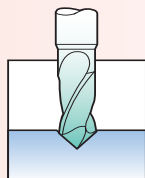
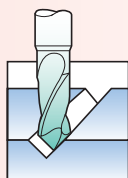


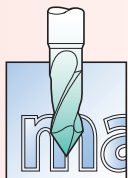
MICRO AND MULTI-FUNCTION TOOLS

MULTI-V®**8 OPERATIONS**

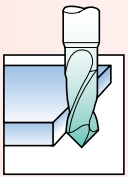
90° - 120°
CENTERING -
SPOTTING



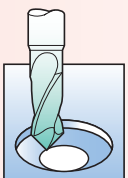
90° - 120°
V - GROOVING



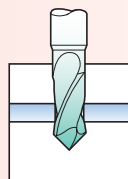
40° - 60°
ENGRAVING



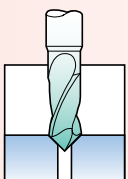
60° - 90° - 120°
COUNTERING



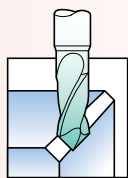
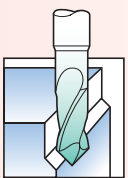
90° - 120°
INTERPOLATION
DRILLING



90° - 120°
DRILLING



60° - 90° - 120°
CHAMFERING

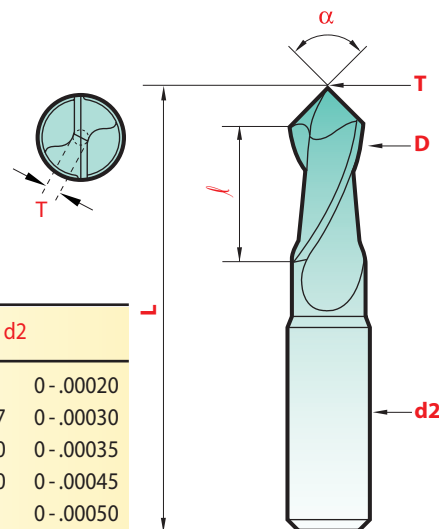


60° - 90° - 120°
LONGITUDINAL
CHAMFERS

T = 0.1 D : Web thickness

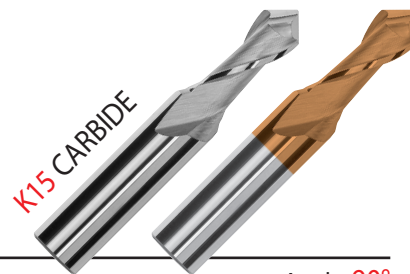
Diameters		α		d2
.020 - .118	- 0 - .0010	$\pm 1^\circ$	.118	0 - .00020
.157 - .236	- 0 - .0012		.157 - .197	0 - .00030
.250 - .394	- 0 - .0014		.197 - .500	0 - .00035
.472 - .630	-.0018 - .0036		.500 - .630	0 - .00045
.787	-.0025 - .0045		.787	0 - .00050

Tolerances



This is the ideal tool for machine centers and NC processing machines.

- Combination of multiple machining process :
 - reduction in machine set-up time,
 - reduction of operating time.
- Improved performances :
 - fine cutting edge : improved depthing and surface finish,
 - micrograin solid carbide : better resistance to wear and greater rigidity,
 - 30° spiral : facilitates chip removal.
- Easy storage :
 - fewer tools required,
 - less stock required.



