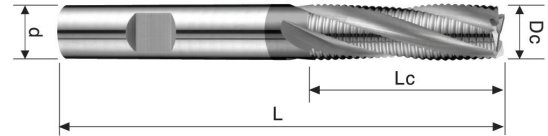
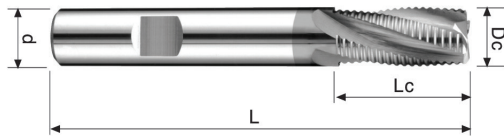
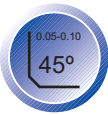




Roughing End Mills



Carbide



Work Material / Velocity m/min

GR.1 Non alloyed steels Alloyed Steels	GR.2 Heat resistant steels Stainless steels	GR.3 Hardened steels < 48 HRC	GR.4 Hardened steels 48-56 HRC	GR.6 Iron	GR.7 Titanium	GR.8 Nickel
100-180	40-80	80-140	60-100	100-180	20-50	30-50

※ 3 FLUTE ORDER NO.
VFF08-6, VFF08-8
VFF09-6, VFF09-8

Standard Length(Order No. VFF08-Dia)

Unit:mm

ORDER NO.	Dc h10	Lc mm	L mm	d h5	CODE NO.
VFF08-6	6	13	57	6	6008-240
VFF08-8	8	19	63	8	6008-241
VFF08-10	10	22	72	10	6008-242
VFF08-12	12	26	83	12	6008-243
VFF08-14	14	26	83	14	6008-244
VFF08-16	16	32	92	16	6008-245
VFF08-18	18	32	92	18	6008-246
VFF08-20	20	38	104	20	6008-247

Long Length(Order No. VFF09-Dia)

Unit:mm

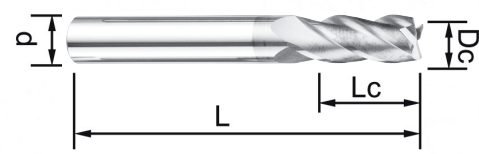
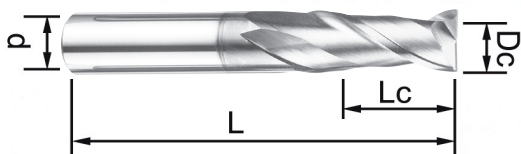
ORDER NO.	Dc h10	Lc mm	L mm	d h5	CODE NO.
VFF09-6	6	19	63	6	6008-260
VFF09-8	8	28	72	8	6008-261
VFF09-10	10	34	84	10	6008-262
VFF09-12	12	40	97	12	6008-263
VFF09-20	20	56	122	20	6008-265



H.S.S. END MILLS



MATERIAL H.S.S. + CO



H.S.S. 2FLUTE END MILL

ORDER NO.	Dc	Lc mm	L mm	d	CODE NO.
VES2-3.0	3.0	10	55	6	6009-301
VES2-4.0	4.0	12	55	6	6009-303
VES2-5.0	5.0	15	60	6	6009-305
VES2-6.0	6.0	15	60	6	6009-307
VES2-7.0	7.0	20	70	8	6009-309
VES2-8.0	8.0	20	70	8	6009-311
VES2-9.0	9.0	25	80	10	6009-313
VES2-10.0	10.0	25	80	10	6009-315
VES2-12.0	12.0	30	90	12	6009-318
VES2-14.0	14.0	35	95	12	6009-320
VES2-16.0	16.0	40	105	16	6009-322
VES2-18.0	18.0	40	105	16	6009-324
VES2-20.0	20.0	45	115	20	6009-326

