



Mills

Drills



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CARBIDE END MILLS

2 TEETH

OR201

OR202

Recommended for use:

< 55 HRC | < 1600 N/mm² | steel | stainless steels | cast iron | copper

Applicable:

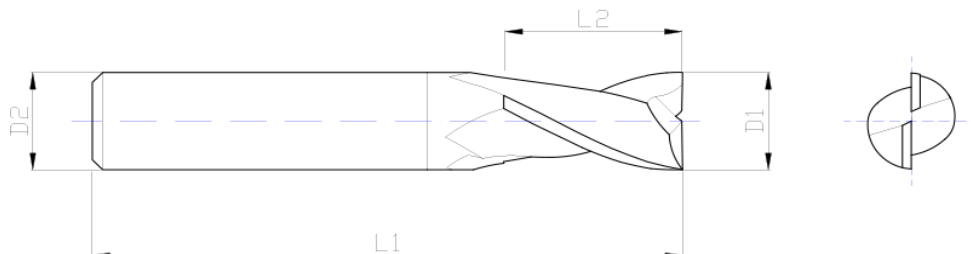
aluminium

Coating:

AlTiN

Geometry:

λ 30°, γ 8°



Catalogue number	Number of teeth Z	Diameter D1 h10	Corner edge K x 45°	Overall length L1	Length of edge L2	Reduced neck length L3	Reduced neck diameter D3	Shank diameter D2 h6
OR201.010	2	1	0,02	38	4	-	-	3
OR201.020	2	2	0,05	38	7	-	-	3
OR202.020	2	2	0,05	50	12	-	-	3
OR201.030	2	3	0,07	38	7	-	-	3
OR202.030	2	3	0,07	50	12	-	-	3
OR201.040	2	4	0,07	50	8	-	-	4
OR202.040	2	4	0,07	50	12	-	-	4
OR201.050	2	5	0,07	50	10	-	-	5
OR202.050	2	5	0,07	60	20	-	-	5
OR201.060	2	6	0,07	57	10	-	-	6
OR202.060	2	6	0,07	60	20	-	-	6
OR201.080	2	8	0,12	63	16	-	-	8
OR202.080	2	8	0,12	70	25	-	-	8
OR201.100	2	10	0,2	72	19	-	-	10
OR202.100	2	10	0,2	110	30	-	-	10
OR201.120	2	12	0,2	83	22	-	-	12
OR202.120	2	12	0,2	110	30	-	-	12
OR201.140	2	14	0,2	83	22	-	-	14
OR202.140	2	14	0,2	110	40	-	-	14
OR201.160	2	16	0,2	92	26	-	-	16
OR202.160	2	16	0,2	110	50	-	-	16
OR201.180	2	18	0,2	92	26	-	-	18
OR202.180	2	18	0,2	110	50	-	-	18
OR201.200	2	20	0,3	104	32	-	-	20
OR202.200	2	20	0,3	110	55	-	-	20



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CARBIDE END MILLS

3 TEETH

OR301

Recommended for use:

< 55 HRC | < 1600 N/mm² | steel | stainless steels | cast iron | copper

Applicable:

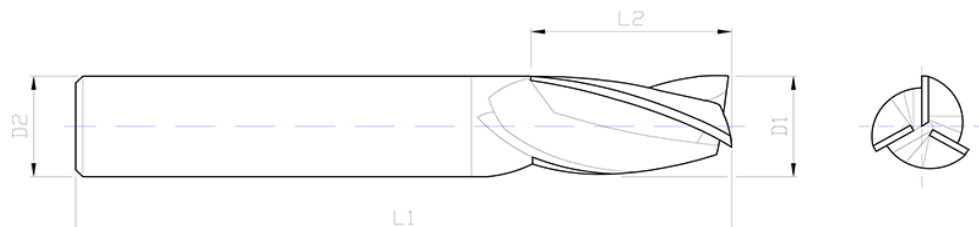
aluminium

Coating:

AlTiN

Geometry:

λ 30°, γ 8°



Catalogue number	Number of teeth Z	Diameter D1 h10	Corner edge K x 45°	Overall length L1	Length of edge L2	Reduced neck length L3	Reduced neck diameter D3	Shank diameter D2 h6
OR301.030	3	3	0,07	38	7	-	-	3
OR301.040	3	4	0,07	50	8	-	-	4
OR301.050	3	5	0,07	50	10	-	-	5
OR301.060	3	6	0,07	57	10	-	-	6
OR301.080	3	8	0,12	63	16	-	-	8
OR301.100	3	10	0,2	72	19	-	-	10
OR301.120	3	12	0,2	83	22	-	-	12
OR301.140	3	14	0,2	83	22	-	-	14
OR301.160	3	16	0,2	92	26	-	-	16
OR301.180	3	18	0,2	92	26	-	-	18
OR301.200	3	20	0,3	104	32	-	-	20



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CARBIDE END MILLS

4 TEETH

OR401

OR402

Recommended for use:

< 55 HRC | < 1600 N/mm² | steel | stainless steels | cast iron | copper

Applicable:

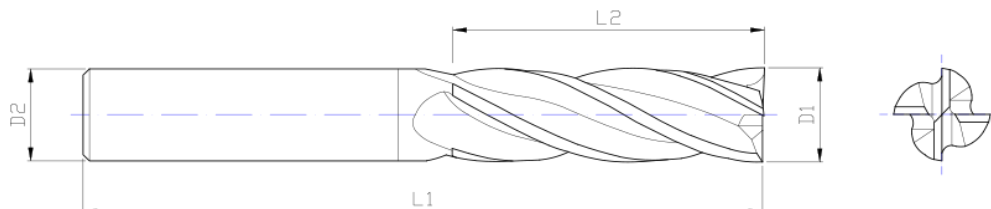
aluminium

Coating:

AlTiN

Geometry:

$\lambda 30^\circ, \gamma 8^\circ$



Catalogue number	Number of teeth Z	Diameter D1 h10	Corner edge K x 45°	Overall length L1	Length of edge L2	Reduced neck length L3	Reduced neck diameter D3	Shank diameter D2 h6
OR401.030	4	3	0,07	38	10	-	-	3
OR402.030	4	3	0,07	65	20	-	-	3
OR401.040	4	4	0,07	50	11	-	-	4
OR402.040	4	4	0,07	65	25	-	-	4
OR401.050	4	5	0,07	50	13	-	-	5
OR402.050	4	5	0,07	70	30	-	-	5
OR401.060	4	6	0,07	57	13	-	-	6
OR402.060	4	6	0,07	70	30	-	-	6
OR401.080	4	8	0,12	63	19	-	-	8
OR402.080	4	8	0,12	100	40	-	-	8
OR401.100	4	10	0,2	72	22	-	-	10
OR402.100	4	10	0,2	110	40	-	-	10
OR401.120	4	12	0,2	83	26	-	-	12
OR402.120	4	12	0,2	110	45	-	-	12
OR401.140	4	14	0,2	83	26	-	-	14
OR402.140	4	14	0,2	110	45	-	-	14
OR401.160	4	16	0,2	92	32	-	-	16
OR402.160	4	16	0,2	124	65	-	-	16
OR401.180	4	18	0,2	92	32	-	-	18
OR402.180	4	18	0,2	124	65	-	-	18
OR401.200	4	20	0,3	104	38	-	-	20
OR402.200	4	20	0,3	150	65	-	-	20
OR402.250	4	25	0,3	165	80	-	-	25



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CARBIDE END MILLS

4 TEETH WITH DOUBLE HELIX

OR411

Recommended for use:

< 60 HRC | < 1600 N/mm² | steel | stainless steels | cast iron

Applicable:

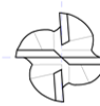
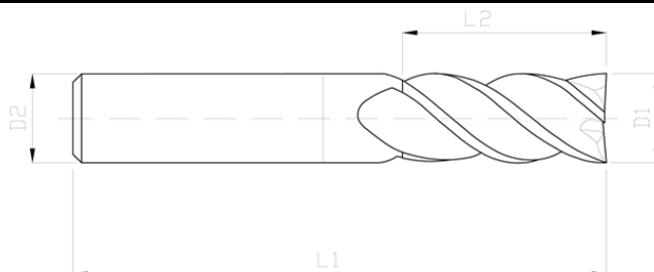
aluminium

Coating:

AlCrN

Geometry:

λ 35°/38°, γ 8°



Catalogue number	Number of teeth Z	Diameter D1 h10	Corner edge K x 45°	Overall length L1	Length of edge L2	Reduced neck length L3	Reduced neck diameter D3	Shank diameter D2 h6
OR411.020	4	2	0,05	50	5	-	-	4
OR411.030	4	3	0,07	57	8	-	-	6
OR411.040	4	4	0,07	57	12	-	-	6
OR411.050	4	5	0,07	57	13	-	-	6
OR411.060	4	6	0,07	57	15	-	-	6
OR411.080	4	8	0,12	63	19	-	-	8
OR411.100	4	10	0,2	72	24	-	-	10
OR411.120	4	12	0,2	83	28	-	-	12
OR411.160	4	16	0,2	92	35	-	-	16
OR411.200	4	20	0,3	110	42	-	-	20
OR411.250	4	25	0,3	125	50	-	-	25



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CARBIDE END MILLS

4 TEETH WITH HELIX 45°

OR452

Recommended for use:

< 60 HRC | < 1600 N/mm² | steel | stainless steels | cast iron

Applicable:

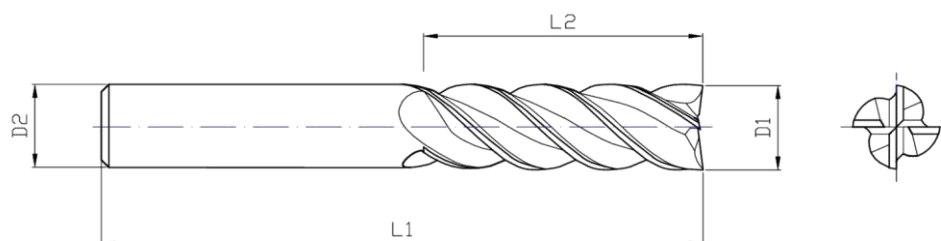
aluminium

Coating:

AlCrN

Geometry:

λ 45°, γ 8°



Catalogue number	Number of teeth Z	Diameter D1 h10	Corner edge K x 45°	Overall length L1	Length of edge L2	Reduced neck length L3	Reduced neck diameter D3	Shank diameter D2 h6
OR452.040	4	4	0,07	50	10	-	-	4
OR452.060	4	6	0,07	62	18	-	-	6
OR452.080	4	8	0,12	70	24	-	-	8
OR452.100	4	10	0,2	80	30	-	-	10
OR452.120	4	12	0,2	90	36	-	-	12
OR452.140	4	14	0,2	100	42	-	-	14
OR452.160	4	16	0,2	110	48	-	-	16
OR452.200	4	20	0,3	124	65	-	-	20



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CARBIDE ROUGHING END MILLS

4 TEETH

OH401

Recommended for use:

< 55 HRC | < 1600 N/mm² | steel | stainless steels | cast iron

Applicable:

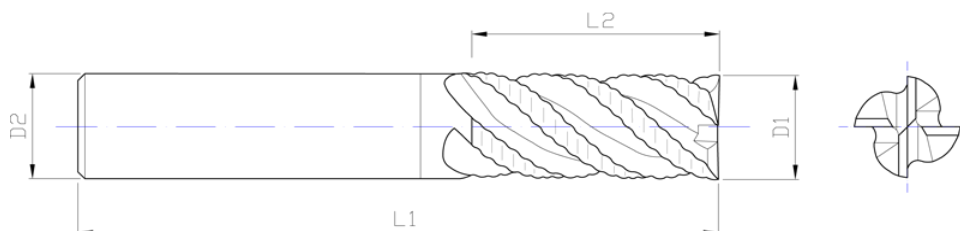
aluminium

Coating:

AlCrN

Geometry:

NR profile, λ 40°, γ 7°



Catalogue number	Number of teeth Z	Diameter D1 h11	Corner edge K x 45°	Overall length L1	Length of edge L2	Reduced neck length L3	Reduced neck diameter D3	Shank diameter D2 h6
OH401.060	4	6	0,15	57	13	-	-	6
OH401.050	4	5	0,15	57	13	-	-	6
OH401.080	4	8	0,2	63	19	-	-	8
OH401.100	4	10	0,2	72	22	-	-	10
OH401.120	4	12	0,25	83	26	-	-	12
OH401.160	4	16	0,35	92	32	-	-	16
OH401.200	4	20	0,4	104	38	-	-	20



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CARBIDE FINISHING END MILLS

6 TEETH

OR601

OR602

Recommended for use:

< 55 HRC | < 1600 N/mm² | steel | stainless steels | cast iron

Applicable:

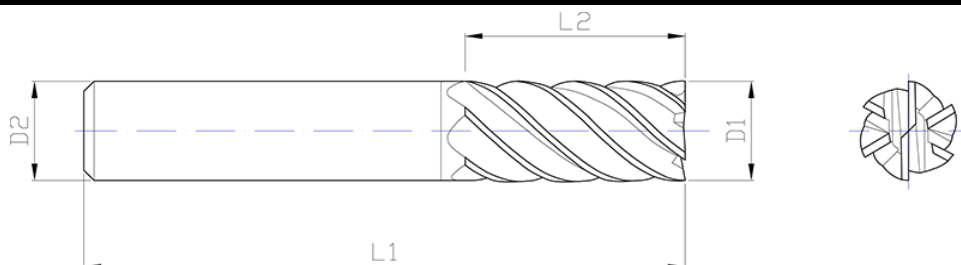
aluminium

Coating:

AlTiN

Geometry:

$\lambda 45^\circ, \gamma 8^\circ$



Catalogue number	Number of teeth Z	Diameter D1 h10	Corner edge K x 45°	Overall length L1	Length of edge L2	Reduced neck length L3	Reduced neck diameter D3	Shank diameter D2 h6
OR601.050	6	5	0,02	57	13	-	-	5
OR601.060	6	6	0,03	57	13	-	-	6
OR602.060	6	6	0,03	70	26	-	-	6
OR601.080	6	8	0,04	63	19	-	-	8
OR602.080	6	8	0,04	90	36	-	-	8
OR601.100	6	10	0,05	72	22	-	-	10
OR602.100	6	10	0,05	100	46	-	-	10
OR601.120	6	12	0,05	83	26	-	-	12
OR602.120	6	12	0,05	110	56	-	-	12
OR601.160	6	16	0,06	92	32	-	-	16
OR602.160	6	16	0,06	130	66	-	-	16
OR601.180	6	18	0,06	92	32	-	-	18
OR601.200	6	20	0,07	104	38	-	-	20
OR602.200	6	20	0,07	140	76	-	-	20
OR602.250	6	25	0,08	180	92	-	-	25



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CARBIDE BALL-NOSE END MILLS

2 TEETH

OK201

OK202

Recommended for use:

< 55 HRC | < 1600 N/mm² | steel | stainless steels | cast iron

Applicable:

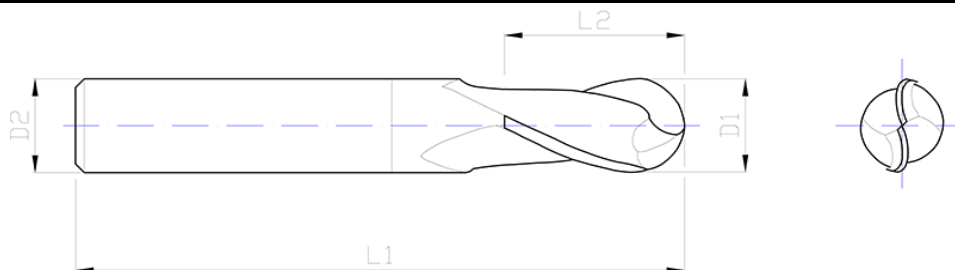
aluminium

Coating:

AlTiN

Geometry:

$\lambda 30^\circ, \gamma 8^\circ$



Catalogue number	Number of teeth Z	Diameter D1 h8	Corner radius R 0/-0,02	Overall length L1	Length of edge L2	Reduced neck length L3	Reduced neck diameter D3	Shank diameter D2 h6
OK201.010	2	1	0,5	38	3	-	-	3
OK201.020	2	2	1	38	5	-	-	3
OK201.030	2	3	1,5	38	7	-	-	3
OK202.030	2	3	1,5	60	8	-	-	3
OK201.040	2	4	2	50	8	-	-	4
OK202.040	2	4	2	70	8	-	-	4
OK201.050	2	5	2,5	50	10	-	-	5
OK202.050	2	5	2,5	80	10	-	-	5
OK201.060	2	6	3	57	10	-	-	6
OK202.060	2	6	3	90	12	-	-	6
OK201.080	2	8	4	63	16	-	-	8
OK202.080	2	8	4	110	14	-	-	8
OK201.100	2	10	5	72	19	-	-	10
OK202.100	2	10	5	110	18	-	-	10
OK201.120	2	12	6	83	22	-	-	12
OK202.120	2	12	6	110	22	-	-	12
OK201.140	2	14	7	83	22	-	-	14
OK202.140	2	14	7	110	26	-	-	14
OK201.160	2	16	8	92	26	-	-	16
OK202.160	2	16	8	140	30	-	-	16
OK201.180	2	18	9	92	26	-	-	18
OK201.200	2	20	10	104	32	-	-	20
OK202.200	2	20	10	160	38	-	-	20



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CARBIDE BALL-NOSE END MILLS

4 TEETH

OK401

OK402

Recommended for use:

< 55 HRC | < 1600 N/mm² | steel | stainless steels | cast iron

Applicable:

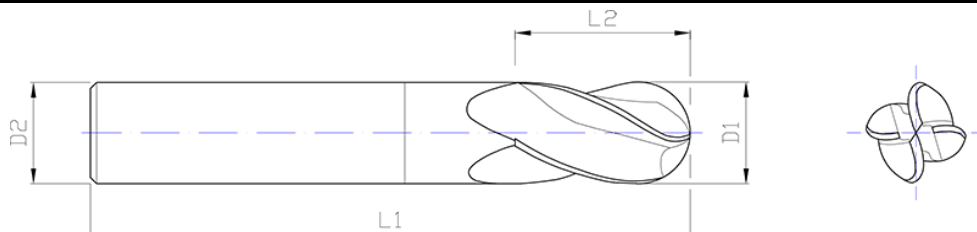
aluminium

Coating:

AlTiN

Geometry:

$\lambda 30^\circ, \gamma 8^\circ$



Catalogue number	Number of teeth Z	Diameter D1 h8	Corner radius R 0/-0,02	Overall length L1	Length of edge L2	Reduced neck length L3	Reduced neck diameter D3	Shank diameter D2 h6
OK401.030	4	3	1,5	38	7	-	-	3
OK402.030	4	3	1,5	60	8	-	-	3
OK401.040	4	4	2	50	8	-	-	4
OK402.040	4	4	2	70	8	-	-	4
OK401.050	4	5	2,5	50	10	-	-	5
OK402.050	4	5	2,5	80	10	-	-	5
OK401.060	4	6	3	57	10	-	-	6
OK402.060	4	6	3	90	12	-	-	6
OK401.080	4	8	4	63	16	-	-	8
OK402.080	4	8	4	110	14	-	-	8
OK401.100	4	10	5	72	19	-	-	10
OK402.100	4	10	5	110	18	-	-	10
OK401.120	4	12	6	83	22	-	-	12
OK402.120	4	12	6	110	22	-	-	12
OK401.140	4	14	7	83	22	-	-	14
OK402.140	4	14	7	110	26	-	-	14
OK401.160	4	16	8	92	26	-	-	16
OK402.160	4	16	8	140	30	-	-	16
OK401.180	4	18	9	92	26	-	-	18
OK401.200	4	20	10	104	32	-	-	20
OK402.200	4	20	10	160	38	-	-	20



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CARBIDE BALL-NOSE END MILLS

FOR HARD MATERIALS

KK201
KK202

Recommended for use:

< 65 HRc | hardened steel | stainless steels | cast iron

Applicable:

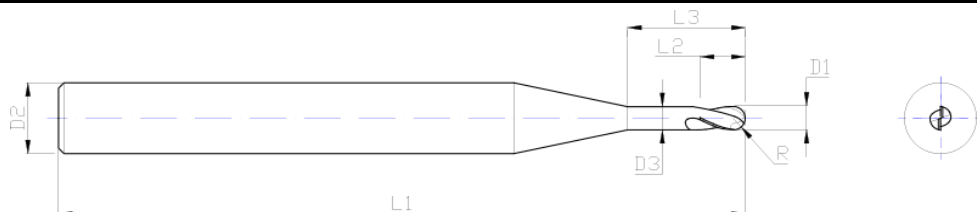
< 55 HRc

Coating:

AlCrN

Geometry:

$\lambda 20^\circ, \gamma 0^\circ$



Catalogue number	Number of teeth Z	Diameter D1 h8	Corner radius R 0/-0,02	Overall length L1	Length of edge L2	Reduced neck length L3	Reduced neck diameter D3	Shank diameter D2 h6
KK201.010	2	1	0,5	57	1,5	3	0,95	6
KK201.015	2	1,5	0,75	57	2	4,5	1,45	6
KK201.020	2	2	1	57	2	7	1,9	6
KK202.020	2	2	1	70	2	17	1,9	6
KK201.030	2	3	1,5	57	3	8	2,8	6
KK202.030	2	3	1,5	70	3	18	2,8	6
KK201.040	2	4	2	57	4	14	3,8	6
KK202.040	2	4	2	80	4	19	3,8	6
KK201.050	2	5	2,5	57	5	21	4,8	6
KK202.050	2	5	2,5	80	5	44	4,8	6
KK201.060	2	6	3	57	6	21	5,8	6
KK202.060	2	6	3	80	6	44	5,8	6
KK201.080	2	8	4	63	8	27	7,6	8
KK202.080	2	8	4	90	8	54	7,6	8
KK201.100	2	10	5	72	10	32	9,6	10
KK202.100	2	10	5	100	10	60	9,6	10
KK201.120	2	12	6	83	12	38	11,5	12
KK202.120	2	12	6	110	12	65	11,5	12
KK401.160	4	16	8	92	16	44	15,5	16
KK402.160	4	16	8	130	16	82	15,5	16



