

# 300 Series FOR GRAPHITE

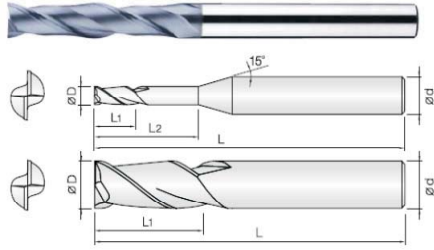


300 Series

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**2 Flutes Long Shank End Mills for Graphite**



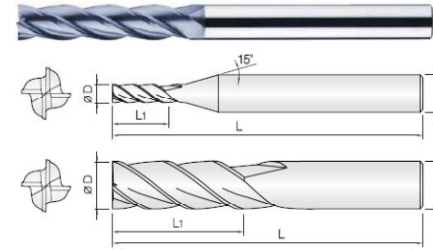
Endmill for various work materials, graphite, hardened steel, pre-hardened steel, tool steel and cast iron.  
 Excellent performance with low cutting force by ALTIN coating.  
 Long flute length optimized for deep-side wall machining of graphite.  
 Applied ultra fine WC grade optimized for various alloy steels applications, below HRc48.

**Cutting Data**  
P120

Size	D Tolerance
D ≤ Φ5	+0~ -0.01mm
D > Φ5	+0~ -0.03mm

Type	Part Number	Dimensions in mm					d
		D	L1	L2	L		
2	350005020H04Z2-ALT	0.5	2	-	50	4	
	350010050H04Z2-ALT	1	5	-	60	4	
UWC	350010100H04Z2-ALT	1	5	10	60	4	
	350010100H06Z2-ALT	1	5	10	60	6	
	350010150H04Z2-ALT	1	5	15	60	4	
	350010200H04Z2-ALT	1	5	20	60	4	
	350010250H04Z2-ALT	1	5	25	70	4	
	350015100H04Z2-ALT	1.5	10	-	60	4	
	350015150H04Z2-ALT	1.5	8	15	60	4	
	350015200H04Z2-ALT	1.5	8	20	60	4	
	350015200H06Z2-ALT	1.5	8	20	60	6	
	350015250H04Z2-ALT	1.5	8	25	70	4	
ALTIN Coating	350020100H04Z2-ALT	2	10	-	60	4	
	350020150H04Z2-ALT	2	10	15	60	4	
	350020200H04Z2-ALT	2	10	20	60	4	
	350020200H06Z2-ALT	2	10	20	60	6	
	350020250H04Z2-ALT	2	10	25	70	4	
	350020300H04Z2-ALT	2	10	30	80	4	
	350030150H04Z2-ALT	3	15	-	70	4	
	350030250H04Z2-ALT	3	15	25	75	4	
	350030300H06Z2-ALT	3	15	30	75	6	
	350040200100Z2-ALT	4	20	-	100	4	
D +0~-0.01 Φ0.5 - Φ5	350040400H06Z2-ALT	4	20	40	100	6	
	350050250100Z2-ALT	5	25	-	100	5	
	350060300110Z2-ALT	6	30	-	110	6	
	350060300150Z2-ALT	6	30	-	150	6	
	350080400150Z2-ALT	8	40	-	150	8	
	350100450150Z2-ALT	10	45	-	150	10	
	350100500200Z2-ALT	10	50	-	200	10	
	350120600150Z2-ALT	12	60	-	150	12	
	350120600200Z2-ALT	12	60	-	200	12	
	350160600130Z2-ALT	16	60	-	130	16	
D +0~-0.03 Φ6 - Φ20	350160700160Z2-ALT	16	70	-	160	16	
	350160700200Z2-ALT	16	70	-	200	16	
	350200800160Z2-ALT	20	80	-	160	20	
	350200900200Z2-ALT	20	90	-	200	20	
	35020012D320Z2-ALT	20	120	-	320	20	
	30° Helix Angle						

**4 Flutes Long Shank End Mills for Graphite**



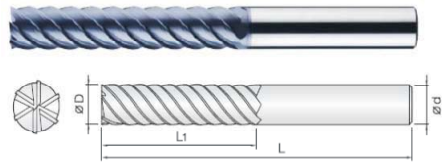
Endmill for various work materials, graphite, hardened steel, pre-hardened steel, tool steel and cast iron.  
 Excellent performance with low cutting force by ALTIN coating.  
 Long flute length optimized for deep-side wall machining of graphite.  
 Applied ultra fine WC grade optimized for various alloy steels applications, below HRc48.

**Cutting Data**  
P120

Size	D Tolerance
D ≤ Φ5	+0~ -0.01mm
D > Φ5	+0~ -0.03mm

Type	Part Number	Dimensions in mm					d
		D	L1	L2	L		
4	351030100H06Z4-ALT	3	10	-	100	6	
	351030150H06Z4-ALT	3	15	-	100	6	
UWC	351040150H06Z4-ALT	4	15	-	100	6	
	351040200100Z4-ALT	4	20	-	100	4	
	351040200H06Z4-ALT	4	20	-	100	6	
	351050200H06Z4-ALT	5	20	-	100	6	
	351060300110Z4-ALT	6	30	-	110	6	
	351060300150Z4-ALT	6	30	-	150	6	
	351080400150Z4-ALT	8	40	-	150	8	
	351080400200Z4-ALT	8	40	-	200	8	
	351100500150Z4-ALT	10	50	-	150	10	
	351100500200Z4-ALT	10	50	-	200	10	
ALTIN Coating	351120600150Z4-ALT	12	60	-	150	12	
	351120600200Z4-ALT	12	60	-	200	12	
	351160700160Z4-ALT	16	70	-	160	16	
	351160800200Z4-ALT	16	80	-	200	16	
	351200750160Z4-ALT	20	75	-	160	20	
	351200900200Z4-ALT	20	90	-	200	20	
	35120010D320Z4-ALT	20	100	-	320	20	
D +0~-0.01 Φ0.3 - Φ5							
D +0~-0.03 Φ6 - Φ20							
30° Helix Angle							

**4 Flutes 45° Long Shank End Mills for Graphite**



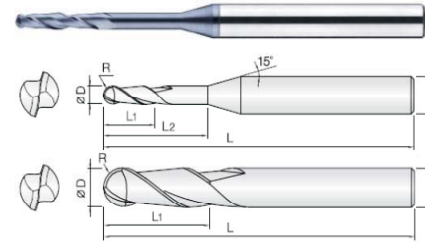
Endmill for various work materials, graphite, hardened steel, pre-hardened steel, tool steel and cast iron.  
 Excellent performance with low cutting force by ALTIN coating.  
 Long flute length optimized for deep-side wall machining of graphite.  
 Applied ultra fine WC grade optimized for various alloy steels applications, below HRc50.