H.S.S. 4FLUTE END MILL

ORDER NO.	Dc	Lc mm	L mm	d	CODE NO.
VES4-3.0	3.0	10	55	6	6009-401
VES4-3.5	3.5	12	60	8	6009-402
VES4-4.0	4.0	12	60	8	6009-403
VES4-4.5	4.5	15	60	8	6009-404
VES4-5.0	5.0	15	60	8	6009-405
VES4-6.0	6.0	15	60	8	6009-407
VES4-7.0	7.0	20	70	8	6009-409
VES4-8.0	8.0	20	70	8	6009-411
VES4-9.0	9.0	25	80	10	6009-413
VES4-10.0	10.0	25	80	10	6009-415
VES4-12.0	12.0	30	90	12	6009-418
VES4-13.0	13.0	35	95	12	6009-419
VES4-14.0	14.0	35	95	12	6009-420
VES4-15.0	15.0	40	105	16	6009-421
VES4-16.0	16.0	40	105	16	6009-422
VES4-17.0	17.0	40	105	16	6009-423
VES4-18.0	18.0	40	105	16	6009-424
VES4-19.0	19.0	45	115	20	6009-425
VES4-20.0	20.0	45	115	20	6009-426



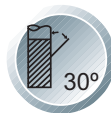
Solid Carbide End Mills For <48HRC

VERTEX®

Micro Grain 10% Co Grade
2 Flute

CARBIDE

ISO CODE



Work Material / Velocity m/min

ORDER NO.	GR.1 Non alloyed steels Alloyed Steels	GR.2 Heat resistant steels Stainless steels	GR.3 Hardened steels < 48 HRC	GR.6 Iron	GR.7 Titanium	GR.8 Nickel	GR.9 Copper
VB221F	60-250	30-100	60-80	30-150	30-180	40-120	100-450
VB222F							
VB232F	60-180	20-80	40-80	30-130	30-120	40-100	100-300



VB242F

Stub Length(Order No. VB221F-Dia)

Unit:mm

ORDER NO.	Dia of Mill Tol e8	Shank Dia mm	Flute Length mm	Overall Length mm	CODE NO.
VB221-1	1.0x0.50R	3	2.5	38	6007-160
VB221-1.5	1.5x0.75R	3	4.0	38	6007-161
VB221-2	2.0x1.00R	3	5.0	38	6007-162
VB221-2.5	2.5x1.25R	3	6.0	38	6007-163
VB221-3	3.0x1.50R	3	6.0	38	6007-164
VB221-3.5	3.5x1.75R	4	8.0	50	6007-165
VB221-4	4.0x2.00R	4	8.0	50	6007-166
VB221-4.5	4.5x2.25R	5	10.0	50	6007-167
VB221-5	5.0x2.50R	5	10.0	50	6007-168
VB221-5.5	5.5x2.75R	6	12.0	50	6007-169
VB221-6	6.0x3.00R	6	12.0	50	6007-170

Standard Length(Order No. VB222F-Dia)

Unit:mm

ORDER NO.	Dia of Mill Tol e8	Shank Dia mm	Flute Length mm	Overall Length mm	CODE NO.
VB222-1	1.00x0.50R	4	2.5	50	6007-180
VB222-1.5	1.50x0.75R	4	4	50	6007-181
VB222-2	2.00x1.00R	4	5	50	6007-182
VB222-2.5	2.50x1.25R	4	6	50	6007-183
VB222-3	3.00x1.50R	6	6	50	6007-184
VB222-4	4.00x2.00R	6	8	50	6007-186
VB222-5	5.00x2.50R	6	10	50	6007-188
VB222-6	6.00x3.00R	6	12	50	6007-190
VB222-7	7.00x3.50R	8	14	60	6007-191
VB222-8	8.00x4.00R	8	14	60	6007-192
VB222-9	9.00x4.50R	10	18	72	6007-193
VB222-10	10.00x5.00R	10	18	72	6007-194
VB222-12	12.00x6.00R	12	22	75	6007-196
VB222-14	14.00x7.00R	16	26	100	6007-197
VB222-16	16.00x8.00R	16	30	100	6007-198
VB222-20	20.00x10.0R	20	38	100	6007-200

Long Length(Order No. VB232F-Dia)

Unit:mm

ORDER NO.	Dia of Mill Tol e8	Shank Dia mm	Flute Length mm	Overall Length mm	CODE NO.
VB232-3	3.0x1.50R	6	6	70	6007-210
VB232-4	4.0x2.00R	6	8	70	6007-211
VB232-5	5.0x2.50R	6	10	80	6007-212
VB232-6	6.0x3.00R	6	12	80	6007-213
VB232-8	8.0x4.00R	8	14	100	6007-215
VB232-10	10.0x5.00R	10	18	100	6007-217
VB232-12	12.0x6.00R	12	22	110	6007-219
VB232-14	14.0x7.00R	16	26	120	6007-220
VB232-16	16.0x8.00R	16	30	140	6007-221
VB232-20	20.0x10.0R	20	38	160	6007-222