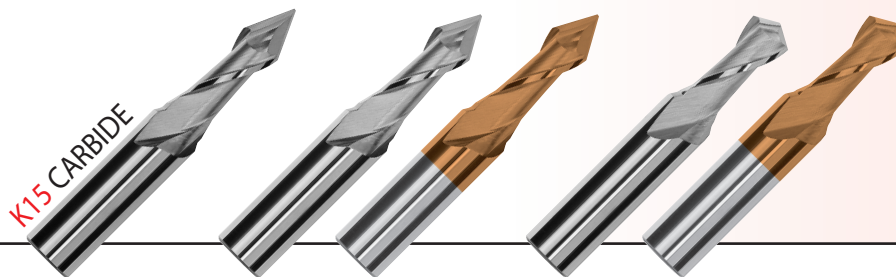
STANDARD magafor

Angle 90°

Diameter inch mm		L	\	d2	T*	MULTI-V 8090	Hard'X 8090-H
.020	0,5	1-1/2	.040	.118	.002	80900050	80900050-H
.024	0,6	1-1/2	.047	.118	.002	80900060	80900060-H
.028	0,7	1-1/2	.055	.118	.003	80900070	80900070-H
.031	0,8	1-1/2	.063	.118	.003	80900080	80900080-H
.035	0,9	1-1/2	.071	.118	.003	80900090	80900090-H
.039	1,0	1-1/2	.080	.118	.004	80900100	80900100-H
.047	1,2	1-1/2	.095	.118	.005	80900120	80900120-H
.055	1,4	1-1/2	.110	.118	.006	80900140	80900140-H
.059	1,5	1-1/2	.120	.118	.006	80900150	80900150-H
.063	1,6	1-1/2	.125	.118	.006	80900160	80900160-H
.071	1,8	1-1/2	.140	.118	.007	80900180	80900180-H
.078	2,0	1-1/2	.160	.118	.008	80900200	80900200-H
.098	2,5	1-1/2	.195	.118	.010	80900250	80900250-H
.118	3	2	.240	.157	.012	80900300	80900300-H
.157	4	2	.315	.197	.016	80900400	80900400-H
3/16		2	.375	1/4	.020	80900476	80900476-H
.197	5	2	.395	.236	.020	80900500	80900500-H
.236	6	2-3/8	.475	.315	.023	80900600	80900600-H
1/4		2-3/8	.475	5/16	.023	80900635	80900635-H
5/16		2-3/4	.630	3/8	.031	80900793	80900793-H
.315	8	2-3/4	.630	.394	.031	80900800	80900800-H
3/8		2-3/4	.710	1/2	.039	80900952	80900952-H
.394	10	2-3/4	.710	.472	.039	80901000	80901000-H
.472	12	2-3/4	.790	.472	.047	80901200	80901200-H
1/2		2-3/4	.790	1/2	.051	80901270	80901270-H
5/8		3-1/8	1.000	5/8	.063	80901587	80901587-H
.630	16	3-1/8	1.025	.630	.063	80901600	80901600-H
.787	20	4	1.260	.787	.079	80902000	80902000-H

T* = 0.1 = .0039" / Web thickness

MULTI-V® 8 OPERATIONS



METRIC

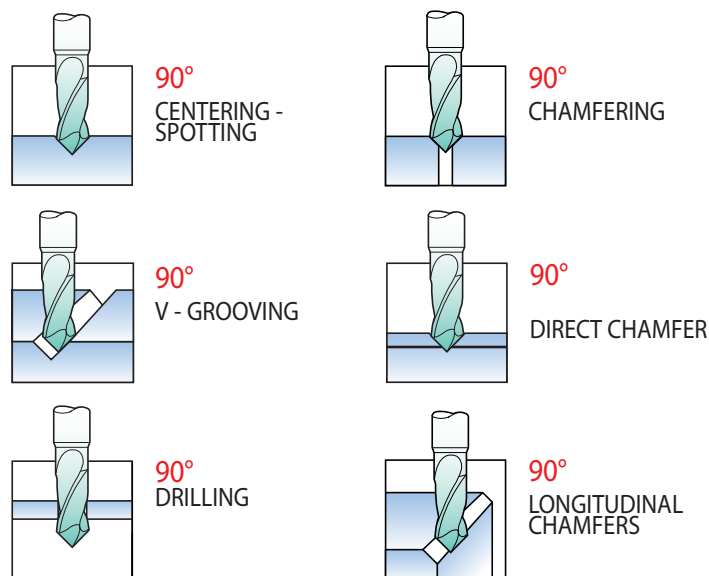
STANDARD magafor

Angle					40°	60°	120°		
Diameter		L	\	d2	MULTI-V 8040*	MULTI-V 8088	Hard'X 8088-H	MULTI-V 8092	Hard'X 8092-H
inch	mm								
.020	0,5	39	1,0	3	8040005	8088005	8088005-H		
.039	1,0	39	2,0	3		8088010	8088010-H	8092010	8092010-H
.059	1,5	39	3,0	3		8088015	8088015-H	8092015	8092015-H
.078	2,0	39	4,0	3		8088020	8088020-H	8092020	8092020-H
.098	2,5	39	5,0	3		8088025	8088025-H	8092025	8092025-H
.118	3	50	6,0	4		8088030	8088030-H	8092030	8092030-H
.157	4	50	8,0	5		8088040	8088040-H	8092040	8092040-H
.197	5	50	10	6		8088050	8088050-H	8092050	8092050-H
.236	6	60	12	8		8088060	8088060-H	8092060	8092060-H
.315	8	70	16	10		8088080	8088080-H	8092080	8092080-H
.394	10	70	18	12		8088100	8088100-H	8092100	8092100-H
.472	12	70	20	12		8088120	8088120-H	8092120	8092120-H
.630	16	80	26	16		8088160	8088160-H	8092160	8092160-H
.787	20	100	32	20		8088200	8088200-H	8092200	8092200-H

* Angle 40° – 60° : special for engraving

AVAILABLE SEPTEMBER 2006
COBALT BASED – WITH HYBRID MULTI-LAYER COATING
FOR MACHINING WITH COOLANT AND DRY

COMBI-MAG 6 OPERATIONS



STANDARD					Angle 90°
Diameter	L	\	T*		Red'X 007
inch mm					
.118 3	1.970	.236	.012		0070300
1/8 3.17	1.970	.236	.015		0070317
.157 4	2.050	.315	.015		0070400
3/16 4.76	2.360	.354	.020		0070476
.197 5	2.360	.400	.020		0070500
.236 6	2.600	.472	.023		0070600
1/4 6.35	2.600	.472	.023		0070635
5/16 7.93	3.110	.552	.032		0070793
.315 8	3.110	.552	.032		0070800
3/8 9.52	3.500	.625	.040		0070952
.394 10	3.500	.625	.040		0071000
.472 12	4.000	.700	.050		0071200
1/2 12.7	4.000	.750	.050		0071270
.551 14	4.530	.825	.055		0071400
5/8 15.87	4.530	.950	.063		0071587
.630 16	4.530	.950	.063		0071600

Red'X Coating can be used for dry machining
– and using coolant will add lubricity.