6
6-01-076126	UB5421201590	12	16	22	25	90	180	1.5	6
6-01-076131	UB54212020100	12	18	22	25	100	200	2	6
6-01-076128	UB5421202060	12	16	22	25	60	130	2	6
6-01-076129	UB5421202080	12	16	22	25	80	150	2	6
6-01-076130	UB5421202090	12	18	22	25	90	180	2	6
6-01-076135	UB54212030100	12	20	22	25	100	200	3	6
6-01-076132	UB5421203060	12	16	22	25	60	130	3	6
6-01-076133	UB5421203080	12	18	22	25	80	150	3	6
6-01-076134	UB5421203090	12	20	22	25	90	180	3	6

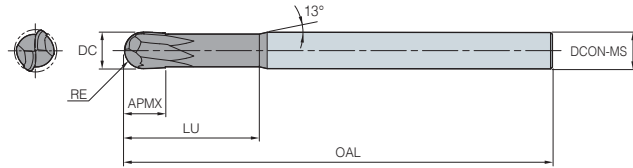
UB552A

2 flutes 15° helix ball



DC	Tolerance
ALL	0 ~ -0.0012

p.216



(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	LU	OAL	RE
6-01-084481	UB552A002	1/32	1/4	1/32	1/16	2	1/64
6-01-084482	UB552A004	1/16	1/4	1/16	1/8	2	1/32
6-01-084483	UB552A006	3/32	1/4	3/32	3/16	2	3/64
6-01-084484	UB552A008	1/8	1/4	1/8	1/4	2 1/2	1/16
6-01-084485	UB552A012	3/16	1/4	3/16	3/8	3	3/32
6-01-084486	UB552A016	1/4	1/4	1/4	1/2	3 1/2	1/8
6-01-084487	UB552A020	5/16	5/16	5/16	5/8	4	5/32
6-01-084488	UB552A024	3/8	3/8	3/8	3/4	4	3/16
6-01-084489	UB552A024L	3/8	3/8	1	1 3/8	6	3/16
6-01-084490	UB552A032	1/2	1/2	1/2	1	4 1/2	1/4
6-01-084491	UB552A032L	1/2	1/2	1	1 1/2	6	1/4

UB503

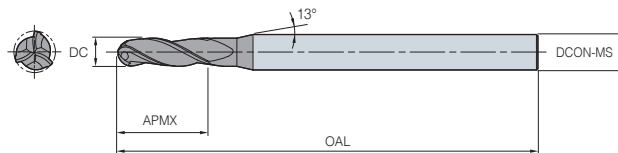
3 flutes ball



DC	Tolerance
Ø1 ~ Ø12	0.000 ~ -0.020

DC6 or below Above DC6

p.216



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
6-01-076152	UB503010	1	6	1	50	0.5
6-01-076153	UB503015	1.5	6	1.5	50	0.75
6-01-076154	UB503020	2	6	2	50	1
6-01-076155	UB503030	3	6	3	60	1.5
6-01-076156	UB503040	4	6	4	70	2
6-01-076157	UB503050	5	6	5	80	2.5
6-01-076158	UB503060	6	6	6	90	3
6-01-076159	UB503080	8	8	8	100	4
6-01-076160	UB503100	10	10	10	100	5
6-01-076161	UB503120	12	12	12	110	6

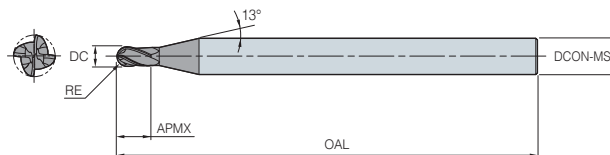
UB504A

4 flutes ball



DC	Tolerance
ALL	0 ~ -0.0012

p.217

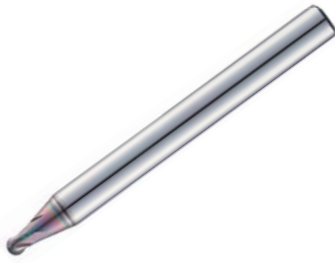


(inch)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
6-01-084492	UB504A002	1/32	1/8	5/64	1 1/2	1/64
6-01-084493	UB504A004S	1/16	1/4	1/16	1 1/2	1/32
6-01-084494	UB504A004	1/16	1/8	3/16	1 1/2	1/32
6-01-084495	UB504A006S	3/32	1/4	3/32	1 1/2	3/64
6-01-084496	UB504A006	3/32	1/8	0.315	1 1/2	3/64
6-01-084497	UB504A008S	1/8	1/8	5/16	2	1/16
6-01-084498	UB504A008	1/8	1/8	1/2	2	1/16
6-01-084499	UB504A012S	3/16	3/16	3/8	2	3/32
6-01-084500	UB504A012	3/16	3/16	5/8	2	3/32
6-01-084501	UB504A016S	1/4	1/4	1/2	2 1/2	1/8
6-01-084502	UB504A016	1/4	1/4	3/4	2 1/2	1/8
6-01-084503	UB504A020	5/16	5/16	9/16	4	5/32
6-01-084504	UB504A024S	3/8	3/8	3/4	3	3/16
6-01-084505	UB504A024	3/8	3/8	1	3	3/16
6-01-084506	UB504A032S	1/2	1/2	7/8	3	1/4
6-01-084507	UB504A032	1/2	1/2	1	3	1/4
6-01-084508	UB504A040	5/8	5/8	1 1/4	5 1/2	5/16
6-01-084509	UB504A048	3/4	3/4	1 1/2	6 1/4	3/8
6-01-084510	UB504A064	1	1	2	7 1/8	1/2

UB504

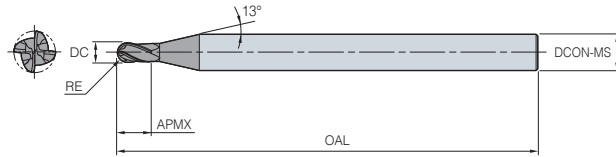
4 flutes ball



DC	Tolerance
Ø1 ~ Ø12	0.000 ~ -0.020

DC	Tolerance
Ø1 ~ Ø12	0.000 ~ -0.020

DC6 or below Above DC6 p.217



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	RE
6-01-076162	UB504010	1	6	1	50	0.5
6-01-076163	UB504015	1.5	6	1.5	50	0.75
6-01-076164	UB504020	2	6	2	50	1
6-01-076165	UB504030	3	6	3	60	1.5
6-01-076166	UB504040	4	6	4	70	2
6-01-076167	UB504050	5	6	5	80	2.5
6-01-076168	UB504060	6	6	6	90	3
6-01-076169	UB504080	8	8	8	100	4
6-01-076170	UB504100	10	10	10	100	5
6-01-076171	UB504120	12	12	12	110	6

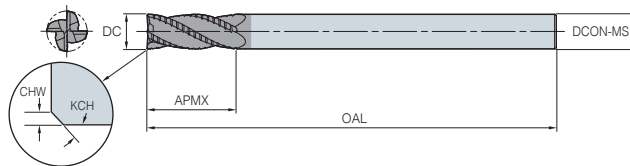
UF50

3~5 flutes chamfer pitch roughing



p.218

DC	Tolerance
Ø3 ~ Ø25	0.000 ~ -0.050



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	KCH	CHW	NOF
6-01-077195	UF503030	3	6	8	50	45°	0.2	3
6-01-077196	UF503040	4	6	10	50	45°	0.2	3
6-01-077197	UF504050	5	6	13	50	45°	0.2	4
6-01-077198	UF504060	6	6	10	50	45°	0.2	4
6-01-077199	UF50406015	6	6	15	60	45°	0.2	4
6-01-077200	UF504070	7	8	18	70	45°	0.2	4
6-01-077201	UF504080	8	8	12	60	45°	0.2	4
6-01-077202	UF50408020	8	8	20	70	45°	0.2	4
6-01-077203	UF504090	9	10	22	75	45°	0.3	4
6-01-077204	UF504100	10	10	15	65	45°	0.3	4
6-01-077205	UF50410025	10	10	25	75	45°	0.3	4
6-01-077206	UF504110	11	12	27	80	45°	0.3	4
6-01-077207	UF504120	12	12	20	70	45°	0.3	4
6-01-077208	UF50412030	12	12	30	80	45°	0.3	4
6-01-077209	UF505130	13	12	35	100	45°	0.5	5
6-01-077211	UF505140S16	14	16	35	100	45°	0.5	5
6-01-077210	UF505140	14	14	35	100	45°	0.5	5
6-01-077212	UF505150	15	16	35	100	45°	0.5	5
6-01-077213	UF505160	16	16	25	80	45°	1	5
6-01-077214	UF50516040	16	16	40	100	45°	1	5
6-01-077216	UF505180S20	18	20	40	100	45°	1	5
6-01-077215	UF505180	18	18	40	100	45°	1	5
6-01-077217	UF505200	20	20	25	80	45°	1	5
6-01-077218	UF50520045	20	20	45	100	45°	1	5
6-01-077219	UF505250	25	25	45	100	45°	1	5

UF51

3~5 flutes fine pitch roughing



CARBIDE



H-A
30°

Grade
PC303W

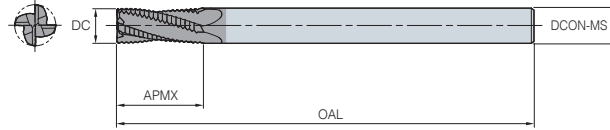
FINE

h5 shank



p.218

DC	Tolerance
Ø3	0.000 ~ -0.040
Ø4 ~ Ø6	0.000 ~ -0.048
Ø7 ~ Ø10	0.000 ~ -0.058
Ø11 ~ Ø18	0.000 ~ -0.070
Ø20 ~ Ø25	0.000 ~ -0.084



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	NOF
6-01-077175	UF513030	3	6	8	50	3
6-01-077176	UF513040	4	6	10	50	3
6-01-077177	UF513050	5	6	13	50	3
6-01-077178	UF513060	6	6	15	60	3
6-01-077179	UF51306020	6	6	20	60	3
6-01-077180	UF513070	7	8	18	70	3
6-01-077181	UF513080	8	8	20	70	3
6-01-077182	UF51308025	8	8	25	70	3
6-01-077183	UF514090	9	10	22	75	4
6-01-077184	UF514100	10	10	25	75	4
6-01-077185	UF51410030	10	10	30	75	4
6-01-077186	UF514110	11	12	27	80	4
6-01-077187	UF514120	12	12	30	80	4
6-01-077188	UF51412035	12	12	35	80	4
6-01-077189	UF514130	13	12	35	100	4
6-01-077190	UF514140	14	16	35	100	4
6-01-077191	UF514160	16	16	40	100	4
6-01-077192	UF514180	18	18	40	100	4
6-01-077193	UF514200	20	20	50	100	4
6-01-077194	UF515250	25	25	50	100	5

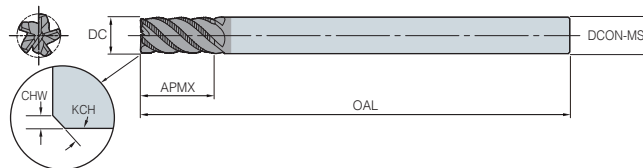
UF51H

3~5 flutes 45° helix fine pitch roughing



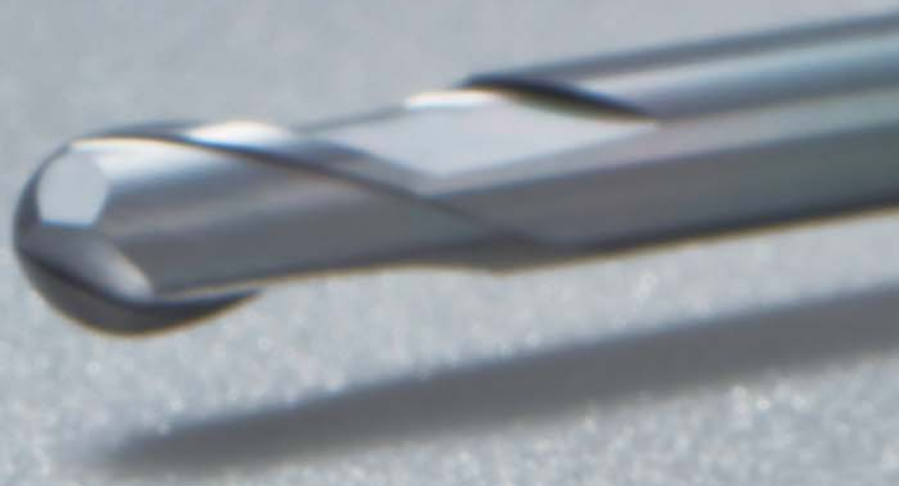
p.219

DC	Tolerance
Ø3 ~ Ø25	0.000 ~ -0.050



(mm)

K.P. Code	Designation	DC	DCON-MS	APMX	OAL	KCH	CHW	NOF
6-01-077220	UF513030H	3	6	8	50	45°	0.2	3
6-01-077221	UF513040H	4	6	10	50	45°	0.2	3
6-01-077222	UF514050H	5	6	13	50	45°	0.3	4
6-01-077223	UF514060H	6	6	10	50	45°	0.3	4
6-01-077224	UF51406015H	6	6	15	60	45°	0.3	4
6-01-077225	UF514070H	7	8	18	70	45°	0.4	4
6-01-077226	UF514080H	8	8	12	60	45°	0.4	4
6-01-077227	UF51408020H	8	8	20	70	45°	0.4	4
6-01-077228	UF514090H	9	10	22	75	45°	0.4	4
6-01-077229	UF514100H	10	10	15	65	45°	0.4	4
6-01-077230	UF51410025H	10	10	25	75	45°	0.4	4
6-01-077231	UF514110H	11	12	27	80	45°	0.5	4
6-01-077232	UF514120H	12	12	20	70	45°	0.5	4
6-01-077233	UF51412030H	12	12	30	80	45°	0.5	4
6-01-077234	UF515130H	13	12	35	100	45°	0.5	5
6-01-077236	UF515140S16H	14	16	35	100	45°	0.5	5
6-01-077235	UF515140H	14	14	35	100	45°	0.5	5
6-01-077237	UF515160H	16	16	25	80	45°	0.5	5
6-01-077238	UF51516040H	16	16	40	100	45°	0.5	5
6-01-077240	UF515180S20H	18	20	40	100	45°	0.5	5
6-01-077239	UF515180H	18	18	40	100	45°	0.5	5
6-01-077241	UF515200H	20	20	25	80	45°	0.5	5
6-01-077242	UF51520045H	20	20	45	100	45°	0.5	5
6-01-077243	UF515250H	25	25	45	100	45°	0.5	5



Recommended Cutting Conditions

-

U-Star Endmill

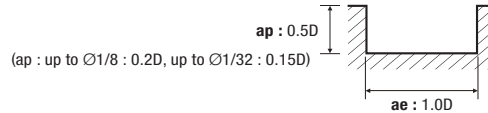


UEM502A series

(inch)

Workpiece	Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Stainless Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled Castiron		Hardened Castiron	
	125HB~300HB		350HB		200HB		180HB		130HB~260HB		HrC55		400HB		HrC55	
	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)
0.016	40,900	5	24,600	3	40,900	5	20,470	2	40,900	5	16,380	1	24,600	3	16,380	1
0.02	35,400	5	21,300	3	35,400	5	17,720	2	35,400	5	14,170	1	21,300	3	14,170	1
0.024	31,500	6	1,900	3	31,500	6	15,750	3	31,500	6	12,600	1	18,900	3	12,600	1
0.031	25,400	7	15,200	4	25,400	7	12,700	4	25,400	7	10,160	1	15,200	4	10,160	1
0.035	23,800	7	14,300	5	23,800	7	11,900	4	23,800	7	9,520	1	14,300	5	9,520	1
0.04	21,200	7	12,700	5	21,200	7	10,580	4	21,200	7	8,460	1	12,700	5	8,460	1
0.043	19,650	8	11,800	5	19,650	8	9,815	4	19,650	8	7,850	2	11,800	5	7,850	2
0.047	18,100	8	10,900	5	18,100	8	9,050	4	18,100	8	7,240	2	10,900	5	7,240	2
0.052	16,150	8	9,700	5	16,150	8	8,070	4	16,150	8	6,455	2	9,700	5	6,455	2
0.055	16,150	8	9,700	5	16,150	8	8,070	4	16,150	8	6,455	2	9,700	5	6,455	2
0.062	14,200	8	8,500	5	14,200	8	7,090	4	14,200	8	5,670	1	8,500	5	5,670	1

Application Tip

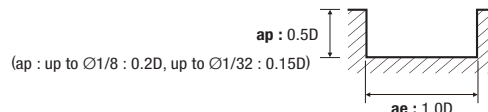


UE502A series _ Slotting

(inch)

Workpiece	Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Stainless Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled Castiron		Hardened Castiron	
	125HB~300HB		350HB		200HB		180HB		130HB~260HB		HrC55		400HB		HrC55	
	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)
1/32	25,400	7	15,200	4	25,400	7	12,700	4	25,400	7	10,160	1	15,200	4	10,160	1
1/16	14,200	8	8,500	5	14,200	8	7,090	4	14,200	8	5,670	1	8,500	5	5,670	1
5/64	11,700	8	7,600	5	11,700	8	6,350	4	11,700	8	5,080	2	7,600	5	5,080	2
3/32	10,800	9	6,900	6	10,800	9	5,730	5	10,800	9	4,410	2	6,900	6	4,410	2
1/8	8,400	9	5,300	6	8,400	9	4,370	5	8,400		3,170	2	5,300	6	3,170	2
5/32	7,450	11	4,650	7	7,450	11	3,850	6	7,450	7	2,830	2	4,650	7	2,830	2
3/16	6,500	13	4,000	8	6,500	13	3,330	6	6,500	13	2,490	2	4,000	8	2,490	2
13/64	6,100	13	3,700	8	6,100	13	3,060	7	6,100	13	2,250	2	3,700	8	2,250	2
7/32	5,700	14	3,450	9	5,700	14	2,870	7	5,700	14	2,070	2	3,450	9	2,070	2
1/4	5,300	14	3,200	9	5,300	14	2,680	7	5,300	14	1,890	2	3,200	9	1,890	2
9/32	4,800	15	2,900	9	4,800	15	2,420	7	4,800	15	1,800	3	2,900	9	1,800	3
5/16	4,200	16	2,500	8	4,200	16	2,120	7	4,200	16	1,690	3	2,500	8	1,690	3
3/8	3,400	14	2,100	7	3,400	14	1,760	7	3,400	14	1,430	3	2,100	7	1,430	3
13/32	3,200	13	2,000	6	3,200	13	1,630	6	3,200	13	1,330	3	2,000	6	1,330	3
7/16	3,000	12	1,800	6	3,000	12	1,500	6	3,000	12	1,250	2	1,800	6	1,250	2
1/2	2,600	11	1,600	5	2,600	11	1,290	5	2,600	11	1,100	2	1,600	5	1,100	2
9/16	2,400	10	1,500	5	2,400	10	1,190	5	2,400	10	1,010	2	1,500	5	1,010	2
5/8	2,200	9	1,400	5	2,200	9	1,070	5	2,200	9	910	2	1,400	5	910	2
3/4	1,800	7	1,100	4	1,800	7	880	4	1,800	7	710	1	1,100	4	710	1
1	1,630	6	1,000	4	1,630	6	800	4	1,630	6	640	1	1,000	4	645	1

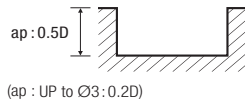
Application Tip




UE502, UXE502 series

(mm)