**Cutting Data**  
P120

Size	D Tolerance
D ≥ Φ6	-0.01~ -0.03 mm

Type	Part Number	Dimensions in mm					d
		D	L1	L2	L		
6	360060300110Z6-ALT	6	30		110	6	
	360080400110Z6-ALT	8	40		110	8	
	360100500120Z6-ALT	10	50		120	10	
	360100500150Z6-ALT	10	50		150	10	
	360120600130Z6-ALT	12	60		130	12	
	360120600160Z6-ALT	12	60		160	12	
	360160900160Z6-ALT	16	90		160	16	
	360160900200Z6-ALT	16	90		200	16	
	360160900250Z6-ALT	16	90		250	16	
	36020010D200Z6-ALT	20	100		200	20	
36020010D250Z6-ALT	20	100		250	20		
36020010D320Z6-ALT	20	100		320	20		
UWC							
ALTIN Coating							
D							
-0.01~0.03							
Φ10 - Φ20							
45° Helix Angle							

**2 Flutes Long Shank Ball End Mills for Graphite**



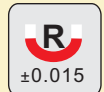
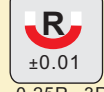
Endmill for various work materials, graphite, non-ferrous and non-metallic, cast iron.  
 Excellent performance with low cutting force by ALTIN coating.  
 Long flute length optimized for deep-side wall machining of graphite.  
 Applied ultra fine WC grade optimized for various non-ferrous and non-metallic work materials.

**Cutting Data**  
P119

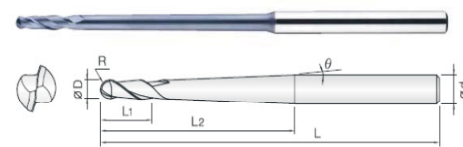
Size	D Tolerance
D ≤ Φ6	+0~ -0.01mm
D > Φ6	+0~ -0.015mm

Type	Part Number	Dimensions in mm					d
		R X D	L1	L2	L		
2	330005020H04Z2-ALT	0.25R X 0.5	2	-	50	4	
	330005050H04Z2-ALT	0.25R X 0.5	2	5	50	4	
	330010050H04Z2-ALT	0.5R X 1	5	-	60	4	
	330010100H04Z2-ALT	0.5R X 1	5	10	60	4	
	330010150H04Z2-ALT	0.5R X 1	5	15	60	4	
	330010200H04Z2-ALT	0.5R X 1	5	20	60	4	
	330010250H04Z2-ALT	0.5R X 1	5	25	70	4	
	330010300H04Z2-ALT	0.5R X 1	5	30	80	4	
	330010350H04Z2-ALT	0.5R X 1	5	35	80	4	
	330010400H04Z2-ALT	0.5R X 1	5	40	90	4	
UWC	330015100H04Z2-ALT	0.75R X 1.5	8	10	60	4	
	330015150H04Z2-ALT	0.75R X 1.5	8	15	60	4	
	330015200H04Z2-ALT	0.75R X 1.5	8	20	60	4	
	330015250H04Z2-ALT	0.75R X 1.5	8	25	70	4	
	330015300H04Z2-ALT	0.75R X 1.5	8	30	80	4	
	330015350H04Z2-ALT	0.75R X 1.5	8	35	80	4	
	330015400H04Z2-ALT	0.75R X 1.5	8	40	90	4	
	330020100H04Z2-ALT	1R X 2	10	-	60	4	
	330020150H04Z2-ALT	1R X 2	10	15	60	4	
	330020200H04Z2-ALT	1R X 2	10	20	60	4	
ALTIN Coating	330020250H04Z2-ALT	1R X 2	10	25	70	4	
	330020300H04Z2-ALT	1R X 2	10	30	80	4	
	330020350H04Z2-ALT	1R X 2	10	35	80	4	
	330020400H04Z2-ALT	1R X 2	10	40	90	4	
	330020500H04Z2-ALT	1RX 2	10	50	100	4	
	330020600H04Z2-ALT	1R X 2	10	60	100	4	
	330025200H04Z2-ALT	1.25R X 2.5	10	20	70	4	
	330030150100Z2-ALT	1.5R X 3	15	-	100	3	
	330030200H04Z2-ALT	1.5R X 3	15	20	70	4	
	330030300H04Z2-ALT	1.5R X 3	15	30	80	4	
R ±0.01	330030400H04Z2-ALT	1.5R X 3	15	40	90	4	
	330030500H04Z2-ALT	1.5R X 3	15	50	100	4	
	330030600H04Z2-ALT	1.5R X 3	15	60	100	4	
	330040200080Z2-ALT	2R X 4	20	-	80	4	
	330040200100Z2-ALT	2R X 4	20	-	100	4	
	330040200130Z2-ALT	2R X 4	20	-	130	4	
	330050250100Z2-ALT	2.5R X 5	25	-	100	5	
	330050250130Z2-ALT	2.5R X 5	25	-	130	5	
	330010050H06Z2-ALT	0.5R X 1	5	-	60	6	
	330010100H06Z2-ALT	0.5R X 1	5	10	60	6	
R ±0.015	330015080H06Z2-ALT	0.75R X 1.5	8	-	60	6	
	330015150H06Z2-ALT	0.75R X 1.5	8	15	60	6	
	330020100H06Z2-ALT	1R X 2	10	-	70	6	
	330020200H06Z2-ALT	1R X 2	10	20	70	6	
	330030150H06Z2-ALT	1.5R X 3	15	-	70	6	
	330030300H06Z2-ALT	1.5R X 3	15	30	75	6	
	330030400H06Z2-ALT	1.5R X 3	15	40	85	6	
	330040200H06Z2-ALT	2R X 4	20	-	75	6	
	30° Helix Angle	330040200H06Z2-ALT	2R X 4	20	-	75	6

Type	Part Number	Dimensions in mm					d
		R X D	L1	L2	L		
	330040350H06Z2-ALT	2R X 4	20	35	85	6	
	330040450H06Z2-ALT	2R X 4	20	45	100	6	
	330050250H06Z2-ALT	2.5R X 5	25	-	85	6	
	330050500H06Z2-ALT	2.5R X 5	25	50	110	6	
	330060250110Z2-ALT	3R X 6	30	-	110	6	
	330060300150Z2-ALT	3R X 6	30	-	150	6	
	330060300185Z2-ALT	3R X 6	30	-	185	6	
	330060300220Z2-ALT	3R X 6	30	-	220	6	
	330080350110Z2-ALT	4R X 8	40	-	110	8	
	330080400150Z2-ALT	4R X 8	40	-	150	8	
	330080400200Z2-ALT	4R X 8	40	-	200	8	
	330080400220Z2-ALT	4R X 8	40	-	220	8	
	330100400120Z2-ALT	5R X 10	40	-	120	10	
	330100450150Z2-ALT	5R X 10	45	-	150	10	
	330100450200Z2-ALT	5R X 10	45	-	200	10	
	330100450230Z2-ALT	5R X 10	45	-	230	10	
	330120500130Z2-ALT	6R X 12	50	-	130	12	
	330120500150Z2-ALT	6R X 12	50	-	150	12	
	330120550200Z2-ALT	6R X 12	55	-	200	12	
	330120550250Z2-ALT	6R X 12	55	-	250	12	
	330160600160Z2-ALT	8R X 16	60	-	160	16	
	330160650200Z2-ALT	8R X 16	65	-	200	16	
	330160650250Z2-ALT	8R X 16	65	-	250	16	
	330160700320Z2-ALT	8R X 16	70	-	320	16	
	330200700160Z2-ALT	10R X 20	70	-	160	20	
	330200750200Z2-ALT	10R X 20	75	-	200	20	
	330200750250Z2-ALT	10R X 20	75	-	250	20	
	330200900320Z2-ALT	10R X 20	90	-	320	20	



