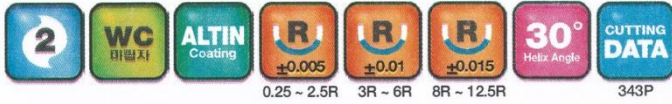


- Endmill for various work materials, graphite, hardened steel(HRc~48), pre-hardened steel, tool steel and cast iron.
- Excellent performance with low cutting force by ALTiN coating.
- Long flute length optimized for deep-side wall machining of graphite.
- Applied fine WC grade optimized for various non-ferrous and non-metallic work materials.



D Size	D Tolerance
ø0.5 - 5	+0 - -0.01mm
ø6 - 12	-0.005 - -0.015mm
ø16 - 25	-0.01 - -0.02mm

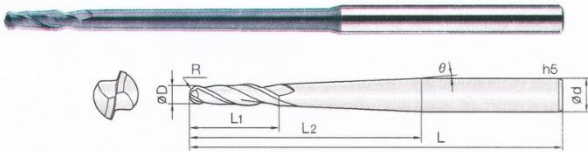
FOR GRAPHITE

Order Number	Diameter R x D	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d	Order Number	Diameter R x D	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d
2GBE 005 020 S04	0.25R X 0.5	2	-	50	4	2GBE 050 250 S06	2.5R X 5	25	-	90	6
2GBE 005 050 S04	0.25R X 0.5	2	5	50	4	2GBE 050 500 S06	2.5R X 5	25	50	110	6
2GBE 010 050 S04	0.5R X 1	5	-	60	4	2GBE 060 250 110	3R X 6	25	-	110	6
2GBE 010 050 S06	0.5R X 1	5	-	60	6	2GBE 060 300 150	3R X 6	30	-	150	6
2GBE 010 100 S04	0.5R X 1	5	10	60	4	2GBE 060 300 200	3R X 6	30	-	200	6
2GBE 010 100 S06	0.5R X 1	5	10	60	6	2GBE 060 300 220	3R X 6	30	-	220	6
2GBE 010 150 S04	0.5R X 1	5	15	60	4	2GBE 080 350 110	4R X 8	35	-	110	8
2GBE 010 200 S04	0.5R X 1	5	20	60	4	2GBE 080 400 150	4R X 8	40	-	150	8
2GBE 010 250 S04	0.5R X 1	5	25	70	4	2GBE 080 400 200	4R X 8	40	-	200	8
2GBE 010 300 S04	0.5R X 1	5	30	80	4	2GBE 080 400 220	4R X 8	40	-	220	8
2GBE 010 350 S04	0.5R X 1	5	35	80	4	2GBE 100 400 120	5R X 10	40	-	120	10
2GBE 010 400 S04	0.5R X 1	5	40	90	4	2GBE 100 450 150	5R X 10	45	-	150	10
2GBE 015 080 S06	0.75R X 1.5	8	-	60	6	2GBE 100 450 200	5R X 10	45	-	200	10
2GBE 015 100 S04	0.75R X 1.5	8	10	60	4	2GBE 100 450 230	5R X 10	45	-	230	10
2GBE 015 150 S04	0.75R X 1.5	8	15	60	4	2GBE 120 500 130	6R X 12	50	-	130	12
2GBE 015 150 S06	0.75R X 1.5	8	15	60	6	2GBE 120 500 150	6R X 12	50	-	150	12
2GBE 015 200 S04	0.75R X 1.5	8	20	60	4	2GBE 120 550 200	6R X 12	55	-	200	12
2GBE 015 250 S04	0.75R X 1.5	8	25	70	4	2GBE 120 550 250	6R X 12	55	-	250	12
2GBE 015 300 S04	0.75R X 1.5	8	30	80	4	2GBE 160 600 160	8R X 16	60	-	160	16
2GBE 015 350 S04	0.75R X 1.5	8	35	80	4	2GBE 160 650 200	8R X 16	65	-	200	16
2GBE 015 400 S04	0.75R X 1.5	8	40	90	4	2GBE 160 650 250	8R X 16	65	-	250	16
2GBE 020 100 S04	1R X 2	10	-	60	4	2GBE 160 700 320	8R X 16	70	-	320	16
2GBE 020 100 S06	1R X 2	10	-	70	6	2GBE 200 700 160	10R X 20	70	-	160	20
2GBE 020 150 S04	1R X 2	10	15	60	4	2GBE 200 750 200	10R X 20	75	-	200	20
2GBE 020 200 S04	1R X 2	10	20	60	4	2GBE 200 750 250	10R X 20	75	-	250	20
2GBE 020 200 S06	1R X 2	10	20	70	6	2GBE 200 900 320	10R X 20	90	-	320	20
2GBE 020 250 S04	1R X 2	10	25	70	4	2GBE 250 1000 250	12.5R X 25	100	-	250	25
2GBE 020 300 S04	1R X 2	10	30	80	4						
2GBE 020 350 S04	1R X 2	10	35	80	4						
2GBE 020 400 S04	1R X 2	10	40	90	4						
2GBE 020 500 S04	1R X 2	10	50	100	4						
2GBE 020 600 S04	1R X 2	10	60	100	4						
2GBE 025 200 S04	1.25R X 2.5	10	20	70	4						
2GBE 030 150 100	1.5R X 3	15	-	100	3						
2GBE 030 150 S06	1.5R X 3	15	-	70	6						
2GBE 030 200 S04	1.5R X 3	15	20	70	4						
2GBE 030 300 S04	1.5R X 3	15	30	80	4						
2GBE 030 300 S06	1.5R X 3	15	30	75	6						
2GBE 030 400 S04	1.5R X 3	15	40	90	4						
2GBE 030 400 S06	1.5R X 3	15	40	90	6						
2GBE 030 500 S04	1.5R X 3	15	50	100	4						
2GBE 030 600 S04	1.5R X 3	15	60	100	4						
2GBE 040 200 080	2R X 4	20	-	80	4						
2GBE 040 200 100	2R X 4	20	-	100	4						
2GBE 040 200 130	2R X 4	20	-	130	4						
2GBE 040 200 S06	2R X 4	20	-	75	6						
2GBE 040 350 S06	2R X 4	20	35	90	6						
2GBE 040 450 S06	2R X 4	20	45	100	6						
2GBE 050 250 100	2.5R X 5	25	-	100	5						
2GBE 050 250 130	2.5R X 5	25	-	130	5						



2 Flutes Taper Neck Ball End Mills for Graphite

VHM 2-Lp. Kugelfräser, kon. Schaftauslauf, Graphit für leichte Schnitte



- Endmill for various work materials, graphite, hardened steel(HRC~48), 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 fine WC grade optimized for various non-ferrous and non-metallic work materials.

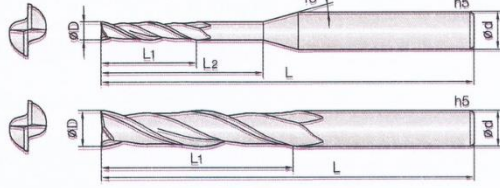
2	WC 마립자	ALTIN Coating	R ±0.005 0.5R~2.5R	R ±0.01 3R~6R	30° Helix Angle	CUTTING DATA 344P
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D Size	D Tolerance
Ø1 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

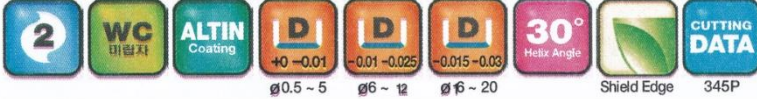
FOR GRAPHITE

Order Number	Diameter R x D	Angle θ	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d	Order Number	Diameter R x D	Angle θ	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d
2TGB 010 003 200	0.5R X 1	0° 30	4	20	60	4							
2TGB 010 003 300	0.5R X 1	0° 30	4	30	75	4							
2TGB 010 003 400	0.5R X 1	0° 30	4	40	90	4							
2TGB 010 010 250	0.5R X 1	1°	4	25	60	4							
2TGB 010 010 350	0.5R X 1	1°	4	35	75	4							
2TGB 010 010 500	0.5R X 1	1°	4	50	100	4							
2TGB 015 003 300	0.75R X 1.5	0° 30	6	30	75	4							
2TGB 015 003 400	0.75R X 1.5	0° 30	6	40	80	4							
2TGB 015 003 500	0.75R X 1.5	0° 30	6	50	100	4							
2TGB 015 010 300	0.75R X 1.5	1°	6	30	75	4							
2TGB 015 010 500	0.75R X 1.5	1°	6	50	100	4							
2TGB 015 010 600	0.75R X 1.5	1°	6	60	100	4							
2TGB 020 003 400	1R X 2	0° 30	8	40	90	4							
2TGB 020 003 500	1R X 2	0° 30	8	50	100	4							
2TGB 020 003 700	1R X 2	0° 30	8	70	130	4							
2TGB 020 010 600	1R X 2	1°	8	60	110	6							
2TGB 020 010 900	1R X 2	1°	8	90	150	6							
2TGB 030 003 700	1.5R X 3	0° 30	10	70	120	6							
2TGB 030 010 900	1.5R X 3	1°	10	90	150	6							
2TGB 040 003 700	2R X 4	0° 30	14	70	120	6							
2TGB 040 010 800	2R X 4	1°	14	80	150	6							
2TGB 050 003 800	2.5R X 5	0° 30	16	80	130	6							
2TGB 060 003 1000	3R X 6	0° 30	16	100	150	8							
2TGB 060 010 1000	3R X 6	1°	16	100	150	10							
2TGB 080 010 1000	4R X 8	1°	20	100	150	12							
2TGB 100 010 830	5R X 10	1°	25	83	200	12							
2TGB 120 010 1100	6R X 12	1°	30	110	200	16							