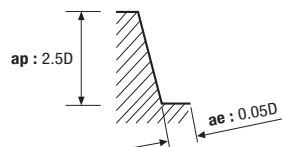
Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Stainless steels (SUS)		Hardened steels (SKD, SKT, STAVAX)	
	~HRC35		HRC35~45				HRC45~55	
Strength								
Conditions	~1100N/mm ²		1100~1500N/mm ²		-		1500~2000N/mm ²	
Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)
2.0	11,560	190	7,560	120	6,300	90	5,040	35
3.0	8,920	210	5,560	140	4,620	120	3,360	40
4.0	7,560	300	4,620	180	3,880	150	2,940	40
5.0	6,300	320	3,780	190	3,160	160	2,320	50
6.0	5,560	350	3,360	220	2,840	180	2,000	55
8.0	4,200	380	2,520	200	2,100	180	1,680	75
10.0	3,260	330	2,000	160	1,680	160	1,360	60
12.0	2,740	280	1,680	130	1,360	130	1,160	55
16.0	2,200	220	1,360	110	1,060	110	900	40
20.0	1,680	170	1,060	80	840	80	680	30
25.0	1,360	130	840	70	680	60	540	20

Application Tip

UTE502 series

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)	
	~HRC35		HRC35~45	
Strength				
Conditions	~1100N/mm ²		1100~1500N/mm ²	
Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)
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
1.0	14,850	149	11,250	113
2.0	7,560	153	5,670	113
3.0	3,969	108	3,213	90
4.0	3,213	126	2,556	104
6.0	2,367	189	1,890	153
8.0	1,800	225	1,422	162
10.0	1,440	225	1,170	167

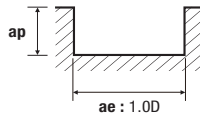
Application Tip

UE512A series _ Slotting

(inch)

Workpiece		Non-alloy Steel, Low alloy Steel			Low alloy Steel			High alloyed Steel, and tool Steel			Grey cast iron, Nodular Cast iron, Malleable Cast iron			Hardened Steel			Chilled Cast Iron			Hardened Cast Iron		
Conditions		125HB~300HB			350HB			200HB			130HB~260HB			HRC55			400HB			HRC55		
Diameter (Ø)	Neck Length	R.P.M n (min ⁻¹)	Feed vf (in/min)	ap (inch)	R.P.M n (min ⁻¹)	Feed vf (in/min)	ap (inch)	R.P.M n (min ⁻¹)	Feed vf (in/min)	ap (inch)	R.P.M n (min ⁻¹)	Feed vf (in/min)	ap (inch)	R.P.M n (min ⁻¹)	Feed vf (in/min)	ap (inch)	R.P.M n (min ⁻¹)	Feed vf (in/min)	ap (inch)	R.P.M n (min ⁻¹)	Feed vf (in/min)	ap (inch)
1/32	5/64	27,620	31	0.0028	26,000	24	0.0022	27,620	31	0.0028	27,620	31	0.0028	22,980	18	0.0016	26,000	24	0.0022	22,980	18	0.0016
	1/8	27,620	31	0.0020	26,000	24	0.0015	27,620	31	0.0020	27,620	31	0.0020	22,980	18	0.0011	26,000	24	0.0015	22,980	18	0.0011
3/64	1/8	22,070	37	0.0042	20,860	29	0.0033	22,070	37	0.0042	22,070	37	0.0042	18,340	19	0.0024	20,860	29	0.0033	18,340	19	0.0024
	5/32	22,070	37	0.0030	20,860	29	0.0023	22,070	37	0.0030	22,070	37	0.0030	18,340	19	0.0017	20,860	29	0.0023	18,340	19	0.0017
1/16	5/32	18,140	34	0.0056	17,100	24	0.0044	18,140	34	0.0056	18,140	34	0.0056	15,120	18	0.0031	17,100	24	0.0044	15,120	18	0.0031
	1/4	18,140	34	0.0039	17,100	24	0.0031	18,140	34	0.0039	18,140	34	0.0039	15,120	18	0.0022	17,100	24	0.0031	15,120	18	0.0022
5/64	1/4	14,510	33	0.0049	13,710	25	0.0038	14,510	33	0.0049	14,510	33	0.0049	12,090	19	0.0027	13,710	25	0.0038	12,090	19	0.0027
	5/16	14,510	33	0.0049	13,710	25	0.0038	14,510	33	0.0049	14,510	33	0.0049	12,090	19	0.0027	13,710	25	0.0038	12,090	19	0.0027
1/8	5/16	10,300	32	0.0113	9,730	22	0.0087	10,300	32	0.0113	10,300	32	0.0113	6,240	17	0.0063	9,730	22	0.0087	6,240	17	0.0063
	3/8	10,300	32	0.0113	9,730	22	0.0087	10,300	32	0.0113	10,300	32	0.0113	6,240	17	0.0063	9,730	22	0.0087	6,240	17	0.0063
3/16	3/8	6,720	43	0.0169	6,380	38	0.0131	6,720	43	0.0169	6,720	43	0.0169	5,630	25	0.0094	6,380	38	0.0131	5,630	25	0.0094
	1/2	6,720	43	0.0169	6,380	38	0.0131	6,720	43	0.0169	6,720	43	0.0169	5,630	25	0.0094	6,380	38	0.0131	5,630	25	0.0094
13/64	3/4	6,200	44	0.0128	5,910	34	0.0100	6,200	44	0.0128	6,200	44	0.0128	5,230	23	0.0071	5,910	34	0.0100	5,230	23	0.0071
	1 3/16	5,580	36	0.0073	5,320	28	0.0057	5,580	36	0.0073	5,580	36	0.0073	4,710	19	0.0041	5,320	28	0.0057	4,710	19	0.0041
1/4	5/8	5,010	39	0.0225	4,720	31	0.0175	5,010	39	0.0225	5,010	39	0.0225	4,160	21	0.0125	4,720	31	0.0175	4,160	21	0.0125
	3/4	5,010	39	0.0225	4,720	31	0.0175	5,010	39	0.0225	5,010	39	0.0225	4,160	21	0.0125	4,720	31	0.0175	4,160	21	0.0125
5/16	1	4,030	38	0.0197	3,830	30	0.0153	4,030	38	0.0197	4,030	38	0.0197	3,330	20	0.0109	3,830	30	0.0153	3,330	20	0.0109
3/8	1 3/16	3,360	37	0.0236	3,200	28	0.0184	3,360	37	0.0236	3,360	37	0.0236	2,760	17	0.0131	3,200	28	0.0184	2,760	17	0.0131
	1 3/4	3,360	37	0.0236	3,200	28	0.0184	3,360	37	0.0236	3,360	37	0.0236	2,760	17	0.0131	3,200	28	0.0184	2,760	17	0.0131
1/2	1 3/8	2,500	30	0.0450	2,380	22	0.0350	2,500	30	0.0450	2,500	30	0.0450	2,060	13	0.0250	2,380	22	0.0350	2,060	13	0.0250
	2	2,500	30	0.0315	2,380	22	0.0245	2,500	30	0.0315	2,500	30	0.0315	2,060	13	0.0175	2,380	22	0.0245	2,060	13	0.0175

Application Tip



 **UE512 series**

(mm)

Workpiece		Alloy steels, Carbon steels (SCM, SNCM, S45C)			Pre-hardened steels (NAK, CENA, KP4)			Hardened steels (SKD, SKT, STAVAX)		
Strength		~HrC35			HrC35~45			HrC45~55		
Conditions		~1100N/mm ²			1100~1500N/mm ²			1500~2000N/mm ²		
Diameter(Ø)	Effective Length	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)
0.1	0.3	50,000	315	0.009	46,200	230	0.007	40,600	170	0.005
	0.5	50,000	315	0.006	46,200	230	0.005	40,600	170	0.004
	1	45,000	255	0.002	41,580	185	0.002	36,540	140	0.001
0.2	0.5	38,500	380	0.018	36,300	270	0.014	32,100	200	0.010
	1	38,500	380	0.013	36,300	270	0.010	32,100	200	0.007
	1.5	34,650	310	0.007	32,670	220	0.006	28,890	160	0.004
	2	34,650	310	0.005	32,670	220	0.004	28,890	160	0.003
0.3	1	34,200	390	0.019	32,300	270	0.015	28,500	230	0.011
	1.5	34,200	390	0.019	32,300	270	0.015	25,800	230	0.011
	2	30,780	315	0.011	29,070	220	0.008	25,650	185	0.006
	2.5	30,780	315	0.007	29,070	220	0.005	25,650	185	0.004
	3	30,780	315	0.007	29,070	220	0.005	25,650	185	0.004
	4	27,360	250	0.004	25,840	175	0.003	22,800	145	0.002
	5	20,520	165	0.003	19,380	115	0.002	17,100	95	0.002
0.4	1	27,400	540	0.036	25,800	380	0.028	22,800	280	0.020
	1.5	27,400	540	0.025	25,800	380	0.020	22,800	280	0.014
	2	27,400	540	0.025	25,800	380	0.020	22,800	280	0.014
	2.5	24,660	435	0.014	23,220	310	0.011	20,520	225	0.008
	3	24,660	435	0.014	23,220	310	0.011	20,520	225	0.008
	4	24,660	435	0.009	23,220	310	0.007	20,520	225	0.005
	5	21,920	345	0.009	20,640	245	0.007	18,240	180	0.005
	6	21,920	345	0.005	20,640	245	0.004	18,240	180	0.003
	8	16,440	225	0.004	15,480	160	0.003	13,680	120	0.002
10	8,220	95	0.004	7,740	70	0.003	6,840	50	0.002	
0.5	1	27,400	540	0.045	25,800	425	0.035	22,800	285	0.025
	1.5	27,400	540	0.045	25,800	425	0.035	22,800	285	0.025
	2	27,400	540	0.032	25,800	425	0.025	22,800	285	0.018
	2.5	27,400	540	0.032	25,800	425	0.025	22,800	285	0.018
	3	24,660	435	0.018	23,220	345	0.014	20,520	230	0.010
	4	24,660	435	0.018	23,220	345	0.014	20,520	230	0.010
	5	24,660	435	0.011	23,220	345	0.009	20,520	230	0.006
	6	21,920	345	0.011	20,640	270	0.009	18,240	180	0.006
	8	16,440	225	0.007	15,480	180	0.005	13,680	120	0.004
	10	16,440	225	0.005	15,480	180	0.004	13,680	120	0.003
	12	8,220	95	0.005	7,740	75	0.004	6,840	50	0.003
	14	8,220	95	0.005	7,740	75	0.004	6,840	50	0.003
	16	2,740	25	0.005	2,580	20	0.004	2,280	15	0.003
0.6	2	27,400	775	0.038	25,800	545	0.029	22,800	405	0.021
	3	27,400	775	0.038	25,800	545	0.029	22,800	405	0.021
	4	24,660	630	0.022	23,220	440	0.017	20,520	330	0.012
	5	24,660	630	0.014	23,220	440	0.011	20,520	330	0.008
	6	24,660	630	0.014	23,220	440	0.011	20,520	330	0.008
	8	21,920	495	0.008	20,640	350	0.006	18,240	260	0.005
	10	16,440	325	0.005	15,480	230	0.004	13,680	170	0.003
12	16,440	325	0.005	15,480	230	0.004	13,680	170	0.003	

 **UE512 series**

(mm)

Workpiece		Alloy steels, Carbon steels (SCM, SNCM, S45C)			Pre-hardened steels (NAK, CENA, KP4)			Hardened steels (SKD, SKT, STAVAX)		
Strength		~HRC35			HRC35~45			HRC45~55		
Conditions		~1100N/mm ²			1100~1500N/mm ²			1500~2000N/mm ²		
Diameter(Ø)	Effective Length	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)
0.6	14	8,220	140	0.005	7,740	100	0.004	6,840	75	0.003
	16	8,220	140	0.005	7,740	100	0.004	6,840	75	0.003
0.7	2	27,400	775	0.063	25,800	545	0.049	22,800	405	0.035
	4	24,660	630	0.025	23,220	440	0.020	20,520	330	0.014
	6	24,660	630	0.016	23,220	440	0.012	20,520	330	0.009
	8	21,920	495	0.016	20,640	350	0.012	18,240	260	0.009
	10	21,920	495	0.009	20,640	350	0.007	18,240	260	0.005
	12	16,440	325	0.009	15,480	230	0.005	13,680	170	0.004
0.8	2	27,400	775	0.072	25,800	605	0.056	22,800	450	0.040
	3	27,400	775	0.050	25,800	605	0.039	22,800	450	0.028
	4	27,400	775	0.050	25,800	605	0.039	22,800	450	0.028
	5	24,660	630	0.029	23,220	490	0.022	20,520	365	0.016
	6	24,660	630	0.029	23,220	490	0.022	20,520	365	0.016
	8	24,660	630	0.018	23,220	490	0.014	20,520	365	0.010
	10	21,920	495	0.018	20,640	385	0.014	18,240	290	0.010
	12	21,920	495	0.011	20,640	385	0.008	18,240	290	0.006
	14	16,440	325	0.007	15,480	255	0.006	13,680	190	0.004
	16	16,440	325	0.007	15,480	255	0.006	13,680	190	0.004
20	8,220	140	0.007	7,740	110	0.006	6,840	80	0.004	
0.9	6	22,140	575	0.032	20,970	440	0.025	18,450	330	0.018
	8	22,140	575	0.020	20,970	440	0.016	18,450	330	0.011
	10	19,680	455	0.020	18,640	350	0.016	16,400	260	0.011
1.0	2	24,600	1045	0.090	23,300	890	0.070	20,500	665	0.050
	3	24,600	1045	0.090	23,300	890	0.070	20,500	665	0.050
	4	24,600	1045	0.063	23,300	890	0.049	20,500	665	0.035
	5	24,600	1045	0.063	23,300	890	0.049	20,500	665	0.035
	6	22,140	845	0.036	20,970	720	0.028	18,450	540	0.020
	7	22,140	845	0.036	20,970	720	0.028	18,450	540	0.020
	8	22,140	845	0.036	20,970	720	0.028	18,450	540	0.020
	10	22,140	845	0.023	20,970	720	0.018	18,450	540	0.013
	12	19,680	670	0.023	18,640	570	0.018	16,400	425	0.013
	14	19,680	670	0.014	18,640	570	0.011	16,400	425	0.008
	16	14,760	440	0.014	13,980	375	0.011	12,300	280	0.008
	18	14,760	440	0.009	13,980	375	0.007	12,300	280	0.005
	20	14,760	440	0.009	13,980	375	0.007	12,300	280	0.005
	22	7,380	190	0.009	6,990	160	0.007	6,150	120	0.005
	26	7,380	190	0.009	6,990	160	0.007	6,150	120	0.005
30	7,380	190	0.009	6,990	160	0.007	6,150	120	0.005	
40	2,460	50	0.009	2,330	45	0.007	2,050	35	0.005	
50	2,460	50	0.006	2,330	45	0.005	2,050	35	0.003	
1.2	4	21900	930	0.076	20,700	720	0.059	18,200	485	0.042
	6	21,900	930	0.076	20,700	720	0.059	18,200	485	0.042
	8	19,710	755	0.043	18,630	585	0.034	16,380	395	0.024
	10	19,710	755	0.027	18,630	585	0.021	16,380	395	0.015
	12	19,710	755	0.027	18,630	585	0.021	16,380	395	0.015

 **UE512 series**

(mm)

Workpiece		Alloy steels, Carbon steels (SCM, SNCM, S45C)			Pre-hardened steels (NAK, CENA, KP4)			Hardened steels (SKD, SKT, STAVAX)		
Strength		~HRC35			HRC35~45			HRC45~55		
Conditions		~1100N/mm ²			1100~1500N/mm ²			1500~2000N/mm ²		
Diameter(Ø)	Effective Length	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)
1.2	14	17,520	595	0.027	16,560	460	0.021	14,560	310	0.015
	16	17,520	595	0.016	16,560	460	0.013	14,560	310	0.009
	20	13,140	390	0.011	12,420	300	0.008	10,920	205	0.006
	26	6,570	165	0.011	6,210	130	0.008	5,460	85	0.006
	30	6,570	165	0.011	6,210	130	0.008	5,460	85	0.006
1.4	6	19,200	815	0.088	18,100	570	0.069	16,000	425	0.049
	8	17,280	660	0.050	16,290	460	0.039	14,400	345	0.028
	10	17,280	660	0.050	16,290	460	0.039	14,400	345	0.028
	14	17,280	660	0.032	16,290	460	0.025	14,400	345	0.018
	16	15,360	520	0.032	14,480	365	0.025	12,800	270	0.018
	20	15,360	520	0.019	14,480	365	0.015	12,800	270	0.011
1.5	4	19,200	905	0.135	18,100	635	0.105	16,000	475	0.075
	5	19,200	905	0.095	18,100	635	0.074	16,000	475	0.053
	6	19,200	905	0.095	18,100	635	0.074	16,000	475	0.053
	7	19,200	905	0.095	18,100	635	0.074	16,000	475	0.053
	8	17,280	735	0.054	16,290	515	0.042	14,400	385	0.030
	10	17,280	735	0.054	16,290	515	0.042	14,400	385	0.030
	12	17,280	735	0.054	16,290	515	0.042	14,400	385	0.030
	14	17,280	735	0.034	16,290	515	0.026	14,400	385	0.019
	16	15,360	580	0.034	14,480	405	0.026	12,800	305	0.019
	18	15,360	580	0.034	14,480	405	0.026	12,800	305	0.019
	20	15,360	580	0.020	14,480	405	0.016	12,800	305	0.011
	22	15,360	580	0.020	14,480	405	0.016	12,800	305	0.011
	26	11,520	380	0.014	10,860	265	0.011	9,600	200	0.008
30	11,520	380	0.014	10,860	265	0.011	9,600	200	0.008	
1.6	8	17,800	840	0.101	16,800	655	0.078	14,800	490	0.056
	10	16,020	680	0.058	15,120	530	0.045	13,320	395	0.032
	12	16,020	680	0.058	15,120	530	0.045	13,320	395	0.032
	16	16,020	680	0.036	15,120	530	0.028	13,320	395	0.020
	20	14,240	540	0.036	13,440	420	0.028	11,840	315	0.020
1.8	8	17,800	840	0.113	16,800	655	0.088	14,800	490	0.063
	10	16,020	680	0.065	15,120	530	0.050	13,320	395	0.036
	12	16,020	680	0.065	15,120	530	0.050	13,320	395	0.036
	16	16,020	680	0.041	15,120	530	0.032	13,320	395	0.023
	20	14,240	540	0.041	13,440	420	0.032	11,840	315	0.023
2.0	6	14,400	820	0.180	13,600	620	0.140	12,000	475	0.100
	8	14,400	820	0.126	13,600	620	0.098	12,000	475	0.070
	10	14,400	820	0.126	13,600	620	0.098	12,000	475	0.070
	12	12,960	665	0.072	12,240	500	0.056	10,800	385	0.040
	14	12,960	665	0.072	12,240	500	0.056	10,800	385	0.040
	16	12,960	665	0.072	12,240	500	0.056	10,800	385	0.040
	18	12,960	665	0.045	12,240	500	0.035	10,800	385	0.025
	20	12,960	665	0.045	12,240	500	0.035	10,800	385	0.025
	22	11,520	525	0.045	10,880	395	0.035	9,600	305	0.025
26	11,520	525	0.045	10,880	395	0.035	9,600	305	0.025	

 **UE512 series**

(mm)