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CARBIDE BALL-NOSE END MILLS FOR EXTRA HARD MATERIALS

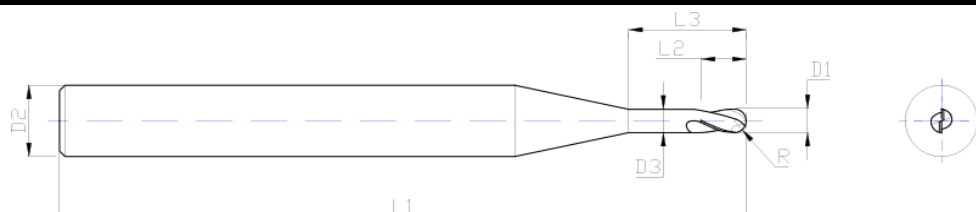
KK251
KK252

Recommended for use:
< 70 HRC | hardened steel

Applicable:
cast iron

Coating:
AlCrN

Geometry:
 $\lambda 20^\circ, \gamma -2^\circ$



Catalogue number	Number of teeth Z	Diameter D1 h8	Corner radius R 0/-0,02	Overall length L1	Length of edge L2	Reduced neck length L3	Reduced neck diameter D3	Shank diameter D2 h5
KK251.020	2	2	1	57	2	7	1,9	6
KK252.020	2	2	1	70	2	17	1,9	6
KK251.030	2	3	1,5	57	3	8	2,8	6
KK252.030	2	3	1,5	70	3	18	2,8	6
KK251.040	2	4	2	57	4	14	3,8	6
KK252.040	2	4	2	80	4	19	3,8	6
KK251.050	2	5	2,5	57	5	21	4,8	6
KK252.050	2	5	2,5	80	5	44	4,8	6
KK251.060	2	6	3	57	6	21	5,8	6
KK252.060	2	6	3	80	6	44	5,8	6
KK251.080	2	8	4	63	8	27	7,6	8
KK252.080	2	8	4	90	8	54	7,6	8
KK251.100	2	10	5	72	10	32	9,6	10
KK252.100	2	10	5	100	10	60	9,6	10
KK251.120	2	12	6	83	12	38	11,5	12
KK252.120	2	12	6	110	12	65	11,5	12
KK451.160	4	16	8	92	16	44	15,5	16
KK452.160	4	16	8	130	16	82	15,5	16



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CARBIDE END MILLS WITH CORNER RADIUS FOR HARD MATERIALS

KT401

KT402

Recommended for use:

< 65 HRc | hardened steel | stainless steels | cast iron

Applicable:

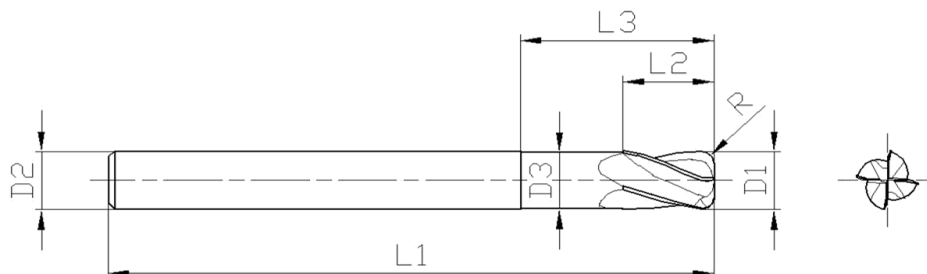
< 55 HRc

Coating:

AlCrN

Geometry:

$\lambda 30^\circ, \gamma 4^\circ$



Catalogue number	Number of teeth Z	Diameter D1 h8	Corner radius R 0/-0,02	Overall length L1	Length of edge L2	Reduced neck length L3	Reduced neck diameter D3	Shank diameter D2 h6
KT401.030.03	4	3	0,3	57	4	14	2,9	6
KT401.040.03	4	4	0,3	57	4	14,5	3,8	6
KT402.040.03	4	4	0,3	80	4	16	3,8	6
KT401.040.05	4	4	0,5	57	4	14,5	3,8	6
KT402.040.05	4	4	0,5	80	4	16	3,8	6
KT401.060.05	4	6	0,5	57	6	21	5,8	6
KT402.060.05	4	6	0,5	90	9	21	5,8	6
KT401.060.10	4	6	1	57	6	21	5,8	6
KT402.060.10	4	6	1	90	9	21	5,8	6
KT401.080.05	4	8	0,5	63	8	27	7,6	8
KT402.080.05	4	8	0,5	100	12	27	7,6	8
KT401.080.10	4	8	1	63	8	27	7,6	8
KT402.080.10	4	8	1	100	12	27	7,6	8
KT401.080.20	4	8	2	63	8	27	7,6	8
KT401.100.05	4	10	0,5	72	10	32	9,6	10
KT402.100.05	4	10	0,5	100	15	32	9,6	10
KT401.100.10	4	10	1	72	10	32	9,6	10
KT402.100.10	4	10	1	100	15	32	9,6	10
KT401.100.20	4	10	2	72	10	32	9,6	10
KT402.100.20	4	10	2	100	15	32	9,6	10
KT401.120.05	4	12	0,5	83	12	38	11,5	12
KT402.120.05	4	12	0,5	110	18	38	11,5	12
KT401.120.10	4	12	1	83	12	38	11,5	12
KT402.120.10	4	12	1	110	18	38	11,5	12
KT401.120.15	4	12	1,5	83	12	38	11,5	12
KT401.120.20	4	12	2	83	12	38	11,5	12
KT402.120.20	4	12	2	110	18	38	11,5	12
KT401.120.30	4	12	3	83	12	38	11,5	12
KT401.160.10	4	16	1	92	16	44	15,5	16
KT401.160.15	4	16	1,5	92	16	44	15,5	16
KT401.160.20	4	16	2	92	16	44	15,5	16