VHM 2-Lp. Schaftfräser, lang, Graphit für leichte Schnitte



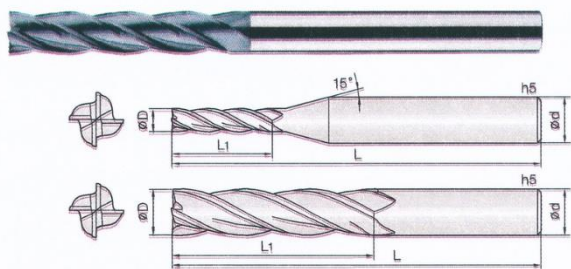
- Endmill for various work materials, graphite, hardened steel(HRc~48), pre-hardened steel, tool steel and cast iron.
- Excellent performance with low cutting force by ALTIN coating.
- Long flute length optimized for deep-side wall machining of graphite.
- Applied fine WC grade optimized for various alloy steels applications, below HRc48.



D Size	D Tolerance
ø0.5 ~ 5	+0 ~ -0.01mm
ø6 ~ 12	-0.01 ~ -0.025mm
ø16 ~ 20	-0.015 ~ -0.03mm

FOR GRAPHITE

Order Number	Diameter D	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d	Order Number	Diameter D	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d
2GEM 005 020 S04	0.5	2	-	50	4						
2GEM 010 050 S04	1	5	-	60	4						
2GEM 010 100 S04	1	5	10	60	4						
2GEM 010 100 S06	1	5	10	60	6						
2GEM 010 150 S04	1	5	15	60	4						
2GEM 010 200 S04	1	5	20	60	4						
2GEM 010 250 S04	1	5	25	70	4						
2GEM 015 100 S04	1.5	10	-	60	4						
2GEM 015 150 S04	1.5	8	15	60	4						
2GEM 015 200 S04	1.5	8	20	60	4						
2GEM 015 200 S06	1.5	8	20	60	6						
2GEM 015 250 S04	1.5	8	25	70	4						
2GEM 020 100 S04	2	10	-	60	4						
2GEM 020 150 S04	2	10	15	60	4						
2GEM 020 200 S04	2	10	20	60	4						
2GEM 020 200 S06	2	10	20	60	6						
2GEM 020 250 S04	2	10	25	70	4						
2GEM 020 300 S04	2	10	30	80	4						
2GEM 030 150 S04	3	15	-	70	4						
2GEM 030 250 S04	3	15	25	75	4						
2GEM 030 300 S06	3	15	30	75	6						
2GEM 040 200 100	4	20	-	100	4						
2GEM 040 400 S06	4	20	40	100	6						
2GEM 050 250 100	5	25	-	100	5						
2GEM 060 300 110	6	30	-	110	6						
2GEM 060 300 150	6	30	-	150	6						
2GEM 080 400 150	8	40	-	150	8						
2GEM 100 450 150	10	45	-	150	10						
2GEM 100 500 200	10	50	-	200	10						
2GEM 120 600 150	12	60	-	150	12						
2GEM 120 600 200	12	60	-	200	12						
2GEM 160 600 130	16	60	-	130	16						
2GEM 160 700 160	16	70	-	160	16						
2GEM 160 700 200	16	70	-	200	16						
2GEM 200 800 160	20	80	-	160	20						
2GEM 200 900 200	20	90	-	200	20						
2GEM 200 1200 320	20	120	-	320	20						



- Endmill for various work materials, graphite, hardened steel(HRc~48), 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 fine WC grade optimized for various alloy steels applications, below HRc48.

D Size	D Tolerance
ø3 - 5	+0 ~ -0.01mm
ø6 ~ 12	-0.01 ~ -0.025mm
ø16 - 20	-0.015 ~ -0.03mm

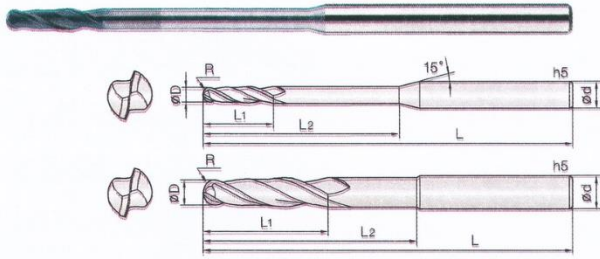
Order Number	Diameter D	Length of cut L1	Overall Length L	Shank Dia d	Order Number	Diameter D	Length of cut L1	Overall Length L	Shank Dia d
4GEM 030 100 S06	3	10	100	6					
4GEM 030 150 S06	3	15	100	6					
4GEM 040 150 S06	4	15	100	6					
4GEM 040 200 100	4	20	100	4					
4GEM 040 200 S06	4	20	100	6					
4GEM 050 200 S06	5	20	100	6					
4GEM 060 300 110	6	30	110	6					
4GEM 060 300 150	6	30	150	6					
4GEM 080 400 150	8	40	150	8					
4GEM 080 400 200	8	40	200	8					
4GEM 100 500 150	10	50	150	10					
4GEM 100 500 200	10	50	200	10					
4GEM 120 600 150	12	60	150	12					
4GEM 120 600 200	12	60	200	12					
4GEM 160 700 160	16	70	160	16					
4GEM 160 800 200	16	80	200	16					
4GEM 200 750 160	20	75	160	20					
4GEM 200 900 200	20	90	200	20					
4GEM 200 1000 320	20	100	320	20					

FOR GRAPHITE



2 Flutes Diamond Coated Ball End Mills for Graphite

VHM 2-Lp. Kugelfräser, Diamant beschichtet, Graphit, non ferrous



- 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.



D Size	D Tolerance
Ø0.2 ~ 12	+0 ~ -0.02mm

Order Number	Diameter R x D	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d
2DBE 002 010 S04	0.1R X 0.2	1	-	45	4
2DBE 003 012 S04	0.15R X 0.3	1.2	-	45	4
2DBE 003 020 S04	0.15R X 0.3	1.2	2	45	4
2DBE 004 015 S04	0.2R X 0.4	1.5	-	45	4
2DBE 004 020 S04	0.2R X 0.4	1.5	2	45	4
2DBE 004 030 S04	0.2R X 0.4	1.5	3	45	4
2DBE 004 040 S04	0.2R X 0.4	1.5	4	45	4
2DBE 004 050 S04	0.2R X 0.4	1.5	5	45	4
2DBE 004 080 S04	0.2R X 0.4	1.5	8	45	4
2DBE 004 100 S04	0.2R X 0.4	1.5	10	45	4
2DBE 005 020 S04	0.25R X 0.5	2	-	45	4
2DBE 005 030 S04	0.25R X 0.5	2	3	45	4
2DBE 005 040 S04	0.25R X 0.5	2	4	45	4
2DBE 005 050 S04	0.25R X 0.5	2	5	45	4
2DBE 005 060 S04	0.25R X 0.5	2	6	45	4
2DBE 005 080 S04	0.25R X 0.5	2	8	45	4
2DBE 005 100 S04	0.25R X 0.5	2	10	45	4
2DBE 005 120 S04	0.25R X 0.5	2	12	45	4
2DBE 006 020 S04	0.3R X 0.6	2	-	45	4
2DBE 006 030 S04	0.3R X 0.6	2	3	45	4
2DBE 006 040 S04	0.3R X 0.6	2	4	45	4
2DBE 006 050 S04	0.3R X 0.6	2	5	45	4
2DBE 006 060 S04	0.3R X 0.6	2	6	45	4
2DBE 006 080 S04	0.3R X 0.6	2	8	45	4
2DBE 006 100 S04	0.3R X 0.6	2	10	45	4
2DBE 006 120 S04	0.3R X 0.6	2	12	45	4
2DBE 006 150 S04	0.3R X 0.6	2	15	45	4
2DBE 006 200 S04	0.3R X 0.6	2	20	45	4
2DBE 008 030 S04	0.4R X 0.8	3	-	45	4
2DBE 008 040 S04	0.4R X 0.8	3	4	45	4
2DBE 008 050 S04	0.4R X 0.8	3	5	45	4
2DBE 008 060 S04	0.4R X 0.8	3	6	45	4
2DBE 008 080 S04	0.4R X 0.8	3	8	45	4
2DBE 008 100 S04	0.4R X 0.8	3	10	45	4
2DBE 008 150 S04	0.4R X 0.8	3	15	45	4
2DBE 008 200 S04	0.4R X 0.8	3	20	45	4
2DBE 010 030 S04	0.5R X 1	3	-	60	4
2DBE 010 040 S04	0.5R X 1	3	4	60	4
2DBE 010 050 S04	0.5R X 1	3	5	60	4
2DBE 010 060 S04	0.5R X 1	3	6	60	4
2DBE 010 080 S04	0.5R X 1	3	8	60	4
2DBE 010 100 S04	0.5R X 1	3	10	60	4
2DBE 010 120 S04	0.5R X 1	3	12	60	4
2DBE 010 150 S04	0.5R X 1	3	15	60	4
2DBE 010 200 S04	0.5R X 1	3	20	60	4
2DBE 010 250 S04	0.5R X 1	3	25	80	4
2DBE 010 300 S04	0.5R X 1	3	30	80	4
2DBE 010 350 S04	0.5R X 1	3	35	80	4
2DBE 010 400 S04	0.5R X 1	3	40	80	4
2DBE 010 450 S04	0.5R X 1	3	45	80	4

