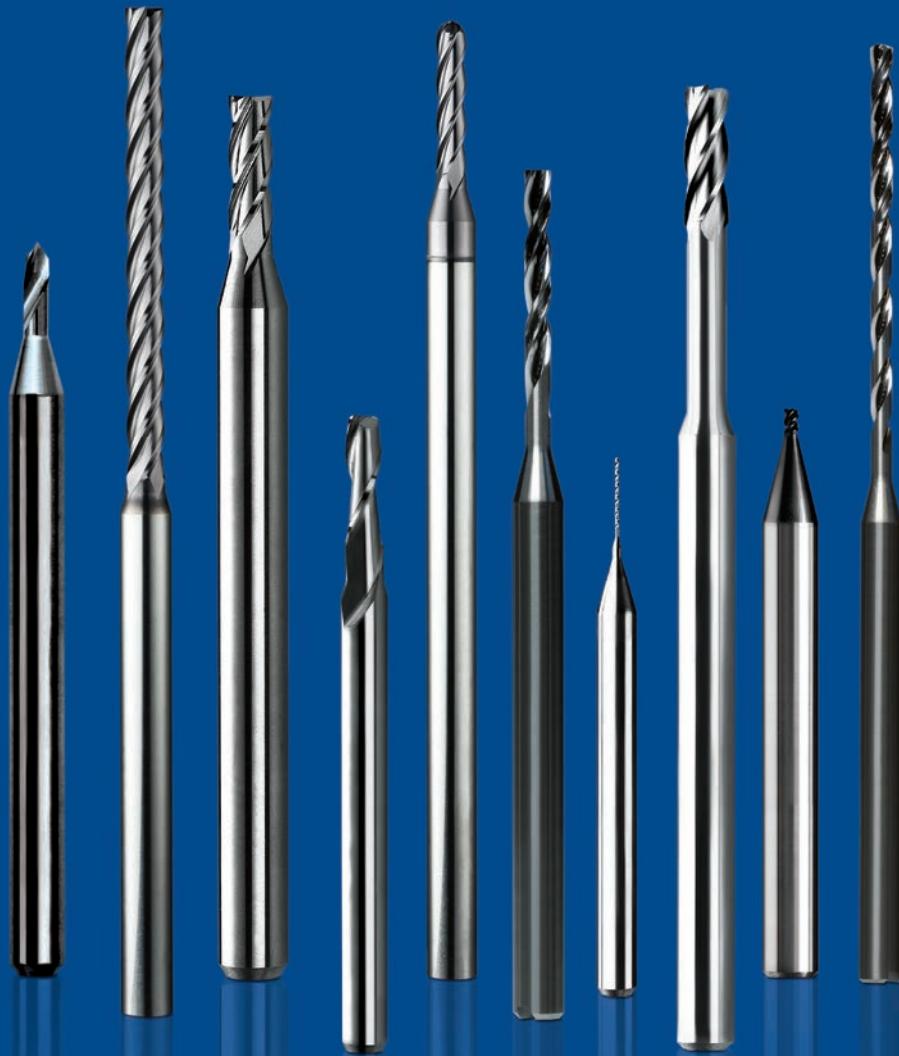




VALUE AT THE SPINDLE®

Micro Tool Catalog



New Expanded Offering

www.sgsmicrotools.com

ISO 9001:2015 Certified



KYOCERA SGS Precision Tools (KSPT) is an ISO-certified manufacturer of industry leading round solid carbide cutting tools. State of the art manufacturing and warehouse facilities have the capacity and processes to meet the quality and delivery demands of customers in all markets around the world. Complete inspections performed within its metallurgical lab and manufacturing quality departments ensure the use of high quality carbide and reliable manufacturing consistency regardless of when a cutting tool is produced.

KSPT is proud to have pioneered some of the world's most advanced cutting technologies due to rigorous testing of tools, coatings, and materials within its Global Innovation Center. It is this commitment to innovation that has launched patented products and technologies like the Z-Carb with its variable geometry and cutting edge preparation, Series 43 APR® and APF® ultra high performance aluminum cutting tools, and the JetStream coolant technology.

SGS has become an important part of the KYOCERA Precision Tools family, and while the name has changed, one thing has not. Its dedicated people and their relentless commitment to the customer. KSPT Technical Sales Engineers, Application Specialists, and Distribution Partners blanket the globe, delivering reliable service and support to all market segments. It is these people and products that drive innovative application strategies and cutting tool technologies into the end user, continually exceeding expectations and providing the most Value at the Spindle®.



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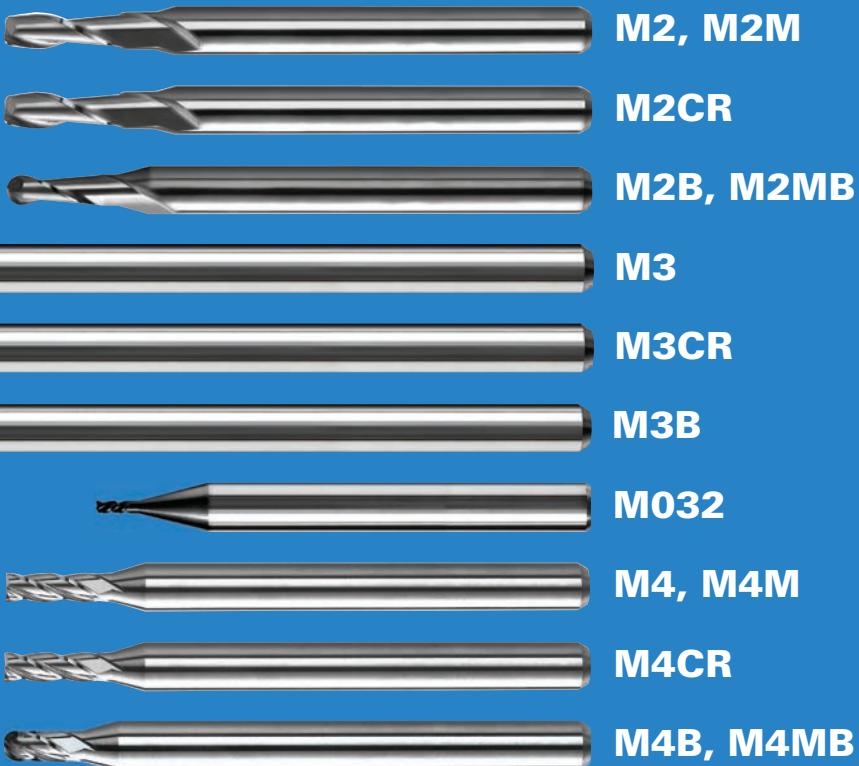
KSPT MICRO END MILLS

SMALL TOOLS. EPIC PROPORTIONS.

KYOCERA SGS Precision Tools (KSPT) commitment to providing superior quality round solid carbide cutting tools is unwavering, and these efforts are being taken one step further by introducing an impressive micro tool expansion. With a staggering expansion of over 2,500 tools in various lengths of cut, reach variations, end configurations and coating options, the portfolio can satisfy a variety of machining applications tailored for small diameter milling environments. Explore the portfolio below and discover how these small tools can deliver epic VALUE AT THE SPINDLE®!

EXPANSION HIGHLIGHTS:

- 2, 3, and 4 flutes in square, corner radii, and ball nose end configurations options standard
- Lengths of cut ranging from 1.5 times diameter through 12 times diameter
- Expansive reach options ranging from 3 times diameter through 25 times diameter overall reach
- Fractional tools on 1/8" common shank and metric tools on 3MM and 4MM shanks to suit global application demands
- Uncoated options for tools in expanded and legacy portfolio
- Offered in Ti-NAMITE®-A coating for superior chip flow at low spindle speeds in a variety of applications
- All micro tools are manufactured in accordance with KSPT ISO 9001: 2015 quality standards



CASE STUDY M4 8XD MICRO END MILL

INDUSTRY

AEROSPACE

MATERIAL

347 Stainless Steel (28 HRc Hardness)

PRODUCT

M4 8XD Micro End Mills

APPLICATION

Plunging

COMPETITOR

3 Flute Extended Reach Micro End Mill

COOLANT

Soluble Flood

TOOL INFORMATION

0.07" Dia / 0.21" LOC / 2" OAL

GOALS

The goals of this study were to significantly reduce job cost through the implementation of superior tooling and increased manufacturing efficiencies.

STRATEGY

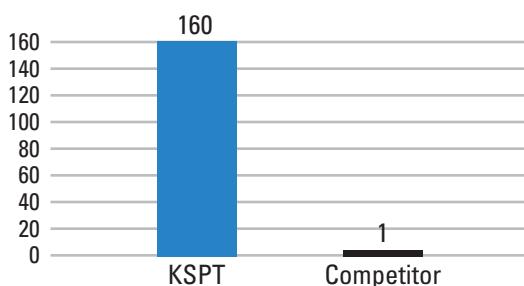
KSPT approached the job with a 4 flute 8XD Micro End Mill. The four flute design allows for higher feed rates and decreased deflection, improving productivity and surface finish.

	KSPT	COMPETITOR
TOOL DIAMETER	.07"	.07
SPEED	6600 RPM	3400 RPM
FEED	4 IPM	2 IPM
RADIAL CUT (AE)	N/A	N/A
AXIAL CUT (AP)	0.38	0.38
CYCLE TIME	6 SECONDS	11.4 SECONDS

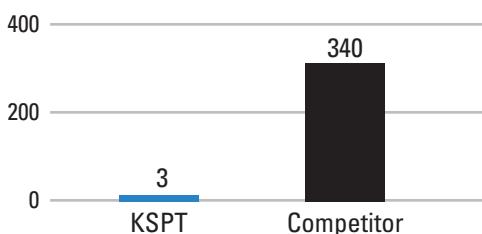
RESULTS

The overall findings of this study indicate **KSPT's 4 flute micro end mill blew away the competitor's 3 flute tool** in efficiency and effectiveness. **KSPT's tool was able to capacitate a 48% higher speed and a 50% greater feed rate**. Those combined efficiencies were able to **cut the cycle time in half!** Because of the higher quality tool, the customer was able to **produce 160 parts per KSPT tool**. The competitor's 3 flute end mill was only able to produce 1 part per tool. Thus, the **tool change cost was reduced by over 99%**! Additionally, since KSPT only used 3 total tools to complete the job, the customer benefited from a **new tool cost reduction by over 99%**. The **M4 8XD 4 flute micro end mill ultimately saved the customer a grand total of \$12,030.34**, resulting in a **98.88% cost reduction!** These tools, albeit small, are an epic step forward for micro machining.

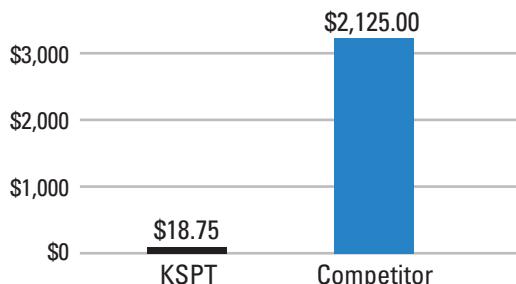
TOTAL PARTS AVAILABLE PERTOOL



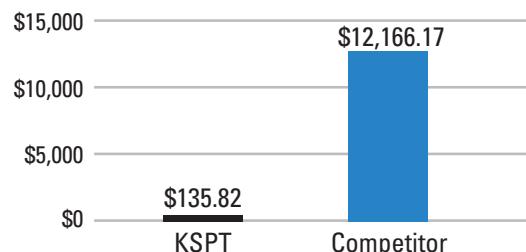
NEW TOOLS REQUIRED TO COMPLETE THE JOB



TOOL CHANGE COST



TOTAL COST



KSPT MICRO DRILLS

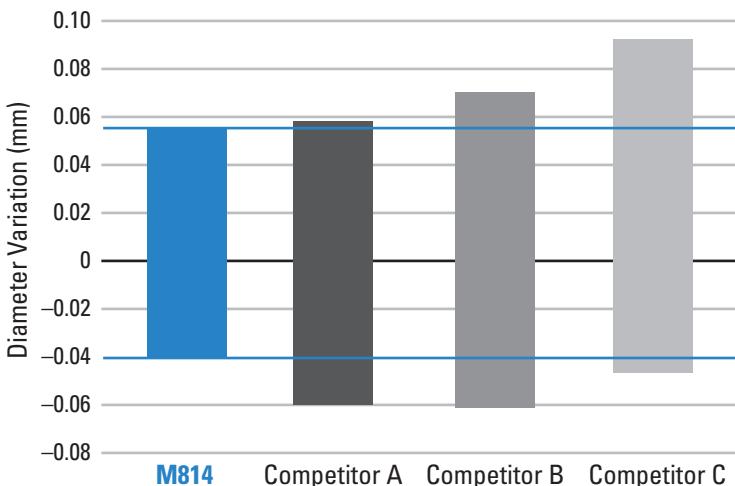
SMALL TOOLS. EPIC PROPORTIONS.

KYOCERA SGS Precision Tools (KSPT) commitment to providing superior quality round solid carbide cutting tools is unwavering, and these efforts are being taken one step further by introducing an impressive micro tool expansion. Within the expansion, KSPT introduces a new lineup of micro drills totaling more than 1,400 tools with a variety of coolant and length options to meet the demands of global hole making applications. Explore the portfolio below and discover how these small tools can deliver epic VALUE AT THE SPINDLE®!

DRILL PORTFOLIO HIGHLIGHTS:

- 2 flutes for optimal chip evacuation and cutting edge strength
- Internal coolant options on select series promotes controlled and consistent operating temperatures
- Lengths of cut ranging from 3 times diameter through 15 times diameter
- Fractional tools on 1/8" common shank and metric tools on 3MM and 4MM shanks to suit global market demands
- Uncoated options standard in select series
- Offered with Ti-NAMITE®-A coating for superior tool life and all-around value across a variety of applications
- Select series offered in new Ti-NAMITE®-Cr (AlCrN) coating for exceptional wear resistance in wet and dry drilling of cast iron and steel materials up to 52 HRc
- All micro tools are manufactured in accordance with KSPT ISO 9001: 2015 quality standards

HOLE DIAMETER VARIATION
SERIES M814



	No. of Holes	Dia. Variation (mm)
M814	600	0.0937
Competitor A	600	0.1141
Competitor B	269 (Broken)	0.1281
Competitor C	600	0.1347

Cutting Conditions:

N = 6468 rpm, Vf = 575 mm/min

Drill Diameter 0,3 mm

Drilling Depth 25,4 mm, 17-4PH-900

M814

- Split point and double margin design provide superior hole finish and size control
- Coolant hole feature allows straight through drilling without a peck cycle
- High-performance Ti-NAMITE®-Cr coating and mirror polished fluting increase tool life and productivity in moderate-to-difficult workpiece materials
- Available from stock in a selection of popular lengths and diameters
- Application specific sub-micron grain carbide designed specifically for micro-tool applications
- Manufactured in accordance with KSPT ISO certified quality procedures



M814 8XD



M814 15XD

M105

- 4-facet point design stabilizes on entry for superior hole size control and tool life
- Mirror surface finishes improve chip flow as hole depth increases
- Ti-NAMITE®-A coating and uncoated options for the ultimate performance in a variety of ferrous and non-ferrous workpiece materials
- Available from stock in a selection of popular lengths and diameters
- Application specific sub-micron grain carbide designed specifically for micro-tool applications
- Manufactured in accordance with KSPT ISO certified quality procedures



M105

M080 & M081

- 4-facet point design, stub length, and mirror finish provide the highest quality spot
- Ti-NAMITE®-A coating and uncoated options for the ultimate performance and tool life in a variety of ferrous and non-ferrous workpiece materials
- Available from stock in all popular diameters and point configurations
- Application specific sub-micron grain carbide designed specifically for micro-tool applications
- Manufactured in accordance with KSPT ISO certified quality procedures



M080



M081

M226 & L226

- 4-facet point design stabilizes on entry for superior hole size control and tool life (>.08mm)
- Mirror surface finishes improve chip flow as hole depth increases
- Ti-NAMITE®-A coating and uncoated options for the ultimate performance in a variety of ferrous and non-ferrous workpiece materials
- Right and left hand cut available from stock in a wide selection of popular lengths and diameters
- Application specific sub-micron grain carbide designed specifically for micro-tool applications
- Manufactured in accordance with KSPT ISO certified quality procedures



M226



L226

KSPT COATINGS

Ti-NAMITE-A

With excellent thermal and chemical resistance, Ti-NAMITE®-A (AlTiN) allows for dry cutting and improvements in performance of carbide. The coating has a high hardness giving ultimate protection against abrasive wear and erosion. Ideal for cast iron, high temperature alloys, steels, and stainless steel applications.

Hardness (HV): 3700

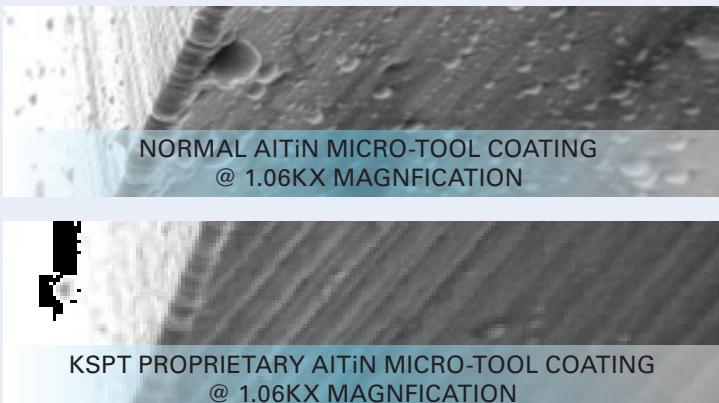
Oxidation Temperature: 1100°C / 2010°F

Coefficient of Friction: 0.30

Thickness: 1 – 4 Microns (based on tool diameter)

KYOCERA SGS PRECISION TOOLS AlTiN COATING PERFORMANCE (LAB RESULTS)

SEM photography shows the KSPT proprietary coating method provides a significant reduction in macro particle deposition on the tool surface, which contributes to increased performance due to smoother chip flow. Another benefit of the KSPT micro-tool coating is a significant reduction in edge rounding due to excessive thickness, typical of most normal coatings.



Ti-NAMITE CR

With very high wear resistance and excellent hot hardness, Ti-NAMITE®-Cr (AlCrN) allows for wet and dry machining versatility at the highest of cutting speeds for increased machine utilization and productivity. The coating provides optimal thermal shock stability and is ideal for cast iron and steel applications up to 52 HRc.

Hardness (HV): 3200

Oxidation Temperature: 1100°C / 2010°F

Coefficient of Friction: 0.35

Thickness: 1 – 4 Microns (based on tool diameter)

Common Legend

TO ORDER: Please specify quantity and EDP number.

RETURN POLICY: An RMA number must accompany all product returns. Contact your Customer Service Representative for an RMA number.

REGULATION SAFETY GLASSES SHOULD ALWAYS BE WORN WHEN USING HIGH-SPEED CUTTING EQUIPMENT



WARNING: This product can expose you to chemicals including Cobalt, which is known to the State of California to cause cancer. For more information go to www.p65warnings.ca.gov

MATERIALS

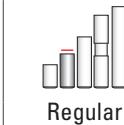


END MILLS

TOOL LENGTH



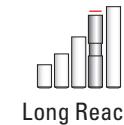
Stub



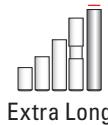
Regular



Long



Long Reach



Extra Long

FLUTES



2 Flutes



3 Flutes



4 Flutes

END CONFIGURATIONS



Ball



Corner



Square

SHANK TYPE



Common

HELIX ANGLE



Right Spiral



Profile Angle

RAKE ANGLE



Positive

All tools are in Right Cut Direction unless noted

DRILLS

SHANK TYPE



Common



Straight

HELIX ANGLES



Right Spiral



Left Spiral

COOLANT OPTIONS



Internal Coolant



External Coolant

POINT ANGLE



Drill Point

REACH

1.5xD

1.5xD Reach

3xD

3xD Reach

5xD

5xD Reach

8xD

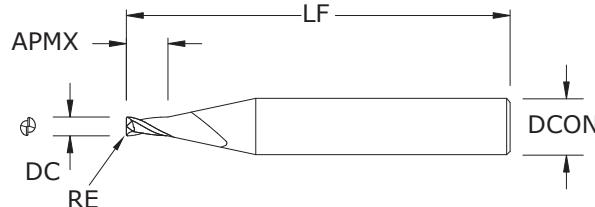
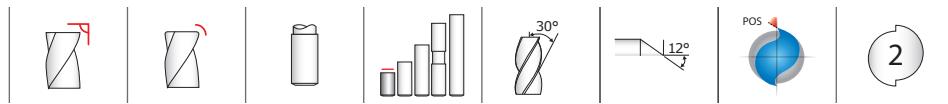
8xD Reach

12xD

12xD Reach

15xD

15xD Reach



New Expanded Tools

M2 • M2CR 1.5xD

FRACTIONAL SERIES

- Two flute design is ideal for softer alloyed, non-ferrous material applications that require slotting or involve heavy chip loads.
- Enhanced corner geometry with tight tolerance corner radii.
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
- High performance carbide substrate designed specifically for Micro Tool applications.
- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.
- All tools in stock to meet customer order requirements.
- All micro tools are manufactured in accordance with the KSPT ISO certified quality procedures.

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	CORNER RADIUS RE	EDP NO.	
					UNCOATED	TI-NAMITE-A (AITIN)
0.004	1/8	0.006	1-1/2	—	04004	04000
0.005	1/8	0.008	1-1/2	—	00301	02201
0.006	1/8	0.009	1-1/2	—	00302	02202
0.007	1/8	0.011	1-1/2	—	00303	02203
0.008	1/8	0.012	1-1/2	—	00304	02204
0.009	1/8	0.014	1-1/2	—	00305	02205
0.010	1/8	0.015	1-1/2	—	00306	02206
0.011	1/8	0.017	1-1/2	—	00307	02207
0.012	1/8	0.018	1-1/2	—	00308	02208
0.013	1/8	0.020	1-1/2	—	00309	02209
0.014	1/8	0.021	1-1/2	—	00310	02210
0.015	1/8	0.023	1-1/2	—	00311	02211
0.015	1/8	0.023	1-1/2	0.003	08500	08641
0.016	1/8	0.024	1-1/2	—	00312	02212
0.017	1/8	0.026	1-1/2	—	00313	02213
0.018	1/8	0.027	1-1/2	—	00314	02214
0.019	1/8	0.029	1-1/2	—	00315	02215
0.020	1/8	0.030	1-1/2	—	00316	02216
0.020	1/8	0.030	1-1/2	0.003	08502	08643
0.020	1/8	0.030	1-1/2	0.005	08504	08645
0.021	1/8	0.032	1-1/2	—	00317	02217
0.022	1/8	0.033	1-1/2	—	00318	02218
0.023	1/8	0.035	1-1/2	—	00319	02219
0.024	1/8	0.036	1-1/2	—	00320	02220
0.025	1/8	0.038	1-1/2	—	00321	02221
0.025	1/8	0.038	1-1/2	0.010	08505	08646
0.026	1/8	0.039	1-1/2	—	00322	02222
0.027	1/8	0.041	1-1/2	—	00323	02223
0.028	1/8	0.042	1-1/2	—	00324	02224
0.029	1/8	0.044	1-1/2	—	00325	02225
0.030	1/8	0.045	1-1/2	—	00326	02226
0.030	1/8	0.045	1-1/2	0.010	08507	08648
0.031	1/8	0.047	1-1/2	—	00327	02227
0.032	1/8	0.048	1-1/2	—	00328	02228
0.033	1/8	0.050	1-1/2	—	00329	02229
0.034	1/8	0.051	1-1/2	—	00330	02230

continued on next page

TOLERANCES (inch)

.004-.120 DIAMETER

DC = +0.000/-0.001

DCON = h6

RE = +0.0000/-0.0005

STEELS

STAINLESS STEELS

CAST IRON

HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES

New Expanded Tools

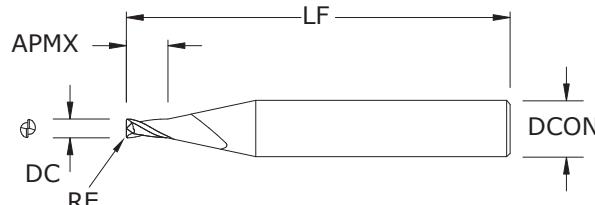
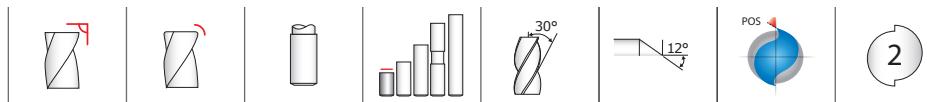
**M2 • M2CR
1.5xD**

FRACTIONAL SERIES

continued

inch					EDP NO.	
CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	CORNER RADIUS RE	UNCOATED	TI-NAMITE-A (AITIN)
0.035	1/8	0.053	1-1/2	—	00331	02231
0.035	1/8	0.053	1-1/2	0.005	08509	08650
0.035	1/8	0.053	1-1/2	0.010	08511	08652
0.036	1/8	0.054	1-1/2	—	00332	02232
0.037	1/8	0.056	1-1/2	—	00333	02233
0.038	1/8	0.057	1-1/2	—	00334	02234
0.039	1/8	0.059	1-1/2	—	00335	02235
0.040	1/8	0.060	1-1/2	—	00336	02236
0.040	1/8	0.060	1-1/2	0.005	08513	08654
0.040	1/8	0.060	1-1/2	0.010	08515	08656
0.041	1/8	0.062	1-1/2	—	00337	02368
0.042	1/8	0.063	1-1/2	—	00338	02369
0.043	1/8	0.065	1-1/2	—	00339	02370
0.044	1/8	0.066	1-1/2	—	00340	02371
0.045	1/8	0.068	1-1/2	—	00341	02372
0.045	1/8	0.068	1-1/2	0.005	08517	08658
0.045	1/8	0.068	1-1/2	0.010	08519	08660
0.046	1/8	0.069	1-1/2	—	00342	02373
0.047	1/8	0.071	1-1/2	—	00343	02374
0.048	1/8	0.072	1-1/2	—	00344	02375
0.049	1/8	0.074	1-1/2	—	00345	02376
0.050	1/8	0.075	1-1/2	—	00346	02377
0.050	1/8	0.075	1-1/2	0.005	08521	08662
0.050	1/8	0.075	1-1/2	0.010	08523	08664
0.050	1/8	0.075	1-1/2	0.015	08525	08666
0.051	1/8	0.077	1-1/2	—	00347	02378
0.052	1/8	0.078	1-1/2	—	00348	02379
0.053	1/8	0.080	1-1/2	—	00349	02380
0.054	1/8	0.081	1-1/2	—	00350	02381
0.055	1/8	0.083	1-1/2	—	00351	02382
0.055	1/8	0.083	1-1/2	0.005	08527	08668
0.055	1/8	0.083	1-1/2	0.010	08529	08670
0.055	1/8	0.083	1-1/2	0.015	08531	08672
0.056	1/8	0.084	1-1/2	—	00352	02383
0.057	1/8	0.086	1-1/2	—	00353	02384
0.058	1/8	0.087	1-1/2	—	00354	02385

continued on next page



New Expanded Tools

M2 • M2CR 1.5xD

FRACTIONAL SERIES

continued

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	inch		EDP NO.	
			OVERALL LENGTH LF	CORNER RADIUS RE	UNCOATED	TI-NAMITE-A (AITIN)
0.059	1/8	0.089	1-1/2	—	00355	02386
0.060	1/8	0.090	1-1/2	—	00356	02387
0.060	1/8	0.090	1-1/2	0.005	08533	08674
0.060	1/8	0.090	1-1/2	0.010	08535	08676
0.060	1/8	0.090	1-1/2	0.015	08537	08678
0.062	1/8	0.093	1-1/2	—	00357	02388
0.065	1/8	0.098	1-1/2	—	00358	02389
0.065	1/8	0.098	1-1/2	0.005	08539	08680
0.065	1/8	0.098	1-1/2	0.010	08541	08682
0.065	1/8	0.098	1-1/2	0.015	08543	08684
0.070	1/8	0.105	1-1/2	—	00359	02390
0.070	1/8	0.105	1-1/2	0.005	08545	08686
0.070	1/8	0.105	1-1/2	0.010	08547	08688
0.070	1/8	0.105	1-1/2	0.015	08549	08690
0.075	1/8	0.112	1-1/2	—	04006	04002
0.075	1/8	0.113	1-1/2	0.005	08551	08692
0.075	1/8	0.113	1-1/2	0.010	08553	08694
0.075	1/8	0.113	1-1/2	0.015	08555	08696
0.075	1/8	0.113	1-1/2	0.020	08557	08698
0.078	1/8	0.117	1-1/2	—	00360	02391
0.080	1/8	0.120	1-1/2	—	00361	02392
0.080	1/8	0.120	1-1/2	0.005	08559	08700
0.080	1/8	0.120	1-1/2	0.010	08561	08702
0.080	1/8	0.120	1-1/2	0.015	08563	08704
0.080	1/8	0.120	1-1/2	0.020	08565	08706
0.085	1/8	0.128	1-1/2	—	00362	02393
0.085	1/8	0.128	1-1/2	0.005	08567	08708
0.085	1/8	0.128	1-1/2	0.010	08569	08710
0.085	1/8	0.128	1-1/2	0.015	08571	08712
0.085	1/8	0.128	1-1/2	0.020	08573	08714
0.090	1/8	0.135	1-1/2	—	00363	02394
0.090	1/8	0.135	1-1/2	0.005	08575	08716
0.090	1/8	0.135	1-1/2	0.010	08577	08718
0.090	1/8	0.135	1-1/2	0.015	08579	08720
0.090	1/8	0.135	1-1/2	0.020	08581	08722
0.093	1/8	0.140	1-1/2	—	00364	02395

continued on next page

TOLERANCES (inch)**.004-.120 DIAMETER**

DC = +0.000/-0.001

DCON = h6

RE = +0.0000/-0.0005

STEELS

STAINLESS STEELS

CAST IRON

HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES

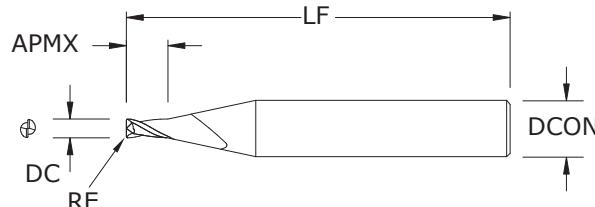
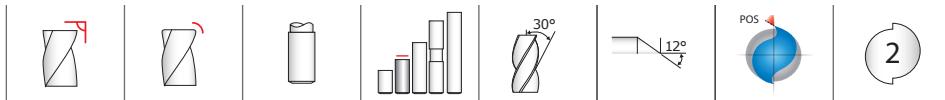
New Expanded Tools

**M2 • M2CR
1.5xD**

FRACTIONAL SERIES

continued

inch					EDP NO.	
CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	CORNER RADIUS RE	UNCOATED	TI-NAMITE-A (AITIN)
0.095	1/8	0.143	1-1/2	—	00365	02396
0.095	1/8	0.143	1-1/2	0.005	08583	08724
0.095	1/8	0.143	1-1/2	0.010	08585	08726
0.095	1/8	0.143	1-1/2	0.015	08587	08728
0.095	1/8	0.143	1-1/2	0.020	08589	08730
0.100	1/8	0.150	1-1/2	—	00366	02397
0.100	1/8	0.150	1-1/2	0.005	08591	08732
0.100	1/8	0.150	1-1/2	0.010	08593	08734
0.100	1/8	0.150	1-1/2	0.015	08595	08736
0.100	1/8	0.150	1-1/2	0.020	08597	08738
0.100	1/8	0.150	1-1/2	0.030	08599	08740
0.105	1/8	0.158	1-1/2	—	00367	02398
0.105	1/8	0.158	1-1/2	0.005	08601	08742
0.105	1/8	0.158	1-1/2	0.010	08603	08744
0.105	1/8	0.158	1-1/2	0.015	08605	08746
0.105	1/8	0.158	1-1/2	0.020	08607	08748
0.105	1/8	0.158	1-1/2	0.030	08609	08750
0.110	1/8	0.165	1-1/2	—	00368	02399
0.110	1/8	0.165	1-1/2	0.005	08611	08752
0.110	1/8	0.165	1-1/2	0.010	08613	08754
0.110	1/8	0.165	1-1/2	0.015	08615	08756
0.110	1/8	0.165	1-1/2	0.020	08617	08758
0.110	1/8	0.165	1-1/2	0.030	08619	08760
0.115	1/8	0.173	1-1/2	—	00369	02400
0.115	1/8	0.173	1-1/2	0.005	08621	08762
0.115	1/8	0.173	1-1/2	0.010	08623	08764
0.115	1/8	0.173	1-1/2	0.015	08625	08766
0.115	1/8	0.173	1-1/2	0.020	08627	08768
0.115	1/8	0.173	1-1/2	0.030	08629	08770
0.120	1/8	0.180	1-1/2	—	00370	02401
0.120	1/8	0.180	1-1/2	0.005	08631	08772
0.120	1/8	0.180	1-1/2	0.010	08633	08774
0.120	1/8	0.180	1-1/2	0.015	08635	08776
0.120	1/8	0.180	1-1/2	0.020	08637	08778
0.120	1/8	0.180	1-1/2	0.030	08639	08780



New Expanded Tools

M2 • M2CR 3xD

FRACTIONAL SERIES

- Two flute design is ideal for softer alloyed, non-ferrous material applications that require slotting or involve heavy chip loads.
- Enhanced corner geometry with tight tolerance corner radii.
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
- High performance carbide substrate designed specifically for Micro Tool applications.
- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.
- All tools in stock to meet customer order requirements.
- All micro tools are manufactured in accordance with the KSPT ISO certified quality procedures.

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	CORNER RADIUS RE	EDP NO.	
					UNCOATED	TI-NAMITE-A (AITIN)
0.004	1/8	0.012	1-1/2	—	04005	04001
0.005	1/8	0.015	1-1/2	—	00811	02275
0.006	1/8	0.018	1-1/2	—	00812	02276
0.007	1/8	0.021	1-1/2	—	00813	02277
0.008	1/8	0.024	1-1/2	—	00814	02278
0.009	1/8	0.027	1-1/2	—	00815	02279
0.010	1/8	0.030	1-1/2	—	00816	02280
0.011	1/8	0.033	1-1/2	—	00817	02281
0.012	1/8	0.036	1-1/2	—	00818	02282
0.013	1/8	0.039	1-1/2	—	00819	02283
0.014	1/8	0.042	1-1/2	—	00820	02284
0.015	1/8	0.045	1-1/2	0.003	08501	08642
0.016	1/8	0.048	1-1/2	—	00822	02286
0.017	1/8	0.051	1-1/2	—	00823	02287
0.018	1/8	0.054	1-1/2	—	00824	02288
0.019	1/8	0.057	1-1/2	—	00825	02289
0.020	1/8	0.060	1-1/2	—	00826	02290
0.020	1/8	0.060	1-1/2	0.003	08503	08644
0.020	1/8	0.060	1-1/2	0.005	04020	04021
0.021	1/8	0.063	1-1/2	—	00827	02291
0.022	1/8	0.066	1-1/2	—	00828	02292
0.023	1/8	0.069	1-1/2	—	00829	02293
0.024	1/8	0.072	1-1/2	—	00830	02294
0.025	1/8	0.075	1-1/2	—	00831	02295
0.025	1/8	0.075	1-1/2	0.005	04022	04023
0.025	1/8	0.075	1-1/2	0.010	08506	08647
0.026	1/8	0.078	1-1/2	—	00832	02296
0.027	1/8	0.081	1-1/2	—	00833	02297
0.028	1/8	0.084	1-1/2	—	00834	02298
0.029	1/8	0.087	1-1/2	—	00835	02299
0.030	1/8	0.090	1-1/2	—	00836	02300
0.030	1/8	0.090	1-1/2	0.010	08508	08649
0.031	1/8	0.093	1-1/2	—	00837	02301
0.032	1/8	0.096	1-1/2	—	00838	02302
0.033	1/8	0.099	1-1/2	—	00839	02303

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TOLERANCES (inch)

.004-.120 DIAMETER

DC = +0.000/-0.001

DCON = h6

RE = +0.0000/-0.0005

STEELS

STAINLESS STEELS

CAST IRON

HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES

New Expanded Tools

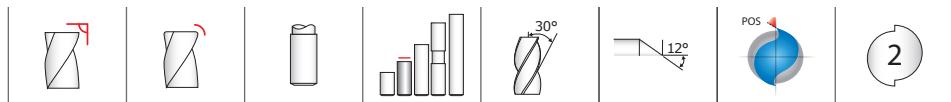
**M2 • M2CR
3xD**

FRACTIONAL SERIES

continued

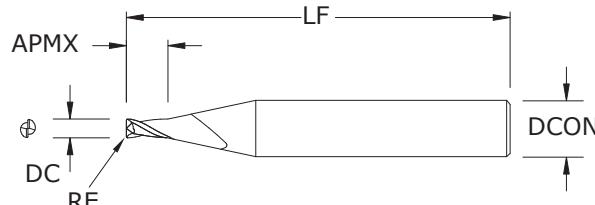
inch					EDP NO.	
CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	CORNER RADIUS RE	UNCOATED	TI-NAMITE-A (AITIN)
0.034	1/8	0.102	1-1/2	—	00840	02304
0.035	1/8	0.105	1-1/2	—	00841	02305
0.035	1/8	0.105	1-1/2	0.005	08510	08651
0.035	1/8	0.105	1-1/2	0.010	08512	08653
0.036	1/8	0.108	1-1/2	—	00842	02306
0.037	1/8	0.111	1-1/2	—	00843	02307
0.038	1/8	0.114	1-1/2	—	00844	02308
0.039	1/8	0.117	1-1/2	—	00845	02309
0.040	1/8	0.120	1-1/2	—	00846	02310
0.040	1/8	0.120	1-1/2	0.005	08514	08655
0.040	1/8	0.120	1-1/2	0.010	08516	08657
0.041	1/8	0.123	1-1/2	—	00479	02436
0.042	1/8	0.126	1-1/2	—	00480	02437
0.043	1/8	0.129	1-1/2	—	00481	02438
0.044	1/8	0.132	1-1/2	—	00482	02439
0.045	1/8	0.135	1-1/2	—	00483	02440
0.045	1/8	0.135	1-1/2	0.005	08518	08659
0.045	1/8	0.135	1-1/2	0.010	08520	08661
0.046	1/8	0.138	1-1/2	—	00484	02441
0.047	1/8	0.141	1-1/2	—	00485	02442
0.048	1/8	0.144	1-1/2	—	00486	02443
0.049	1/8	0.147	1-1/2	—	00487	02444
0.050	1/8	0.150	1-1/2	—	00488	02445
0.050	1/8	0.150	1-1/2	0.005	08522	08663
0.050	1/8	0.150	1-1/2	0.010	08524	08665
0.050	1/8	0.150	1-1/2	0.015	08526	08667
0.051	1/8	0.153	1-1/2	—	00489	02446
0.052	1/8	0.156	1-1/2	—	00490	02447
0.053	1/8	0.159	1-1/2	—	00491	02448
0.054	1/8	0.162	1-1/2	—	00492	02449
0.055	1/8	0.165	1-1/2	—	00493	02450
0.055	1/8	0.165	1-1/2	0.005	08528	08669
0.055	1/8	0.165	1-1/2	0.010	08530	08671
0.055	1/8	0.165	1-1/2	0.015	08532	08673
0.056	1/8	0.168	1-1/2	—	00494	02451
0.057	1/8	0.171	1-1/2	—	00495	02452

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M2 • M2CR • 3xD

**MICRO
SGS®**
Solid Carbide Tools

KYOCERA



New Expanded Tools

M2 • M2CR 3xD

FRACTIONAL SERIES

continued

CUTTING DIAMETER DC	SHANK DIAMETER DCON	inch			EDP NO.	
		LENGTH OF CUT APMX	OVERALL LENGTH LF	CORNER RADIUS RE	UNCOATED	TI-NAMITE-A (AITIN)
0.058	1/8	0.174	1-1/2	—	00496	02453
0.059	1/8	0.177	1-1/2	—	00865	02454
0.060	1/8	0.180	1-1/2	—	00498	02455
0.060	1/8	0.180	1-1/2	0.005	08534	08675
0.060	1/8	0.180	1-1/2	0.010	08536	08677
0.060	1/8	0.180	1-1/2	0.015	08538	08679
0.062	1/8	0.186	1-1/2	—	00499	02456
0.065	1/8	0.195	1-1/2	—	00500	02457
0.065	1/8	0.195	1-1/2	0.005	08540	08681
0.065	1/8	0.195	1-1/2	0.010	08542	08683
0.065	1/8	0.195	1-1/2	0.015	08544	08685
0.070	1/8	0.210	1-1/2	—	00501	02458
0.070	1/8	0.210	1-1/2	0.005	08546	08687
0.070	1/8	0.210	1-1/2	0.010	08548	08689
0.070	1/8	0.210	1-1/2	0.015	08550	08691
0.075	1/8	0.225	1-1/2	—	04007	04003
0.075	1/8	0.225	1-1/2	0.005	08552	08693
0.075	1/8	0.225	1-1/2	0.010	08554	08695
0.075	1/8	0.225	1-1/2	0.015	08556	08697
0.075	1/8	0.225	1-1/2	0.020	08558	08699
0.078	1/8	0.234	1-1/2	—	00870	02459
0.080	1/8	0.240	1-1/2	—	00503	02460
0.080	1/8	0.240	1-1/2	0.005	08560	08701
0.080	1/8	0.240	1-1/2	0.010	08562	08703
0.080	1/8	0.240	1-1/2	0.015	08564	08705
0.080	1/8	0.240	1-1/2	0.020	08566	08707
0.085	1/8	0.255	1-1/2	—	00504	02461
0.085	1/8	0.255	1-1/2	0.005	08568	08709
0.085	1/8	0.255	1-1/2	0.010	08570	08711
0.085	1/8	0.255	1-1/2	0.015	08572	08713
0.085	1/8	0.255	1-1/2	0.020	08574	08715
0.090	1/8	0.270	1-1/2	—	00505	02462
0.090	1/8	0.270	1-1/2	0.005	08576	08717
0.090	1/8	0.270	1-1/2	0.010	08578	08719
0.090	1/8	0.270	1-1/2	0.015	08580	08721
0.090	1/8	0.270	1-1/2	0.020	08582	08723

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TOLERANCES (inch)

.004-.120 DIAMETER

DC = +0.000/-0.001

DCON = h6

RE = +0.0000/-0.0005

STEELS

STAINLESS STEELS

CAST IRON

HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES

New Expanded Tools

**M2 • M2CR
3xD**

FRACTIONAL SERIES

continued

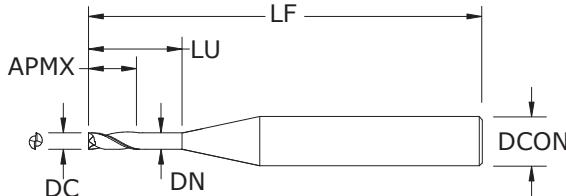
inch					EDP NO.	
CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	CORNER RADIUS RE	UNCOATED	TI-NAMITE-A (AITIN)
0.093	1/8	0.279	1-1/2	—	00506	02463
0.095	1/8	0.285	1-1/2	—	00507	02464
0.095	1/8	0.285	1-1/2	0.005	08584	08725
0.095	1/8	0.285	1-1/2	0.010	08586	08727
0.095	1/8	0.285	1-1/2	0.015	08588	08729
0.095	1/8	0.285	1-1/2	0.020	08590	08731
0.100	1/8	0.300	1-1/2	—	00508	02465
0.100	1/8	0.300	1-1/2	0.005	08592	08733
0.100	1/8	0.300	1-1/2	0.010	08594	08735
0.100	1/8	0.300	1-1/2	0.015	08596	08737
0.100	1/8	0.300	1-1/2	0.020	08598	08739
0.100	1/8	0.300	1-1/2	0.030	08600	08741
0.105	1/8	0.315	1-1/2	—	00509	02466
0.105	1/8	0.315	1-1/2	0.005	08602	08743
0.105	1/8	0.315	1-1/2	0.010	08604	08745
0.105	1/8	0.315	1-1/2	0.015	08606	08747
0.105	1/8	0.315	1-1/2	0.020	08608	08749
0.105	1/8	0.315	1-1/2	0.030	08610	08751
0.110	1/8	0.330	1-1/2	—	00878	02467
0.110	1/8	0.330	1-1/2	0.005	08612	08753
0.110	1/8	0.330	1-1/2	0.010	08614	08755
0.110	1/8	0.330	1-1/2	0.015	08616	08757
0.110	1/8	0.330	1-1/2	0.020	08618	08759
0.110	1/8	0.330	1-1/2	0.030	08620	08761
0.115	1/8	0.345	1-1/2	—	00511	02468
0.115	1/8	0.345	1-1/2	0.005	08622	08763
0.115	1/8	0.345	1-1/2	0.010	08624	08765
0.115	1/8	0.345	1-1/2	0.015	08626	08767
0.115	1/8	0.345	1-1/2	0.020	08628	08769
0.115	1/8	0.345	1-1/2	0.030	08630	08771
0.120	1/8	0.360	1-1/2	—	00512	02469
0.120	1/8	0.360	1-1/2	0.005	08632	08773
0.120	1/8	0.360	1-1/2	0.010	08634	08775
0.120	1/8	0.360	1-1/2	0.015	08636	08777
0.120	1/8	0.360	1-1/2	0.020	08638	08779
0.120	1/8	0.360	1-1/2	0.030	08640	08781

FRACTIONAL

M2 • 3xD • 8xD Overall Reach

**MICRO
SGS®**
Solid Carbide Tools

KYOCERA



New Expanded Tools

M2 • 3xD 8xD

FRACTIONAL SERIES

- Two flute design is ideal for softer alloyed, non-ferrous material applications that require slotting or involve heavy chip loads.
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
- High performance carbide substrate designed specifically for Micro Tool applications.
- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.
- All tools in stock to meet customer order requirements.
- All micro tools are manufactured in accordance with the KSPT ISO certified quality procedures.

inch

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	EDP NO.
						UNCOATED TI-NAMITE-A (AlTiN)
0.010	1/8	0.030	0.080	0.009	1-1/2	09353 03400
0.015	1/8	0.045	0.120	0.014	1-1/2	09355 03401
0.020	1/8	0.060	0.160	0.018	1-1/2	09357 03402
0.025	1/8	0.075	0.200	0.023	1-1/2	09359 03403
0.030	1/8	0.090	0.240	0.028	1-1/2	09361 03404
0.031	1/8	0.093	0.248	0.029	1-1/2	09363 03405
0.035	1/8	0.105	0.280	0.032	1-1/2	09365 03406
0.040	1/8	0.120	0.320	0.037	1-1/2	09367 03407
0.045	1/8	0.135	0.360	0.042	2	09369 03408
0.047	1/8	0.141	0.376	0.044	2	09371 03409
0.050	1/8	0.150	0.400	0.047	2	09373 03410
0.055	1/8	0.165	0.440	0.051	2	09375 03411
0.060	1/8	0.180	0.480	0.056	2	09377 03412
0.062	1/8	0.186	0.496	0.058	2	09379 03413
0.065	1/8	0.195	0.520	0.061	2	09381 03414
0.070	1/8	0.210	0.560	0.065	2	09383 03415
0.075	1/8	0.225	0.600	0.070	2	09385 03416
0.078	1/8	0.234	0.624	0.073	2	09387 03417
0.080	1/8	0.240	0.640	0.075	2	09389 03418
0.085	1/8	0.255	0.680	0.079	2	09391 03419
0.090	1/8	0.270	0.720	0.084	2	09393 03420
0.093	1/8	0.279	0.744	0.087	2	09395 03421
0.095	1/8	0.285	0.760	0.089	2	09397 03422
0.100	1/8	0.300	0.800	0.094	2	09399 03423
0.110	1/8	0.330	0.880	0.103	2	09401 03424
0.115	1/8	0.345	0.920	0.108	2	09403 03425
0.120	1/8	0.360	0.960	0.112	2	09405 03426

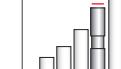
TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h6





New Expanded Tools

TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h₆

STEELS

STAINLESS STEELS

CAST IRON

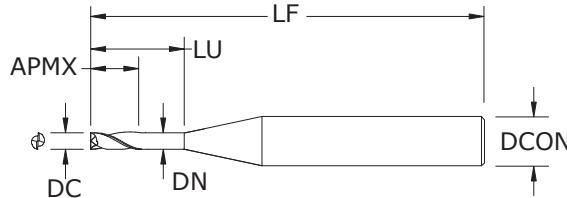
HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES



**M2 • 3xD
12xD**
FRACTIONAL SERIES

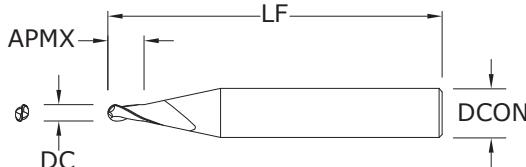
CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	EDP NO.	
						UNCOATED	TI-NAMITE-A (AlTiN)
0.010	1/8	0.030	0.120	0.009	1-1/2	09352	03427
0.015	1/8	0.045	0.180	0.014	1-1/2	09354	03428
0.020	1/8	0.060	0.240	0.018	1-1/2	09356	03429
0.025	1/8	0.075	0.300	0.023	1-1/2	09358	03430
0.030	1/8	0.090	0.360	0.028	2	09360	03431
0.031	1/8	0.093	0.372	0.029	2	09362	03432
0.035	1/8	0.105	0.420	0.032	2	09364	03433
0.040	1/8	0.120	0.480	0.037	2	09366	03434
0.045	1/8	0.135	0.540	0.042	2	09368	03435
0.047	1/8	0.141	0.564	0.044	2	09370	03436
0.050	1/8	0.150	0.600	0.047	2	09372	03437
0.055	1/8	0.165	0.660	0.051	2	09374	03438
0.060	1/8	0.180	0.720	0.056	2	09376	03439
0.062	1/8	0.186	0.744	0.058	2	09378	03440
0.065	1/8	0.195	0.780	0.061	2	09380	03441
0.070	1/8	0.210	0.840	0.065	2	09382	03442
0.075	1/8	0.225	0.900	0.070	2	09384	03443
0.078	1/8	0.234	0.936	0.073	2-1/2	09386	03444
0.080	1/8	0.240	0.960	0.075	2-1/2	09388	03445
0.085	1/8	0.255	1.020	0.079	2-1/2	09390	03446
0.090	1/8	0.270	1.080	0.084	2-1/2	09392	03447
0.093	1/8	0.279	1.116	0.087	2-1/2	09394	03448
0.095	1/8	0.285	1.140	0.089	2-1/2	09396	03449
0.100	1/8	0.300	1.200	0.094	2-1/2	09398	03450
0.110	1/8	0.330	1.320	0.103	2-1/2	09400	03451
0.115	1/8	0.345	1.380	0.108	2-1/2	09402	03452
0.120	1/8	0.360	1.440	0.112	2-1/2	09404	03453

- Two flute design is ideal for softer alloyed, non-ferrous material applications that require slotting or involve heavy chip loads.

- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.

- High performance carbide substrate designed specifically for Micro Tool applications.
- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.

- All tools in stock to meet customer order requirements.
- All micro tools are manufactured in accordance with the KSPT ISO certified quality procedures.

M2B • 1.5xD

New Expanded Tools

M2B • 1.5xD

FRACTIONAL SERIES

- Two flute design is ideal for softer alloyed, non-ferrous material applications that require slotting or involve heavy chip loads.
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
- High performance carbide substrate designed specifically for Micro Tool applications.
- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.
- All tools in stock to meet customer order requirements.
- All micro tools are manufactured in accordance with the KSPT ISO certified quality procedures.

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	EDP NO.	
				UNCOATED	TI-NAMITE-A (AITIN)
0.005	1/8	0.008	1-1/2	00669	03029
0.006	1/8	0.009	1-1/2	00670	03030
0.007	1/8	0.011	1-1/2	00671	03031
0.008	1/8	0.012	1-1/2	00672	03032
0.009	1/8	0.014	1-1/2	00673	03033
0.010	1/8	0.015	1-1/2	00674	03034
0.011	1/8	0.017	1-1/2	00675	03035
0.012	1/8	0.018	1-1/2	00676	03036
0.013	1/8	0.020	1-1/2	00677	03037
0.014	1/8	0.021	1-1/2	00678	03038
0.015	1/8	0.023	1-1/2	00679	03039
0.016	1/8	0.024	1-1/2	00680	03040
0.017	1/8	0.026	1-1/2	00681	03041
0.018	1/8	0.027	1-1/2	00682	03042
0.019	1/8	0.029	1-1/2	00683	03043
0.020	1/8	0.030	1-1/2	00684	03044
0.021	1/8	0.032	1-1/2	00685	03045
0.022	1/8	0.033	1-1/2	00686	03046
0.023	1/8	0.035	1-1/2	00687	03047
0.024	1/8	0.036	1-1/2	00688	03048
0.025	1/8	0.038	1-1/2	00689	03049
0.026	1/8	0.039	1-1/2	00690	03050
0.027	1/8	0.041	1-1/2	00691	03051
0.028	1/8	0.042	1-1/2	00692	03052
0.029	1/8	0.044	1-1/2	00693	03053
0.030	1/8	0.045	1-1/2	00694	03054
0.031	1/8	0.047	1-1/2	00695	03055
0.032	1/8	0.048	1-1/2	00696	03056
0.033	1/8	0.050	1-1/2	00697	03057
0.034	1/8	0.051	1-1/2	00698	03058
0.035	1/8	0.053	1-1/2	00699	03059
0.036	1/8	0.054	1-1/2	00700	03060
0.037	1/8	0.056	1-1/2	00701	03061
0.038	1/8	0.057	1-1/2	00702	03062
0.039	1/8	0.059	1-1/2	00703	03063
0.040	1/8	0.060	1-1/2	00704	03064

RE = 1/2 Cutting Diameter (DC)

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TOLERANCES (inch)**.005-.120 DIAMETER**

DC = +0.000/-0.001

DCON = h6

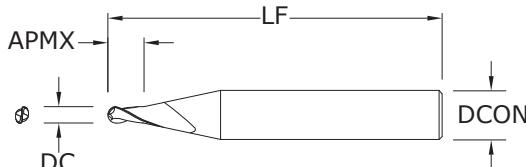


New Expanded Tools

M2B • 1.5xD
 FRACTIONAL SERIES

inch				EDP NO.		<i>continued</i>
CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	UNCOATED	TI-NAMITE-A (AITIN)	
0.041	1/8	0.062	1-1/2	00705	02504	
0.042	1/8	0.063	1-1/2	00706	02505	
0.043	1/8	0.065	1-1/2	00707	02506	
0.044	1/8	0.066	1-1/2	00708	02507	
0.045	1/8	0.068	1-1/2	00709	02508	
0.046	1/8	0.069	1-1/2	00710	02509	
0.047	1/8	0.071	1-1/2	00711	02510	
0.048	1/8	0.072	1-1/2	00712	02511	
0.049	1/8	0.074	1-1/2	00713	02512	
0.050	1/8	0.075	1-1/2	00714	02513	
0.051	1/8	0.077	1-1/2	00715	02514	
0.052	1/8	0.078	1-1/2	00716	02515	
0.053	1/8	0.080	1-1/2	00717	02516	
0.054	1/8	0.081	1-1/2	00718	02517	
0.055	1/8	0.083	1-1/2	00719	02518	
0.056	1/8	0.084	1-1/2	00720	02519	
0.057	1/8	0.086	1-1/2	00721	02520	
0.058	1/8	0.087	1-1/2	00722	02521	
0.059	1/8	0.089	1-1/2	00723	02522	
0.060	1/8	0.090	1-1/2	00724	02523	
0.062	1/8	0.093	1-1/2	00725	02524	
0.065	1/8	0.098	1-1/2	00726	02525	
0.070	1/8	0.105	1-1/2	00727	02526	
0.075	1/8	0.112	1-1/2	04010	04008	
0.078	1/8	0.117	1-1/2	00728	02527	
0.080	1/8	0.120	1-1/2	00729	02528	
0.085	1/8	0.128	1-1/2	00730	02529	
0.090	1/8	0.135	1-1/2	00731	02530	
0.093	1/8	0.140	1-1/2	00732	02531	
0.095	1/8	0.143	1-1/2	00733	02532	
0.100	1/8	0.150	1-1/2	00734	02533	
0.105	1/8	0.158	1-1/2	00735	02534	
0.110	1/8	0.165	1-1/2	00736	02535	
0.115	1/8	0.173	1-1/2	00737	02536	
0.120	1/8	0.180	1-1/2	00738	02537	

RE = 1/2 Cutting Diameter (DC)



New Expanded Tools

M2B • 3xD

FRACTIONAL SERIES

- Two flute design is ideal for softer alloyed, non-ferrous material applications that require slotting or involve heavy chip loads.
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
- High performance carbide substrate designed specifically for Micro Tool applications.
- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.
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CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	EDP NO.	
				UNCOATED	TI-NAMITE-A (AITIN)
0.005	1/8	0.015	1-1/2	00443	03103
0.006	1/8	0.018	1-1/2	00444	03104
0.007	1/8	0.021	1-1/2	00445	03105
0.008	1/8	0.024	1-1/2	00446	03106
0.009	1/8	0.027	1-1/2	00447	03107
0.010	1/8	0.030	1-1/2	00448	03108
0.011	1/8	0.033	1-1/2	00449	03109
0.012	1/8	0.036	1-1/2	00450	03110
0.013	1/8	0.039	1-1/2	00451	03111
0.014	1/8	0.042	1-1/2	00452	03112
0.015	1/8	0.045	1-1/2	00453	03113
0.016	1/8	0.048	1-1/2	00454	03114
0.017	1/8	0.051	1-1/2	00455	03115
0.018	1/8	0.054	1-1/2	00456	03116
0.019	1/8	0.057	1-1/2	00457	03117
0.020	1/8	0.060	1-1/2	00458	03118
0.021	1/8	0.063	1-1/2	00459	03119
0.022	1/8	0.066	1-1/2	00460	03120
0.023	1/8	0.069	1-1/2	00461	03121
0.024	1/8	0.072	1-1/2	00462	03122
0.025	1/8	0.075	1-1/2	00463	03123
0.026	1/8	0.078	1-1/2	00464	03124
0.027	1/8	0.081	1-1/2	00465	03125
0.028	1/8	0.084	1-1/2	00466	03126
0.029	1/8	0.087	1-1/2	00467	03127
0.030	1/8	0.090	1-1/2	00468	03128
0.031	1/8	0.093	1-1/2	00469	03129
0.032	1/8	0.096	1-1/2	00470	03130
0.033	1/8	0.099	1-1/2	00471	03131
0.034	1/8	0.102	1-1/2	00472	03132
0.035	1/8	0.105	1-1/2	00473	03133
0.036	1/8	0.108	1-1/2	00474	03134
0.037	1/8	0.111	1-1/2	00475	03135
0.038	1/8	0.114	1-1/2	00476	03136
0.039	1/8	0.117	1-1/2	00477	03137
0.040	1/8	0.120	1-1/2	00478	03138

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TOLERANCES (inch)**.005-.120 DIAMETER**

DC = +0.000/-0.001

DCON = h6



New Expanded Tools

M2B • 3xD
 FRACTIONAL SERIES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	inch		EDP NO.		<i>continued</i>
		LENGTH OF CUT APMX	OVERALL LENGTH LF	UNCOATED	TI-NAMITE-A (AITIN)	
0.041	1/8	0.123	1-1/2	00847	02572	
0.042	1/8	0.126	1-1/2	00848	02573	
0.043	1/8	0.129	1-1/2	00849	02574	
0.044	1/8	0.132	1-1/2	00850	02575	
0.045	1/8	0.135	1-1/2	00851	02576	
0.046	1/8	0.138	1-1/2	00852	02577	
0.047	1/8	0.141	1-1/2	00853	02578	
0.048	1/8	0.144	1-1/2	00854	02579	
0.049	1/8	0.147	1-1/2	00855	02580	
0.050	1/8	0.150	1-1/2	00856	02581	
0.051	1/8	0.153	1-1/2	00857	02582	
0.052	1/8	0.156	1-1/2	00858	02583	
0.053	1/8	0.159	1-1/2	00859	02584	
0.054	1/8	0.162	1-1/2	00860	02585	
0.055	1/8	0.165	1-1/2	00861	02586	
0.056	1/8	0.168	1-1/2	00862	02587	
0.057	1/8	0.171	1-1/2	00863	02588	
0.058	1/8	0.174	1-1/2	00864	02589	
0.059	1/8	0.177	1-1/2	00497	02590	
0.060	1/8	0.180	1-1/2	00866	02591	
0.062	1/8	0.186	1-1/2	00867	02592	
0.065	1/8	0.195	1-1/2	00868	02593	
0.070	1/8	0.210	1-1/2	00869	02594	
0.075	1/8	0.225	1-1/2	04011	04009	
0.078	1/8	0.234	1-1/2	00502	02595	
0.080	1/8	0.240	1-1/2	00871	02596	
0.085	1/8	0.255	1-1/2	00872	02597	
0.090	1/8	0.270	1-1/2	00873	02598	
0.093	1/8	0.279	1-1/2	00874	02599	
0.095	1/8	0.285	1-1/2	00875	02600	
0.100	1/8	0.300	1-1/2	00876	02601	
0.105	1/8	0.315	1-1/2	00877	02602	
0.110	1/8	0.330	1-1/2	00510	02603	
0.115	1/8	0.345	1-1/2	00879	02604	
0.120	1/8	0.360	1-1/2	00880	02605	

M2B • 3xD • 8xD Overall Reach



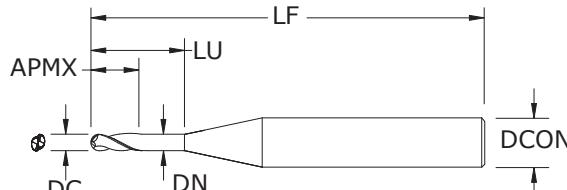
**MICRO
SGS®**
Solid Carbide Tools

KYOCERA

M2B • 3xD 8xD

FRACTIONAL SERIES

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New Expanded Tools

TOLERANCES (inch)

.010-.120 DIAMETER

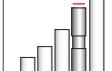
DC = +0.000/-0.001

DCON = h₆

STEELS
STAINLESS STEELS
CAST IRON
HIGH TEMP ALLOYS
TITANIUM
HARDENED STEELS
NON-FERROUS
PLASTICS/COMPOSITES

inch						EDP NO.	
CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	UNCOATED	TI-NAMITE-A (AlTiN)
0.010	1/8	0.030	0.080	0.009	1-1/2	09299	03697
0.015	1/8	0.045	0.120	0.014	1-1/2	09301	03698
0.020	1/8	0.060	0.160	0.018	1-1/2	09303	03699
0.025	1/8	0.075	0.200	0.023	1-1/2	09305	03700
0.030	1/8	0.090	0.240	0.028	1-1/2	09307	03701
0.031	1/8	0.093	0.248	0.029	1-1/2	09309	03702
0.035	1/8	0.105	0.280	0.032	1-1/2	09311	03703
0.040	1/8	0.120	0.320	0.037	1-1/2	09313	03704
0.045	1/8	0.135	0.360	0.042	2	09315	03705
0.047	1/8	0.141	0.376	0.044	2	09317	03706
0.050	1/8	0.150	0.400	0.047	2	09319	03707
0.055	1/8	0.165	0.440	0.051	2	09321	03708
0.060	1/8	0.180	0.480	0.056	2	09323	03709
0.062	1/8	0.186	0.496	0.058	2	09325	03710
0.065	1/8	0.195	0.520	0.061	2	09327	03711
0.070	1/8	0.210	0.560	0.065	2	09329	03712
0.075	1/8	0.225	0.600	0.070	2	09331	03713
0.078	1/8	0.234	0.624	0.073	2	09333	03714
0.080	1/8	0.240	0.640	0.075	2	09335	03715
0.085	1/8	0.255	0.680	0.079	2	09337	03716
0.090	1/8	0.270	0.720	0.084	2	09339	03717
0.093	1/8	0.279	0.744	0.087	2	09341	03718
0.095	1/8	0.285	0.760	0.089	2	09343	03719
0.100	1/8	0.300	0.800	0.094	2	09345	03720
0.110	1/8	0.330	0.880	0.103	2	09347	03721
0.115	1/8	0.345	0.920	0.108	2	09349	03722
0.120	1/8	0.360	0.960	0.112	2	09351	03723

RE = 1/2 Cutting Diameter (DC)



New Expanded Tools

TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h₆

STEELS

STAINLESS STEELS

CAST IRON

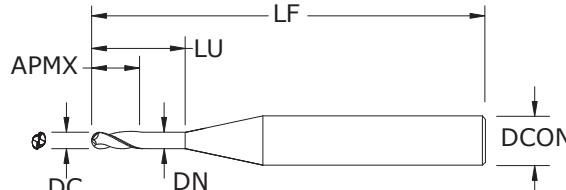
HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES



**M2B • 3xD
12xD**

FRACTIONAL SERIES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	EDP NO.	
						UNCOATED	TI-NAMITE-A (AlTiN)
0.010	1/8	0.030	0.120	0.009	1-1/2	09298	03724
0.015	1/8	0.045	0.180	0.014	1-1/2	09300	03725
0.020	1/8	0.060	0.240	0.018	1-1/2	09302	03726
0.025	1/8	0.075	0.300	0.023	1-1/2	09304	03727
0.030	1/8	0.090	0.360	0.028	2	09306	03728
0.031	1/8	0.093	0.372	0.029	2	09308	03729
0.035	1/8	0.105	0.420	0.032	2	09310	03730
0.040	1/8	0.120	0.480	0.037	2	09312	03731
0.045	1/8	0.135	0.540	0.042	2	09314	03732
0.047	1/8	0.141	0.564	0.044	2	09316	03733
0.050	1/8	0.150	0.600	0.047	2	09318	03734
0.055	1/8	0.165	0.660	0.051	2	09320	03735
0.060	1/8	0.180	0.720	0.056	2	09322	03736
0.062	1/8	0.186	0.744	0.058	2	09324	03737
0.065	1/8	0.195	0.780	0.061	2	09326	03738
0.070	1/8	0.210	0.840	0.065	2	09328	03739
0.075	1/8	0.225	0.900	0.070	2	09330	03740
0.078	1/8	0.234	0.936	0.073	2-1/2	09332	03741
0.080	1/8	0.240	0.960	0.075	2-1/2	09334	03742
0.085	1/8	0.255	1.020	0.079	2-1/2	09336	03743
0.090	1/8	0.270	1.080	0.084	2-1/2	09338	03744
0.093	1/8	0.279	1.116	0.087	2-1/2	09340	03745
0.095	1/8	0.285	1.140	0.089	2-1/2	09342	03746
0.100	1/8	0.300	1.200	0.094	2-1/2	09344	03747
0.110	1/8	0.330	1.320	0.103	2-1/2	09346	03748
0.115	1/8	0.345	1.380	0.108	2-1/2	09348	03749
0.120	1/8	0.360	1.440	0.112	2-1/2	09350	03750

RE = 1/2 Cutting Diameter (DC)

- Two flute design is ideal for softer alloyed, non-ferrous material applications that require slotting or involve heavy chip loads.

- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.

- High performance carbide substrate designed specifically for Micro Tool applications.
- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.

- All tools in stock to meet customer order requirements.
- All micro tools are manufactured in accordance with the KSPT ISO certified quality procedures.

M3 • 1.5xD • 3xD Overall Reach

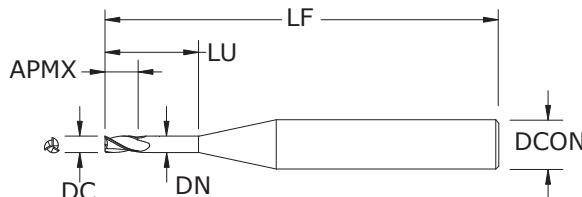
**MICRO
SGS®**
Solid Carbide Tools

KYOCERA

M3 • 1.5xD 3xD

FRACTIONAL SERIES

- Three flute design features improved chip space over four flutes and increased strength and feed capability over two flutes.
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
- High performance carbide substrate designed specifically for Micro Tool applications.
- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.
- All tools in stock to meet customer order requirements.
- All micro tools are manufactured in accordance with the KSPT ISO certified quality procedures.



New Expanded Tools

TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h6

STEELS

STAINLESS STEELS

CAST IRON

HIGH TEMP ALLOYS

TITANIUM

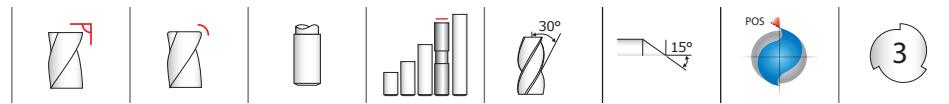
HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES

inch						EDP NO.	
CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	UNCOATED	TI-NAMITE-A (AITiN)
0.010	1/8	0.015	0.030	0.009	2-1/2	09599	03508
0.015	1/8	0.023	0.045	0.014	2-1/2	09606	03509
0.020	1/8	0.030	0.060	0.018	2-1/2	09613	03510
0.025	1/8	0.038	0.075	0.023	2-1/2	09620	03511
0.030	1/8	0.045	0.090	0.028	2-1/2	09627	03512
0.031	1/8	0.047	0.093	0.029	2-1/2	09634	03513
0.035	1/8	0.053	0.105	0.032	2-1/2	09641	03514
0.040	1/8	0.060	0.120	0.037	2-1/2	09648	03515
0.045	1/8	0.068	0.135	0.042	2-1/2	09655	03516
0.047	1/8	0.071	0.141	0.044	2-1/2	09662	03517
0.050	1/8	0.075	0.150	0.047	2-1/2	09669	03518
0.055	1/8	0.083	0.165	0.051	2-1/2	09676	03519
0.060	1/8	0.090	0.180	0.056	2-1/2	09683	03520
0.062	1/8	0.093	0.186	0.058	2-1/2	09690	03521
0.065	1/8	0.098	0.195	0.061	2-1/2	09697	03522
0.070	1/8	0.105	0.210	0.065	2-1/2	09704	03523
0.075	1/8	0.113	0.225	0.070	2-1/2	09711	03524
0.078	1/8	0.117	0.234	0.073	2-1/2	09718	03525
0.080	1/8	0.120	0.240	0.075	2-1/2	09725	03526
0.085	1/8	0.128	0.255	0.079	2-1/2	09732	03527
0.090	1/8	0.135	0.270	0.084	2-1/2	09739	03528
0.093	1/8	0.140	0.279	0.087	2-1/2	09746	03529
0.095	1/8	0.143	0.285	0.089	2-1/2	09753	03530
0.100	1/8	0.150	0.300	0.094	2-1/2	09760	03531
0.110	1/8	0.165	0.330	0.103	2-1/2	09767	03532
0.115	1/8	0.173	0.345	0.108	2-1/2	09774	03533
0.120	1/8	0.180	0.360	0.112	2-1/2	09781	03534

M3 • M3CR • 1.5xD • 5xD Overall Reach



New Expanded Tools

TOLERANCES (inch)

.010–.120 DIAMETER

DC = +0.000/-0.001

DCON = h₆

RE = +0.0000/-0.0005

STEELS

STAINLESS STEELS

CAST IRON

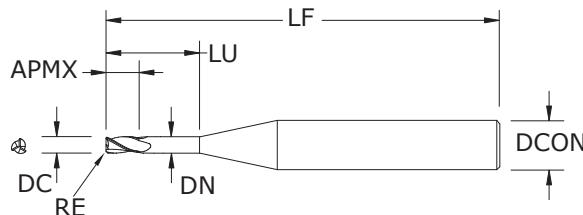
HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES



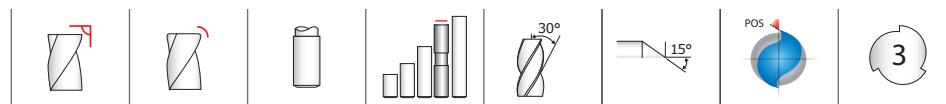
M3 • M3CR • 1.5xD 5xD

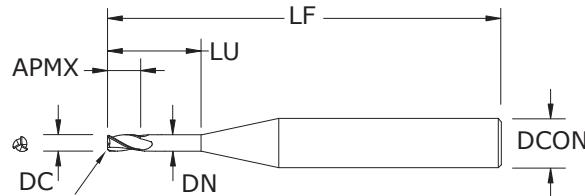
FRACTIONAL SERIES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	inch				EDP NO.	
			REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	CORNER RADIUS RE	UNCOATED	TI-NAMITE-A (AlTiN)
0.010	1/8	0.015	0.050	0.009	2-1/2	—	09600	03535
0.015	1/8	0.023	0.075	0.014	2-1/2	—	09607	03536
0.015	1/8	0.023	0.075	0.014	2-1/2	0.003	08782	08884
0.020	1/8	0.030	0.100	0.018	2-1/2	—	09614	03537
0.020	1/8	0.030	0.100	0.018	2-1/2	0.005	08785	08887
0.025	1/8	0.038	0.125	0.023	2-1/2	—	09621	03538
0.025	1/8	0.038	0.125	0.023	2-1/2	0.005	08788	08890
0.030	1/8	0.045	0.150	0.028	2-1/2	—	09628	03539
0.030	1/8	0.045	0.150	0.028	2-1/2	0.005	08791	08893
0.031	1/8	0.047	0.155	0.029	2-1/2	—	09635	03540
0.035	1/8	0.053	0.175	0.032	2-1/2	—	09642	03541
0.035	1/8	0.053	0.175	0.032	2-1/2	0.005	08794	08896
0.035	1/8	0.053	0.175	0.032	2-1/2	0.010	08797	08899
0.040	1/8	0.060	0.200	0.037	2-1/2	—	09649	03542
0.040	1/8	0.060	0.200	0.037	2-1/2	0.005	08800	08902
0.040	1/8	0.060	0.200	0.037	2-1/2	0.010	08803	08905
0.045	1/8	0.068	0.225	0.042	2-1/2	—	09656	03543
0.045	1/8	0.068	0.225	0.042	2-1/2	0.005	08806	08908
0.045	1/8	0.068	0.225	0.042	2-1/2	0.010	08809	08911
0.047	1/8	0.071	0.235	0.044	2-1/2	—	09663	03544
0.050	1/8	0.075	0.250	0.047	2-1/2	—	09670	03545
0.050	1/8	0.075	0.250	0.047	2-1/2	0.005	08812	08914
0.050	1/8	0.075	0.250	0.047	2-1/2	0.010	08815	08917
0.050	1/8	0.075	0.250	0.047	2-1/2	0.015	08818	08920
0.055	1/8	0.083	0.275	0.051	2-1/2	—	09677	03546
0.060	1/8	0.090	0.300	0.056	2-1/2	—	09684	03547
0.060	1/8	0.090	0.300	0.056	2-1/2	0.005	08821	08923
0.060	1/8	0.090	0.300	0.056	2-1/2	0.010	08824	08926
0.060	1/8	0.090	0.300	0.056	2-1/2	0.015	08827	08929
0.062	1/8	0.093	0.310	0.058	2-1/2	—	09691	03548
0.065	1/8	0.098	0.325	0.061	2-1/2	—	09698	03549
0.070	1/8	0.105	0.350	0.065	2-1/2	—	09705	03550
0.070	1/8	0.105	0.350	0.065	2-1/2	0.005	08830	08932
0.070	1/8	0.105	0.350	0.065	2-1/2	0.010	08833	08935

continued on next page

- Three flute design features improved chip space over four flutes and increased strength and feed capability over two flutes.
- Enhanced corner geometry with tight tolerance corner radii.
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
- High performance carbide substrate designed specifically for Micro Tool applications.
- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.
- All tools in stock to meet customer order requirements.
- All micro tools are manufactured in accordance with the KSPT ISO certified quality procedures.

M3 • M3CR • 1.5xD • 5xD Overall Reach
**MICRO
SGS®**
Solid Carbide Tools



New Expanded Tools

**M3 • M3CR • 1.5xD
5xD**

FRACTIONAL SERIES

continued

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	inch				EDP NO.	
			REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	CORNER RADIUS RE	UNCOATED	TI-NAMITE-A (AlTiN)
0.070	1/8	0.105	0.350	0.065	2-1/2	0.015	08836	08938
0.075	1/8	0.113	0.375	0.070	2-1/2	—	09712	03551
0.078	1/8	0.117	0.390	0.073	2-1/2	—	09719	03552
0.080	1/8	0.120	0.400	0.075	2-1/2	—	09726	03553
0.080	1/8	0.120	0.400	0.075	2-1/2	0.005	08839	08941
0.080	1/8	0.120	0.400	0.075	2-1/2	0.010	08842	08944
0.080	1/8	0.120	0.400	0.075	2-1/2	0.015	08845	08947
0.085	1/8	0.128	0.425	0.079	2-1/2	—	09733	03554
0.090	1/8	0.135	0.450	0.084	2-1/2	—	09740	03555
0.090	1/8	0.135	0.450	0.084	2-1/2	0.005	08848	08950
0.090	1/8	0.135	0.450	0.084	2-1/2	0.010	08851	08953
0.090	1/8	0.135	0.450	0.084	2-1/2	0.015	08854	08956
0.093	1/8	0.140	0.465	0.087	2-1/2	—	09747	03556
0.095	1/8	0.143	0.475	0.089	2-1/2	—	09754	03557
0.100	1/8	0.150	0.500	0.094	2-1/2	—	09761	03558
0.100	1/8	0.150	0.500	0.094	2-1/2	0.005	08857	08959
0.100	1/8	0.150	0.500	0.094	2-1/2	0.010	08860	08962
0.100	1/8	0.150	0.500	0.094	2-1/2	0.015	08863	08965
0.110	1/8	0.165	0.550	0.103	2-1/2	—	09768	03559
0.110	1/8	0.165	0.550	0.103	2-1/2	0.005	08866	08968
0.110	1/8	0.165	0.550	0.103	2-1/2	0.010	08869	08971
0.110	1/8	0.165	0.550	0.103	2-1/2	0.015	08872	08974
0.115	1/8	0.173	0.575	0.108	2-1/2	—	09775	03560
0.120	1/8	0.180	0.600	0.112	2-1/2	—	09782	03561
0.120	1/8	0.180	0.600	0.112	2-1/2	0.005	08875	08977
0.120	1/8	0.180	0.600	0.112	2-1/2	0.010	08878	08980
0.120	1/8	0.180	0.600	0.112	2-1/2	0.015	08881	08983

TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h6

RE = +0.0000/-0.0005

STEELS

STAINLESS STEELS

CAST IRON

HIGH TEMP ALLOYS

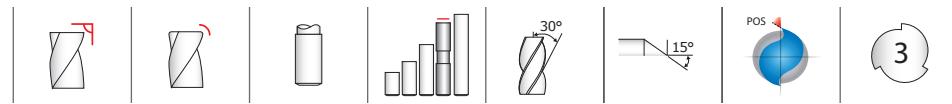
TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES

M3 • M3CR • 1.5xD • 8xD Overall Reach



New Expanded Tools

TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h₆

RE = +0.0000/-0.0005

STEELS

STAINLESS STEELS

CAST IRON

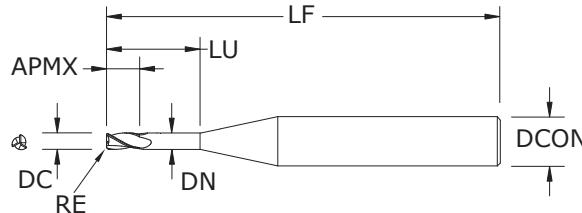
HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES

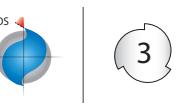


M3 • M3CR • 1.5xD 8xD

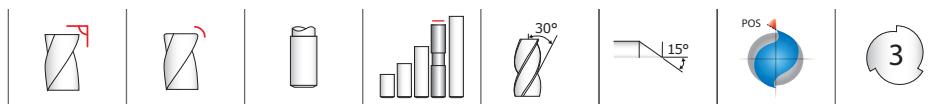
FRACTIONAL SERIES

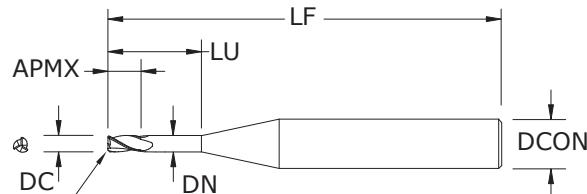
CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	inch				EDP NO.	
			REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	CORNER RADIUS RE	UNCOATED	TI-NAMITE-A (AlTiN)
0.010	1/8	0.015	0.080	0.009	2-1/2	—	09601	03562
0.015	1/8	0.023	0.120	0.014	2-1/2	—	09608	03563
0.015	1/8	0.023	0.120	0.014	2-1/2	0.003	08783	08885
0.020	1/8	0.030	0.160	0.018	2-1/2	—	09615	03564
0.020	1/8	0.030	0.160	0.018	2-1/2	0.005	08786	08888
0.025	1/8	0.038	0.200	0.023	2-1/2	—	09622	03565
0.025	1/8	0.038	0.200	0.023	2-1/2	0.005	08789	08891
0.030	1/8	0.045	0.240	0.028	2-1/2	—	09629	03566
0.030	1/8	0.045	0.240	0.028	2-1/2	0.005	08792	08894
0.031	1/8	0.047	0.248	0.029	2-1/2	—	09636	03567
0.035	1/8	0.053	0.280	0.032	2-1/2	—	09643	03568
0.035	1/8	0.053	0.280	0.032	2-1/2	0.005	08795	08897
0.035	1/8	0.053	0.280	0.032	2-1/2	0.010	08798	08900
0.040	1/8	0.060	0.320	0.037	2-1/2	—	09650	03569
0.040	1/8	0.060	0.320	0.037	2-1/2	0.005	08801	08903
0.040	1/8	0.060	0.320	0.037	2-1/2	0.010	08804	08906
0.045	1/8	0.068	0.360	0.042	2-1/2	—	09657	03570
0.045	1/8	0.068	0.360	0.042	2-1/2	0.005	08807	08909
0.045	1/8	0.068	0.360	0.042	2-1/2	0.010	08810	08912
0.047	1/8	0.071	0.376	0.044	2-1/2	—	09664	03571
0.050	1/8	0.075	0.400	0.047	2-1/2	—	09671	03572
0.050	1/8	0.075	0.400	0.047	2-1/2	0.005	08813	08915
0.050	1/8	0.075	0.400	0.047	2-1/2	0.010	08816	08918
0.050	1/8	0.075	0.400	0.047	2-1/2	0.015	08819	08921
0.055	1/8	0.083	0.440	0.051	2-1/2	—	09678	03573
0.060	1/8	0.090	0.480	0.056	2-1/2	—	09685	03574
0.060	1/8	0.090	0.480	0.056	2-1/2	0.005	08822	08924
0.060	1/8	0.090	0.480	0.056	2-1/2	0.010	08825	08927
0.060	1/8	0.090	0.480	0.056	2-1/2	0.015	08828	08930
0.062	1/8	0.093	0.496	0.058	2-1/2	—	09692	03575
0.065	1/8	0.098	0.520	0.061	2-1/2	—	09699	03576
0.070	1/8	0.105	0.560	0.065	2-1/2	—	09706	03577
0.070	1/8	0.105	0.560	0.065	2-1/2	0.005	08831	08933
0.070	1/8	0.105	0.560	0.065	2-1/2	0.010	08834	08936
0.070	1/8	0.105	0.560	0.065	2-1/2	0.015	08837	08939
0.075	1/8	0.113	0.600	0.070	2-1/2	—	09713	03578

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- Three flute design features improved chip space over four flutes and increased strength and feed capability over two flutes.
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- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.
- All tools in stock to meet customer order requirements.
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M3 • M3CR • 1.5xD • 8xD Overall Reach
**MICRO
SGS®**
Solid Carbide Tools



New Expanded Tools

**M3 • M3CR • 1.5xD
8xD**

FRACTIONAL SERIES

continued

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	inch				EDP NO.	
			REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	CORNER RADIUS RE	UNCOATED	TI-NAMITE-A (AlTiN)
0.078	1/8	0.117	0.624	0.073	2-1/2	—	09720	03579
0.080	1/8	0.120	0.640	0.075	2-1/2	—	09727	03580
0.080	1/8	0.120	0.640	0.075	2-1/2	0.005	08840	08942
0.080	1/8	0.120	0.640	0.075	2-1/2	0.010	08843	08945
0.080	1/8	0.120	0.640	0.075	2-1/2	0.015	08846	08948
0.085	1/8	0.128	0.680	0.079	2-1/2	—	09734	03581
0.090	1/8	0.135	0.720	0.084	2-1/2	—	09741	03582
0.090	1/8	0.135	0.720	0.084	2-1/2	0.005	08849	08951
0.090	1/8	0.135	0.720	0.084	2-1/2	0.010	08852	08954
0.090	1/8	0.135	0.720	0.084	2-1/2	0.015	08855	08957
0.093	1/8	0.140	0.744	0.087	2-1/2	—	09748	03583
0.095	1/8	0.143	0.760	0.089	2-1/2	—	09755	03584
0.100	1/8	0.150	0.800	0.094	2-1/2	—	09762	03585
0.100	1/8	0.150	0.800	0.094	2-1/2	0.005	08858	08960
0.100	1/8	0.150	0.800	0.094	2-1/2	0.010	08861	08963
0.100	1/8	0.150	0.800	0.094	2-1/2	0.015	08864	08966
0.110	1/8	0.165	0.880	0.103	2-1/2	—	09769	03586
0.110	1/8	0.165	0.880	0.103	2-1/2	0.005	08867	08969
0.110	1/8	0.165	0.880	0.103	2-1/2	0.010	08870	08972
0.110	1/8	0.165	0.880	0.103	2-1/2	0.015	08873	08975
0.115	1/8	0.173	0.920	0.108	2-1/2	—	09776	03587
0.120	1/8	0.180	0.960	0.112	2-1/2	—	09783	03588
0.120	1/8	0.180	0.960	0.112	2-1/2	0.005	08876	08978
0.120	1/8	0.180	0.960	0.112	2-1/2	0.010	08879	08981
0.120	1/8	0.180	0.960	0.112	2-1/2	0.015	08882	08984

TOLERANCES (inch)**.010-.120 DIAMETER**

DC = +0.000/-0.001

DCON = h6

RE = +0.0000/-0.0005

STEELS

STAINLESS STEELS

CAST IRON

HIGH TEMP ALLOYS

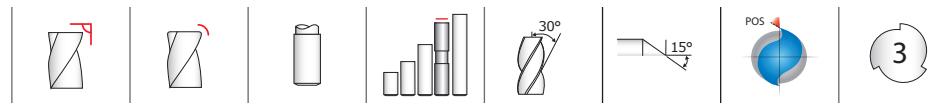
TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES

M3 • M3CR • 1.5xD • 12xD Overall Reach



New Expanded Tools

TOLERANCES (inch)

.010–.120 DIAMETER

DC = +0.000/-0.001

DCON = h₆

RE = +0.0000/-0.0005

STEELS

STAINLESS STEELS

CAST IRON

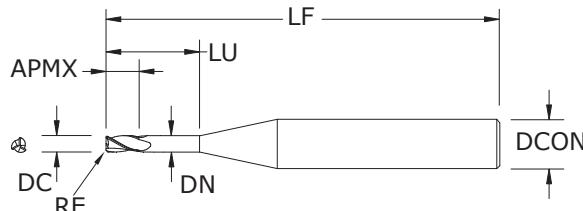
HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES



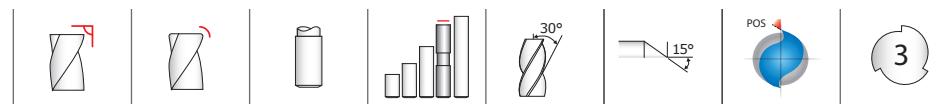
M3 • M3CR • 1.5xD 12xD

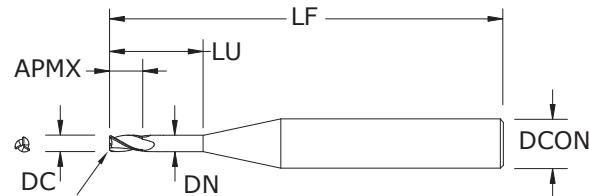
FRACTIONAL SERIES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	CORNER RADIUS RE	EDP NO.	
							UNCOATED	NAMITE-A (AITIN)
0.010	1/8	0.015	0.120	0.009	2-1/2	—	09595	03589
0.015	1/8	0.023	0.180	0.014	2-1/2	—	09602	03590
0.015	1/8	0.023	0.180	0.014	2-1/2	0.003	08784	08886
0.020	1/8	0.030	0.240	0.018	2-1/2	—	09609	03591
0.020	1/8	0.030	0.240	0.018	2-1/2	0.005	08787	08889
0.025	1/8	0.038	0.300	0.023	2-1/2	—	09616	03592
0.025	1/8	0.038	0.300	0.023	2-1/2	0.005	08790	08892
0.030	1/8	0.045	0.360	0.028	2-1/2	—	09623	03593
0.030	1/8	0.045	0.360	0.028	2-1/2	0.005	08793	08895
0.031	1/8	0.047	0.372	0.029	2-1/2	—	09630	03594
0.035	1/8	0.053	0.420	0.032	2-1/2	—	09637	03595
0.035	1/8	0.053	0.420	0.032	2-1/2	0.005	08796	08898
0.035	1/8	0.053	0.420	0.032	2-1/2	0.010	08799	08901
0.040	1/8	0.060	0.480	0.037	2-1/2	—	09644	03596
0.040	1/8	0.060	0.480	0.037	2-1/2	0.005	08802	08904
0.040	1/8	0.060	0.480	0.037	2-1/2	0.010	08805	08907
0.045	1/8	0.068	0.540	0.042	2-1/2	—	09651	03597
0.045	1/8	0.068	0.540	0.042	2-1/2	0.005	08808	08910
0.045	1/8	0.068	0.540	0.042	2-1/2	0.010	08811	08913
0.047	1/8	0.071	0.564	0.044	2-1/2	—	09658	03598
0.050	1/8	0.075	0.600	0.047	2-1/2	—	09665	03599
0.050	1/8	0.075	0.600	0.047	2-1/2	0.005	08814	08916
0.050	1/8	0.075	0.600	0.047	2-1/2	0.010	08817	08919
0.050	1/8	0.075	0.600	0.047	2-1/2	0.015	08820	08922
0.055	1/8	0.083	0.660	0.051	2-1/2	—	09672	03600
0.060	1/8	0.090	0.720	0.056	2-1/2	—	09679	03601
0.060	1/8	0.090	0.720	0.056	2-1/2	0.005	08823	08925
0.060	1/8	0.090	0.720	0.056	2-1/2	0.010	08826	08928
0.060	1/8	0.090	0.720	0.056	2-1/2	0.015	08829	08931
0.062	1/8	0.093	0.744	0.058	2-1/2	—	09686	03602
0.065	1/8	0.098	0.780	0.061	2-1/2	—	09693	03603
0.070	1/8	0.105	0.840	0.065	2-1/2	—	09700	03604
0.070	1/8	0.105	0.840	0.065	2-1/2	0.005	08832	08934
0.070	1/8	0.105	0.840	0.065	2-1/2	0.010	08835	08937
0.070	1/8	0.105	0.840	0.065	2-1/2	0.015	08838	08940
0.075	1/8	0.113	0.900	0.070	2-1/2	—	09707	03605

continued on next page

- Three flute design features improved chip space over four flutes and increased strength and feed capability over two flutes.
- Enhanced corner geometry with tight tolerance corner radii.
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
- High performance carbide substrate designed specifically for Micro Tool applications.
- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.
- All tools in stock to meet customer order requirements.
- All micro tools are manufactured in accordance with the KSPT ISO certified quality procedures.