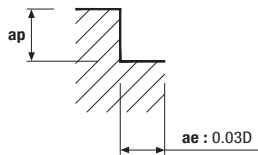
Workpiece		Alloy steels, Carbon steels (SCM, SNCM, S45C)			Pre-hardened steels (NAK, CENA, KP4)			Hardened steels (SKD, SKT, STAVAX)		
Strength		~HRC35			HRC35~45			HRC45~55		
Conditions		~1100N/mm ²			1100~1500N/mm ²			1500~2000N/mm ²		
Diameter(Ø)	Effective Length	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)
2.0	30	11,520	525	0.027	10,880	395	0.021	9,600	305	0.015
	35	8,640	345	0.018	8,160	260	0.014	7,200	200	0.010
	40	8,640	345	0.018	8,160	260	0.014	7,200	200	0.010
	45	4,320	150	0.018	4,080	110	0.014	3,600	85	0.010
	50	4,320	150	0.018	4,080	110	0.014	3,600	85	0.010
	60	4,320	150	0.018	4,080	110	0.014	3,600	85	0.010
2.5	8	12,300	970	0.158	11,600	680	0.123	10,300	510	0.088
	10	12,300	970	0.158	11,600	680	0.123	10,300	510	0.088
	12	12,300	970	0.158	11,600	680	0.123	10,300	510	0.088
	14	11,070	785	0.090	10,440	550	0.070	9,270	415	0.050
	16	11,070	785	0.090	10,440	550	0.070	9,270	415	0.050
	18	11,070	785	0.090	10,440	550	0.070	9,270	415	0.050
	20	11,070	785	0.090	10,440	550	0.070	9,270	415	0.050
	22	11,070	785	0.056	10,440	550	0.044	9,270	415	0.031
	26	9,840	620	0.056	9,280	435	0.044	8,240	325	0.031
	30	9,840	620	0.056	9,280	435	0.044	8,240	325	0.031
	35	9,840	620	0.034	9,280	435	0.026	8,240	325	0.019
	40	7,380	405	0.034	6,960	285	0.026	6,180	215	0.019
	45	7,380	405	0.023	6,960	285	0.018	6,180	215	0.013
	50	7,380	405	0.023	6,960	285	0.018	6,180	215	0.013
3.0	6	10,900	860	0.270	10,300	605	0.210	6,600	450	0.150
	8	10,900	860	0.270	10,300	605	0.210	6,600	450	0.150
	10	10,900	860	0.189	10,300	605	0.147	6,600	450	0.105
	12	10,900	860	0.189	10,300	605	0.147	6,600	450	0.105
	14	10,900	860	0.189	10,300	605	0.147	6,600	450	0.105
	16	9,810	695	0.108	9,270	490	0.084	5,940	365	0.060
	18	9,810	695	0.108	9,270	490	0.084	5,940	365	0.060
	20	9,810	695	0.108	9,270	490	0.084	5,940	365	0.060
	22	9,810	695	0.108	9,270	490	0.084	5,940	365	0.060
	26	9,810	695	0.068	9,270	490	0.053	5,940	365	0.038
	30	9,810	695	0.068	9,270	490	0.053	5,940	365	0.038
	35	8,720	550	0.068	8,240	385	0.053	5,280	290	0.038
	40	8,720	550	0.041	8,240	385	0.032	5,280	290	0.023
	45	8,720	550	0.041	8,240	385	0.032	5,280	290	0.023
50	6,540	360	0.027	6,180	255	0.021	3,960	190	0.015	
60	6,540	360	0.027	6,180	255	0.021	3,960	190	0.015	
4.0	8	8,000	1,300	0.360	7,600	1,160	0.280	6,700	770	0.200
	10	8,000	1,300	0.360	7,600	1,160	0.280	6,700	770	0.200
	12	8,000	1,300	0.360	7,600	1,160	0.280	6,700	770	0.200
	14	8,000	1,300	0.252	7,600	1,160	0.196	6,700	770	0.140
	16	8,000	1,300	0.252	7,600	1,160	0.196	6,700	770	0.140
	18	8,000	1,300	0.252	7,600	1,160	0.196	6,700	770	0.140
	20	8,000	1,300	0.252	7,600	1,160	0.196	6,700	770	0.140
	22	7,200	1,055	0.144	6,840	940	0.112	6,030	625	0.080
26	7,200	1,055	0.144	6,840	940	0.112	6,030	625	0.080	

UE512 series

(mm)

Workpiece		Alloy steels, Carbon steels (SCM, SNCM, S45C)			Pre-hardened steels (NAK, CENA, KP4)			Hardened steels (SKD, SKT, STAVAX)		
Strength		~HrC35			HrC35~45			HrC45~55		
Conditions		~1100N/mm ²			1100~1500N/mm ²			1500~2000N/mm ²		
Diameter(Ø)	Effective Length	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)
4.0	30	7,200	1,055	0.144	6,840	940	0.112	6,030	625	0.080
	35	7,200	1,055	0.090	6,840	940	0.070	6,030	625	0.050
	40	7,200	1,055	0.090	6,840	940	0.070	6,030	625	0.050
	45	6,400	830	0.090	6,080	740	0.070	5,360	495	0.050
	50	6,400	830	0.090	6,080	740	0.070	5,360	495	0.050
	60	6,400	830	0.054	6,080	740	0.042	5,360	495	0.030
5.0	16	6,400	1,155	0.315	6,100	900	0.245	5,400	605	0.175
	20	6,400	1,155	0.315	6,100	900	0.245	5,400	605	0.175
	26	5,760	935	0.180	5,490	730	0.140	4,860	490	0.100
	30	5,760	935	0.180	5,490	730	0.140	4,860	490	0.100
	35	5,760	935	0.180	5,490	730	0.140	4,860	490	0.100
	40	5,760	935	0.180	5,490	730	0.140	4,860	490	0.100
	50	5,760	935	0.113	5,490	730	0.088	4,860	490	0.063
6.0	60	5,120	740	0.113	4,880	575	0.088	4,320	385	0.063
	15	5,300	1,055	0.540	5,000	820	0.420	4,400	550	0.300
	20	5,300	1,055	0.378	5,000	820	0.294	4,400	550	0.210
	30	5,300	1,055	0.378	5,000	820	0.294	4,400	550	0.210
8.0	32	4,770	855	0.216	4,500	665	0.168	3,960	445	0.120
	25	4,000	950	0.504	3,800	750	0.392	3,300	500	0.280
	30	4,000	950	0.504	3,800	750	0.392	3,300	500	0.280
	42	3,600	770	0.288	3,400	605	0.224	2,950	405	0.160
10.0	30	3,200	900	0.900	3,050	680	0.700	2,630	400	0.500
	35	3,200	900	0.630	3,050	680	0.490	2,630	400	0.350
	45	3,200	900	0.630	3,050	680	0.490	2,630	400	0.350
12.0	35	2,650	800	1.080	2,520	600	0.840	2,180	350	0.600
	40	2,650	800	0.756	2,520	600	0.588	2,180	350	0.420
	50	2,650	800	0.756	2,520	600	0.588	2,180	350	0.420

Application Tip



UE522A series _ Slotting

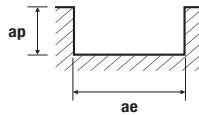
(inch)

Workpiece		Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled Castiron		Hardened Castiron	
Conditions		125HB~300HB		350HB		200HB		130HB~260HB		HRC55		400HB		HRC55	
Diameter (Ø)	Cutting length	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)
3/64	1/8	13,710	3	10,970	3	13,710	3	13,710	3	6,860	1.2	10,970	3	6,860	1.2
1/16	1/4	10,000	3	8,000	2	10,000	3	10,000	3	5,000	1	8,000	2	5,000	1
5/64	5/16	9,210	3	7,370	3	9,210	3	9,210	3	4,610	1.4	7,370	3	4,610	1.4
3/32	5/8	7,640	3	6,150	3	7,640	3	8,290	2	4,150	1	6,150	3	3,820	1.4
1/8	1/2	5,670	4	4,600	3	5,670	4	5,670	4	2,830	1.4	4,600	3	2,830	1.4
	3/4	5,100	3	4,140	2	5,100	3	5,670	4	2,830	1.4	4,140	2	2,550	1.2
	1	5,100	3	4,140	2	5,100	3	5,100	3	2,550	1.2	4,140	2	2,550	1
3/16	5/8	3,630	3	2,890	3	3,630	3	3,630	3	1,820	1.4	2,890	3	1,820	1.4
	3/4	3,630	3	2,890	3	3,630	3	3,630	3	1,820	1.4	2,890	3	1,820	1.4
13/64	3/4	4,130	6	3,270	5	4,130	6	3,270	3	1,640	1.2	3,270	5	2,140	2
1/4	3/4	3,390	6	2,720	5	3,390	6	3,390	6	1,760	2.4	2,720	5	1,760	2.4
	1 1/8	3,390	5	2,720	5	3,390	5	3,390	5	1,760	2.2	2,720	5	1,760	2.2
	1 1/2	3,050	4	2,450	4	3,050	4	3,050	4	1,580	1.6	2,450	4	1,580	1.6
5/16	1	2,930	8	2,320	6	2,930	8	2,930	8	1,530	2.8	2,320	6	1,530	2.8
	1 1/8	2,930	8	2,320	6	2,930	8	2,930	8	1,530	2.8	2,320	6	1,530	2.8
3/8	1 1/8	2,700	8	2,200	7	2,700	8	2,700	8	13,330	3	2,200	7	13,330	3
	1 3/16	2,700	8	2,200	7	2,700	8	2,700	8	13,330	3	2,200	7	13,330	3
	1 3/4	2,700	7	2,200	6	2,700	7	2,700	7	1,330	2.6	2,200	6	1,330	2.6
	2	2,430	6	1,980	5	2,430	6	2,430	6	1,200	2.4	1,980	5	1,200	2.4
1/2	1 3/8	1,790	5	1,490	5	1,790	5	1,790	5	900	2	1,490	5	900	2
	1 1/2	1,790	5	1,490	5	1,790	5	1,790	5	900	2	1,490	5	900	2
	2	1,790	5	1,490	4	1,790	5	1,790	5	900	1.6	1,490	4	900	1.6
5/8	2 1/4	1,730	6	1,300	4	1,730	6	1,730	6	810	2	1,300	4	810	2
3/4	2 1/4	1,340	3	1,050	2	1,340	3	1,340	3	660	1.2	1,050	2	660	1.2
1	2 1/4	1,210	3	940	2	1,210	3	1,210	3	600	1	940	2	600	1

Application Tip

ap : 0.03D (up to Ø1/8 : 0.2D, up to Ø1/32 : 0.15D)

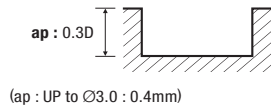
ap : 0.05D




UE522 series

(mm)

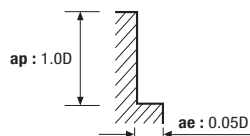
Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Hardened steels (SKD, SKT, STAVAX)	
	~HRC35		HRC35~45		HRC45~55	
	~1100N/mm ²		1100~1500N/mm ²		1500~2000N/mm ²	
	Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)
2.0	6,300	60	5,040	50	3,150	25
3.0	4,410	70	3,570	60	2,200	30
4.0	3,570	85	2,840	70	1,790	35
5.0	3,050	105	2,420	85	1,580	40
6.0	2,630	125	2,100	105	1,370	50
8.0	2,000	135	1,580	105	1,050	50
10.0	1,680	135	1,370	105	840	50
12.0	1,370	105	1,160	95	700	40
16.0	1,160	95	890	75	560	35
20.0	840	70	680	50	420	25

Application Tip

UE504A series _ Side cutting

(inch)

Workpiece	Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Stainless Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled Castiron		Hardened Castiron	
	125HB~300HB		350HB		200HB		180HB		130HB~260HB		HRC55		400HB		HRC55	
	Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)
1/32	22,680	12	13,610	7	22,680	12	11,340	6	22,680	12	9,070	2	13,610	7	9,070	2
3/64	22,680	12	13,610	7	22,680	12	11,340	6	22,680	12	9,070	2	13,610	7	9,070	2
1/16	17,720	11	10,630	7	17,720	11	8,860	6	17,720	11	7,090	2	10,630	7	7,090	2
5/64	14,560	12	9,520	7	14,560	12	7,940	6	14,560	12	6,350	2	9,520	7	6,350	2
3/32	13,440	14	8,610	9	13,440	14	7,170	7	13,440	14	5,510	3	8,610	9	5,510	3
1/8	10,540	13	6,570	8	10,540	13	5,460	7	10,540	13	3,970	2	6,570	8	3,970	2
5/32	10,090	19	6,230	12	10,090	19	5,200	10	10,090	19	3,860	3	6,230	12	3,860	3
3/16	8,180	24	4,960	15	8,180	24	4,160	12	8,180	24	3,110	3	4,960	15	3,110	3
13/64	7,640	25	4,580	15	7,640	25	3,830	13	7,640	25	2,810	3	4,580	15	2,810	3
1/4	6,570	27	3,970	17	6,570	27	3,350	13	6,570	27	2,360	3	3,970	17	2,360	3
9/32	5,980	28	3,610	16	5,980	28	3,030	14	5,980	28	2,250	4	3,610	16	2,250	4
5/16	5,290	30	3,170	16	5,290	30	2,650	15	5,290	30	2,120	5	3,170	16	2,120	5
3/8	4,280	27	2,620	13	4,280	27	2,200	13	4,280	27	1,780	4	2,620	13	1,780	4
7/16	3,710	23	2,280	11	3,710	23	1,880	11	3,710	23	1,560	4	2,280	11	1,560	4
1/2	3,240	21	1,980	10	3,240	21	1,610	10	3,240	21	1,370	3	1,980	10	1,370	3
5/8	2,770	18	1,710	9	2,770	18	1,390	8	2,770	18	1,140	3	1,710	9	1,140	3
3/4	2,200	14	1,400	7	2,200	14	1,100	6	2,200	14	890	2	1,400	7	890	2
1	1,600	10	1,300	9	1,600	10	800	4	1,600	10	830	2	1,300	9	830	2

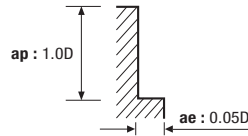
Application Tip

UE504, UXE504 series

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Stainless steels (SUS)		Hardened steels (SKD, SKT, STAVAX)		
	~HRC35		HRC35~45				HRC45~55		
	~1100N/mm ²		1100~1500N/mm ²		-		1500~2000N/mm ²		
	Strength	Conditions	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	
Diameter(Ø)									
2.0		11,560	280	7,560	170	6,300	140	6,300	5,040
3.0		8,920	320	5,560	200	4,620	170	4,620	3,360
4.0		7,560	570	4,620	350	3,880	280	3,880	2,940
5.0		6,300	600	3,780	360	3,160	300	3,160	2,320
6.0		5,560	660	3,360	410	2,840	330	2,840	2,000
8.0		4,200	710	2,520	380	2,100	350	2,100	1,680
10.0		3,260	610	2,000	300	1,680	300	1,680	1,360
12.0		2,740	520	1,680	250	1,360	240	1,360	1,160
16.0		2,200	410	1,360	200	1,100	300	1,100	900
20.0		1,680	320	1,060	160	840	150	840	680
25.0		1,360	250	840	130	680	120	680	540

Application Tip

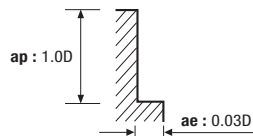


UE504AH series

(inch)

Workpiece	Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled CastIron		Hardened CastIron	
	125HB~300HB		350HB		200HB		130HB~260HB		HRC55		400HB		HRC55	
	Conditions													
	Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)
1/32	45,360	30	27,220	14	45,360	30	45,360	30	18,140	6	27,220	21	18,140	6
3/64	45,360	30	27,220	14	45,360	30	45,360	30	18,140	6	27,220	21	18,140	6
1/16	35,440	27.5	21,260	14	35,440	27.5	35,440	27.5	14,180	6	21,260	21	14,180	6
5/64	29,120	30	19,040	14	29,120	30	29,120	30	12,700	6	19,040	21	12,700	6
3/32	22,848	35	17,220	18	22,848	35	22,848	35	11,020	9	17,220	27	11,020	9
1/8	17,918	18.2	13,140	16	17,918	18.2	17,918	18.2	7,940	6	13,140	24	7,940	6
5/32	17,153	26.6	12,460	24	17,153	26.6	17,153	26.6	7,720	9	12,460	36	7,720	9
3/16	13,906	33.6	9,920	30	13,906	33.6	13,906	33.6	6,220	9	9,920	45	6,220	9
13/64	12,988	35	9,160	30	12,988	35	12,988	35	5,620	9	9,160	45	5,620	9
1/4	11,169	37.8	7,940	34	11,169	37.8	11,169	37.8	4,720	9	7,940	51	4,720	9
9/32	10,166	39.2	7,220	32	10,166	39.2	10,166	39.2	4,500	12	7,220	48	4,500	12
5/16	8,993	42	6,340	32	8,993	42	8,993	42	4,240	15	6,340	48	4,240	15
3/8	7,276	37.8	5,240	26	7,276	37.8	7,276	37.8	3,560	12	5,240	39	3,560	12
7/16	6,307	32.2	4,560	22	6,307	32.2	6,307	32.2	3,120	12	4,560	33	3,120	12
1/2	5,508	29.4	3,960	20	5,508	29.4	5,508	29.4	2,740	9	3,960	30	2,740	9
5/8	4,709	25.2	3,420	18	4,709	25.2	4,709	25.2	2,280	9	3,420	27	2,280	9
3/4	3,740	19.6	2,800	14	3,740	19.6	3,740	19.6	1,780	6	2,800	21	1,780	6
1	2,720	14	2,600	18	2,720	14	2,720	14	1,660	6	2,600	27	1,660	6

Application Tip

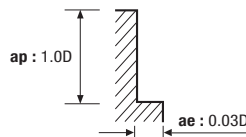


 **UE504H series**

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Hardened steels (SKD, SKT, STAVAX)	
	~HRC35		HRC35~45		HRC45~55	
Strength						
Conditions	~1100N/mm ²		1100~1500N/mm ²		1500~2000N/mm ²	
Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)
1.0	45,000	750	37,000	560	23,000	300
2.0	23,500	800	18,000	540	12,000	360
3.0	15,750	810	12,600	580	8,280	380
4.0	12,150	830	9,540	600	6,345	400
6.0	9,450	900	7,470	640	4,950	440
8.0	7,110	860	5,625	620	3,780	410
10.0	5,580	800	4,410	570	2,925	380
12.0	4,770	800	3,780	570	2,520	380
16.0	3,600	810	2,900	570	2,000	400
20.0	3,000	810	2,300	570	1,600	400

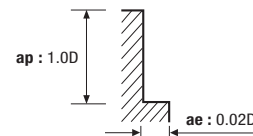
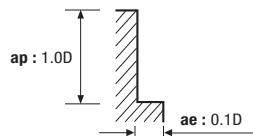
Application Tip


 **ULE504 series _ General processing**

(mm)

Workpiece	Non-ferrous steel Alloy steel, Cast iron		Heat treatment steel				Stainless steel	
	~HRC30		HRC35~45		HRC45~55			
Strength								
Conditions	~1000N/mm ²		1000~1500N/mm ²		1500~2000N/mm ²		-	
Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)
2.0	12,100	320	7,900	195	2,700	47	6,600	160
3.0	9,400	370	5,840	230	2,000	58	4,850	195
4.0	7,900	655	4,850	405	1,500	58	4,070	320
5.0	6,600	690	3,970	415	1,300	58	3,320	345
6.0	5,830	760	3,530	470	1,150	58	2,980	380
8.0	4,410	815	2,650	435	880	58	2,200	405
10.0	3,420	700	2,100	345	720	46	1,760	345
12.0	2,880	600	1,760	290	590	46	1,430	275
16.0	2,310	470	1,430	230	460	29	1,150	230
20.0	1,760	370	1,110	185	340	29	880	175
25.0	1,430	290	880	150	270	23	715	140