Order Number	Diameter R x D	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d
2DBE 010 500 S04	0.5R X 1	3	50	80	4
2DBE 015 045 S04	0.75R X 1.5	4.5	-	60	4
2DBE 015 080 S04	0.75R X 1.5	4.5	8	80	4
2DBE 015 100 S04	0.75R X 1.5	4.5	10	80	4
2DBE 015 120 S04	0.75R X 1.5	4.5	12	80	4
2DBE 015 150 S04	0.75R X 1.5	4.5	15	80	4
2DBE 015 180 S04	0.75R X 1.5	4.5	18	80	4
2DBE 015 200 S04	0.75R X 1.5	4.5	20	80	4
2DBE 015 250 S04	0.75R X 1.5	4.5	25	80	4
2DBE 015 300 S04	0.75R X 1.5	4.5	30	80	4
2DBE 015 350 S04	0.75R X 1.5	4.5	35	80	4
2DBE 015 400 S04	0.75R X 1.5	4.5	40	80	4
2DBE 020 060 S04	1R X 2	6	-	60	4
2DBE 020 100 S04	1R X 2	6	10	80	4
2DBE 020 150 S04	1R X 2	6	15	80	4
2DBE 020 200 S04	1R X 2	6	20	80	4
2DBE 020 250 S04	1R X 2	6	25	80	4
2DBE 020 300 S04	1R X 2	6	30	80	4
2DBE 020 350 S04	1R X 2	6	35	80	4
2DBE 020 400 S04	1R X 2	6	40	100	4
2DBE 020 450 S04	1R X 2	6	45	100	4
2DBE 020 500 S04	1R X 2	6	50	100	4
2DBE 020 600 S04	1R X 2	6	60	100	4
2DBE 020 700 S04	1R X 2	6	70	100	4
2DBE 030 150 100	1.5R X 3	8	15	100	3
2DBE 030 080 S04	1.5R X 3	8	-	60	4
New 2DBE 030 080 S06	1.5R X 3	3	8	60	6
2DBE 030 150 S04	1.5R X 3	8	15	100	4
2DBE 030 200 S04	1.5R X 3	8	20	100	4
2DBE 030 250 S04	1.5R X 3	8	25	100	4
2DBE 030 300 S04	1.5R X 3	8	30	100	4
2DBE 030 350 S04	1.5R X 3	8	35	100	4
2DBE 030 400 S04	1.5R X 3	8	40	100	4
2DBE 030 500 S04	1.5R X 3	8	50	100	4
2DBE 030 600 S04	1.5R X 3	8	60	100	4
2DBE 030 700 S04	1.5R X 3	8	70	100	4
2DBE 040 040 060	2R X 4	4	-	60	4
2DBE 040 160 060	2R X 4	16	-	60	4
2DBE 040 160 080	2R X 4	16	-	80	4
2DBE 040 300 080	2R X 4	16	30	80	4
2DBE 040 160 100	2R X 4	16	-	100	4
2DBE 040 400 100	2R X 4	16	40	100	4
2DBE 040 160 130	2R X 4	16	-	130	4
2DBE 040 400 130	2R X 4	16	40	130	4
2DBE 040 160 150	2R X 4	16	-	150	4
2DBE 040 500 150	2R X 4	16	50	150	4
2DBE 050 160 110	2.5R X 5	16	-	110	5
2DBE 050 400 110	2.5R X 5	16	40	110	5
2DBE 050 200 S06	2.5R X 5	16	20	110	6
2DBE 050 400 S06	2.5R X 5	16	40	110	6

FOR GRAPHITE



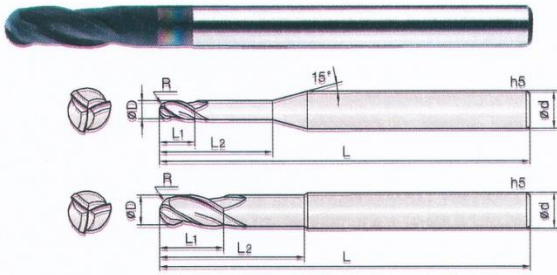
FOR GRAPHITE

Order Number	Diameter R x D	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d	Order Number	Diameter R x D	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d
2DBE 050 600 S06	2.5R X 5	16	60	110	6						
2DBE 060 250 080	3R X 6	16	25	80	6						
2DBE 060 250 110	3R X 6	16	25	110	6						
2DBE 060 400 110	3R X 6	16	40	110	6						
2DBE 060 300 150	3R X 6	16	30	150	6						
2DBE 060 500 150	3R X 6	16	50	150	6						
2DBE 080 300 080	4R X 8	20	30	80	8						
2DBE 080 300 110	4R X 8	20	30	110	8						
2DBE 080 400 110	4R X 8	20	40	110	8						
2DBE 080 500 150	4R X 8	20	50	150	8						
2DBE 080 400 200	4R X 8	20	40	200	8						
2DBE 100 400 080	5R X 10	22	40	80	10						
2DBE 100 400 110	5R X 10	22	40	110	10						
2DBE 100 500 110	5R X 10	22	50	110	10						
2DBE 100 600 160	5R X 10	22	60	160	10						
2DBE 100 500 200	5R X 10	22	50	200	10						
2DBE 120 500 110	6R X 12	25	50	110	12						
2DBE 120 500 160	6R X 12	25	50	160	12						
2DBE 120 600 200	6R X 12	25	60	200	12						



3 Flutes Diamond Coated Ball End Mills for Graphite

VHM 3-Lp. Kugelfräser, Diamant beschichtet, Graphit, non ferrous



- 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.



0.5 ~ 6R

346P

D Size	D Tolerance
Ø1 ~ 12	+0 ~ -0.02mm

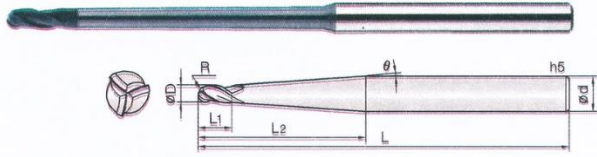
FOR GRAPHITE

Order Number	Diameter R x D	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d	Order Number	Diameter R x D	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d
3DBE 010 030 S04	0.5R X 1	3	-	60	4	3DBE 060 500 150	3R X 6	16	50	150	6
3DBE 010 050 S04	0.5R X 1	3	5	60	4	3DBE 060 500 180	3R X 6	16	50	180	6
3DBE 010 100 S04	0.5R X 1	3	10	60	4	3DBE 080 400 110	4R X 8	20	40	110	8
3DBE 010 150 S04	0.5R X 1	3	15	60	4	3DBE 080 500 150	4R X 8	20	50	150	8
3DBE 010 200 S04	0.5R X 1	3	20	60	4	3DBE 100 400 110	5R X 10	22	40	110	10
3DBE 010 250 S04	0.5R X 1	3	25	80	4	3DBE 100 600 160	5R X 10	22	60	160	10
3DBE 010 300 S04	0.5R X 1	3	30	80	4	3DBE 120 500 110	6R X 12	25	50	110	12
3DBE 010 350 S04	0.5R X 1	3	35	80	4	3DBE 120 500 160	6R X 12	25	50	160	12
3DBE 010 400 S04	0.5R X 1	3	40	80	4	3DBE 120 600 200	6R X 12	25	60	200	12
3DBE 010 450 S04	0.5R X 1	3	45	80	4						
3DBE 010 500 S04	0.5R X 1	3	50	80	4						
3DBE 015 045 S04	0.75R X 1.5	4.5	-	60	4						
3DBE 015 100 S04	0.75R X 1.5	4.5	10	80	4						
3DBE 015 150 S04	0.75R X 1.5	4.5	15	80	4						
3DBE 015 200 S04	0.75R X 1.5	4.5	20	80	4						
3DBE 015 250 S04	0.75R X 1.5	4.5	25	80	4						
3DBE 015 300 S04	0.75R X 1.5	4.5	30	80	4						
3DBE 015 350 S04	0.75R X 1.5	4.5	35	80	4						
3DBE 015 400 S04	0.75R X 1.5	4.5	40	80	4						
3DBE 015 450 S04	0.75R X 1.5	4.5	45	80	4						
3DBE 015 500 S04	0.75R X 1.5	4.5	50	80	4						
3DBE 020 060 S04	1R X 2	6	-	60	4						
3DBE 020 100 S04	1R X 2	6	10	80	4						
3DBE 020 150 S04	1R X 2	6	15	80	4						
3DBE 020 200 S04	1R X 2	6	20	80	4						
3DBE 020 250 S04	1R X 2	6	25	80	4						
3DBE 020 300 S04	1R X 2	6	30	80	4						
3DBE 020 350 S04	1R X 2	6	35	80	4						
3DBE 020 400 S04	1R X 2	6	40	100	4						
3DBE 020 500 S04	1R X 2	6	50	100	4						
3DBE 020 600 S04	1R X 2	6	60	100	4						
3DBE 020 700 S04	1R X 2	6	70	100	4						
3DBE 030 150 100	1.5R X 3	8	15	100	3						
3DBE 030 080 S04	1.5R X 3	8	-	60	4						
3DBE 030 150 S04	1.5R X 3	8	15	100	4						
3DBE 030 200 S04	1.5R X 3	8	20	100	4						
3DBE 030 300 S04	1.5R X 3	8	30	100	4						
3DBE 030 400 S04	1.5R X 3	8	40	100	4						
3DBE 030 500 S04	1.5R X 3	8	50	100	4						
3DBE 040 160 080	2R X 4	16	-	80	4						
3DBE 040 300 080	2R X 4	16	30	80	4						
3DBE 040 160 100	2R X 4	16	-	100	4						
3DBE 040 400 100	2R X 4	16	40	100	4						
3DBE 040 160 130	2R X 4	16	-	130	4						
3DBE 040 400 130	2R X 4	16	40	130	4						
3DBE 050 160 110	2.5R X 5	16	-	110	5						
3DBE 050 400 110	2.5R X 5	16	40	110	5						
3DBE 060 250 110	3R X 6	16	25	110	6						
3DBE 060 400 110	3R X 6	16	40	110	6						
3DBE 060 300 150	3R X 6	16	30	150	6						