M3 • M3CR • 1.5xD • 12xD Overall Reach
**MICRO
SGS®**
Solid Carbide Tools



New Expanded Tools

**M3 • M3CR • 1.5xD
12xD**

FRACTIONAL SERIES

continued

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	inch				EDP NO.	
			REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	CORNER RADIUS RE	UNCOATED	NAMITE-A (AITIN)
0.078	1/8	0.117	0.936	0.073	2-1/2	—	09714	03606
0.080	1/8	0.120	0.960	0.075	2-1/2	—	09721	03607
0.080	1/8	0.120	0.960	0.075	2-1/2	0.005	08841	08943
0.080	1/8	0.120	0.960	0.075	2-1/2	0.010	08844	08946
0.080	1/8	0.120	0.960	0.075	2-1/2	0.015	08847	08949
0.085	1/8	0.128	1.020	0.079	2-1/2	—	09728	03608
0.090	1/8	0.135	1.080	0.084	2-1/2	—	09735	03609
0.090	1/8	0.135	1.080	0.084	2-1/2	0.005	08850	08952
0.090	1/8	0.135	1.080	0.084	2-1/2	0.010	08853	08955
0.090	1/8	0.135	1.080	0.084	2-1/2	0.015	08856	08958
0.093	1/8	0.140	1.116	0.087	2-1/2	—	09742	03610
0.095	1/8	0.143	1.140	0.089	2-1/2	—	09749	03611
0.100	1/8	0.150	1.200	0.094	2-1/2	—	09756	03612
0.100	1/8	0.150	1.200	0.094	2-1/2	0.005	08859	08961
0.100	1/8	0.150	1.200	0.094	2-1/2	0.010	08862	08964
0.100	1/8	0.150	1.200	0.094	2-1/2	0.015	08865	08967
0.110	1/8	0.165	1.320	0.103	2-1/2	—	09763	03613
0.110	1/8	0.165	1.320	0.103	2-1/2	0.005	08868	08970
0.110	1/8	0.165	1.320	0.103	2-1/2	0.010	08871	08973
0.110	1/8	0.165	1.320	0.103	2-1/2	0.015	08874	08976
0.115	1/8	0.173	1.380	0.108	2-1/2	—	09770	03614
0.120	1/8	0.180	1.440	0.112	2-1/2	—	09777	03615
0.120	1/8	0.180	1.440	0.112	2-1/2	0.005	08877	08979
0.120	1/8	0.180	1.440	0.112	2-1/2	0.010	08880	08982
0.120	1/8	0.180	1.440	0.112	2-1/2	0.015	08883	08985

TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h6

RE = +0.0000/-0.0005

STEELS

STAINLESS STEELS

CAST IRON

HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES

M3 • 1.5xD • 15xD Overall Reach



New Expanded Tools

TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h₆

STEELS

STAINLESS STEELS

CAST IRON

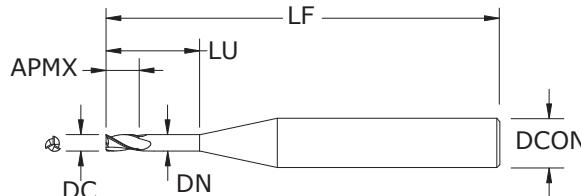
HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES



M3 • 1.5xD 15xD

FRACTIONAL SERIES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	inch		OVERALL LENGTH LF	EDP NO.	
			REACH LU	NECK DIAMETER DN		UNCOATED	TI-NAMITE-A (AlTiN)
0.010	1/8	0.015	0.150	0.009	2-1/2	09596	03616
0.015	1/8	0.023	0.225	0.014	2-1/2	09603	03617
0.020	1/8	0.030	0.300	0.018	2-1/2	09610	03618
0.025	1/8	0.038	0.375	0.023	2-1/2	09617	03619
0.030	1/8	0.045	0.450	0.028	2-1/2	09624	03620
0.031	1/8	0.047	0.465	0.029	2-1/2	09631	03621
0.035	1/8	0.053	0.525	0.032	2-1/2	09638	03622
0.040	1/8	0.060	0.600	0.037	2-1/2	09645	03623
0.045	1/8	0.068	0.675	0.042	2-1/2	09652	03624
0.047	1/8	0.071	0.705	0.044	2-1/2	09659	03625
0.050	1/8	0.075	0.750	0.047	2-1/2	09666	03626
0.055	1/8	0.083	0.825	0.051	2-1/2	09673	03627
0.060	1/8	0.090	0.900	0.056	2-1/2	09680	03628
0.062	1/8	0.093	0.930	0.058	2-1/2	09687	03629
0.065	1/8	0.098	0.975	0.061	2-1/2	09694	03630
0.070	1/8	0.105	1.050	0.065	2-1/2	09701	03631
0.075	1/8	0.113	1.125	0.070	2-1/2	09708	03632
0.078	1/8	0.117	1.170	0.073	2-1/2	09715	03633
0.080	1/8	0.120	1.200	0.075	2-1/2	09722	03634
0.085	1/8	0.128	1.275	0.079	2-1/2	09729	03635
0.090	1/8	0.135	1.350	0.084	2-1/2	09736	03636
0.093	1/8	0.140	1.395	0.087	3	09743	03637
0.095	1/8	0.143	1.425	0.089	3	09750	03638
0.100	1/8	0.150	1.500	0.094	3	09757	03639
0.110	1/8	0.165	1.650	0.103	3	09764	03640
0.115	1/8	0.173	1.725	0.108	3	09771	03641
0.120	1/8	0.180	1.800	0.112	3	09778	03642

- Three flute design features improved chip space over four flutes and increased strength and feed capability over two flutes.
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
- High performance carbide substrate designed specifically for Micro Tool applications.
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M3 • 1.5xD • 20xD Overall Reach

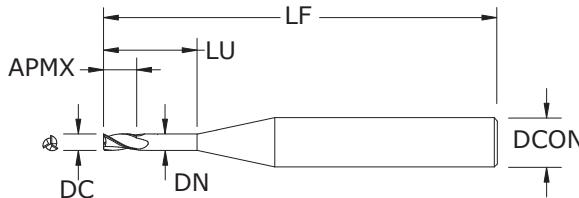
**MICRO
SGS®**
Solid Carbide Tools

KYOCERA

M3 • 1.5xD 20xD

FRACTIONAL SERIES

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New Expanded Tools

TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h6

STEELS

STAINLESS STEELS

CAST IRON

HIGH TEMP ALLOYS

TITANIUM

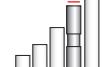
HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES

inch						EDP NO.	
CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	UNCOATED	TI-NAMITE-A (AlTiN)
0.010	1/8	0.015	0.200	0.009	2-1/2	09597	03643
0.015	1/8	0.023	0.300	0.014	2-1/2	09604	03644
0.020	1/8	0.030	0.400	0.018	2-1/2	09611	03645
0.025	1/8	0.038	0.500	0.023	2-1/2	09618	03646
0.030	1/8	0.045	0.600	0.028	2-1/2	09625	03647
0.031	1/8	0.047	0.620	0.029	2-1/2	09632	03648
0.035	1/8	0.053	0.700	0.032	2-1/2	09639	03649
0.040	1/8	0.060	0.800	0.037	2-1/2	09646	03650
0.045	1/8	0.068	0.900	0.042	2-1/2	09653	03651
0.047	1/8	0.071	0.940	0.044	2-1/2	09660	03652
0.050	1/8	0.075	1.000	0.047	2-1/2	09667	03653
0.055	1/8	0.083	1.100	0.051	2-1/2	09674	03654
0.060	1/8	0.090	1.200	0.056	2-1/2	09681	03655
0.062	1/8	0.093	1.240	0.058	2-1/2	09688	03656
0.065	1/8	0.098	1.300	0.061	3	09695	03657
0.070	1/8	0.105	1.400	0.065	3	09702	03658
0.075	1/8	0.113	1.500	0.070	3	09709	03659
0.078	1/8	0.117	1.560	0.073	3	09716	03660
0.080	1/8	0.120	1.600	0.075	3	09723	03661
0.085	1/8	0.128	1.700	0.079	3	09730	03662
0.090	1/8	0.135	1.800	0.084	3	09737	03663
0.093	1/8	0.140	1.860	0.087	3	09744	03664
0.095	1/8	0.143	1.900	0.089	3	09751	03665
0.100	1/8	0.150	2.000	0.094	4	09758	03666
0.110	1/8	0.165	2.200	0.103	4	09765	03667
0.115	1/8	0.173	2.300	0.108	4	09772	03668
0.120	1/8	0.180	2.400	0.112	4	09779	03669

M3 • 1.5xD • 25xD Overall Reach



New Expanded Tools

TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h₆

STEELS

STAINLESS STEELS

CAST IRON

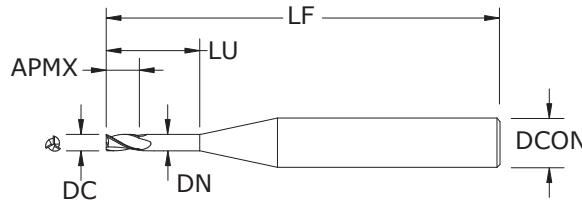
HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES



M3 • 1.5xD 25xD

FRACTIONAL SERIES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	EDP NO.	
						UNCOATED	TI-NAMITE-A (AlTiN)
0.010	1/8	0.015	0.250	0.009	2-1/2	09598	03670
0.015	1/8	0.023	0.375	0.014	2-1/2	09605	03671
0.020	1/8	0.030	0.500	0.018	2-1/2	09612	03672
0.025	1/8	0.038	0.625	0.023	2-1/2	09619	03673
0.030	1/8	0.045	0.750	0.028	2-1/2	09626	03674
0.031	1/8	0.047	0.775	0.029	2-1/2	09633	03675
0.035	1/8	0.053	0.875	0.032	2-1/2	09640	03676
0.040	1/8	0.060	1.000	0.037	2-1/2	09647	03677
0.045	1/8	0.068	1.125	0.042	2-1/2	09654	03678
0.047	1/8	0.071	1.175	0.044	2-1/2	09661	03679
0.050	1/8	0.075	1.250	0.047	2-1/2	09668	03680
0.055	1/8	0.083	1.375	0.051	3	09675	03681
0.060	1/8	0.090	1.500	0.056	3	09682	03682
0.062	1/8	0.093	1.550	0.058	3	09689	03683
0.065	1/8	0.098	1.625	0.061	3	09696	03684
0.070	1/8	0.105	1.750	0.065	3	09703	03685
0.075	1/8	0.113	1.875	0.070	3	09710	03686
0.078	1/8	0.117	1.950	0.073	4	09717	03687
0.080	1/8	0.120	2.000	0.075	4	09724	03688
0.085	1/8	0.128	2.125	0.079	4	09731	03689
0.090	1/8	0.135	2.250	0.084	4	09738	03690
0.093	1/8	0.140	2.325	0.087	4	09745	03691
0.095	1/8	0.143	2.375	0.089	4	09752	03692
0.100	1/8	0.150	2.500	0.094	4	09759	03693
0.110	1/8	0.165	2.750	0.103	4	09766	03694
0.115	1/8	0.173	2.875	0.108	4	09773	03695
0.120	1/8	0.180	3.000	0.112	4	09780	03696

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M3B • 1.5xD • 3xD Overall Reach



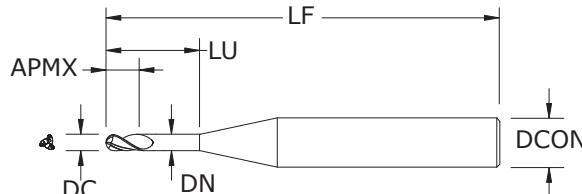
**MICRO
SGS®**
Solid Carbide Tools

KYOCERA

M3B • 1.5xD 3xD

FRACTIONAL SERIES

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New Expanded Tools

TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h6

STEELS
STAINLESS STEELS
CAST IRON
HIGH TEMP ALLOYS
TITANIUM
HARDENED STEELS
NON-FERROUS
PLASTICS/COMPOSITES

inch						EDP NO.	
CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	UNCOATED	TI-NAMITE-A (AlTiN)
0.010	1/8	0.015	0.030	0.009	2-1/2	09410	03805
0.015	1/8	0.023	0.045	0.014	2-1/2	09417	03806
0.020	1/8	0.030	0.060	0.018	2-1/2	09424	03807
0.025	1/8	0.038	0.075	0.023	2-1/2	09431	03808
0.030	1/8	0.045	0.090	0.028	2-1/2	09438	03809
0.031	1/8	0.047	0.093	0.029	2-1/2	09445	03810
0.035	1/8	0.053	0.105	0.032	2-1/2	09452	03811
0.040	1/8	0.060	0.120	0.037	2-1/2	09459	03812
0.045	1/8	0.068	0.135	0.042	2-1/2	09466	03813
0.047	1/8	0.071	0.141	0.044	2-1/2	09473	03814
0.050	1/8	0.075	0.150	0.047	2-1/2	09480	03815
0.055	1/8	0.083	0.165	0.051	2-1/2	09487	03816
0.060	1/8	0.090	0.180	0.056	2-1/2	09494	03817
0.062	1/8	0.093	0.186	0.058	2-1/2	09501	03818
0.065	1/8	0.098	0.195	0.061	2-1/2	09508	03819
0.070	1/8	0.105	0.210	0.065	2-1/2	09515	03820
0.075	1/8	0.113	0.225	0.070	2-1/2	09522	03821
0.078	1/8	0.117	0.234	0.073	2-1/2	09529	03822
0.080	1/8	0.120	0.240	0.075	2-1/2	09536	03823
0.085	1/8	0.128	0.255	0.079	2-1/2	09543	03824
0.090	1/8	0.135	0.270	0.084	2-1/2	09550	03825
0.093	1/8	0.140	0.279	0.087	2-1/2	09557	03826
0.095	1/8	0.143	0.285	0.089	2-1/2	09564	03827
0.100	1/8	0.150	0.300	0.094	2-1/2	09571	03828
0.110	1/8	0.165	0.330	0.103	2-1/2	09578	03829
0.115	1/8	0.173	0.345	0.108	2-1/2	09585	03830
0.120	1/8	0.180	0.360	0.112	2-1/2	09592	03831

RE = 1/2 Cutting Diameter (DC)

M3B • 1.5xD • 5xD Overall Reach



3

New Expanded Tools

TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h₆

█ STEELS

█ STAINLESS STEELS

█ CAST IRON

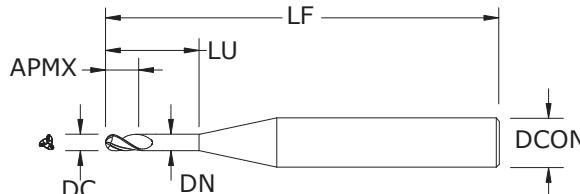
█ HIGH TEMP ALLOYS

█ TITANIUM

█ HARDENED STEELS

█ NON-FERROUS

█ PLASTICS/COMPOSITES



M3B • 1.5xD 5xD

FRACTIONAL SERIES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	EDP NO.	
						UNCOATED	TI-NAMITE-A (AlTiN)
0.010	1/8	0.015	0.050	0.009	2-1/2	09411	03832
0.015	1/8	0.023	0.075	0.014	2-1/2	09418	03833
0.020	1/8	0.030	0.100	0.018	2-1/2	09425	03834
0.025	1/8	0.038	0.125	0.023	2-1/2	09432	03835
0.030	1/8	0.045	0.150	0.028	2-1/2	09439	03836
0.031	1/8	0.047	0.155	0.029	2-1/2	09446	03837
0.035	1/8	0.053	0.175	0.032	2-1/2	09453	03838
0.040	1/8	0.060	0.200	0.037	2-1/2	09460	03839
0.045	1/8	0.068	0.225	0.042	2-1/2	09467	03840
0.047	1/8	0.071	0.235	0.044	2-1/2	09474	03841
0.050	1/8	0.075	0.250	0.047	2-1/2	09481	03842
0.055	1/8	0.083	0.275	0.051	2-1/2	09488	03843
0.060	1/8	0.090	0.300	0.056	2-1/2	09495	03844
0.062	1/8	0.093	0.310	0.058	2-1/2	09502	03845
0.065	1/8	0.098	0.325	0.061	2-1/2	09509	03846
0.070	1/8	0.105	0.350	0.065	2-1/2	09516	03847
0.075	1/8	0.113	0.375	0.070	2-1/2	09523	03848
0.078	1/8	0.117	0.390	0.073	2-1/2	09530	03849
0.080	1/8	0.120	0.400	0.075	2-1/2	09537	03850
0.085	1/8	0.128	0.425	0.079	2-1/2	09544	03851
0.090	1/8	0.135	0.450	0.084	2-1/2	09551	03852
0.093	1/8	0.140	0.465	0.087	2-1/2	09558	03853
0.095	1/8	0.143	0.475	0.089	2-1/2	09565	03854
0.100	1/8	0.150	0.500	0.094	2-1/2	09572	03855
0.110	1/8	0.165	0.550	0.103	2-1/2	09579	03856
0.115	1/8	0.173	0.575	0.108	2-1/2	09586	03857
0.120	1/8	0.180	0.600	0.112	2-1/2	09593	03858

RE = 1/2 Cutting Diameter (DC)

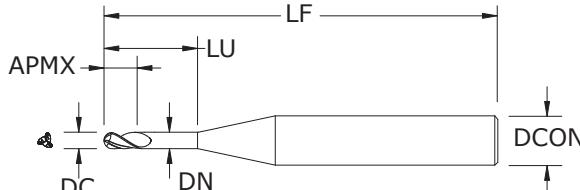
- Three flute design features improved chip space over four flutes and increased strength and feed capability over two flutes.
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
- High performance carbide substrate designed specifically for Micro Tool applications.
- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.
- All tools in stock to meet customer order requirements.
- All micro tools are manufactured in accordance with the KSPT ISO certified quality procedures.

M3B • 1.5xD • 8xD Overall Reach



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New Expanded Tools

M3B • 1.5xD 8xD

FRACTIONAL SERIES

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inch						EDP NO.	
CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	UNCOATED	TI-NAMITE-A (AlTiN)
0.010	1/8	0.015	0.080	0.009	2-1/2	09412	03859
0.015	1/8	0.023	0.120	0.014	2-1/2	09419	03860
0.020	1/8	0.030	0.160	0.018	2-1/2	09426	03861
0.025	1/8	0.038	0.200	0.023	2-1/2	09433	03862
0.030	1/8	0.045	0.240	0.028	2-1/2	09440	03863
0.031	1/8	0.047	0.248	0.029	2-1/2	09447	03864
0.035	1/8	0.053	0.280	0.032	2-1/2	09454	03865
0.040	1/8	0.060	0.320	0.037	2-1/2	09461	03866
0.045	1/8	0.068	0.360	0.042	2-1/2	09468	03867
0.047	1/8	0.071	0.376	0.044	2-1/2	09475	03868
0.050	1/8	0.075	0.400	0.047	2-1/2	09482	03869
0.055	1/8	0.083	0.440	0.051	2-1/2	09489	03870
0.060	1/8	0.090	0.480	0.056	2-1/2	09496	03871
0.062	1/8	0.093	0.496	0.058	2-1/2	09503	03872
0.065	1/8	0.098	0.520	0.061	2-1/2	09510	03873
0.070	1/8	0.105	0.560	0.065	2-1/2	09517	03874
0.075	1/8	0.113	0.600	0.070	2-1/2	09524	03875
0.078	1/8	0.117	0.624	0.073	2-1/2	09531	03876
0.080	1/8	0.120	0.640	0.075	2-1/2	09538	03877
0.085	1/8	0.128	0.680	0.079	2-1/2	09545	03878
0.090	1/8	0.135	0.720	0.084	2-1/2	09552	03879
0.093	1/8	0.140	0.744	0.087	2-1/2	09559	03880
0.095	1/8	0.143	0.760	0.089	2-1/2	09566	03881
0.100	1/8	0.150	0.800	0.094	2-1/2	09573	03882
0.110	1/8	0.165	0.880	0.103	2-1/2	09580	03883
0.115	1/8	0.173	0.920	0.108	2-1/2	09587	03884
0.120	1/8	0.180	0.960	0.112	2-1/2	09594	03885

RE = 1/2 Cutting Diameter (DC)

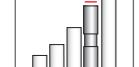
TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h6

STEELS
STAINLESS STEELS
CAST IRON
HIGH TEMP ALLOYS
TITANIUM
HARDENED STEELS
NON-FERROUS
PLASTICS/COMPOSITES



New Expanded Tools

TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h₆

STEELS

STAINLESS STEELS

CAST IRON

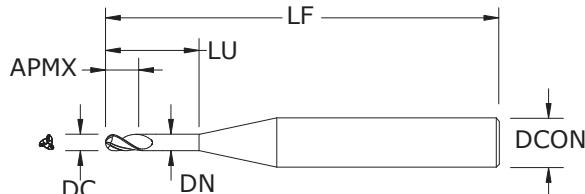
HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES



**M3B • 1.5xD
12xD**

FRACTIONAL SERIES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	EDP NO.	
						UNCOATED	TI-NAMITE-A (AlTiN)
0.010	1/8	0.015	0.120	0.009	2-1/2	09406	03886
0.015	1/8	0.023	0.180	0.014	2-1/2	09413	03887
0.020	1/8	0.030	0.240	0.018	2-1/2	09420	03888
0.025	1/8	0.038	0.300	0.023	2-1/2	09427	03889
0.030	1/8	0.045	0.360	0.028	2-1/2	09434	03890
0.031	1/8	0.047	0.372	0.029	2-1/2	09441	03891
0.035	1/8	0.053	0.420	0.032	2-1/2	09448	03892
0.040	1/8	0.060	0.480	0.037	2-1/2	09455	03893
0.045	1/8	0.068	0.540	0.042	2-1/2	09462	03894
0.047	1/8	0.071	0.564	0.044	2-1/2	09469	03895
0.050	1/8	0.075	0.600	0.047	2-1/2	09476	03896
0.055	1/8	0.083	0.660	0.051	2-1/2	09483	03897
0.060	1/8	0.090	0.720	0.056	2-1/2	09490	03898
0.062	1/8	0.093	0.744	0.058	2-1/2	09497	03899
0.065	1/8	0.098	0.780	0.061	2-1/2	09504	03900
0.070	1/8	0.105	0.840	0.065	2-1/2	09511	03901
0.075	1/8	0.113	0.900	0.070	2-1/2	09518	03902
0.078	1/8	0.117	0.936	0.073	2-1/2	09525	03903
0.080	1/8	0.120	0.960	0.075	2-1/2	09532	03904
0.085	1/8	0.128	1.020	0.079	2-1/2	09539	03905
0.090	1/8	0.135	1.080	0.084	2-1/2	09546	03906
0.093	1/8	0.140	1.116	0.087	2-1/2	09553	03907
0.095	1/8	0.143	1.140	0.089	2-1/2	09560	03908
0.100	1/8	0.150	1.200	0.094	2-1/2	09567	03909
0.110	1/8	0.165	1.320	0.103	2-1/2	09574	03910
0.115	1/8	0.173	1.380	0.108	2-1/2	09581	03911
0.120	1/8	0.180	1.440	0.112	2-1/2	09588	03912

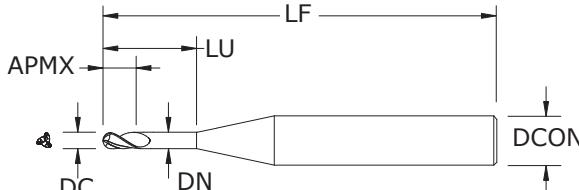
RE = 1/2 Cutting Diameter (DC)

- Three flute design features improved chip space over four flutes and increased strength and feed capability over two flutes.
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M3B • 1.5xD • 15xD Overall Reach

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M3B • 1.5xD 15xD

FRACTIONAL SERIES

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inch

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	EDP NO.
						UNCOATED TI-NAMITE-A (AlTiN)
0.010	1/8	0.015	0.150	0.009	2-1/2	09407 03913
0.015	1/8	0.023	0.225	0.014	2-1/2	09414 03914
0.020	1/8	0.030	0.300	0.018	2-1/2	09421 03915
0.025	1/8	0.038	0.375	0.023	2-1/2	09428 03916
0.030	1/8	0.045	0.450	0.028	2-1/2	09435 03917
0.031	1/8	0.047	0.465	0.029	2-1/2	09442 03918
0.035	1/8	0.053	0.525	0.032	2-1/2	09449 03919
0.040	1/8	0.060	0.600	0.037	2-1/2	09456 03920
0.045	1/8	0.068	0.675	0.042	2-1/2	09463 03921
0.047	1/8	0.071	0.705	0.044	2-1/2	09470 03922
0.050	1/8	0.075	0.750	0.047	2-1/2	09477 03923
0.055	1/8	0.083	0.825	0.051	2-1/2	09484 03924
0.060	1/8	0.090	0.900	0.056	2-1/2	09491 03925
0.062	1/8	0.093	0.930	0.058	2-1/2	09498 03926
0.065	1/8	0.098	0.975	0.061	2-1/2	09505 03927
0.070	1/8	0.105	1.050	0.065	2-1/2	09512 03928
0.075	1/8	0.113	1.125	0.070	2-1/2	09519 03929
0.078	1/8	0.117	1.170	0.073	2-1/2	09526 03930
0.080	1/8	0.120	1.200	0.075	2-1/2	09533 03931
0.085	1/8	0.128	1.275	0.079	2-1/2	09540 03932
0.090	1/8	0.135	1.350	0.084	2-1/2	09547 03933
0.093	1/8	0.140	1.395	0.087	3	09554 03934
0.095	1/8	0.143	1.425	0.089	3	09561 03935
0.100	1/8	0.150	1.500	0.094	3	09568 03936
0.110	1/8	0.165	1.650	0.103	3	09575 03937
0.115	1/8	0.173	1.725	0.108	3	09582 03938
0.120	1/8	0.180	1.800	0.112	3	09589 03939

RE = 1/2 Cutting Diameter (DC)

TOLERANCES (inch)

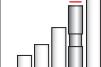
.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h6



M3B • 1.5xD • 20xD Overall Reach



New Expanded Tools

TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h₆

STEELS

STAINLESS STEELS

CAST IRON

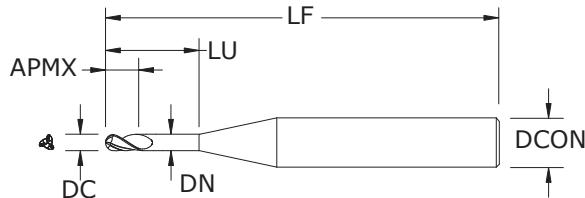
HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES



M3B • 1.5xD 20xD

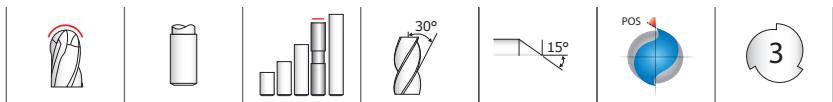
FRACTIONAL SERIES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	EDP NO.	
						UNCOATED	TI-NAMITE-A (AlTiN)
0.010	1/8	0.015	0.200	0.009	2-1/2	09408	03940
0.015	1/8	0.023	0.300	0.014	2-1/2	09415	03941
0.020	1/8	0.030	0.400	0.018	2-1/2	09422	03942
0.025	1/8	0.038	0.500	0.023	2-1/2	09429	03943
0.030	1/8	0.045	0.600	0.028	2-1/2	09436	03944
0.031	1/8	0.047	0.620	0.029	2-1/2	09443	03945
0.035	1/8	0.053	0.700	0.032	2-1/2	09450	03946
0.040	1/8	0.060	0.800	0.037	2-1/2	09457	03947
0.045	1/8	0.068	0.900	0.042	2-1/2	09464	03948
0.047	1/8	0.071	0.940	0.044	2-1/2	09471	03949
0.050	1/8	0.075	1.000	0.047	2-1/2	09478	03950
0.055	1/8	0.083	1.100	0.051	2-1/2	09485	03951
0.060	1/8	0.090	1.200	0.056	2-1/2	09492	03952
0.062	1/8	0.093	1.240	0.058	2-1/2	09499	03953
0.065	1/8	0.098	1.300	0.061	3	09506	03954
0.070	1/8	0.105	1.400	0.065	3	09513	03955
0.075	1/8	0.113	1.500	0.070	3	09520	03956
0.078	1/8	0.117	1.560	0.073	3	09527	03957
0.080	1/8	0.120	1.600	0.075	3	09534	03958
0.085	1/8	0.128	1.700	0.079	3	09541	03959
0.090	1/8	0.135	1.800	0.084	3	09548	03960
0.093	1/8	0.140	1.860	0.087	3	09555	03961
0.095	1/8	0.143	1.900	0.089	3	09562	03962
0.100	1/8	0.150	2.000	0.094	4	09569	03963
0.110	1/8	0.165	2.200	0.103	4	09576	03964
0.115	1/8	0.173	2.300	0.108	4	09583	03965
0.120	1/8	0.180	2.400	0.112	4	09590	03966

RE = 1/2 Cutting Diameter (DC)

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- All micro tools are manufactured in accordance with the KSPT ISO certified quality procedures.

M3B • 1.5xD • 25xD Overall Reach



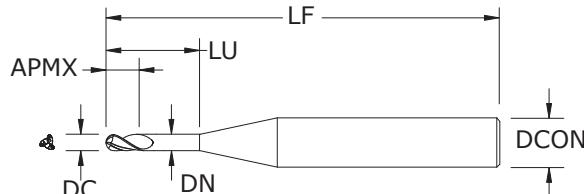
**MICRO
SGS®**
Solid Carbide Tools

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M3B • 1.5xD 25xD

FRACTIONAL SERIES

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New Expanded Tools

TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h6

STEELS

STAINLESS STEELS

CAST IRON

HIGH TEMP ALLOYS

TITANIUM

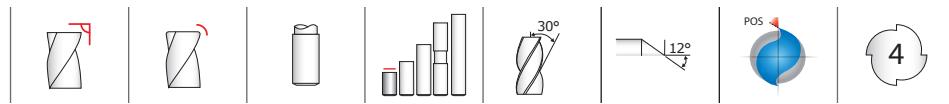
HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	inch				EDP NO.	
		LENGTH OF CUT APMX	REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	UNCOATED	TI-NAMITE-A (AlTiN)
0.010	1/8	0.015	0.250	0.009	2-1/2	09409	03967
0.015	1/8	0.023	0.375	0.014	2-1/2	09416	03968
0.020	1/8	0.030	0.500	0.018	2-1/2	09423	03969
0.025	1/8	0.038	0.625	0.023	2-1/2	09430	03970
0.030	1/8	0.045	0.750	0.028	2-1/2	09437	03971
0.031	1/8	0.047	0.775	0.029	2-1/2	09444	03972
0.035	1/8	0.053	0.875	0.032	2-1/2	09451	03973
0.040	1/8	0.060	1.000	0.037	2-1/2	09458	03974
0.045	1/8	0.068	1.125	0.042	2-1/2	09465	03975
0.047	1/8	0.071	1.175	0.044	2-1/2	09472	03976
0.050	1/8	0.075	1.250	0.047	2-1/2	09479	03977
0.055	1/8	0.083	1.375	0.051	3	09486	03978
0.060	1/8	0.090	1.500	0.056	3	09493	03979
0.062	1/8	0.093	1.550	0.058	3	09500	03980
0.065	1/8	0.098	1.625	0.061	3	09507	03981
0.070	1/8	0.105	1.750	0.065	3	09514	03982
0.075	1/8	0.113	1.875	0.070	3	09521	03983
0.078	1/8	0.117	1.950	0.073	4	09528	03984
0.080	1/8	0.120	2.000	0.075	4	09535	03985
0.085	1/8	0.128	2.125	0.079	4	09542	03986
0.090	1/8	0.135	2.250	0.084	4	09549	03987
0.093	1/8	0.140	2.325	0.087	4	09556	03988
0.095	1/8	0.143	2.375	0.089	4	09563	03989
0.100	1/8	0.150	2.500	0.094	4	09570	03990
0.110	1/8	0.165	2.750	0.103	4	09577	03991
0.115	1/8	0.173	2.875	0.108	4	09584	03992
0.120	1/8	0.180	3.000	0.112	4	09591	03993

RE = 1/2 Cutting Diameter (DC)



New Expanded Tools

TOLERANCES (inch)

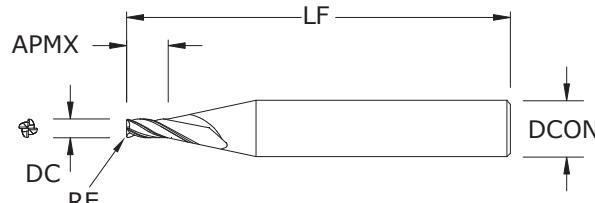
.005-.120 DIAMETER

DC = +0.000/-0.001

DCON = h₆

RE = +0.0000/-0.0005

- STEELS
- STAINLESS STEELS
- CAST IRON
- HIGH TEMP ALLOYS
- TITANIUM
- HARDENED STEELS
- NON-FERROUS
- PLASTICS/COMPOSITES



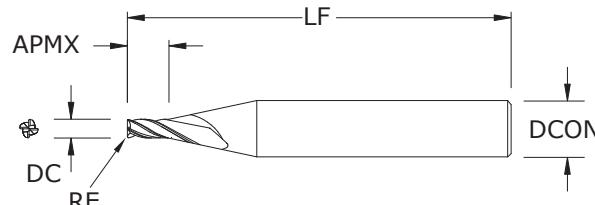
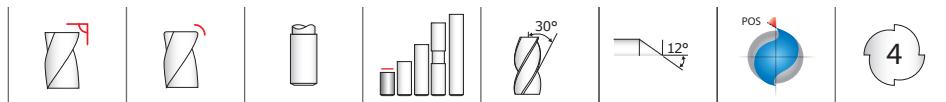
**M4 • M4CR
1.5xD**

FRACTIONAL SERIES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	CORNER RADIUS RE	EDP NO.	
					UNCOATED	TI-NAMITE-A (AITIN)
0.005	1/8	0.008	1-1/2	—	00372	02238
0.006	1/8	0.009	1-1/2	—	00373	02239
0.007	1/8	0.011	1-1/2	—	00374	02240
0.008	1/8	0.012	1-1/2	—	00375	02241
0.009	1/8	0.014	1-1/2	—	00376	02242
0.010	1/8	0.015	1-1/2	—	00377	02243
0.011	1/8	0.017	1-1/2	—	00378	02244
0.012	1/8	0.018	1-1/2	—	00379	02245
0.013	1/8	0.020	1-1/2	—	00380	02246
0.014	1/8	0.021	1-1/2	—	00381	02247
0.015	1/8	0.023	1-1/2	—	00382	02248
0.015	1/8	0.023	1-1/2	0.003	08986	09126
0.016	1/8	0.024	1-1/2	—	00383	02249
0.017	1/8	0.026	1-1/2	—	00384	02250
0.018	1/8	0.027	1-1/2	—	00385	02251
0.019	1/8	0.029	1-1/2	—	00386	02252
0.020	1/8	0.030	1-1/2	—	00387	02253
0.020	1/8	0.030	1-1/2	0.003	08988	09128
0.020	1/8	0.030	1-1/2	0.005	04024	04025
0.021	1/8	0.032	1-1/2	—	00388	02254
0.022	1/8	0.033	1-1/2	—	00389	02255
0.023	1/8	0.035	1-1/2	—	00390	02256
0.024	1/8	0.036	1-1/2	—	00391	02257
0.025	1/8	0.038	1-1/2	—	00392	02258
0.025	1/8	0.038	1-1/2	0.005	04026	04027
0.025	1/8	0.038	1-1/2	0.010	08990	09130
0.026	1/8	0.039	1-1/2	—	00393	02259
0.027	1/8	0.041	1-1/2	—	00394	02260
0.028	1/8	0.042	1-1/2	—	00395	02261
0.029	1/8	0.044	1-1/2	—	00396	02262
0.030	1/8	0.045	1-1/2	—	00397	02263
0.030	1/8	0.045	1-1/2	0.010	08992	09132
0.031	1/8	0.047	1-1/2	—	00398	02264
0.032	1/8	0.048	1-1/2	—	00399	02265
0.033	1/8	0.050	1-1/2	—	00400	02266
0.034	1/8	0.051	1-1/2	—	00401	02267

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- Four flute design allows for higher feed rates and decreased deflection, improving productivity and surface finish.
- Enhanced corner geometry with tight tolerance corner radii
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
- High performance carbide substrate designed specifically for Micro Tool applications.
- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.
- All tools in stock to meet customer order requirements.
- All micro tools are manufactured in accordance with the KSPT ISO certified quality procedures.



New Expanded Tools

M4 • M4CR 1.5xD

FRACTIONAL SERIES

continued

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	CORNER RADIUS RE	EDP NO.	
					UNCOATED	TI-NAMITE-A (AITIN)
0.035	1/8	0.053	1-1/2	—	00402	02268
0.035	1/8	0.053	1-1/2	0.005	08994	09134
0.035	1/8	0.053	1-1/2	0.010	08996	09136
0.036	1/8	0.054	1-1/2	—	00403	02269
0.037	1/8	0.056	1-1/2	—	00404	02270
0.038	1/8	0.057	1-1/2	—	00405	02271
0.039	1/8	0.059	1-1/2	—	00406	02272
0.040	1/8	0.060	1-1/2	—	00407	02273
0.040	1/8	0.060	1-1/2	0.005	08998	09138
0.040	1/8	0.060	1-1/2	0.010	09000	09140
0.041	1/8	0.062	1-1/2	—	00408	02402
0.042	1/8	0.063	1-1/2	—	00409	02403
0.043	1/8	0.065	1-1/2	—	00410	02404
0.044	1/8	0.066	1-1/2	—	00411	02405
0.045	1/8	0.068	1-1/2	—	00412	02406
0.045	1/8	0.068	1-1/2	0.005	09002	09142
0.045	1/8	0.068	1-1/2	0.010	09004	09144
0.046	1/8	0.069	1-1/2	—	00413	02407
0.047	1/8	0.071	1-1/2	—	00414	02408
0.048	1/8	0.072	1-1/2	—	00415	02409
0.049	1/8	0.074	1-1/2	—	00416	02410
0.050	1/8	0.075	1-1/2	—	00417	02411
0.050	1/8	0.075	1-1/2	0.005	09006	09146
0.050	1/8	0.075	1-1/2	0.010	09008	09148
0.050	1/8	0.075	1-1/2	0.015	09010	09150
0.051	1/8	0.077	1-1/2	—	00418	02412
0.052	1/8	0.078	1-1/2	—	00419	02413
0.053	1/8	0.080	1-1/2	—	00420	02414
0.054	1/8	0.081	1-1/2	—	00421	02415
0.055	1/8	0.083	1-1/2	—	00422	02416
0.055	1/8	0.083	1-1/2	0.005	09012	09152
0.055	1/8	0.083	1-1/2	0.010	09014	09154
0.055	1/8	0.083	1-1/2	0.015	09016	09156
0.056	1/8	0.084	1-1/2	—	00423	02417

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TOLERANCES (inch)**.005–.120 DIAMETER**

DC = +0.000/-0.001

DCON = h6

RE = +0.0000/-0.0005

STEELS

STAINLESS STEELS

CAST IRON

HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES

New Expanded Tools

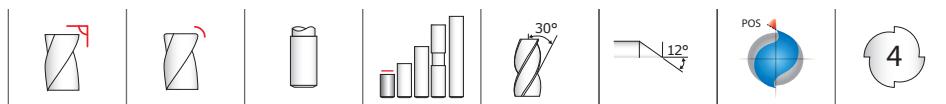
**M4 • M4CR
1.5xD**

FRACTIONAL SERIES

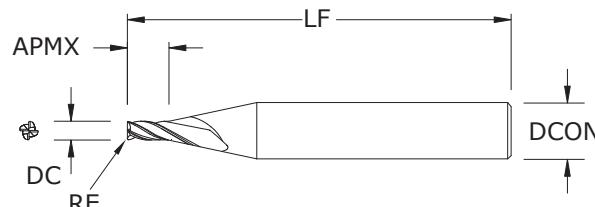
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inch					EDP NO.	
CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	CORNER RADIUS RE	UNCOATED	TI-NAMITE-A (AITIN)
0.057	1/8	0.086	1-1/2	—	00424	02418
0.058	1/8	0.087	1-1/2	—	00425	02419
0.059	1/8	0.089	1-1/2	—	00426	02420
0.060	1/8	0.090	1-1/2	—	00427	02421
0.060	1/8	0.090	1-1/2	0.005	09018	09158
0.060	1/8	0.090	1-1/2	0.010	09020	09160
0.060	1/8	0.090	1-1/2	0.015	09022	09162
0.062	1/8	0.093	1-1/2	—	00428	02422
0.065	1/8	0.098	1-1/2	—	00429	02423
0.065	1/8	0.098	1-1/2	0.005	09024	09164
0.065	1/8	0.098	1-1/2	0.010	09026	09166
0.065	1/8	0.098	1-1/2	0.015	09028	09168
0.070	1/8	0.105	1-1/2	—	00430	02424
0.070	1/8	0.105	1-1/2	0.005	09030	09170
0.070	1/8	0.105	1-1/2	0.010	09032	09172
0.070	1/8	0.105	1-1/2	0.015	09034	09174
0.075	1/8	0.1125	1-1/2	—	04014	04012
0.075	1/8	0.113	1-1/2	0.005	09036	09176
0.075	1/8	0.113	1-1/2	0.010	09038	09178
0.075	1/8	0.113	1-1/2	0.015	09040	09180
0.075	1/8	0.113	1-1/2	0.020	09042	09182
0.078	1/8	0.117	1-1/2	—	00431	02425
0.080	1/8	0.120	1-1/2	—	00432	02426
0.080	1/8	0.120	1-1/2	0.005	09044	09184
0.080	1/8	0.120	1-1/2	0.010	09046	09186
0.080	1/8	0.120	1-1/2	0.015	09048	09188
0.080	1/8	0.120	1-1/2	0.020	09050	09190
0.085	1/8	0.128	1-1/2	—	00433	02427
0.085	1/8	0.128	1-1/2	0.005	09052	09192
0.085	1/8	0.128	1-1/2	0.010	09054	09194
0.085	1/8	0.128	1-1/2	0.015	09056	09196
0.085	1/8	0.128	1-1/2	0.020	09058	09198
0.090	1/8	0.135	1-1/2	—	00434	02428
0.090	1/8	0.135	1-1/2	0.005	09060	09200

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M4 • M4CR • 1.5xD
**MICRO
SGS®**
Solid Carbide Tools

KYOCERA



New Expanded Tools

**M4 • M4CR
1.5xD**

FRACTIONAL SERIES

continued

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	CORNER RADIUS RE	EDP NO.	
					UNCOATED	TI-NAMITE-A (AITIN)
0.090	1/8	0.135	1-1/2	0.010	09062	09202
0.090	1/8	0.135	1-1/2	0.015	09064	09204
0.090	1/8	0.135	1-1/2	0.020	09066	09206
0.093	1/8	0.140	1-1/2	—	00435	02429
0.095	1/8	0.143	1-1/2	—	00436	02430
0.095	1/8	0.143	1-1/2	0.005	09068	09208
0.095	1/8	0.143	1-1/2	0.010	09070	09210
0.095	1/8	0.143	1-1/2	0.015	09072	09212
0.095	1/8	0.143	1-1/2	0.020	09074	09214
0.100	1/8	0.150	1-1/2	—	00437	02431
0.100	1/8	0.150	1-1/2	0.005	09076	09216
0.100	1/8	0.150	1-1/2	0.010	09078	09218
0.100	1/8	0.150	1-1/2	0.015	09080	09220
0.100	1/8	0.150	1-1/2	0.020	09082	09222
0.100	1/8	0.150	1-1/2	0.030	09084	09224
0.105	1/8	0.158	1-1/2	—	00438	02432
0.105	1/8	0.158	1-1/2	0.005	09086	09226
0.105	1/8	0.158	1-1/2	0.010	09088	09228
0.105	1/8	0.158	1-1/2	0.015	09090	09230
0.105	1/8	0.158	1-1/2	0.020	09092	09232
0.105	1/8	0.158	1-1/2	0.030	09094	09234
0.110	1/8	0.165	1-1/2	—	00439	02433
0.110	1/8	0.165	1-1/2	0.005	09096	09236
0.110	1/8	0.165	1-1/2	0.010	09098	09238
0.110	1/8	0.165	1-1/2	0.015	09100	09240
0.110	1/8	0.165	1-1/2	0.020	09102	09242
0.110	1/8	0.165	1-1/2	0.030	09104	09244
0.115	1/8	0.173	1-1/2	—	00440	02434
0.115	1/8	0.173	1-1/2	0.005	09106	09246
0.115	1/8	0.173	1-1/2	0.010	09108	09248
0.115	1/8	0.173	1-1/2	0.015	09110	09250
0.115	1/8	0.173	1-1/2	0.020	09112	09252
0.115	1/8	0.173	1-1/2	0.030	09114	09254
0.120	1/8	0.180	1-1/2	—	00441	02435

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TOLERANCES (inch)

.005–.120 DIAMETER

DC = +0.000/-0.001

DCON = h6

RE = +0.0000/-0.0005

STEELS

STAINLESS STEELS

CAST IRON

HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES

New Expanded Tools

**M4 • M4CR
1.5xD**

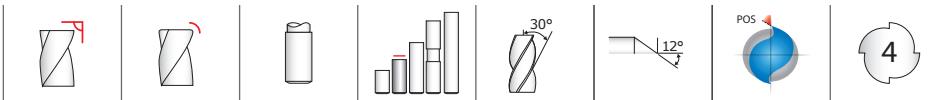
FRACTIONAL SERIES

continued

CUTTING DIAMETER DC	SHANK DIAMETER DCON	inch			EDP NO.		
		LENGTH OF CUT APMX	OVERALL LENGTH LF	CORNER RADIUS RE	UNCOATED	TI-NAMITE-A (AITIN)	
0.120	1/8	0.180	1-1/2	0.005	09116	09256	
0.120	1/8	0.180	1-1/2	0.010	09118	09258	
0.120	1/8	0.180	1-1/2	0.015	09120	09260	
0.120	1/8	0.180	1-1/2	0.020	09122	09262	
0.120	1/8	0.180	1-1/2	0.030	09124	09264	

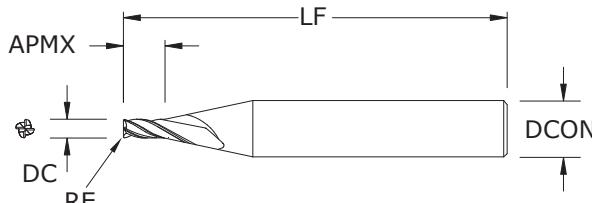
FRACTIONAL

M4 • M4CR • 3xD



**MICRO
SGS®**
Solid Carbide Tools

KYOCERA



M4 • M4CR • 3xD

FRACTIONAL SERIES

- Four flute design allows for higher feed rates and decreased deflection, improving productivity and surface finish.
- Enhanced corner geometry with tight tolerance corner radii
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
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CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	CORNER RADIUS RE	EDP NO.	
					UNCOATED	TI-NAMITE-A (AITIN)
0.005	1/8	0.015	1-1/2	—	00514	02312
0.006	1/8	0.018	1-1/2	—	00515	02313
0.007	1/8	0.021	1-1/2	—	00516	02314
0.008	1/8	0.024	1-1/2	—	00517	02315
0.009	1/8	0.027	1-1/2	—	00518	02316
0.010	1/8	0.030	1-1/2	—	00519	02317
0.011	1/8	0.033	1-1/2	—	00520	02318
0.012	1/8	0.036	1-1/2	—	00521	02319
0.013	1/8	0.039	1-1/2	—	00522	02320
0.014	1/8	0.042	1-1/2	—	00523	02321
0.015	1/8	0.045	1-1/2	—	00524	02322
0.015	1/8	0.045	1-1/2	0.003	08987	09127
0.016	1/8	0.048	1-1/2	—	00525	02323
0.017	1/8	0.051	1-1/2	—	00526	02324
0.018	1/8	0.054	1-1/2	—	00527	02325
0.019	1/8	0.057	1-1/2	—	00528	02326
0.020	1/8	0.060	1-1/2	—	00529	02327
0.020	1/8	0.060	1-1/2	0.003	08989	09129
0.020	1/8	0.060	1-1/2	0.005	04028	04029
0.021	1/8	0.063	1-1/2	—	00530	02328
0.022	1/8	0.066	1-1/2	—	00531	02329
0.023	1/8	0.069	1-1/2	—	00532	02330
0.024	1/8	0.072	1-1/2	—	00533	02331
0.025	1/8	0.075	1-1/2	—	00534	02332
0.025	1/8	0.075	1-1/2	0.005	04030	04031
0.025	1/8	0.075	1-1/2	0.010	08991	09131
0.026	1/8	0.078	1-1/2	—	00535	02333
0.027	1/8	0.081	1-1/2	—	00536	02334
0.028	1/8	0.084	1-1/2	—	00537	02335
0.029	1/8	0.087	1-1/2	—	00538	02336
0.030	1/8	0.090	1-1/2	—	00539	02337
0.030	1/8	0.090	1-1/2	0.010	08993	09133
0.031	1/8	0.093	1-1/2	—	00540	02338
0.032	1/8	0.096	1-1/2	—	00541	02339
0.033	1/8	0.099	1-1/2	—	00542	02340
0.034	1/8	0.102	1-1/2	—	00543	02341