Extra Long Length(Order No. VB242F-Dia)

Unit:mm

ORDER NO.	Dia of Mill Tol e8	Shank Dia mm	Flute Length mm	Overall Length mm	CODE NO.
VB242-3	3.0x1.50R	6	9	75	6007-230
VB242-4	4.0x2.00R	6	12	75	6007-231
VB242-5	5.0x2.50R	6	16	100	6007-232
VB242-6	6.0x3.00R	6	20	100	6007-233
VB242-8	8.0x4.00R	8	25	150	6007-234
VB242-10	10.0x5.00R	10	30	150	6007-235
VB242-12	12.0x6.00R	12	35	180	6007-236
VB242-16	16.0x8.00R	16	40	210	6007-237
VB242-20	20.0x10.0R	20	50	210	6007-238

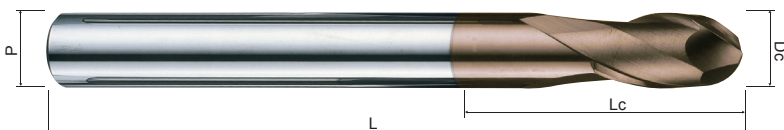
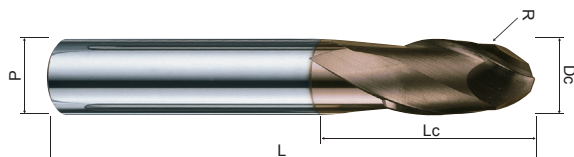


Ball Nose End Mills <56HRC



VERTEX®

CARBIDE



Work Material / Velocity m/min

ORDER NO.	GR.1 Non alloyed steels Alloyed Steels	GR.3 Hardened steels < 48 HRC	GR.4 Hardened steels 48-56 HRC	GR.6 Iron	GR.7 Titanium	GR.8 Nickel
VB262X	80-350	60-200	40-150	50-250	30-180	40-120
VB263X	80-250	60-160	40-120	50-200	30-150	40-100

Standard Length(Order No. VB262X-Dc)

Unit:mm

ORDER NO.	Dc e8	R ±0.01	LC mm	L mm	d h6	CODE NO.
VB262-1.0	1.0	0.5R	2	50	4	6007-350
VB262-1.5	1.5	0.75R	3	50	4	6007-351
VB262-2.0	2.0	1.0R	4	50	4	6007-352
VB262-2.5	2.5	1.25R	5	50	4	6007-353
VB262-3.0	3.0	1.5R	6	50	6	6007-354
VB262-4.0	4.0	2.0R	8	50	6	6007-355
VB262-5.0	5.0	2.5R	10	50	6	6007-356
VB262-6.0	6.0	3.0R	12	50	6	6007-357
VB262-8.0	8.0	4.0R	14	60	8	6007-359
VB262-10.0	10.0	5.0R	18	72	10	6007-361
VB262-12.0	12.0	6.0R	22	75	12	6007-362
VB262-14.0	14.0	7.0R	26	100	16	6007-363
VB262-16.0	16.0	8.0R	30	100	16	6007-364
VB262-20.0	20.0	10.0R	38	100	20	6007-365

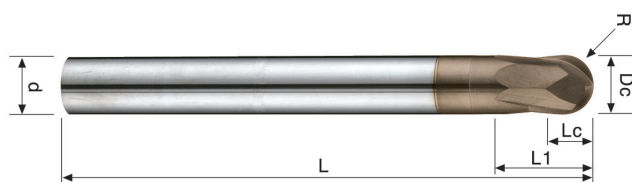
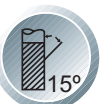
Long Length(Order No. VB263X-Dc)