3 Flutes Diamond Coated Taper Neck Ball End Mills for Graphite

VHM 3-Lp. Kugelfräser, kon. Schaftauslauf, Diamant beschichtet, Graphit, non ferrous

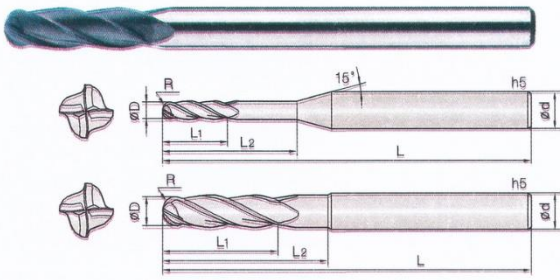


- Endmills for Graphite, reinforced plastic, carbon fiber, Non-ferrous and non-metallic materials.
- Excellent wear resistance by applying qualified CVD diamond coating.
- Wide range products prepared for various work shape and excellent performance.

D Size	D Tolerance
ø1 ~ 4	+0 ~ -0.02mm

FOR GRAPHITE

Order Number	Diameter R x D	Angle θ	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d	Order Number	Diameter R x D	Angle θ	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d
3TBD 010 003 300	0.5R X 1	0°30'	3	30	100	4							
3TBD 010 003 400	0.5R X 1	0°30'	3	40	100	4							
3TBD 010 003 500	0.5R X 1	0°30'	3	50	100	4							
3TBD 010 010 300	0.5R X 1	1°	3	30	100	4							
3TBD 010 010 400	0.5R X 1	1°	3	40	100	4							
3TBD 010 010 500	0.5R X 1	1°	3	50	100	4							
3TBD 010 010 600	0.5R X 1	1°	3	60	100	4							
3TBD 015 003 300	0.75R X 1.5	0°30'	4	30	100	4							
3TBD 015 003 400	0.75R X 1.5	0°30'	4	40	100	4							
3TBD 015 003 500	0.75R X 1.5	0°30'	4	50	100	4							
3TBD 015 010 400	0.75R X 1.5	1°	4	40	100	4							
3TBD 015 010 500	0.75R X 1.5	1°	4	50	100	4							
3TBD 015 010 600	0.75R X 1.5	1°	4	60	100	4							
3TBD 020 003 400	1R X 2	0°30'	5	40	130	4							
3TBD 020 003 500	1R X 2	0°30'	5	50	130	4							
3TBD 020 003 600	1R X 2	0°30'	5	60	130	4							
3TBD 020 010 500	1R X 2	1°	5	50	130	4							
3TBD 020 010 600	1R X 2	1°	5	60	130	4							
3TBD 020 010 700	1R X 2	1°	5	70	130	4							
3TBD 030 003 600	1.5R X 3	0°30'	6	60	150	6							
3TBD 030 003 800	1.5R X 3	0°30'	6	80	150	6							
3TBD 030 010 700	1.5R X 3	1°	6	70	150	6							
3TBD 030 010 900	1.5R X 3	1°	6	90	150	6							
3TBD 040 003 800	2R X 4	0°30'	8	80	150	6							
3TBD 040 003 1000	2R X 4	0°30'	8	100	150	6							
3TBD 040 010 1000	2R X 4	1°	8	100	150	6							



- 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.

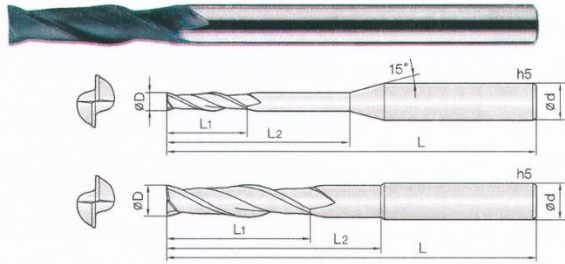


D Size	D Tolerance
Ø1 - 12	+0 - -0.02mm

Order Number	Diameter R x D	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d
4DBE 010 030 S04	0.5R X 1	3	-	60	4
4DBE 010 050 S04	0.5R X 1	3	5	60	4
4DBE 010 100 S04	0.5R X 1	3	10	60	4
4DBE 010 150 S04	0.5R X 1	3	15	60	4
4DBE 010 200 S04	0.5R X 1	3	20	60	4
4DBE 010 250 S04	0.5R X 1	3	25	60	4
4DBE 010 300 S04	0.5R X 1	3	30	80	4
4DBE 010 350 S04	0.5R X 1	3	35	80	4
4DBE 010 400 S04	0.5R X 1	3	40	80	4
4DBE 010 450 S04	0.5R X 1	3	45	80	4
4DBE 010 500 S04	0.5R X 1	3	50	80	4
4DBE 015 045 S04	0.75R X 1.5	4.5	-	60	4
4DBE 015 100 S04	0.75R X 1.5	4.5	10	60	4
4DBE 015 150 S04	0.75R X 1.5	4.5	15	60	4
4DBE 015 200 S04	0.75R X 1.5	4.5	20	60	4
4DBE 015 250 S04	0.75R X 1.5	4.5	25	60	4
4DBE 015 300 S04	0.75R X 1.5	4.5	30	80	4
4DBE 015 350 S04	0.75R X 1.5	4.5	35	80	4
4DBE 015 400 S04	0.75R X 1.5	4.5	40	80	4
4DBE 015 450 S04	0.75R X 1.5	4.5	45	80	4
4DBE 015 500 S04	0.75R X 1.5	4.5	50	80	4
4DBE 020 060 S04	1R X 2	6	-	60	4
4DBE 020 100 S04	1R X 2	6	10	80	4
4DBE 020 200 S04	1R X 2	6	20	80	4
4DBE 020 300 S04	1R X 2	6	30	80	4
4DBE 020 400 S04	1R X 2	6	40	80	4
4DBE 020 500 S04	1R X 2	6	50	100	4
4DBE 020 600 S04	1R X 2	6	60	100	4
4DBE 020 700 S04	1R X 2	6	70	100	4
4DBE 030 080 S04	1.5R X 3	8	-	60	4
4DBE 030 150 S04	1.5R X 3	8	15	100	4
4DBE 030 200 S04	1.5R X 3	8	20	100	4
4DBE 030 300 S04	1.5R X 3	8	30	100	4
4DBE 030 400 S04	1.5R X 3	8	40	100	4
4DBE 030 500 S04	1.5R X 3	8	50	100	4
4DBE 030 600 S04	1.5R X 3	8	60	100	4
4DBE 030 700 S04	1.5R X 3	8	70	100	4
4DBE 040 160 060	2R X 4	16	-	60	4
4DBE 040 160 080	2R X 4	16	-	80	4
4DBE 040 160 100	2R X 4	16	-	100	4
4DBE 040 160 130	2R X 4	16	-	130	4
4DBE 060 250 080	3R X 6	16	25	80	6
4DBE 060 250 110	3R X 6	16	25	110	6
4DBE 060 300 150	3R X 6	16	30	150	6
4DBE 080 300 080	4R X 8	20	30	80	8
4DBE 080 300 110	4R X 8	20	30	110	8
4DBE 080 350 150	4R X 8	20	35	150	8
4DBE 080 400 200	4R X 8	20	40	200	8
4DBE 100 350 080	5R X 10	22	35	80	10
4DBE 100 350 110	5R X 10	22	35	110	10

Order Number	Diameter R x D	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d
4DBE 100 400 160	5R X 10	22	40	160	10
4DBE 100 500 200	5R X 10	22	50	200	10
4DBE 120 500 110	6R X 12	25	50	110	12
4DBE 120 500 160	6R X 12	25	50	160	12
4DBE 120 600 200	6R X 12	25	60	200	12

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.