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CARBIDE FINISHING END MILLS FOR HARD MATERIALS

KR

Recommended for use:

< 65 HRC | hardened steel | stainless steels | cast iron

Applicable:

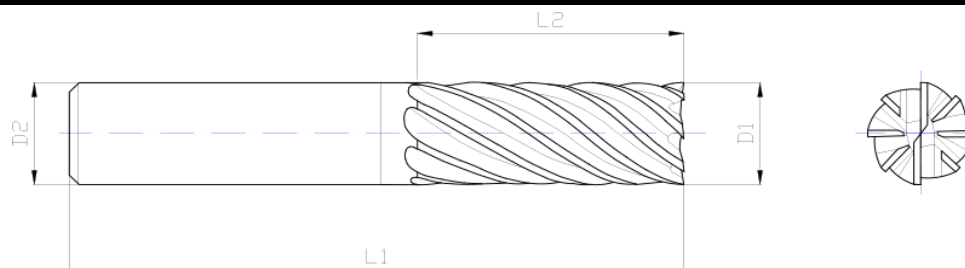
< 55 HRC

Coating:

AlCrN

Geometry:

λ 30° – 45°, γ 0°



Catalogue number	Number of teeth Z	Diameter D1 e8	Corner edge K x 45°	Overall length L1	Length of edge L2	Reduced neck length L3	Reduced neck diameter D3	Shank diameter D2 h6
KR401.030	4	3	0,02	57	12	-	-	6
KR401.040	4	4	0,02	57	13	-	-	6
KR601.050	6	5	0,02	57	15	-	-	6
KR601.060	6	6	0,03	57	16	-	-	6
KR601.080	6	8	0,04	70	22	-	-	8
KR601.100	6	10	0,05	72	25	-	-	10
KR601.120	6	12	0,05	83	28	-	-	12
KR601.140	6	14	0,06	83	30	-	-	14
KR801.160	8	16	0,06	92	35	-	-	16
KR1001.180	10	18	0,06	92	35	-	-	18
KR1001.200	10	20	0,07	104	40	-	-	20
KR1002.200	10	20	0,07	135	70	85	17,8	20
KR1202.250	12	25	0,07	186	55	132	24	25



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CARBIDE END MILLS 4 TEETH WITH DOUBLE HELIX - INOX

NR411

Recommended for use:

stainless steels | < 55 HRc | < 1600 N/mm²

Applicable:

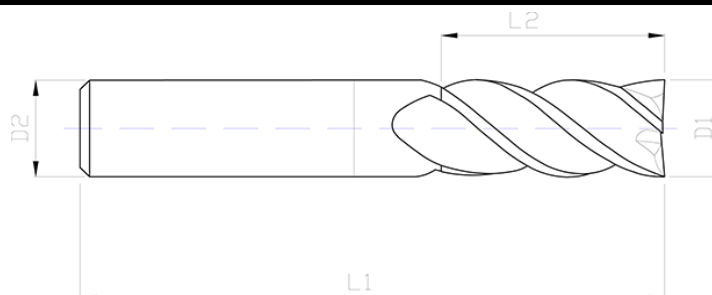
copper, aluminium

Coating:

AlCrN

Geometry:

λ 38°/40°, γ 12°



Catalogue number	Number of teeth Z	Diameter D1 h10	Corner edge K x 45°	Overall length L1	Length of edge L2	Reduced neck length L3	Reduced neck diameter D3	Shank diameter D2 h6
NR411.030	4	3	0,07	57	10	-	-	6
NR411.040	4	4	0,07	57	12	-	-	6
NR411.050	4	5	0,07	57	13	-	-	6
NR411.060	4	6	0,07	57	15	-	-	6
NR411.080	4	8	0,12	63	19	-	-	8
NR411.100	4	10	0,2	72	24	-	-	10
NR411.120	4	12	0,2	83	28	-	-	12
NR411.160	4	16	0,2	92	35	-	-	16
NR411.200	4	20	0,3	110	42	-	-	20



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CARBIDE END MILLS 4 TEETH WITH DOUBLE HELIX FOR ALUMINIUM

AR411

Recommended for use:

aluminium and its alloys | copper | plastics

Applicable:

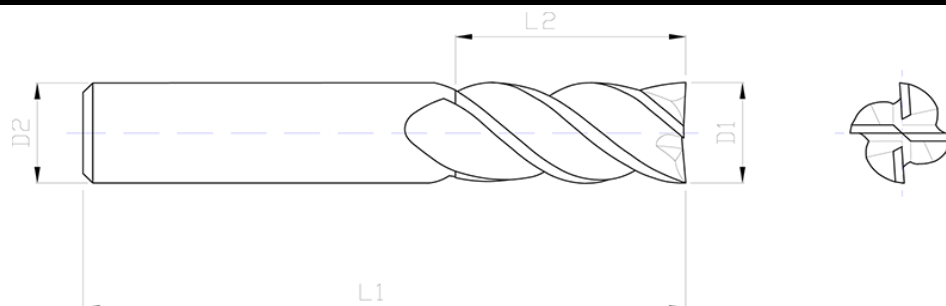
< 55 HRC

Coating:

without coating

Geometry:

$\lambda 38^\circ/40^\circ, \gamma 15^\circ$



Catalogue number	Number of teeth Z	Diameter D1 h10	Corner edge K x 45°	Overall length L1	Length of edge L2	Reduced neck length L3	Reduced neck diameter D3	Shank diameter D2 h6
AR411.030	4	3	0,07	57	10	-	-	6
AR411.040	4	4	0,07	57	12	-	-	6
AR411.050	4	5	0,07	57	13	-	-	6
AR411.060	4	6	0,07	57	15	-	-	6
AR411.080	4	8	0,12	63	19	-	-	8
AR411.100	4	10	0,2	72	24	-	-	10
AR411.120	4	12	0,2	83	28	-	-	12
AR411.160	4	16	0,2	95	35	-	-	16
AR411.200	4	20	0,3	110	42	-	-	20



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CARBIDE END MILLS FOR GRAPHITE

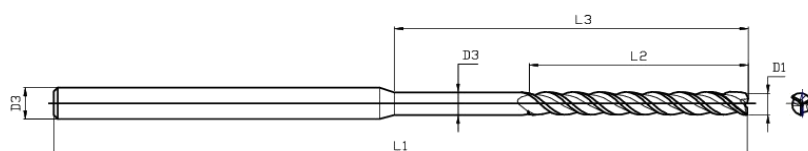
GR

Recommended for use:
graphite

Coating:

diamond

Geometry: $\lambda 40^\circ$, $\gamma 12^\circ$
(micro $\lambda 30^\circ$, $\gamma 12^\circ$)



Catalogue number	Number of teeth Z	Diameter D1 -0,01/-0,03	Corner edge K x 45°	Overall length L1	Length of edge L2	Reduced neck length L3	Reduced neck diameter D3	Shank diameter D2 h6
GR202.010	2	1	0,01	60	5	10	0,95	4
GR202.015	2	1,5	0,01	60	5	10	1,4	4
GR302.020	3	2	0,02	80	20	10	1,9	4
GR302.030	3	3	0,05	100	30	50	2,8	4
GR302.040	3	4	0,05	100	40	50	3,8	4
GR302.060	3	6	0,05	100	40	50	5,8	6
GR302.080	3	8	0,05	120	40	60	7,6	8
GR402.100	4	10	0,05	120	60	-	-	10
GR402.120	4	12	0,05	120	75	-	-	12



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CARBIDE BALL-NOSE END MILLS FOR GRAPHITE

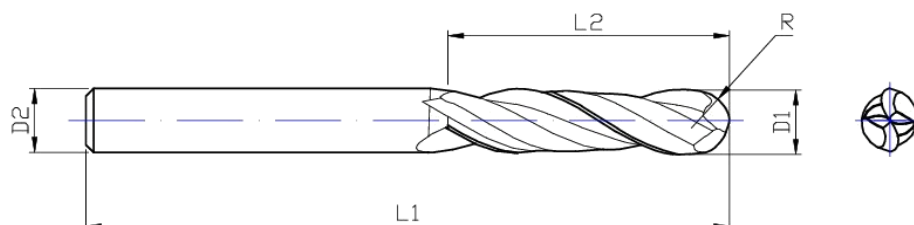
GK

Recommended for use:
graphite

Coating:

diamond

Geometry: $\lambda 30^\circ$, $\gamma 12^\circ$
(micro $\lambda 30^\circ$, $\gamma 6^\circ$)



Catalogue number	Number of teeth Z	Diameter D1 h8	Corner radius R 0/-0,02	Overall length L1	Length of edge L2	Reduced neck length L3	Reduced neck diameter D3	Shank diameter D2 h6
GK202.010	2	1	0,5	60	5	10	0,95	4
GK202.015	2	1,5	0,75	60	5	15	1,4	4
GK202.020	2	2	1	80	10	20	1,9	4
GK202.030	2	3	1,5	80	15	25	2,8	4
GK202.040	2	4	2	80	20	30	3,8	4
GK202.060	2	6	3	100	30	50	5,8	6
GK202.080	2	8	4	110	40	60	7,6	8
GK202.100	2	10	5	120	50	70	9,6	10
GK202.120	2	12	6	130	55	75	11,5	12



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CARBIDE DRILLS 5xD WITH INTERNAL COOLING

VS501

Recommended for use:

< 55 HRC | < 1600 N/mm² | steel | stainless steels | cast iron

Applicable:

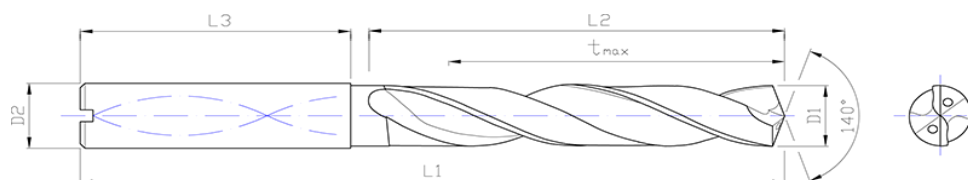
copper, aluminium

Coating:

AlCrN

Geometry:

(λ 30°)