Unit:mm

ORDER NO.	Dc e8	R ±0.01	LC mm	L mm	d h6	CODE NO.
VB263-3	3	1.5R	8	70	6	6007-374
VB263-4	4	2.0R	8	70	6	6007-375
VB263-5	5	2.5R	10	80	6	6007-376
VB263-6	6	3.0R	12	80	6	6007-377
VB263-8	8	4.0R	14	100	8	6007-379
VB263-10	10	5.0R	18	100	10	6007-381
VB263-12	12	6.0R	22	110	12	6007-382
VB263-14	14	7.0R	26	120	16	6007-383
VB263-16	16	8.0R	30	140	16	6007-384
VB263-20	20	10.0R	38	160	20	6007-385



Ball Nose End Mills Carbide



Work Material / Velocity m/min

GR.3 Hardened steels < 48 HRC	GR.4 Hardened steels 48-56 HRC	GR.5 Hardened steels 56-68 HRC	GR.6 Iron
120-350	100-210	30-120	80-350

Long Length(Order No. VBB61-Dia)

Unit:mm

ORDER NO.	Dc h10	R ±0.01	Lc mm	L mm	d h6	L1 mm	CODE NO.
VBB61-1.0	1.0	0.50R	1.0	50	4	2	6008-220
VBB61-1.5	1.5	0.75R	1.5	50	4	3	6008-221
VBB61-2.0	2.0	1.00R	2.0	60	6	4	6008-222
VBB61-3.0	3.0	1.50R	3.0	70	6	6	6008-223
VBB61-4.0	4.0	2.00R	4.0	70	6	8	6008-224
VBB61-5.0	5.0	2.50R	5.0	80	6	10	6008-225
VBB61-6.0	6.0	3.00R	6.0	80	6	12	6008-226
VBB61-8.0	8.0	4.00R	8.0	100	8	16	6008-227
VBB61-10.0	10.0	5.00R	10.0	100	10	20	6008-228
VBB61-12.0	12.0	6.00R	12.0	110	12	24	6008-229



Solid Carbide NC/CNC Spot Drills



VERTEX®

Micro Grain 10% Co Grade

CARBIDE



Work Material / Velocity m/min

GR.1 Non alloyed steels Alloyed Steels	GR.2 Heat resistant steels Stainless steels	GR.3 Hardened steels < 48 HRC	GR.4 Hardened steels 48-56 HRC	GR.6 Iron
30-80	20-60	15-25	10-20	40-100
GR.7 Titanium	GR.8 Nickel	GR.9 Copper	GR.10 Aluminium	
20-40	15-40	60-300	80-400	

CUTTING TIP WELD TYPE
FOR VD903,VD904:
FROM Ø3~Ø5 STAY THE SAME.
FROM Ø6~Ø20 SUPPLY IN TIP WELD TYPE.

Standard Length 90° Angle(Order No. VD903-Dia)

Unit:mm

ORDER NO.	Dia of Mill Tol e8	Shank Dia mm	Flute Length mm	Overall Length mm	CODE NO.
VD903-3	3	3	10	38	6007-260
VD903-4	4	4	12	50	6007-261
VD903-5	5	5	15	50	6007-262
VD903-6	6	6	20	60	6007-263
VD903-8	8	8	25	60	6007-264
VD903-10	10	10	25	72	6007-265
VD903-12	12	12	30	75	6007-266
VD903-16	16	16	35	100	6007-267
VD903-20	20	20	40	100	6007-268

Standard Length 120° Angle(Order No. VD913-Dia)

Unit:mm

ORDER NO.	Dia of Mill Tol e8	Shank Dia mm	Flute Length mm	Overall Length mm	CODE NO.
VD913-3	3	3	10	38	6007-270
VD913-4	4	4	12	50	6007-271
VD913-5	5	5	15	50	6007-272
VD913-6	6	6	20	60	6007-273
VD913-8	8	8	25	60	6007-274
VD913-10	10	10	25	72	6007-275
VD913-12	12	12	30	75	6007-276
VD913-16	16	16	35	100	6007-277
VD913-20	20	20	40	100	6007-278

Long Length 90° Angle(Order No. VD904-Dia)