D Size	D Tolerance
ø0.2 ~ 12	+0 ~ -0.02mm

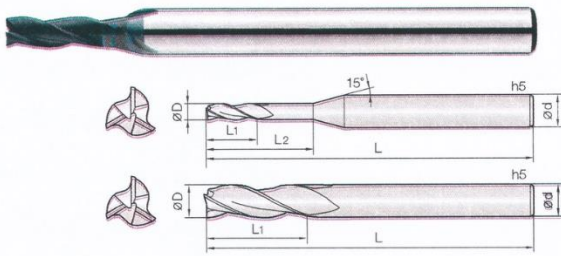
FOR GRAPHITE

Order Number	Diameter D	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d	Order Number	Diameter D	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d
2DEM 002 004 S04	0.2	0.4	-	45	4	2DEM 040 120 S06	4	12	-	50	6
2DEM 003 006 S04	0.3	0.6	-	45	4	2DEM 040 160 080	4	16	-	80	4
2DEM 003 020 S04	0.3	0.6	2	45	4	2DEM 050 150 S06	5	15	-	60	6
2DEM 003 040 S04	0.3	0.6	4	45	4	2DEM 050 200 S06	5	20	-	110	6
2DEM 004 008 S04	0.4	0.8	-	45	4	2DEM 060 180 S06	6	18	-	60	6
2DEM 004 020 S04	0.4	0.8	2	45	4	2DEM 060 250 110	6	25	-	110	6
2DEM 004 040 S04	0.4	0.8	4	45	4	2DEM 060 250 150	6	25	-	150	6
2DEM 005 010 S04	0.5	1	-	45	4	2DEM 080 240 S08	8	24	-	70	8
2DEM 005 030 S04	0.5	1	3	45	4	2DEM 080 400 150	8	25	40	150	8
2DEM 005 050 S04	0.5	1	5	45	4	2DEM 100 250 S10	10	25	-	80	10
2DEM 006 012 S04	0.6	1.2	-	45	4	2DEM 100 500 160	10	25	50	160	10
2DEM 006 030 S04	0.6	1.2	3	45	4	2DEM 120 250 S12	12	25	-	80	12
2DEM 006 050 S04	0.6	1.2	5	45	4	2DEM 120 600 160	12	25	60	160	12
2DEM 007 015 S04	0.7	1.5	-	45	4						
2DEM 007 040 S04	0.7	1.5	4	45	4						
2DEM 007 060 S04	0.7	1.5	6	45	4						
2DEM 007 080 S04	0.7	1.5	8	45	4						
2DEM 008 020 S04	0.8	2	-	45	4						
2DEM 009 025 S04	0.9	2.5	-	45	4						
2DEM 010 030 S04	1	3	-	60	4						
2DEM 010 030 045	1	3	-	45	4						
2DEM 010 050 S04	1	3	5	60	4						
2DEM 010 100 S04	1	3	10	60	4						
2DEM 010 150 S04	1	3	15	60	4						
2DEM 010 200 S04	1	3	20	60	4						
2DEM 010 250 S04	1	3	25	60	4						
2DEM 010 300 S04	1	3	30	60	4						
2DEM 015 060 S04	1.5	6	-	60	4						
2DEM 015 100 S04	1.5	6	10	60	4						
2DEM 015 150 S04	1.5	6	15	60	4						
2DEM 015 200 S04	1.5	6	20	60	4						
2DEM 015 250 S04	1.5	6	25	60	4						
2DEM 015 300 S04	1.5	6	30	60	4						
2DEM 020 060 S04	2	6	-	45	4						
2DEM 020 080 S04	2	8	-	80	4						
2DEM 020 120 S04	2	8	12	80	4						
2DEM 020 150 S04	2	8	15	80	4						
2DEM 020 200 S04	2	8	20	80	4						
2DEM 020 250 S04	2	8	25	80	4						
2DEM 020 300 S04	2	8	30	80	4						
2DEM 020 400 S04	2	8	40	80	4						
2DEM 020 450 S04	2	8	45	80	4						
2DEM 020 500 S04	2	8	50	80	4						
2DEM 030 090 S06	3	9	-	50	6						
2DEM 030 120 S04	3	12	-	80	4						
2DEM 030 200 S04	3	12	20	80	4						
2DEM 030 250 S04	3	12	25	80	4						
2DEM 030 300 S04	3	12	30	80	4						
2DEM 030 400 S04	3	12	40	80	4						
2DEM 030 500 S04	3	12	50	80	4						



3 Flutes Diamond Coated End Mills for Graphite

VHM 3-Lp. Schaftfräser, Diamant beschichtet, Graphit, non ferrous



- 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.

2

WC
마립자

DIA.
Coating

ID
+0 -0.02

30°
Helix Angle

Shield Edge

CUTTING
DATA

g1- g12 346P

D Size	D Tolerance
ø1 ~ 12	+0 ~ -0.02mm

Order Number	Diameter D	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d
3DEM 010 030 S04	1	3	-	45	4
3DEM 010 050 S04	1	3	5	45	4
3DEM 010 100 S04	1	3	10	45	4
3DEM 010 150 S04	1	3	15	45	4
3DEM 015 060 S04	1.5	6	-	60	4
3DEM 015 100 S04	1.5	6	10	60	4
3DEM 015 150 S04	1.5	6	15	60	4
3DEM 015 200 S04	1.5	6	20	60	4
3DEM 020 060 S04	2	6	-	45	4
3DEM 020 100 S04	2	10	10	60	4
3DEM 020 150 S04	2	10	15	60	4
3DEM 020 200 S04	2	10	20	60	4
3DEM 020 250 S04	2	10	25	60	4
3DEM 030 090 S06	3	9	-	50	6
3DEM 030 150 S03	3	15	-	60	3
3DEM 030 150 S04	3	15	-	60	4
3DEM 030 200 S04	3	15	20	60	4
3DEM 030 250 S04	3	15	25	60	4
3DEM 040 120 S06	4	12	-	50	6
3DEM 040 200 080	4	20	-	80	4
3DEM 060 180 060	6	18	-	60	6
3DEM 060 250 110	6	25	-	110	6
3DEM 060 250 150	6	25	-	150	6
3DEM 080 240 070	8	24	-	70	8
3DEM 080 350 110	8	35	-	110	8
3DEM 080 350 150	8	35	-	150	8
3DEM 100 250 080	10	25	-	80	10
3DEM 100 400 110	10	40	-	110	10
3DEM 100 500 160	10	50	-	160	10
3DEM 120 250 080	12	25	-	80	12
3DEM 120 450 110	12	45	-	110	12
3DEM 120 550 160	12	55	-	160	12

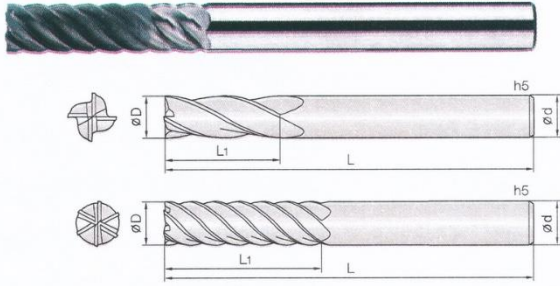
Order Number	Diameter D	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d

FOR GRAPHITE

4&6DEM

4&6 Flutes Diamond Coated End Mills for Graphite

VHM 4 & 6-Lp. Schaftfräser, Diamant beschichtet, Graphit, non ferrous



- 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.

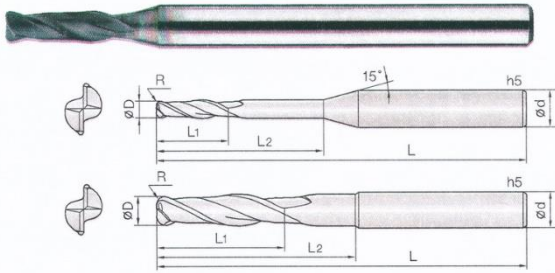
4 6 WC DIA. Coating DIA. +0 -0.02 30° Helix Angle 45° Helix Angle Shield Edge CUTTING DATA

ø2- ø16 4F 6F Shield Edge 346P

D Size	D Tolerance
ø0.2 ~ 16	+0 ~ -0.02mm

FOR GRAPHITE

Order Number	Diameter D	Length of cut L1	Overall Length L	Shank Dia d	Order Number	Diameter D	Length of cut L1	Overall Length L	Shank Dia d
4DEM 020 060 S04	2	6	45	4	6DEM 100 400 110	10	40	110	10
4DEM 020 100 S04	2	10	60	4	6DEM 100 400 160	10	40	160	10
4DEM 030 090 S06	3	9	50	6	6DEM 120 450 110	12	45	110	12
4DEM 030 150 S03	3	15	60	3	6DEM 120 450 160	12	45	160	12
4DEM 030 150 S04	3	15	60	4	6DEM 160 500 110	16	50	110	16
4DEM 040 120 S06	4	12	50	6	6DEM 160 500 160	16	50	160	16
4DEM 040 200 080	4	20	80	4	6DEM 160 500 200	16	50	200	16
4DEM 040 200 100	4	20	100	4					
4DEM 060 180 060	6	18	60	6					
4DEM 060 250 110	6	25	110	6					
4DEM 060 250 150	6	25	150	6					
4DEM 080 240 070	8	24	70	8					
4DEM 080 350 110	8	35	110	8					
4DEM 080 350 150	8	35	150	8					
4DEM 100 250 080	10	25	80	10					
4DEM 100 400 110	10	40	110	10					
4DEM 100 500 160	10	50	160	10					
4DEM 120 250 080	12	25	80	12					
4DEM 120 450 110	12	45	110	12					
4DEM 120 550 160	12	55	160	12					



- 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.