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TOLERANCES (inch)

.004-.120 DIAMETER

DC = +0.000/-0.001

DCON = h6

RE = +0.0000/-0.0005

STEELS

STAINLESS STEELS

CAST IRON

HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES

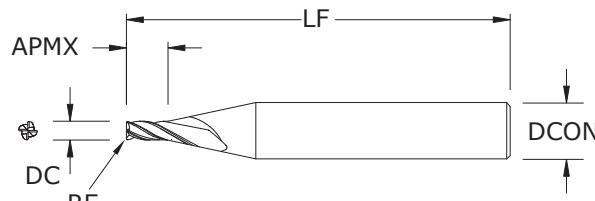
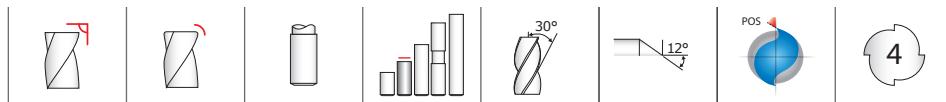
M4 • M4CR • 3xD

FRACTIONAL SERIES

continued

inch					EDP NO.	
CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	CORNER RADIUS RE	UNCOATED	TI-NAMITE-A (AITIN)
0.035	1/8	0.105	1-1/2	—	00544	02342
0.035	1/8	0.105	1-1/2	0.005	08995	09135
0.035	1/8	0.105	1-1/2	0.010	08997	09137
0.036	1/8	0.108	1-1/2	—	00545	02343
0.037	1/8	0.111	1-1/2	—	00546	02344
0.038	1/8	0.114	1-1/2	—	00547	02345
0.039	1/8	0.117	1-1/2	—	00548	02346
0.040	1/8	0.120	1-1/2	—	00549	02347
0.040	1/8	0.120	1-1/2	0.005	08999	09139
0.040	1/8	0.120	1-1/2	0.010	09001	09141
0.041	1/8	0.123	1-1/2	—	00550	02470
0.042	1/8	0.126	1-1/2	—	00551	02471
0.043	1/8	0.129	1-1/2	—	00552	02472
0.044	1/8	0.132	1-1/2	—	00553	02473
0.045	1/8	0.135	1-1/2	—	00554	02474
0.045	1/8	0.135	1-1/2	0.005	09003	09143
0.045	1/8	0.135	1-1/2	0.010	09005	09145
0.046	1/8	0.138	1-1/2	—	00555	02475
0.047	1/8	0.141	1-1/2	—	00556	02476
0.048	1/8	0.144	1-1/2	—	00557	02477
0.049	1/8	0.147	1-1/2	—	00558	02478
0.050	1/8	0.150	1-1/2	—	00559	02479
0.050	1/8	0.150	1-1/2	0.005	09007	09147
0.050	1/8	0.150	1-1/2	0.010	09009	09149
0.050	1/8	0.150	1-1/2	0.015	09011	09151
0.051	1/8	0.153	1-1/2	—	00560	02480
0.052	1/8	0.156	1-1/2	—	00561	02481
0.053	1/8	0.159	1-1/2	—	00562	02482
0.054	1/8	0.162	1-1/2	—	00563	02483
0.055	1/8	0.165	1-1/2	—	00564	02484
0.055	1/8	0.165	1-1/2	0.005	09013	09153
0.055	1/8	0.165	1-1/2	0.010	09015	09155
0.055	1/8	0.165	1-1/2	0.015	09017	09157
0.056	1/8	0.168	1-1/2	—	00565	02485
0.057	1/8	0.171	1-1/2	—	00566	02486
0.058	1/8	0.174	1-1/2	—	00567	02487

continued on next page



New Expanded Tools

M4 • M4CR • 3xD

FRACTIONAL SERIES

continued

CUTTING DIAMETER DC	SHANK DIAMETER DCON	inch			EDP NO.	
		LENGTH OF CUT APMX	OVERALL LENGTH LF	CORNER RADIUS RE	UNCOATED	TI-NAMITE-A (AITIN)
0.059	1/8	0.177	1-1/2	—	00568	02488
0.060	1/8	0.180	1-1/2	—	00569	02489
0.060	1/8	0.180	1-1/2	0.005	09019	09159
0.060	1/8	0.180	1-1/2	0.010	09021	09161
0.060	1/8	0.180	1-1/2	0.015	09023	09163
0.062	1/8	0.186	1-1/2	—	00570	02490
0.065	1/8	0.195	1-1/2	—	00571	02491
0.065	1/8	0.195	1-1/2	0.005	09025	09165
0.065	1/8	0.195	1-1/2	0.010	09027	09167
0.065	1/8	0.195	1-1/2	0.015	09029	09169
0.070	1/8	0.210	1-1/2	—	00572	02492
0.070	1/8	0.210	1-1/2	0.005	09031	09171
0.070	1/8	0.210	1-1/2	0.010	09033	09173
0.070	1/8	0.210	1-1/2	0.015	09035	09175
0.075	1/8	0.225	1-1/2	—	04015	04013
0.075	1/8	0.225	1-1/2	0.005	09037	09177
0.075	1/8	0.225	1-1/2	0.010	09039	09179
0.075	1/8	0.225	1-1/2	0.015	09041	09181
0.075	1/8	0.225	1-1/2	0.020	09043	09183
0.078	1/8	0.234	1-1/2	—	00573	02493
0.080	1/8	0.240	1-1/2	—	00574	02494
0.080	1/8	0.240	1-1/2	0.005	09045	09185
0.080	1/8	0.240	1-1/2	0.010	09047	09187
0.080	1/8	0.240	1-1/2	0.015	09049	09189
0.080	1/8	0.240	1-1/2	0.020	09051	09191
0.085	1/8	0.255	1-1/2	—	00575	02495
0.085	1/8	0.255	1-1/2	0.005	09053	09193
0.085	1/8	0.255	1-1/2	0.010	09055	09195
0.085	1/8	0.255	1-1/2	0.015	09057	09197
0.085	1/8	0.255	1-1/2	0.020	09059	09199
0.090	1/8	0.270	1-1/2	—	00576	02496
0.090	1/8	0.270	1-1/2	0.005	09061	09201
0.090	1/8	0.270	1-1/2	0.010	09063	09203
0.090	1/8	0.270	1-1/2	0.015	09065	09205
0.090	1/8	0.270	1-1/2	0.020	09067	09207
0.093	1/8	0.279	1-1/2	—	00577	02497

continued on next page

TOLERANCES (inch)**.004-.120 DIAMETER**

DC = +0.000/-0.001

DCON = h6

RE = +0.0000/-0.0005

STEELS

STAINLESS STEELS

CAST IRON

HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

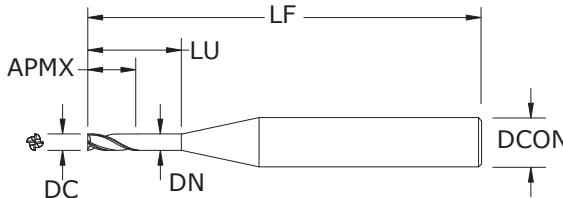
PLASTICS/COMPOSITES

New Expanded Tools

M4 • M4CR • 3xD
FRACTIONAL SERIES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	inch			EDP NO.		<i>continued</i>
		LENGTH OF CUT APMX	OVERALL LENGTH LF	CORNER RADIUS RE	UNCOATED	TI-NAMITE-A (AITIN)	
0.095	1/8	0.285	1-1/2	—	00578	02498	
0.095	1/8	0.285	1-1/2	0.005	09069	09209	
0.095	1/8	0.285	1-1/2	0.010	09071	09211	
0.095	1/8	0.285	1-1/2	0.015	09073	09213	
0.095	1/8	0.285	1-1/2	0.020	09075	09215	
0.100	1/8	0.300	1-1/2	—	00579	02499	
0.100	1/8	0.300	1-1/2	0.005	09077	09217	
0.100	1/8	0.300	1-1/2	0.010	09079	09219	
0.100	1/8	0.300	1-1/2	0.015	09081	09221	
0.100	1/8	0.300	1-1/2	0.020	09083	09223	
0.100	1/8	0.300	1-1/2	0.030	09085	09225	
0.105	1/8	0.315	1-1/2	—	00580	02500	
0.105	1/8	0.315	1-1/2	0.005	09087	09227	
0.105	1/8	0.315	1-1/2	0.010	09089	09229	
0.105	1/8	0.315	1-1/2	0.015	09091	09231	
0.105	1/8	0.315	1-1/2	0.020	09093	09233	
0.105	1/8	0.315	1-1/2	0.030	09095	09235	
0.110	1/8	0.330	1-1/2	—	00581	02501	
0.110	1/8	0.330	1-1/2	0.005	09097	09237	
0.110	1/8	0.330	1-1/2	0.010	09099	09239	
0.110	1/8	0.330	1-1/2	0.015	09101	09241	
0.110	1/8	0.330	1-1/2	0.020	09103	09243	
0.110	1/8	0.330	1-1/2	0.030	09105	09245	
0.115	1/8	0.345	1-1/2	—	00582	02502	
0.115	1/8	0.345	1-1/2	0.005	09107	09247	
0.115	1/8	0.345	1-1/2	0.010	09109	09249	
0.115	1/8	0.345	1-1/2	0.015	09111	09251	
0.115	1/8	0.345	1-1/2	0.020	09113	09253	
0.115	1/8	0.345	1-1/2	0.030	09115	09255	
0.120	1/8	0.360	1-1/2	—	00583	02503	
0.120	1/8	0.360	1-1/2	0.005	09117	09257	
0.120	1/8	0.360	1-1/2	0.010	09119	09259	
0.120	1/8	0.360	1-1/2	0.015	09121	09261	
0.120	1/8	0.360	1-1/2	0.020	09123	09263	
0.120	1/8	0.360	1-1/2	0.030	09125	09265	

M4 • 3xD • 8xD Overall Reach
**MICRO
SGS®**
Solid Carbide Tools



New Expanded Tools

**M4 • 3xD
8xD**

FRACTIONAL SERIES

- Four flute design allows for higher feed rates and decreased deflection, improving productivity and surface finish.
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
- High performance carbide substrate designed specifically for Micro Tool applications.
- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.
- All tools in stock to meet customer order requirements.
- All micro tools are manufactured in accordance with the KSPT ISO certified quality procedures.

CUTTING DIAMETER DC	SHANK DIAMETER DCON	inch				EDP NO.	
		LENGTH OF CUT APMX	REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	UNCOATED	TI-NAMITE-A (AlTiN)
0.010	1/8	0.030	0.080	0.009	1-1/2	09839	03454
0.015	1/8	0.045	0.120	0.014	1-1/2	09841	03455
0.020	1/8	0.060	0.160	0.018	1-1/2	09843	03456
0.025	1/8	0.075	0.200	0.023	1-1/2	09845	03457
0.030	1/8	0.090	0.240	0.028	1-1/2	09847	03458
0.031	1/8	0.093	0.248	0.029	1-1/2	09849	03459
0.035	1/8	0.105	0.280	0.032	1-1/2	09851	03460
0.040	1/8	0.120	0.320	0.037	1-1/2	09853	03461
0.045	1/8	0.135	0.360	0.042	2	09855	03462
0.047	1/8	0.141	0.376	0.044	2	09857	03463
0.050	1/8	0.150	0.400	0.047	2	09859	03464
0.055	1/8	0.165	0.440	0.051	2	09861	03465
0.060	1/8	0.180	0.480	0.056	2	09863	03466
0.062	1/8	0.186	0.496	0.058	2	09865	03467
0.065	1/8	0.195	0.520	0.061	2	09867	03468
0.070	1/8	0.210	0.560	0.065	2	09869	03469
0.075	1/8	0.225	0.600	0.070	2	09871	03470
0.078	1/8	0.234	0.624	0.073	2	09873	03471
0.080	1/8	0.240	0.640	0.075	2	09875	03472
0.085	1/8	0.255	0.680	0.079	2	09877	03473
0.090	1/8	0.270	0.720	0.084	2	09879	03474
0.093	1/8	0.279	0.744	0.087	2	09881	03475
0.095	1/8	0.285	0.760	0.089	2	09883	03476
0.100	1/8	0.300	0.800	0.094	2	09885	03477
0.110	1/8	0.330	0.880	0.103	2	09887	03478
0.115	1/8	0.345	0.920	0.108	2	09889	03479
0.120	1/8	0.360	0.960	0.112	2	09891	03480

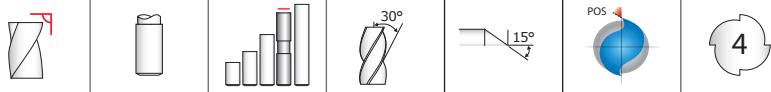
TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h6





New Expanded Tools

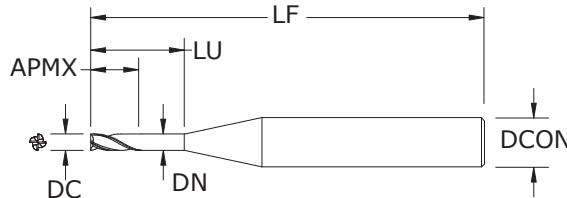
TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h₆

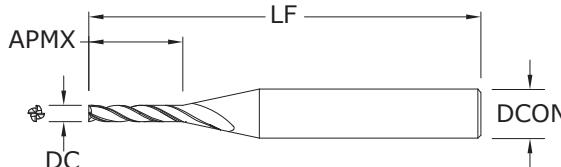
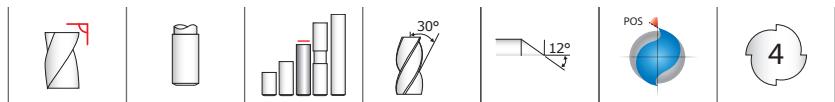
- STEELS
- STAINLESS STEELS
- CAST IRON
- HIGH TEMP ALLOYS
- TITANIUM
- HARDENED STEELS
- NON-FERROUS
- PLASTICS/COMPOSITES



**M4 • 3xD
12xD**
FRACTIONAL SERIES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	EDP NO.	
						UNCOATED	TI-NAMITE-A (AlTiN)
0.010	1/8	0.030	0.120	0.009	1-1/2	09838	03481
0.015	1/8	0.045	0.180	0.014	1-1/2	09840	03482
0.020	1/8	0.060	0.240	0.018	1-1/2	09842	03483
0.025	1/8	0.075	0.300	0.023	1-1/2	09844	03484
0.030	1/8	0.090	0.360	0.028	2	09846	03485
0.031	1/8	0.093	0.372	0.029	2	09848	03486
0.035	1/8	0.105	0.420	0.032	2	09850	03487
0.040	1/8	0.120	0.480	0.037	2	09852	03488
0.045	1/8	0.135	0.540	0.042	2	09854	03489
0.047	1/8	0.141	0.564	0.044	2	09856	03490
0.050	1/8	0.150	0.600	0.047	2	09858	03491
0.055	1/8	0.165	0.660	0.051	2	09860	03492
0.060	1/8	0.180	0.720	0.056	2	09862	03493
0.062	1/8	0.186	0.744	0.058	2	09864	03494
0.065	1/8	0.195	0.780	0.061	2	09866	03495
0.070	1/8	0.210	0.840	0.065	2	09868	03496
0.075	1/8	0.225	0.900	0.070	2	09870	03497
0.078	1/8	0.234	0.936	0.073	2-1/2	09872	03498
0.080	1/8	0.240	0.960	0.075	2-1/2	09874	03499
0.085	1/8	0.255	1.020	0.079	2-1/2	09876	03500
0.090	1/8	0.270	1.080	0.084	2-1/2	09878	03501
0.093	1/8	0.279	1.116	0.087	2-1/2	09880	03502
0.095	1/8	0.285	1.140	0.089	2-1/2	09882	03503
0.100	1/8	0.300	1.200	0.094	2-1/2	09884	03504
0.110	1/8	0.330	1.320	0.103	2-1/2	09886	03505
0.115	1/8	0.345	1.380	0.108	2-1/2	09888	03506
0.120	1/8	0.360	1.440	0.112	2-1/2	09890	03507

- Four flute design allows for higher feed rates and decreased deflection, improving productivity and surface finish.
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
- High performance carbide substrate designed specifically for Micro Tool applications.
- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.
- All tools in stock to meet customer order requirements.
- All micro tools are manufactured in accordance with the KSPT ISO certified quality procedures.



New Expanded Tools

M4L • 5xD

FRACTIONAL SERIES

- Four flute design allows for higher feed rates and decreased deflection, improving productivity and surface finish.
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
- High performance carbide substrate designed specifically for Micro Tool applications.
- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.
- All tools in stock to meet customer order requirements.
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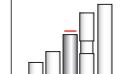
inch				EDP NO.	
CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	UNCOATED	TI-NAMITE-A (AITIN)
0.010	1/8	0.050	2-1/2	00584	02640
0.015	1/8	0.075	2-1/2	00585	02641
0.020	1/8	0.100	2-1/2	00586	02642
0.025	1/8	0.125	2-1/2	00587	02643
0.030	1/8	0.150	2-1/2	00588	02644
0.031	1/8	0.155	2-1/2	00589	02645
0.035	1/8	0.175	2-1/2	00590	02646
0.040	1/8	0.200	2-1/2	00591	02647
0.045	1/8	0.225	2-1/2	00592	02648
0.047	1/8	0.235	2-1/2	00593	02649
0.050	1/8	0.250	2-1/2	00594	02650
0.055	1/8	0.275	2-1/2	00595	02651
0.060	1/8	0.300	2-1/2	00596	02652
0.062	1/8	0.310	2-1/2	00597	02653
0.065	1/8	0.325	2-1/2	00598	02654
0.070	1/8	0.350	2-1/2	00599	02655
0.075	1/8	0.375	2-1/2	00600	02656
0.078	1/8	0.390	2-1/2	00601	02657
0.080	1/8	0.400	2-1/2	00602	02658
0.085	1/8	0.425	2-1/2	00603	02659
0.090	1/8	0.450	2-1/2	00604	02660
0.093	1/8	0.465	2-1/2	00605	02661
0.095	1/8	0.475	2-1/2	00606	02662
0.100	1/8	0.500	2-1/2	00607	02663
0.110	1/8	0.550	2-1/2	00608	02664
0.115	1/8	0.575	2-1/2	00609	02665
0.120	1/8	0.600	2-1/2	00610	02666

TOLERANCES (inch)**.010-.120 DIAMETER**

DC = +0.000/-0.001

DCON = h6





New Expanded Tools

TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h₆

STEELS

STAINLESS STEELS

CAST IRON

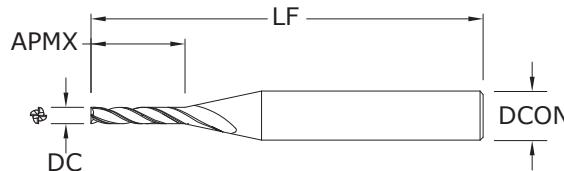
HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES



M4E • 8xD

FRACTIONAL SERIES

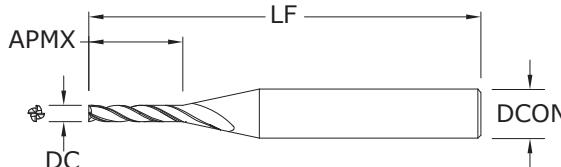
CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	EDP NO.
		inch		
0.010	1/8	0.080	2-1/2	00611
0.015	1/8	0.120	2-1/2	00612
0.020	1/8	0.160	2-1/2	00613
0.025	1/8	0.200	2-1/2	00614
0.030	1/8	0.240	2-1/2	00615
0.031	1/8	0.248	2-1/2	00616
0.035	1/8	0.280	2-1/2	00617
0.040	1/8	0.320	2-1/2	00618
0.045	1/8	0.360	2-1/2	00619
0.047	1/8	0.376	2-1/2	00620
0.050	1/8	0.400	2-1/2	00621
0.055	1/8	0.440	2-1/2	00622
0.060	1/8	0.480	2-1/2	00623
0.062	1/8	0.496	2-1/2	00624
0.065	1/8	0.520	2-1/2	00625
0.070	1/8	0.560	2-1/2	00626
0.075	1/8	0.600	2-1/2	00627
0.078	1/8	0.624	2-1/2	00628
0.080	1/8	0.640	2-1/2	00629
0.085	1/8	0.680	2-1/2	00630
0.090	1/8	0.720	2-1/2	00631
0.093	1/8	0.744	2-1/2	00632
0.095	1/8	0.760	2-1/2	00633
0.100	1/8	0.800	2-1/2	00634
0.110	1/8	0.880	2-1/2	00635
0.115	1/8	0.920	2-1/2	00636
0.120	1/8	0.960	2-1/2	00637

- Four flute design allows for higher feed rates and decreased deflection, improving productivity and surface finish.
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M4X • 12xD

**MICRO
SGS®**
Solid Carbide Tools

KYOCERA



New Expanded Tools

M4X • 12xD

FRACTIONAL SERIES

- Four flute design allows for higher feed rates and decreased deflection, improving productivity and surface finish.
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
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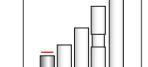
CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	EDP NO.	
				UNCOATED	TI-NAMITE-A (AITIN)
0.015	1/8	0.180	2-1/2	00639	02694
0.020	1/8	0.240	2-1/2	00640	02695
0.025	1/8	0.300	2-1/2	00641	02696
0.030	1/8	0.360	2-1/2	00642	02697
0.031	1/8	0.372	2-1/2	00643	02698
0.035	1/8	0.420	2-1/2	00644	02699
0.040	1/8	0.480	2-1/2	00645	02700
0.045	1/8	0.540	2-1/2	00646	02701
0.047	1/8	0.564	2-1/2	00647	02702
0.050	1/8	0.600	2-1/2	00648	02703
0.055	1/8	0.660	2-1/2	00649	02704
0.060	1/8	0.720	2-1/2	00650	02705
0.062	1/8	0.744	2-1/2	00651	02706
0.065	1/8	0.780	2-1/2	00652	02707
0.070	1/8	0.840	2-1/2	00653	02708
0.075	1/8	0.900	2-1/2	00654	02709
0.078	1/8	0.936	2-1/2	00655	02710
0.080	1/8	0.960	2-1/2	00656	02711
0.085	1/8	1.020	2-1/2	00657	02712
0.090	1/8	1.080	2-1/2	00658	02713
0.093	1/8	1.116	2-1/2	00659	02714
0.095	1/8	1.140	2-1/2	00660	02715
0.100	1/8	1.200	2-1/2	00661	02716
0.110	1/8	1.320	2-1/2	00662	02717
0.115	1/8	1.380	2-1/2	00663	02718
0.120	1/8	1.440	2-1/2	00664	02719

TOLERANCES (inch)**.015-.120 DIAMETER**

DC = +0.000/-0.001

DCON = h6





New Expanded Tools

TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h₆

STEELS

STAINLESS STEELS

CAST IRON

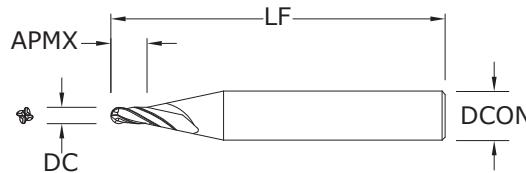
HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES



M4B • 1.5xD

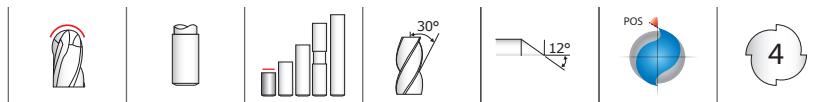
FRACTIONAL SERIES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	EDP NO.
				UNCOATED TI-NAMITE-A (AITIN)
0.010	1/8	0.015	1-1/2	00745 03071
0.011	1/8	0.017	1-1/2	00746 03072
0.012	1/8	0.018	1-1/2	00747 03073
0.013	1/8	0.020	1-1/2	00748 03074
0.014	1/8	0.021	1-1/2	00749 03075
0.015	1/8	0.023	1-1/2	00750 03076
0.016	1/8	0.024	1-1/2	00751 03077
0.017	1/8	0.026	1-1/2	00752 03078
0.018	1/8	0.027	1-1/2	00753 03079
0.019	1/8	0.029	1-1/2	00754 03080
0.020	1/8	0.030	1-1/2	00755 03081
0.021	1/8	0.032	1-1/2	00756 03082
0.022	1/8	0.033	1-1/2	00757 03083
0.023	1/8	0.035	1-1/2	00758 03084
0.024	1/8	0.036	1-1/2	00759 03085
0.025	1/8	0.038	1-1/2	00760 03086
0.026	1/8	0.039	1-1/2	00761 03087
0.027	1/8	0.041	1-1/2	00762 03088
0.028	1/8	0.042	1-1/2	00763 03089
0.029	1/8	0.044	1-1/2	00764 03090
0.030	1/8	0.045	1-1/2	00765 03091
0.031	1/8	0.047	1-1/2	00766 03092
0.032	1/8	0.048	1-1/2	00767 03093
0.033	1/8	0.050	1-1/2	00768 03094
0.034	1/8	0.051	1-1/2	00769 03095
0.035	1/8	0.053	1-1/2	00770 03096
0.036	1/8	0.054	1-1/2	00771 03097
0.037	1/8	0.056	1-1/2	00772 03098
0.038	1/8	0.057	1-1/2	00773 03099
0.039	1/8	0.059	1-1/2	00774 03100
0.040	1/8	0.060	1-1/2	00775 03101
0.041	1/8	0.062	1-1/2	00776 02538
0.042	1/8	0.063	1-1/2	00777 02539
0.043	1/8	0.065	1-1/2	00778 02540

RE = 1/2 Cutting Diameter (DC)

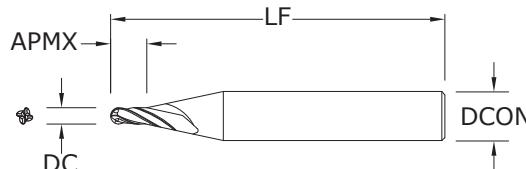
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M4B • 1.5xD

**MICRO
SGS®**
Solid Carbide Tools

KYOCERA



New Expanded Tools

M4B • 1.5xD

FRACTIONAL SERIES

continued

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	EDP NO.	
				UNCOATED	TI-NAMITE-A (AITIN)
0.044	1/8	0.066	1-1/2	00779	02541
0.045	1/8	0.068	1-1/2	00780	02542
0.046	1/8	0.069	1-1/2	00781	02543
0.047	1/8	0.071	1-1/2	00782	02544
0.048	1/8	0.072	1-1/2	00783	02545
0.049	1/8	0.074	1-1/2	00784	02546
0.050	1/8	0.075	1-1/2	00785	02547
0.051	1/8	0.077	1-1/2	00786	02548
0.052	1/8	0.078	1-1/2	00787	02549
0.053	1/8	0.080	1-1/2	00788	02550
0.054	1/8	0.081	1-1/2	00789	02551
0.055	1/8	0.083	1-1/2	00790	02552
0.056	1/8	0.084	1-1/2	00791	02553
0.057	1/8	0.086	1-1/2	00792	02554
0.058	1/8	0.087	1-1/2	00793	02555
0.059	1/8	0.089	1-1/2	00794	02556
0.060	1/8	0.090	1-1/2	00795	02557
0.062	1/8	0.093	1-1/2	00796	02558
0.065	1/8	0.098	1-1/2	00797	02559
0.070	1/8	0.105	1-1/2	00798	02560
0.075	1/8	0.112	1-1/2	04018	04016
0.078	1/8	0.117	1-1/2	00799	02561
0.080	1/8	0.120	1-1/2	00800	02562
0.085	1/8	0.128	1-1/2	00801	02563
0.090	1/8	0.135	1-1/2	00802	02564
0.093	1/8	0.140	1-1/2	00803	02565
0.095	1/8	0.143	1-1/2	00804	02566
0.100	1/8	0.150	1-1/2	00805	02567
0.105	1/8	0.158	1-1/2	00806	02568
0.110	1/8	0.165	1-1/2	00807	02569
0.115	1/8	0.173	1-1/2	00808	02570
0.120	1/8	0.180	1-1/2	00809	02571

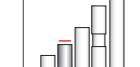
RE = 1/2 Cutting Diameter (DC)

TOLERANCES (inch)**.010-.120 DIAMETER**

DC = +0.000/-0.001

DCON = h6

- STEELS
- STAINLESS STEELS
- CAST IRON
- HIGH TEMP ALLOYS
- TITANIUM
- HARDENED STEELS
- NON-FERROUS
- PLASTICS/COMPOSITES



New Expanded Tools

TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h₆

STEELS

STAINLESS STEELS

CAST IRON

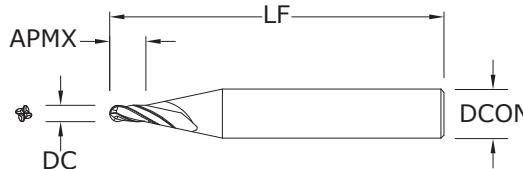
HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES



M4B • 3xD

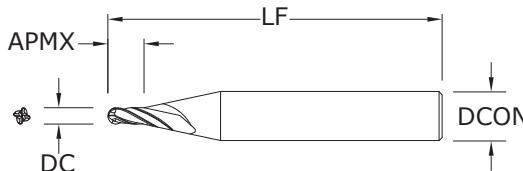
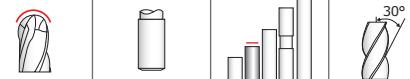
FRACTIONAL SERIES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	EDP NO.
				UNCOATED TI-NAMITE-A (AITIN)
0.010	1/8	0.030	1-1/2	00887 03145
0.011	1/8	0.033	1-1/2	00888 03146
0.012	1/8	0.036	1-1/2	00889 03147
0.013	1/8	0.039	1-1/2	00890 03148
0.014	1/8	0.042	1-1/2	00891 03149
0.015	1/8	0.045	1-1/2	00892 03150
0.016	1/8	0.048	1-1/2	00893 03151
0.017	1/8	0.051	1-1/2	00894 03152
0.018	1/8	0.054	1-1/2	00895 03153
0.019	1/8	0.057	1-1/2	00896 03154
0.020	1/8	0.060	1-1/2	00897 03155
0.021	1/8	0.063	1-1/2	00898 03156
0.022	1/8	0.066	1-1/2	00899 03157
0.023	1/8	0.069	1-1/2	00900 03158
0.024	1/8	0.072	1-1/2	00901 03159
0.025	1/8	0.075	1-1/2	00902 03160
0.026	1/8	0.078	1-1/2	00903 03161
0.027	1/8	0.081	1-1/2	00904 03162
0.028	1/8	0.084	1-1/2	00905 03163
0.029	1/8	0.087	1-1/2	00906 03164
0.030	1/8	0.090	1-1/2	00907 03165
0.031	1/8	0.093	1-1/2	00908 03166
0.032	1/8	0.096	1-1/2	00909 03167
0.033	1/8	0.099	1-1/2	00910 03168
0.034	1/8	0.102	1-1/2	00911 03169
0.035	1/8	0.105	1-1/2	00912 03170
0.036	1/8	0.108	1-1/2	00913 03171
0.037	1/8	0.111	1-1/2	00914 03172
0.038	1/8	0.114	1-1/2	00915 03173
0.039	1/8	0.117	1-1/2	00916 03174
0.040	1/8	0.120	1-1/2	00917 03175
0.041	1/8	0.123	1-1/2	00918 02606
0.042	1/8	0.126	1-1/2	00919 02607
0.043	1/8	0.129	1-1/2	00920 02608

RE = 1/2 Cutting Diameter (DC)

continued on next page

- Four flute design allows for higher feed rates and decreased deflection, improving productivity and surface finish.
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New Expanded Tools

M4B • 3xD

FRACTIONAL SERIES

continued

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	EDP NO.	
				UNCOATED	TI-NAMITE-A (AITIN)
0.044	1/8	0.132	1-1/2	00921	02609
0.045	1/8	0.135	1-1/2	00922	02610
0.046	1/8	0.138	1-1/2	00923	02611
0.047	1/8	0.141	1-1/2	00924	02612
0.048	1/8	0.144	1-1/2	00925	02613
0.049	1/8	0.147	1-1/2	00926	02614
0.050	1/8	0.150	1-1/2	00927	02615
0.051	1/8	0.153	1-1/2	00928	02616
0.052	1/8	0.156	1-1/2	00929	02617
0.053	1/8	0.159	1-1/2	00930	02618
0.054	1/8	0.162	1-1/2	00931	02619
0.055	1/8	0.165	1-1/2	00932	02620
0.056	1/8	0.168	1-1/2	00933	02621
0.057	1/8	0.171	1-1/2	00934	02622
0.058	1/8	0.174	1-1/2	00935	02623
0.059	1/8	0.177	1-1/2	00936	02624
0.060	1/8	0.180	1-1/2	00937	02625
0.062	1/8	0.186	1-1/2	00938	02626
0.065	1/8	0.195	1-1/2	00939	02627
0.070	1/8	0.210	1-1/2	00940	02628
0.075	1/8	0.225	1-1/2	04019	04017
0.078	1/8	0.234	1-1/2	00941	02629
0.080	1/8	0.240	1-1/2	00942	02630
0.085	1/8	0.255	1-1/2	00943	02631
0.090	1/8	0.270	1-1/2	00944	02632
0.093	1/8	0.279	1-1/2	00945	02633
0.095	1/8	0.285	1-1/2	00946	02634
0.100	1/8	0.300	1-1/2	00947	02635
0.105	1/8	0.315	1-1/2	00948	02636
0.110	1/8	0.330	1-1/2	00949	02637
0.115	1/8	0.345	1-1/2	00950	02638
0.120	1/8	0.360	1-1/2	00951	02639

RE = 1/2 Cutting Diameter (DC)

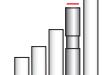
TOLERANCES (inch)**.010-.120 DIAMETER**

DC = +0.000/-0.001

DCON = h6

- STEELS
- STAINLESS STEELS
- CAST IRON
- HIGH TEMP ALLOYS
- TITANIUM
- HARDENED STEELS
- NON-FERROUS
- PLASTICS/COMPOSITES

M4B • 3xD • 8xD Overall Reach



New Expanded Tools

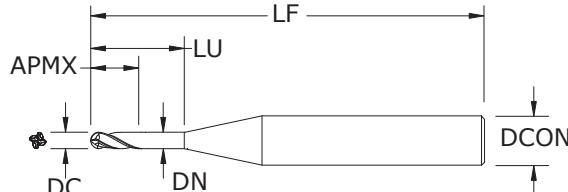
TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h₆

- STEELS
- STAINLESS STEELS
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- PLASTICS/COMPOSITES



M4B • 3xD 8xD

FRACTIONAL SERIES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	EDP NO.	
						UNCOATED	TI-NAMITE-A (AlTiN)
0.010	1/8	0.030	0.080	0.009	1-1/2	09785	03751
0.015	1/8	0.045	0.120	0.014	1-1/2	09787	03752
0.020	1/8	0.060	0.160	0.018	1-1/2	09789	03753
0.025	1/8	0.075	0.200	0.023	1-1/2	09791	03754
0.030	1/8	0.090	0.240	0.028	1-1/2	09793	03755
0.031	1/8	0.093	0.248	0.029	1-1/2	09795	03756
0.035	1/8	0.105	0.280	0.032	1-1/2	09797	03757
0.040	1/8	0.120	0.320	0.037	1-1/2	09799	03758
0.045	1/8	0.135	0.360	0.042	2	09801	03759
0.047	1/8	0.141	0.376	0.044	2	09803	03760
0.050	1/8	0.150	0.400	0.047	2	09805	03761
0.055	1/8	0.165	0.440	0.051	2	09807	03762
0.060	1/8	0.180	0.480	0.056	2	09809	03763
0.062	1/8	0.186	0.496	0.058	2	09811	03764
0.065	1/8	0.195	0.520	0.061	2	09813	03765
0.070	1/8	0.210	0.560	0.065	2	09815	03766
0.075	1/8	0.225	0.600	0.070	2	09817	03767
0.078	1/8	0.234	0.624	0.073	2	09819	03768
0.080	1/8	0.240	0.640	0.075	2	09821	03769
0.085	1/8	0.255	0.680	0.079	2	09823	03770
0.090	1/8	0.270	0.720	0.084	2	09825	03771
0.093	1/8	0.279	0.744	0.087	2	09827	03772
0.095	1/8	0.285	0.760	0.089	2	09829	03773
0.100	1/8	0.300	0.800	0.094	2	09831	03774
0.110	1/8	0.330	0.880	0.103	2	09833	03775
0.115	1/8	0.345	0.920	0.108	2	09835	03776
0.120	1/8	0.360	0.960	0.112	2	09837	03777

RE = 1/2 Cutting Diameter (DC)

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M4B • 3xD • 12xD Overall Reach



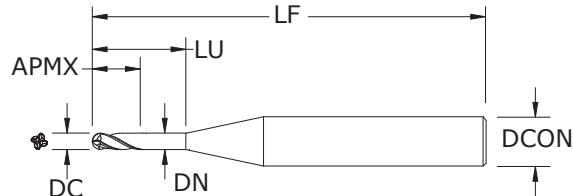
**MICRO
SGS®**
Solid Carbide Tools

KYOCERA

M4B • 3xD 12xD

FRACTIONAL SERIES

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New Expanded Tools

TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h6

STEELS

STAINLESS STEELS

CAST IRON

HIGH TEMP ALLOYS

TITANIUM

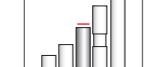
HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	inch				EDP NO.	
		LENGTH OF CUT APMX	REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	UNCOATED	TI-NAMITE-A (AlTiN)
0.010	1/8	0.030	0.120	0.009	1-1/2	09784	03778
0.015	1/8	0.045	0.180	0.014	1-1/2	09786	03779
0.020	1/8	0.060	0.240	0.018	1-1/2	09788	03780
0.025	1/8	0.075	0.300	0.023	1-1/2	09790	03781
0.030	1/8	0.090	0.360	0.028	2	09792	03782
0.031	1/8	0.093	0.372	0.029	2	09794	03783
0.035	1/8	0.105	0.420	0.032	2	09796	03784
0.040	1/8	0.120	0.480	0.037	2	09798	03785
0.045	1/8	0.135	0.540	0.042	2	09800	03786
0.047	1/8	0.141	0.564	0.044	2	09802	03787
0.050	1/8	0.150	0.600	0.047	2	09804	03788
0.055	1/8	0.165	0.660	0.051	2	09806	03789
0.060	1/8	0.180	0.720	0.056	2	09808	03790
0.062	1/8	0.186	0.744	0.058	2	09810	03791
0.065	1/8	0.195	0.780	0.061	2	09812	03792
0.070	1/8	0.210	0.840	0.065	2	09814	03793
0.075	1/8	0.225	0.900	0.070	2	09816	03794
0.078	1/8	0.234	0.936	0.073	2-1/2	09818	03795
0.080	1/8	0.240	0.960	0.075	2-1/2	09820	03796
0.085	1/8	0.255	1.020	0.079	2-1/2	09822	03797
0.090	1/8	0.270	1.080	0.084	2-1/2	09824	03798
0.093	1/8	0.279	1.116	0.087	2-1/2	09826	03799
0.095	1/8	0.285	1.140	0.089	2-1/2	09828	03800
0.100	1/8	0.300	1.200	0.094	2-1/2	09830	03801
0.110	1/8	0.330	1.320	0.103	2-1/2	09832	03802
0.115	1/8	0.345	1.380	0.108	2-1/2	09834	03803
0.120	1/8	0.360	1.440	0.112	2-1/2	09836	03804

RE = 1/2 Cutting Diameter (DC)



New Expanded Tools

TOLERANCES (inch)

.010-.120 DIAMETER

DC = +0.000/-0.001

DCON = h₆

█ STEELS

█ STAINLESS STEELS

█ CAST IRON

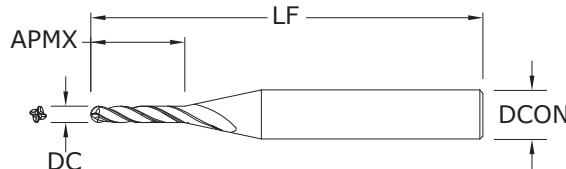
█ HIGH TEMP ALLOYS

█ TITANIUM

█ HARDENED STEELS

█ NON-FERROUS

█ PLASTICS/COMPOSITES



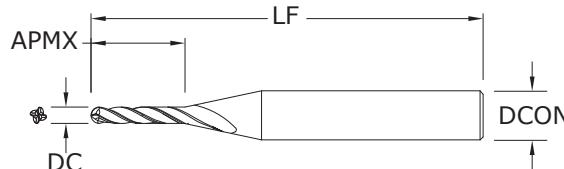
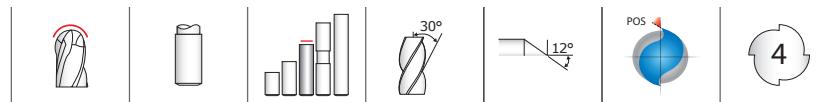
M4LB • 5xD

FRACTIONAL SERIES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	EDP NO.
				UNCOATED TI-NAMITE-A (AITIN)
0.010	1/8	0.050	2-1/2	00952 02720
0.015	1/8	0.075	2-1/2	00953 02721
0.020	1/8	0.100	2-1/2	00954 02722
0.025	1/8	0.125	2-1/2	00955 02723
0.030	1/8	0.150	2-1/2	00956 02724
0.031	1/8	0.155	2-1/2	00957 02725
0.035	1/8	0.175	2-1/2	00958 02726
0.040	1/8	0.200	2-1/2	00959 02727
0.045	1/8	0.225	2-1/2	00960 02728
0.047	1/8	0.235	2-1/2	00961 02729
0.050	1/8	0.250	2-1/2	00962 02730
0.055	1/8	0.275	2-1/2	00963 02731
0.060	1/8	0.300	2-1/2	00964 02732
0.062	1/8	0.310	2-1/2	00965 02733
0.065	1/8	0.325	2-1/2	00966 02734
0.070	1/8	0.350	2-1/2	00967 02735
0.075	1/8	0.375	2-1/2	00968 02736
0.078	1/8	0.390	2-1/2	00969 02737
0.080	1/8	0.400	2-1/2	00970 02738
0.085	1/8	0.425	2-1/2	00971 02739
0.090	1/8	0.450	2-1/2	00972 02740
0.093	1/8	0.465	2-1/2	00973 02741
0.095	1/8	0.475	2-1/2	00974 02742
0.100	1/8	0.500	2-1/2	00975 02743
0.110	1/8	0.550	2-1/2	00976 02744
0.115	1/8	0.575	2-1/2	00977 02745
0.120	1/8	0.600	2-1/2	00978 02746

RE = 1/2 Cutting Diameter (DC)

- Four flute design allows for higher feed rates and decreased deflection, improving productivity and surface finish.
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
- High performance carbide substrate designed specifically for Micro Tool applications.
- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.
- All tools in stock to meet customer order requirements.
- All micro tools are manufactured in accordance with the KSPT ISO certified quality procedures.



New Expanded Tools

M4EB • 8xD

FRACTIONAL SERIES

- Four flute design allows for higher feed rates and decreased deflection, improving productivity and surface finish.
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
- High performance carbide substrate designed specifically for Micro Tool applications.
- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.
- All tools in stock to meet customer order requirements.
- All micro tools are manufactured in accordance with the KSPT ISO certified quality procedures.

inch				EDP NO.	
CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	UNCOATED	TI-NAMITE-A (AITIN)
0.010	1/8	0.080	2-1/2	00979	02747
0.015	1/8	0.120	2-1/2	00980	02748
0.020	1/8	0.160	2-1/2	00981	02749
0.025	1/8	0.200	2-1/2	00982	02750
0.030	1/8	0.240	2-1/2	00983	02751
0.031	1/8	0.248	2-1/2	00984	02752
0.035	1/8	0.280	2-1/2	00985	02753
0.040	1/8	0.320	2-1/2	00986	02754
0.045	1/8	0.360	2-1/2	00987	02755
0.047	1/8	0.376	2-1/2	00988	02756
0.050	1/8	0.400	2-1/2	00989	02757
0.055	1/8	0.440	2-1/2	00990	02758
0.060	1/8	0.480	2-1/2	00991	02759
0.062	1/8	0.496	2-1/2	00992	02760
0.065	1/8	0.520	2-1/2	00993	02761
0.070	1/8	0.560	2-1/2	00994	02762
0.075	1/8	0.600	2-1/2	00995	02763
0.078	1/8	0.624	2-1/2	00996	02764
0.080	1/8	0.640	2-1/2	00997	02765
0.085	1/8	0.680	2-1/2	00998	02766
0.090	1/8	0.720	2-1/2	00999	02767
0.093	1/8	0.744	2-1/2	01000	02768
0.095	1/8	0.760	2-1/2	01001	02769
0.100	1/8	0.800	2-1/2	01002	02770
0.110	1/8	0.880	2-1/2	01003	02771
0.115	1/8	0.920	2-1/2	01004	02772
0.120	1/8	0.960	2-1/2	01005	02773

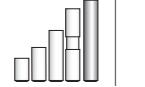
RE = 1/2 Cutting Diameter (DC)

TOLERANCES (inch)**.010-.120 DIAMETER**

DC = +0.000/-0.001

DCON = h6





New Expanded Tools

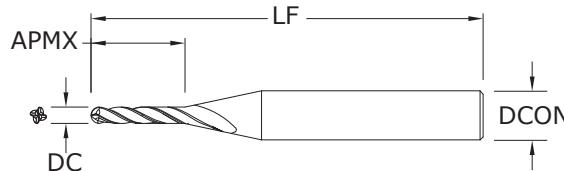
TOLERANCES (inch)

.015-.120 DIAMETER

DC = +0.000/-0.001

DCON = h₆

- STEELS
- STAINLESS STEELS
- CAST IRON
- HIGH TEMP ALLOYS
- TITANIUM
- HARDENED STEELS
- NON-FERROUS
- PLASTICS/COMPOSITES



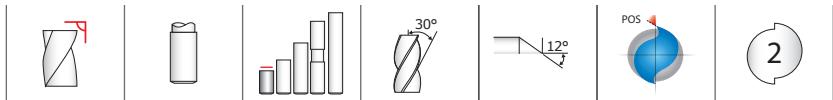
M4XB • 12xD

FRACTIONAL SERIES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	EDP NO.
				UNCOATED TI-NAMITE-A (AITIN)
0.015	1/8	0.180	2-1/2	01007 02774
0.020	1/8	0.240	2-1/2	01008 02775
0.025	1/8	0.300	2-1/2	01009 02776
0.030	1/8	0.360	2-1/2	01010 02777
0.031	1/8	0.372	2-1/2	01011 02778
0.035	1/8	0.420	2-1/2	01012 02779
0.040	1/8	0.480	2-1/2	01013 02780
0.045	1/8	0.540	2-1/2	01014 02781
0.047	1/8	0.564	2-1/2	01015 02782
0.050	1/8	0.600	2-1/2	01016 02783
0.055	1/8	0.660	2-1/2	01017 02784
0.060	1/8	0.720	2-1/2	01018 02785
0.062	1/8	0.744	2-1/2	01019 02786
0.065	1/8	0.780	2-1/2	01020 02787
0.070	1/8	0.840	2-1/2	01021 02788
0.075	1/8	0.900	2-1/2	01022 02789
0.078	1/8	0.936	2-1/2	01023 02790
0.080	1/8	0.960	2-1/2	01024 02791
0.085	1/8	1.020	2-1/2	01025 02792
0.090	1/8	1.080	2-1/2	01026 02793
0.093	1/8	1.116	2-1/2	01027 02794
0.095	1/8	1.140	2-1/2	01028 02795
0.100	1/8	1.200	2-1/2	01029 02796
0.110	1/8	1.320	2-1/2	01030 02797
0.115	1/8	1.380	2-1/2	01031 02798
0.120	1/8	1.440	2-1/2	01032 02799

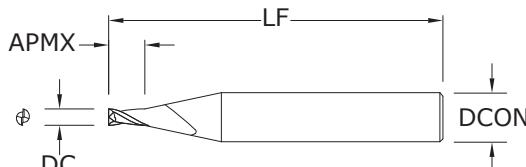
RE = 1/2 Cutting Diameter (DC)

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- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
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- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.
- All tools in stock to meet customer order requirements.
- All micro tools are manufactured in accordance with the KSPT ISO certified quality procedures.