Unit:mm

ORDER NO.	Dia of Mill Tol e8	Shank Dia mm	Flute Length mm	Overall Length mm	CODE NO.
VD904-6	6	6	20	100	6007-280
VD904-8	8	8	25	125	6007-281
VD904-10	10	10	25	150	6007-282
VD904-12	12	12	30	150	6007-283
VD904-16	16	16	35	150	6007-284
VD904-20	20	20	40	150	6007-285

Long Length 120° Angle(Order No. VD914-Dia)

Unit:mm

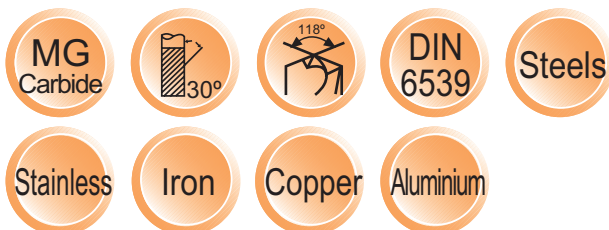
ORDER NO.	Dia of Mill Tol e8	Shank Dia mm	Flute Length mm	Overall Length mm	CODE NO.
VD914-6	6	6	20	100	6007-290
VD914-8	8	8	25	125	6007-291
VD914-10	10	10	25	150	6007-292
VD914-12	12	12	30	150	6007-293
VD914-16	16	16	35	150	6007-294
VD914-20	20	20	40	150	6007-295



Twist Drills



Carbide VERTEX®



Straight Shank(Order No. VDD12-Dia)

Unit:mm

ORDER NO.	Dc h7	Lc mm	L mm	d mm	CODE NO.
VDD12-1.0	1.0	6	26	1.0	6008-280
VDD12-1.1	1.1	7	28	1.1	6008-281
VDD12-1.2	1.2	8	30	1.2	6008-282
VDD12-1.3	1.3	8	30	1.3	6008-283
VDD12-1.4	1.4	9	32	1.4	6008-284
VDD12-1.5	1.5	9	32	1.5	6008-285
VDD12-1.6	1.6	10	34	1.6	6008-286
VDD12-1.7	1.7	10	34	1.7	6008-287
VDD12-1.8	1.8	11	36	1.8	6008-288
VDD12-1.9	1.9	11	36	1.9	6008-289
VDD12-2.0	2.0	12	38	2.0	6008-290
VDD12-2.1	2.1	12	38	2.1	6008-291
VDD12-2.2	2.2	13	40	2.2	6008-292
VDD12-2.3	2.3	13	40	2.3	6008-293
VDD12-2.4	2.4	14	43	2.4	6008-294
VDD12-2.5	2.5	14	43	2.5	6008-295
VDD12-2.6	2.6	14	43	2.6	6008-296
VDD12-2.7	2.7	16	46	2.7	6008-297
VDD12-2.8	2.8	16	46	2.8	6008-298
VDD12-2.9	2.9	16	46	2.9	6008-299
VDD12-3.0	3.0	16	46	3.0	6008-300
VDD12-3.1	3.1	18	49	3.1	6008-301
VDD12-3.2	3.2	18	49	3.2	6008-302
VDD12-3.3	3.3	18	49	3.3	6008-303
VDD12-3.4	3.4	20	52	3.4	6008-304
VDD12-3.5	3.5	20	52	3.5	6008-305
VDD12-3.6	3.6	20	52	3.6	6008-306
VDD12-3.7	3.7	20	52	3.7	6008-307
VDD12-3.8	3.8	22	55	3.8	6008-308
VDD12-3.9	3.9	22	55	3.9	6008-309
VDD12-4.0	4.0	22	55	4.0	6008-310
VDD12-4.1	4.1	22	55	4.1	6008-311
VDD12-4.2	4.2	22	55	4.2	6008-312
VDD12-4.3	4.3	24	58	4.3	6008-313
VDD12-4.4	4.4	24	58	4.4	6008-314
VDD12-4.5	4.5	24	58	4.5	6008-315
VDD12-4.6	4.6	24	58	4.6	6008-316
VDD12-4.7	4.7	24	58	4.7	6008-317
VDD12-4.8	4.8	26	62	4.8	6008-318
VDD12-4.9	4.9	26	62	4.9	6008-319
VDD12-5.0	5.0	26	62	5.0	6008-320
VDD12-5.1	5.1	26	62	5.1	6008-321
VDD12-5.2	5.2	26	62	5.2	6008-322
VDD12-5.3	5.3	26	62	5.3	6008-323
VDD12-5.4	5.4	28	66	5.4	6008-324
VDD12-5.5	5.5	28	66	5.5	6008-325
VDD12-5.6	5.6	28	66	5.6	6008-326
VDD12-5.7	5.7	28	66	5.7	6008-327
VDD12-5.8	5.8	28	66	5.8	6008-328
VDD12-5.9	5.9	28	66	5.9	6008-329