Application Tip

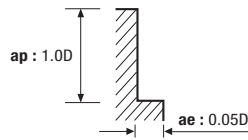


UXE504A series _ Side cutting

(inch)

Workpiece Conditions Diameter(Ø)	Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Stainless Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled Castron		Hardened Castron	
	125HB~300HB		350HB		200HB		180HB		130HB~260HB		HrC55		400HB		HrC55	
	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)
1/32	22,680	12	13,610	7	22,680	12	11,340	6	22,680	12	9,070	2	13,610	7	9,070	2
3/64	22,680	12	13,610	7	22,680	12	11,340	6	22,680	12	9,070	2	13,610	7	9,070	2
1/16	17,720	11	10,630	7	17,720	11	8,860	6	17,720	11	7,090	2	10,630	7	7,090	2
5/64	14,560	12	9,520	7	14,560	12	7,940	6	14,560	12	6,350	2	9,520	7	6,350	2
3/32	13,440	14	8,610	9	13,440	14	7,170	7	13,440	14	5,510	3	8,610	9	5,510	3
1/8	10,540	13	6,570	8	10,540	13	5,460	7	10,540	13	3,970	2	6,570	8	3,970	2
5/32	10,090	19	6,230	12	10,090	19	5,200	10	10,090	19	3,860	3	6,230	12	3,860	3
3/16	8,180	24	4,960	15	8,180	24	4,160	12	8,180	24	3,110	3	4,960	15	3,110	3
13/64	7,640	25	4,580	15	7,640	25	3,830	13	7,640	25	2,810	3	4,580	15	2,810	3
1/4	6,570	27	3,970	17	6,570	27	3,350	13	6,570	27	2,360	3	3,970	17	2,360	3
9/32	5,980	28	3,610	16	5,980	28	3,030	14	5,980	28	2,250	4	3,610	16	2,250	4
5/16	5,290	30	3,170	16	5,290	30	2,650	15	5,290	30	2,120	5	3,170	16	2,120	5
3/8	4,280	27	2,620	13	4,280	27	2,200	13	4,280	27	1,780	4	2,620	13	1,780	4
7/16	3,710	23	2,280	11	3,710	23	1,880	11	3,710	23	1,560	4	2,280	11	1,560	4
1/2	3,240	21	1,980	10	3,240	21	1,610	10	3,240	21	1,370	3	1,980	10	1,370	3
5/8	2,770	18	1,710	9	2,770	18	1,390	8	2,770	18	1,140	3	1,710	9	1,140	3
3/4	2,200	14	1,400	7	2,200	14	1,100	6	2,200	14	890	2	1,400	7	890	2
1	1,600	10	1,300	9	1,600	10	800	4	1,600	10	830	2	1,300	9	830	2

Application Tip

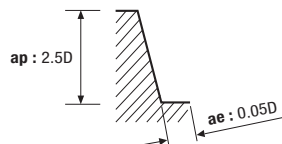


UTE504 series

(mm)

Workpiece Strength Conditions Diameter(Ø)	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)	
	~HrC35		HrC35~45	
	~1100N/mm ²		1100~1500N/mm ²	
	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)
3.0	3,969	216	3,213	180
4.0	3,213	252	2,556	207
6.0	2,367	378	1,890	306
8.0	1,800	450	1,422	324
10.0	1,440	450	1,170	333

Application Tip

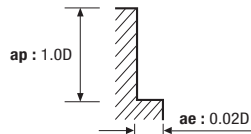


1 inch UE514A series

(inch)

Workpiece		Non-alloy Steel, Low alloy Steel			Low alloy Steel			High alloyed Steel, and tool Steel			Grey cast iron, Nodular Cast iron, Malleable Cast iron			Hardened Steel			Chilled CastIron			Hardened CastIron		
Conditions		125HB~300HB			350HB			200HB			130HB~260HB			HRC55			400HB			HRC55		
Diameter (Ø)	Neck Length	R.P.M n(min ⁻¹)	Feed vf(in/min)	ap (inch)	R.P.M n(min ⁻¹)	Feed vf(in/min)	ap (inch)	R.P.M n(min ⁻¹)	Feed vf(in/min)	ap (inch)	R.P.M n(min ⁻¹)	Feed vf(in/min)	ap (inch)	R.P.M n(min ⁻¹)	Feed vf(in/min)	ap (inch)	R.P.M n(min ⁻¹)	Feed vf(in/min)	ap (inch)	R.P.M n(min ⁻¹)	Feed vf(in/min)	ap (inch)
1/32	5/32	19,650	12	0.0007	12,200	7	0.0005	19,650	12	0.0007	19,650	12	0.0007	7,560	2	0.004	12,200	7	0.0005	7,560	2	0.004
	3/16	19,650	12	0.0007	12,200	7	0.0005	19,650	12	0.0007	19,650	12	0.0007	7,560	2	0.004	12,200	7	0.0005	7,560	2	0.004
1/16	1/4	16,060	12	0.0009	10,110	7	0.0007	16,060	12	0.0009	16,060	12	0.0009	6,140	2	0.0006	10,110	7	0.0007	6,140	2	0.006
	5/16	16,060	12	0.0009	10,110	7	0.0007	16,060	12	0.0009	16,060	12	0.0009	6,140	2	0.0006	10,110	7	0.0007	6,140	2	0.006
5/64	5/16	14,010	13	0.0011	9,140	8	0.0009	14,010	13	0.0011	14,010	13	0.0011	6,050	2	0.007	9,140	8	0.0009	6,050	2	0.007
	3/8	14,010	13	0.0011	9,140	8	0.0009	14,010	13	0.0011	14,010	13	0.0011	6,050	2	0.007	9,140	8	0.0009	6,050	2	0.007
1/8	3/8	10,110	14	0.0026	6,300	9	0.002	10,110	14	0.0026	10,110	14	0.0026	3,810	3	0.016	6,300	9	0.002	3,810	3	0.016
	1/2	10,110	14	0.0019	6,300	9	0.0014	10,110	14	0.0019	10,110	14	0.0019	3,810	3	0.011	6,300	9	0.0014	3,810	3	0.011
3/16	1/2	7,620	22	0.0039	4,650	14	0.003	7,620	22	0.0039	7,620	22	0.0028	2,960	2	0.017	4,650	14	0.003	2,960	2	0.024
	5/8	7,620	22	0.0028	4,650	14	0.0021	7,620	22	0.0028	7,620	22	0.0039	2,960	2	0.024	4,650	14	0.003	2,960	2	0.024
13/64	3/4	7,330	28	0.003	4,390	16	0.0022	7,330	28	0.003	7,330	28	0.003	2,690	3	0.018	4,390	16	0.0022	2,690	3	0.018
	1 1/2	6,590	22	0.0017	3,950	13	0.0013	6,590	22	0.0017	6,590	22	0.0017	2,420	3	0.010	3,950	13	0.0013	2,420	3	0.010
1/4	5/8	6,300	29	0.0052	3,810	18	0.0039	6,300	29	0.0052	6,300	29	0.0052	2,270	4	0.031	3,810	18	0.0039	2,270	4	0.031
	1 3/16	6,300	29	0.0037	3,810	18	0.0028	6,300	29	0.0037	6,300	29	0.0037	2,270	4	0.022	3,810	18	0.0028	2,270	4	0.022
5/16	1	5,080	34	0.0046	3,040	18	0.0035	5,080	34	0.0046	5,080	34	0.0046	2,030	5	0.028	3,040	18	0.0035	2,030	5	0.028
	1 5/8	4,570	27	0.0026	2,740	14	0.002	4,570	27	0.0026	4,570	27	0.0026	1,820	4	0.016	2,740	14	0.002	1,820	4	0.016
3/8	1 3/16	4,100	30	0.0055	2,520	15	0.0041	4,100	30	0.0055	4,100	30	0.0055	1,710	4	0.033	2,520	15	0.0041	1,710	4	0.033
	1 3/4	4,100	30	0.0055	2,520	15	0.0041	4,100	30	0.0055	4,100	30	0.0055	1,710	4	0.033	2,520	15	0.0041	1,710	4	0.033
1/2	1 3/8	3,120	23	0.0105	1,900	11	0.0079	3,120	23	0.0105	3,120	23	0.0105	1,320	4	0.063	1,900	11	0.0079	1,320	4	0.063
	2	3,120	23	0.0074	1,900	11	0.0055	3,120	23	0.0074	3,120	23	0.0074	1,320	4	0.044	1,900	11	0.0055	1,320	4	0.044

Application Tip

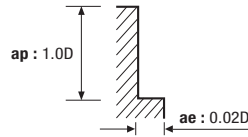


UE514 series

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Stainless steels (SUS)		Hardened steels (SKD, SKT, STAVAX)	
	~HRC35		HRC35~45				HRC45~55	
Strength								
Conditions	~1100N/mm ²		1100~1500N/mm ²		-		1500~2000N/mm ²	
Diameter(Ø)	R.P.M n (min ⁻¹)	Feed vf (mm/min)	R.P.M n (min ⁻¹)	Feed vf (mm/min)	R.P.M n (min ⁻¹)	Feed vf (mm/min)	R.P.M n (min ⁻¹)	Feed vf (mm/min)
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
10.0	3,910	730	2,400	360	2,010	360	1,630	105
12.0	3,300	620	2,010	300	1,630	280	1,400	95

Application Tip



UE524A series _ Side cutting

(inch)

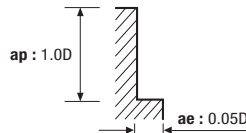
Workpiece		Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled Castron		Hardened Castron	
Conditions		125HB~300HB		350HB		200HB		130HB~260HB		HrC55		400HB		HrC55	
Diameter (Ø)	Cutting length	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)
3/64	1/8	16,330	8	9,310	3	16,330	8	16,330	8	5,710	2	9,310	3	5,710	2
	5/32	16,330	8	9,310	3	16,330	8	16,330	8	5,710	2	9,310	3	5,710	2
1/16	1/4	13,040	8	7,430	3	13,040	8	13,040	8	4,560	2	7,430	3	4,560	2
5/64	5/16	10,670	10	6,100	4	10,670	10	10,670	10	3,810	2	6,100	4	3,810	2
	3/8	10,670	10	6,100	4	10,670	10	10,670	10	3,810	2	6,100	4	3,810	2
3/32	3/8	9,440	11	5,420	5	9,440	11	9,440	11	3,370	3	5,420	5	3,370	3
	1/2	8,500	10	4,880	4	8,500	10	8,500	10	3,030	2	4,880	4	3,030	2
1/8	1/2	7,000	10	4,050	5	7,000	10	7,000	10	2,490	2	4,050	5	2,490	2
	3/4	6,300	8	3,640	4	6,300	8	6,300	8	2,250	2	3,640	4	2,250	2
	1	6,300	8	3,640	3	6,300	8	6,300	8	2,250	2	3,640	3	2,250	2
3/16	5/8	5,040	11	2,860	5	5,040	11	5,040	11	1,800	2	2,860	5	1,800	2
	3/4	5,040	11	2,860	5	5,040	11	5,040	11	1,800	2	2,860	5	1,800	2
13/64	3/4	4,970	17	2,810	7	4,970	17	4,970	17	1,840	3	2,810	7	1,840	3
	1	4,970	17	2,810	7	4,970	17	4,970	17	1,840	3	2,810	7	1,840	3
1/4	3/4	4,170	19	2,380	8	4,170	19	4,170	19	1,550	4	2,380	8	1,550	4
	1 1/8	4,170	16	2,380	7	4,170	16	4,170	16	1,550	3	2,380	7	1,550	3
	1 1/2	3,760	13	2,140	6	3,760	13	3,760	13	1,400	3	2,140	6	1,400	3
5/16	1	3,390	22	1,910	9	3,390	22	3,390	22	1,270	4	1,910	9	1,270	4
	1 3/16	3,390	22	1,910	9	3,390	22	3,390	22	1,270	4	1,910	9	1,270	4
3/8	1 1/8	2,960	23	1,730	9	2,960	23	2,960	23	1,060	5	1,730	9	1,060	5
	1 3/16	2,960	23	1,730	9	2,960	23	2,960	23	1,060	5	1,730	9	1,060	5
	1 3/4	2,960	20	1,730	8	2,960	20	2,960	20	1,060	4	1,730	8	1,060	4
	2	2,660	18	1,550	7	2,660	18	2,660	18	950	3	1,550	7	950	3
	2 1/4	2,180	16	1,320	7	2,180	16	2,180	16	790	3	1,320	7	790	3
1/2	1 1/2	2,180	16	1,320	7	2,180	16	2,180	16	790	3	1,320	7	790	3
	2	2,180	14	1,320	6	2,180	14	2,180	14	790	3	1,320	6	790	2
	2 1/4	1,960	13	1,080	5	1,960	13	1,960	13	680	2	1,080	5	680	2
3/4	2 1/4	1,490	9	860	3	1,490	9	1,490	9	530	2	860	3	530	2
1	2 1/4	1,090	7	800	4	1,090	7	1,090	7	500	2	800	4	500	2

Application Tip

ae : 0.05D
ap : 2.5D

ae : 0.02D
ap : 2.0D

ae : 0.05D
ap : 2.5D

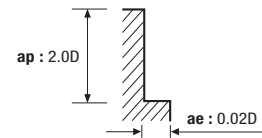
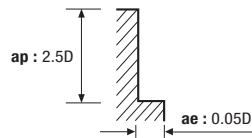


UE524 series

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Hardened steels (SKD, SKT, STAVAX)	
	~HRC35		HRC35~45		HRC45~55	
Strength						
Conditions	~1100N/mm ²		1100~1500N/mm ²		1500~2000N/mm ²	
Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)
2.0	6,300	100	5,040	80	3,150	45
3.0	4,410	115	3,570	100	2,200	55
4.0	3,570	140	2,840	115	1,790	60
5.0	3,050	180	2,420	140	1,580	70
6.0	2,630	215	2,100	180	1,370	90
8.0	2,000	230	1,580	180	1,050	90
10.0	1,680	230	1,370	180	840	90
12.0	1,370	180	1,160	160	700	70
16.0	1,160	160	890	125	560	60
20.0	840	115	680	90	420	45

Application Tip



1 inch UE506A series _ Side cutting (Normal Speed)

(inch)

Workpiece		Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled Castiron		Hardened Castiron	
Conditions		125HB~300HB		350HB		200HB		130HB~260HB		HrC55		400HB		HrC55	
Diameter (Ø)	Cutting length	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)
1/4	1/2	5,775	82	4,035	56	5,775	82	5,775	82	1,640	9	4,035	56	1,640	9
	5/8	5,775	82	4,035	56	5,775	82	5,775	82	1,640	9	4,035	56	1,640	9
5/16	3/4	4,440	83	3,110	57	4,440	83	4,440	83	1,230	9	3,110	57	1,230	9
3/8	7/8	3,705	87	2,560	60	3,705	87	3,705	87	1,105	9	2,560	60	1,105	9
	1	3,705	87	2,560	60	3,705	87	3,705	87	1,105	9	2,560	60	1,105	9
1/2	1	2,950	69	2,080	47	2,950	69	2,950	69	870	7	2,080	47	870	7
	1 3/16	2,950	69	2,080	47	2,950	69	2,950	69	870	7	2,080	47	870	7
5/8	1 1/4	2,225	53	1,565	37	2,225	53	2,225	53	685	5	1,565	37	685	5

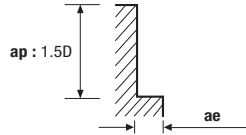
Application Tip

ae : 0.1D

ae : 0.05D

ae : 0.1D

ae : 0.05D



1 inch UE506A series _ Side cutting (High Speed)

(inch)

Workpiece		Low alloy Steel		High alloyed Steel, and tool Steel		Hardened Steel		Chilled Castiron		Hardened Castiron	
Conditions		350HB		325HB		HrC55		400HB		HrC55	
Diameter (Ø)	Cutting length	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)
1/4	1/2	17,455	249	17,455	249	8,735	125	17,455	249	8,735	125
	5/8	17,455	249	17,455	249	8,735	125	17,455	249	8,735	125
5/16	3/4	13,335	254	13,335	254	6,670	127	13,335	254	6,670	127
3/8	7/8	11,005	260	11,005	260	5,555	132	11,005	260	5,555	132
	1	11,005	260	11,005	260	5,555	132	11,005	260	5,555	132
1/2	1	8,735	206	8,735	206	4,365	103	8,735	206	4,365	103
	1 3/16	8,735	206	8,735	206	4,365	103	8,735	206	4,365	103
5/8	1 1/4	6,670	158	6,670	158	3,340	79	6,670	158	3,340	79

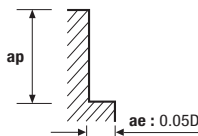
Application Tip

ap : 1.5D

ap : 1.0D

ap : 1.5D

ap : 1.0D

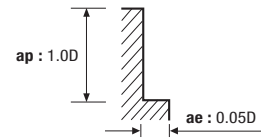
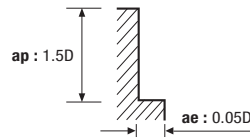
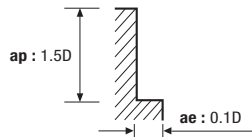


UE506 series _ General processing

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Hardened steels (SKD, SKT, STAVAX)	
	~HrC35		HrC35~45		HrC45~55	
Strength						
Conditions	~1100N/mm ²		1100~1500N/mm ²		1500~2000N/mm ²	
Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)
6.0	5,560	2,000	3,880	1,370	1,580	210
8.0	4,200	2,000	2,940	1,370	1,160	210
10.0	3,360	2,000	2,320	1,370	1,000	210
12.0	2,840	1,680	2,000	1,160	840	180
16.0	2,100	1,260	1,480	880	640	130
20.0	1,680	1,010	1,160	690	500	110
25.0	1,500	900	1,100	600	430	90

Application Tip

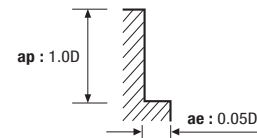
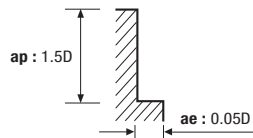


UE506 series _ High speed processing

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Hardened steels (SKD, SKT, STAVAX)	
	~HrC35		HrC45~55	
Strength				
Conditions	~1100N/mm ²		1500~2000N/mm ²	
Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)
6.0	16,800	6,090	8,400	3,050
8.0	12,600	6,090	6,300	3,050
10.0	9,980	5,990	5,040	3,050
12.0	8,400	5,040	4,200	2,520
16.0	6,300	3,780	3,160	1,890
20.0	5,040	3,050	2,520	1,470
25.0	4,500	2,700	2,200	1,300

Application Tip

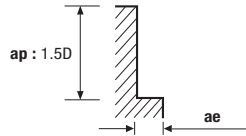


1 inch UE526A series _ Side cutting (Normal Speed)

(inch)