**2 Flutes Taper Neck Ball End Mills for Graphite**

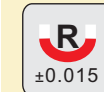
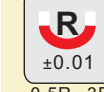
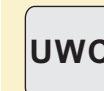


Endmill for various work materials, graphite, non-ferrous and non-metallic, cast iron.  
 Excellent performance with low cutting force by ALTIN coating.  
 Long flute length optimized for deep-side wall machining of graphite.  
 Applied ultra fine WC grade optimized for various non-ferrous and non-metallic work materials

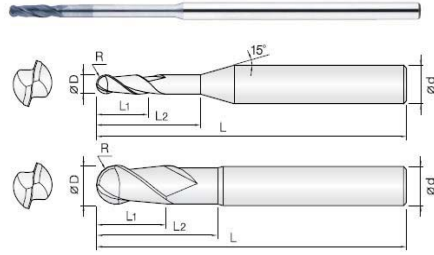
**Cutting Data**  
P119

Size	D Tolerance
D ≤ Φ6	+0~ -0.01mm
D > Φ6	+0~ -0.015mm

Type	Part Number	Dimensions in mm					Angle θ
		R X D	L1	L2	L	d	
	331010003200Z2-ALT	0.5R X 1	4	20	60	4	0°30
	331010003300Z2-ALT	0.5R X 1	4	30	75	4	0°30
	331010003400Z2-ALT	0.5R X 1	4	40	90	4	0°30
	331010010250Z2-ALT	0.5R X 1	4	25	60	4	1°
	331010010350Z2-ALT	0.5R X 1	4	35	75	4	1°
	331010010500Z2-ALT	0.5R X 1	4	50	100	4	1°
	331015003300Z2-ALT	0.75R X 1.5	6	30	75	4	0°30
	331015003400Z2-ALT	0.75R X 1.5	6	40	80	4	0°30
	331015003500Z2-ALT	0.75R X 1.5	6	50	100	4	0°30
	331015010300Z2-ALT	0.75R X 1.5	6	30	75	4	1°
	331015010500Z2-ALT	0.75R X 1.5	6	50	100	4	1°
	331015010600Z2-ALT	0.75R X 1.5	6	60	100	4	1°
	331020003400Z2-ALT	1R X 2	8	40	90	4	0°30
	331020003500Z2-ALT	1R X 2	8	50	100	4	0°30
	331020003700Z2-ALT	1R X 2	8	70	130	4	0°30
	331020010600Z2-ALT	1R X 2	8	60	110	6	1°
	331020010900Z2-ALT	1R X 2	8	90	150	6	1°
	331030003700Z2-ALT	1.5R X 3	10	70	120	6	0°30
	331030010900Z2-ALT	1.5R X 3	10	90	150	6	1°
	331040003700Z2-ALT	2R X 4	14	70	120	6	0°30
	331040010800Z2-ALT	2R X 4	14	80	150	6	1°
	331050003800Z2-ALT	2.5R X 5	16	80	130	6	0°30
	33106000310PZ2-ALT	3R X 6	16	100	150	8	0°30
	33106001010PZ2-ALT	3R X 6	16	100	150	10	1°
	33108001010PZ2-ALT	4R X 8	20	100	150	12	1°
	331100010830Z2-ALT	5R X 10	25	83	200	12	1°
	33112001011PZ2-ALT	6R X 12	30	110	200	16	1°



**2 Flutes Diamond Coated Ball End Mills for Graphite**



Endmills for Graphite, reinforced plastic, carbon fiber,  
**Non-ferrous and non-metallic materials.**  
 Excellent wear resistance by applying qualified CVD diamond coating.  
 Wide range products prepared for various work shape and excellent performance.

**Cutting Data**  
 P119

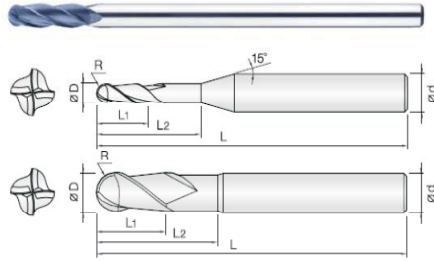
Size	D Tolerance
D ≤ Φ6	+0~ -0.01mm
D > Φ6	+0~ -0.015mm

Type	Part Number	Dimensions in mm					d
		R X D	L1	L2	L		
2	332002010H04Z2-DIA	0.1R X 0.2	1		45	4	
	332003012H04Z2-DIA	0.15R X 0.3	1.2		45	4	
UWC	332004015H04Z2-DIA	0.2R X 0.4	1.5	-	45	4	
	332004030H04Z2-DIA	0.2R X 0.4	1.5	3	45	4	
DIA. Coating	332005020H04Z2-DIA	0.25R X 0.5	2	-	45	4	
	332005050H04Z2-DIA	0.25R X 0.5	2	5	45	4	
R ±0.005	332006020H04Z2-DIA	0.3R X 0.6	2	-	45	4	
	332006050H04Z2-DIA	0.3R X 0.6	2	5	45	4	
R ±0.01	332006080H04Z2-DIA	0.3R X 0.6	2	8	45	4	
	332006100H04Z2-DIA	0.3R X 0.6	2	10	45	4	
30° Helix Angle	332008030H04Z2-DIA	0.4R X 0.8	3	-	45	4	
	332008050H04Z2-DIA	0.4R X 0.8	3	5	45	4	
R ±0.005	332008100H04Z2-DIA	0.4R X 0.8	3	10	45	4	
	332008150H04Z2-DIA	0.4R X 0.8	3	15	45	4	
R ±0.01	332008200H04Z2-DIA	0.4R X 0.8	3	20	45	4	
	332010030H04Z2-DIA	0.5R X 1	3	-	60	4	
30° Helix Angle	332010050H04Z2-DIA	0.5R X 1	3	5	60	4	
	332010100H04Z2-DIA	0.5R X 1	3	10	60	4	
R ±0.005	332010150H04Z2-DIA	0.5R X 1	3	15	60	4	
	332010200H04Z2-DIA	0.5R X 1	3	20	60	4	
R ±0.01	332010250H04Z2-DIA	0.5R X 1	3	25	80	4	
	332010300H04Z2-DIA	0.5R X 1	3	30	80	4	
30° Helix Angle	332015050H04Z2-DIA	0.75R X 1.5	5	-	60	4	
	332015100H04Z2-DIA	0.75R X 1.5	5	10	80	4	
R ±0.005	332015150H04Z2-DIA	0.75R X 1.5	5	15	80	4	
	332015200H04Z2-DIA	0.75R X 1.5	5	20	80	4	
R ±0.01	332015250H04Z2-DIA	0.75R X 1.5	5	25	80	4	
	332015300H04Z2-DIA	0.75R X 1.5	5	30	80	4	
30° Helix Angle	332020060H04Z2-DIA	1R X 2	6	-	60	4	
	332020100H04Z2-DIA	1R X 2	6	10	80	4	
R ±0.005	332020150H04Z2-DIA	1R X 2	6	15	80	4	
	332020200H04Z2-DIA	1R X 2	6	20	80	4	
R ±0.01	332020300H04Z2-DIA	1R X 2	6	30	80	4	
	332020400H04Z2-DIA	1R X 2	6	40	100	4	
30° Helix Angle	332020500H04Z2-DIA	1R X 2	6	50	100	4	
	332030080H04Z2-DIA	1.5R X 3	8	-	60	4	
R ±0.005	332030150H04Z2-DIA	1.5R X 3	8	15	100	4	
	332030200H04Z2-DIA	1.5R X 3	8	20	100	4	
R ±0.01	332030300H04Z2-DIA	1.5R X 3	8	30	100	4	
	332030400H04Z2-DIA	1.5R X 3	8	40	100	4	
30° Helix Angle	332030500H04Z2-DIA	1.5R X 3	8	50	100	4	
	332040160060Z2-DIA	2R X 4	16	-	60	4	
R ±0.005	332040160080Z2-DIA	2R X 4	16	-	80	4	
	332040160100Z2-DIA	2R X 4	16	-	100	4	
R ±0.01	332040160130Z2-DIA	2R X 4	16	-	130	4	
	332050200H06Z2-DIA	2.5R X 5	16	20	105	6	
30° Helix Angle	332060250080Z2-DIA	3R X 6	16	25	80	6	
	332060250105Z2-DIA	3R X 6	16	25	105	6	