M2M • 1.5xD

**MICRO
SGS®**
Solid Carbide Tools

KYOCERA



New Expanded Tools

M2M • 1.5xD

METRIC SERIES

- Two flute design is ideal for softer alloyed, non-ferrous material applications that require slotting or involve heavy chip loads.
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- High performance carbide substrate designed specifically for Micro Tool applications.
- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.
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CUTTING DIAMETER DC	DECIMAL EQUIVALENT	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	EDP NO.
0,1	0,0039	3,0	0,1	38,0	05002 05000
0,2	0,0079	3,0	0,3	38,0	01801 02801
0,3	0,0118	3,0	0,4	38,0	01802 02802
0,4	0,0157	3,0	0,6	38,0	01803 02803
0,5	0,0197	3,0	0,7	38,0	01804 02804
0,6	0,0236	3,0	0,9	38,0	01805 02805
0,7	0,0276	3,0	1,0	38,0	01806 02806
0,8	0,0315	3,0	1,2	38,0	01807 02807
0,9	0,0354	3,0	1,3	38,0	01808 02808
1,0	0,0394	3,0	1,5	38,0	01809 02809
1,0	0,0394	4,0	1,5	50,0	01861 02819
1,1	0,0433	3,0	1,6	38,0	01810 02860
1,1	0,0433	4,0	1,6	50,0	01862 02892
1,2	0,0472	3,0	1,8	38,0	01811 02861
1,2	0,0472	4,0	1,8	50,0	01863 02893
1,3	0,0512	3,0	1,9	38,0	01812 02862
1,3	0,0512	4,0	1,9	50,0	01864 02894
1,4	0,0551	3,0	2,1	38,0	01813 02863
1,4	0,0551	4,0	2,1	50,0	01865 02895
1,5	0,0591	3,0	2,2	38,0	01814 02864
1,5	0,0591	4,0	2,2	50,0	01866 02896
1,6	0,0630	3,0	2,4	38,0	01815 02865
1,6	0,0630	4,0	2,4	50,0	01867 02897
1,7	0,0669	3,0	2,5	38,0	01816 02866
1,7	0,0669	4,0	2,5	50,0	01868 02898
1,8	0,0709	3,0	2,7	38,0	01817 02867
1,8	0,0709	4,0	2,7	50,0	01869 02899
1,9	0,0748	3,0	2,8	38,0	01818 02868
1,9	0,0748	4,0	2,8	50,0	01870 02900
2,0	0,0787	3,0	3,0	38,0	01819 02869
2,0	0,0787	4,0	3,0	50,0	01871 02901
2,5	0,0984	3,0	3,7	38,0	01820 02870
2,5	0,0984	4,0	3,7	50,0	01872 02902
3,0	0,1181	3,0	4,5	38,0	01821 02871
3,0	0,1181	4,0	4,5	50,0	01873 02903

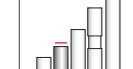
TOLERANCES (mm)

0,1–3,0 DIAMETER

DC = +0,0000/-0,0254

DCON = h6





New Expanded Tools

TOLERANCES (mm)

0,1-3,0 DIAMETER

DC = +0,0000/-0,0254

DCON = h₆

STEELS

STAINLESS STEELS

CAST IRON

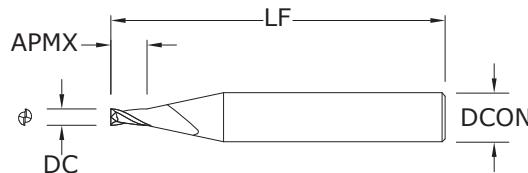
HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES



M2M • 3xD
METRIC SERIES

CUTTING DIAMETER DC	DECIMAL EQUIVALENT	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	EDP NO.	
					UNCOATED	TI-NAMITE-A (AlTiN)
0,1	0.0039	3,0	0,3	38,0	05003	05001
0,2	0.0079	3,0	0,6	38,0	01823	02811
0,2	0.0079	4,0	0,6	50,0	01875	02349
0,3	0.0118	3,0	0,9	38,0	01824	02350
0,3	0.0118	4,0	0,9	50,0	01876	02360
0,4	0.0157	3,0	1,2	38,0	01825	02351
0,4	0.0157	4,0	1,2	50,0	01877	02361
0,5	0.0197	3,0	1,5	38,0	01826	02352
0,5	0.0197	4,0	1,5	50,0	01878	02362
0,6	0.0236	3,0	1,8	38,0	01827	02353
0,6	0.0236	4,0	1,8	50,0	01879	02363
0,7	0.0276	3,0	2,1	38,0	01828	02354
0,7	0.0276	4,0	2,1	50,0	01880	02364
0,8	0.0315	3,0	2,4	38,0	01829	02355
0,8	0.0315	4,0	2,4	50,0	01881	02365
0,9	0.0354	3,0	2,7	38,0	01830	02356
0,9	0.0354	4,0	2,7	50,0	01882	02366
1,0	0.0394	3,0	3,0	38,0	01831	02357
1,0	0.0394	4,0	3,0	50,0	01883	02367
1,1	0.0433	3,0	3,3	38,0	01832	02872
1,1	0.0433	4,0	3,3	50,0	01884	02904
1,2	0.0472	3,0	3,6	38,0	01833	02873
1,2	0.0472	4,0	3,6	50,0	01885	02905
1,3	0.0512	3,0	3,9	38,0	01834	02874
1,3	0.0512	4,0	3,9	50,0	01886	02906
1,4	0.0551	3,0	4,2	38,0	01835	02875
1,4	0.0551	4,0	4,2	50,0	01887	02907
1,5	0.0591	3,0	4,5	38,0	01836	02876
1,5	0.0591	4,0	4,5	50,0	01888	02908
1,6	0.0630	3,0	4,8	38,0	01837	02877
1,6	0.0630	4,0	4,8	50,0	01889	02909
1,7	0.0669	3,0	5,1	38,0	01838	02878
1,7	0.0669	4,0	5,1	50,0	01890	02910
1,8	0.0709	3,0	5,4	38,0	01839	02879

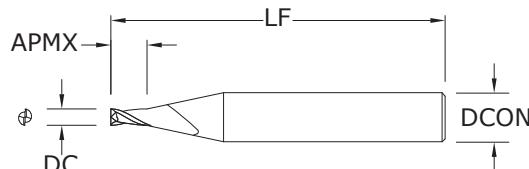
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- Two flute design is ideal for softer alloyed, non-ferrous material applications that require slotting or involve heavy chip loads.
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METRIC

M2M • 3xD
**MICRO
SGS®**
Solid Carbide Tools

KYOCERA



New Expanded Tools

M2M • 3xD

METRIC SERIES

continued

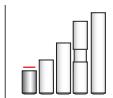
CUTTING DIAMETER DC	DECIMAL EQUIVALENT	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	EDP NO.	
					UNCOATED	TI-NAMITE-A (AITIN)
1,8	0,0709	4,0	5,4	50,0	01891	02911
1,9	0,0748	3,0	5,7	38,0	01840	02880
1,9	0,0748	4,0	5,7	50,0	01892	02912
2,0	0,0787	3,0	6,0	38,0	01841	02881
2,0	0,0787	4,0	6,0	50,0	01893	02913
2,1	0,0827	3,0	6,3	38,0	01842	02882
2,2	0,0866	3,0	6,6	38,0	01843	02883
2,3	0,0906	3,0	6,9	38,0	01844	02884
2,4	0,0945	3,0	7,2	38,0	01845	02885
2,5	0,0984	3,0	7,5	38,0	01846	02886
2,5	0,0984	4,0	7,5	50,0	01894	02914
2,6	0,1024	3,0	7,8	38,0	01847	02887
2,7	0,1063	3,0	8,1	38,0	01848	02888
2,8	0,1102	3,0	8,4	38,0	01849	02889
2,9	0,1142	3,0	8,7	38,0	01850	02890
3,0	0,1181	3,0	9,0	38,0	01851	02891
3,0	0,1181	4,0	9,0	50,0	01895	02915

TOLERANCES (mm)**0,1–3,0 DIAMETER**

DC = +0,0000/-0,0254

DCON = h6

- STEELS
- STAINLESS STEELS
- CAST IRON
- HIGH TEMP ALLOYS
- TITANIUM
- HARDENED STEELS
- NON-FERROUS
- PLASTICS/COMPOSITES



New Expanded Tools

TOLERANCES (mm)

0,1-3,0 DIAMETER

DC = +0,0000/-0,0254

DCON = h₆

STEELS

STAINLESS STEELS

CAST IRON

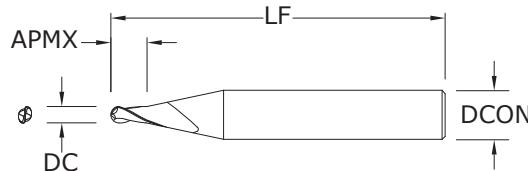
HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES



M2MB • 1.5xD

METRIC SERIES

CUTTING DIAMETER DC	DECIMAL EQUIVALENT	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	EDP NO.	
					UNCOATED	TI-NAMITE-A (AITIN)
0,1	0.0039	3,0	0,1	38,0	05017	05004
0,2	0.0079	3,0	0,3	38,0	05019	05006
0,3	0.0118	3,0	0,3	38,0	05021	05008
0,4	0.0157	3,0	0,6	38,0	05023	05010
0,5	0.0197	3,0	0,7	38,0	01900	03180
0,6	0.0236	3,0	0,9	38,0	01901	03181
0,7	0.0276	3,0	1,0	38,0	01902	03182
0,8	0.0315	3,0	1,2	38,0	01903	03183
0,9	0.0354	3,0	1,3	38,0	01904	03184
1,0	0.0394	3,0	1,5	38,0	01905	03185
1,0	0.0394	4,0	1,5	50,0	02009	02849
1,1	0.0433	3,0	1,6	38,0	01906	02916
1,1	0.0433	4,0	1,6	50,0	02010	02980
1,2	0.0472	3,0	1,8	38,0	01907	02917
1,2	0.0472	4,0	1,8	50,0	02011	02981
1,3	0.0512	3,0	1,9	38,0	01908	02918
1,3	0.0512	4,0	1,9	50,0	02012	02982
1,4	0.0551	3,0	2,1	38,0	01909	02919
1,4	0.0551	4,0	2,1	50,0	02013	02983
1,5	0.0591	3,0	2,2	38,0	01910	02920
1,5	0.0591	4,0	2,2	50,0	02014	02984
1,6	0.0630	3,0	2,4	38,0	01911	02921
1,6	0.0630	4,0	2,4	50,0	02015	02985
1,7	0.0669	3,0	2,5	38,0	01912	02922
1,7	0.0669	4,0	2,5	50,0	02016	02986
1,8	0.0709	3,0	2,7	38,0	01913	02923
1,8	0.0709	4,0	2,7	50,0	02017	02987
1,9	0.0748	3,0	2,8	38,0	01914	02924
1,9	0.0748	4,0	2,8	50,0	02018	02988
2,0	0.0787	3,0	3,0	38,0	01915	02925
2,0	0.0787	4,0	3,0	50,0	02019	02989
2,5	0.0984	3,0	3,7	38,0	01916	02926
2,5	0.0984	4,0	3,7	50,0	02020	02990
3,0	0.1181	3,0	4,5	38,0	01917	02927
3,0	0.1181	4,0	4,5	50,0	02021	02991

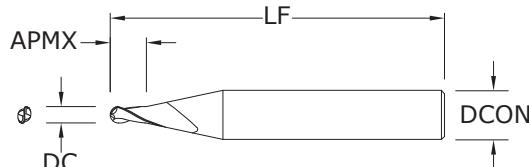
RE = 1/2 Cutting Diameter (DC)

- Two flute design is ideal for softer alloyed, non-ferrous material applications that require slotting or involve heavy chip loads.
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
- High performance carbide substrate designed specifically for Micro Tool applications.
- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.
- All tools in stock to meet customer order requirements.
- All micro tools are manufactured in accordance with the KSPT ISO certified quality procedures.

M2MB • 3xD

**MICRO
SGS®**
Solid Carbide Tools

KYOCERA



New Expanded Tools

M2MB • 3xD

METRIC SERIES

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CUTTING DIAMETER DC	DECIMAL EQUIVALENT	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	EDP NO.	
					UNCOATED	TI-NAMITE-A (AITIN)
0,1	0,0039	3,0	0,3	38,0	05018	05005
0,2	0,0079	3,0	0,6	38,0	05020	05007
0,3	0,0118	3,0	0,9	38,0	05022	05009
0,4	0,0157	3,0	1,2	38,0	05024	05011
0,5	0,0197	3,0	1,5	38,0	05025	05012
0,5	0,0197	4,0	1,5	50,0	02048	03200
0,6	0,0236	3,0	1,8	38,0	05026	05013
0,6	0,0236	4,0	1,8	50,0	02049	03201
0,7	0,0276	3,0	2,1	38,0	05027	05014
0,7	0,0276	4,0	2,1	50,0	02050	03202
0,8	0,0315	3,0	2,4	38,0	05028	05015
0,8	0,0315	4,0	2,4	50,0	02051	03203
0,9	0,0354	3,0	2,7	38,0	05029	05016
0,9	0,0354	4,0	2,7	50,0	02052	03204
1,0	0,0394	3,0	3,0	38,0	01949	02829
1,0	0,0394	4,0	3,0	50,0	02053	03205
1,1	0,0433	3,0	3,3	38,0	01950	02940
1,1	0,0433	4,0	3,3	50,0	02054	03004
1,2	0,0472	3,0	3,6	38,0	01951	02941
1,2	0,0472	4,0	3,6	50,0	02055	03005
1,3	0,0512	3,0	3,9	38,0	01952	02942
1,3	0,0512	4,0	3,9	50,0	02056	03006
1,4	0,0551	3,0	4,2	38,0	01953	02943
1,4	0,0551	4,0	4,2	50,0	02057	03007
1,5	0,0591	3,0	4,5	38,0	01954	02944
1,5	0,0591	4,0	4,5	50,0	02058	03008
1,6	0,0630	3,0	4,8	38,0	01955	02945
1,6	0,0630	4,0	4,8	50,0	02059	03009
1,7	0,0669	3,0	5,1	38,0	01956	02946
1,7	0,0669	4,0	5,1	50,0	02060	03010
1,8	0,0709	3,0	5,4	38,0	01957	02947
1,8	0,0709	4,0	5,4	50,0	02061	03011
1,9	0,0748	3,0	5,7	38,0	01958	02948
1,9	0,0748	4,0	5,7	50,0	02062	03012

RE = 1/2 Cutting Diameter (DC)

continued on next page

TOLERANCES (mm)**0,1–3,0 DIAMETER**

DC = +0,0000/-0,0254

DCON = h6



New Expanded Tools

TOLERANCES (mm)

0,1-3,0 DIAMETER

DC = +0,0000/-0,0254

DCON = h₆

STEELS

STAINLESS STEELS

CAST IRON

HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES

M2MB • 3xD

METRIC SERIES

continued

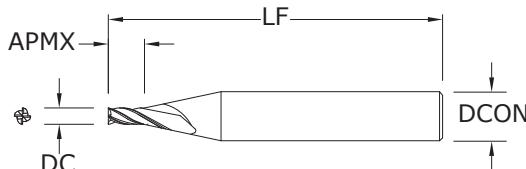
CUTTING DIAMETER DC	DECIMAL EQUIVALENT	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	EDP NO.	
					UNCOATED	TI-NAMITE-A (AITIN)
2,0	0,0787	3,0	6,0	38,0	01959	02949
2,0	0,0787	4,0	6,0	50,0	02063	03013
2,1	0,0827	3,0	6,3	38,0	01960	02950
2,2	0,0866	3,0	6,6	38,0	01961	02951
2,3	0,0906	3,0	6,9	38,0	01962	02952
2,4	0,0945	3,0	7,2	38,0	01963	02953
2,5	0,0984	3,0	7,5	38,0	01964	02954
2,5	0,0984	4,0	7,5	50,0	02064	03014
2,6	0,1024	3,0	7,8	38,0	01965	02955
2,7	0,1063	3,0	8,1	38,0	01966	02956
2,8	0,1102	3,0	8,4	38,0	01967	02957
2,9	0,1142	3,0	8,7	38,0	01968	02958
3,0	0,1181	3,0	9,0	38,0	01969	02959
3,0	0,1181	4,0	9,0	50,0	02065	03015

RE = 1/2 Cutting Diameter (DC)

M4M • 1.5xD

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Solid Carbide Tools

KYOCERA



New Expanded Tools

M4M • 1.5xD

METRIC SERIES

- Four flute design allows for higher feed rates and decreased deflection, improving productivity and surface finish.
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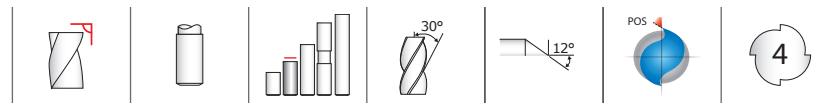
CUTTING DIAMETER DC	DECIMAL EQUIVALENT	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	EDP NO.
0,1	0,0039	3,0	0,15	38,0	05112 05076
0,2	0,0079	3,0	0,30	38,0	05113 05077
0,3	0,0118	3,0	0,45	38,0	05114 05078
0,4	0,0157	3,0	0,60	38,0	05115 05079
0,5	0,0197	3,0	0,75	38,0	05116 05080
0,6	0,0236	3,0	0,90	38,0	05117 05081
0,7	0,0276	3,0	1,05	38,0	05118 05082
0,8	0,0315	3,0	1,20	38,0	05119 05083
0,9	0,0354	3,0	1,35	38,0	05120 05084
1,0	0,0394	3,0	1,50	38,0	05121 05085
1,1	0,0433	3,0	1,65	38,0	09282 09290
1,2	0,0472	3,0	1,80	38,0	09283 09291
1,3	0,0512	3,0	1,95	38,0	09284 09292
1,4	0,0551	3,0	2,10	38,0	09285 09293
1,5	0,0591	3,0	2,25	38,0	05122 05086
1,6	0,0630	3,0	2,40	38,0	09286 09294
1,7	0,0669	3,0	2,55	38,0	09287 09295
1,8	0,0709	3,0	2,70	38,0	09288 09296
1,9	0,0748	3,0	2,85	38,0	09289 09297
2,0	0,0787	3,0	3,00	38,0	05123 05087
2,1	0,0827	3,0	3,15	38,0	09270 09278
2,2	0,0866	3,0	3,30	38,0	09271 09279
2,3	0,0906	3,0	3,45	38,0	09272 09280
2,4	0,0945	3,0	3,60	38,0	09273 09281
2,5	0,0984	3,0	3,75	38,0	05124 05088
3,0	0,1181	3,0	4,50	38,0	05125 05089

TOLERANCES (mm)**0,1–3,0 DIAMETER**

DC = +0,0000/-0,0254

DCON = h6





New Expanded Tools

TOLERANCES (mm)

0,1-3,0 DIAMETER

DC = +0,0000/-0,0254

DCON = h₆

STEELS

STAINLESS STEELS

CAST IRON

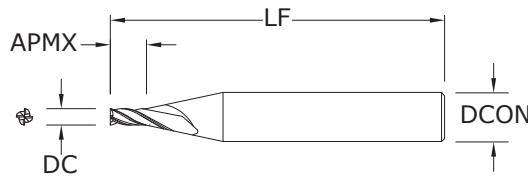
HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES



M4M • 3xD
METRIC SERIES

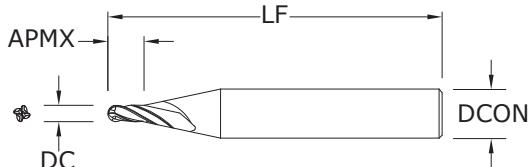
CUTTING DIAMETER DC	DECIMAL EQUIVALENT	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	EDP NO.
0,1	0.0039	3,0	0,3	38,0	05090
0,2	0.0079	3,0	0,6	38,0	05091
0,3	0.0118	3,0	0,9	38,0	05092
0,4	0.0157	3,0	1,2	38,0	05093
0,5	0.0197	3,0	1,5	38,0	05094
0,6	0.0236	3,0	1,8	38,0	05095
0,7	0.0276	3,0	2,1	38,0	05096
0,8	0.0315	3,0	2,4	38,0	05097
0,9	0.0354	3,0	2,7	38,0	05098
1,0	0.0394	3,0	3,0	38,0	05099
1,1	0.0433	3,0	3,3	38,0	05100
1,2	0.0472	3,0	3,6	38,0	05101
1,3	0.0512	3,0	3,9	38,0	05102
1,4	0.0551	3,0	4,2	38,0	05103
1,5	0.0591	3,0	4,5	38,0	05104
1,6	0.0630	3,0	4,8	38,0	05105
1,7	0.0669	3,0	5,1	38,0	05106
1,8	0.0709	3,0	5,4	38,0	05107
1,9	0.0748	3,0	5,7	38,0	05108
2,0	0.0787	3,0	6,0	38,0	05109
2,1	0.0827	3,0	6,3	38,0	09266
2,2	0.0866	3,0	6,6	38,0	09267
2,3	0.0906	3,0	6,9	38,0	09268
2,4	0.0945	3,0	7,2	38,0	09269
2,5	0.0984	3,0	7,5	38,0	05110
3,0	0.1181	3,0	9,0	38,0	05111

- Four flute design allows for higher feed rates and decreased deflection, improving productivity and surface finish.
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M4MB • 1.5xD

**MICRO
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New Expanded Tools

M4MB • 1.5xD

METRIC SERIES

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CUTTING DIAMETER DC	DECIMAL EQUIVALENT	mm	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	EDP NO.
0,4	0,0157	3,0	0,6	38,0	05042	05030
0,5	0,0197	3,0	0,7	38,0	05044	05032
0,6	0,0236	3,0	0,9	38,0	05046	05034
0,7	0,0276	3,0	1,0	38,0	05048	05036
0,8	0,0315	3,0	1,2	38,0	05050	05038
0,9	0,0354	3,0	1,3	38,0	05052	05040
1,0	0,0394	3,0	1,5	38,0	01927	03195
1,0	0,0394	4,0	1,5	50,0	02031	02859
1,1	0,0433	3,0	1,6	38,0	01928	02928
1,1	0,0433	4,0	1,6	50,0	02032	02992
1,2	0,0472	3,0	1,8	38,0	01929	02929
1,2	0,0472	4,0	1,8	50,0	02033	02993
1,3	0,0512	3,0	1,9	38,0	01930	02930
1,3	0,0512	4,0	1,9	50,0	02034	02994
1,4	0,0551	3,0	2,1	38,0	01931	02931
1,4	0,0551	4,0	2,1	50,0	02035	02995
1,5	0,0591	3,0	2,2	38,0	01932	02932
1,5	0,0591	4,0	2,2	50,0	02036	02996
1,6	0,0630	3,0	2,4	38,0	01933	02933
1,6	0,0630	4,0	2,4	50,0	02037	02997
1,7	0,0669	3,0	2,5	38,0	01934	02934
1,7	0,0669	4,0	2,5	50,0	02038	02998
1,8	0,0709	3,0	2,7	38,0	01935	02935
1,8	0,0709	4,0	2,7	50,0	02039	02999
1,9	0,0748	3,0	2,8	38,0	01936	02936
1,9	0,0748	4,0	2,8	50,0	02040	03000
2,0	0,0787	3,0	3,0	38,0	01937	02937
2,0	0,0787	4,0	3,0	50,0	02041	03001
2,5	0,0984	3,0	3,7	38,0	01938	02938
2,5	0,0984	4,0	3,7	50,0	02042	03002
3,0	0,1181	3,0	4,5	38,0	01939	02939
3,0	0,1181	4,0	4,5	50,0	02043	03003

RE = 1/2 Cutting Diameter (DC)

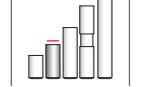
TOLERANCES (mm)

0,4–3,0 DIAMETER

DC = +0,0000/-0,0254

DCON = h6





New Expanded Tools

TOLERANCES (mm)

0,4–3,0 DIAMETER

DC = +0,0000/-0,0254

DCON = h₆

STEELS

STAINLESS STEELS

CAST IRON

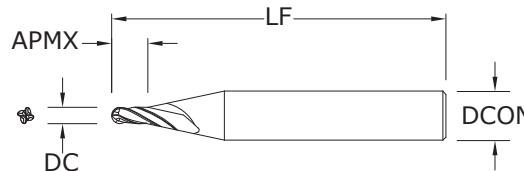
HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES



M4MB • 3xD

METRIC SERIES

CUTTING DIAMETER DC	DECIMAL EQUIVALENT	SHANK DIAMETER DCON	LENGTH OF CUT APMX	OVERALL LENGTH LF	EDP NO.	
					UNCOATED	TI-NAMITE-A (AITIN)
0,4	0.0157	3,0	1,2	38,0	05043	05031
0,5	0.0197	3,0	1,5	38,0	05045	05033
0,6	0.0236	3,0	1,8	38,0	05047	05035
0,7	0.0276	3,0	2,1	38,0	05049	05037
0,8	0.0315	3,0	2,4	38,0	05051	05039
0,9	0.0354	3,0	2,7	38,0	05053	05041
1,0	0.0394	3,0	3,0	38,0	01979	02839
1,0	0.0394	4,0	3,0	50,0	02075	03215
1,1	0.0433	3,0	3,3	38,0	01980	02960
1,1	0.0433	4,0	3,3	50,0	02076	03016
1,2	0.0472	3,0	3,6	38,0	01981	02961
1,2	0.0472	4,0	3,6	50,0	02077	03017
1,3	0.0512	3,0	3,9	38,0	01982	02962
1,3	0.0512	4,0	3,9	50,0	02078	03018
1,4	0.0551	3,0	4,2	38,0	01983	02963
1,4	0.0551	4,0	4,2	50,0	02079	03019
1,5	0.0591	3,0	4,5	38,0	01984	02964
1,5	0.0591	4,0	4,5	50,0	02080	03020
1,6	0.0630	3,0	4,8	38,0	01985	02965
1,6	0.0630	4,0	4,8	50,0	02081	03021
1,7	0.0669	3,0	5,1	38,0	01986	02966
1,7	0.0669	4,0	5,1	50,0	02082	03022
1,8	0.0709	3,0	5,4	38,0	01987	02967
1,8	0.0709	4,0	5,4	50,0	02083	03023
1,9	0.0748	3,0	5,7	38,0	01988	02968
1,9	0.0748	4,0	5,7	50,0	02084	03024
2,0	0.0787	3,0	6,0	38,0	01989	02969
2,0	0.0787	4,0	6,0	50,0	02085	03025
2,1	0.0827	3,0	6,3	38,0	01990	02970
2,2	0.0866	3,0	6,6	38,0	01991	02971
2,3	0.0906	3,0	6,9	38,0	01992	02972
2,4	0.0945	3,0	7,2	38,0	01993	02973
2,5	0.0984	3,0	7,5	38,0	01994	02974
2,5	0.0984	4,0	7,5	50,0	02086	03026
2,6	0.1024	3,0	7,8	38,0	01995	02975
2,7	0.1063	3,0	8,1	38,0	01996	02976
2,8	0.1102	3,0	8,4	38,0	01997	02977
2,9	0.1142	3,0	8,7	38,0	01998	02978
3,0	0.1181	3,0	9,0	38,0	01999	02979
3,0	0.1181	4,0	9,0	50,0	02087	03027

RE = 1/2 Cutting Diameter (DC)

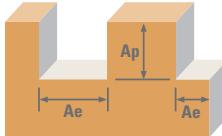
- Four flute design allows for higher feed rates and decreased deflection, improving productivity and surface finish.
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
- High performance carbide substrate designed specifically for Micro Tool applications.
- Broad portfolio, offering consistent lengths of cut, to ensure application demands are met.
- Advanced geometries that extend tool life, reduce chatter, cut cycle times, and improve part quality.
- All tools in stock to meet customer order requirements.
- All micro tools are manufactured in accordance with the KSPT ISO certified quality procedures.

FRACTIONAL & METRIC

Speeds and Feeds

Instructions:

- rpm = use speed from INCH or METRIC Baseline chart
- ipm = INCH Baseline Feed (ipm) x Feed Multiplier [from selected chart below]
- mm/min = METRIC Baseline Feed (mm/min) x Feed Multiplier [from selected chart below]
- Reduce speed and feed 30 percent when using uncoated tools
- Find Width of Cut (Ae) and Depth of Cut (Ap) recommendations on chart below
- refer to the KYOCERA SGS Tool Wizard® or sgsmicrotools.com for detailed technical charts by series



INCH		Flute Length	1.5 x DC		3 x DC	
2-Flute, Square, Corner Radius & Ball Without Reach		Feed Multiplier	1		0.9	
		Width/Depth	Ae x DC	Ap x DC	Ae x DC	Ap x DC
P	H	Diameter (DC)	≤0.0312	>0.0312	≤0.0312	>0.0312
ALL	Profile	≤.30	≤.50	≤1	≤.10	≤.25
	Slot	1	≤.20	≤.50	1	≤.15
≤.35						

INCH		Flute Length	1.5 x DC		3 x DC		5 x DC		8 x DC		12 x DC	
4-Flute, Square, Corner Radius & Ball Without Reach		Feed Multiplier	1.57		1.41		0.59		0.59		0.36	
		Width/Depth	Ae x DC	Ap x DC	Ae x DC	Ap x DC	Ae x DC	Ap x DC	Ae x DC	Ap x DC	Ae x DC	Ap x DC
P	H	Diameter (DC)	≤0.0312	>0.0312	≤0.0312	>0.0312	≤0.0312	>0.0312	≤0.0312	>0.0312	≤0.0312	>0.0312
ALL	Profile	≤.30	≤.50	≤1	≤.10	≤.25	≤2	≤.10	≤.25	≤3	≤.05	≤.10
	Slot	1	≤.20	≤.50	1	≤.15	≤.35	1	≤.10	≤.20	≤4	≤.03
≤.35												≤6

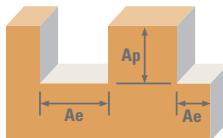
METRIC		Flute Length	1.5 x DC		3 x DC	
2-Flute Square & Ball Without Reach		Feed Multiplier	1		0.9	
		Width/Depth	Ae x DC	Ap x DC	Ae x DC	Ap x DC
P	H	Diameter (DC)	≤0.0312	>0.0312	≤0.0312	>0.0312
ALL	Profile	≤.30	≤.50	≤1	≤.10	≤.25
	Slot	1	≤.20	≤.50	1	≤.15
≤.35						

METRIC		Flute Length	1.5 x DC		3 x DC	
4-Flute Square & Ball Without Reach		Feed Multiplier	1.57		1.41	
		Width/Depth	Ae x DC	Ap x DC	Ae x DC	Ap x DC
P	H	Diameter (DC)	≤0.0312	>0.0312	≤0.0312	>0.0312
ALL	Profile	≤.30	≤.50	≤1	≤.10	≤.25
	Slot	1	≤.20	≤.50	1	≤.15
≤.35						

FRACTIONAL Speeds and Feeds

Instructions:

- rpm = use speed from INCH or METRIC Baseline chart
- ipm = INCH Baseline Feed (ipm) x Feed Multiplier [from selected chart below]
- mm/min = METRIC Baseline Feed (mm/min) x Feed Multiplier [from selected chart below]
- Reduce speed and feed 30 percent when using uncoated tools
- Find Width of Cut (Ae) and Depth of Cut (Ap) recommendations on chart below
- refer to the KYOCERA SGS Tool Wizard® or sgsmicrotools.com for detailed technical charts by series



INCH 2-Flute Square & Ball With Reach		Flute Length	8 x DC		12 x DC			
		Feed Multiplier	0.6		0.5			
		Width/Depth	Ae x DC	Ap x DC	Ae x DC	Ap x DC		
P		Diameter (DC)	≤0.0312	>0.0312	≤0.0312	>0.0312		
H		Profile	≤.25	≤.50	≤.30	≤.22	≤.45	≤.25
K								
M	ALL							
S		Slot	1	≤.07	≤.17	1	≤.06	≤.15
N								

INCH 3-Flute Square, Corner Radius & Ball With Reach		Flute Length	3 x DC		5 x DC		8 x DC		12 x DC		15 x DC		20 x DC		25 x DC									
		Feed Multiplier	1.4		1.15		0.9		0.7		0.6		0.45		0.35									
		Width/Depth	Ae x DC	Ap x DC	Ap x DC	Ap x DC																		
P		Diameter (DC)	≤0.0312	>0.0312	≤0.0312	>0.0312	≤0.0312	>0.0312	≤0.0312	>0.0312	≤0.0312	>0.0312	≤0.0312	>0.0312	≤0.0312	>0.0312								
H		Profile	≤.30	≤.60	≤.5	≤.30	≤.60	≤.35	≤.25	≤.50	≤.30	≤.22	≤.45	≤.25	≤.15	≤.30	≤.25	≤.12	≤.25	≤.20	≤.12	≤.25	≤.20	
K	ALL																							
M		Slot	1	≤.15	≤.30	1	≤.08	≤.20	1	≤.07	≤.17	1	≤.06	≤.15	1	≤.06	≤.15	1	≤.04	≤.10	1	≤.04	≤.10	
S																								
N																								

INCH 4-Flute Square & Ball With Reach		Flute Length	8 x DC		12 x DC																		
		Feed Multiplier	0.95		0.75																		
		Width/Depth	Ae x DC	Ap x DC	Ae x DC	Ap x DC																	
P		Diameter (DC)	≤0.0312	>0.0312	≤0.0312	>0.0312																	
H		Profile	≤.25	≤.50	≤.30	≤.22	≤.45	≤.25															
K	ALL																						
M		Slot	1	≤.07	≤.17	1	≤.06	≤.15															
S																							
N																							

Note:

- Bhn (Brinell) HRC (Rockwell C)
- reduce speed and feed 30 percent when using uncoated tools
- Fz x No. of Flutes x max available rpm when recommendation exceeds machine limit
- helical ramp at 1 degrees or less, using slotting speed and feed rates (plunging is not recommended)
- reduce speed and feed for materials harder than listed
- reduce feed and Ae when finish milling (.02 x DC maximum)
- refer to the KYOCERA SGS Tool Wizard® or sgsmicrotools.com for detailed technical charts by series

FRACTIONAL Baseline

INCH Baseline
Speed and Feed
Square, Corner Radius
& Ball End
With and Without Reach

				Vc (sfm)	DC • in						
					0.0050	0.0156	0.0312	0.0625	0.0938	0.1200	
P	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	$\leq 275 \text{ Bhn}$ $\text{or} \leq 28 \text{ HRc}$	Profile	365 (292-438)	RPM	278860	89378	44689	22309	14865	11619
			Slot	290 (232-348)	RPM	221560	71013	35506	17725	11810	9232
			Profile	210 (168-252)	RPM	160440	51423	25712	12835	8552	6685
			Slot	165 (132-198)	RPM	126060	40404	20202	10085	6720	5253
P	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	$\leq 375 \text{ Bhn}$ $\text{or} \leq 40 \text{ HRc}$	Profile	340 (272-408)	RPM	259760	83256	41628	20781	13846	10823
			Slot	270 (216-324)	RPM	206280	66115	33058	16502	10996	8595
			Profile	235 (188-282)	RPM	179540	57545	28772	14363	9570	7481
			Slot	185 (148-222)	RPM	141340	45301	22651	11307	7534	5889
M	STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F, 440F	$\leq 275 \text{ Bhn}$ $\text{or} \leq 28 \text{ HRc}$	Profile	215 (172-258)	RPM	164260	52647	26324	13141	8756	6844
			Slot	170 (136-204)	RPM	129880	41628	20814	10390	6923	5412
			Profile	305 (244-366)	RPM	233020	74686	37343	18642	12421	9709
			Slot	245 (196-294)	RPM	187180	59994	29997	14974	9978	7799
K	CAST IRONS (LOW & MEDIUM ALLOY) Gray, Malleable, Ductile	$\leq 220 \text{ Bhn}$ $\text{or} \leq 19 \text{ HRc}$	Profile	1000 (800-1200)	RPM	764000	244872	122436	61120	40725	31833
			Slot	800 (640-960)	RPM	611200	195897	97949	48896	32580	25467
			Profile	515 (412-618)	RPM	393460	126109	63054	31477	20973	16394
			Slot	410 (328-492)	RPM	313240	100397	50199	25059	16697	13052
N	ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	$\leq 150 \text{ Bhn}$ $\text{or} \leq 7 \text{ HRc}$	Profile	515 (412-618)	RPM	37.68	37.68	37.68	37.68	37.68	37.68
			Slot	410 (328-492)	RPM	30.00	30.00	30.00	30.00	30.00	30.00
			Profile	515 (412-618)	RPM	37.68	37.68	37.68	37.68	37.68	37.68
			Slot	410 (328-492)	RPM	30.00	30.00	30.00	30.00	30.00	30.00

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FRACTIONAL Baseline

INCH Baseline Speed and Feed Square, Corner Radius & Ball End With and Without Reach		Hardness	Vc (sfm)	DC • in					
				0.0050	0.0156	0.0312	0.0625	0.0938	0.1200
N	PLASTICS Polycarbonate, PVC, Polypropylene	Profile 	1000 (800-1200)	RPM Fz Feed (ipm)	764000 0.000064 97.50	244872 0.00020 97.50	122436 0.00040 97.50	61120 0.00080 97.50	40725 0.00120 97.50
			800 (640-960)	RPM Fz Feed (ipm)	611200 0.000064 78.00	195897 0.00020 78.00	97949 0.00040 78.00	48896 0.00080 78.00	32580 0.00120 78.00
		Slot 	60 (48-72)	RPM Fz Feed (ipm)	45840 0.000012 1.11	14692 0.00004 1.11	7346 0.00008 1.11	3667 0.00015 1.11	2443 0.00023 1.11
			45 (36-54)	RPM Fz Feed (ipm)	34380 0.000012 0.83	11019 0.00004 0.83	5510 0.00008 0.83	2750 0.00015 0.83	1833 0.00023 0.83
S	SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy, Monel 400	Profile 	60 (48-72)	RPM Fz Feed (ipm)	45840 0.000012 1.11	14692 0.00004 1.11	7346 0.00008 1.11	3667 0.00015 1.11	2443 0.00023 1.11
			45 (36-54)	RPM Fz Feed (ipm)	34380 0.000012 0.83	11019 0.00004 0.83	5510 0.00008 0.83	2750 0.00015 0.83	1833 0.00023 0.83
		Slot 	45 (36-54)	RPM Fz Feed (ipm)	34380 0.000008 0.55	11019 0.00003 0.55	5510 0.00005 0.55	2750 0.00010 0.55	1833 0.00015 0.55
			35 (28-42)	RPM Fz Feed (ipm)	26740 0.000008 0.43	8571 0.00003 0.43	4285 0.00005 0.43	2139 0.00010 0.43	1425 0.00015 0.43
S	SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 718, X-750, Incoloy, Waspaloy, Hastelloy, Rene	Profile 	45 (36-54)	RPM Fz Feed (ipm)	34380 0.000008 0.55	11019 0.00003 0.55	5510 0.00005 0.55	2750 0.00010 0.55	1833 0.00015 0.55
			35 (28-42)	RPM Fz Feed (ipm)	26740 0.000008 0.43	8571 0.00003 0.43	4285 0.00005 0.43	2139 0.00010 0.43	1425 0.00015 0.43
		Slot 	160 (128-192)	RPM Fz Feed (ipm)	122240 0.000014 3.32	39179 0.00004 3.32	19590 0.00008 3.32	9779 0.00017 3.32	6516 0.00025 3.32
			130 (104-156)	RPM Fz Feed (ipm)	99320 0.000014 2.70	31833 0.00004 2.70	15917 0.00008 2.70	7946 0.00017 2.70	5294 0.00025 2.70
S	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si	Profile 	60 (48-72)	RPM Fz Feed (ipm)	45840 0.000010 0.88	14692 0.00003 0.88	7346 0.00006 0.88	3667 0.00012 0.88	2443 0.00018 0.88
			45 (36-54)	RPM Fz Feed (ipm)	34380 0.000010 0.66	11019 0.00003 0.66	5510 0.00006 0.66	2750 0.00012 0.66	1833 0.00018 0.66
		Slot 	160 (128-192)	RPM Fz Feed (ipm)	122240 0.000014 3.32	39179 0.00004 3.32	19590 0.00008 3.32	9779 0.00017 3.32	6516 0.00025 3.32
			130 (104-156)	RPM Fz Feed (ipm)	99320 0.000014 2.70	31833 0.00004 2.70	15917 0.00008 2.70	7946 0.00017 2.70	5294 0.00025 2.70
S	TITANIUM ALLOYS (DIFFICULT) Ti10Al2Fe3Al, Ti5Al5V5Mo3Cr, Ti7Al4Mo, Ti3Al8V6Cr4Zr4Mo, Ti6Al6V6Sn, Ti15V3 Cr3Sn3Al	Profile 	60 (48-72)	RPM Fz Feed (ipm)	45840 0.000010 0.88	14692 0.00003 0.88	7346 0.00006 0.88	3667 0.00012 0.88	2443 0.00018 0.88
			45 (36-54)	RPM Fz Feed (ipm)	34380 0.000010 0.66	11019 0.00003 0.66	5510 0.00006 0.66	2750 0.00012 0.66	1833 0.00018 0.66
		Slot 	160 (128-192)	RPM Fz Feed (ipm)	122240 0.000014 3.32	39179 0.00004 3.32	19590 0.00008 3.32	9779 0.00017 3.32	6516 0.00025 3.32
			130 (104-156)	RPM Fz Feed (ipm)	99320 0.000014 2.70	31833 0.00004 2.70	15917 0.00008 2.70	7946 0.00017 2.70	5294 0.00025 2.70
H	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	Profile 	175 (140-210)	RPM Fz Feed (ipm)	133700 0.000016 4.28	42853 0.00005 4.28	21426 0.00010 4.28	10696 0.00020 4.28	7127 0.00030 4.28
			140 (112-168)	RPM Fz Feed (ipm)	106960 0.000016 3.42	34282 0.00005 3.42	17141 0.00010 3.42	8557 0.00020 3.42	5701 0.00030 3.42
		Slot 	175 (140-210)	RPM Fz Feed (ipm)	133700 0.000016 4.28	42853 0.00005 4.28	21426 0.00010 4.28	10696 0.00020 4.28	7127 0.00030 4.28
			140 (112-168)	RPM Fz Feed (ipm)	106960 0.000016 3.42	34282 0.00005 3.42	17141 0.00010 3.42	8557 0.00020 3.42	5701 0.00030 3.42

Note:

- Bhn (Brinell) HRc (Rockwell C)
- when recommended speed exceeds your capability, use maximum available and recalculate ipm
- rpm = $V_c \times 3.82 / DC$
- ipm = $F_z \times \text{No. of flutes} \times rpm$
- reduce speed and feed for materials harder than listed
- reduce feed and Ae when finish milling ($.02 \times D_1$ maximum)
- refer to the KYOCERA SGS Tool Wizard® or sgsmicrotools.com for detailed technical charts by series