Workpiece		Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled Castiron		Hardened Castiron	
Conditions		125HB~300HB		350HB		200HB		130HB~260HB		HrC55		400HB		HrC55	
Diameter (Ø)	Cutting length	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)
1/4	1	5,775	70	4,035	48	5,775	70	5,775	70	1,640	7	4,035	48	1,640	7
5/16	1 1/2	4,440	71	3,110	49	4,440	71	4,440	71	1,230	7	3,110	49	1,230	7
3/8	1 3/4	3,705	87	2,560	60	3,705	87	3,705	87	1,105	9	2,560	60	1,105	9
1/2	2 3/16	2,950	59	2,080	40	2,950	59	2,950	59	870	6	2,080	40	870	6
5/8	2 5/8	2,225	45	1,565	31	2,225	45	2,225	45	685	5	1,565	31	685	5

Application Tip	ae : 0.1D	ae : 0.05D	ae : 0.1D	ae : 0.05D
------------------------	-----------	------------	-----------	------------

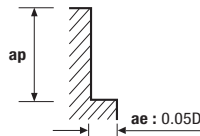


1 inch UE526A series _ Side cutting (High Speed)

(inch)

Workpiece		Low alloy Steel		High alloyed Steel, and tool Steel		Hardened Steel		Chilled Castiron		Hardened Castiron	
Conditions		350HB		325HB		HrC55		400HB		HrC55	
Diameter (Ø)	Cutting length	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)
1/4	1	17,455	212	17,455	212	8,735	106	17,455	212	8,735	106
5/16	1 1/2	13,335	216	13,335	216	6,670	108	13,335	216	6,670	108
3/8	1 3/4	11,005	260	11,005	260	5,555	132	11,005	260	5,555	132
1/2	2 3/16	8,735	175	8,735	175	4,365	88	8,735	175	4,365	88
5/8	2 5/8	6,670	134	6,670	134	3,340	67	6,670	134	3,340	67

Application Tip	ap : 1.5D	ap : 1.0D	ap : 1.5D	ap : 1.0D
------------------------	-----------	-----------	-----------	-----------

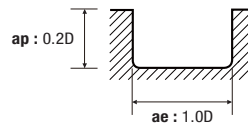


UR502A series _ Slotting

(inch)

Workpiece	Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled Cast Iron		Hardened Cast Iron	
	125HB~300HB		350HB		200HB		130HB~260HB		HRC55		400HB		HRC55	
	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)
1/16	20,800	9	12,760	4	20,800	9	20,800	9	9,830	2	15,870	4	9,830	2
1/8	12,500	10	8,090	5	12,500	10	12,500	10	4,990	3	8,090	5	4,990	3
3/16	10,000	15	6,425	7	10,000	15	10,000	15	4,045	4	6,425	7	4,045	4
1/4	7,500	19	4,760	9	7,500	19	7,500	19	3,100	5	4,760	9	3,100	5
5/16	6,000	22	3,830	10	6,000	22	6,000	22	2,540	5	3,830	10	2,540	5
3/8	5,300	22	3,440	10	5,300	22	5,300	22	2,120	5	3,440	10	2,120	5
1/2	3,900	16	2,630	9	3,900	16	3,900	16	1,590	4	2,630	9	1,590	4

Application Tip



UR502 series

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Hardened steels (SKD, SKT, STAVAX)	
	~HrC35		HrC35~45		HrC45~55	
	~1100N/mm ²		1100~1500N/mm ²		1500~2000N/mm ²	
Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)
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
1.0	27,600	240	18,000	100	11,000	60
1.5	22,000	250	13,500	110	8,500	60
2.0	18,000	260	11,560	120	7,200	70
2.5	15,000	270	9,500	130	6,100	70
3.0	13,240	280	8,560	140	5,280	70
4.0	10,720	340	6,820	170	4,300	80
5.0	9,160	420	5,800	200	3,800	100
6.0	7,900	500	5,040	250	3,280	120
8.0	6,000	540	3,800	250	2,520	120
10.0	5,040	540	3,280	250	2,020	120
12.0	4,120	420	2,780	230	1,680	100
16.0	3,100	360	2,100	170	1,280	80
20.0	2,520	280	1,640	120	1,000	60

Application Tip

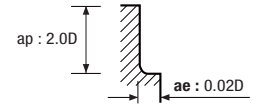
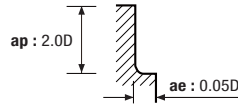


UR504, UR512 series

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Hardened steels (SKD, SKT, STAVAX)	
	~HrC35		HrC35~45		HrC45~55	
	~1100N/mm ²		1100~1500N/mm ²		1500~2000N/mm ²	
	Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)
3.0	4,410	115	3,570	100	2,200	55
4.0	3,570	140	2,840	115	1,790	60
5.0	3,050	180	2,420	140	1,580	70
6.0	2,630	215	2,100	180	1,370	85
8.0	2,000	230	1,580	180	1,050	85
10.0	1,680	230	1,370	180	840	85
12.0	1,370	180	1,160	160	700	70
16.0	1,160	160	890	125	560	60
20.0	840	115	680	90	420	45

Application Tip

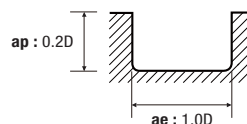


UR522A series _ Slotting

(inch)

Workpiece		Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled Castiron		Hardened Castiron	
Conditions		125HB~300HB		350HB		200HB		130HB~260HB		HrC55		400HB		HrC55	
Diameter (Ø)	Cutting length	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)
1/16	3/16	14,640	3	12,000	1	14,640	3	14,640	3	8,660	2	14,930	1	8,660	2
1/8	1/2	8,430	4	7,020	2	8,430	4	8,430	3	4,450	2	7,020	2	4,450	2
3/16	5/8	5,580	3	4,640	2	5,580	3	5,580	3	2,950	2	4,640	2	2,950	2
1/4	3/4	4,790	8	4,040	5	4,790	8	4,790	8	2,880	6	4,040	5	2,880	6
	1 1/8	4,790	8	4,040	5	4,790	8	4,790	8	2,880	6	4,040	5	2,880	6
5/16	1 3/16	3,690	11	3,190	7	3,690	11	3,690	11	1,910	4	3,190	7	1,910	4
	1 1/8	3,690	11	3,190	7	3,690	11	3,690	11	1,910	4	3,190	7	1,910	4
3/8	1 1/8	4,200	12	3,600	10	4,200	12	4,200	12	19,760	5	3,600	10	19,760	5
7/16	1	3,440	9	3,020	9	3,440	9	3,440	9	10,530	4	3,020	9	10,530	4
1/2	1 3/16	2,680	7	2,440	9	2,680	7	2,680	7	1,300	4	2,440	9	1,300	4
	2	2,680	7	2,440	9	2,680	7	2,680	7	1,300	4	2,440	9	1,300	4

Application Tip

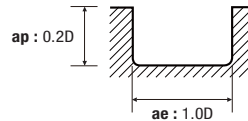


UR542A series _ Slotting

(inch)

Workpiece Conditions Diameter(Ø)	Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled Cast Iron		Hardened Cast Iron	
	125HB~300HB		350HB		200HB		130HB~260HB		HRC55		400HB		HRC55	
	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)
3/64	29,750	11	18,900	4	29,750	11	29,750	11	11,700	2	1,300	2	11,700	2
1/16	26,400	11	16,200	5	26,400	11	26,400	11	10,200	2	11,330	2	10,200	2
5/64	21,600	12	13,800	5	21,600	12	21,600	12	8,640	3	9,600	3	8,640	3
1/8	15,900	12	10,300	6	15,900	12	15,900	12	6,300	3	7,000	3	6,300	3
3/16	11,000	19	7,000	9	11,000	19	11,000	19	4,560	4	5,060	4	4,560	4
1/4	9,500	23	6,000	11	9,500	23	9,500	23	3,930	5	4,360	5	3,930	5
5/16	7,200	25	4,550	11	7,200	25	7,200	25	3,020	5	3,350	5	3,020	5
3/8	6,000	25	4,000	11	6,000	25	6,000	25	2,420	5	2,680	5	2,420	5
1/2	5,000	19	3,340	10	5,000	19	5,000	19	2,000	4	2,220	4	2,000	4

Application Tip

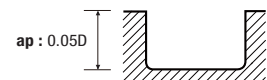


UR542 series

(mm)

Workpiece Strength Conditions Diameter(Ø)	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Hardened steels (SKD, SKT, STAVAX)	
	~HRC35		HRC35~45		HRC45~55	
	~1100N/mm ²		1100~1500N/mm ²		1500~2000N/mm ²	
	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)
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
1.0	33,100	280	21,600	120	13,200	70
1.5	26,400	300	16,200	130	10,200	70
2.0	21,600	310	13,800	140	8,640	80
2.5	18,000	320	11,400	150	7,320	80
3.0	15,900	330	10,300	160	6,300	80
4.0	12,800	400	8,200	200	5,150	95
5.0	11,000	500	7,000	240	4,560	120
6.0	9,500	600	6,000	300	3,930	140
8.0	7,200	640	4,550	300	3,020	140
10.0	6,000	640	4,000	300	2,420	140
12.0	5,000	500	3,340	270	2,000	120
16.0	3,720	450	2,520	210	1,540	95
20.0	3,000	330	1,950	140	1,200	70

Application Tip

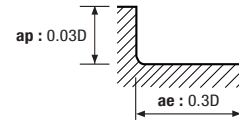
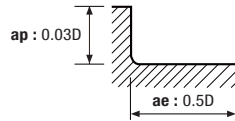


UDR503 series _ General processing

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Hardened steels (SKD, SKT, STAVAX)	
	~HRC35		HRC35~45		HRC45~55	
	~1100N/mm ²		1100~1500N/mm ²		1500~2000N/mm ²	
	Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)
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
10.0	3,800	3,750	3,600	3,500	2,700	2,700
12.0	3,200	4,200	3,250	4,250	2,250	2,300
16.0	2,400	3,100	2,250	2,900	1,700	1,750
20.0	1,900	2,500	1,800	2,350	1,350	1,400

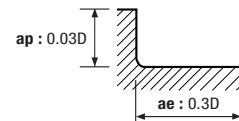
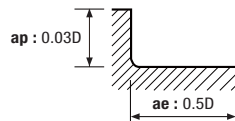
Application Tip


UDR503 series _ High speed processing

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Hardened steels (SKD, SKT, STAVAX)	
	~HRC35		HRC35~45		HRC45~55	
	~1100N/mm ²		1100~1500N/mm ²		1500~2000N/mm ²	
	Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)
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
10.0	5,750	5,650	5,000	4,900	4,200	4,250
12.0	4,800	6,300	4,150	5,450	3,500	3,650
16.0	3,600	4,700	3,100	4,050	2,650	2,700
20.0	2,900	3,750	2,500	3,250	2,100	2,150

Application Tip

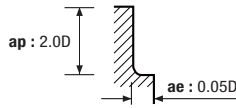


UXR504A series _ Side cutting

(inch)

Workpiece	Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled Cast Iron		Hardened Cast Iron	
	125HB~300HB		350HB		200HB		130HB~260HB		HRC55		400HB		HRC55	
	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)
1/16	21,550	12.5	13,760	9.5	21,550	12.5	21,550	12.5	8,545	5	13,760	9.5	8,545	5
1/8	12,500	13	8,090	10	12,500	13	12,500	13	4,990	5	8,090	10	4,990	5
3/16	9,400	16	5,960	12	9,400	16	9,400	16	3,830	6	5,960	12	3,830	6
13/64	8,900	16	5,620	14	8,900	16	8,900	16	3,680	7	5,620	14	3,680	7
1/4	7,500	16	4,760	13	7,500	16	7,500	16	3,100	6	4,760	13	3,100	6
5/16	6,000	18	3,830	14	6,000	18	6,000	18	2,540	7	3,830	14	2,540	7
3/8	5,300	19	3,440	15	5,300	19	5,300	19	2,120	7	3,440	15	2,120	7
1/2	3,900	13	2,630	12	3,900	13	3,900	13	1,590	5	2,630	12	15,930	5

Application Tip



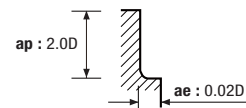
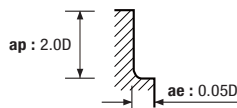
* 1.5 × D Axial cutting depth should be for DIA over 5/8 inch

UXR504 series

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Hardened steels (SKD, SKT, STAVAX)	
	~HRC35		HRC35~45		HRC45~55	
	~1100N/mm ²		1100~1500N/mm ²		1500~2000N/mm ²	
Diameter(Ø)	R.P.M n (min ⁻¹)	Feed vf (mm/min)	R.P.M n (min ⁻¹)	Feed vf (mm/min)	R.P.M n (min ⁻¹)	Feed vf (mm/min)
1.0	27,600	300	18,000	220	11,000	120
1.5	22,000	310	13,500	230	8,500	120
2.0	18,000	320	11,560	240	7,200	130
2.5	15,000	330	9,500	250	6,100	130
3.0	13,240	340	8,560	260	5,280	130
4.0	10,720	420	6,820	300	4,300	140
5.0	9,160	430	5,800	360	3,800	170
6.0	7,900	430	5,040	360	3,280	170
8.0	6,000	460	3,800	360	2,520	170
10.0	5,040	460	3,280	360	2,020	170
12.0	4,120	360	2,780	320	1,680	140
16.0	3,100	280	2,100	230	1,280	115
20.0	2,520	230	1,640	180	1,000	90

Application Tip

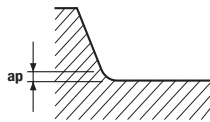


UTR504 series

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)			Pre-hardened steels (NAK, CENA, KP4)			Hardened steels (SKD, SKT, STAVAX)		
	~HRC35			HRC35~45			HRC45~55		
	~1100N/mm ²			1100~1500N/mm ²			1500~2000N/mm ²		
	Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	Ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	Ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)
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
1.0	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
2.0	9,000	630	0.040~0.080	7,200	450	0.040~0.060	4,500	270	0.020~0.040

Application Tip

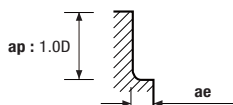


IXR514A series _ Side cutting

(inch)

Workpiece	Neck Length	Non-alloy Steel, Low alloy Steel			Low alloy Steel			High alloyed Steel, and tool Steel			Grey cast iron, Nodular Cast iron, Malleable Cast iron			Hardened Steel			Chilled Castiron			Hardened Castiron		
		125HB~300HB			350HB			200HB			130HB~260HB			HRC55			400HB			HRC55		
		R.P.M n(min ⁻¹)	Feed vf(in/min)	ap (inch)	R.P.M n(min ⁻¹)	Feed vf(in/min)	ap (inch)	R.P.M n(min ⁻¹)	Feed vf(in/min)	ap (inch)	R.P.M n(min ⁻¹)	Feed vf(in/min)	ap (inch)	R.P.M n(min ⁻¹)	Feed vf(in/min)	ap (inch)	R.P.M n(min ⁻¹)	Feed vf(in/min)	ap (inch)	R.P.M n(min ⁻¹)	Feed vf(in/min)	ap (inch)
3/64	5/32	29,980	15	0.0010	19,050	10	0.0007	29,980	15	0.0010	29,980	15	0.0010	11,790	6	0.0006	19,050	10	0.0007	11,790	6	0.0006
	1/4	26,990	12	0.0006	17,140	9	0.0004	26,990	12	0.0006	26,990	12	0.0006	10,610	5	0.0004	17,140	9	0.0004	10,610	5	0.0004
1/16	1/4	24,940	14	0.0013	15,310	10	0.0010	24,940	14	0.0013	24,940	14	0.0013	9,640	5	0.0008	15,310	10	0.0010	9,640	5	0.0008
	5/16	24,940	14	0.0013	15,310	10	0.0010	24,940	14	0.0013	24,940	14	0.0013	9,640	5	0.0008	15,310	10	0.0010	9,640	5	0.0008
1/8	5/16	15,020	15	0.0037	9,730	12	0.0028	15,020	15	0.0037	15,020	15	0.0037	5,950	6	0.0022	9,730	12	0.0028	5,950	6	0.0022
	3/8	15,020	15	0.0037	9,730	12	0.0028	15,020	15	0.0037	15,020	15	0.0037	5,950	6	0.0022	9,730	12	0.0028	5,950	6	0.0022
3/16	3/8	11,550	21	0.0056	7,350	18	0.0042	11,550	21	0.0056	11,550	21	0.0056	4,790	8	0.0034	7,350	18	0.0042	4,790	8	0.0034
	1/2	11,550	21	0.0056	7,350	18	0.0042	11,550	21	0.0056	11,550	21	0.0056	4,790	8	0.0034	7,350	18	0.0042	4,790	8	0.0034
1/4	3/4	8,980	19	0.0075	5,670	16	0.0056	8,980	19	0.0075	8,980	19	0.0075	3,710	8	0.0045	5,670	16	0.0056	3,710	8	0.0045
5/16	1	7,260	22	0.0066	4,590	17	0.0049	7,260	22	0.0066	7,260	22	0.0066	3,040	8	0.0039	4,590	17	0.0049	3,040	8	0.0039
	1 3/8	7,260	22	0.0066	4,590	17	0.0049	7,260	22	0.0066	7,260	22	0.0066	3,040	8	0.0039	4,590	17	0.0049	3,040	8	0.0039
3/8	1 3/16	6,300	23	0.0079	4,200	18	0.0059	6,300	23	0.0079	6,300	23	0.0079	2,540	8	0.0047	4,200	18	0.0059	2,540	8	0.0047
	1 1/2	6,300	23	0.0079	4,200	18	0.0059	6,300	23	0.0079	6,300	23	0.0079	2,540	8	0.0047	4,200	18	0.0059	2,540	8	0.0047
1/2	1 1/4	4,720	16	0.0150	3,160	14	0.0113	4,720	16	0.0150	4,720	16	0.0150	1,890	6	0.0090	3,160	14	0.0113	1,890	6	0.0090
	1 3/4	4,720	16	0.0105	3,160	14	0.0079	4,720	16	0.0105	4,720	16	0.0105	1,890	6	0.0063	3,160	14	0.0079	1,890	6	0.0063

Application Tip

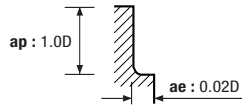


UR544, UXR514 series

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Hardened steels (SKD, SKT, STAVAX)	
	~HrC35		HrC35~45		HrC45~55	
Strength						
Conditions	~1100N/mm ²		1100~1500N/mm ²		1500~2000N/mm ²	
Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)
1.0	33,100	360	21,600	260	13,200	140
1.5	26,400	370	16,200	270	10,200	140
2.0	21,600	380	13,800	280	8,640	150
2.5	18,000	390	11,400	300	7,320	150
3.0	15,900	400	10,300	310	6,300	150
4.0	12,800	500	8,200	360	5,150	160
5.0	11,000	510	7,000	430	4,560	200
6.0	9,500	510	6,000	430	3,930	200
8.0	7,200	550	4,550	430	3,020	200
10.0	6,000	550	4,000	430	2,420	200
12.0	5,000	430	3,340	380	2,000	160
16.0	3,720	330	2,520	280	1,540	135
20.0	3,000	270	1,950	210	1,200	100

Application Tip



UXR524A series _ Side cutting

(inch)