Type	Part Number	Dimensions in mm					d
		R X D	L1	L2	L		
2	332060300150Z2-DIA	3R X 6	16	30	150	6	
	332080300080Z2-DIA	4R X 8	20	30	80	8	
UWC	332080300105Z2-DIA	4R X 8	20	30	105	8	
	332080350150Z2-DIA	4R X 8	20	35	150	8	
DIA. Coating	332080400200Z2-DIA	4R X 8	20	40	200	8	
	332100350080Z2-DIA	5R X 10	22	35	80	10	
R ±0.005	332100350105Z2-DIA	5R X 10	22	35	105	10	
	332100400160Z2-DIA	5R X 10	22	40	160	10	
R ±0.01	332100500200Z2-DIA	5R X 10	22	50	200	10	
	332120500105Z2-DIA	6R X 12	25	50	105	12	
30° Helix Angle	332120500160Z2-DIA	6R X 12	25	50	160	12	
	332120600200Z2-DIA	6R X 12	25	60	200	12	

**4 Flutes Diamond Coated Ball End Mills for Graphite**

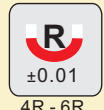
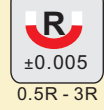


Endmills for Graphite, reinforced plastic, carbon fiber,  
**Non-ferrous and non-metallic materials.**  
 Excellent wear resistance by applying qualified CVD diamond coating.  
 Wide range products prepared for various work shape and excellent performance.

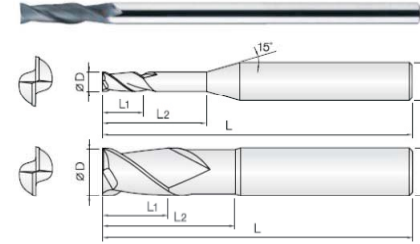
**Cutting Data**  
 P119

Size	D Tolerance
D ≤ Φ6	+0~ -0.01mm
D > Φ6	+0~ -0.015mm

Type	Part Number	Dimensions in mm					d
		R X D	L1	L2	L		
4	333010030H04Z4-DIA	0.5R X 1	3	-	60	4	
	333010050H04Z4-DIA	0.5R X 1	3	5	60	4	
	333010100H04Z4-DIA	0.5R X 1	3	10	60	4	
	333010150H04Z4-DIA	0.5R X 1	3	15	60	4	
	333010200H04Z4-DIA	0.5R X 1	3	20	60	4	
	333010250H04Z4-DIA	0.5R X 1	3	25	60	4	
	333015050H04Z4-DIA	0.75R X 1	5	-	60	4	
	333015100H04Z4-DIA	0.75R X 1	5	10	60	4	
	333015150H04Z4-DIA	0.75R X 1	5	15	60	4	
	333015200H04Z4-DIA	0.75R X 1	5	20	60	4	
	333015250H04Z4-DIA	0.75R X 1	5	25	60	4	
	333020060H04Z4-DIA	1R X 2	6	-	60	4	
333020100H04Z4-DIA	1R X 2	6	10	80	4		
333020200H04Z4-DIA	1R X 2	6	20	80	4		
333020300H04Z4-DIA	1R X 2	6	30	80	4		
333020400H04Z4-DIA	1R X 2	6	40	80	4		
333030080H04Z4-DIA	1.5R X 3	8	-	60	4		
333030150H04Z4-DIA	1.5R X 3	8	15	100	4		
333030200H04Z4-DIA	1.5R X 3	8	20	100	4		
333030300H04Z4-DIA	1.5R X 3	8	30	100	4		
333030400H04Z4-DIA	1.5R X 3	8	40	100	4		
333030500H04Z4-DIA	1.5R X 3	8	50	100	4		
333040160060Z4-DIA	2R X 4	16	-	60	4		
333040160080Z4-DIA	2R X 4	16	-	80	4		
333040160100Z4-DIA	2R X 4	16	-	100	4		
333060250080Z4-DIA	3R X 6	16	25	80	6		
333060250105Z4-DIA	3R X 6	16	25	105	6		
333060300150Z4-DIA	3R X 6	16	30	150	6		
333080300080Z4-DIA	4R X 8	20	30	80	8		
333080300105Z4-DIA	4R X 8	20	30	105	8		
333080350150Z4-DIA	4R X 8	20	35	150	8		
333080400200Z4-DIA	4R X 8	20	40	200	8		
333100350080Z4-DIA	5R X 10	22	35	80	10		
333100350105Z4-DIA	5R X 10	22	35	105	10		
333100400160Z4-DIA	5R X 10	22	40	160	10		
333100500200Z4-DIA	5R X 10	22	50	200	10		
333120500105Z4-DIA	6R X 12	25	50	105	12		
333120500160Z4-DIA	6R X 12	25	50	160	12		
333120600200Z4-DIA	6R X 12	25	60	200	12		



**2 Flutes Diamond Coated End Mills for Graphite**

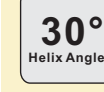
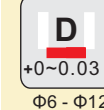
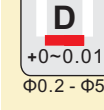
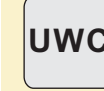


Endmills for Graphite, reinforced plastic, carbon fiber,  
**Non-ferrous and non-metallic materials.**  
 Excellent wear resistance by applying qualified CVD diamond coating.  
 Wide range products prepared for various work shape and excellent performance.