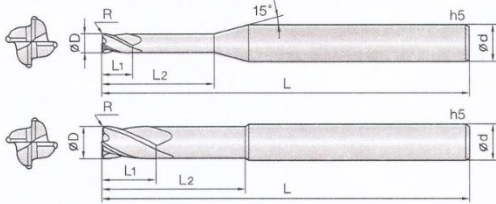
D Size	D Tolerance
ø0.2 - 6	+0 ~ -0.02mm

Order Number	Diameter D x R	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d	Order Number	Diameter D x R	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d
2DCR 002 0002 015	0.2 X R0.02	0.5	1.5	60	4	2DCR 015 0015 030	1.5 X R0.15	3	-	60	4
2DCR 003 0002 015	0.3 X R0.02	0.6	1.5	60	4	2DCR 015 0015 050	1.5 X R0.15	3	5	60	4
2DCR 003 0002 030	0.3 X R0.02	0.6	3	60	4	2DCR 015 0015 100	1.5 X R0.15	3	10	60	4
2DCR 003 0002 045	0.3 X R0.02	0.6	4.5	60	4	2DCR 015 0015 150	1.5 X R0.15	3	15	60	4
2DCR 003 0002 060	0.3 X R0.02	0.6	6	60	4	2DCR 015 0015 200	1.5 X R0.15	3	20	60	4
2DCR 004 0002 020	0.4 X R0.02	0.8	2	60	4	2DCR 015 002 030	1.5 X R0.2	3	-	60	4
2DCR 004 0002 040	0.4 X R0.02	0.8	4	60	4	2DCR 015 002 050	1.5 X R0.2	3	5	60	4
2DCR 004 0002 060	0.4 X R0.02	0.8	6	60	4	2DCR 015 002 100	1.5 X R0.2	3	10	60	4
2DCR 004 0002 080	0.4 X R0.02	0.8	8	60	4	2DCR 015 002 150	1.5 X R0.2	3	15	60	4
2DCR 005 0005 010	0.5 X R0.05	1	-	60	4	2DCR 015 002 200	1.5 X R0.2	3	20	60	4
2DCR 005 0005 025	0.5 X R0.05	1	2.5	60	4	2DCR 015 003 030	1.5 X R0.3	3	-	60	4
2DCR 005 0005 035	0.5 X R0.05	1	3.5	60	4	2DCR 015 003 050	1.5 X R0.3	3	5	60	4
2DCR 005 0005 050	0.5 X R0.05	1	5	60	4	2DCR 015 003 100	1.5 X R0.3	3	10	60	4
2DCR 005 0005 075	0.5 X R0.05	1	7.5	60	4	2DCR 015 003 150	1.5 X R0.3	3	15	60	4
2DCR 005 0005 100	0.5 X R0.05	1	10	60	4	2DCR 015 003 200	1.5 X R0.3	3	20	60	4
2DCR 006 0005 012	0.6 X R0.05	1.2	-	60	4	2DCR 020 0005 035	2 X R0.05	3.5	-	60	4
2DCR 006 0005 030	0.6 X R0.05	1.2	3	60	4	2DCR 020 0005 060	2 X R0.05	3.5	6	60	4
2DCR 006 0005 060	0.6 X R0.05	1.2	6	60	4	2DCR 020 0005 120	2 X R0.05	3.5	12	60	4
2DCR 006 0005 090	0.6 X R0.05	1.2	9	60	4	2DCR 020 0005 180	2 X R0.05	3.5	18	60	4
2DCR 006 0005 120	0.6 X R0.05	1.2	12	60	4	2DCR 020 0005 250	2 X R0.05	3.5	25	60	4
2DCR 008 0005 016	0.8 X R0.05	1.6	-	60	4	2DCR 020 0005 300	2 X R0.05	3.5	30	60	4
2DCR 008 0005 040	0.8 X R0.05	1.6	4	60	4	2DCR 020 002 035	2 X R0.2	3.5	-	60	4
2DCR 008 0005 080	0.8 X R0.05	1.6	8	60	4	2DCR 020 002 060	2 X R0.2	3.5	6	60	4
2DCR 008 0005 100	0.8 X R0.05	1.6	10	60	4	2DCR 020 002 120	2 X R0.2	3.5	12	60	4
2DCR 008 0005 160	0.8 X R0.05	1.6	16	60	4	2DCR 020 002 180	2 X R0.2	3.5	18	60	4
2DCR 010 0005 020	1 X R0.05	2	-	60	4	2DCR 020 002 250	2 X R0.2	3.5	25	60	4
2DCR 010 0005 050	1 X R0.05	2	5	60	4	2DCR 020 002 300	2 X R0.2	3.5	30	60	4
2DCR 010 0005 100	1 X R0.05	2	10	60	4	2DCR 020 003 035	2 X R0.3	3.5	-	60	4
2DCR 010 0005 150	1 X R0.05	2	15	60	4	2DCR 020 003 060	2 X R0.3	3.5	6	60	4
2DCR 010 0005 200	1 X R0.05	2	20	60	4	2DCR 020 003 120	2 X R0.3	3.5	12	60	4
2DCR 010 001 020	1 X R0.1	2	-	60	4	2DCR 020 003 180	2 X R0.3	3.5	18	60	4
2DCR 010 001 050	1 X R0.1	2	5	60	4	2DCR 020 003 250	2 X R0.3	3.5	25	60	4
2DCR 010 001 100	1 X R0.1	2	10	60	4	2DCR 020 003 300	2 X R0.3	3.5	30	60	4
2DCR 010 001 150	1 X R0.1	2	15	60	4	2DCR 020 005 035	2 X R0.5	3.5	-	60	4
2DCR 010 001 200	1 X R0.1	2	20	60	4	2DCR 020 005 060	2 X R0.5	3.5	6	60	4
2DCR 010 002 020	1 X R0.2	2	-	60	4	2DCR 020 005 120	2 X R0.5	3.5	12	60	4
2DCR 010 002 050	1 X R0.2	2	5	60	4	2DCR 020 005 180	2 X R0.5	3.5	18	60	4
2DCR 010 002 100	1 X R0.2	2	10	60	4	2DCR 020 005 250	2 X R0.5	3.5	25	60	4
2DCR 010 002 150	1 X R0.2	2	15	60	4	2DCR 020 005 300	2 X R0.5	3.5	30	60	4
2DCR 010 002 200	1 X R0.2	2	20	60	4	2DCR 030 0005 040	3 X R0.05	4	-	80	4
2DCR 015 0005 030	1.5 X R0.05	3	-	60	4	2DCR 030 0005 100	3 X R0.05	4	10	80	4
2DCR 015 0005 050	1.5 X R0.05	3	5	60	4	2DCR 030 0005 200	3 X R0.05	4	20	80	4
2DCR 015 0005 100	1.5 X R0.05	3	10	60	4	2DCR 030 0005 300	3 X R0.05	4	30	80	4
2DCR 015 0005 150	1.5 X R0.05	3	15	60	4	2DCR 030 0005 400	3 X R0.05	4	40	80	4
2DCR 015 0005 200	1.5 X R0.05	3	20	60	4	2DCR 030 002 040	3 X R0.2	4	-	80	4
2DCR 015 001 030	1.5 X R0.1	3	-	60	4	2DCR 030 002 100	3 X R0.2	4	10	80	4
2DCR 015 001 050	1.5 X R0.1	3	5	60	4	2DCR 030 002 200	3 X R0.2	4	20	80	4
2DCR 015 001 100	1.5 X R0.1	3	10	60	4	2DCR 030 002 300	3 X R0.2	4	30	80	4
2DCR 015 001 150	1.5 X R0.1	3	15	60	4	2DCR 030 002 400	3 X R0.2	4	40	80	4
2DCR 015 001 200	1.5 X R0.1	3	20	60	4	2DCR 030 003 040	3 X R0.3	4	-	80	4