Catalogue number	Diameter D1	Overall length L1	Length of helix L2	Length of shank L3	Max. drilling depth t _{max}	Diameter tolerance m7	Shank diameter D2 h6
VS501.0300 ↓ VS501.0370	3,0 - 3,7	66	28	36	23	0,004/0,016	6
VS501.0380 ↓ VS501.0470	3,8 - 4,7	74	36	36	29	0,004/0,016	6
VS501.0480 ↓ VS501.0600	4,8 - 6,0	82	44	36	35	0,004/0,016	6
VS501.0610 ↓ VS501.0800	6,1 - 8,0	91	53	36	43	0,006/0,021	8
VS501.0810 ↓ VS501.1000	8,1 - 10,0	103	61	40	49	0,006/0,021	10
VS501.1010 ↓ VS501.1200	10,1 - 12,0	118	71	45	56	0,007/0,025	12
VS501.1210 ↓ VS501.1400	12,1 - 14,0	124	77	45	60	0,007/0,025	14
VS501.1410 ↓ VS501.1600	14,1 - 16,0	133	83	48	63	0,007/0,025	16
VS501.1610 ↓ VS501.1800	16,1 - 18,0	143	93	48	71	0,007/0,025	18
VS501.1810 ↓ VS501.2000	18,1 - 20,0	153	101	50	77	0,008/0,029	20

Pozn.: We keep in stock only the most commonly used diameters of drills.
The current list of available items, we will provide on request.



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RECOMMENDED CUTTING CONDITIONS FOR CARBIDE END MILLS

Cutting speed Vc:

$$V_c = \frac{D1 \cdot \pi \cdot n}{1000} \quad \text{m/min}$$

Revolutions n:

$$n = \frac{V_c \cdot 1000}{D1 \cdot \pi} \quad \text{ot/min}$$

Rate of feed Vf:

$$V_f = f_z \cdot z \cdot n \cdot f1 \quad \text{mm/min}$$

Feed per tooth fz:

$$f_z = \frac{V_f}{z \cdot n} \quad \text{mm}$$

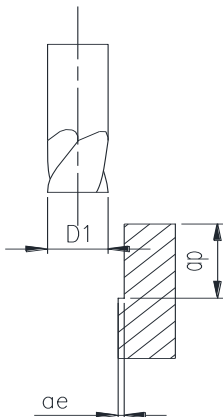
Feed per revolutions f:

$$f = f_z \cdot z \quad \text{mm}$$

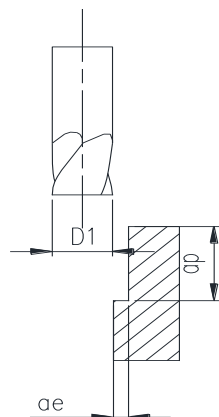
Machined material	Material strenght N/mm ²	Cutting speed Vc (m/min)	Feed per tooth fz (mm)				
			Ø 2-3	Ø 4-5	Ø 6-10	Ø 12-16	Ø 20
Free cutting steels General construction steels	< 600	200	0,02	0,04	0,05	0,08	0,12
General construction steels Non alloyed steel castings Low alloyed steel castings	< 750	180	0,02	0,03	0,04	0,07	0,08
Heat resistant steels Alloyed steel castings	< 1100	100	0,02	0,025	0,04	0,07	0,08
Castings steels Inconel	< 1400	20	0,01	0,01	0,02	0,04	0,05
Nitriding steels Cementation steels	< 950	130	0,02	0,03	0,04	0,07	0,08
Tool steels	< 1400	90	0,01	0,01	0,02	0,035	0,05
High speed steels	< 1100	110	0,015	0,02	0,035	0,07	0,08
Heat resistant alloys	< 850	60	0,01	0,015	0,02	0,04	0,05
Hardened steels	< 55 HRc	80	0,015	0,02	0,04	0,07	0,09
Hardened steels	< 70 HRc	65	0,01	0,015	0,02	0,03	0,04
Stainless steels	< 900	80	0,01	0,015	0,02	0,04	0,05
Grey cast iron Malleable cast iron	< 240 HB	150	0,02	0,03	0,05	0,08	0,12
Ductile cast iron Alloyed cast iron	< 800 HB	110	0,01	0,02	0,04	0,07	0,1
Aluminium alloys <10%Si	< 400	800	0,02	0,03	0,055	0,085	0,12
Aluminium alloys >10%Si	< 600	450	0,01	0,02	0,04	0,06	0,1
Copper	< 500	280	0,01	0,02	0,04	0,07	0,1
Copper alloys	< 700	250	0,01	0,02	0,04	0,07	0,1

Coefficients for reducing of the feed rate f1:

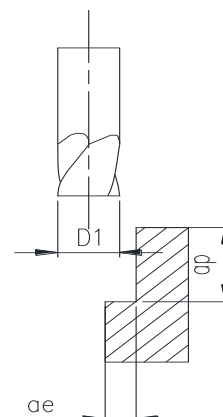
$$\begin{aligned} a_e &= 0,1 \times D1 \\ a_p &= 1,5 \times D1 \\ f1 &= 1 \end{aligned}$$



$$\begin{aligned} a_e &= 0,25 \times D1 \\ a_p &= 1,5 \times D1 \\ f1 &= 0,8 \end{aligned}$$



$$\begin{aligned} a_e &= 0,5 \times D1 \\ a_p &= 1,5 \times D1 \\ f1 &= 0,5 \end{aligned}$$



$$\begin{aligned} a_e &= D1 \\ a_p &= 0,5 \times D1 \\ f1 &= 0,5 \end{aligned}$$