**Cutting Data**  
 P120

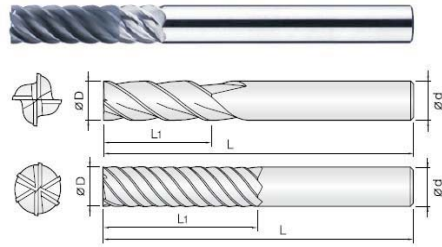
Size	D Tolerance
D ≤ Φ6	+0~ -0.01mm
D > Φ6	+0~ -0.03mm

Type	Part Number	Dimensions in mm					d
		D	L1	L2	L		
2	352002004H04Z2-DIA	0.2	0.4	-	45	4	
	352003006H04Z2-DIA	0.3	0.6	-	45	4	
	352004008H04Z2-DIA	0.4	0.8	-	45	4	
	352005010H04Z2-DIA	0.5	1	-	45	4	
	352006012H04Z2-DIA	0.6	1.2	-	45	4	
	352007015H04Z2-DIA	0.7	1.5	-	45	4	
	352008020H04Z2-DIA	0.8	2	-	45	4	
	352009025H04Z2-DIA	0.9	2.5	-	45	4	
	352010032H04Z2-DIA	1	3.2	-	45	4	
	352020060H04Z2-DIA	2	6	-	45	4	
	352030090H06Z2-DIA	3	9	-	50	6	
	352040120H06Z2-DIA	4	12	-	50	6	
UWC	352050150H06Z2-DIA	5	15	-	60	6	
	352060180H06Z2-DIA	6	18	-	60	6	
	352080240H08Z2-DIA	8	24	-	70	8	
	352100250H10Z2-DIA	10	25	-	80	10	
	352120250H12Z2-DIA	12	25	-	80	12	
	352010030H04Z2-DIA	1	3	-	60	4	
	352010050H04Z2-DIA	1	3	5	60	4	
	352010100H04Z2-DIA	1	3	10	60	4	
	352010150H04Z2-DIA	1	3	15	60	4	
	352010200H04Z2-DIA	1	3	20	60	4	
	352010250H04Z2-DIA	1	3	25	60	4	
	352015060H04Z2-DIA	1.5	6	-	60	4	
352015100H04Z2-DIA	1.5	6	10	60	4		
352015150H04Z2-DIA	1.5	6	15	60	4		
352015200H04Z2-DIA	1.5	6	20	60	4		
352015250H04Z2-DIA	1.5	6	25	60	4		
352020080H04Z2-DIA	2	8	-	80	4		
352020120H04Z2-DIA	2	8	12	80	4		
352020150H04Z2-DIA	2	8	15	80	4		
352020200H04Z2-DIA	2	8	20	80	4		
352020250H04Z2-DIA	2	8	25	80	4		
352020300H04Z2-DIA	2	8	30	80	4		
352020400H04Z2-DIA	2	8	40	80	4		
352030120H04Z2-DIA	3	12	-	80	4		
352030200H04Z2-DIA	3	12	20	80	4		
352030250H04Z2-DIA	3	12	25	80	4		
352030300H04Z2-DIA	3	12	30	80	4		
352030400H04Z2-DIA	3	12	40	80	4		
352040160080Z2-DIA	4	16	-	80	4		
352050200H06Z2-DIA	5	20	-	105	6		
352060250105Z2-DIA	6	25	-	105	6		
352060250150Z2-DIA	6	25	-	150	6		
352080400150Z2-DIA	8	25	40	150	8		
352100500160Z2-DIA	10	25	50	160	10		
352120600160Z2-DIA	12	25	60	160	12		



300 Series

**4&6 Flutes Diamond Coated End Mills for Graphite**



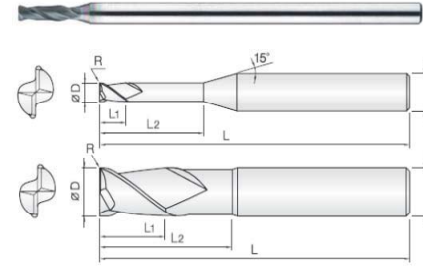
Endmills for Graphite, reinforced plastic, carbon fiber,  
**Non-ferrous and non-metallic materials.**  
 Excellent wear resistance by applying qualified CVD diamond coating.  
 Wide range products prepared for various work shape and excellent performance.

**Cutting Data**  
 P120

Size	D Tolerance
D ≤ Φ6	+0~ -0.01mm
D > Φ6	+0~ -0.03mm

Type	Part Number	Dimensions in mm					
		D	L1	L2	L	d	
4	353020060H04Z4-DIA	2	6		45	4	
	353020100H04Z4-DIA	2	10		60	4	
	353030090H06Z4-DIA	3	9		50	6	
6	353030150H03Z4-DIA	3	15		60	3	
	353030150H04Z4-DIA	3	15		60	4	
	353040120H06Z4-DIA	4	12		50	6	
	353040200080Z4-DIA	4	20		80	4	
	353060180060Z4-DIA	6	18		60	6	
	353060250105Z4-DIA	6	25		105	6	
	353060250150Z4-DIA	6	25		150	6	
	353080240070Z4-DIA	8	24		70	8	
	353080350105Z4-DIA	8	35		105	8	
	353080350150Z4-DIA	8	35		150	8	
	UWC	353100250080Z4-DIA	10	25		80	10
		353100400105Z4-DIA	10	40		105	10
353120250080Z4-DIA		12	25		80	12	
353120450105Z4-DIA		12	45		105	12	
353100400105Z6-DIA		10	40		105	10	
353100400160Z6-DIA		10	40		160	10	
353120450105Z6-DIA		12	45		105	12	
353120450160Z6-DIA		12	45		160	12	
353160500105Z6-DIA		16	50		105	16	
353160500160Z6-DIA		16	50		160	16	
DIA. Coating							
D +0~-0.01 Φ2 - Φ4							
D +0~-0.03 Φ6 - Φ16							
30° Helix Angle							
45° Helix Angle							

**2 Flutes Diamond Coated Corner Radius End Mills for Graphite**



Endmills for Graphite, reinforced plastic, carbon fiber,  
**Non-ferrous and non-metallic materials.**  
 Excellent wear resistance by applying qualified CVD diamond coating.  
 Wide range products prepared for various work shape and excellent performance.