Baseline

METRIC Baseline

Speed and Feed

Square & Ball End

With and Without Reach Hardness

			Vc (m/min)	DC • (mm)								
				0.1	0.5	1	1.5	2	2.5	3		
P	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	$\leq 275 \text{ Bhn}$ $\text{or} \leq 28 \text{ HRc}$	Profile	111 (89-134)	RPM	353837	70767	35384	23589	17692	14153	11795
			Slot	88 (71-106)	Fz	0.00043	0.00216	0.00432	0.00648	0.00865	0.01081	0.01297
		$\leq 375 \text{ Bhn}$ $\text{or} \leq 40 \text{ HRc}$	Profile	64 (51-77)	Feed (mm/min)	306	306	306	306	306	306	306
			Slot	50 (40-60)	RPM	281131	56226	28113	18742	14057	11245	9371
P	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	$\leq 375 \text{ Bhn}$ $\text{or} \leq 40 \text{ HRc}$	Profile	64 (51-77)	Fz	0.00038	0.00192	0.00384	0.00576	0.00769	0.00961	0.01153
			Slot	50 (40-60)	Feed (mm/min)	156	156	156	156	156	156	156
		$\leq 275 \text{ Bhn}$ $\text{or} \leq 28 \text{ HRc}$	Profile	104 (83-124)	RPM	203577	40715	20358	13572	10179	8143	6786
			Slot	82 (66-99)	Fz	0.00043	0.00216	0.00432	0.00648	0.00865	0.01081	0.01295
M	STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F, 440F	$\leq 275 \text{ Bhn}$ $\text{or} \leq 28 \text{ HRc}$	Profile	104 (83-124)	Feed (mm/min)	285	285	285	285	285	285	285
			Slot	82 (66-99)	RPM	261742	52348	26174	17449	13087	10470	8725
		$\leq 275 \text{ Bhn}$ $\text{or} \leq 28 \text{ HRc}$	Profile	72 (57-86)	Fz	0.00043	0.00216	0.00432	0.00648	0.00865	0.01081	0.01295
			Slot	56 (45-68)	Feed (mm/min)	226	226	226	226	226	226	226
M	STAINLESS STEELS (DIFFICULT) 304, 304L, 316, 316L	$\leq 275 \text{ Bhn}$ $\text{or} \leq 28 \text{ HRc}$	Profile	72 (57-86)	RPM	227813	45563	22781	15188	11391	9113	7594
			Slot	56 (45-68)	Fz	0.00038	0.00192	0.00385	0.00577	0.00769	0.00961	0.01154
		$\leq 325 \text{ Bhn}$ $\text{or} \leq 35 \text{ HRc}$	Profile	66 (52-79)	Feed (mm/min)	175	175	175	175	175	175	175
			Slot	52 (41-62)	RPM	179342	35868	17934	11956	8967	7174	5978
M	STAINLESS STEELS (PH) 13-8 PH, 15-5PH, 17-4 PH, CUSTOM 450	$\leq 325 \text{ Bhn}$ $\text{or} \leq 35 \text{ HRc}$	Profile	66 (52-79)	Fz	0.00027	0.00136	0.00272	0.00408	0.00544	0.00680	0.00819
			Slot	52 (41-62)	Feed (mm/min)	113	113	113	113	113	113	113
		$\leq 220 \text{ Bhn}$ $\text{or} \leq 19 \text{ HRc}$	Profile	93 (74-112)	RPM	295672	59134	29567	19711	14784	11827	9856
			Slot	75 (60-90)	Fz	0.00043	0.00217	0.00433	0.00650	0.00866	0.01083	0.01301
K	CAST IRONS (LOW & MEDIUM ALLOY) Gray, Malleable, Ductile	$\leq 220 \text{ Bhn}$ $\text{or} \leq 19 \text{ HRc}$	Profile	93 (74-112)	Feed (mm/min)	256	256	256	256	256	256	256
			Slot	75 (60-90)	RPM	237507	47501	23751	15834	11875	9500	7917
		$\leq 150 \text{ Bhn}$ $\text{or} \leq 7 \text{ HRc}$	Profile	305 (244-366)	Fz	0.00128	0.00639	0.01277	0.01916	0.02555	0.03193	0.03832
			Slot	244 (195-293)	Feed (mm/min)	2477	2477	2477	2477	2477	2477	2477
N	ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	$\leq 150 \text{ Bhn}$ $\text{or} \leq 7 \text{ HRc}$	Profile	157 (126-188)	RPM	969416	193883	96942	64628	48471	38777	32314
			Slot	125 (100-150)	Fz	0.00128	0.00639	0.01277	0.01916	0.02555	0.03193	0.03832
		$\leq 140 \text{ Bhn}$ $\text{or} \leq 3 \text{ HRc}$	Profile	157 (126-188)	Feed (mm/min)	957	957	957	957	957	957	957
			Slot	125 (100-150)	RPM	397461	79492	39746	26497	19873	15898	13249

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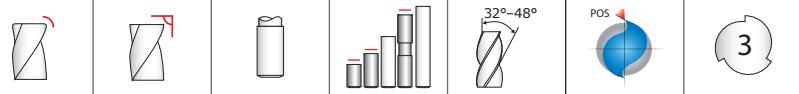
METRIC Baseline
Speed and Feed
Square & Ball End
With and Without Reach Hardness

			Vc (m/min)	DC • (mm)							
				0.1	0.5	1	1.5	2	2.5	3	
N	PLASTICS Polycarbonate, PVC, Polypropylene	Profile 	305 (244-366)	RPM Fz	969416 0.00128	193883 0.00639	96942 0.01277	64628 0.01916	48471 0.02555	38777 0.03193	32314 0.03832
				Feed (mm/min)	2477	2477	2477	2477	2477	2477	2477
		Slot 	244 (195-293)	RPM Fz	775533 0.00128	155107 0.00639	77553 0.01277	51702 0.01916	38777 0.02555	31021 0.03193	25851 0.03832
				Feed (mm/min)	1981	1981	1981	1981	1981	1981	1981
S	SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy, Monel 400	Profile 	18 (15-22)	RPM Fz	58165 0.00024	11633 0.00121	5816 0.00242	3878 0.00362	2908 0.00483	2327 0.00604	1939 0.00722
				Feed (mm/min)	28	28	28	28	28	28	28
		Slot 	14 (11-16)	RPM Fz	43624 0.00024	8725 0.00121	4362 0.00242	2908 0.00362	2181 0.00483	1745 0.00604	1454 0.00722
				Feed (mm/min)	21	21	21	21	21	21	21
S	SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 718, X-750, Incoloy, Waspaloy, Hastelloy, Rene	Profile 	14 (11-16)	RPM Fz	43624 0.00016	8725 0.00080	4362 0.00161	2908 0.00241	2181 0.00322	1745 0.00402	1454 0.00486
				Feed (mm/min)	14	14	14	14	14	14	14
		Slot 	11 (9-13)	RPM Fz	33930 0.00016	6786 0.00080	3393 0.00161	2262 0.00241	1696 0.00322	1357 0.00402	1131 0.00486
				Feed (mm/min)	11	11	11	11	11	11	11
S	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si	Profile 	49 (39-59)	RPM Fz	155107 0.00027	31021 0.00136	15511 0.00272	10340 0.00408	7755 0.00544	6204 0.00680	5170 0.00821
				Feed (mm/min)	84	84	84	84	84	84	84
		Slot 	40 (32-48)	RPM Fz	126024 0.00027	25205 0.00136	12602 0.00272	8402 0.00408	6301 0.00544	5041 0.00680	4201 0.00821
				Feed (mm/min)	69	69	69	69	69	69	69
S	TITANIUM ALLOYS (DIFFICULT) Ti10Al2Fe3Al, Ti5Al5V5Mo3Cr, Ti7Al4Mo, Ti3Al8V6Cr4Zr4Mo, Ti6Al6V6Sn, Ti15V3 Cr3Sn3Al	Profile 	18 (15-22)	RPM Fz	58165 0.00019	11633 0.00096	5816 0.00192	3878 0.00288	2908 0.00384	2327 0.00480	1939 0.00585
				Feed (mm/min)	22	22	22	22	22	22	22
		Slot 	14 (11-16)	RPM Fz	43624 0.00019	8725 0.00096	4362 0.00192	2908 0.00288	2181 0.00384	1745 0.00480	1454 0.00585
				Feed (mm/min)	17	17	17	17	17	17	17
H	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	Profile 	53 (43-64)	RPM Fz	169648 0.00032	33930 0.00160	16965 0.00320	11310 0.00480	8482 0.00640	6786 0.00800	5655 0.00962
				Feed (mm/min)	109	109	109	109	109	109	109
		Slot 	43 (34-51)	RPM Fz	135718 0.00032	27144 0.00160	13572 0.00320	9048 0.00480	6786 0.00640	5429 0.00800	4524 0.00962
				Feed (mm/min)	87	87	87	87	87	87	87

Note:

- Bhv (Brinell) HRc (Rockwell C)
- when recommended speed exceeds your capability, use maximum available and recalculate mm/min
- rpm = $(Vc \times 1000) / (DC \times 3.14)$
- mm/min = Fz x No. of flutes x rpm
- reduce speed and feed for materials harder than listed
- reduce feed and Ae when finish milling (.02 x D₁ maximum)
- refer to the KYOCERA SGS Tool Wizard® or sgsmicrotools.com for detailed technical charts by series

FRACTIONAL M032

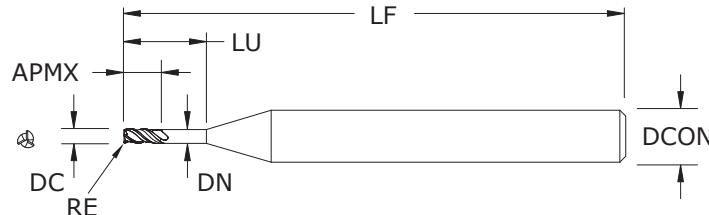


**MICRO
SGS®**
Solid Carbide Tools

KYOCERA

M032 FRACTIONAL SERIES

- Variable helix design improves stability, extends tool life, and improves part quality in challenging applications
- Reinforced shank maximizes rigidity, especially in applications requiring additional tool extension
- Proprietary coating allows for superior chip flow, driving industry leading productivity and value, even at low spindle speeds.
- Available from stock in a selection of popular diameters, flute lengths, and end configurations
- Application specific sub-micron grain carbide designed specifically for micro-tool applications
- Manufactured in accordance with KSPT ISO certified quality procedures



New Expanded Tools

TOLERANCES (inch)

.031-.109 DIAMETER

DC = +0.000/-0.001

DCON = h6

RE = +0.002/-0.002

STEELS

STAINLESS STEELS

CAST IRON

HIGH TEMP ALLOYS

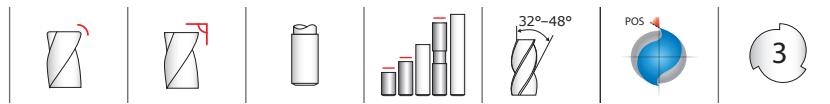
TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	inch				EDP NO.
			REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	CORNER RADIUS RE	
0.0312	1/4	0.063	—	—	2-1/2	—	05271
0.0312	1/4	0.063	0.155	0.029	2-1/2	—	05272
0.0312	1/4	0.063	—	—	2-1/2	0.006	05270
0.0312	1/4	0.094	—	—	2-1/2	—	05274
0.0312	1/4	0.094	—	—	2-1/2	0.006	05273
0.0312	1/4	0.094	0.155	0.029	2-1/2	0.006	05275
0.0469	1/4	0.094	—	—	2-1/2	—	05277
0.0469	1/4	0.094	0.230	0.043	2-1/2	—	05278
0.0469	1/4	0.094	—	—	2-1/2	0.010	05276
0.0469	1/4	0.141	—	—	2-1/2	—	05280
0.0469	1/4	0.141	—	—	2-1/2	0.010	05279
0.0469	1/4	0.141	0.230	0.043	2-1/2	0.010	05281
0.0625	1/4	0.140	—	—	2-1/2	—	05283
0.0625	1/4	0.140	0.312	0.058	2-1/2	—	05284
0.0625	1/4	0.140	—	—	2-1/2	0.010	05282
0.0625	1/4	0.188	—	—	2-1/2	—	05286
0.0625	1/4	0.188	—	—	2-1/2	0.010	05285
0.0625	1/4	0.188	0.312	0.058	2-1/2	0.010	05287
0.0781	1/4	0.140	—	—	2-1/2	—	05289
0.0781	1/4	0.140	0.390	0.072	2-1/2	—	05290
0.0781	1/4	0.140	—	—	2-1/2	0.010	05288
0.0781	1/4	0.234	—	—	2-1/2	—	05292
0.0781	1/4	0.234	—	—	2-1/2	0.010	05291
0.0781	1/4	0.234	0.390	0.072	2-1/2	0.010	05293
0.0938	1/4	0.188	—	—	2-1/2	—	05295
0.0938	1/4	0.188	0.465	0.086	2-1/2	—	05296
0.0938	1/4	0.188	—	—	2-1/2	0.010	05294
0.0938	1/4	0.375	—	—	2-1/2	—	05298
0.0938	1/4	0.375	—	—	2-1/2	0.010	05297
0.0938	1/4	0.375	0.465	0.086	2-1/2	0.010	05299
0.1094	1/4	0.188	—	—	2-1/2	—	05301
0.1094	1/4	0.188	0.545	0.101	2-1/2	—	05302
0.1094	1/4	0.188	—	—	2-1/2	0.010	05300
0.1094	1/4	0.438	—	—	2-1/2	—	05304
0.1094	1/4	0.438	—	—	2-1/2	0.010	05303
0.1094	1/4	0.438	0.545	0.101	2-1/2	0.010	05305



New Expanded Tools

TOLERANCES (mm)

1,0–3,0 DIAMETER

DC = +0,0000/-0,0254

DCON = h₆

RE = +0,050/-0,050

STEELS

STAINLESS STEELS

CAST IRON

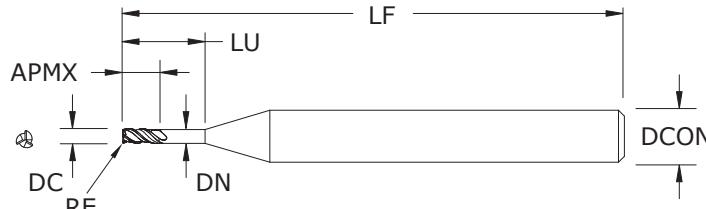
HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES

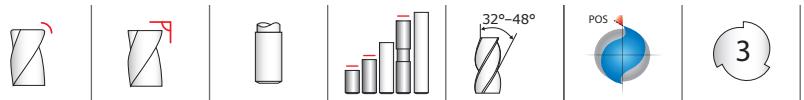


M032
METRIC SERIES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	CORNER RADIUS RE	EDP NO.	TI-NAMITE-A (AITIN)
1,0	6,0	1,5	—	—	63,5	—	05324	
1,0	6,0	1,5	—	—	63,5	0,1	05321	
1,0	6,0	1,5	—	—	63,5	0,2	05322	
1,0	6,0	1,5	—	—	63,5	0,3	05323	
1,0	6,0	3,0	—	—	63,5	—	05328	
1,0	6,0	3,0	—	—	63,5	0,1	05325	
1,0	6,0	3,0	—	—	63,5	0,2	05326	
1,0	6,0	3,0	—	—	63,5	0,3	05327	
1,0	6,0	3,0	10,0	0,92	75,0	—	05332	
1,0	6,0	3,0	10,0	0,92	63,5	0,1	05329	
1,0	6,0	3,0	10,0	0,92	63,5	0,2	05330	
1,0	6,0	3,0	10,0	0,92	63,5	0,3	05331	
1,5	6,0	2,5	—	—	63,5	—	05310	
1,5	6,0	2,5	—	—	63,5	0,1	05306	
1,5	6,0	2,5	—	—	63,5	0,2	05307	
1,5	6,0	2,5	—	—	63,5	0,3	05308	
1,5	6,0	2,5	—	—	63,5	0,5	05309	
1,5	6,0	4,5	—	—	63,5	—	05315	
1,5	6,0	4,5	—	—	63,5	0,1	05311	
1,5	6,0	4,5	—	—	63,5	0,2	05312	
1,5	6,0	4,5	—	—	63,5	0,3	05313	
1,5	6,0	4,5	—	—	63,5	0,5	05314	
1,5	6,0	4,5	15,0	1,38	75,0	—	05320	
1,5	6,0	4,5	15,0	1,38	63,5	0,1	05316	
1,5	6,0	4,5	15,0	1,38	63,5	0,2	05317	
1,5	6,0	4,5	15,0	1,38	63,5	0,3	05318	
1,5	6,0	4,5	15,0	1,38	63,5	0,5	05319	
2,0	6,0	3,0	—	—	63,5	—	05348	
2,0	6,0	3,0	—	—	63,5	0,2	05345	
2,0	6,0	3,0	—	—	63,5	0,3	05346	
2,0	6,0	3,0	—	—	63,5	0,5	05347	
2,0	6,0	6,0	—	—	63,5	—	05352	
2,0	6,0	6,0	—	—	63,5	0,2	05349	
2,0	6,0	6,0	—	—	63,5	0,3	05350	

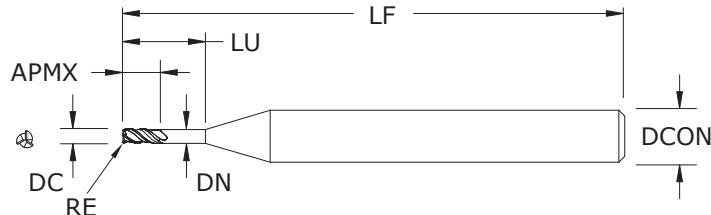
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METRIC
M032



**MICRO
SGS®**
Solid Carbide Tools

KYOCERA



New Expanded Tools

M032
METRIC SERIES

continued

CUTTING DIAMETER DC	SHANK DIAMETER DCON	LENGTH OF CUT APMX	mm					EDP NO., TI-NAMITE-A (AIT:IN)
			REACH LU	NECK DIAMETER DN	OVERALL LENGTH LF	CORNER RADIUS RE		
2,0	6,0	6,0	—	—	63,5	0,5	05351	
2,0	6,0	6,0	20,0	1,84	75,0	—	05356	
2,0	6,0	6,0	20,0	1,84	63,5	0,2	05353	
2,0	6,0	6,0	20,0	1,84	63,5	0,3	05354	
2,0	6,0	6,0	20,0	1,84	63,5	0,5	05355	
2,5	6,0	4,0	—	—	63,5	—	05336	
2,5	6,0	4,0	—	—	63,5	0,2	05333	
2,5	6,0	4,0	—	—	63,5	0,3	05334	
2,5	6,0	4,0	—	—	63,5	0,5	05335	
2,5	6,0	7,5	—	—	63,5	—	05340	
2,5	6,0	7,5	—	—	63,5	0,2	05337	
2,5	6,0	7,5	—	—	63,5	0,3	05338	
2,5	6,0	7,5	—	—	63,5	0,5	05339	
2,5	6,0	7,5	25,0	2,3	75,0	—	05344	
2,5	6,0	7,5	25,0	2,3	63,5	0,2	05341	
2,5	6,0	7,5	25,0	2,3	63,5	0,3	05342	
2,5	6,0	7,5	25,0	2,3	63,5	0,5	05343	
3,0	6,0	5,0	—	—	63,5	—	05361	
3,0	6,0	5,0	—	—	63,5	0,2	05357	
3,0	6,0	5,0	—	—	63,5	0,3	05358	
3,0	6,0	5,0	—	—	63,5	0,5	05359	
3,0	6,0	5,0	—	—	63,5	1,0	05360	
3,0	6,0	9,0	—	—	63,5	—	05366	
3,0	6,0	9,0	—	—	63,5	0,2	05362	
3,0	6,0	9,0	—	—	63,5	0,3	05363	
3,0	6,0	9,0	—	—	63,5	0,5	05364	
3,0	6,0	9,0	—	—	63,5	1,0	05365	
3,0	6,0	9,0	30,0	2,76	75,0	—	05371	
3,0	6,0	9,0	30,0	2,76	63,5	0,2	05367	
3,0	6,0	9,0	30,0	2,76	63,5	0,3	05368	
3,0	6,0	9,0	30,0	2,76	63,5	0,5	05369	
3,0	6,0	9,0	30,0	2,76	63,5	1,0	05370	

TOLERANCES (mm)

1,0–3,0 DIAMETER

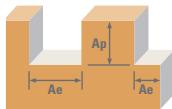
DC = +0,0000/-0,0254

DCON = h6

RE = +0,050/-0,050

- STEELS
- STAINLESS STEELS
- CAST IRON
- HIGH TEMP ALLOYS
- TITANIUM
- HARDENED STEELS
- NON-FERROUS
- PLASTICS/COMPOSITES

FRACTIONAL
Series M032

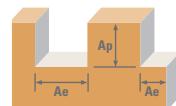


Series M032 Fractional		Hardness	Ae x DC	Ap x DC	Vc (sfm)	DC • in		
						1/32	5/64	7/64
P	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	$\leq 275 \text{ Bhn}$ or $\leq 28 \text{ HRc}$	Profile 	≤ 0.25	≤ 1	790 (632-948)	RPM Fz Feed (ipm)	96570 0.00009 26.0
			Slot 	1	$\leq .5$	630 (504-756)	RPM Fz Feed (ipm)	77011 0.00009 20.5
			Finish 	$\leq .02$	1	1565 (1252-1878)	RPM Fz Feed (ipm)	191306 0.00017 95.0
	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	$\leq 375 \text{ Bhn}$ or $\leq 40 \text{ HRc}$	Profile 	≤ 0.25	≤ 1	450 (360-540)	RPM Fz Feed (ipm)	55008 0.00007 11.0
			Slot 	1	$\leq .5$	360 (288-432)	RPM Fz Feed (ipm)	44006 0.00007 8.9
			Finish 	$\leq .02$	1	895 (716-1074)	RPM Fz Feed (ipm)	109405 0.00012 40.0
	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	$\leq 560 \text{ Bhn}$ or $\leq 55 \text{ HRc}$	Profile 	≤ 0.25	≤ 1	93 (74-112)	RPM Fz Feed (ipm)	11368 0.00003 0.9
			Slot 	1	$\leq .5$	65 (52-78)	RPM Fz Feed (ipm)	7946 0.00003 0.6
			Finish 	$\leq .02$	1	167 (134-200)	RPM Fz Feed (ipm)	20414 0.00004 2.8
H	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	$\leq 375 \text{ Bhn}$ or $\leq 40 \text{ HRc}$	Profile 	≤ 0.25	≤ 1	69 (55-83)	RPM Fz Feed (ipm)	8435 0.00003 0.8
			Slot 	1	$\leq .5$	50 (40-60)	RPM Fz Feed (ipm)	6112 0.00002 0.5
			Finish 	$\leq .02$	1	124 (99-149)	RPM Fz Feed (ipm)	15158 0.00005 2.2
	CAST IRONS (LOW & MEDIUM ALLOY) Gray, Malleable, Ductile	$\leq 220 \text{ Bhn}$ or $\leq 19 \text{ HRc}$	Profile 	≤ 0.25	≤ 1	620 (496-744)	RPM Fz Feed (ipm)	75789 0.00011 25.5
			Slot 	1	$\leq .5$	450 (360-540)	RPM Fz Feed (ipm)	55008 0.00010 16.0
			Finish 	$\leq .02$	1	1115 (892-1338)	RPM Fz Feed (ipm)	136298 0.00018 73.0

continued on next page

FRACTIONAL

Series M032



Series M032 Fractional		Hardness	Ae x DC	Ap x DC	Vc (sfm)	DC • in			
						1/32	5/64	7/64	
M STAINLESS STEELS (DIFFICULT) 304, 304L, 316, 316L	≤ 275 Bhn or ≤ 28 HRc	Profile	≤ 0.25	≤ 1	335 (268-402)	RPM	40950	16380	11700
		Slot	1	$\leq .5$	245 (196-294)	RPM	29949	11980	8557
		Finish	$\leq .02$	1	605 (484-726)	RPM	73955	29582	21130
	≤ 325 Bhn or ≤ 35 HRc	Profile	≤ 0.25	≤ 1	310 (248-372)	RPM	37894	15158	10827
		Slot	1	$\leq .5$	225 (180-270)	RPM	27504	11002	7858
		Finish	$\leq .02$	1	555 (444-666)	RPM	67843	27137	19384
		Profile	≤ 0.5	≤ 1.5	200 (160-240)	RPM	24448	9779	6985
		Slot	1	≤ 1	145 (116-174)	RPM	17725	7090	5064
		Finish	$\leq .02$	1	360 (288-432)	RPM	44006	17603	12573
S SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 718, X-750, Incoloy, Waspaloy, Hastelloy, Rene	≤ 400 Bhn or ≤ 43 HRc	Profile	≤ 0.5	≤ 1.5	245 (196-294)	RPM	29949	11980	8557
		Slot	1	≤ 1	180 (144-216)	RPM	22003	8801	6287
		Finish	$\leq .02$	1	440 (352-528)	RPM	53786	21514	15367
	≤ 350 Bhn or ≤ 38 HRc	Profile	≤ 0.5	≤ 1.5	Fz Feed (ipm)	0.00007 6.3	0.00018 6.3	0.00025 6.3	
		Slot	1	≤ 1	Fz Feed (ipm)	0.00006 3.9	0.00015 3.9	0.00021 3.9	
		Finish	$\leq .02$	1	Fz Feed (ipm)	0.00011 14.5	0.00027 14.5	0.00038 14.5	
		Profile	≤ 0.5	≤ 1.5	Fz Feed (ipm)	0.00007 6.3	0.00018 6.3	0.00025 6.3	
		Slot	1	≤ 1	Fz Feed (ipm)	0.00006 3.9	0.00015 3.9	0.00021 3.9	
		Finish	$\leq .02$	1	Fz Feed (ipm)	0.00011 18.0	0.00028 18.0	0.00039 18.0	

Bhn (Brinell) HRc (Rockwell C)

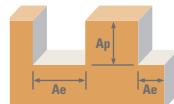
rpm = $V_c \times 3.82 / DC$ ipm = $F_z \times 3 \times rpm$ ($F_z \times 3 \times$ max available rpm when recommendation exceeds machine limit)

ramp up to 5 degrees using slotting speed and feed rates. Do not plunge.

reduce speed and feed for materials harder than listed

refer to the KYOCERA SGS Tool Wizard® for complete technical information (www.kyocera-sgstool.com)

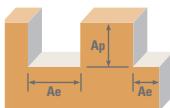
Series M032



Series M032 Metric	Hardness	Ae x DC	Ap x DC	Vc (m/min)	DC • mm		
					1	2	3
P	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	$\leq 275 \text{ Bhn}$ or $\leq 28 \text{ HRc}$	Profile 	≤ 0.25	≤ 1	241 (193-289)	RPM Fz Feed (mm/min)
			Slot 	1	$\leq .5$	192 (154-230)	RPM Fz Feed (ipm)
			Finish 	$\leq .02$	1	477 (382-572)	RPM Fz Feed (ipm)
	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	$\leq 375 \text{ Bhn}$ or $\leq 40 \text{ HRc}$	Profile 	≤ 0.25	≤ 1	137 (110-165)	RPM Fz Feed (ipm)
			Slot 	1	$\leq .5$	110 (88-132)	RPM Fz Feed (ipm)
			Finish 	$\leq .02$	1	273 (218-327)	RPM Fz Feed (ipm)
	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	$\leq 560 \text{ Bhn}$ or $\leq 55 \text{ HRc}$	Profile 	≤ 0.25	≤ 1	28 (23-34)	RPM Fz Feed (ipm)
			Slot 	1	$\leq .5$	20 (16-24)	RPM Fz Feed (ipm)
			Finish 	$\leq .02$	1	51 (41-61)	RPM Fz Feed (ipm)
H	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	$\leq 375 \text{ Bhn}$ or $\leq 40 \text{ HRc}$	Profile 	≤ 0.25	≤ 1	21 (17-25)	RPM Fz Feed (ipm)
			Slot 	1	$\leq .5$	15 (12-18)	RPM Fz Feed (ipm)
			Finish 	$\leq .02$	1	38 (30-45)	RPM Fz Feed (ipm)
			Profile 	≤ 0.25	≤ 1	189 (151-227)	RPM Fz Feed (ipm)
			Slot 	1	$\leq .5$	137 (110-165)	RPM Fz Feed (ipm)
			Finish 	$\leq .02$	1	340 (272-408)	RPM Fz Feed (ipm)
K	CAST IRONS (LOW & MEDIUM ALLOY) Gray, Malleable, Ductile	$\leq 220 \text{ Bhn}$ or $\leq 19 \text{ HRc}$	Profile 	≤ 0.25	≤ 1	60104 (30052)	RPM Fz Feed (ipm)
			Slot 	1	$\leq .5$	43624 (21812)	RPM Fz Feed (ipm)
			Finish 	$\leq .02$	1	108090 (54045)	RPM Fz Feed (ipm)
						1854	1854

continued on next page

Series M032



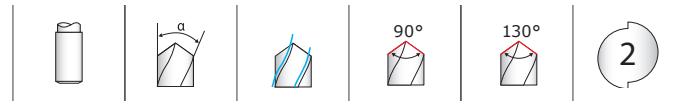
Series M032 Metric	Hardness	Ae x DC	Ap x DC	Vc (m/min)	DC • mm			
					1	2	3	
M STAINLESS STEELS (DIFFICULT) 304, 304L, 316, 316L $\leq 275 \text{ Bhn}$ or $\leq 28 \text{ HRc}$	Profile 	≤ 0.25	≤ 1	102	RPM	32475	16238	10825
				(82-123)	Fz	0.0026	0.0052	0.0077
				75	RPM	23751	11875	7917
	Slot 	1	$\leq .5$	(60-90)	Fz	0.0021	0.0043	0.0064
				184	RPM	58650	29325	19550
				(148-221)	Fz	0.0040	0.0079	0.0119
	Finish 	$\leq .02$	1	699	Feed (ipm)	699	699	699
				94	RPM	30052	15026	10017
				(76-113)	Fz	0.0025	0.0051	0.0076
M STAINLESS STEELS (PH) 13-8 PH, 15-5 PH, 17-4 PH, Custom 450 $\leq 325 \text{ Bhn}$ or $\leq 35 \text{ HRc}$	Profile 	≤ 0.25	≤ 1	69	RPM	21812	10906	7271
				(55-82)	Fz	0.0021	0.0043	0.0064
				169	RPM	53803	26901	17934
	Slot 	1	$\leq .5$	(135-203)	Fz	0.0040	0.0080	0.0120
				648	Feed (ipm)	648	648	648
				110	RPM	34899	17449	11633
	Finish 	$\leq .02$	1	(88-132)	Fz	0.0035	0.0070	0.0106
				368	Feed (ipm)	368	368	368
				75	RPM	23751	11875	7917
S SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 718, X-750, Incoloy, Waspaloy, Hastelloy, Rene $\leq 400 \text{ Bhn}$ or $\leq 43 \text{ HRc}$	Profile 	≤ 0.5	≤ 1.5	(49-73)	Fz	0.0022	0.0045	0.0067
				44	RPM	14057	7028	4686
				(35-53)	Fz	0.0019	0.0039	0.0058
	Slot 	1	≤ 1	110	RPM	34899	17449	11633
				(88-132)	Fz	0.0035	0.0070	0.0106
				368	Feed (ipm)	368	368	368
	Finish 	$\leq .02$	1	75	RPM	23751	11875	7917
				(60-90)	Fz	0.0022	0.0045	0.0067
				55	RPM	17449	8725	5816
S TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si $\leq 350 \text{ Bhn}$ or $\leq 38 \text{ HRc}$	Profile 	≤ 0.5	≤ 1.5	(44-66)	Fz	0.0019	0.0038	0.0057
				134	RPM	42654	21327	14218
				(107-161)	Fz	0.0036	0.0071	0.0107
	Slot 	1	≤ 1	457	Feed (ipm)	457	457	457
				134	RPM	42654	21327	14218
				(107-161)	Fz	0.0036	0.0071	0.0107

Bhn (Brinell) HRc (Rockwell C)

rpm = $(V_c \times 1000) / (DC \times 3.14)$ mm/min = $F_z \times 3 \times \text{rpm}$ ($F_z \times 3 \times \text{max available rpm}$ when recommendation exceeds machine limit)

reduce speed and feed for materials harder than listed

refer to the KYOCERA SGS Tool Wizard® for complete technical information (www.kyocera-sgstoold.com)



New Expanded Tools

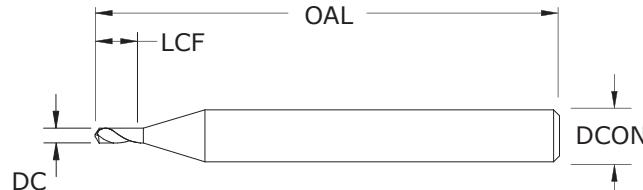
TOLERANCES (inch)

.005-.125 DIAMETER

DC = +0.0000/-0.0003

DCON = h₆

- STEELS
- STAINLESS STEELS
- CAST IRON
- HIGHEMP ALLOYS
- TITANIUM
- HARDENED STEELS
- NON-FERROUS
- PLASTICS/COMPOSITES



M080
FRACTIONAL SERIES

CUTTING DIAMETER DC	SHANK DIAMETER DCON	FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	EDP NO.	
					UNCOATED	TI-NAMITE-A (AITIN)
0.0050	1/8	0.025	1-1/2	90	07016	07000
0.0100	1/8	0.035	1-1/2	90	07017	07001
0.0150	1/8	0.045	1-1/2	90	07018	07002
0.0200	1/8	0.050	1-1/2	90	07019	07003
0.0312	1/8	0.090	1-1/2	90	07020	07004
0.0625	1/8	0.200	1-1/2	90	07021	07005
0.0938	1/8	0.200	1-1/2	90	07022	07006
0.1250	1/8	0.200	1-1/2	90	07023	07007
0.0050	1/8	0.025	1-1/2	130	07024	07008
0.0100	1/8	0.035	1-1/2	130	07025	07009
0.0150	1/8	0.045	1-1/2	130	07026	07010
0.0200	1/8	0.050	1-1/2	130	07027	07011
0.0312	1/8	0.090	1-1/2	130	07028	07012
0.0625	1/8	0.200	1-1/2	130	07029	07013
0.0938	1/8	0.200	1-1/2	130	07030	07014
0.1250	1/8	0.200	1-1/2	130	07031	07015

- 4-facet point design, stub length, and mirror finish provide the highest quality spot
- Ti-Namite A coating and uncoated options for the ultimate performance and tool life in a variety of ferrous and non-ferrous workpiece materials
- Available from stock in all popular diameters and point configurations
- Application specific sub-micron grain carbide designed specifically for micro-tool applications
- Manufactured in accordance with KSPT ISO certified quality procedures

METRIC

2 Flute Spotting External Coolant

**MICRO
SGS®**
Solid Carbide Tools

KYOCERA



New Expanded Tools

M081

METRIC SERIES

- 4-facet point design, stub length, and mirror finish provide the highest quality spot
- Ti-Namite A coating and uncoated options for the ultimate performance and tool life in a variety of ferrous and non-ferrous workpiece materials
- Available from stock in all popular diameters and point configurations
- Application specific sub-micron grain carbide designed specifically for micro-tool applications
- Manufactured in accordance with KSPT ISO certified quality procedures

CUTTING DIAMETER DC	SHANK DIAMETER DCON	FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	EDP NO.	
					UNCOATED	TI-NAMITE-A (AlTiN)
0,15	3,0	0,65	38,0	90	07048	07032
0,25	3,0	0,90	38,0	90	07049	07033
0,40	3,0	1,15	38,0	90	07050	07034
0,50	3,0	1,30	38,0	90	07051	07035
1,00	3,0	2,30	38,0	90	07052	07036
1,50	3,0	5,00	38,0	90	07053	07037
2,00	3,0	5,00	38,0	90	07054	07038
3,00	3,0	5,00	38,0	90	07055	07039
0,15	3,0	0,65	38,0	130	07056	07040
0,25	3,0	0,90	38,0	130	07057	07041
0,40	3,0	1,15	38,0	130	07058	07042
0,50	3,0	1,30	38,0	130	07059	07043
1,00	3,0	2,30	38,0	130	07060	07044
1,50	3,0	5,00	38,0	130	07061	07045
2,00	3,0	5,00	38,0	130	07062	07046
3,00	3,0	5,00	38,0	130	07063	07047

TOLERANCES (mm)

0,15–3,0 DIAMETER

DC = +0,000/-0,008

DCON = h₆

STEELS

STAINLESS STEELS

CAST IRON

HIGH TEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES

FRACTIONAL
Series M080

			Vc (sfm)	DC • in						
Series M080		Hardness		0.005	0.010	0.020	0.040	0.080	0.125	
P	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 175 Bhn or ≤ 7 HRc	280 (224-336)	RPM	213920	106960	53480	26740	13370	8557
				Fz	0.00010	0.00021	0.0004	0.0008	0.0016	0.0026
				Feed (ipm)	22.0	22.0	22.0	22.0	22.0	22.0
H	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 275 Bhn or ≤ 28 HRc	180 (144-216)	RPM	137520	68760	34380	17190	8595	5501
				Fz	0.00010	0.00019	0.0004	0.0008	0.0015	0.0024
				Feed (ipm)	13.3	13.3	13.3	13.3	13.3	13.3
K	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 475 Bhn or ≤ 50 HRc	70 (56-84)	RPM	53480	26740	13370	6685	3343	2139
				Fz	0.00004	0.00008	0.0002	0.0003	0.0006	0.0010
				Feed (ipm)	2.1	2.1	2.1	2.1	2.1	2.1
M	CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	280 (224-336)	RPM	213920	106960	53480	26740	13370	8557
				Fz	0.00007	0.00015	0.0003	0.0006	0.0012	0.0018
				Feed (ipm)	15.8	15.8	15.8	15.8	15.8	15.8
S	STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F, 440F	≤ 250 Bhn or ≤ 24 HRc	210 (168-252)	RPM	160440	80220	40110	20055	10028	6418
				Fz	0.00011	0.00021	0.0004	0.0008	0.0017	0.0026
				Feed (ipm)	17.0	17.0	17.0	17.0	17.0	17.0
N	STAINLESS STEELS (DIFFICULT) 304, 316, 321, 13-8 PH, 15-5PH, 17-4 PH, CUSTOM 450	≤ 275 Bhn or ≤ 28 HRc	180 (144-216)	RPM	137520	68760	34380	17190	8595	5501
				Fz	0.0001	0.0002	0.0004	0.0008	0.0015	0.0024
				Feed (ipm)	13.3	13.3	13.3	13.3	13.3	13.3
T	SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy 800, Monel 400, Rene, Waspaloy	≤ 320 Bhn or ≤ 34 HRc	70 (56-84)	RPM	53480	26740	13370	6685	3343	2139
				Fz	0.00006	0.00012	0.0002	0.0005	0.0010	0.0015
				Feed (ipm)	3.2	3.2	3.2	3.2	3.2	3.2
U	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si	≤ 350 Bhn or ≤ 38 HRc	120 (96-144)	RPM	91680	45840	22920	11460	5730	3667
				Fz	0.00006	0.00012	0.0002	0.0005	0.0010	0.0015
				Feed (ipm)	5.6	5.6	5.6	5.6	5.6	5.6
V	ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	≤ 150 Bhn or ≤ 7 HRc	600 (480-720)	RPM	458400	229200	114600	57300	28650	18336
				Fz	0.00012	0.00024	0.0005	0.0009	0.0019	0.0029
				Feed (ipm)	54.0	54.0	54.0	54.0	54.0	54.0
W	COPPER ALLOYS Alum Bronze, C110, Muntz Brass	≤ 140 Bhn or ≤ 3 HRc	190 (152-228)	RPM	145160	72580	36290	18145	9073	5806
				Fz	0.00010	0.00019	0.0004	0.0008	0.0016	0.0024
				Feed (ipm)	14.1	14.1	14.1	14.1	14.1	14.1
X	PLASTICS Polycarbonate, PVC		500 (400-600)	RPM	382000	191000	95500	47750	23875	15280
				Fz	0.00012	0.00024	0.0005	0.0009	0.0019	0.0029
				Feed (ipm)	45.0	45.0	45.0	45.0	45.0	45.0

Note:

- Bhn (Brinell) HRc (Rockwell C) HRb (Rockwell B)
- rpm = $V_c \times 3.82 / DC$
- ipm = $F_z \times rpm$ (Fr x maximum available rpm when recommendation exceeds machine limit)
- reduce speed and feed 30% when using uncoated drills
- reduce speed and feed for materials harder than listed
- refer to the KYOCERA SGS Tool Wizard® or sgsmicrotools.com for complete technical information

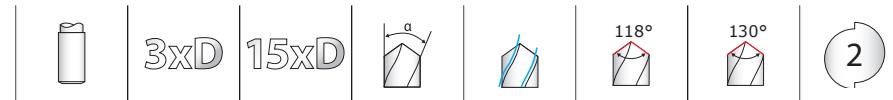
Series M081

	Series M081	Hardness	Vc (m/min)	DC • mm						
				0.15	0.25	0.5	1	2	3	
P	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 175 Bhn or ≤ 7 HRc	85 (68-102)	RPM	180958	108575	54287	27144	13572	9048
	Fz	0.0031		0.0051	0.0103	0.0206	0.0412	0.0618		
	Feed (mm/min)	559		559	559	559	559	559		
H	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 275 Bhn or ≤ 28 HRc	55 (44-66)	RPM	116330	69798	34899	17449	8725	5816
	Fz	0.0029		0.0048	0.0097	0.0194	0.0387	0.0581		
	Feed (mm/min)	338		338	338	338	338	338		
K	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 475 Bhn or ≤ 50 HRc	21 (17-26)	RPM	45239	27144	13572	6786	3393	2262
	Fz	0.0012		0.0020	0.0039	0.0079	0.0157	0.0236		
	Feed (mm/min)	53		53	53	53	53	53		
M	CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	85 (68-102)	RPM	180958	108575	54287	27144	13572	9048
	Fz	0.0022		0.0037	0.0074	0.0148	0.0296	0.0444		
	Feed (mm/min)	401		401	401	401	401	401		
M	STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F, 440F	≤ 250 Bhn or ≤ 24 HRc	64 (51-77)	RPM	135718	81431	40715	20358	10179	6786
	Fz	0.0032		0.0053	0.0106	0.0212	0.0424	0.0636		
	Feed (mm/min)	432		432	432	432	432	432		
S	STAINLESS STEELS (DIFFICULT) 304, 316, 321, 13-8 PH, 15-5PH, 17-4 PH, CUSTOM 450	≤ 275 Bhn or ≤ 28 HRc	55 (44-66)	RPM	116330	69798	34899	17449	8725	5816
	Fz	0.0029		0.0048	0.0097	0.0194	0.0387	0.0581		
	Feed (mm/min)	338		338	338	338	338	338		
S	SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy 800, Monel 400, Rene, Waspaloy	≤ 320 Bhn or ≤ 34 HRc	21 (17-26)	RPM	45239	27144	13572	6786	3393	2262
	Fz	0.0018		0.0030	0.0060	0.0120	0.0240	0.0359		
	Feed (mm/min)	81		81	81	81	81	81		
S	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si	≤ 350 Bhn or ≤ 38 HRc	37 (29-44)	RPM	77553	46532	23266	11633	5816	3878
	Fz	0.0018		0.0031	0.0061	0.0122	0.0245	0.0367		
	Feed (mm/min)	142		142	142	142	142	142		
N	ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	≤ 150 Bhn or ≤ 7 HRc	183 (146-219)	RPM	387767	232660	116330	58165	29082	19388
	Fz	0.0035		0.0059	0.0118	0.0236	0.0472	0.0707		
	Feed (mm/min)	1372		1372	1372	1372	1372	1372		
N	COPPER ALLOYS Alum Bronze, C110, Muntz Brass	≤ 140 Bhn or ≤ 3 HRc	58 (46-69)	RPM	122793	73676	36838	18419	9209	6140
	Fz	0.0029		0.0049	0.0097	0.0194	0.0389	0.0583		
	Feed (mm/min)	358		358	358	358	358	358		
N	PLASTICS Polycarbonate, PVC		152 (122-183)	RPM	323139	193883	96942	48471	24235	16157
	Fz	0.0035		0.0059	0.0118	0.0236	0.0472	0.0707		
	Feed (mm/min)	1143		1143	1143	1143	1143	1143		

Note:

- Bhn (Brinell) HRc (Rockwell C) HRb (Rockwell B)
- rpm = $(V_c \times 1000) / (DC \times 3.14)$
- mm/min = Fr x rpm (Fr maximum available rpm when recommendation exceeds machine limit)
- reduce speed and feed 30% when using uncoated drills
- reduce speed and feed for materials harder than listed
- refer to the KYOCERA SGS Tool Wizard® or sgsmicrotools.com for complete technical information

2 Flute External Coolant • Standard & Extended Length



New Expanded Tools

TOLERANCES (inch)

≤.125 DIAMETER

DC = +.0000/+0.0003

DCON = h₆

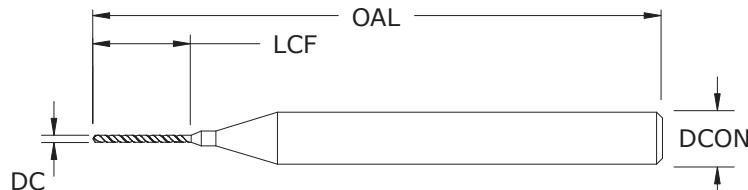
TOLERANCES (mm)

0,1–3,0 DIAMETER

DC = +0,000/+0,008

DCON = h₆

- STEELS
- STAINLESS STEELS
- CAST IRON
- HIGH TEMP ALLOYS
- TITANIUM
- NON-FERROUS
- HARDENED STEELS



M105

FRACTIONAL & METRIC SERIES

CUTTING DIAMETER DC	DECIMAL EQUIV.	SHANK DIAMETER DCON	FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	EDP NO.	
						UNCOATED	TI-NAMITE-A (AlTiN)
0,1mm	0.0040	1/8	0.040	1-1/2	118	07088	07098
0,1mm	0.0040	1/8	0.070	1-1/2	118	07089	07099
0,13mm	0.0050	1/8	0.040	1-1/2	118	07064	07066
0,13mm	0.0050	1/8	0.070	1-1/2	118	07065	07067
#97	0.0059	1/8	0.080	1-1/2	118	07236	07068
#97	0.0059	1/8	0.120	1-1/2	118	07237	07069
#96	0.0063	1/8	0.080	1-1/2	118	07238	07070
#96	0.0063	1/8	0.120	1-1/2	118	07239	07071
#95	0.0067	1/8	0.080	1-1/2	118	07240	07072
#95	0.0067	1/8	0.120	1-1/2	118	07241	07073
#94	0.0071	1/8	0.100	1-1/2	118	07242	07074
#94	0.0071	1/8	0.150	1-1/2	118	07243	07075
#93	0.0075	1/8	0.100	1-1/2	118	07244	07076
#93	0.0075	1/8	0.150	1-1/2	118	07245	07077
#92	0.0079	1/8	0.100	1-1/2	118	07246	07078
#92	0.0079	1/8	0.150	1-1/2	118	07247	07079
#91	0.0083	1/8	0.100	1-1/2	118	07248	07080
#91	0.0083	1/8	0.150	1-1/2	118	07249	07081
#90	0.0087	1/8	0.100	1-1/2	118	07250	07082
#90	0.0087	1/8	0.150	1-1/2	118	07251	07083
#89	0.0091	1/8	0.150	1-1/2	118	07252	07084
#89	0.0091	1/8	0.220	1-1/2	118	07253	07085
#88	0.0095	1/8	0.150	1-1/2	118	07254	07086
#88	0.0095	1/8	0.220	1-1/2	118	07255	07087
0,25mm	0.0098	1/8	0.150	1-1/2	118	07108	07114
0,25mm	0.0098	1/8	0.220	1-1/2	118	07109	07115
#87	0.0100	1/8	0.150	1-1/2	118	07258	07090
#87	0.0100	1/8	0.220	1-1/2	118	07259	07091
#86	0.0105	1/8	0.150	1-1/2	118	07260	07092
#86	0.0105	1/8	0.220	1-1/2	118	07261	07093
#85	0.0110	1/8	0.150	1-1/2	118	07262	07094
#85	0.0110	1/8	0.220	1-1/2	118	07263	07095
#84	0.0115	1/8	0.150	1-1/2	118	07264	07096
#84	0.0115	1/8	0.220	1-1/2	118	07265	07097
0,3mm	0.0118	1/8	0.225	1-1/2	118	07127	07132
0,3mm	0.0118	1/8	0.280	1-1/2	118	07129	07134

continued on next page

- 4-facet point design stabilizes on entry for superior hole size control and tool life
- Mirror surface finishes improve chip flow as hole depth increases
- Ti-Namite A coating and uncoated options for the ultimate performance in a variety of ferrous and non-ferrous workpiece materials
- Available from stock in a selection of popular lengths and diameters
- Application specific sub-micron grain carbide designed specifically for micro-tool applications
- Manufactured in accordance with KSPT ISO certified quality procedures