Workpiece		Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled Castiron		Hardened CastIron	
Conditions		125HB~300HB		350HB		200HB		130HB~260HB		HrC55		400HB		HrC55	
Diameter (Ø)	Cutting length	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)
1/16	3/16	15,850	9	9,610	4	15,850	9	15,850	9	5,490	5	9,610	4	5,490	5
1/8	1/2	8,300	10	4,980	6	8,300	10	8,300	10	3,120	5	4,980	6	3,120	5
3/16	5/8	5,790	7	3,430	4	5,790	7	5,790	7	2,210	4	3,430	4	2,210	4
1/4	3/4	4,760	11	2,850	6	4,760	11	4,760	11	2,030	8	2,850	6	2,030	8
	1 1/8	4,760	9	2,850	5	4,760	9	4,760	9	2,030	6	2,850	5	2,030	6
5/16	13/16	3,840	13	2,300	7	3,840	13	3,840	13	1,520	5	2,300	7	1,520	5
	1 1/8	3,840	13	2,300	7	3,840	13	3,840	13	1,520	5	2,300	7	1,520	5
3/8	1 1/8	3,660	16	2,270	10	3,660	16	3,660	16	1,260	8	2,270	10	1,260	8
7/16	1	3,140	13	2,010	9	3,140	13	3,140	13	1,080	6	2,010	9	5,220	6
1/2	1 3/16	2,620	9	1,750	8	2,620	9	2,620	9	910	5	1,750	8	9,180	5

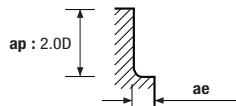
Application Tip

$ae : 0.05D$

$ae : 0.02D$

$ae : 0.05D$

$ae : 0.02D$



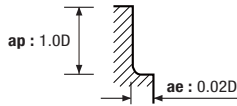
* 1.5 × D Axial cutting depth should be for DIA over 5/8 inch

UR544A series _ Side cutting

(inch)

Workpiece	Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled CastIron		Hardened CastIron	
	125HB~300HB		350HB		200HB		130HB~260HB		HRC55		400HB		HRC55	
	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)
3/64	29,980	15	19,050	10	29,980	15	29,980	15	11,790	6	19,050	10	11,790	6
1/16	24,940	14	15,310	10	24,940	14	24,940	14	9,640	5	15,310	10	9,640	5
5/64	19,980	14.5	12,520	11	19,980	14.5	19,980	14.5	7,795	5.5	12,520	11	7,795	5.5
1/8	15,020	15	9,730	12	15,020	15	15,020	15	5,950	6	9,730	12	5,950	6
3/16	11,550	21	7,350	18	11,550	21	11,550	21	4,790	8	7,350	18	4,790	8
1/4	8,980	19	5,670	16	8,980	19	8,980	19	3,710	8	5,670	16	3,710	8
5/16	7,260	22	4,590	17	7,260	22	7,260	22	3,040	8	4,590	17	3,040	8
3/8	6,300	23	4,200	18	6,300	23	6,300	23	2,540	8	4,200	18	2,540	8
1/2	4,720	16	3,160	14	4,720	16	4,720	16	1,890	6	3,160	14	1,890	6

Application Tip



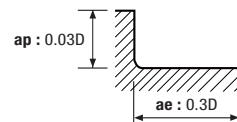
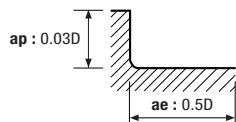
* $1.5 \times D$ Axial cutting depth should be for DIA over 5/8 inch

USPM4 series

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Hardened steels (SKD, SKT, STAVAX)	
	~HRC35		HRC35~45		HRC45~55	
	~1100N/mm ²		1100~1500N/mm ²		1500~2000N/mm ²	
Diameter(Ø)	R.P.M n (min ⁻¹)	Feed vf (mm/min)	R.P.M n (min ⁻¹)	Feed vf (mm/min)	R.P.M n (min ⁻¹)	Feed vf (mm/min)
1.0	49,000	7,650	40,000	6,500	35,000	5,750
1.5	37,000	8,550	30,000	7,200	27,000	6,400
2.0	29,700	9,000	24,300	7,560	21,600	6,750
3.0	19,800	9,900	16,200	8,100	14,400	7,650
4.0	15,300	10,800	12,600	8,550	10,800	7,920
6.0	9,900	11,700	8,100	9,900	7,200	8,640
8.0	7,380	11,700	6,300	9,900	5,400	8,640
10.0	5,850	10,800	4,950	9,000	4,320	8,550
12.0	4,950	10,800	4,140	9,000	3,690	8,100
16.0	3,690	9,000	3,060	7,920	2,700	7,020
20.0	2,970	7,200	2,430	6,300	2,160	5,670

Application Tip



UR506A series

(inch)

Workpiece	Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled Cast Iron		Hardened Cast Iron	
	125HB~300HB		350HB		200HB		130HB~260HB		HRC55		400HB		HRC55	
	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)
1/4	16,800	9.4	8,400	4.7	16,800	9.4	16,800	9.4	4,200	2.2	4,660	2.4	4,200	2.2
5/16	12,600	9.4	6,300	4.7	12,600	9.4	12,600	9.4	3,200	2.2	3,550	2.4	3,200	2.2
3/8	10,000	9.2	5,000	4.7	10,000	9.2	10,000	9.2	2,500	2.2	2,770	2.4	2,500	2.2
7/16	9,200	8.5	4,600	4.3	9,200	8.5	9,200	8.5	2,300	2.1	2,550	2.3	2,300	2.1
1/2	8,400	7.7	4,200	3.9	8,400	7.7	8,400	7.7	2,100	1.9	2,330	2.1	2,100	1.9
5/8	6,300	5.9	3,150	2.9	6,300	5.9	6,300	5.9	1,600	1.4	1,770	1.5	1,600	1.4

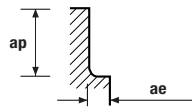
Application Tip

ae : 0.05D
ap : 1.5D

ae : 0.05D
ap : 1.0D

ae : 0.05D
ap : 1.5D

ae : 0.008D
ap : 1.0D

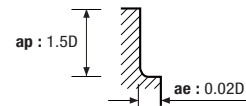
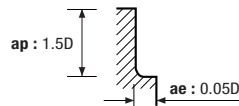


UR506 series

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Hardened steels (SKD, SKT, STAVAX)	
	~HrC35		HrC35~45		HrC45~55	
	~1100N/mm ²		1100~1500N/mm ²		1500~2000N/mm ²	
Diameter(Ø)	R.P.M n (min ⁻¹)	Feed vf (mm/min)	R.P.M n (min ⁻¹)	Feed vf (mm/min)	R.P.M n (min ⁻¹)	Feed vf (mm/min)
6.0	14,880	3,210	14,100	2,940	9,600	2,940
8.0	12,000	3,300	11,400	3,000	7,200	2,760
10.0	9,600	2,940	9,300	2,700	5,700	2,460
12.0	7,800	2,700	7,500	2,460	4,800	2,280
16.0	6,000	2,400	5,820	2,220	3,600	2,040
20.0	4,800	2,010	4,680	2,040	2,880	1,920

Application Tip

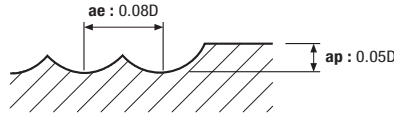


UBM502A series

(inch)

Workpiece	Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled CastIron		Hardened CastIron	
	125HB~300HB		350HB		200HB		130HB~260HB		HrC55		400HB		HrC55	
	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)
0.024	29,530	68	29,530	58	29,530	68	29,530	68	26,570	51	29,530	58	26,570	51
0.028	29,530	79	29,530	68	29,530	79	29,530	79	26,570	60	29,530	68	26,570	60
0.031	30,480	94	30,480	79	30,480	94	30,480	94	27,430	72	30,480	79	27,430	72
0.035	30,370	104	30,370	90	30,370	104	30,370	104	27,330	81	30,370	90	27,330	81
0.040	30,305	113	29,700	96	30,305	113	30,305	113	26,665	87	29,700	96	26,665	87
0.043	30,305	113	29,700	96	30,305	113	30,305	113	26,665	87	29,700	96	26,665	87
0.047	30,240	122	29,030	102	30,240	122	30,240	122	26,000	92	29,030	102	26,000	92
0.052	29,295	122	28,120	101	29,295	122	29,295	122	25,190	91	28,120	101	25,190	91
0.055	29,295	122	28,120	101	29,295	122	29,295	122	25,190	91	28,120	101	25,190	91
0.062	28,350	121	27,210	100	28,350	121	28,350	121	24,380	89	27,210	100	24,380	89

Application Tip

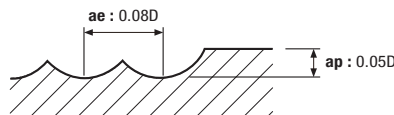


UB502A series

(inch)

Workpiece	Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled CastIron		Hardened CastIron	
	125HB~300HB		350HB		200HB		130HB~260HB		HrC55		400HB		HrC55	
	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)
1/32	30,480	94	30,480	79	30,480	94	30,480	94	27,430	72	30,480	79	27,430	72
3/64	30,240	122	29,030	102	30,240	122	30,240	122	26,000	92	29,030	102	26,000	92
1/16	28,350	121	27,210	100	28,350	121	28,350	121	24,380	89	27,210	100	24,380	89
5/64	30,050	136	28,910	114	30,050	136	30,050	136	24,190	99	28,910	114	24,190	95
3/32	24,990	145	24,040	125	24,990	145	24,990	145	20,160	99	24,040	125	20,160	99
1/8	18,770	134	18,030	118	18,770	134	18,030	118	15,120	89	18,030	118	15,120	89
3/16	12,310	132	11,820	114	12,310	132	12,310	132	9,920	86	11,820	114	9,920	86
13/64	10,820	133	10,350	112	10,820	133	10,820	133	8,720	86	10,350	112	8,720	86
1/4	7,880	108	7,600	92	7,880	108	7,880	108	6,240	69	7,600	92	6,240	69
9/32	7,070	102	6,820	86	7,070	102	7,070	102	5,680	66	6,820	86	5,680	66
5/16	6,710	100	6,470	83	6,710	100	6,710	100	5,440	64	6,470	83	5,440	64
3/8	5,860	92	5,610	77	5,860	92	5,860	92	4,720	60	5,610	77	5,720	60
1/2	3,940	66	3,780	56	3,940	66	3,940	66	3,170	42	3,780	56	3,170	42
5/8	3,370	63	3,240	52	3,370	63	3,370	63	2,720	41	3,240	52	2,720	41
3/4	2,800	58	2,710	48	2,800	58	2,800	58	2,270	37	2,710	48	2,270	37
1	2,540	53	2,460	44	2,540	53	2,540	53	2,060	34	2,460	44	2,060	34

Application Tip

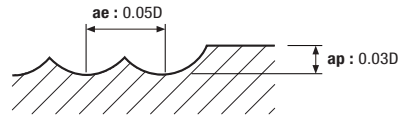


UB502, UB502P series

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Hardened steels (SKD, SKT, STAVAX)	
	~HrC35		HrC35~45		HrC45~55	
	~1100N/mm ²		1100~1500N/mm ²		1500~2000N/mm ²	
	Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)
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
1.0	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
2.0	29,820	3,420	28,680	2,880	24,000	2,400
3.0	19,860	3,600	19,080	3,180	15,900	2,400
4.0	14,940	3,600	14,340	3,180	12,000	2,400
5.0	11,160	3,480	10,680	2,940	9,000	2,250
6.0	8,340	2,910	8,040	2,460	6,600	1,860
8.0	6,660	2,520	6,420	2,100	5,400	1,620
10.0	5,580	2,220	5,340	1,860	4,500	1,440
12.0	4,170	1,770	4,008	1,500	3,360	1,140
16.0	3,340	1,590	3,210	1,320	2,700	1,020
20.0	2,670	1,410	2,580	1,170	2,160	900
25.0	2,130	1,150	2,060	950	1,730	730

Application Tip

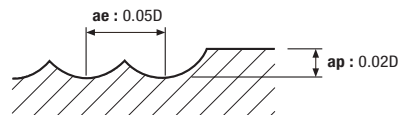


USB502 series

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Hardened steels (SKD, SKT, STAVAX)	
	~HrC35		HrC35~45		HrC45~55	
	~1100N/mm ²		1100~1500N/mm ²		1500~2000N/mm ²	
	Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)
3.0	13,500	1,700	13,200	1,620	12,500	860
4.0	10,600	1,700	10,300	1,620	9,800	860
5.0	9,400	1,650	9,050	1,570	8,600	860
6.0	8,600	1,750	8,250	1,670	7,850	865
8.0	7,000	1,550	6,700	1,460	6,350	890
10.0	6,050	1,450	5,800	1,360	5,450	870
12.0	5,450	1,420	5,200	1,330	4,900	785
16.0	4,300	1,200	4,000	1,100	3,700	650
20.0	3,600	1,050	3,200	900	3,000	550

Application Tip

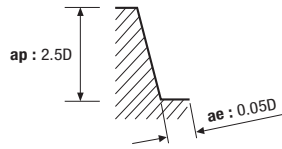


UTB502 series

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)	
	~HRC35		HRC35~45	
Strength	~1100N/mm ²		1100~1500N/mm ²	
Conditions	R.P.M n (min ⁻¹)	Feed vf (mm/min)	R.P.M n (min ⁻¹)	Feed vf (mm/min)
Diameter(Ø)				
0.4	36,000	144	27,900	113
0.6	25,200	144	18,900	113
0.8	18,000	144	13,950	108
1.0	14,850	149	11,250	113
2.0	7,560	153	5,670	113
3.0	3,969	108	3,213	90
4.0	3,213	126	2,556	104

Application Tip



UB512A series

(inch)

Workpiece		Non-alloy Steel, Low alloy Steel			Low alloy Steel			High alloyed Steel, and tool Steel			Grey cast iron, Nodular Cast iron, Malleable Cast iron			Hardened Steel			Chilled Cast Iron			Hardened Cast Iron		
Conditions		125HB~300HB			350HB			200HB			130HB~260HB			HrC55			400HB			HrC55		
Diameter (Ø)	Effective Length	R.P.M n (min ⁻¹)	Feed vf (in/min)	ap (inch)	R.P.M n (min ⁻¹)	Feed vf (in/min)	ap (inch)	R.P.M n (min ⁻¹)	Feed vf (in/min)	ap (inch)	R.P.M n (min ⁻¹)	Feed vf (in/min)	ap (inch)	R.P.M n (min ⁻¹)	Feed vf (in/min)	ap (inch)	R.P.M n (min ⁻¹)	Feed vf (in/min)	ap (inch)	R.P.M n (min ⁻¹)	Feed vf (in/min)	ap (inch)
1/32	5/64	34,200	48	0.002	32,300	40	0.002	34,200	48	0.002	34,200	48	0.002	28,500	33	0.001	31,660	36	0.001	28,500	33	0.001
	1/8	34,200	48	0.001	32,300	40	0.001	34,200	48	0.001	34,200	48	0.001	28,500	33	0.001	31,660	36	0.001	28,500	33	0.001
3/64	1/8	26,300	54	0.002	24,800	45	0.002	26,300	54	0.002	26,300	54	0.002	21,900	37	0.001	24,330	41	0.001	21,900	37	0.001
	5/32	26,300	54	0.002	24,800	45	0.002	26,300	54	0.002	26,300	54	0.002	21,900	37	0.001	24,330	41	0.001	21,900	37	0.001
1/16	5/32	23,900	62	0.005	22,600	53	0.004	23,900	62	0.005	23,900	62	0.005	20,000	42	0.002	22,220	46	0.002	20,000	42	0.002
	1/4	23,900	62	0.003	22,600	53	0.002	23,900	62	0.003	23,900	62	0.003	20,000	42	0.002	22,220	46	0.002	20,000	42	0.002
5/64	1/4	18,000	70	0.007	17,000	60	0.005	18,000	70	0.007	18,000	70	0.007	15,000	50	0.003	16,660	55	0.003	15,000	50	0.003
	5/16	18,000	70	0.004	17,000	60	0.003	18,000	70	0.004	18,000	70	0.004	15,000	50	0.002	16,660	55	0.002	15,000	50	0.002
1/8	5/16	13,700	8	0.010	12,900	68	0.008	13,700	8	0.010	13,700	8	0.010	11,400	56	0.005	12,660	62	0.005	11,400	56	0.005
	3/8	13,700	80	0.007	12,900	68	0.005	13,700	80	0.007	13,700	80	0.007	11,400	56	0.004	12,660	62	0.004	11,400	56	0.004
3/16	3/8	7,700	72	0.012	7,300	57	0.009	7,700	72	0.012	7,700	72	0.012	6,400	50	0.006	7,110	55	0.006	6,400	50	0.006
	1/2	7,700	72	0.012	7,300	57	0.009	7,700	72	0.012	7,700	72	0.012	6,400	50	0.006	7,110	55	0.006	6,400	50	0.006
13/64	1 3/16	6,930	58	0.007	6,570	46	0.005	6,930	58	0.007	6,930	58	0.007	5,760	40	0.003	6,400	44	0.003	5,760	40	0.003
1/4	3/4	6,500	74	0.014	6,200	62	0.011	6,500	74	0.014	6,500	74	0.014	5,500	52	0.008	6,110	57	0.008	5,500	52	0.008
	7/8	6,500	74	0.014	6,200	62	0.011	6,500	74	0.014	6,500	74	0.014	5,500	52	0.008	6,110	57	0.008	5,500	52	0.008
	1 3/16	6,500	74	0.014	6,200	62	0.011	6,500	74	0.014	6,500	74	0.014	5,500	52	0.008	6,110	57	0.008	5,500	52	0.008
	1	4,850	70	0.019	4,600	59	0.015	4,850	70	0.019	4,850	70	0.019	4,000	50	0.011	4,440	55	0.011	4,000	50	0.011
5/16	1 1/16	4,850	70	0.019	4,600	59	0.015	4,850	70	0.019	4,850	70	0.019	4,000	50	0.011	4,440	55	0.011	4,000	50	0.011
	1 3/8	4,850	70	0.019	4,600	59	0.015	4,850	70	0.019	4,850	70	0.019	4,000	50	0.011	4,440	55	0.011	4,000	50	0.011
	1 3/16	3,850	64	0.035	3,680	55	0.027	3,850	64	0.035	3,850	64	0.035	3,200	47	0.019	3,550	52	0.019	3,200	47	0.019
3/8	1 1/4	3,850	64	0.035	3,680	55	0.027	3,850	64	0.035	3,850	64	0.035	3,200	47	0.019	3,550	52	0.019	3,200	47	0.019
	1 1/2	3,200	59	0.042	3,050	51	0.033	3,200	59	0.042	3,200	59	0.042	2,650	43	0.023	2,940	47	0.023	2,650	43	0.023
1/2	1 3/8	3,200	59	0.042	3,050	51	0.033	3,200	59	0.042	3,200	59	0.042	2,650	43	0.023	2,940	47	0.023	2,650	43	0.023
	5/8	2,730	56	0.052	2,610	47	0.041	2,730	56	0.052	2,730	56	0.052	2,273	40	0.028	2,520	43	0.028	2,273	40	0.028
3/4	2 1/4	2,270	51	0.063	2,180	43	0.049	2,270	51	0.063	2,270	51	0.063	1,897	30	0.034	2,100	40	0.034	1,897	30	0.034
1	3	2,060	47	0.084	1,980	40	0.066	2,060	47	0.084	2,060	47	0.084	1,722	30	0.046	1,910	36	0.046	1,722	30	0.046

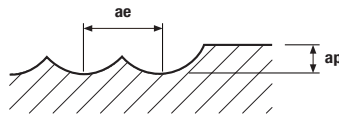
Application Tip

ae : 0.2D

ae : 0.1D

ae : 0.2D

ae : 0.1D




UB512, UB512S6 series

(mm)