**Cutting Data**  
 P120

Size	D Tolerance
D ≤ Φ6	+0~ -0.01mm
D > Φ6	+0~ -0.015mm

Type	Part Number	Dimensions in mm					
		D X R	L1	L2	L	d	
2	380002D02015Z2-DIA	0.2 X R0.02	0.5	1.5	60	4	
	380003D02015Z2-DIA	0.3 X R0.02	0.6	1.5	60	4	
	380003D02030Z2-DIA	0.3 X R0.02	0.6	3	60	4	
	380003D02045Z2-DIA	0.3 X R0.02	0.6	4.5	60	4	
	380003D02060Z2-DIA	0.3 X R0.02	0.6	6	60	4	
	380004D02020Z2-DIA	0.4 X R0.02	0.8	2	60	4	
	380004D02040Z2-DIA	0.4 X R0.02	0.8	4	60	4	
	380004D02060Z2-DIA	0.4 X R0.02	0.8	6	60	4	
	380004D02080Z2-DIA	0.4 X R0.02	0.8	8	60	4	
	380005D05010Z2-DIA	0.5 X R0.05	1	-	60	4	
	380005D05025Z2-DIA	0.5 X R0.05	1	2.5	60	4	
	380005D05035Z2-DIA	0.5 X R0.05	1	3.5	60	4	
UWC	380005D05050Z2-DIA	0.5 X R0.05	1	5	60	4	
	380005D05075Z2-DIA	0.5 X R0.05	1	7.5	60	4	
	380005D05100Z2-DIA	0.5 X R0.05	1	10	60	4	
	380006D05012Z2-DIA	0.6 X R0.05	1.2	-	60	4	
	380006D05030Z2-DIA	0.6 X R0.05	1.2	3	60	4	
	380006D05060Z2-DIA	0.6 X R0.05	1.2	6	60	4	
	380006D05090Z2-DIA	0.6 X R0.05	1.2	9	60	4	
	380006D05120Z2-DIA	0.6 X R0.05	1.2	12	60	4	
	380008D05016Z2-DIA	0.8 X R0.05	1.6	-	60	4	
	380008D05040Z2-DIA	0.8 X R0.05	1.6	4	60	4	
	380008D05080Z2-DIA	0.8 X R0.05	1.6	8	60	4	
	380008D05100Z2-DIA	0.8 X R0.05	1.6	10	60	4	
DIA. Coating	380008D05160Z2-DIA	0.8 X R0.05	1.6	16	60	4	
	380010D05020Z2-DIA	1 X R0.05	2	-	60	4	
	380010D05050Z2-DIA	1 X R0.05	2	5	60	4	
	380010D05100Z2-DIA	1 X R0.05	2	10	60	4	
	380010D05150Z2-DIA	1 X R0.05	2	15	60	4	
	380010D05200Z2-DIA	1 X R0.05	2	20	60	4	
	380010001020Z2-DIA	1 X R0.1	2	-	60	4	
	380010001050Z2-DIA	1 X R0.1	2	5	60	4	
	380010001100Z2-DIA	1 X R0.1	2	10	60	4	
	380010001150Z2-DIA	1 X R0.1	2	15	60	4	
	380010001200Z2-DIA	1 X R0.1	2	20	60	4	
	380010002020Z2-DIA	1 X R0.2	2	-	60	4	
380010002050Z2-DIA	1 X R0.2	2	5	60	4		
380010002100Z2-DIA	1 X R0.2	2	10	60	4		
380010002150Z2-DIA	1 X R0.2	2	15	60	4		
380010002200Z2-DIA	1 X R0.2	2	20	60	4		
R ±0.005 Φ0.2 - Φ2	380015D05030Z2-DIA	1.5 X R0.05	3	-	60	4	
	380015D05050Z2-DIA	1.5 X R0.05	3	5	60	4	
	380015D05100Z2-DIA	1.5 X R0.05	3	10	60	4	
	380015D05150Z2-DIA	1.5 X R0.05	3	15	60	4	
	380015D05200Z2-DIA	1.5 X R0.05	3	20	60	4	
	380015001030Z2-DIA	1.5 X R0.1	3	-	60	4	
	380015001050Z2-DIA	1.5 X R0.1	3	5	60	4	
	380015001100Z2-DIA	1.5 X R0.1	3	10	60	4	
	R ±0.01 Φ3 - Φ6						
30° Helix Angle							

Type	Part Number	Dimensions in mm					d
		D X R	L1	L2	L		
	380015001150Z2-DIA	1.5 X R0.1	3	15	60	4	
	380015001200Z2-DIA	1.5 X R0.1	3	20	60	4	
	380015D15030Z2-DIA	1.5 X R0.15	3	-	60	4	
	380015D15050Z2-DIA	1.5 X R0.15	3	5	60	4	
	380015D15100Z2-DIA	1.5 X R0.15	3	10	60	4	
	380015D15150Z2-DIA	1.5 X R0.15	3	15	60	4	
	380015D15200Z2-DIA	1.5 X R0.15	3	20	60	4	
	380015002030Z2-DIA	1.5 X R0.2	3	-	60	4	
	380015002050Z2-DIA	1.5 X R0.2	3	5	60	4	
	380015002100Z2-DIA	1.5 X R0.2	3	10	60	4	
	380015002150Z2-DIA	1.5 X R0.2	3	15	60	4	
	380015002200Z2-DIA	1.5 X R0.2	3	20	60	4	
	380015003030Z2-DIA	1.5 X R0.3	3	-	60	4	
	380015003050Z2-DIA	1.5 X R0.3	3	5	60	4	
	380015003100Z2-DIA	1.5 X R0.3	3	10	60	4	
	380015003150Z2-DIA	1.5 X R0.3	3	15	60	4	
	380015003200Z2-DIA	1.5 X R0.3	3	20	60	4	
	380020D05035Z2-DIA	2 X R0.05	3.5	-	60	4	
	380020D05060Z2-DIA	2 X R0.05	3.5	6	60	4	
	380020D05120Z2-DIA	2 X R0.05	3.5	12	60	4	
	380020D05180Z2-DIA	2 X R0.05	3.5	18	60	4	
	380020D05250Z2-DIA	2 X R0.05	3.5	25	60	4	
	380020D05300Z2-DIA	2 X R0.05	3.5	30	60	4	
	380020002035Z2-DIA	2 X R0.2	3.5	-	60	4	
	380020002060Z2-DIA	2 X R0.2	3.5	6	60	4	
	380020002120Z2-DIA	2 X R0.2	3.5	12	60	4	
	380020002180Z2-DIA	2 X R0.2	3.5	18	60	4	
	380020002250Z2-DIA	2 X R0.2	3.5	25	60	4	
	380020002300Z2-DIA	2 X R0.2	3.5	30	60	4	
	380020003035Z2-DIA	2 X R0.3	3.5	-	60	4	
	380020003060Z2-DIA	2 X R0.3	3.5	6	60	4	
	380020003120Z2-DIA	2 X R0.3	3.5	12	60	4	
	380020003180Z2-DIA	2 X R0.3	3.5	18	60	4	
	380020003250Z2-DIA	2 X R0.3	3.5	25	60	4	
	380020003300Z2-DIA	2 X R0.3	3.5	30	60	4	
	380020005035Z2-DIA	2 X R0.5	3.5	-	60	4	
	380020005060Z2-DIA	2 X R0.5	3.5	6	60	4	
	380020005120Z2-DIA	2 X R0.5	3.5	12	60	4	
	380020005180Z2-DIA	2 X R0.5	3.5	18	60	4	
	380020005250Z2-DIA	2 X R0.5	3.5	25	60	4	
	380020005300Z2-DIA	2 X R0.5	3.5	30	60	4	
	380030D05040Z2-DIA	3 X R0.05	4	-	80	4	
	380030D05100Z2-DIA	3 X R0.05	4	10	80	4	
	380030D05200Z2-DIA	3 X R0.05	4	20	80	4	
	380030D05300Z2-DIA	3 X R0.05	4	30	80	4	
	380030D05400Z2-DIA	3 X R0.05	4	40	80	4	
	380030002040Z2-DIA	3 X R0.2	4	-	80	4	
	380030002100Z2-DIA	3 X R0.2	4	10	80	4	
	380030002200Z2-DIA	3 X R0.2	4	20	80	4	
	380030002300Z2-DIA	3 X R0.2	4	30	80	4	
	380030002400Z2-DIA	3 X R0.2	4	40	80	4	
	380030003040Z2-DIA	3 X R0.3	4	-	80	4	
	380030003100Z2-DIA	3 X R0.3	4	10	80	4	
	380030003200Z2-DIA	3 X R0.3	4	20	80	4	
	380030003300Z2-DIA	3 X R0.3	4	30	80	4	
	380030003400Z2-DIA	3 X R0.3	4	40	80	4	
	380030005040Z2-DIA	3 X R0.5	4	-	80	4	
	380030005100Z2-DIA	3 X R0.5	4	10	80	4	