FOR GRAPHITE

Order Number	Diameter D x R	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d	Order Number	Diameter D x R	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d
2DCR 030 003 100	3 X R0.3	4	10	80	4	2DCR 060 005 070	6 X R0.5	7	-	110	6
2DCR 030 003 200	3 X R0.3	4	20	80	4	2DCR 060 005 200	6 X R0.5	7	20	110	6
2DCR 030 003 300	3 X R0.3	4	30	80	4	2DCR 060 005 300	6 X R0.5	7	30	110	6
2DCR 030 003 400	3 X R0.3	4	40	80	4	2DCR 060 005 500	6 X R0.5	7	50	110	6
2DCR 030 005 040	3 X R0.5	4	-	80	4	2DCR 060 010 070	6 X R1	7	-	110	6
2DCR 030 005 100	3 X R0.5	4	10	80	4	2DCR 060 010 200	6 X R1	7	20	110	6
2DCR 030 005 200	3 X R0.5	4	20	80	4	2DCR 060 010 300	6 X R1	7	30	110	6
2DCR 030 005 300	3 X R0.5	4	30	80	4	2DCR 060 010 500	6 X R1	7	50	110	6
2DCR 030 005 400	3 X R0.5	4	40	80	4						
2DCR 030 010 040	3 X R1	4	-	80	4						
2DCR 030 010 100	3 X R1	4	10	80	4						
2DCR 030 010 200	3 X R1	4	20	80	4						
2DCR 030 010 300	3 X R1	4	30	80	4						
2DCR 030 010 400	3 X R1	4	40	80	4						
2DCR 040 0005 050	4 X R0.05	5	-	80	4						
2DCR 040 0005 150	4 X R0.05	5	15	80	4						
2DCR 040 0005 250	4 X R0.05	5	25	80	4						
2DCR 040 0005 400	4 X R0.05	5	40	80	4						
2DCR 040 002 050	4 X R0.2	5	-	80	4						
2DCR 040 002 150	4 X R0.2	5	15	80	4						
2DCR 040 002 250	4 X R0.2	5	25	80	4						
2DCR 040 002 400	4 X R0.2	5	40	80	4						
2DCR 040 005 050	4 X R0.5	5	-	80	4						
2DCR 040 005 150	4 X R0.5	5	15	80	4						
2DCR 040 005 250	4 X R0.5	5	25	80	4						
2DCR 040 005 400	4 X R0.5	5	40	80	4						
2DCR 040 010 050	4 X R1	5	-	80	4						
2DCR 040 010 150	4 X R1	5	15	80	4						
2DCR 040 010 250	4 X R1	5	25	80	4						
2DCR 040 010 400	4 X R1	5	40	80	4						
2DCR 050 0005 060	5 X R0.05	6	-	110	6						
2DCR 050 0005 150	5 X R0.05	6	15	110	6						
2DCR 050 0005 300	5 X R0.05	6	30	110	6						
2DCR 050 0005 500	5 X R0.05	6	50	110	6						
2DCR 050 002 060	5 X R0.2	6	-	110	6						
2DCR 050 002 150	5 X R0.2	6	15	110	6						
2DCR 050 002 300	5 X R0.2	6	30	110	6						
2DCR 050 002 500	5 X R0.2	6	50	110	6						
2DCR 050 005 060	5 X R0.5	6	-	110	6						
2DCR 050 005 150	5 X R0.5	6	15	110	6						
2DCR 050 005 300	5 X R0.5	6	30	110	6						
2DCR 050 005 500	5 X R0.5	6	50	110	6						
2DCR 060 0005 070	6 X R0.05	7	-	110	6						
2DCR 060 0005 200	6 X R0.05	7	20	110	6						
2DCR 060 0005 300	6 X R0.05	7	30	110	6						
2DCR 060 0005 500	6 X R0.05	7	50	110	6						
2DCR 060 002 070	6 X R0.2	7	-	110	6						
2DCR 060 002 200	6 X R0.2	7	20	110	6						
2DCR 060 002 300	6 X R0.2	7	30	110	6						
2DCR 060 002 500	6 X R0.2	7	50	110	6						



- 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.



D Size	D Tolerance
ø2 ~ 12	+0 ~ -0.02mm

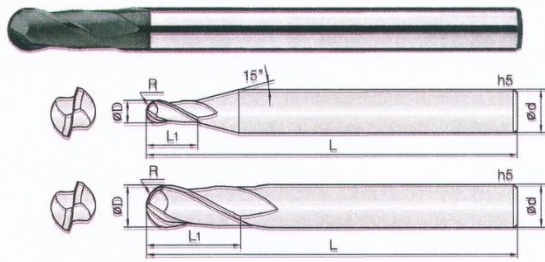
Order Number	Diameter D x R	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d	Order Number	Diameter D x R	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d
4DCR 020 0005 035	2 X R0.05	3.5	-	60	4	4DCR 040 005 100	4 X R0.5	6	20	100	4
4DCR 020 0005 060	2 X R0.05	3.5	6	60	4	4DCR 040 010 100	4 X R1	6	20	100	4
4DCR 020 0005 120	2 X R0.05	3.5	12	60	4	4DCR 060 003 110	6 X R0.3	9	25	110	6
4DCR 020 0005 180	2 X R0.05	3.5	18	60	4	4DCR 060 005 110	6 X R0.5	9	25	110	6
4DCR 020 0005 250	2 X R0.05	3.5	25	60	4	4DCR 060 005 150	6 X R0.5	9	30	150	6
4DCR 020 0005 300	2 X R0.05	3.5	30	60	4	4DCR 060 010 110	6 X R1	9	25	110	6
4DCR 020 002 035	2 X R0.2	3.5	-	60	4	4DCR 060 010 150	6 X R1	9	30	150	6
4DCR 020 002 060	2 X R0.2	3.5	6	60	4	4DCR 080 003 110	8 X R0.3	12	30	110	8
4DCR 020 002 120	2 X R0.2	3.5	12	60	4	4DCR 080 005 110	8 X R0.5	12	30	110	8
4DCR 020 002 180	2 X R0.2	3.5	18	60	4	4DCR 080 005 150	8 X R0.5	12	40	150	8
4DCR 020 002 250	2 X R0.2	3.5	25	60	4	4DCR 080 010 110	8 X R1	12	30	110	8
4DCR 020 002 300	2 X R0.2	3.5	30	60	4	4DCR 080 010 150	8 X R1	12	40	150	8
4DCR 020 003 035	2 X R0.3	3.5	-	60	4	4DCR 100 005 110	10 X R0.5	15	35	110	10
4DCR 020 003 060	2 X R0.3	3.5	6	60	4	4DCR 100 005 160	10 X R0.5	15	45	160	10
4DCR 020 003 120	2 X R0.3	3.5	12	60	4	4DCR 100 010 110	10 X R1	15	35	110	10
4DCR 020 003 180	2 X R0.3	3.5	18	60	4	4DCR 100 010 160	10 X R1	15	45	160	10
4DCR 020 003 250	2 X R0.3	3.5	25	60	4	4DCR 120 005 110	12 X R0.5	18	40	110	12
4DCR 020 003 300	2 X R0.3	3.5	30	60	4	4DCR 120 005 160	12 X R0.5	18	45	160	12
4DCR 020 005 035	2 X R0.5	3.5	-	60	4	4DCR 120 010 110	12 X R1	18	40	110	12
4DCR 020 005 060	2 X R0.5	3.5	6	60	4	4DCR 120 010 160	12 X R1	18	45	160	12
4DCR 020 005 120	2 X R0.5	3.5	12	60	4						
4DCR 020 005 180	2 X R0.5	3.5	18	60	4						
4DCR 020 005 250	2 X R0.5	3.5	25	60	4						
4DCR 020 005 300	2 X R0.5	3.5	30	60	4						
4DCR 030 0005 040	3 X R0.05	4	-	80	4						
4DCR 030 0005 100	3 X R0.05	4	10	80	4						
4DCR 030 0005 200	3 X R0.05	4	20	80	4						
4DCR 030 0005 300	3 X R0.05	4	30	80	4						
4DCR 030 0005 400	3 X R0.05	4	40	80	4						
4DCR 030 002 040	3 X R0.2	4	-	80	4						
4DCR 030 002 100	3 X R0.2	4	10	80	4						
4DCR 030 002 200	3 X R0.2	4	20	80	4						
4DCR 030 002 300	3 X R0.2	4	30	80	4						
4DCR 030 002 400	3 X R0.2	4	40	80	4						
4DCR 030 003 040	3 X R0.3	4	-	80	4						
4DCR 030 003 100	3 X R0.3	4	10	80	4						
4DCR 030 003 200	3 X R0.3	4	20	80	4						
4DCR 030 003 300	3 X R0.3	4	30	80	4						
4DCR 030 003 400	3 X R0.3	4	40	80	4						
4DCR 030 005 040	3 X R0.5	4	-	80	4						
4DCR 030 005 100	3 X R0.5	4	10	80	4						
4DCR 030 005 200	3 X R0.5	4	20	80	4						
4DCR 030 005 300	3 X R0.5	4	30	80	4						
4DCR 030 005 400	3 X R0.5	4	40	80	4						
4DCR 030 010 040	3 X R1	4	-	80	4						
4DCR 030 010 100	3 X R1	4	10	80	4						
4DCR 030 010 200	3 X R1	4	20	80	4						
4DCR 030 010 300	3 X R1	4	30	80	4						
4DCR 030 010 400	3 X R1	4	40	80	4						
4DCR 040 003 100	4 X R0.3	6	20	100	4						

FOR GRAPHITE

2CPB

2 Flutes Ball End Mills for Composite

VHM 2-Lp. Kugelfräser, Diamant beschichtet, Composites



- Endmills for CFRP, GFRP, glass/carbon fiber, nonferrous and non-metallic materials.
- Outstanding performance in machining of various composite materials.
- Excellent wear resistance by applying high hardness coating layer.
- Minimize built up edge by low friction diamond coating technology.