Workpiece		Alloy steels, Carbon steels (SCM, SNCM, S45C)			Pre-hardened steels (NAK, CENA, KP4)			Hardened steels (SKD, SKT, STAVAX)		
Strength		~HRC35			HRC35~45			HRC45~55		
Conditions		~1100N/mm ²			1100~1500N/mm ²			1500~2000N/mm ²		
Diameter(Ø)	Effective Length	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)
0.1	0.2	50,000	240	0.009	50,000	215	0.007	50,000	190	0.005
	0.3	50,000	240	0.009	50,000	215	0.007	50,000	190	0.005
	0.5	50,000	240	0.006	50,000	215	0.005	50,000	190	0.004
	1	45,000	195	0.002	45,000	175	0.002	45,000	155	0.001
0.2	0.5	50,000	335	0.018	50,000	310	0.014	43,200	260	0.010
	1	50,000	335	0.013	50,000	310	0.010	43,200	260	0.007
	1.5	45,000	270	0.007	45,000	250	0.006	38,880	210	0.004
	2	45,000	270	0.005	45,000	250	0.004	38,880	210	0.003
	3	45,000	270	0.003	45,000	250	0.003	38,880	210	0.002
0.3	1	50,000	475	0.019	50,000	430	0.015	42,800	365	0.011
	1.5	50,000	475	0.019	50,000	430	0.015	42,800	365	0.011
	2	45,000	385	0.011	45,000	350	0.008	38,520	295	0.006
	2.5	45,000	385	0.007	45,000	350	0.005	38,520	295	0.004
	3	45,000	385	0.007	45,000	350	0.005	38,520	295	0.004
	4	40,000	305	0.004	40,000	275	0.003	34,240	235	0.002
	5	30,000	200	0.003	30,000	180	0.002	25,680	155	0.002
0.4	1	41,000	490	0.036	38,800	425	0.028	34,200	340	0.020
	1.5	41,000	490	0.025	38,800	425	0.020	34,200	340	0.014
	2	41,000	490	0.025	38,800	425	0.020	34,200	340	0.014
	2.5	36,900	395	0.014	34,920	345	0.011	30,780	275	0.008
	3	36,900	395	0.014	34,920	345	0.011	30,780	275	0.008
	4	36,900	395	0.009	34,920	345	0.007	30,780	275	0.005
	5	32,800	315	0.009	31,040	270	0.007	27,360	220	0.005
	6	32,800	315	0.005	31,040	270	0.004	27,360	220	0.003
	8	24,600	205	0.004	23,280	180	0.003	20,520	145	0.002
10	12,300	90	0.004	11,640	75	0.003	10,260	60	0.002	
0.5	1	34,200	685	0.045	32,300	580	0.035	28,500	515	0.025
	1.5	34,200	685	0.045	32,300	580	0.035	28,500	515	0.025
	2	34,200	685	0.032	32,300	580	0.025	28,500	515	0.018
	2.5	34,200	685	0.032	32,300	580	0.025	28,500	515	0.018
	3	30,780	555	0.018	29,070	470	0.014	25,650	415	0.010
	4	30,780	555	0.018	29,070	470	0.014	25,650	415	0.010
	5	30,780	555	0.011	29,070	470	0.009	25,650	415	0.006
	6	27,360	440	0.011	25,840	370	0.009	22,800	330	0.006
	8	20,520	290	0.007	19,380	245	0.005	17,100	215	0.004
	10	20,520	290	0.005	19,380	245	0.004	17,100	215	0.003
	12	10,260	125	0.005	9,690	105	0.004	8,550	95	0.003
	14	10,260	125	0.005	9,690	105	0.004	8,550	95	0.003
	16	3,420	35	0.005	3,230	30	0.004	2,850	25	0.003
0.6	1	34,200	1,025	0.038	32,300	840	0.029	28,500	685	0.021
	2	34,200	1,025	0.038	32,300	840	0.029	28,500	685	0.021
	3	34,200	1,025	0.038	32,300	840	0.029	28,500	685	0.021
	4	30,780	830	0.022	29,070	680	0.017	25,650	555	0.012
	5	30,780	830	0.014	29,070	680	0.011	25,650	555	0.008
	6	30,780	830	0.014	29,070	680	0.011	25,650	555	0.008

 **UB512, UB512S6 series**

(mm)

Workpiece		Alloy steels, Carbon steels (SCM, SNCM, S45C)			Pre-hardened steels (NAK, CENA, KP4)			Hardened steels (SKD, SKT, STAVAX)		
Strength		~HRC35			HRC35~45			HRC45~55		
Conditions		~1100N/mm ²			1100~1500N/mm ²			1500~2000N/mm ²		
Diameter(Ø)	Effective Length	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)
0.6	8	27,360	655	0.008	25,840	540	0.006	22,800	440	0.005
	10	20,520	430	0.005	19,380	355	0.004	17,100	290	0.003
	12	20,520	430	0.005	19,380	355	0.004	17,100	290	0.003
	14	10,260	185	0.005	9,690	150	0.004	8,550	125	0.003
	16	10,260	185	0.005	9,690	150	0.004	8,550	125	0.003
0.7	2	34,200	1,130	0.063	32,300	930	0.049	28,500	765	0.035
	4	30,780	915	0.025	29,070	755	0.020	25,650	620	0.014
	6	30,780	915	0.016	29,070	755	0.012	25,650	620	0.009
	8	27,360	725	0.016	25,840	595	0.012	22,800	490	0.009
	10	27,360	725	0.009	25,840	595	0.007	22,800	490	0.005
0.8	12	20,520	475	0.006	19,380	390	0.005	17,100	320	0.004
	2	34,200	1,230	0.072	32,300	1,035	0.056	28,500	855	0.040
	3	34,200	1,230	0.050	32,300	1,035	0.039	28,500	855	0.028
	4	34,200	1,230	0.050	32,300	1,035	0.039	28,500	855	0.028
	5	30,780	995	0.029	29,070	840	0.022	25,650	695	0.016
	6	30,780	995	0.029	29,070	840	0.022	25,650	695	0.016
	8	30,780	995	0.018	29,070	840	0.014	25,650	695	0.010
	10	27,360	785	0.018	25,840	660	0.014	22,800	545	0.010
	12	27,360	785	0.011	25,840	660	0.008	22,800	545	0.006
	14	20,520	515	0.007	19,380	435	0.006	17,100	360	0.004
0.9	16	20,520	515	0.007	19,380	435	0.006	17,100	360	0.004
	20	10,260	220	0.007	9,690	185	0.006	8,550	155	0.004
	4	29,250	1,120	0.032	27,630	935	0.025	24,390	775	0.018
	6	29,250	1,120	0.032	27,630	935	0.025	24,390	775	0.018
1.0	8	29,250	1,120	0.020	27,630	935	0.016	24,390	775	0.011
	10	26,000	885	0.020	24,560	740	0.016	21,680	610	0.011
	2	30,800	1,540	0.090	29,100	1,310	0.070	25,700	1,075	0.050
	3	30,800	1,540	0.090	29,100	1,310	0.070	25,700	1,075	0.050
	4	30,800	1,540	0.063	29,100	1,310	0.049	25,700	1,075	0.035
	5	30,800	1,540	0.063	29,100	1,310	0.049	25,700	1,075	0.035
	6	27,720	1,245	0.036	26,190	1,060	0.028	23,130	870	0.020
	7	27,720	1,245	0.036	26,190	1,060	0.028	23,130	870	0.020
	8	27,720	1,245	0.036	26,190	1,060	0.028	23,130	870	0.020
	10	27,720	1,245	0.023	26,190	1,060	0.018	23,130	870	0.013
	12	24,640	985	0.023	23,280	840	0.018	20,560	690	0.013
	14	24,640	985	0.014	23,280	840	0.011	20,560	690	0.008
	16	18,480	645	0.014	17,460	550	0.011	15,420	450	0.008
	18	18,480	645	0.009	17,460	550	0.007	15,420	450	0.005
	20	18,480	645	0.009	17,460	550	0.007	15,420	450	0.005
	1.2	22	9,240	275	0.009	8,730	235	0.007	7,710	195
26		9,240	275	0.009	8,730	235	0.007	7,710	195	0.005
30		9,240	275	0.009	8,730	235	0.007	7,710	195	0.005
40		3,080	75	0.009	2,910	65	0.007	2,570	55	0.005
50		3,080	75	0.006	2,910	65	0.005	2,570	55	0.003
4		26,300	1,375	0.076	24,800	1,150	0.059	21,900	950	0.042


UB512, UB512S6 series

(mm)

Workpiece		Alloy steels, Carbon steels (SCM, SNCM, S45C)			Pre-hardened steels (NAK, CENA, KP4)			Hardened steels (SKD, SKT, STAVAX)		
Strength		~HrC35			HrC35~45			HrC45~55		
Conditions		~1100N/mm ²			1100~1500N/mm ²			1500~2000N/mm ²		
Diameter(Ø)	Effective Length	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)
1.2	6	26,300	1,375	0.076	24,800	1,150	0.059	21,900	950	0.042
	8	23,670	1,115	0.043	22,320	930	0.034	19,710	770	0.024
	10	23,670	1,115	0.027	22,320	930	0.021	19,710	770	0.015
	12	23,670	1,115	0.027	22,320	930	0.021	19,710	770	0.015
	16	21,040	880	0.016	19,840	735	0.013	17,520	610	0.009
	20	15,780	580	0.011	14,880	485	0.008	13,140	400	0.006
	26	7,890	245	0.011	7,440	205	0.008	6,570	170	0.006
1.4	6	21,500	1,295	0.088	20,300	1,100	0.069	18,000	935	0.049
	8	19,350	1,050	0.050	18,270	890	0.039	16,200	755	0.028
	10	19,350	1,050	0.050	18,270	890	0.039	16,200	755	0.028
	16	17,200	830	0.032	16,240	705	0.025	14,400	600	0.018
1.5	4	23,900	1,580	0.135	22,600	1,355	0.105	20,000	1,075	0.075
	5	23,900	1,580	0.095	22,600	1,355	0.074	20,000	1,075	0.053
	6	23,900	1,580	0.095	22,600	1,355	0.074	20,000	1,075	0.053
	7	23,900	1,580	0.095	22,600	1,355	0.074	20,000	1,075	0.053
	8	21,510	1,280	0.054	20,340	1,100	0.042	18,000	870	0.030
	10	21,510	1,280	0.054	20,340	1,100	0.042	18,000	870	0.030
	12	21,510	1,280	0.054	20,340	1,100	0.042	18,000	870	0.030
	14	21,510	1,280	0.034	20,340	1,100	0.026	18,000	870	0.019
	16	19,120	1,010	0.034	18,080	865	0.026	16,000	690	0.019
	18	19,120	1,010	0.034	18,080	865	0.026	16,000	690	0.019
	20	19,120	1,010	0.020	18,080	865	0.016	16,000	690	0.011
	22	19,120	1,010	0.020	18,080	865	0.016	16,000	690	0.011
	26	14,340	665	0.014	13,560	570	0.011	12,000	450	0.008
	30	14,340	665	0.014	13,560	570	0.011	12,000	450	0.008
35	7,170	285	0.010	6,780	245	0.008	6,000	195	0.005	
40	7,170	285	0.010	6,780	245	0.008	6,000	195	0.005	
1.6	4	22,200	1,555	0.101	21,000	1,300	0.078	18,500	1,110	0.056
	6	22,200	1,555	0.101	21,000	1,300	0.078	18,500	1,110	0.056
	8	22,200	1,555	0.101	21,000	1,300	0.078	18,500	1,110	0.056
	10	19,980	1,260	0.058	18,900	1,055	0.045	16,650	900	0.032
	12	19,980	1,260	0.058	18,900	1,055	0.045	16,650	900	0.032
	16	19,980	1,260	0.036	18,900	1,055	0.028	16,650	900	0.020
	20	17,760	995	0.036	16,800	830	0.028	14,800	710	0.020
1.8	4	22,200	1,780	0.113	21,000	1,470	0.088	18,500	1,225	0.063
	6	22,200	1,780	0.113	21,000	1,470	0.088	18,500	1,225	0.063
	8	22,200	1,780	0.113	21,000	1,470	0.088	18,500	1,225	0.063
	10	19,980	1,440	0.065	18,900	1,190	0.050	16,650	990	0.036
	12	19,980	1,440	0.065	18,900	1,190	0.050	16,650	990	0.036
	16	19,980	1,440	0.041	18,900	1,190	0.032	16,650	990	0.023
	20	17,760	1,140	0.041	16,800	940	0.032	14,800	785	0.023
2.0	6	18,000	1,795	0.18	17,000	1,525	0.140	15,000	1,285	0.100
	8	18,000	1,795	0.126	17,000	1,525	0.098	15,000	1,285	0.070
	10	18,000	1,795	0.126	17,000	1,525	0.098	15,000	1,285	0.070
	12	16,200	1,455	0.072	15,300	1,235	0.056	13,500	1,040	0.040

 **UB512, UB512S6 series**

(mm)

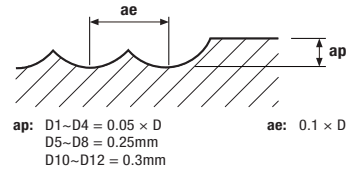
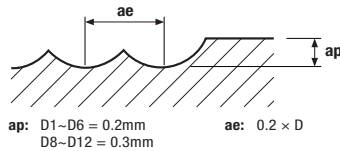
Workpiece		Alloy steels, Carbon steels (SCM, SNCM, S45C)			Pre-hardened steels (NAK, CENA, KP4)			Hardened steels (SKD, SKT, STAVAX)		
Strength		~HRC35			HRC35~45			HRC45~55		
Conditions		~1100N/mm ²			1100~1500N/mm ²			1500~2000N/mm ²		
Diameter(Ø)	Effective Length	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)
2.0	14	16,200	1,455	0.072	15,300	1,235	0.056	13,500	1,040	0.040
	16	16,200	1,455	0.072	15,300	1,235	0.056	13,500	1,040	0.040
	18	16,200	1,455	0.045	15,300	1,235	0.035	13,500	1,040	0.025
	20	16,200	1,455	0.045	15,300	1,235	0.035	13,500	1,040	0.025
	22	14,400	1,150	0.045	13,600	975	0.035	12,000	820	0.025
	26	14,400	1,150	0.045	13,600	975	0.035	12,000	820	0.025
	30	14,400	1,150	0.027	13,600	975	0.021	12,000	820	0.015
	35	10,800	755	0.018	10,200	640	0.014	9,000	540	0.010
	40	10,800	755	0.018	10,200	640	0.014	9,000	540	0.010
	45	5,400	325	0.018	5,100	275	0.014	4,500	230	0.010
	50	5,400	325	0.018	5,100	275	0.014	4,500	230	0.010
60	5,400	325	0.018	5,100	275	0.014	4,500	230	0.010	
2.5	8	15,800	1,925	0.158	14,900	1,605	0.123	13,200	1,305	0.088
	10	15,800	1,925	0.158	14,900	1,605	0.123	13,200	1,305	0.088
	12	15,800	1,925	0.158	14,900	1,605	0.123	13,200	1,305	0.088
	16	14,220	1,560	0.090	13,410	1,300	0.070	11,880	1,055	0.050
	20	14,220	1,560	0.090	13,410	1,300	0.070	11,880	1,055	0.050
	22	14,220	1,560	0.056	13,410	1,300	0.044	11,880	1,055	0.031
	26	12,640	1,230	0.056	11,920	1,025	0.044	10,560	835	0.031
	30	12,640	1,230	0.056	11,920	1,025	0.044	10,560	835	0.031
	35	12,640	1,230	0.034	11,920	1,025	0.026	10,560	835	0.019
	40	9,480	810	0.034	8,940	675	0.026	7,920	550	0.019
	45	9,480	810	0.023	8,940	675	0.018	7,920	550	0.013
50	9,480	810	0.023	8,940	675	0.018	7,920	550	0.013	
3.0	6	13,700	2,050	0.270	12,900	1,730	0.210	11,400	1,435	0.150
	8	13,700	2,050	0.270	12,900	1,730	0.210	11,400	1,435	0.150
	10	13,700	2,050	0.189	12,900	1,730	0.147	11,400	1,435	0.105
	12	13,700	2,050	0.189	12,900	1,730	0.147	11,400	1,435	0.105
	14	13,700	2,050	0.189	12,900	1,730	0.147	11,400	1,435	0.105
	16	12,330	1,660	0.108	11,610	1,400	0.084	10,260	1,160	0.060
	18	12,330	1,660	0.108	11,610	1,400	0.084	10,260	1,160	0.060
	20	12,330	1,660	0.108	11,610	1,400	0.084	10,260	1,160	0.060
	22	12,330	1,660	0.108	11,610	1,400	0.084	10,260	1,160	0.060
	26	12,330	1,660	0.068	11,610	1,400	0.053	10,260	1,160	0.038
	30	12,330	1,660	0.068	11,610	1,400	0.053	10,260	1,160	0.038
	35	10,960	1,310	0.068	10,320	1,105	0.053	9,120	920	0.038
	40	10,960	1,310	0.041	10,320	1,105	0.032	9,120	920	0.023
	45	10,960	1,310	0.041	10,320	1,105	0.032	9,120	920	0.023
	50	8,220	860	0.027	7,740	725	0.021	6,840	605	0.015
60	8,220	860	0.027	7,740	725	0.021	6,840	605	0.015	
4.0	8	9,800	1,965	0.360	9,300	1,670	0.280	8,200	1,395	0.200
	10	9,800	1,965	0.360	9,300	1,670	0.280	8,200	1,395	0.200
	12	9,800	1,965	0.360	9,300	1,670	0.280	8,200	1,395	0.200
	14	9,800	1,965	0.252	9,300	1,670	0.196	8,200	1,395	0.140
	16	9,800	1,965	0.252	9,300	1,670	0.196	8,200	1,395	0.140

UB512, UB512S6 series

(mm)

Workpiece		Alloy steels, Carbon steels (SCM, SNCM, S45C)			Pre-hardened steels (NAK, CENA, KP4)			Hardened steels (SKD, SKT, STAVAX)		
Strength		~HRC35			HRC35~45			HRC45~55		
Conditions		~1100N/mm ²			1100~1500N/mm ²			1500~2000N/mm ²		
Diameter(Ø)	Effective Length	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	ap (mm)
4.0	18	9,800	1,965	0.252	9,300	1,670	0.196	8,200	1,395	0.140
	20	9,800	1,965	0.252	9,300	1,670	0.196	8,200	1,395	0.140
	22	8,820	1,590	0.144	8,370	1,355	0.112	7,380	1,130	0.080
	26	8,820	1,590	0.144	8,370	1,355	0.112	7,380	1,130	0.080
	30	8,820	1,590	0.144	8,370	1,355	0.112	7,380	1,130	0.080
	35	8,820	1,590	0.090	8,370	1,355	0.070	7,380	1,130	0.050
	40	8,820	1,590	0.090	8,370	1,355	0.070	7,380	1,130	0.050
	45	7,840	1,260	0.090	7,440	1,070	0.070	6,560	895	0.050
	50	7,840	1,260	0.090	7,440	1,070	0.070	6,560	895	0.050
5.0	60	7,840	1,260	0.054	7,440	1,070	0.042	6,560	895	0.030
	15	7,700	1,845	0.315	7,300	1,455	0.245	6,400	1,285	0.175
	20	7,700	1,845	0.315	7,300	1,455	0.245	6,400	1,285	0.175
	26	6,930	1,495	0.180	6,570	1,180	0.140	5,760	1,040	0.100
	30	6,930	1,495	0.180	6,570	1,180	0.140	5,760	1,040	0.100
	35	6,930	1,495	0.180	6,570	1,180	0.140	5,760	1,040	0.100
	40	6,930	1,495	0.180	6,570	1,180	0.140	5,760	1,040	0.100
6.0	50	6,930	1,495	0.113	6,570	1,180	0.088	5,760	1,040	0.063
	60	6,160	1,180	0.113	5,840	930	0.088	5,120	820	0.063
	20	6,500	1,900	0.378	6,200	1,600	0.294	5,500	1,330	0.210
8.0	30	6,500	1,900	0.378	6,200	1,600	0.294	5,500	1,330	0.210
	25	4,850	1,800	0.504	4,600	1,500	0.392	4,000	1,280	0.280
10.0	30	4,850	1,800	0.504	4,600	1,500	0.392	4,000	1,280	0.280
	30	3,850	1,650	0.900	3,680	1,400	0.700	3,200	1,200	0.500
12.0	40	3,850	1,650	0.630	3,680	1,400	0.490	3,200	1,200	0.350
	32	3,200	1,520	1.080	3,050	1,300	0.840	2,650	1,100	0.600
	45	3,200	1,520	0.756	3,050	1,300	0.588	2,650	1,100	0.420