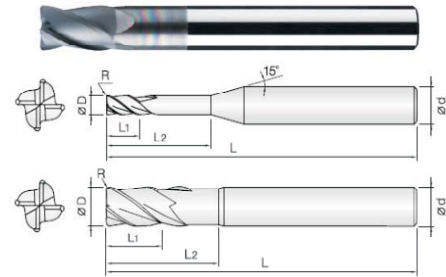
Type	Part Number	Dimensions in mm					d
		D X R	L1	L2	L		
	380030005200Z2-DIA	3 X R0.5	4	20	80	4	
	380030005300Z2-DIA	3 X R0.5	4	30	80	4	
	380030005400Z2-DIA	3 X R0.5	4	40	80	4	
	380030010040Z2-DIA	3 X R1	4	-	80	4	
	380030010100Z2-DIA	3 X R1	4	10	80	4	
	380030010200Z2-DIA	3 X R1	4	20	80	4	
	380030010300Z2-DIA	3 X R1	4	30	80	4	
	380030010400Z2-DIA	3 X R1	4	40	80	4	
	380040D05050Z2-DIA	4 X R0.05	5	-	80	4	
	380040D05150Z2-DIA	4 X R0.05	5	15	80	4	
	380040D05250Z2-DIA	4 X R0.05	5	25	80	4	
	380040D05400Z2-DIA	4 X R0.05	5	40	80	4	
	380040002050Z2-DIA	4 X R0.2	5	-	80	4	
	380040002150Z2-DIA	4 X R0.2	5	15	80	4	
	380040002250Z2-DIA	4 X R0.2	5	25	80	4	
	380040002400Z2-DIA	4 X R0.2	5	40	80	4	
	380040005050Z2-DIA	4 X R0.5	5	-	80	4	
	380040005150Z2-DIA	4 X R0.5	5	15	80	4	
	380040005250Z2-DIA	4 X R0.5	5	25	80	4	
	380040005400Z2-DIA	4 X R0.5	5	40	80	4	
	380040010050Z2-DIA	4 X R1	5	-	80	4	
	380040010150Z2-DIA	4 X R1	5	15	80	4	
	380040010250Z2-DIA	4 X R1	5	25	80	4	
	380040010400Z2-DIA	4 X R1	5	40	80	4	
	380050D05060Z2-DIA	5 X R0.05	6	-	105	6	
	380050D05150Z2-DIA	5 X R0.05	6	15	105	6	
	380050D05300Z2-DIA	5 X R0.05	6	30	105	6	
	380050D05500Z2-DIA	5 X R0.05	6	50	105	6	
	380050002060Z2-DIA	5 X R0.2	6	-	105	6	
	380050002150Z2-DIA	5 X R0.2	6	15	105	6	
	380050002300Z2-DIA	5 X R0.2	6	30	105	6	
	380050002500Z2-DIA	5 X R0.2	6	50	105	6	
	380050005060Z2-DIA	5 X R0.5	6	-	105	6	
	380050005150Z2-DIA	5 X R0.5	6	15	105	6	
	380050005300Z2-DIA	5 X R0.5	6	30	105	6	
	380050005500Z2-DIA	5 X R0.5	6	50	105	6	
	380060D05070Z2-DIA	6 X R0.05	7	-	105	6	
	380060D05200Z2-DIA	6 X R0.05	7	20	105	6	
	380060D05300Z2-DIA	6 X R0.05	7	30	105	6	
	380060D05500Z2-DIA	6 X R0.05	7	50	105	6	
	380060002070Z2-DIA	6 X R0.2	7	-	105	6	
	380060002200Z2-DIA	6 X R0.2	7	20	105	6	
	380060002300Z2-DIA	6 X R0.2	7	30	105	6	
	380060002500Z2-DIA	6 X R0.2	7	50	105	6	
	380060005070Z2-DIA	6 X R0.5	7	-	105	6	
	380060005200Z2-DIA	6 X R0.5	7	20	105	6	
	380060005300Z2-DIA	6 X R0.5	7	30	105	6	
	380060005500Z2-DIA	6 X R0.5	7	50	105	6	
	380060010070Z2-DIA	6 X R1	7	-	105	6	
	380060010200Z2-DIA	6 X R1	7	20	105	6	
	380060010300Z2-DIA	6 X R1	7	30	105	6	
	380060010500Z2-DIA	6 X R1	7	50	105	6	

300 Series

300 Series



**4 Flutes Diamond Coated Corner Radius End Mills for Graphite**



Endmills for Graphite, reinforced plastic, carbon fiber, Non-ferrous and non-metallic materials.  
Excellent wear resistance by applying qualified CVD diamond coating.  
Wide range products prepared for various work shape and excellent performance.

**Cutting Data**  
P120

Size	D Tolerance
D ≤ Φ6	+0~ -0.01mm
D > Φ6	+0~ -0.015mm

Type	Part Number	Dimensions in mm					d
		D X R	L1	L2	L		
4	381020D05035Z4-DIA	2 X R0.05	3.5	-	60	4	
	381020D05060Z4-DIA	2 X R0.05	3.5	6	60	4	
UWC	381020D05120Z4-DIA	2 X R0.05	3.5	12	60	4	
	381020D05180Z4-DIA	2 X R0.05	3.5	18	60	4	
DIA. Coating	381020D05250Z4-DIA	2 X R0.05	3.5	25	60	4	
	381020D05300Z4-DIA	2 X R0.05	3.5	30	60	4	
R ±0.01	381020002035Z4-DIA	2 X R0.2	3.5	-	60	4	
	381020002060Z4-DIA	2 X R0.2	3.5	6	60	4	
30° Helix Angle	381020002120Z4-DIA	2 X R0.2	3.5	12	60	4	
	381020002180Z4-DIA	2 X R0.2	3.5	18	60	4	
	381020002250Z4-DIA	2 X R0.2	3.5	25	60	4	
	381020002300Z4-DIA	2 X R0.2	3.5	30	60	4	
	381020003035Z4-DIA	2 X R0.3	3.5	-	60	4	
	381020003060Z4-DIA	2 X R0.3	3.5	6	60	4	
	381020003120Z4-DIA	2 X R0.3	3.5	12	60	4	
	381020003180Z4-DIA	2 X R0.3	3.5	18	60	4	
	381020003250Z4-DIA	2 X R0.3	3.5	25	60	4	
	381020003300Z4-DIA	2 X R0.3	3.5	30	60	4	
	381020005035Z4-DIA	2 X R0.5	3.5	-	60	4	
	381020005060Z4-DIA	2 X R0.5	3.5	6	60	4	
	381020005120Z4-DIA	2 X R0.5	3.5	12	60	4	
	381020005180Z4-DIA	2 X R0.5	3.5	18	60	4	
	381020005250Z4-DIA	2 X R0.5	3.5	25	60	4	
	381020005300Z4-DIA	2 X R0.5	3.5	30	60	4	
	381030D05040Z4-DIA	3 X R0.05	4	-	80	4	
	381030D05100Z4-DIA	3 X R0.05	4	10	80	4	
	381030D05200Z4-DIA	3 X R0.05	4	20	80	4	
	381030D05300Z4-DIA	3 X R0.05	4	30	80	4	
	381030D05400Z4-DIA	3 X R0.05	4	40	80	4	
	381030002040Z4-DIA	3 X R0.2	4	-	80	4	
	381030002100Z4-DIA	3 X R0.2	4	10	80	4	
	381030002200Z4-DIA	3 X R0.2	4	20	80	4	
	381030002300Z4-DIA	3 X R0.2	4	30	80	4	
	381030002400Z4-DIA	3 X R0.2	4	40	80	4	
	381030003040Z4-DIA	3 X R0.3	4	-	80	4	
	381030003100Z4-DIA	3 X R0.3	4	10	80	4	
	381030003200Z4-DIA	3 X R0.3	4	20	80	4	
	381030003300Z4-DIA	3 X R0.3	4	30	80	4	
	381030003400Z4-DIA	3 X R0.3	4	40	80	4	
	381030005040Z4-DIA	3 X R0.5	4	-	80	4	
	381030005100Z4-DIA	3 X R0.5	4	10	80	4	
	381030005200Z4-DIA	3 X R0.5	4	20	80	4	
	381030005300Z4-DIA	3 X R0.5	4	30	80	4	
	381030005400Z4-DIA	3 X R0.5	4	40	80	4	
	381030010040Z4-DIA	3 X R1	4	-	80	4	
	381030010100Z4-DIA	3 X R1	4	10	80	4	
	381030010200Z4-DIA	3 X R1	4	20	80	4	
	381030010300Z4-DIA	3 X R1	4	30	80	4	