2 Flute External Coolant •

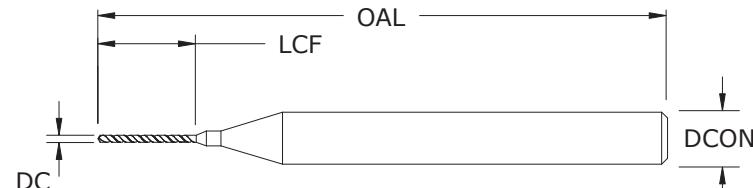
Standard & Extended Length

MICRO
SGS
Solid Carbide Tools



3xD

15xD



New Expanded Tools

M105

FRACTIONAL & METRIC SERIES

continued

CUTTING DIAMETER DC	DECIMAL EQUIV.	SHANK DIAMETER DCON	FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	EDP NO.	
						UNCOATED	TI-NAMITE-A (AlTiN)
#83	0.0120	1/8	0.225	1-1/2	118	07268	07100
#83	0.0120	1/8	0.280	1-1/2	118	07269	07101
#82	0.0125	1/8	0.225	1-1/2	118	07270	07102
#82	0.0125	1/8	0.280	1-1/2	118	07271	07103
#81	0.0130	1/8	0.225	1-1/2	118	07272	07104
#81	0.0130	1/8	0.280	1-1/2	118	07273	07105
#80	0.0135	1/8	0.225	1-1/2	130	07274	07106
#80	0.0135	1/8	0.280	1-1/2	130	07275	07107
0.35mm	0.0138	1/8	0.225	1-1/2	130	07118	07122
0.35mm	0.0138	1/8	0.280	1-1/2	130	07119	07123
#79	0.0145	1/8	0.225	1-1/2	130	07278	07110
#79	0.0145	1/8	0.280	1-1/2	130	07279	07111
1/64	0.0156	1/8	0.250	1-1/2	130	07280	07112
1/64	0.0156	1/8	0.295	1-1/2	130	07281	07113
0.4mm	0.0157	1/8	0.250	1-1/2	130	07148	07233
0.4mm	0.0157	1/8	0.295	1-1/2	130	07232	07234
#78	0.0160	1/8	0.250	1-1/2	130	07284	07116
#78	0.0160	1/8	0.295	1-1/2	130	07285	07117
0.45mm	0.0177	1/8	0.250	1-1/2	130	07137	07143
0.45mm	0.0177	1/8	0.295	1-1/2	130	07140	07145
#77	0.0180	1/8	0.250	1-1/2	130	07288	07120
#77	0.0180	1/8	0.295	1-1/2	130	07289	07121
0.5mm	0.0197	1/8	0.260	1-1/2	130	07257	07267
0.5mm	0.0197	1/8	0.310	1-1/2	130	07266	07276
#76	0.0200	1/8	0.260	1-1/2	130	07292	07124
#76	0.0200	1/8	0.310	1-1/2	130	07293	07125
#75	0.0210	1/8	0.310	1-1/2	130	07294	07126
0.55mm	0.0217	1/8	0.340	1-1/2	130	07235	07256
#74	0.0225	1/8	0.340	1-1/2	130	07296	07128
0.6mm	0.0236	1/8	0.340	1-1/2	130	07283	07286
#73	0.0240	1/8	0.340	1-1/2	130	07298	07130
#72	0.0250	1/8	0.340	1-1/2	130	07299	07131
0.65mm	0.0256	1/8	0.340	1-1/2	130	07277	07282
#71	0.0260	1/8	0.340	1-1/2	130	07301	07133

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TOLERANCES (inch)

≤.125 DIAMETER
DC = +.0000/+..0003
DCON = h_6

TOLERANCES (mm)

0.1–3.0 DIAMETER
DC = +0,000/+0,008
DCON = h_6

- STEELS
- STAINLESS STEELS
- CAST IRON
- HIGH TEMP ALLOYS
- TITANIUM
- NON-FERROUS
- HARDENED STEELS

2 Flute External Coolant • Standard & Extended Length

M105

FRACTIONAL & METRIC SERIES

inch & mm						EDP NO.		<i>continued</i>
CUTTING DIAMETER DC	DECIMAL EQUIV.	SHANK DIAMETER DCON	FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	UNCOATED	TI-NAMITE-A (AlTiN)	
0,7mm	0.0276	1/8	0.400	1-1/2	130	07291	07295	
#70	0.0280	1/8	0.400	1-1/2	130	07303	07135	
#69	0.0292	1/8	0.400	1-1/2	130	07304	07136	
0,75mm	0.0295	1/8	0.400	1-1/2	130	07287	07290	
#68	0.0310	1/8	0.400	1-1/2	130	07306	07138	
1/32	0.0312	1/8	0.400	1-1/2	130	07307	07139	
0,8mm	0.0315	1/8	0.400	1-1/2	130	07302	07305	
#67	0.0320	1/8	0.400	1-1/2	130	07309	07141	
#66	0.0330	1/8	0.400	1-1/2	130	07310	07142	
0,85mm	0.0335	1/8	0.400	1-1/2	130	07297	07300	
#65	0.0350	1/8	0.400	1-1/2	130	07312	07144	
0,9mm	0.0354	1/8	0.400	1-1/2	130	07313	07316	
#64	0.0360	1/8	0.400	1-1/2	130	07314	07146	
#63	0.0370	1/8	0.400	1-1/2	130	07315	07147	
0,95mm	0.0374	1/8	0.400	1-1/2	130	07308	07311	
#62	0.0380	1/8	0.400	1-1/2	130	07317	07149	
#61	0.0390	1/8	0.400	1-1/2	130	07318	07150	
1,0mm	0.0394	1/8	0.400	1-1/2	130	07319	07151	
#60	0.0400	1/8	0.400	1-1/2	130	07320	07152	
#59	0.0410	1/8	0.400	1-1/2	130	07321	07153	
1,05mm	0.0413	1/8	0.400	1-1/2	130	07322	07154	
#58	0.0420	1/8	0.400	1-1/2	130	07323	07155	
#57	0.0430	1/8	0.400	1-1/2	130	07324	07156	
1,1mm	0.0433	1/8	0.400	1-1/2	130	07325	07157	
1,12mm	0.0440	1/8	0.400	1-1/2	130	07326	07158	
1,15mm	0.0453	1/8	0.400	1-1/2	130	07327	07159	
#56	0.0465	1/8	0.400	1-1/2	130	07328	07160	
3/64	0.0469	1/8	0.400	1-1/2	130	07329	07161	
1,2mm	0.0472	1/8	0.400	1-1/2	130	07330	07162	
1,25mm	0.0492	1/8	0.400	1-1/2	130	07331	07163	
1,3mm	0.0512	1/8	0.400	1-1/2	130	07332	07164	
#55	0.0520	1/8	0.400	1-1/2	130	07333	07165	
1,35mm	0.0531	1/8	0.400	1-1/2	130	07334	07166	
#54	0.0550	1/8	0.400	1-1/2	130	07335	07167	
1,4mm	0.0551	1/8	0.400	1-1/2	130	07336	07168	
1,45mm	0.0571	1/8	0.400	1-1/2	130	07337	07169	
1,5mm	0.0591	1/8	0.400	1-1/2	130	07338	07170	
#53	0.0595	1/8	0.400	1-1/2	130	07339	07171	
1,55mm	0.0610	1/8	0.400	1-1/2	130	07340	07172	
1/16	0.0625	1/8	0.400	1-1/2	130	07341	07173	
1,6mm	0.0630	1/8	0.400	1-1/2	130	07342	07174	
#52	0.0635	1/8	0.400	1-1/2	130	07343	07175	
1,65mm	0.0650	1/8	0.400	1-1/2	130	07344	07176	
1,7mm	0.0669	1/8	0.400	1-1/2	130	07345	07177	

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2 Flute External Coolant •

Standard & Extended Length

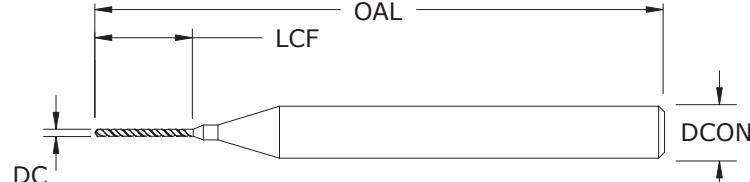
MICRO
SGS
Solid Carbide Tools

KYOCERA



3xD

15xD



New Expanded Tools

M105

FRACTIONAL & METRIC SERIES

continued

CUTTING DIAMETER DC	DECIMAL EQUIV.	SHANK DIAMETER DCON	FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	EDP NO.	
						UNCOATED	TI-NAMITE-A (AlTiN)
#51	0.0670	1/8	0.400	1-1/2	130	07346	07178
1,75mm	0.0689	1/8	0.400	1-1/2	130	07347	07179
#50	0.0700	1/8	0.400	1-1/2	130	07348	07180
1,8mm	0.0709	1/8	0.400	1-1/2	130	07349	07181
1,85mm	0.0728	1/8	0.400	1-1/2	130	07350	07182
#49	0.0730	1/8	0.400	1-1/2	130	07351	07183
1,9mm	0.0748	1/8	0.400	1-1/2	130	07352	07184
#48	0.0760	1/8	0.400	1-1/2	130	07353	07185
1,95mm	0.0768	1/8	0.400	1-1/2	130	07354	07186
5/64	0.0781	1/8	0.400	1-1/2	130	07355	07187
#47	0.0785	1/8	0.400	1-1/2	130	07356	07188
2,0mm	0.0787	1/8	0.400	1-1/2	130	07357	07189
2,05mm	0.0807	1/8	0.400	1-1/2	130	07358	07190
#46	0.0810	1/8	0.400	1-1/2	130	07359	07191
#45	0.0820	1/8	0.400	1-1/2	130	07360	07192
2,1mm	0.0827	1/8	0.400	1-1/2	130	07361	07193
2,15mm	0.0846	1/8	0.400	1-1/2	130	07362	07194
#44	0.0860	1/8	0.400	1-1/2	130	07363	07195
2,2mm	0.0866	1/8	0.400	1-1/2	130	07364	07196
2,25mm	0.0886	1/8	0.400	1-1/2	130	07365	07197
#43	0.0890	1/8	0.400	1-1/2	130	07366	07198
2,3mm	0.0906	1/8	0.400	1-1/2	130	07367	07199
2,35mm	0.0925	1/8	0.400	1-1/2	130	07368	07200
#42	0.0935	1/8	0.400	1-1/2	130	07369	07201
3/32	0.0938	1/8	0.400	1-1/2	130	07370	07202
2,4mm	0.0945	1/8	0.400	1-1/2	130	07371	07203
#41	0.0960	1/8	0.400	1-1/2	130	07372	07204
2,45mm	0.0965	1/8	0.400	1-1/2	130	07373	07205
#40	0.0980	1/8	0.400	1-1/2	130	07374	07206
2,5mm	0.0984	1/8	0.400	1-1/2	130	07375	07207
#39	0.0995	1/8	0.400	1-1/2	130	07376	07208
2,55mm	0.1004	1/8	0.400	1-1/2	130	07377	07209
#38	0.1015	1/8	0.400	1-1/2	130	07378	07210
2,6mm	0.1024	1/8	0.400	1-1/2	130	07379	07211

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TOLERANCES (inch)

≤.125 DIAMETER

DC = +.0000/+,.0003

DCON = h₆

TOLERANCES (mm)

0,1–3,0 DIAMETER

DC = +0,000/+0,008

DCON = h₆

STEELS

STAINLESS STEELS

CAST IRON

HIGH TEMP ALLOYS

TITANIUM

NON-FERROUS

HARDENED STEELS

2 Flute External Coolant • Standard & Extended Length

M105

FRACTIONAL & METRIC SERIES

continued

inch & mm						EDP NO.	
CUTTING DIAMETER DC	DECIMAL EQUIV.	SHANK DIAMETER DCON	FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	UNCOATED	TI-NAMITE-A (AlTiN)
#37	0.1040	1/8	0.400	1-1/2	130	07380	07212
2,65mm	0.1043	1/8	0.400	1-1/2	130	07381	07213
2,7mm	0.1063	1/8	0.400	1-1/2	130	07382	07214
#36	0.1065	1/8	0.400	1-1/2	130	07383	07215
2,75mm	0.1083	1/8	0.400	1-1/2	130	07384	07216
7/64	0.1094	1/8	0.400	1-1/2	130	07385	07217
#35	0.1100	1/8	0.400	1-1/2	130	07386	07218
2,8mm	0.1102	1/8	0.400	1-1/2	130	07387	07219
#34	0.1110	1/8	0.400	1-1/2	130	07388	07220
2,85mm	0.1122	1/8	0.400	1-1/2	130	07389	07221
#33	0.1130	1/8	0.400	1-1/2	130	07390	07222
2,9mm	0.1142	1/8	0.400	1-1/2	130	07391	07223
#32	0.1160	1/8	0.400	1-1/2	130	07392	07224
2,95mm	0.1161	1/8	0.400	1-1/2	130	07393	07225
3,0mm	0.1181	1/8	0.400	1-1/2	130	07394	07226
#31	0.1200	1/8	0.400	1-1/2	130	07395	07227
3,05mm	0.1201	1/8	0.400	1-1/2	130	07396	07228
3,1mm	0.1220	1/8	0.400	1-1/2	130	07397	07229
3,15mm	0.1240	1/8	0.400	1-1/2	130	07398	07230
1/8	0.1250	1/8	0.400	1-1/2	130	07399	07231

FRACTIONAL

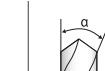
Series M105

Series M105		Hardness	Vc (sfm)	DC • in						
				0.004	0.010	0.020	0.040	0.080	0.125	
P	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 175 Bhn or ≤ 7 HRc	130 (104-156)	RPM	124150	49660	24830	12415	6208	3973
	Fz	0.00012		0.00029	0.0006	0.0012	0.0023	0.0036		
	Feed (ipm)	14.3		14.3	14.3	14.3	14.3	14.3		
H	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 275 Bhn or ≤ 28 HRc	195 (156-234)	RPM	186225	74490	37245	18623	9311	5959
	Fz	0.00010		0.00026	0.0005	0.0010	0.0021	0.0033		
	Feed (ipm)	19.4		19.4	19.4	19.4	19.4	19.4		
K	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 475 Bhn or ≤ 50 HRc	80 (64-96)	RPM	76400	30560	15280	7640	3820	2445
	Fz	0.00005		0.00013	0.0003	0.0005	0.0010	0.0016		
	Feed (ipm)	4.0		4.0	4.0	4.0	4.0	4.0		
M	CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	280 (224-336)	RPM	267400	106960	53480	26740	13370	8557
	Fz	0.00007		0.00016	0.0003	0.0007	0.0013	0.0020		
	Feed (ipm)	17.5		17.5	17.5	17.5	17.5	17.5		
M	STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F, 440F	≤ 275 Bhn or ≤ 28 HRc	65 (52-78)	RPM	62075	24830	12415	6208	3104	1986
	Fz	0.00009		0.00022	0.0004	0.0009	0.0017	0.0027		
	Feed (ipm)	5.4		5.4	5.4	5.4	5.4	5.4		
S	STAINLESS STEELS (DIFFICULT) 304, 316, 321, 13-8 PH, 15-5PH, 17-4 PH, CUSTOM 450	≤ 325 Bhn or ≤ 35 HRc	40 (32-48)	RPM	38200	15280	7640	3820	1910	1222
	Fz	0.0001		0.0002	0.0004	0.0007	0.0014	0.0022		
	Feed (ipm)	2.7		2.7	2.7	2.7	2.7	2.7		
S	SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy 800, Monel 400, Rene, Waspaloy	≤ 320 Bhn or ≤ 34 HRc	50 (40-60)	RPM	47750	19100	9550	4775	2388	1528
	Fz	0.00004		0.00011	0.0002	0.0004	0.0009	0.0014		
	Feed (ipm)	2.1		2.1	2.1	2.1	2.1	2.1		
T	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si	≤ 350 Bhn or ≤ 38 HRc	50 (40-60)	RPM	47750	19100	9550	4775	2388	1528
	Fz	0.00005		0.00013	0.0003	0.0005	0.0010	0.0016		
	Feed (ipm)	2.5		2.5	2.5	2.5	2.5	2.5		
N	ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	≤ 150 Bhn or ≤ 7 HRc	245 (196-294)	RPM	233975	93590	46795	23398	11699	7487
	Fz	0.00020		0.00049	0.0010	0.0020	0.0039	0.0062		
	Feed (ipm)	46.1		46.1	46.1	46.1	46.1	46.1		
N	COPPER ALLOYS Alum Bronze, C110, Muntz Brass	≤ 140 Bhn or ≤ 3 HRc	180 (144-216)	RPM	171900	68760	34380	17190	8595	5501
	Fz	0.00020		0.00049	0.0010	0.0020	0.0039	0.0062		
	Feed (ipm)	33.9		33.9	33.9	33.9	33.9	33.9		
P	PLASTICS Polycarbonate, PVC		245 (196-294)	RPM	233975	93590	46795	23398	11699	7487
		Fz		0.00020	0.00049	0.0010	0.0020	0.0039	0.0062	
		Feed (ipm)		46.1	46.1	46.1	46.1	46.1	46.1	

Note:

- Bhn (Brinell) HRc (Rockwell C) HRb (Rockwell B)
- rpm = Vc x 3.82 / DC
- ipm = Fr x rpm (Fr = maximum available rpm when recommendation exceeds machine limit)
- reduce speed and feed 30% when using uncoated drills
- reduce speed and feed for materials harder than listed
- refer to the KYOCERA SGS Tool Wizard® or sgsmicrotools.com for complete technical information

2 Flute External Coolant



3xD | 12xD



2

New Expanded Tools

TOLERANCES (mm)

0,04–3,0 DIAMETER

DC = +0,000/-0,008

DCON = h₆

STEELS

STAINLESS STEELS

CAST IRON

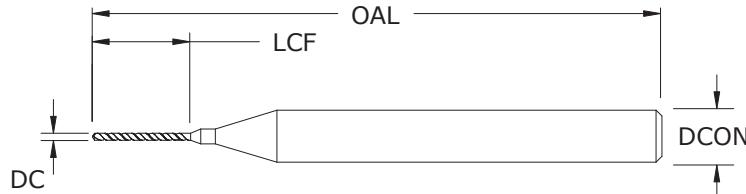
HIGHTEMP ALLOYS

TITANIUM

HARDENED STEELS

NON-FERROUS

PLASTICS/COMPOSITES



M226
METRIC SERIES

CUTTING DIAMETER DC	DECIMAL EQUIV.	SHANK DIAMETER DCON	FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	EDP NO.	
						UNCOATED	TI-NAMITE-A (AlTiN)
0,04	0,0016	3,0	0,5	38,0	118	07722	—
0,04	0,0018	3,0	0,6	38,0	118	07723	—
0,05	0,0020	3,0	0,8	38,0	118	07724	—
0,06	0,0024	3,0	0,8	38,0	118	07725	—
0,07	0,0028	3,0	1,3	38,0	118	07726	—
0,08	0,0031	3,0	1,3	38,0	118	07727	—
0,09	0,0035	3,0	1,3	38,0	118	07728	—
0,10	0,0039	3,0	1,0	38,0	118	07729	—
0,11	0,0043	3,0	1,0	38,0	118	07730	—
0,12	0,0047	3,0	1,0	38,0	118	07731	—
0,13	0,0051	3,0	1,0	38,0	118	07732	—
0,14	0,0055	3,0	1,0	38,0	118	07733	—
0,15	0,0059	3,0	2,0	38,0	118	07734	—
0,16	0,0063	3,0	2,0	38,0	118	07735	—
0,17	0,0067	3,0	2,0	38,0	118	07736	—
0,18	0,0071	3,0	2,5	38,0	118	07737	—
0,19	0,0075	3,0	2,5	38,0	118	07738	—
0,20	0,0079	3,0	2,5	38,0	118	07739	—
0,21	0,0083	3,0	2,5	38,0	118	07740	—
0,22	0,0087	3,0	2,5	38,0	118	07741	—
0,23	0,0091	3,0	3,8	38,0	118	07742	—
0,24	0,0094	3,0	3,8	38,0	118	07743	—
0,25	0,0098	3,0	3,8	38,0	118	07744	07400
0,26	0,0102	3,0	3,8	38,0	118	07745	07401
0,27	0,0106	3,0	3,8	38,0	118	07746	07402
0,28	0,0110	3,0	3,8	38,0	118	07747	07403
0,29	0,0114	3,0	3,8	38,0	118	07748	07404
0,30	0,0118	3,0	5,7	38,0	118	07749	07405
0,31	0,0122	3,0	5,7	38,0	118	07750	07406
0,32	0,0126	3,0	5,7	38,0	118	07751	07407
0,33	0,0130	3,0	5,7	38,0	118	07752	07408
0,34	0,0134	3,0	5,7	38,0	118	07753	07409
0,35	0,0138	3,0	5,7	38,0	130	07754	07410
0,36	0,0142	3,0	5,7	38,0	130	07755	07411
0,37	0,0146	3,0	5,7	38,0	130	07756	07412
0,38	0,0150	3,0	6,4	38,0	130	07757	07413

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- 4-facet point design stabilizes on entry for superior hole size control and tool life (>0,08mm). 2-facet point on 0,08 and smaller.
- Mirror surface finishes improve chip flow as hole depth increases
- Ti-Namite A coating and uncoated options for the ultimate performance in a variety of ferrous and non-ferrous workpiece materials
- Available from stock in a selection of popular lengths and diameters
- Application specific sub-micron grain carbide designed specifically for micro-tool applications
- Manufactured in accordance with KSPT ISO certified quality procedures

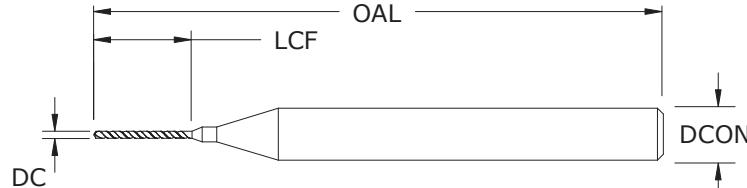
2 Flute External Coolant

**MICRO
SGS®**
Solid Carbide Tools

KYOCERA



3xD | 12xD



New Expanded Tools

M226
METRIC SERIES

continued

CUTTING DIAMETER DC	DECIMAL EQUIV.	SHANK DIAMETER DCON	FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	EDP NO.	
						UNCOATED	TI-NAMITE-A (AlTiN)
0,39	0,0154	3,0	6,4	38,0	130	07758	07414
0,40	0,0157	3,0	6,4	38,0	130	07759	07415
0,41	0,0161	3,0	6,4	38,0	130	07760	07416
0,42	0,0165	3,0	6,4	38,0	130	07761	07417
0,43	0,0169	3,0	6,4	38,0	130	07762	07418
0,44	0,0173	3,0	6,4	38,0	130	07763	07419
0,45	0,0177	3,0	6,4	38,0	130	07764	07420
0,46	0,0181	3,0	6,4	38,0	130	07765	07421
0,47	0,0185	3,0	6,4	38,0	130	07766	07422
0,48	0,0189	3,0	6,6	38,0	130	07767	07423
0,49	0,0193	3,0	6,6	38,0	130	07768	07424
0,50	0,0197	3,0	6,6	38,0	130	07769	07425
0,51	0,0201	3,0	6,6	38,0	130	07770	07426
0,52	0,0205	3,0	6,6	38,0	130	07771	07427
0,53	0,0209	3,0	6,6	38,0	130	07772	07428
0,54	0,0213	3,0	6,6	38,0	130	07773	07429
0,55	0,0217	3,0	8,6	38,0	130	07774	07430
0,56	0,0220	3,0	8,6	38,0	130	07775	07431
0,57	0,0224	3,0	8,6	38,0	130	07776	07432
0,58	0,0228	3,0	8,6	38,0	130	07777	07433
0,59	0,0232	3,0	8,6	38,0	130	07778	07434
0,60	0,0236	3,0	8,6	38,0	130	07779	07435
0,61	0,0240	3,0	8,6	38,0	130	07780	07436
0,62	0,0244	3,0	8,6	38,0	130	07781	07437
0,63	0,0248	3,0	8,6	38,0	130	07782	07438
0,64	0,0252	3,0	8,6	38,0	130	07783	07439
0,65	0,0256	3,0	8,6	38,0	130	07784	07440
0,66	0,0260	3,0	8,6	38,0	130	07785	07441
0,67	0,0264	3,0	8,6	38,0	130	07786	07442
0,68	0,0268	3,0	8,6	38,0	130	07787	07443
0,69	0,0272	3,0	8,6	38,0	130	07788	07444
0,70	0,0276	3,0	10,2	38,0	130	07789	07445
0,71	0,0280	3,0	10,2	38,0	130	07790	07446
0,72	0,0283	3,0	10,2	38,0	130	07791	07447
0,73	0,0287	3,0	10,2	38,0	130	07792	07448
0,74	0,0291	3,0	10,2	38,0	130	07793	07449

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TOLERANCES (mm)

0,04–3,0 DIAMETER

DC = +0,000/-0,008

DCON = h6

- STEELS
- STAINLESS STEELS
- CAST IRON
- HIGH TEMP ALLOYS
- TITANIUM
- HARDENED STEELS
- NON-FERROUS
- PLASTICS/COMPOSITES

2 Flute External Coolant

M226
METRIC SERIES

CUTTING DIAMETER DC	DECIMAL EQUIV.	SHANK DIAMETER DCON	FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	EDP NO.		<i>continued</i>
						UNCOATED	TI-NAMITE-A (AITiN)	
0,75	0,0295	3,0	10,2	38,0	130	07794	07450	
0,75	0,0295	3,0	11,0	50,0	130	07795	07451	
0,76	0,0299	3,0	10,2	38,0	130	07796	07452	
0,77	0,0303	3,0	10,2	38,0	130	07797	07453	
0,78	0,0307	3,0	10,2	38,0	130	07798	07454	
0,79	0,0311	3,0	10,2	38,0	130	07799	07455	
0,80	0,0315	3,0	10,2	38,0	130	07800	07456	
0,80	0,0315	3,0	11,0	50,0	130	07801	07457	
0,81	0,0319	3,0	10,2	38,0	130	07802	07458	
0,82	0,0323	3,0	10,2	38,0	130	07803	07459	
0,83	0,0327	3,0	10,2	38,0	130	07804	07460	
0,84	0,0331	3,0	10,2	38,0	130	07805	07461	
0,85	0,0335	3,0	10,2	38,0	130	07806	07462	
0,85	0,0335	3,0	13,0	50,0	130	07807	07463	
0,86	0,0339	3,0	10,2	38,0	130	07808	07464	
0,87	0,0343	3,0	10,2	38,0	130	07809	07465	
0,88	0,0346	3,0	10,2	38,0	130	07810	07466	
0,89	0,0350	3,0	10,2	38,0	130	07811	07467	
0,90	0,0354	3,0	10,2	38,0	130	07812	07468	
0,90	0,0354	3,0	13,0	50,0	130	07813	07469	
0,91	0,0358	3,0	10,2	38,0	130	07814	07470	
0,92	0,0362	3,0	10,2	38,0	130	07815	07471	
0,93	0,0366	3,0	10,2	38,0	130	07816	07472	
0,94	0,0370	3,0	10,2	38,0	130	07817	07473	
0,95	0,0374	3,0	10,2	38,0	130	07818	07474	
0,95	0,0374	3,0	15,0	50,0	130	07819	07475	
0,96	0,0378	3,0	10,2	38,0	130	07820	07476	
0,97	0,0382	3,0	10,2	38,0	130	07821	07477	
0,98	0,0386	3,0	10,2	38,0	130	07822	07478	
0,99	0,0390	3,0	10,2	38,0	130	07823	07479	
1,00	0,0394	3,0	10,2	38,0	130	07824	07480	
1,00	0,0394	3,0	15,0	50,0	130	07825	07481	
1,01	0,0398	3,0	10,2	38,0	130	07826	07482	
1,02	0,0402	3,0	10,2	38,0	130	07827	07483	
1,03	0,0406	3,0	10,2	38,0	130	07828	07484	
1,04	0,0409	3,0	10,2	38,0	130	07829	07485	
1,05	0,0413	3,0	10,2	38,0	130	07830	07486	
1,05	0,0413	3,0	17,0	50,0	130	07831	07487	
1,06	0,0417	3,0	10,2	38,0	130	07832	07488	
1,07	0,0421	3,0	10,2	38,0	130	07833	07489	
1,08	0,0425	3,0	10,2	38,0	130	07834	07490	
1,09	0,0429	3,0	10,2	38,0	130	07835	07491	
1,10	0,0433	3,0	10,2	38,0	130	07836	07492	
1,10	0,0433	3,0	17,0	50,0	130	07837	07493	
1,11	0,0437	3,0	10,2	38,0	130	07838	07494	
1,12	0,0441	3,0	10,2	38,0	130	07839	07495	

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2 Flute External Coolant

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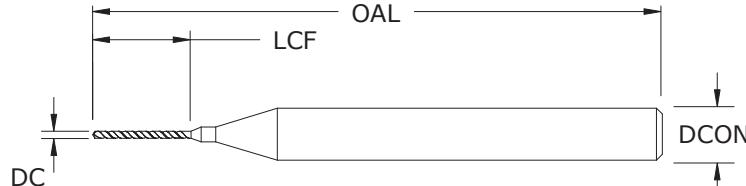
3xD | 12xD



118°

130°

2



New Expanded Tools

M226
METRIC SERIES

continued

CUTTING DIAMETER DC	DECIMAL EQUIV.	SHANK DIAMETER DCON	FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	EDP NO.	
						UNCOATED	TI-NAMITE-A (AlTiN)
1,13	0,0445	3,0	10,2	38,0	130	07840	07496
1,14	0,0449	3,0	10,2	38,0	130	07841	07497
1,15	0,0453	3,0	10,2	38,0	130	07842	07498
1,15	0,0453	3,0	17,0	50,0	130	07843	07499
1,16	0,0457	3,0	10,2	38,0	130	07844	07500
1,17	0,0461	3,0	10,2	38,0	130	07845	07501
1,18	0,0465	3,0	10,2	38,0	130	07846	07502
1,19	0,0469	3,0	10,2	38,0	130	07847	07503
1,20	0,0472	3,0	10,2	38,0	130	07848	07504
1,20	0,0472	3,0	17,0	50,0	130	07849	07505
1,21	0,0476	3,0	10,2	38,0	130	07850	07506
1,22	0,0480	3,0	10,2	38,0	130	07851	07507
1,23	0,0484	3,0	10,2	38,0	130	07852	07508
1,24	0,0488	3,0	10,2	38,0	130	07853	07509
1,25	0,0492	3,0	10,2	38,0	130	07854	07510
1,25	0,0492	3,0	19,0	50,0	130	07855	07511
1,26	0,0496	3,0	10,2	38,0	130	07856	07512
1,27	0,0500	3,0	10,2	38,0	130	07857	07513
1,28	0,0504	3,0	10,2	38,0	130	07858	07514
1,29	0,0508	3,0	10,2	38,0	130	07859	07515
1,30	0,0512	3,0	10,2	38,0	130	07860	07516
1,30	0,0512	3,0	19,0	50,0	130	07861	07517
1,31	0,0516	3,0	10,2	38,0	130	07862	07518
1,32	0,0520	3,0	10,2	38,0	130	07863	07519
1,33	0,0524	3,0	10,2	38,0	130	07864	07520
1,34	0,0528	3,0	10,2	38,0	130	07865	07521
1,35	0,0531	3,0	10,2	38,0	130	07866	07522
1,35	0,0531	3,0	19,0	50,0	130	07867	07523
1,36	0,0535	3,0	10,2	38,0	130	07868	07524
1,37	0,0539	3,0	10,2	38,0	130	07869	07525
1,38	0,0543	3,0	10,2	38,0	130	07870	07526
1,39	0,0547	3,0	10,2	38,0	130	07871	07527
1,40	0,0551	3,0	10,2	38,0	130	07872	07528
1,40	0,0551	3,0	19,0	50,0	130	07873	07529
1,41	0,0555	3,0	10,2	38,0	130	07874	07530
1,42	0,0559	3,0	10,2	38,0	130	07875	07531

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TOLERANCES (mm)

0,04–3,0 DIAMETER

DC = +0,000/-0,008

DCON = h6

- STEELS
- STAINLESS STEELS
- CAST IRON
- HIGH TEMP ALLOYS
- TITANIUM
- HARDENED STEELS
- NON-FERROUS
- PLASTICS/COMPOSITES

2 Flute External Coolant

M226
METRIC SERIES

CUTTING DIAMETER DC	DECIMAL EQUIV.	SHANK DIAMETER DCON	FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	EDP NO.		<i>continued</i>
						UNCOATED	TI-NAMITE-A (AITiN)	
1,43	0.0563	3,0	10,2	38,0	130	07876	07532	
1,44	0.0567	3,0	10,2	38,0	130	07877	07533	
1,45	0.0571	3,0	10,2	38,0	130	07878	07534	
1,45	0.0571	3,0	20,0	50,0	130	07879	07535	
1,46	0.0575	3,0	10,2	38,0	130	07880	07536	
1,47	0.0579	3,0	10,2	38,0	130	07881	07537	
1,48	0.0583	3,0	10,2	38,0	130	07882	07538	
1,49	0.0587	3,0	10,2	38,0	130	07883	07539	
1,50	0.0591	3,0	10,2	38,0	130	07884	07540	
1,50	0.0591	3,0	20,0	50,0	130	07885	07541	
1,51	0.0594	3,0	10,2	38,0	130	07886	07542	
1,52	0.0598	3,0	10,2	38,0	130	07887	07543	
1,53	0.0602	3,0	10,2	38,0	130	07888	07544	
1,54	0.0606	3,0	10,2	38,0	130	07889	07545	
1,55	0.0610	3,0	10,2	38,0	130	07890	07546	
1,55	0.0610	3,0	20,0	50,0	130	07891	07547	
1,56	0.0614	3,0	10,2	38,0	130	07892	07548	
1,57	0.0618	3,0	10,2	38,0	130	07893	07549	
1,58	0.0622	3,0	10,2	38,0	130	07894	07550	
1,59	0.0626	3,0	10,2	38,0	130	07895	07551	
1,60	0.0630	3,0	10,2	38,0	130	07896	07552	
1,60	0.0630	3,0	20,0	50,0	130	07897	07553	
1,61	0.0634	3,0	10,2	38,0	130	07898	07554	
1,62	0.0638	3,0	10,2	38,0	130	07899	07555	
1,63	0.0642	3,0	10,2	38,0	130	07900	07556	
1,64	0.0646	3,0	10,2	38,0	130	07901	07557	
1,65	0.0650	3,0	10,2	38,0	130	07902	07558	
1,65	0.0650	3,0	20,0	50,0	130	07903	07559	
1,66	0.0654	3,0	10,2	38,0	130	07904	07560	
1,67	0.0657	3,0	10,2	38,0	130	07905	07561	
1,68	0.0661	3,0	10,2	38,0	130	07906	07562	
1,69	0.0665	3,0	10,2	38,0	130	07907	07563	
1,70	0.0669	3,0	10,2	38,0	130	07908	07564	
1,70	0.0669	3,0	20,0	50,0	130	07909	07565	
1,71	0.0673	3,0	10,2	38,0	130	07910	07566	
1,72	0.0677	3,0	10,2	38,0	130	07911	07567	
1,73	0.0681	3,0	10,2	38,0	130	07912	07568	
1,74	0.0685	3,0	10,2	38,0	130	07913	07569	
1,75	0.0689	3,0	10,2	38,0	130	07914	07570	
1,75	0.0689	3,0	20,0	50,0	130	07915	07571	
1,76	0.0693	3,0	10,2	38,0	130	07916	07572	
1,77	0.0697	3,0	10,2	38,0	130	07917	07573	
1,78	0.0701	3,0	10,2	38,0	130	07918	07574	
1,79	0.0705	3,0	10,2	38,0	130	07919	07575	
1,80	0.0709	3,0	10,2	38,0	130	07920	07576	
1,80	0.0709	3,0	20,0	50,0	130	07921	07577	

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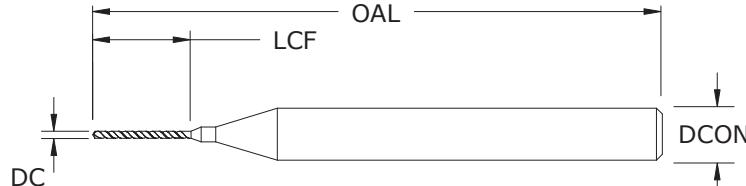
2 Flute External Coolant

**MICRO
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Solid Carbide Tools

KYOCERA



3xD | 12xD



New Expanded Tools

M226
METRIC SERIES

continued

CUTTING DIAMETER DC	DECIMAL EQUIV.	SHANK DIAMETER DCON	FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	EDP NO.	
						UNCOATED	TI-NAMITE-A (AlTiN)
1,81	0,0713	3,0	10,2	38,0	130	07922	07578
1,82	0,0717	3,0	10,2	38,0	130	07923	07579
1,83	0,0720	3,0	10,2	38,0	130	07924	07580
1,84	0,0724	3,0	10,2	38,0	130	07925	07581
1,85	0,0728	3,0	10,2	38,0	130	07926	07582
1,85	0,0728	3,0	22,8	60,0	130	07927	07583
1,86	0,0732	3,0	10,2	38,0	130	07928	07584
1,87	0,0736	3,0	10,2	38,0	130	07929	07585
1,88	0,0740	3,0	10,2	38,0	130	07930	07586
1,89	0,0744	3,0	10,2	38,0	130	07931	07587
1,90	0,0748	3,0	10,2	38,0	130	07932	07588
1,90	0,0748	3,0	22,8	60,0	130	07933	07589
1,91	0,0752	3,0	10,2	38,0	130	07934	07590
1,92	0,0756	3,0	10,2	38,0	130	07935	07591
1,93	0,0760	3,0	10,2	38,0	130	07936	07592
1,94	0,0764	3,0	10,2	38,0	130	07937	07593
1,95	0,0768	3,0	10,2	38,0	130	07938	07594
1,95	0,0768	3,0	24,0	60,0	130	07939	07595
1,96	0,0772	3,0	10,2	38,0	130	07940	07596
1,97	0,0776	3,0	10,2	38,0	130	07941	07597
1,98	0,0780	3,0	10,2	38,0	130	07942	07598
1,99	0,0783	3,0	10,2	38,0	130	07943	07599
2,00	0,0787	3,0	10,2	38,0	130	07944	07600
2,00	0,0787	3,0	24,0	60,0	130	07945	07601
2,01	0,0791	3,0	10,2	38,0	130	07946	07602
2,02	0,0795	3,0	10,2	38,0	130	07947	07603
2,03	0,0799	3,0	10,2	38,0	130	07948	07604
2,04	0,0803	3,0	10,2	38,0	130	07949	07605
2,05	0,0807	3,0	10,2	38,0	130	07950	07606
2,05	0,0807	3,0	25,2	60,0	130	07951	07607
2,06	0,0811	3,0	10,2	38,0	130	07952	07608
2,07	0,0815	3,0	10,2	38,0	130	07953	07609
2,08	0,0819	3,0	10,2	38,0	130	07954	07610
2,09	0,0823	3,0	10,2	38,0	130	07955	07611
2,10	0,0827	3,0	10,2	38,0	130	07956	07612
2,10	0,0827	3,0	25,2	60,0	130	07957	07613

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TOLERANCES (mm)

0,04–3,0 DIAMETER

DC = +0,000/-0,008

DCON = h6

- STEELS
- STAINLESS STEELS
- CAST IRON
- HIGH TEMP ALLOYS
- TITANIUM
- HARDENED STEELS
- NON-FERROUS
- PLASTICS/COMPOSITES

2 Flute External Coolant

M226
METRIC SERIES

CUTTING DIAMETER DC	DECIMAL EQUIV.	SHANK DIAMETER DCON	FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	EDP NO.		<i>continued</i>
						UNCOATED	TI-NAMITE-A (AITiN)	
2,11	0.0831	3,0	10,2	38,0	130	07958	07614	
2,12	0.0835	3,0	10,2	38,0	130	07959	07615	
2,13	0.0839	3,0	10,2	38,0	130	07960	07616	
2,14	0.0843	3,0	10,2	38,0	130	07961	07617	
2,15	0.0846	3,0	10,2	38,0	130	07962	07618	
2,15	0.0846	3,0	26,4	60,0	130	07963	07619	
2,16	0.0850	3,0	10,2	38,0	130	07964	07620	
2,17	0.0854	3,0	10,2	38,0	130	07965	07621	
2,18	0.0858	3,0	10,2	38,0	130	07966	07622	
2,19	0.0862	3,0	10,2	38,0	130	07967	07623	
2,20	0.0866	3,0	10,2	38,0	130	07968	07624	
2,20	0.0866	3,0	26,4	60,0	130	07969	07625	
2,21	0.0870	3,0	10,2	38,0	130	07970	07626	
2,22	0.0874	3,0	10,2	38,0	130	07971	07627	
2,23	0.0878	3,0	10,2	38,0	130	07972	07628	
2,24	0.0882	3,0	10,2	38,0	130	07973	07629	
2,25	0.0886	3,0	10,2	38,0	130	07974	07630	
2,25	0.0886	3,0	27,6	60,0	130	07975	07631	
2,26	0.0890	3,0	10,2	38,0	130	07976	07632	
2,27	0.0894	3,0	10,2	38,0	130	07977	07633	
2,28	0.0898	3,0	10,2	38,0	130	07978	07634	
2,29	0.0902	3,0	10,2	38,0	130	07979	07635	
2,30	0.0906	3,0	10,2	38,0	130	07980	07636	
2,30	0.0906	3,0	27,6	60,0	130	07981	07637	
2,31	0.0909	3,0	10,2	38,0	130	07982	07638	
2,32	0.0913	3,0	10,2	38,0	130	07983	07639	
2,33	0.0917	3,0	10,2	38,0	130	07984	07640	
2,34	0.0921	3,0	10,2	38,0	130	07985	07641	
2,35	0.0925	3,0	10,2	38,0	130	07986	07642	
2,35	0.0925	3,0	28,8	60,0	130	07987	07643	
2,36	0.0929	3,0	10,2	38,0	130	07988	07644	
2,37	0.0933	3,0	10,2	38,0	130	07989	07645	
2,38	0.0937	3,0	10,2	38,0	130	07990	07646	
2,39	0.0941	3,0	10,2	38,0	130	07991	07647	
2,40	0.0945	3,0	10,2	38,0	130	07992	07648	
2,40	0.0945	3,0	28,8	60,0	130	07993	07649	
2,41	0.0949	3,0	10,2	38,0	130	07994	07650	
2,42	0.0953	3,0	10,2	38,0	130	07995	07651	
2,43	0.0957	3,0	10,2	38,0	130	07996	07652	
2,44	0.0961	3,0	10,2	38,0	130	07997	07653	
2,45	0.0965	3,0	10,2	38,0	130	07998	07654	
2,45	0.0965	3,0	30,0	60,0	130	07999	07655	
2,46	0.0969	3,0	10,2	38,0	130	08000	07656	
2,47	0.0972	3,0	10,2	38,0	130	08001	07657	
2,48	0.0976	3,0	10,2	38,0	130	08002	07658	
2,49	0.0980	3,0	10,2	38,0	130	08003	07659	

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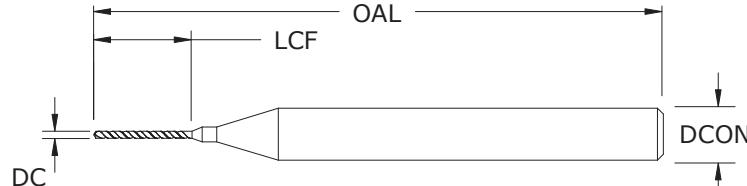
2 Flute External Coolant

**MICRO
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Solid Carbide Tools

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3xD | 12xD



New Expanded Tools

M226
METRIC SERIES

continued

CUTTING DIAMETER DC	DECIMAL EQUIV.	SHANK DIAMETER DCON	FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	EDP NO.	
						UNCOATED	TI-NAMITE-A (AlTiN)
2,50	0,0984	3,0	10,2	38,0	130	08004	07660
2,50	0,0984	3,0	30,0	60,0	130	08005	07661
2,51	0,0988	3,0	10,2	38,0	130	08006	07662
2,52	0,0992	3,0	10,2	38,0	130	08007	07663
2,53	0,0996	3,0	10,2	38,0	130	08008	07664
2,54	0,1000	3,0	10,2	38,0	130	08009	07665
2,55	0,1004	3,0	10,2	38,0	130	08010	07666
2,55	0,1004	3,0	31,2	60,0	130	08011	07667
2,56	0,1008	3,0	10,2	38,0	130	08012	07668
2,57	0,1012	3,0	10,2	38,0	130	08013	07669
2,58	0,1016	3,0	10,2	38,0	130	08014	07670
2,59	0,1020	3,0	10,2	38,0	130	08015	07671
2,60	0,1024	3,0	10,2	38,0	130	08016	07672
2,60	0,1024	3,0	31,2	60,0	130	08017	07673
2,61	0,1028	3,0	10,2	38,0	130	08018	07674
2,62	0,1031	3,0	10,2	38,0	130	08019	07675
2,63	0,1035	3,0	10,2	38,0	130	08020	07676
2,64	0,1039	3,0	10,2	38,0	130	08021	07677
2,65	0,1043	3,0	10,2	38,0	130	08022	07678
2,65	0,1043	3,0	32,4	60,0	130	08023	07679
2,66	0,1047	3,0	10,2	38,0	130	08024	07680
2,67	0,1051	3,0	10,2	38,0	130	08025	07681
2,68	0,1055	3,0	10,2	38,0	130	08026	07682
2,69	0,1059	3,0	10,2	38,0	130	08027	07683
2,70	0,1063	3,0	10,2	38,0	130	08028	07684
2,70	0,1063	3,0	32,4	60,0	130	08029	07685
2,71	0,1067	3,0	10,2	38,0	130	08030	07686
2,72	0,1071	3,0	10,2	38,0	130	08031	07687
2,73	0,1075	3,0	10,2	38,0	130	08032	07688
2,74	0,1079	3,0	10,2	38,0	130	08033	07689
2,75	0,1083	3,0	10,2	38,0	130	08034	07690
2,75	0,1083	3,0	33,6	60,0	130	08035	07691
2,76	0,1087	3,0	10,2	38,0	130	08036	07692
2,77	0,1091	3,0	10,2	38,0	130	08037	07693
2,78	0,1094	3,0	10,2	38,0	130	08038	07694
2,79	0,1098	3,0	10,2	38,0	130	08039	07695