Application Tip

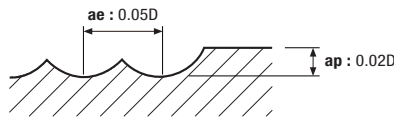


UB532A series

(inch)

Workpiece	Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled Castiron		Hardened Castron	
	125HB~300HB		350HB		200HB		130HB~260HB		HRC55		400HB		HRC55	
	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)	R.P.M n(min ⁻¹)	Feed vf(in/min)
1/8	35,000	110	33,000	102	35,000	110	35,000	110	12,000	35	13,330	38	12,000	35
3/16	26,000	90	25,000	86	26,000	90	26,000	90	9,000	31	10,000	34	9,000	31
13/64	21,000	82	20,000	78	21,000	82	21,000	82	7,000	27	7,770	30	7,000	27
1/4	17,000	74	16,000	70	17,000	74	17,000	74	6,000	25	6,660	27	6,000	25
5/16	13,000	66	12,000	62	13,000	66	13,000	66	4,500	21	5,000	23	4,500	21
3/8	10,500	57	10,000	55	10,500	57	10,500	57	3,500	19	3,880	21	3,500	19
1/2	9,000	55	8,000	51	9,000	55	9,000	55	3,000	17	3,330	18	3,000	17

Application Tip

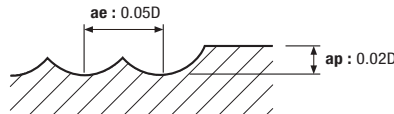


UB532 series

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Hardened steels (SKD, SKT, STAVAX)	
	~HrC35		HrC35~45		HrC45~55	
	~1100N/mm ²		1100~1500N/mm ²		1500~2000N/mm ²	
Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)
3.0	35,000	2,800	33,000	2,600	12,000	900
4.0	26,000	2,300	25,000	2,200	9,000	800
5.0	21,000	2,100	20,000	2,000	7,000	700
6.0	17,000	1,900	16,000	1,800	6,000	650
8.0	13,000	1,700	12,000	1,600	4,500	550
10.0	10,500	1,450	10,000	1,400	3,500	500
12.0	9,000	1,400	8,000	1,300	3,000	450

Application Tip



UB542A series

(inch)

Workpiece Conditions Diameter(Ø)	Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled CastIron		Hardened CastIron	
	125HB~300HB		350HB		200HB		130HB~260HB		HRC55		400HB		HRC55	
	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)
1/16	9,500	8.6	13,000	19.6	9,500	8.6	9,500	8.6	12,800	15.7	14,220	17	12,800	15.7
1/8	8,000	14.5	10,200	34.6	8,000	14.5	8,000	14.5	9,800	33.4	10,880	37	9,800	33.4
3/16	6,720	16.5	8,500	34.6	6,720	16.5	6,720	16.5	8,200	33.4	9,110	37	8,200	33.4
1/4	5,500	25.9	6,900	36.2	5,500	25.9	5,500	25.9	6,500	34.6	7,220	38	6,500	34.6
5/16	4,600	29.1	5,600	33	4,600	29.1	4,600	29.1	5,300	31.4	5,880	34	5,300	31.4
3/8	4,070	32.2	4,850	31.4	4,070	32.2	4,070	32.2	4,650	30.3	5,160	33	4,650	30.3
1/2	3,700	35	4,350	31.4	3,700	35	3,700	35	4,150	30.3	4,610	33	4,150	30.3

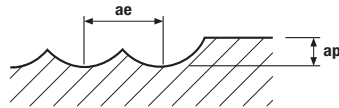
Application Tip

ae : 0.2D
ap
(up to Ø1/2 : 0.011 inch
up to Ø1/4 : 0.007 inch)

ae : 0.1D
ap
(up to Ø1/2 : 0.011 inch
up to Ø5/16 : 0.009 inch
up to 3/16 : 0.05D)

ae : 0.2D
ap
(up to Ø1/2 : 0.011 inch
up to Ø1/4 : 0.007 inch)

ae : 0.2D
ap
(up to Ø1/2 : 0.011 inch
up to Ø5/16 : 0.009 inch
up to 3/16 : 0.05D)

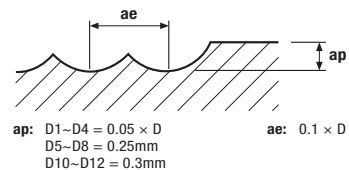
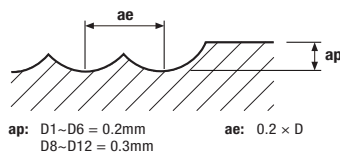


UB542 series _ General processing

(mm)

Workpiece Strength Conditions Diameter(Ø)	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Hardened steels (SKD, SKT, STAVAX)	
	~HRC35		HRC35~45		HRC45~55	
	~1100N/mm ²		1100~1500N/mm ²		1500~2000N/mm ²	
	R.P.M n (min ⁻¹)	Feed vf (mm/min)	R.P.M n (min ⁻¹)	Feed vf (mm/min)	R.P.M n (min ⁻¹)	Feed vf (mm/min)
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
10.0	4,070	820	4,850	800	4,650	770
12.0	3,700	890	4,350	800	4,150	770

Application Tip

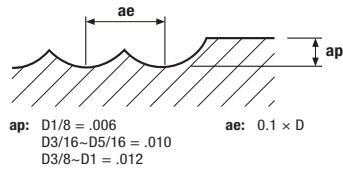


UB552A series

(inch)

Workpiece Conditions Diameter (Ø)	Hardened steels							
	HrC45~50		HrC50~55		HrC55~60		HrC60~65	
	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)
1/32	12,700	43.3	12,300	41.3	11,800	39.4	8,400	26
1/16	9,400	43.3	9,050	41.3	8,600	37.4	5,600	26.8
3/32	8,600	45.3	8,250	43.3	7,850	37.4	4,850	27.6
1/8	7,000	41.3	6,700	39.4	6,350	37.4	3,800	25.6
3/16	6,050	39.4	5,800	37.8	5,450	35.4	3,200	24.4
1/4	5,450	39.4	5,200	37.8	4,900	35.4	2,750	24.4
5/16	4,350	34.3	4,150	32.7	3,900	32.3	2,150	10.4
3/8	3,500	27.2	3,300	25.6	3,150	24.8	1,700	8.7
1/2	2,800	27.2	2,650	25.6	2,520	24.8	1,360	8.7

Application Tip

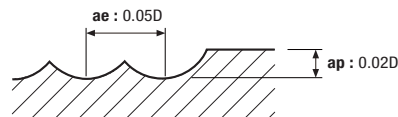


UB503 series

(mm)

Workpiece Strength Conditions Diameter (Ø)	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Hardened steels (SKD, SKT, STAVAX)	
	~HrC35		HrC35~45		HrC45~55	
	~1100N/mm ²		1100~1500N/mm ²		1500~2000N/mm ²	
	R.P.M n (min ⁻¹)	Feed vf (mm/min)	R.P.M n (min ⁻¹)	Feed vf (mm/min)	R.P.M n (min ⁻¹)	Feed vf (mm/min)
1.0	50,000	4,150	44,000	3,000	33,000	2100
1.5	40,000	5,100	35,000	3,660	36,400	2600
2.0	33,000	5,890	29,000	4,150	21,700	3000
3.0	25,000	6,930	22,000	4,880	16,500	3490
4.0	21,670	6,930	18,120	4,880	13,400	3490
5.0	18,000	6,520	15,100	4,880	11,160	3320
6.0	16,200	7,710	13,680	5,590	10,980	4050
8.0	12,150	6,610	10,170	4,720	8,280	3580
10.0	9,720	5,870	8,190	4,130	6,620	3100
12.0	8,150	5,490	4,130	3,830	5,520	2870

Application Tip



UB504A series

(inch)

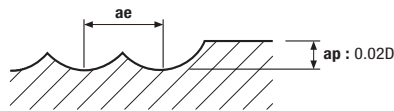
Workpiece	Non-alloy Steel, Low alloy Steel		Low alloy Steel		High alloyed Steel, and tool Steel		Grey cast iron, Nodular Cast iron, Malleable Cast iron		Hardened Steel		Chilled CastIron		Hardened CastIron	
	125HB~300HB		350HB		200HB		130HB~260HB		HRC55		400HB		HRC55	
	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)	R.P.M n (min ⁻¹)	Feed vf (in/min)
1/32	37,170	142	27,960	98	37,170	142	38,580	162	27,430	110	27,960	97	27,430	110
1/16	34,570	183	24,960	123	34,570	183	35,880	208	24,380	136	24,960	123	24,380	136
3/32	30,470	220	22,050	154	30,470	220	31,630	250	20,160	152	22,050	154	20,160	152
1/8	22,700	202	16,540	144	22,700	202	22,700	202	15,120	136	16,540	144	15,120	136
3/16	17,600	224	13,020	153	17,600	224	17,600	224	12,250	144	13,020	153	12,250	144
1/4	14,400	231	11,530	167	14,400	231	14,400	231	10,490	143	11,530	167	10,490	143
5/16	11,400	208	9,270	158	11,400	208	11,400	208	8,390	133	9,270	158	8,390	133
3/8	9,600	190	7,720	143	9,600	190	9,600	190	6,990	119	7,720	143	6,990	119
1/2	7,200	159	5,790	119	7,200	159	7,200	159	5,230	89	5,790	119	5,230	89
5/8	6,240	153	4,980	110	6,240	153	6,240	153	4,530	87	4,980	110	4,530	87
3/4	5,180	141	4,160	102	5,180	141	5,180	141	3,780	78	4,160	102	3,780	78
1	4,700	128	3,780	93	4,700	128	4,700	128	3,430	71	3,780	93	3,430	71

Application Tip

ae : 0.05D

ae : 0.08D

ae : 0.05D

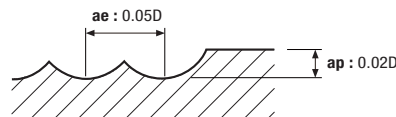


UB504 series

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Hardened steels (SKD, SKT, STAVAX)	
	~HRC35		HRC35~45		HRC45~55	
	~1100N/mm ²		1100~1500N/mm ²		1500~2000N/mm ²	
Diameter(Ø)	R.P.M n (min ⁻¹)	Feed vf (mm/min)	R.P.M n (min ⁻¹)	Feed vf (mm/min)	R.P.M n (min ⁻¹)	Feed vf (mm/min)
1.0	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
2.0	31,680	4,600	23,100	3,300	21,000	3,100
3.0	24,000	5,430	17,500	3,880	16,000	3,650
4.0	20,130	5,430	14,880	3,880	14,220	3,650
5.0	16,780	5,430	12,400	3,690	11,670	3,470
6.0	15,200	6,220	12,200	4,500	11,100	3,830
8.0	11,300	5,250	9,200	3,980	8,320	3,350
10.0	9,100	4,590	7,350	3,450	6,660	2,870
12.0	7,590	4,260	6,130	3,190	5,530	2,400

Application Tip

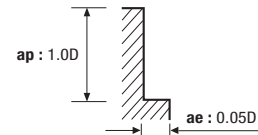
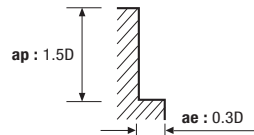


UF50 series

(mm)

Workpiece	Non ferrous 3teel, Alloy steel, Cast iron		Alloy steel, Heat resisting steel		Stainless Steel		Heat treatment steel			
	~HrC30		HrC30~38		HrC38~45		HrC45~55		HrC55~65	
	~1000N/mm ²		1000~1200N/mm ²		1200~1400N/mm ²		1400~2000N/mm ²		2000N/mm ² ~	
	Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)
6.0	15,600	2,320	12,400	840	8,400	570	3,400	260	2,400	190
8.0	11,600	2,320	9,200	840	6,300	570	2,400	240	1,800	180
10.0	9,200	2,320	7,600	840	5,100	570	2,000	290	1,300	190
12.0	8,000	2,400	6,000	800	4,200	570	1,680	260	1,200	190
14.0	6,800	2,400	5,200	840	3,600	570	1,400	200	900	130
16.0	6,000	2,400	4,800	760	3,300	510	1,200	160	800	110
18.0	5,200	2,320	4,400	720	2,700	420	1,100	150	700	100
20.0	4,800	2,160	3,600	560	2,400	360	1,000	150	660	100
25.0	4,300	2,150	3,200	620	2,160	410	900	160	600	100

Application Tip

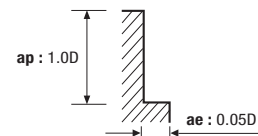
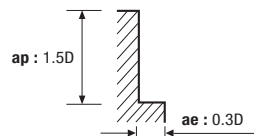


UF51 series

(mm)

Workpiece	Alloy steels, Carbon steels (SCM, SNCM, S45C)		Pre-hardened steels (NAK, CENA, KP4)		Hardened steels (SKD, SKT, STAVAX)	
	~HrC35		HrC35~45		HrC45~55	
	~1100N/mm ²		1100~1500N/mm ²		1500~2000N/mm ²	
	Diameter(Ø)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)
6.0	12,400	840	8,400	570	3,400	260
8.0	9,200	840	6,300	570	2,400	240
10.0	7,600	840	5,100	570	2,000	290
12.0	6,000	800	4,200	570	1,680	260
14.0	5,200	840	3,600	570	1,400	200
16.0	4,800	760	3,300	510	1,200	160
18.0	4,400	720	2,700	420	1,100	150
20.0	3,600	560	2,400	360	1,000	150
25.0	3,200	620	2,160	410	900	160

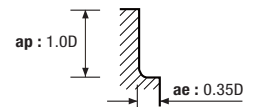
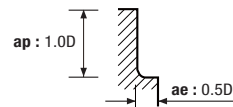
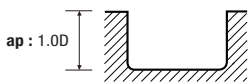
Application Tip




UF51H series

(mm)

Workpiece Conditions Diameter(Ø)	Alloy steels Carbon steels (SCM, S45C, S50C)		Alloy steels Carbon steels Pre-hardened steels (SCM, SKD, NAK, KP4)		Alloy steels Carbon steels (SCM, S45C, S50C)		Alloy steels Carbon steels Pre-hardened steels (SCM, SKD, NAK, KP4)	
	~HRC25		HRC25~40		~HRC25		HRC25~40	
	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)	R.P.M n(min ⁻¹)	Feed vf(mm/min)
6.0	12,000	1,550	10,600	1,100	15,800	2,570	14,300	1,850
8.0	9,000	1,650	8,100	1,180	11,900	2,700	10,700	1,950
10.0	7,200	1,650	6,400	1,180	9,500	2,700	8,500	1,950
12.0	6,000	1,540	5,400	1,140	8,000	2,570	7,100	1,850
16.0	4,500	1,500	4,100	1,050	6,000	2,450	5,400	1,750
20.0	3,600	1,330	3,200	900	4,800	2,140	4,300	1,500

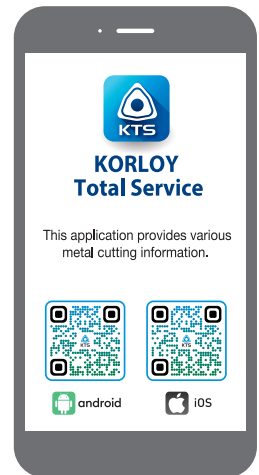
Application Tip

⚠ For the safe metalcutting

- Use safety supplies such as protective gloves to prevent possible injury while touching the edge of tools.
- Use safety glasses or safety cover to hedge possible dangers. Inappropriate usage or excessive cutting condition may lead tool's breakage or even the fragment's scattering.
- Clamp the workpiece tightly enough to prevent its movement while its machining.
- Properly manage the tool change phase because the inordinately used tool can be easily broken under the excessive cutting load or severe wear, and it may threaten the operator's safety.
- Use safety cover because chips evacuated during cutting are hot and sharp and may cause burns and cuts. To remove chips safely, stop machining, put on protective gloves, and use a hook or other tools.
- Prepare for fire prevention measures as the use of the non-water soluble cutting oil may cause fire.
- Use safety cover and other safety supplies because the spare parts or the tools can be pulled out due to centrifugal force while high speed machining.



Head Office: Holystar B/D, 326, Seocho-daero, Seocho-gu, Seoul, 06633, Republic of Korea
Tel : +82-2-522-3181 Fax : +82-2-522-3184, +82-2-3474-4744 Web : www.korloy.com E-mail : sales.khq@korloy.com



KORLOY AMERICA

620 Maple Avenue, Torrance, CA 90503, USA
Tel : +1-310-782-3800 / +1-888-711-0001 Fax : +1-310-782-3885
E-mail : sales.kai@korloy.com

KORLOY INDIA

Plot No. 415, Sector 8, IMT Manesar, Gurgaon 122051, Haryana, India
Tel : +91-124-4391790 Fax : +91-124-4050032
E-mail : sales.kip@korloy.com

KORLOY TURKIYE

Ziya Gokalp, Mah. Seyit Onbasi Cad. No:36, 3 Kat,
iC Kapi No : 5 Basaksehir/Istanbul, Turkiye
Tel : +90-212-813-8874 E-mail : sales.ktl@korloy.com

KORLOY RUSSIA

115280, Moscow, vn.ter.g. municipal district Danilovsky,
street Masterkova, house 4, premises 1/2
Tel : +7-495-280-1458 Fax : +7-495-280-1459 E-mail : sales.krc@korloy.com

KORLOY UK

13 Approach Rd, Raynes Park, London SW20 8BA, United Kingdom
E-mail : sales.kul@korloy.com

KORLOY EUROPE

Gablonzer Str. 25-27, 61440 Oberursel, Germany
Tel : +49-6171-27783-0 Fax : +49-6171-27783-59
E-mail : sales.keg@korloy.com

KORLOY BRASIL

Av. Aruana 280, conj.12, WLC, Alphaville, Barueri, CEP06460-010, SP, Brasil
Tel : +55-11-4193-3810 Fax : +55-11-4193-5837
E-mail : sales.kbl@korloy.com

KORLOY CHILE

Av. Providencia 1650, Office 1009, 7500027
Providencia-Santiago, Chile
Tel : +56-229-295-490 E-mail : sales.kcs@korloy.com

KORLOY MEXICO

Avenida de las Ciencias, No. 3015, Interior 406, Juriquilla Santa Fe,
C.P.76230 Querétaro, Mexico
Tel : +52-442-193-3600 E-mail : sales.kml@korloy.com