Type	Part Number	Dimensions in mm					d
		D X R	L1	L2	L		
4	381030010400Z4-DIA	3 X R1	4	40	80	4	
	381040003100Z4-DIA	4 X R0.3	6	20	100	4	
UWC	381040005100Z4-DIA	4 X R0.5	6	20	100	4	
	381040010100Z4-DIA	4 X R1	6	20	100	4	
DIA. Coating	381060003105Z4-DIA	6 X R0.3	9	25	105	6	
	381060005105Z4-DIA	6 X R0.5	9	25	105	6	
R ±0.01	381060005150Z4-DIA	6 X R0.5	9	30	150	6	
	381060010105Z4-DIA	6 X R1	9	25	105	6	
30° Helix Angle	381060010150Z4-DIA	6 X R1	9	30	150	6	
	381080003105Z4-DIA	8 X R0.3	12	30	105	8	
	381080005105Z4-DIA	8 X R0.5	12	30	105	8	
	381080005150Z4-DIA	8 X R0.5	12	40	150	8	
	381080010105Z4-DIA	8 X R1	12	30	105	8	
	381080010150Z4-DIA	8 X R1	12	40	150	8	
	381100005105Z4-DIA	10 X R0.5	15	35	105	10	
	381100005160Z4-DIA	10 X R0.5	15	45	160	10	
	381100010105Z4-DIA	10 X R1	15	35	105	10	
	381100010160Z4-DIA	10 X R1	15	45	160	10	
	381120005105Z4-DIA	12 X R0.5	18	40	105	12	
	381120005160Z4-DIA	12 X R0.5	18	45	160	12	
	381120010105Z4-DIA	12 X R1	18	40	105	12	
	381120010160Z4-DIA	12 X R1	18	45	160	12	

**330 / 331**

• RPM : rev./min • Feed : mm/min

	330		331	
Material	Graphite		Graphite	
Radius	RPM	FEED	RPM	FEED
R0.25	32,000	1,000	-	-
R0.5	32,000	1,600	20,000	650
R0.75	28,000	1,600	20,000	1,000
R1	24,000	1,600	17,000	1,000
R1.5	16,000	1,600	15,000	1,000
R2	12,000	1,600	10,000	1,000
R2.5	9,600	1,400	7,500	1,000
R3	8,000	1,200	5,000	800
R4	6,400	640	4,500	800
R5	5,200	650	4,000	600
R6	4,300	600	-	-
R8	3,500	500	-	-
R10	3,000	400	-	-

Depth of Cut	Ap	Pf
	1.0D	0.3D

**350 / 351 / 360**

• RPM : rev./min • Feed : mm/min

	350		351		360	
Material	Graphite		Graphite		Graphite	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED
1mm	8,000	160	-	-	-	-
2mm	8,000	250	-	-	-	-
3mm	8,000	380	8,000	430	-	-
4mm	8,000	510	8,000	570	-	-
5mm	8,000	640	8,000	720	-	-
6mm	8,000	770	8,000	860	8,000	960
8mm	8,000	1,000	8,000	1,100	8,000	1,300
10mm	8,000	1,250	8,000	1,400	8,000	1,600
12mm	8,000	1,500	7,000	1,400	7,000	1,600
16mm	8,000	1,600	7,000	1,500	7,000	1,800
20mm	8,000	1,600	7,000	1,500	7,000	1,800

Depth of Cut	Ap	Ae
	1D	0.1D

**332 / 333**

• RPM : rev./min • Feed : mm/min

	332		333	
Material	Graphite		Graphite	
Radius	RPM	FEED	RPM	FEED
R0.2	40,000	1,200	-	-
R0.3	40,000	1,600	-	-
R0.4	40,000	1,800	-	-
R0.5	40,000	2,000	-	-
R1	40,000	2,200	-	-
R1.5	30,000	2,400	-	-
R2	24,000	2,600	24,000	3,600
R2.5	19,000	2,600	19,000	3,600
R3	16,000	2,600	16,000	3,600
R4	12,000	2,800	12,000	3,800
R5	10,000	3,000	10,000	4,000
R6	8,000	3,000	8,000	4,000

Depth of Cut	0.2R	<0.5R
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**352 / 353 / 380 / 381**

• RPM : rev./min • Feed : mm/min

	352		353(4F)		353(6F)		380		381	
Material	Graphite		Graphite		Graphite		Graphite		Graphite	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
0.2mm	40,000	50	-	-	-	-	40,000	100	-	-
0.4mm	40,000	100	-	-	-	-	40,000	200	-	-
0.5mm	40,000	200	-	-	-	-	40,000	300	-	-
0.6mm	40,000	250	-	-	-	-	40,000	400	-	-
0.8mm	40,000	300	-	-	-	-	40,000	500	-	-
1mm	40,000	400	-	-	-	-	40,000	900	-	-
2mm	30,000	470	30,000	800	-	-	36,000	900	-	-
3mm	21,000	640	21,000	1,200	-	-	32,000	1,300	-	-
4mm	16,000	540	16,000	1,200	-	-	26,000	1,500	40,000	3,500
5mm	12,500	560	-	-	-	-	24,000	1,100	-	-
6mm	10,500	590	10,500	1,200	-	-	21,000	1,100	40,000	5,600
8mm	8,000	610	8,000	1,250	-	-	-	-	32,000	5,600
10mm	6,400	640	-	-	13,000	6,000	-	-	26,000	5,700
12mm	5,300	630	-	-	11,200	5,600	-	-	21,000	5,500
16mm	-	-	-	-	7,000	4,000	-	-	15,800	5,500

Depth of Cut	D	Ap	Ae
	Dc < ∅ 2.5	1.5D	0.05D
Depth of Cut	∅ 2.5 < D ∞	1.5D	0.1D