D Size	D Tolerance
Ø0.5 - 1	+0 ~ -0.01mm
Ø1.5 - 12	-0.005 ~ -0.02mm

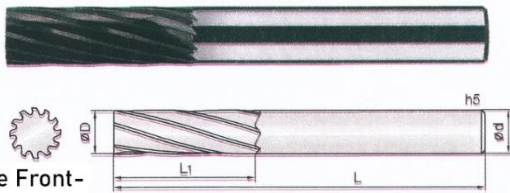
FOR COMPOSITE

Order Number	Diameter R x D	Length of cut L1	Overall Length L	Shank Dia d	Order Number	Diameter R x D	Length of cut L1	Overall Length L	Shank Dia d
2CPB 005 010 S04	0.25R X 0.5	1	50	4	2CPB 080 140 080	4R X 8	14	80	8
2CPB 006 012 S04	0.3R X 0.6	1.2	50	4	2CPB 080 140 110	4R X 8	14	110	8
2CPB 008 020 S04	0.4R X 0.8	2	50	4	2CPB 100 180 080	5R X 10	18	80	10
2CPB 010 025 S04	0.5R X 1	2.5	50	4	2CPB 100 180 110	5R X 10	18	110	10
2CPB 015 040 S04	0.75R X 1.5	4	50	4	2CPB 120 220 080	6R X 12	22	80	12
2CPB 020 050 S04	1R X 2	5	50	4	2CPB 120 220 110	6R X 12	22	110	12
2CPB 025 060 S04	1.25R X 2.5	6	50	4					
2CPB 030 080 S06	1.5R X 3	8	60	6					
2CPB 040 080 S06	2R X 4	8	70	6					
2CPB 050 100 S06	2.5R X 5	10	80	6					
2CPB 060 120 080	3R X 6	12	80	6					
2CPB 060 120 110	3R X 6	12	110	6					

8-12CPE

8-12 Flutes Finishing End Mills for Composite

VHM 8-12-Lp. Schaftfräser, Diamant beschichtet, Composites



ohne Front-schneiden

- Endmills for CFRP, GFRP, glass/carbon fiber, graphite, nonferrous and non-metallic materials.
- Outstanding performance in machining of various composite materials.
- Excellent wear resistance by applying high hardness coating layer.
- Minimize built up edge by low friction diamond coating technology.



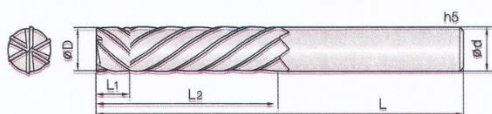
D Size	D Tolerance
Ø6 - 12	-0.01 ~ -0.025mm

Order Number	Diameter D	Length of cut L1	Overall Length L	Shank Dia d	Order Number	Diameter D	Length of cut L1	Overall Length L	Shank Dia d
8CPE 060 180 080	6	18	80	6					
10CPE 080 240 080	8	24	80	8					
12CPE 100 300 100	10	30	100	10					
12CPE 120 360 100	12	36	100	12					

3&4&6CPR

3-6 Flutes Compression Router for Composite

VHM 3-6-Lp. Gegenlauf-Router, Diamant beschichtet, Composites



- Router for CFRP, GFRP, glass/carbon fiber, graphite, nonferrous and non-metallic materials.
- No up-moving work material at wall cutting.
- No burr in work materials.
- Excellent wear resistance by applying high hardness coating layer.
- Minimize built up edge by low friction diamond coating technology.

3 4 6 WC GTAC NANO DIA. DI 30° Shield Edge CUTTING DATA

3F 4F, 6F $\phi 6 - \phi 12$ Helix Angle 348P

D Size	D Tolerance
$\phi 6 \sim 12$	-0.01 ~ -0.025mm

Order Number	Diameter	Length of cut	Length of cut	Overall Length	Shank Dia	Order Number	Diameter	Length of cut	Length of cut	Overall Length	Shank Dia
GTAC 코팅 GTAC Coating	D	L1	L2	L	d	다이아 코팅 DIA Coating	D	L1	L2	L	d
3CPR 060 200 S06	6	5	20	70	6	4CPR 060 200 S06	6	5	20	70	6
3CPR 080 250 S08	8	5	25	80	8	6CPR 080 250 S08	8	5	25	80	8
3CPR 100 270 S10	10	6	27	80	10	6CPR 100 270 S10	10	6	27	80	10
3CPR 120 300 S12	12	6	30	80	12	6CPR 120 300 S12	12	6	30	80	12

FOR COMPOSITE

6-16CPO

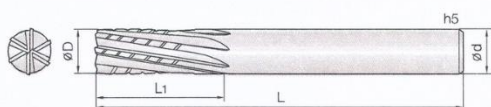
6-16 Flutes Router for Composite

VHM 6-16-Lp. Router, Diamant beschichtet, Composites

A Type



B Type



- Router for CFRP, GFRP, glass/carbon fiber, graphite, nonferrous and non-metallic materials.
- Outstanding performance in roughing of various composite materials.
- A type has many bottom edges and optimized for slotting.
- B type has two bottom edges and excellent performance in vertical, horizontal machining.
- Excellent wear resistance by applying high hardness coating layer.
- Minimize built up edge by low friction diamond coating technology.

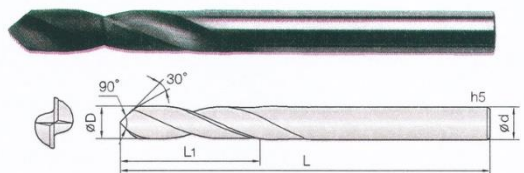
6 ~ 16 WC NANO DIA. DI DI 30° Shield Edge CUTTING DATA

$\phi 2 - \phi 5$ $\phi 6 - \phi 12$ Helix Angle 348P

D Size	D Tolerance
$\phi 2 \sim 5$	+0 ~ -0.01mm
$\phi 6 \sim 12$	-0.005 ~ -0.02mm

Order Number	Diameter	Length of cut	Overall Length	Type	Shank Dia	Order Number	Diameter	Length of cut	Overall Length	Type	Shank Dia
	D	L1	L		d		D	L1	L		d
6CPOA 020 070 S04	2	7	40	A	4	12CPOA 080 250 S08	8	25	80	A	8
6CPOB 020 070 S04	2	7	40	B	4	12CPOB 080 250 S08	8	25	80	B	8
6CPOA 030 120 S04	3	12	50	A	4	14CPOA 100 270 S10	10	27	80	A	10
6CPOB 030 120 S04	3	12	50	B	4	14CPOB 100 270 S10	10	27	80	B	10
8CPOA 040 160 S04	4	16	60	A	4	16CPOA 120 300 S12	12	30	80	A	12
8CPOB 040 160 S04	4	16	60	B	4	16CPOB 120 300 S12	12	30	80	B	12
10CPOA 050 200 S06	5	20	60	A	6						
10CPOB 050 200 S06	5	20	60	B	6						
10CPOA 060 200 S06	6	20	70	A	6						
10CPOB 060 200 S06	6	20	70	B	6						

VHM 2-Lp. Spiralbohrer, Diamant beschichtet, Composites



- Endmills for CFRP, GFRP, glass/carbon fiber, graphite, copper, copper alloy, nonferrous and non-metallic materials.
- Outstanding performance in machining of various composite materials.
- Excellent wear resistance by applying high hardness coating layer.
- Minimize built up edge by low friction diamond coating technology.

2

WC
마립자

NANO
DIA.
Coating

DI
+0 -0.01
ø2~ø5.5

DI
-0.005 -0.015
ø6~ø12

20°
Helix Angle

CUTTING
DATA
349P

D Size	D Tolerance
ø2 - 5.5	+0 ~ -0.01mm
ø6 - 12	-0.005 ~ -0.015mm

FOR COMPOSITE

Order Number	Diameter D	Length of cut L1	Overall Length L	Shank Dia d	Order Number	Diameter D	Length of cut L1	Overall Length L	Shank Dia d
2DDCA 020 160 S04	2	16	60	4					
2DDCA 023 180 S04	2.3	18	60	4					
2DDCA 025 200 S04	2.5 X M3	20	60	4					
2DDCA 030 220 S04	3	22	60	4					
2DDCA 033 230 S04	3.3 X M4	23	60	4					
2DDCA 035 270 S04	3.5	27	60	4					
2DDCA 040 300 S04	4	30	60	4					
2DDCA 042 300 S06	4.2 X M5	30	80	6					
2DDCA 045 330 S06	4.5	33	80	6					
2DDCA 050 360 S06	5 X M6	36	80	6					
2DDCA 055 380 S06	5.5	38	80	6					
2DDCA 060 380 S06	6	38	80	6					
2DDCA 065 450 S08	6.5	45	90	8					
2DDCA 068 450 S08	6.8 X M8	45	90	8					
2DDCA 070 450 S08	7	45	90	8					
2DDCA 075 480 S08	7.5	48	90	8					
2DDCA 080 480 S08	8	48	90	8					
2DDCA 085 510 S10	8.5 X M10	51	110	10					
2DDCA 090 540 S10	9	54	110	10					
2DDCA 095 540 S10	9.5	54	110	10					
2DDCA 100 600 S10	10	60	110	10					
2DDCA 103 600 S12	10.3 X M12	60	110	12					
2DDCA 105 600 S12	10.5	60	110	12					
2DDCA 110 650 S12	11	65	110	12					
2DDCA 115 650 S12	11.5	65	110	12					
2DDCA 120 700 S12	12	70	120	12					

■ JJTOOLS drills benefit

Minimize burr by the best drill design