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TOLERANCES (mm)

0,04–3,0 DIAMETER

DC = +0,000/-0,008

DCON = h6

- STEELS
- STAINLESS STEELS
- CAST IRON
- HIGH TEMP ALLOYS
- TITANIUM
- HARDENED STEELS
- NON-FERROUS
- PLASTICS/COMPOSITES

2 Flute External Coolant

M226
METRIC SERIES

CUTTING DIAMETER DC	DECIMAL EQUIV.	SHANK DIAMETER DCON	mm			EDP NO.		<i>continued</i>
			FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	UNCOATED	TI-NAMITE-A (AITiN)	
2,80	0.1102	3,0	10,2	38,0	130	08040	07696	
2,80	0.1102	3,0	33,6	60,0	130	08041	07697	
2,81	0.1106	3,0	10,2	38,0	130	08042	07698	
2,82	0.1110	3,0	10,2	38,0	130	08043	07699	
2,83	0.1114	3,0	10,2	38,0	130	08044	07700	
2,84	0.1118	3,0	10,2	38,0	130	08045	07701	
2,85	0.1122	3,0	10,2	38,0	130	08046	07702	
2,85	0.1122	3,0	34,8	60,0	130	08047	07703	
2,86	0.1126	3,0	10,2	38,0	130	08048	07704	
2,87	0.1130	3,0	10,2	38,0	130	08049	07705	
2,88	0.1134	3,0	10,2	38,0	130	08050	07706	
2,89	0.1138	3,0	10,2	38,0	130	08051	07707	
2,90	0.1142	3,0	10,2	38,0	130	08052	07708	
2,90	0.1142	3,0	34,8	60,0	130	08053	07709	
2,91	0.1146	3,0	10,2	38,0	130	08054	07710	
2,92	0.1150	3,0	10,2	38,0	130	08055	07711	
2,93	0.1154	3,0	10,2	38,0	130	08056	07712	
2,94	0.1157	3,0	10,2	38,0	130	08057	07713	
2,95	0.1161	3,0	10,2	38,0	130	08058	07714	
2,95	0.1161	3,0	36,0	60,0	130	08059	07715	
2,96	0.1165	3,0	10,2	38,0	130	08060	07716	
2,97	0.1169	3,0	10,2	38,0	130	08061	07717	
2,98	0.1173	3,0	10,2	38,0	130	08062	07718	
2,99	0.1177	3,0	10,2	38,0	130	08063	07719	
3,00	0.1181	3,0	10,2	38,0	130	08064	07720	
3,00	0.1181	3,0	36,0	60,0	130	08065	07721	

2 Flute Left Hand Cut External Coolant

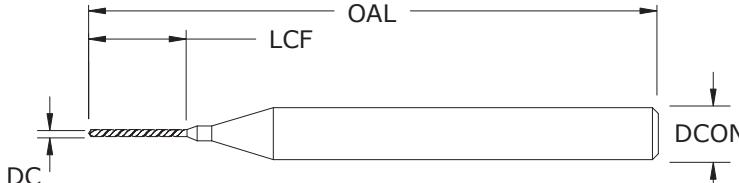


KYOCERA



3xD

12xD



New Expanded Tools

L226

METRIC SERIES

- 4-facet point design stabilizes on entry for superior hole size control and tool life (>.08mm). 2-facet point on 0,08 and smaller.
- Mirror surface finishes improve chip flow as hole depth increases
- Ti-Nomite A coating and uncoated options for the ultimate performance in a variety of ferrous and non-ferrous workpiece materials
- Available from stock in a selection of popular lengths and diameters
- Application specific sub-micron grain carbide designed specifically for micro-tool applications
- Manufactured in accordance with KSPT ISO certified quality procedures

CUTTING DIAMETER DC	DECIMAL EQUIV.	SHANK DIAMETER DCON	FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	EDP NO.	
						UNCOATED	TI-NAMITE-A (AITiN)
0,04	0.0016	3,0	0,5	38,0	118	08228	—
0,05	0.0020	3,0	0,8	38,0	118	08229	—
0,06	0.0024	3,0	0,8	38,0	118	08230	—
0,07	0.0028	3,0	1,3	38,0	118	08231	—
0,08	0.0031	3,0	1,3	38,0	118	08232	—
0,09	0.0035	3,0	1,3	38,0	118	08233	—
0,10	0.0039	3,0	1,0	38,0	118	08234	—
0,11	0.0043	3,0	1,0	38,0	118	08235	—
0,12	0.0047	3,0	1,0	38,0	118	08236	—
0,13	0.0051	3,0	1,0	38,0	118	08237	—
0,14	0.0055	3,0	2,0	38,0	118	08238	—
0,15	0.0059	3,0	2,0	38,0	118	08239	—
0,16	0.0063	3,0	2,0	38,0	118	08240	—
0,17	0.0067	3,0	2,0	38,0	118	08241	—
0,18	0.0071	3,0	2,5	38,0	118	08242	—
0,19	0.0075	3,0	2,5	38,0	118	08243	—
0,20	0.0079	3,0	2,5	38,0	118	08244	—
0,21	0.0083	3,0	2,5	38,0	118	08245	—
0,22	0.0087	3,0	2,5	38,0	118	08246	—
0,23	0.0091	3,0	3,8	38,0	118	08247	—
0,24	0.0094	3,0	3,8	38,0	118	08248	—
0,25	0.0098	3,0	3,8	38,0	118	08249	08066
0,26	0.0102	3,0	3,8	38,0	118	08250	08067
0,27	0.0106	3,0	3,8	38,0	118	08251	08068
0,28	0.0110	3,0	3,8	38,0	118	08252	08069
0,29	0.0114	3,0	3,8	38,0	118	08253	08070
0,30	0.0118	3,0	5,7	38,0	118	08254	08071
0,31	0.0122	3,0	5,7	38,0	118	08255	08072
0,32	0.0126	3,0	5,7	38,0	118	08256	08073
0,33	0.0130	3,0	5,7	38,0	118	08257	08074
0,34	0.0134	3,0	5,7	38,0	118	08258	08075
0,35	0.0138	3,0	5,7	38,0	130	08259	08076
0,36	0.0142	3,0	5,7	38,0	130	08260	08077
0,37	0.0146	3,0	5,7	38,0	130	08261	08078
0,38	0.0150	3,0	6,4	38,0	130	08262	08079
0,39	0.0154	3,0	6,4	38,0	130	08263	08080

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TOLERANCES (mm)**0,04–3,0 DIAMETER**

DC = +0,000/-0,008

DCON = h6



2 Flute Left Hand Cut External Coolant

L226
METRIC SERIES

CUTTING DIAMETER DC	DECIMAL EQUIV.	SHANK DIAMETER DCON	FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	EDP NO.		<i>continued</i>
						UNCOATED	TI-NAMITE-A (AlTiN)	
0,40	0.0157	3,0	6,4	38,0	130	08264	08081	
0,41	0.0161	3,0	6,4	38,0	130	08265	08082	
0,42	0.0165	3,0	6,4	38,0	130	08266	08083	
0,43	0.0169	3,0	6,4	38,0	130	08267	08084	
0,44	0.0173	3,0	6,4	38,0	130	08268	08085	
0,45	0.0177	3,0	6,4	38,0	130	08269	08086	
0,46	0.0181	3,0	6,4	38,0	130	08270	08087	
0,47	0.0185	3,0	6,4	38,0	130	08271	08088	
0,48	0.0189	3,0	6,6	38,0	130	08272	08089	
0,49	0.0193	3,0	6,6	38,0	130	08273	08090	
0,50	0.0197	3,0	6,6	38,0	130	08274	08091	
0,51	0.0201	3,0	6,6	38,0	130	08275	08092	
0,52	0.0205	3,0	6,6	38,0	130	08276	08093	
0,53	0.0209	3,0	6,6	38,0	130	08277	08094	
0,54	0.0213	3,0	6,6	38,0	130	08278	08095	
0,55	0.0217	3,0	8,6	38,0	130	08279	08096	
0,56	0.0220	3,0	8,6	38,0	130	08280	08097	
0,57	0.0224	3,0	8,6	38,0	130	08281	08098	
0,58	0.0228	3,0	8,6	38,0	130	08282	08099	
0,59	0.0232	3,0	8,6	38,0	130	08283	08100	
0,60	0.0236	3,0	8,6	38,0	130	08284	08101	
0,61	0.0240	3,0	8,6	38,0	130	08285	08102	
0,62	0.0244	3,0	8,6	38,0	130	08286	08103	
0,63	0.0248	3,0	8,6	38,0	130	08287	08104	
0,64	0.0252	3,0	8,6	38,0	130	08288	08105	
0,65	0.0256	3,0	8,6	38,0	130	08289	08106	
0,66	0.0260	3,0	8,6	38,0	130	08290	08107	
0,67	0.0264	3,0	8,6	38,0	130	08291	08108	
0,68	0.0268	3,0	8,6	38,0	130	08292	08109	
0,69	0.0272	3,0	8,6	38,0	130	08293	08110	
0,70	0.0276	3,0	10,2	38,0	130	08294	08111	
0,71	0.0280	3,0	10,2	38,0	130	08295	08112	
0,72	0.0283	3,0	10,2	38,0	130	08296	08113	
0,73	0.0287	3,0	10,2	38,0	130	08297	08114	
0,74	0.0291	3,0	10,2	38,0	130	08298	08115	
0,75	0.0295	3,0	10,2	38,0	130	08299	08116	
0,75	0.0295	3,0	11,0	50,0	130	08300	08117	
0,76	0.0299	3,0	10,2	38,0	130	08301	08118	
0,77	0.0303	3,0	10,2	38,0	130	08302	08119	
0,78	0.0307	3,0	10,2	38,0	130	08303	08120	
0,79	0.0311	3,0	10,2	38,0	130	08304	08121	
0,80	0.0315	3,0	10,2	38,0	130	08305	08122	
0,80	0.0315	3,0	11,0	50,0	130	08306	08123	
0,81	0.0319	3,0	10,2	38,0	130	08307	08124	
0,82	0.0323	3,0	10,2	38,0	130	08308	08125	
0,83	0.0327	3,0	10,2	38,0	130	08309	08126	

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2 Flute Left Hand Cut External Coolant

**MICRO
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Solid Carbide Tools

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3xD | 12xD



118°

130°



New Expanded Tools

L226

METRIC SERIES

continued

CUTTING DIAMETER DC	DECIMAL EQUIV.	SHANK DIAMETER DCON	FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	EDP NO.	
						UNCOATED	TI-NAMITE-A (AITIN)
0,84	0,0331	3,0	10,2	38,0	130	08310	08127
0,85	0,0335	3,0	10,2	38,0	130	08311	08128
0,85	0,0335	3,0	13,0	50,0	130	08312	08129
0,86	0,0339	3,0	10,2	38,0	130	08313	08130
0,87	0,0343	3,0	10,2	38,0	130	08314	08131
0,88	0,0346	3,0	10,2	38,0	130	08315	08132
0,89	0,0350	3,0	10,2	38,0	130	08316	08133
0,90	0,0354	3,0	10,2	38,0	130	08317	08134
0,90	0,0354	3,0	13,0	50,0	130	08318	08135
0,91	0,0358	3,0	10,2	38,0	130	08319	08136
0,92	0,0362	3,0	10,2	38,0	130	08320	08137
0,93	0,0366	3,0	10,2	38,0	130	08321	08138
0,94	0,0370	3,0	10,2	38,0	130	08322	08139
0,95	0,0374	3,0	10,2	38,0	130	08323	08140
0,95	0,0374	3,0	15,0	50,0	130	08324	08141
0,96	0,0378	3,0	10,2	38,0	130	08325	08142
0,97	0,0382	3,0	10,2	38,0	130	08326	08143
0,98	0,0386	3,0	10,2	38,0	130	08327	08144
0,99	0,0390	3,0	10,2	38,0	130	08328	08145
1,00	0,0394	3,0	10,2	38,0	130	08329	08146
1,00	0,0394	3,0	15,0	50,0	130	08330	08147
1,05	0,0413	3,0	10,2	38,0	130	08331	08148
1,05	0,0413	3,0	17,0	50,0	130	08332	08149
1,10	0,0433	3,0	10,2	38,0	130	08333	08150
1,10	0,0433	3,0	17,0	50,0	130	08334	08151
1,15	0,0453	3,0	10,2	38,0	130	08335	08152
1,15	0,0453	3,0	17,0	50,0	130	08336	08153
1,20	0,0472	3,0	10,2	38,0	130	08337	08154
1,20	0,0472	3,0	17,0	50,0	130	08338	08155
1,25	0,0492	3,0	10,2	38,0	130	08339	08156
1,25	0,0492	3,0	19,0	50,0	130	08340	08157
1,30	0,0512	3,0	10,2	38,0	130	08341	08158
1,30	0,0512	3,0	19,0	50,0	130	08342	08159
1,35	0,0531	3,0	10,2	38,0	130	08343	08160
1,35	0,0531	3,0	19,0	50,0	130	08344	08161
1,40	0,0551	3,0	10,2	38,0	130	08345	08162

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TOLERANCES (mm)

0,04–3,0 DIAMETER

DC = +0,000/-0,008

DCON = h6

- STEELS
- STAINLESS STEELS
- CAST IRON
- HIGH TEMP ALLOYS
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- NON-FERROUS
- PLASTICS/COMPOSITES

2 Flute Left Hand Cut External Coolant

L226
METRIC SERIES

CUTTING DIAMETER DC	DECIMAL EQUIV.	SHANK DIAMETER DCON	FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	EDP NO.		<i>continued</i>
						UNCOATED	TI-NAMITE-A (AlTiN)	
1,40	0.0551	3,0	19,0	50,0	130	08346	08163	
1,45	0.0571	3,0	10,2	38,0	130	08347	08164	
1,45	0.0571	3,0	20,0	50,0	130	08348	08165	
1,50	0.0591	3,0	10,2	38,0	130	08349	08166	
1,50	0.0591	3,0	20,0	50,0	130	08350	08167	
1,55	0.0610	3,0	10,2	38,0	130	08351	08168	
1,55	0.0610	3,0	20,0	50,0	130	08352	08169	
1,60	0.0630	3,0	10,2	38,0	130	08353	08170	
1,60	0.0630	3,0	20,0	50,0	130	08354	08171	
1,65	0.0650	3,0	10,2	38,0	130	08355	08172	
1,65	0.0650	3,0	20,0	50,0	130	08356	08173	
1,70	0.0669	3,0	10,2	38,0	130	08357	08174	
1,70	0.0669	3,0	20,0	50,0	130	08358	08175	
1,75	0.0689	3,0	10,2	38,0	130	08359	08176	
1,75	0.0689	3,0	20,0	50,0	130	08360	08177	
1,80	0.0709	3,0	10,2	38,0	130	08361	08178	
1,80	0.0709	3,0	20,0	50,0	130	08362	08179	
1,85	0.0728	3,0	10,2	38,0	130	08363	08180	
1,85	0.0728	3,0	22,8	60,0	130	08364	08181	
1,90	0.0748	3,0	10,2	38,0	130	08365	08182	
1,90	0.0748	3,0	22,8	60,0	130	08366	08183	
1,95	0.0768	3,0	10,2	38,0	130	08367	08184	
1,95	0.0768	3,0	23,4	60,0	130	08368	08185	
2,00	0.0787	3,0	10,2	38,0	130	08369	08186	
2,00	0.0787	3,0	24,0	60,0	130	08370	08187	
2,05	0.0807	3,0	10,2	38,0	130	08371	08188	
2,05	0.0807	3,0	25,2	60,0	130	08372	08189	
2,10	0.0827	3,0	10,2	38,0	130	08373	08190	
2,10	0.0827	3,0	25,2	60,0	130	08374	08191	
2,15	0.0846	3,0	10,2	38,0	130	08375	08192	
2,15	0.0846	3,0	26,4	60,0	130	08376	08193	
2,20	0.0866	3,0	10,2	38,0	130	08377	08194	
2,20	0.0866	3,0	26,4	60,0	130	08378	08195	
2,25	0.0886	3,0	10,2	38,0	130	08379	08196	
2,25	0.0886	3,0	27,6	60,0	130	08380	08197	
2,30	0.0906	3,0	10,2	38,0	130	08381	08198	
2,30	0.0906	3,0	27,6	60,0	130	08382	08199	
2,35	0.0925	3,0	10,2	38,0	130	08383	08200	
2,35	0.0925	3,0	28,8	60,0	130	08384	08201	
2,40	0.0945	3,0	10,2	38,0	130	08385	08202	
2,40	0.0945	3,0	28,8	60,0	130	08386	08203	
2,45	0.0965	3,0	10,2	38,0	130	08387	08204	
2,45	0.0965	3,0	30,0	60,0	130	08388	08205	
2,50	0.0984	3,0	10,2	38,0	130	08389	08206	
2,50	0.0984	3,0	30,0	60,0	130	08390	08207	
2,55	0.1004	3,0	10,2	38,0	130	08391	08208	

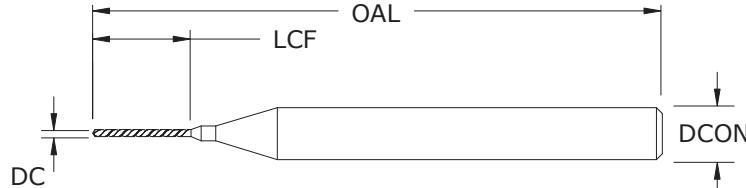
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METRIC

2 Flute Left Hand Cut External Coolant



KYOCERA



New Expanded Tools

L226
 METRIC SERIES

continued

CUTTING DIAMETER DC	DECIMAL EQUIV.	SHANK DIAMETER DCON	FLUTE LENGTH LCF	OVERALL LENGTH OAL	POINT ANGLE	EDP NO.	
						UNCOATED	TI-NAMITE-A (AITiN)
2,55	0,1004	3,0	31,2	60,0	130	08392	08209
2,60	0,1024	3,0	10,2	38,0	130	08393	08210
2,60	0,1024	3,0	31,2	60,0	130	08394	08211
2,65	0,1043	3,0	10,2	38,0	130	08395	08212
2,65	0,1043	3,0	32,4	60,0	130	08396	08213
2,70	0,1063	3,0	10,2	38,0	130	08397	08214
2,70	0,1063	3,0	32,4	60,0	130	08398	08215
2,75	0,1083	3,0	10,2	38,0	130	08399	08216
2,75	0,1083	3,0	33,6	60,0	130	08400	08217
2,80	0,1102	3,0	10,2	38,0	130	08401	08218
2,80	0,1102	3,0	33,6	60,0	130	08402	08219
2,85	0,1122	3,0	10,2	38,0	130	08403	08220
2,85	0,1122	3,0	34,8	60,0	130	08404	08221
2,90	0,1142	3,0	10,2	38,0	130	08405	08222
2,90	0,1142	3,0	34,8	60,0	130	08406	08223
2,95	0,1161	3,0	10,2	38,0	130	08407	08224
2,95	0,1161	3,0	36,0	60,0	130	08408	08225
3,00	0,1181	3,0	10,2	38,0	130	08409	08226
3,00	0,1181	3,0	36,0	60,0	130	08410	08227

TOLERANCES (mm)

0,04–3,0 DIAMETER

DC = +0,000/-0,008

DCON = h6



METRIC
Series M226 • L226

Series M226 • L226			Vc (m/min)	DC • mm						
	Hardness			0.04	0.25	0.5	1	2	3	
P	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 175 Bhn or ≤ 7 HRc	40 (32-48)	RPM	315060	50410	25205	12602	6301	4201
				Fz	0.001	0.007	0.014	0.029	0.058	0.086
				Feed (mm/min)	363	363	363	363	363	363
A	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 275 Bhn or ≤ 28 HRc	59 (48-71)	RPM	472590	75614	37807	18904	9452	6301
				Fz	0.001	0.007	0.013	0.026	0.052	0.078
				Feed (mm/min)	493	493	493	493	493	493
H	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 475 Bhn or ≤ 50 HRc	24 (20-29)	RPM	193883	31021	15511	7755	3878	2585
				Fz	0.001	0.003	0.007	0.013	0.026	0.039
				Feed (mm/min)	102	102	102	102	102	102
K	CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	85 (68-102)	RPM	678591	108575	54287	27144	13572	9048
				Fz	0.001	0.004	0.008	0.016	0.033	0.049
				Feed (mm/min)	445	445	445	445	445	445
M	STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F, 440F	≤ 275 Bhn or ≤ 28 HRc	20 (16-24)	RPM	157530	25205	12602	6301	3151	2100
				Fz	0.001	0.005	0.011	0.022	0.044	0.065
				Feed (mm/min)	137	137	137	137	137	137
T	STAINLESS STEELS (DIFFICULT) 304, 316, 321, 13-8 PH, 15-5PH, 17-4 PH, CUSTOM 450	≤ 325 Bhn or ≤ 35 HRc	12 (10-15)	RPM	96942	15511	7755	3878	1939	1293
				Fz	0.001	0.004	0.009	0.018	0.035	0.053
				Feed (mm/min)	69	69	69	69	69	69
S	SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy 800, Monel 400, Rene, Waspaloy	≤ 320 Bhn or ≤ 34 HRc	15 (12-18)	RPM	121177	19388	9694	4847	2424	1616
				Fz	0.000	0.003	0.006	0.011	0.022	0.033
				Feed (mm/min)	53	53	53	53	53	53
T	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si	≤ 350 Bhn or ≤ 38 HRc	15 (12-18)	RPM	121177	19388	9694	4847	2424	1616
				Fz	0.001	0.004	0.008	0.017	0.034	0.051
				Feed (mm/min)	82	82	82	82	82	82
U	ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	≤ 150 Bhn or ≤ 7 HRc	75 (60-90)	RPM	593768	95003	47501	23751	11875	7917
				Fz	0.002	0.012	0.025	0.049	0.099	0.148
				Feed (mm/min)	1171	1171	1171	1171	1171	1171
N	COPPER ALLOYS Alum Bronze, C110, Muntz Brass	≤ 140 Bhn or ≤ 3 HRc	55 (44-66)	RPM	436237	69798	34899	17449	8725	5816
				Fz	0.002	0.012	0.025	0.049	0.099	0.148
				Feed (mm/min)	861	861	861	861	861	861
P	PLASTICS Polycarbonate, PVC		75 (60-90)	RPM	593768	95003	47501	23751	11875	7917
				Fz	0.002	0.012	0.025	0.049	0.099	0.148
				Feed (mm/min)	1171	1171	1171	1171	1171	1171

Note:

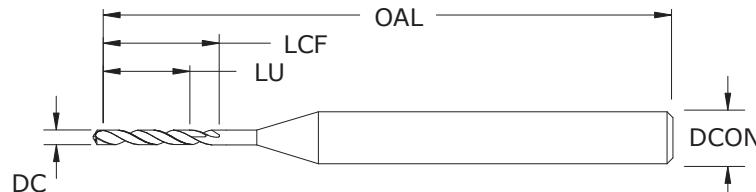
- Bhn (Brinell) HRc (Rockwell C) HRb (Rockwell B)
- rpm = Vc x 3.82 / DC
- ipm = Fr x rpm (Fr x maximum available rpm when recommendation exceeds machine limit)
- reduce speed and feed 30% when using uncoated drills
- reduce speed and feed for materials harder than listed
- refer to the KYOCERA SGS Tool Wizard® or sgsmicrotools.com for complete technical information

2 Flute Internal Coolant



**MICRO
SGS®**
Solid Carbide Tools

KYOCERA



New Expanded Tools

M814 METRIC SERIES

- Split point and double margin design provide superior hole finish and size control
- Coolant hole feature allows straight through drilling without a peck cycle
- Proprietary high-performance coating and mirror polished fluting increase tool life and productivity in moderate-to-difficult workpiece materials
- Available from stock in a selection of popular lengths and diameters
- Application specific sub-micron grain carbide designed specifically for micro-tool applications
- Manufactured in accordance with KSPT ISO certified quality procedures

CUTTING DIAMETER DC	DECIMAL EQUIVALENT	SHANK DIAMETER DCON	FLUTE LENGTH LCF	CLEARED LENGTH LU	OVERALL LENGTH OAL	EDP NO.
1,0	0,0394	4,0	13,3	8,0	53,0	06000
1,1	0,0433	4,0	14,1	8,8	53,0	06001
1,2	0,0472	4,0	14,9	9,6	53,0	06002
1,3	0,0512	4,0	15,7	10,4	53,0	06003
1,4	0,0551	4,0	16,5	11,2	53,0	06004
1,5	0,0591	4,0	17,3	12,0	53,0	06005
1,6	0,0630	4,0	18,1	12,8	64,0	06006
1,7	0,0669	4,0	18,9	13,6	64,0	06007
1,8	0,0709	4,0	20,4	14,4	64,0	06008
1,9	0,0748	4,0	21,2	15,2	64,0	06009
2,0	0,0787	4,0	22,0	16,0	64,0	06010
2,1	0,0827	4,0	22,8	16,8	64,0	06011
2,2	0,0866	4,0	25,7	17,6	64,0	06012
2,3	0,0906	4,0	26,5	18,4	64,0	06013
2,4	0,0945	4,0	27,3	19,2	64,0	06014
2,5	0,0984	4,0	28,1	20,0	64,0	06015
2,6	0,1024	4,0	28,9	20,8	76,0	06016
2,7	0,1063	4,0	29,7	21,6	76,0	06017
2,8	0,1102	4,0	30,5	22,4	76,0	06018
2,9	0,1142	4,0	32,2	23,2	76,0	06019
3,0	0,1181	4,0	33,0	24,0	76,0	06020
3,1	0,1220	4,0	33,8	24,8	76,0	06021
3,2	0,1260	4,0	34,6	25,6	76,0	06022
3,3	0,1299	4,0	35,4	26,4	76,0	06023
3,4	0,1339	4,0	38,1	27,2	76,0	06024
3,5	0,1378	4,0	38,9	28,0	76,0	06025
3,6	0,1417	4,0	39,7	28,8	76,0	06026
3,7	0,1457	4,0	40,5	29,6	76,0	06027
3,8	0,1496	4,0	41,3	30,4	76,0	06028
3,9	0,1535	4,0	42,1	31,2	76,0	06029
4,0	0,1575	4,0	42,9	32,0	76,0	06030
1,0	0,0394	4,0	20,3	15,0	64,0	06031
1,1	0,0433	4,0	21,8	16,5	64,0	06032
1,2	0,0472	4,0	23,3	18,0	64,0	06033

continued on next page

TOLERANCES (mm)

1,0–4,0 DIAMETER

DC = +0,000/-0,008

DCON = h6



2 Flute Internal Coolant

M814
METRIC SERIES

CUTTING DIAMETER DC	DECIMAL EQUIVALENT	SHANK DIAMETER DCON	FLUTE LENGTH LCF	CLEARED LENGTH LU	OVERALL LENGTH OAL	EDP NO.
1,3	0,0512	4,0	24,8	19,5	64,0	06034
1,4	0,0551	4,0	26,3	21,0	64,0	06035
1,5	0,0591	4,0	27,8	22,5	64,0	06036
1,6	0,0630	4,0	29,3	24,0	81,0	06037
1,7	0,0669	4,0	30,8	25,5	81,0	06038
1,8	0,0709	4,0	33,0	27,0	81,0	06039
1,9	0,0748	4,0	34,5	28,5	81,0	06040
2,0	0,0787	4,0	36,0	30,0	81,0	06041
2,1	0,0827	4,0	37,5	31,5	81,0	06042
2,2	0,0866	4,0	41,1	33,0	81,0	06043
2,3	0,0906	4,0	42,6	34,5	81,0	06044
2,4	0,0945	4,0	44,1	36,0	81,0	06045
2,5	0,0984	4,0	45,6	37,5	90,0	06046
2,6	0,1024	4,0	47,1	39,0	90,0	06047
2,7	0,1063	4,0	48,6	40,5	90,0	06048
2,8	0,1102	4,0	50,1	42,0	90,0	06049
2,9	0,1142	4,0	52,5	43,5	90,0	06050
3,0	0,1181	4,0	54,0	45,0	90,0	06051
3,1	0,1220	4,0	55,5	46,5	106,0	06052
3,2	0,1260	4,0	57,0	48,0	106,0	06053
3,3	0,1299	4,0	58,5	49,5	106,0	06054
3,4	0,1339	4,0	61,9	51,0	106,0	06055
3,5	0,1378	4,0	63,4	52,5	106,0	06056
3,6	0,1417	4,0	64,9	54,0	106,0	06057
3,7	0,1457	4,0	66,4	55,5	106,0	06058
3,8	0,1496	4,0	67,9	57,0	106,0	06059
3,9	0,1535	4,0	69,4	58,6	106,0	06060
4,0	0,1575	4,0	70,9	60,0	106,0	06061

continued

Series M814 8xD

		Vc (m/min)	DC • mm				
	Hardness		1	2	3	4	
P	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 175 Bhn or ≤ 7 HRc	125 (100-150)	RPM Fz Feed (mm/min)	39746 0.0229 909	19873 0.0458 909	13249 0.0686 909
	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 275 Bhn or ≤ 28 HRc	94 (76-113)	RPM Fz Feed (mm/min)	30052 0.0216 648	15026 0.0431 648	10017 0.0647 648
	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 475 Bhn or ≤ 50 HRc	46 (37-55)	RPM Fz Feed (mm/min)	14541 0.0101 147	7271 0.0203 147	4847 0.0304 147
K	CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	110 (88-132)	RPM Fz Feed (mm/min)	34899 0.0318 1110	17449 0.0636 1110	11633 0.0954 1110
	STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F, 440F	≤ 275 Bhn or ≤ 28 HRc	55 (44-66)	RPM Fz Feed (mm/min)	17449 0.0178 310	8725 0.0355 310	5816 0.0533 310
	STAINLESS STEELS (DIFFICULT) 304, 316, 321, 13-8 PH, 15-5PH, 17-4 PH, CUSTOM 450	≤ 325 Bhn or ≤ 35 HRc	38 (30-46)	RPM Fz Feed (mm/min)	12118 0.0140 170	6059 0.0281 170	4039 0.0421 170
M	SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy 800, Monel 400, Rene, Waspaloy	≤ 320 Bhn or ≤ 34 HRc	27 (22-33)	RPM Fz Feed (mm/min)	8725 0.0096 84	4362 0.0192 84	2908 0.0288 84
	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si	≤ 350 Bhn or ≤ 38 HRc	46 (37-55)	RPM Fz Feed (mm/min)	14541 0.0093 135	7271 0.0185 135	4847 0.0278 135
	ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	≤ 150 Bhn or ≤ 7 HRc	130 (104-155)	RPM Fz Feed (mm/min)	41200 0.0395 1626	20600 0.0789 1626	13733 0.1184 1626
N	COPPER ALLOYS Alum Bronze, C110, Muntz Brass	≤ 140 Bhn or ≤ 3 HRc	99 (79-119)	RPM Fz Feed (mm/min)	31506 0.0407 1283	15753 0.0814 1283	10502 0.1221 1283

Note:

- Bhn (Brinell) HRc (Rockwell C) HRb (Rockwell B)
- rpm = $(V_c \times 1000) / (DC \times 3.14)$
- mm/min = Fr x rpm (Fr x maximum available rpm when recommendation exceeds machine limit)
- reduce speed and feed 30% when using uncoated drills
- reduce speed and feed for materials harder than listed
- refer to the KYOCERA SGS Tool Wizard® or sgsmicrotools.com for complete technical information

METRIC
Series M814 15xD

Series M814 15xD		Hardness	V_c (m/min)	DC • mm				
				1	2	3	4	
P	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 175 Bhn or ≤ 7 HRc	125 (100-150)	RPM	39746	19873	13249	9937
				Fz	0.0160	0.0320	0.0479	0.0639
				Feed (mm/min)	635	635	635	635
H	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 275 Bhn or ≤ 28 HRc	94 (76-113)	RPM	30052	15026	10017	7513
				Fz	0.0139	0.0279	0.0418	0.0558
				Feed (mm/min)	419	419	419	419
K	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 475 Bhn or ≤ 50 HRc	46 (37-55)	RPM	14541	7271	4847	3635
				Fz	0.0070	0.0140	0.0210	0.0279
				Feed (mm/min)	102	102	102	102
M	CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	110 (68-132)	RPM	34899	17449	11633	8725
				Fz	0.0229	0.0459	0.0688	0.0917
				Feed (mm/min)	800	800	800	800
S	STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F, 440F	≤ 275 Bhn or ≤ 28 HRc	55 (44-66)	RPM	17449	8725	5816	4362
				Fz	0.0127	0.0253	0.0380	0.0507
				Feed (mm/min)	221	221	221	221
N	STAINLESS STEELS (DIFFICULT) 304, 316, 321, 13-8 PH, 15-5PH, 17-4 PH, CUSTOM 450	≤ 325 Bhn or ≤ 35 HRc	38 (30-46)	RPM	12118	6059	4039	3029
				Fz	0.0094	0.0189	0.0283	0.0377
				Feed (mm/min)	114	114	114	114
C	SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy 800, Monel 400, Rene, Waspaloy	≤ 320 Bhn or ≤ 34 HRc	27 (22-33)	RPM	8725	4362	2908	2181
				Fz	0.0064	0.0128	0.0192	0.0256
				Feed (mm/min)	56	56	56	56
T	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si	≤ 350 Bhn or ≤ 38 HRc	46 (37-55)	RPM	14541	7271	4847	3635
				Fz	0.0077	0.0154	0.0231	0.0307
				Feed (mm/min)	112	112	112	112
A	ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	≤ 150 Bhn or ≤ 7 HRc	130 (104-155)	RPM	41200	20600	13733	10300
				Fz	0.0287	0.0573	0.0860	0.1147
				Feed (mm/min)	1181	1181	1181	1181
B	COPPER ALLOYS Alum Bronze, C110, Muntz Brass	≤ 140 Bhn or ≤ 3 HRc	99 (79-119)	RPM	31506	15753	10502	7877
				Fz	0.0286	0.0572	0.0859	0.1145
				Feed (mm/min)	902	902	902	902

Note:

- Bhn (Brinell) HRc (Rockwell C) HRb (Rockwell B)
- rpm = $(V_c \times 1000) / (DC \times 3.14)$
- mm/min = Fr x rpm (Fr x maximum available rpm when recommendation exceeds machine limit)
- reduce speed and feed 30% when using uncoated drills
- reduce speed and feed for materials harder than listed
- refer to the KYOCERA SGS Tool Wizard® or sgsmicrotools.com for complete technical information

EDP Number Index

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09539.....39	09598.....35	09657.....29	09716.....34	09775.....28	09834.....62						
09540.....40	09599.....26	09658.....31	09717.....35	09776.....30	09835.....61						
09541.....41	09600.....27	09659.....33	09718.....26	09777.....32	09836.....62						
09542.....42	09601.....29	09660.....34	09719.....28	09778.....33	09837.....61						

Decimal Equivalents

Fraction • Number • Letter • Metric Sizes

INCH	METRIC	DECIMAL EQUIVALENT	INCH	METRIC	DECIMAL EQUIVALENT	INCH	METRIC	DECIMAL EQUIVALENT	INCH	METRIC	DECIMAL EQUIVALENT	INCH	METRIC	DECIMAL EQUIVALENT	INCH	METRIC	DECIMAL EQUIVALENT
–	0,10	0.0039	–	1,60	0.0630	9/64	3,57	0.1406	#1	5,79	0.2280	R	8,61	0.3390	–	13,00	0.5118
–	0,20	0.0079	#52	1,61	0.0635	–	3,60	0.1417	–	5,80	0.2283	–	8,70	0.3425	33/64	13,10	0.5156
–	0,25	0.0098	–	1,65	0.0650	#27	3,66	0.1440	–	5,90	0.2323	11/32	8,73	0.3438	17/32	13,49	0.5312
–	0,30	0.0118	#51	1,70	0.0669	–	3,70	0.1457	A	5,94	0.2340	–	8,75	0.3445	–	13,50	0.5315
#80	0,34	0.0135	–	1,75	0.0689	#26	3,73	0.1470	15/64	5,95	0.2344	–	8,80	0.3465	35/64	13,89	0.5469
–	0,35	0.0138	#50	1,78	0.0700	–	3,75	0.1476	B	6,05	0.2380	–	8,90	0.3504	9/16	14,29	0.5625
#79	0,37	0.0145	–	1,80	0.0709	#25	3,80	0.1495	–	6,10	0.2402	–	9,00	0.3543	–	14,50	0.5709
1/64	0,40	0.0156	#49	1,85	0.0728	–	3,80	0.1496	C	6,15	0.2420	T	9,09	0.3580	37/64	14,68	0.5781
#78	0,41	0.0160	–	1,90	0.0748	#24	3,86	0.1520	–	6,20	0.2441	–	9,10	0.3583	–	15,00	0.5906
–	0,45	0.0177	#48	1,93	0.0760	–	3,90	0.1535	D	6,25	0.2461	23/64	9,13	0.3594	19/32	15,08	0.5938
#77	0,46	0.0180	–	1,95	0.0768	#23	3,91	0.1540	E	6,35	0.2500	–	9,25	0.3642	–	15,50	0.6102
–	0,50	0.0197	5/64	1,98	0.0781	5/32	3,97	0.1562	–	6,30	0.2480	–	9,20	0.3622	39/64	15,48	0.6094
#76	0,51	0.0200	#47	1,99	0.0785	#22	3,99	0.1570	G	6,63	0.2610	–	9,30	0.3661	5/8	15,88	0.6250
#75	0,53	0.0210	–	2,00	0.0787	–	4,00	0.1575	1/4	6,35	0.2500	U	9,35	0.3680	–	16,00	0.6299
–	0,55	0.0217	–	2,05	0.0807	#21	4,04	0.1590	–	6,40	0.2520	–	9,40	0.3701	41/64	16,27	0.6406
#74	0,57	0.0225	#46	2,06	0.0810	#20	4,09	0.1610	–	6,50	0.2559	–	9,50	0.3740	–	16,50	0.6496
–	0,60	0.0236	#45	2,08	0.0820	–	4,10	0.1614	F	6,53	0.2570	–	9,50	0.3750	21/32	16,67	0.6562
#73	0,61	0.0240	–	2,10	0.0827	–	4,20	0.1654	–	6,60	0.2598	3/8	9,53	0.3750	43/64	17,07	0.6719
#72	0,64	0.0250	–	2,15	0.0846	#19	4,22	0.1660	G	6,63	0.2610	V	9,56	0.3770	–	17,00	0.6693
–	0,65	0.0256	#44	2,18	0.0860	–	4,25	0.1673	–	6,70	0.2638	–	9,60	0.3780	11/16	17,46	0.6875
#71	0,66	0.0260	–	2,20	0.0866	–	4,30	0.1693	17/64	6,75	0.2656	–	9,70	0.3819	–	17,50	0.6890
–	0,70	0.0276	–	2,25	0.0886	#18	4,31	0.1695	H	6,76	0.2660	–	9,75	0.3839	–	17,50	0.6890
#70	0,71	0.0280	#43	2,26	0.0890	11/64	4,37	0.1719	–	6,80	0.2677	W	9,80	0.3858	45/64	17,86	0.7031
#69	0,74	0.0292	–	2,30	0.0906	#17	4,39	0.1730	–	6,90	0.2717	–	9,90	0.3898	–	18,00	0.7087
–	0,75	0.0295	–	2,35	0.0925	–	4,40	0.1732	I	6,91	0.2720	25/64	9,92	0.3906	23/32	18,26	0.7188
#68	0,79	0.0310	#42	2,37	0.0935	#16	4,50	0.1770	–	7,00	0.2756	–	10,00	0.3937	–	18,50	0.7283
1/32	0,79	0.0313	3/32	2,38	0.0938	–	4,50	0.1772	J	7,04	0.2770	X	10,08	0.3970	47/64	18,65	0.7344
–	0,80	0.0315	–	2,40	0.0945	#15	4,57	0.1800	–	7,10	0.2795	–	10,10	0.3976	–	19,00	0.7480
#67	0,81	0.0320	#41	2,44	0.0960	–	4,60	0.1811	K	7,14	0.2810	–	10,20	0.4016	3/4	19,05	0.7500
#66	0,84	0.0330	–	2,45	0.0965	#14	4,62	0.1820	9/32	7,14	0.2812	Y	10,26	0.4040	49/64	19,45	0.7656
–	0,85	0.0335	#40	2,50	0.0984	#13	4,70	0.1850	–	7,20	0.2835	–	10,30	0.4055	–	19,50	0.7677
#65	0,89	0.0350	#39	2,53	0.0995	–	4,75	0.1870	–	7,25	0.2854	13/32	10,32	0.4062	25/32	19,84	0.7812
–	0,90	0.0354	#38	2,58	0.1015	3/16	4,76	0.1875	–	7,30	0.2874	–	10,40	0.4094	–	20,00	0.7874
#64	0,91	0.0360	–	2,60	0.1024	#12	4,80	0.1890	L	7,37	0.2900	Z	10,49	0.4130	51/64	20,24	0.7969
#63	0,94	0.0370	#37	2,64	0.1040	#11	4,85	0.1910	–	7,40	0.2913	–	10,50	0.4134	–	20,50	0.8071
–	0,95	0.0374	–	2,70	0.1063	–	4,90	0.1929	M	7,49	0.2950	–	10,60	0.4173	13/16	20,64	0.8125
#62	0,97	0.0380	#36	2,71	0.1065	#10	4,91	0.1935	–	7,50	0.2953	–	10,70	0.4213	–	21,00	0.8268
#61	0,99	0.0390	–	2,75	0.1083	#9	4,98	0.1960	19/64	7,54	0.2969	27/64	10,72	0.4219	53/64	21,03	0.8281
–	1,00	0.0394	7/64	2,78	0.1094	–	5,00	0.1969	–	7,60	0.2992	–	10,80	0.4252	27/32	21,43	0.8438
#60	1,02	0.0400	#35	2,79	0.1100	#8	5,05	0.1990	N	7,67	0.3020	–	10,90	0.4291	–	21,50	0.8465
#59	1,04	0.0410	–	2,80	0.1102	–	5,10	0.2008	–	7,70	0.3031	–	11,00	0.4331	55/64	21,84	0.8594
–	1,05	0.0413	#34	2,82	0.1110	#7	5,11	0.2010	–	7,75	0.3051	–	11,10	0.4370	–	22,00	0.8661
#58	1,07	0.0420	#33	2,87	0.1130	13/64	5,16	0.2031	–	7,80	0.3071	7/16	11,11	0.4375	7/8	22,23	0.8750
#57	1,09	0.0430	–	2,90	0.1142	#6	5,18	0.2040	–	7,90	0.3110	–	11,20	0.4409	–	22,50	0.8858
–	1,10	0.0433	#32	2,95	0.1160	–	5,20	0.2047	5/16	7,94	0.3125	–	11,30	0.4449	57/64	22,62	0.8906
–	1,15	0.0453	–	3,00	0.1181	#5	5,22	0.2055	–	8,00	0.3150	–	11,40	0.4488	–	23,00	0.9055
#56	1,18	0.0465	#31	3,05	0.1200	–	5,25	0.2067	O	8,03	0.3160	–	11,50	0.4528	29/32	23,02	0.9062
3/64	1,19	0.0469	–	3,10	0.1220	–	5,3	0.2087	–	8,10	0.3189	29/64	11,51	0.4531	59/64	23,42	0.9219
–	1,20	0.0472	1/8	3,18	0.1250	#4	5,31	0.2090	–	8,20	0.3228	–	11,60	0.4567	–	23,50	0.9252
–	1,25	0.0492	–	3,20	0.1260	–	5,40	0.2126	P	8,20	0.3230	–	11,70	0.4606	15/16	23,81	0.9375
–	1,30	0.0512	–	3,25	0.1280	#3	5,41	0.2130	–	8,25	0.3248	–	11,80	0.4646	–	24,00	0.9449
#55	1,32	0.0520	#30	3,26	0.1285	–	5,50	0.2165	–	8,30	0.3268	–	11,90	0.4685	61/64	24,21	0.9531
–	1,35	0.0531	–	3,30	0.1299	7/32	5,56	0.2188	21/64	8,33	0.3281	15/32	11,91	0.4688	–	24,50	0.9646
#54	1,40	0.0550	–	3,40	0.1339	–	5,60	0.2205	–	8,40	0.3307	–	12,00	0.4724	31/32	24,61	0.9688
#53	1,51	0.0595	#29	3,45	0.1360	#2	5,61	0.2210	Q	8,43	0.3320	31/64	12,30	0.4844	–	25,00	0.9843
–	1,55	0.0610	–	3,50	0.1378	–	5,70	0.2244	–	8,50	0.3346	–	12,50	0.4921	63/64	25,00	0.9844
1/16	1,59	0.0625	#28	3,57	0.1405	–	5,75	0.2264	–	8,60	0.3386	1/2	12,70	0.5000	1	25,40	1.0000

Hardness Conversion Chart

ROCKWELL HARDNESS (HRb)	ROCKWELL HARDNESS (HRc)	BRINELL HARDNESS (HB)	VICKERS HARDNESS (HV)	TENSILE STRENGTH (N/mm ²)	PSI (1000lb/in ²)
67	—	121	122	401	58
70	—	126	127	432	63
73	—	132	132	448	65
75	—	136	137	455	66
77	—	140	143	463	67
80	—	147	150	479	69
82	—	153	156	494	72
84	—	159	163	525	76
86	—	165	171	540	78
89	—	177	178	556	81
91	—	186	188	602	88
93	—	197	196	632	92
96	—	216	212	664	97
97	—	223	218	695	101
98	21	230	234	756	110
—	22	236	241	772	112
—	23	242	247	787	114
—	24	248	255	818	118
—	25	254	261	849	123
—	27	266	269	865	125
—	28	272	275	895	130
—	29	278	284	911	132
—	30	284	292	942	136
—	31	293	300	973	141
—	32	302	308	988	143
—	33	310	318	1019	147
—	34	319	327	1050	152
—	35	328	337	1096	159
—	37	345	349	1127	163
—	38	353	359	1158	168
—	39	362	370	1189	172
—	40	370	381	1235	179
—	41	381	395	1266	183
—	42	391	408	1312	190
—	44	411	422	1359	197
—	45	422	437	1420	206
—	46	433	452	1467	212
—	48	455	470	1513	219
—	50	479	497	1559	226
—	51	485	517	1621	235
—	52	497	532	1668	241
—	54	—	573	1729	250
—	56	—	609	1807	262
—	57	—	630	1884	273
—	59	—	670	1961	284
—	60	—	698	2039	295
—	61	—	725	—	—
—	62	—	740	—	—
—	63	—	780	—	—
—	64	—	812	—	—
—	65	—	847	—	—
—	66	—	885	—	—
—	67	—	926	—	—
—	68	—	971	—	—

Conversions from each scale are approximate

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