Work Material / Velocity m/min

GR.1 Non alloyed steels Alloyed Steels	GR.6 Iron	GR.9 Copper	GR.10 Aluminium	GR.11 Plastics
50-80	70-100	100-180	100-250	80-200

ORDER NO.	Dc h7	Lc mm	L mm	d mm	CODE NO.
VDD12-6.0	6.0	28	66	6.0	6008-330
VDD12-6.1	6.1	31	70	6.1	6008-331
VDD12-6.2	6.2	31	70	6.2	6008-332
VDD12-6.3	6.3	31	70	6.3	6008-333
VDD12-6.4	6.4	31	70	6.4	6008-334
VDD12-6.5	6.5	31	70	6.5	6008-335
VDD12-6.6	6.6	31	70	6.6	6008-336
VDD12-6.7	6.7	31	70	6.7	6008-337
VDD12-6.8	6.8	34	74	6.8	6008-338
VDD12-6.9	6.9	34	74	6.9	6008-339
VDD12-7.0	7.0	34	74	7.0	6008-340
VDD12-7.1	7.1	34	74	7.1	6008-341
VDD12-7.2	7.2	34	74	7.2	6008-342
VDD12-7.3	7.3	34	74	7.3	6008-343
VDD12-7.4	7.4	34	74	7.4	6008-344
VDD12-7.5	7.5	34	74	7.5	6008-345
VDD12-7.6	7.6	37	79	7.6	6008-346
VDD12-7.7	7.7	37	79	7.7	6008-347
VDD12-7.8	7.8	37	79	7.8	6008-348
VDD12-7.9	7.9	37	79	7.9	6008-349
VDD12-8.0	8.0	37	79	8.0	6008-350
VDD12-8.1	8.1	37	79	8.1	6008-351
VDD12-8.2	8.2	37	79	8.2	6008-352
VDD12-8.3	8.3	37	79	8.3	6008-353
VDD12-8.4	8.4	37	79	8.4	6008-354
VDD12-8.5	8.5	37	79	8.5	6008-355
VDD12-8.6	8.6	40	84	8.6	6008-356
VDD12-8.7	8.7	40	84	8.7	6008-357
VDD12-8.8	8.8	40	84	8.8	6008-358
VDD12-8.9	8.9	40	84	8.9	6008-359
VDD12-9.0	9.0	40	84	9.0	6008-360
VDD12-9.1	9.1	40	84	9.1	6008-361
VDD12-9.2	9.2	40	84	9.2	6008-362
VDD12-9.3	9.3	40	84	9.3	6008-363
VDD12-9.4	9.4	40	84	9.4	6008-364
VDD12-9.5	9.5	40	84	9.5	6008-365
VDD12-9.6	9.6	43	89	9.6	6008-366
VDD12-9.7	9.7	43	89	9.7	6008-367
VDD12-9.8	9.8	43	89	9.8	6008-368
VDD12-9.9	9.9	43	89	9.9	6008-369
VDD12-10.0	10.0	43	89	10.0	6008-370
VDD12-10.2	10.2	43	89	10.2	6008-371
VDD12-10.5	10.5	43	89	10.5	6008-372
VDD12-11.0	11.0	47	95	11.0	6008-373
VDD12-11.5	11.5	47	95	11.5	6008-374
VDD12-12.0	12.0	51	102	12.0	6008-375
VDD12-13.0	13.0	51	102	13.0	6008-376