

NEW

Y-Coated SOLID CARBIDE END MILLS

6 FLUTE CHIP SPLITTER (PLAIN SHANK)

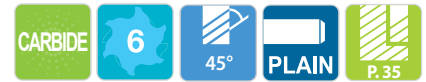
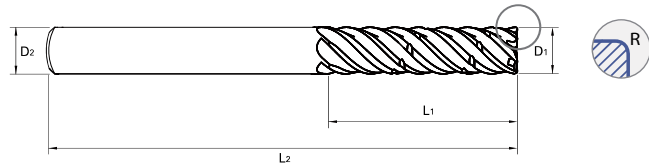
SERIES

Corner Radius

GMH72

- Special chip splitter design for better chip removal shortened chip length at high axial machining
- High Performance for Steels, Stainless Steels and Cast Iron

Corner Radius



Unit : INCH

OD (D1)	SD (D2)	LOC (L1)	OAL (L2)	Corner Radius			
				.015	.030	.060	.125
				EDP No.	EDP No.	EDP No.	EDP No.
3/8	3/8	5/8	2_1/2	◇ GMH72901	GMH72902		
3/8	3/8	1"	2_1/2	◇ GMH72903			
3/8	3/8	1_1/8	3"	GMH72024	GMH72904		
1/2	1/2	1_1/4	3"		◇ GMH72905	◇ GMH72906	
1/2	1/2	1_1/2	3_1/2		◇ GMH72907	◇ GMH72908	
1/2	1/2	1_5/8	4"	GMH72032	GMH72909	GMH72910	
1/2	1/2	2"	4"		GMH72911	GMH72912	
5/8	5/8	1_1/4	3_1/2		◇ GMH72913	◇ GMH72914	
5/8	5/8	1_7/8	4"		◇ GMH72915	◇ GMH72916	
5/8	5/8	2"	4"	GMH72040	GMH72917	GMH72918	◇ GMH72919
5/8	5/8	2_3/16	4_1/2		◇ GMH72920	◇ GMH72921	
5/8	5/8	2_5/8	5"		GMH72922	GMH72923	
3/4	3/4	1_1/2	4"		◇ GMH72924	◇ GMH72925	◇ GMH72926
3/4	3/4	1_7/8	4_1/2		GMH72927	GMH72928	
3/4	3/4	2_1/4	5"	GMH72048	GMH72929	GMH72930	GMH72931
3/4	3/4	2_3/4	5"		◇ GMH72932	GMH72933	◇ GMH72934
3/4	3/4	3"	6"		GMH72935	◇ GMH72936	
1"	1"	2"	5"		◇ GMH72937	◇ GMH72938	◇ GMH72939
1"	1"	2_1/2	5_1/2		◇ GMH72942	◇ GMH72943	
1"	1"	3_1/4	6"	GMH72064	GMH72944	GMH72945	GMH72946
1"	1"	3_1/2	6_1/2		◇ GMH72940	◇ GMH72941	
1"	1"	4"	7"			◇ GMH72947	

◇ : Call for Availability

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0~- .0012	h5 (≥ Ø12 : h6)

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	32	10	29	32	38	15	35	15	23	10	26	3	25	21		
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S									
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	60	100	75	90	130	110	90	100			15	30	25	38	34	320	400 Rm	1050 Rm	550	600
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400
Recommend											○	○	○	○	○	○	○	○	○	○

GMH72 SERIES

6 FLUTE CHIP SPLITTER - SIDE CUTTING



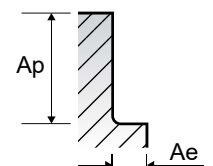
SFM = ft./min.

fz = in./tooth

RPM = rev./min.

FEED = in./min.

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)				
						3/8	1/2	5/8	3/4	1
P	1-4	Non-alloy steel	0.05D	2.0D	SFM(Vc)	885	885	885	885	885
					fz	.0028	.0034	.0040	.0044	.0046
					RPM	9022	6766	5413	4511	3383
					FEED	153.43	138.25	129.14	119.87	92.70
	5		0.05D	2.0D	SFM(Vc)	600	600	600	600	600
					fz	.0021	.0025	.0029	.0033	.0034
					RPM	6106	4579	3664	3053	2290
					FEED	76.45	69.23	64.47	60.22	47.06
	6-7	Low alloy steel	0.05D	2.0D	SFM(Vc)	885	885	885	885	885
					fz	.0028	.0034	.0040	.0044	.0046
					RPM	9022	6766	5413	4511	3383
					FEED	153.43	138.25	129.14	119.87	92.70
	8-9		0.05D	2.0D	SFM(Vc)	600	600	600	600	600
					fz	.0021	.0025	.0029	.0033	.0034
					RPM	6106	4579	3664	3053	2290
					FEED	76.45	69.23	64.47	60.22	47.06
	10-11.1	High alloyed steel, and tool steel	0.05D	2.0D	SFM(Vc)	295	295	295	295	295
					fz	.0017	.0021	.0024	.0027	.0028
					RPM	3007	2255	1805	1504	1128
					FEED	31.26	27.97	26.21	24.33	19.18
M	12-13		0.05D	2.0D	SFM(Vc)	630	630	630	630	630
					fz	.0020	.0025	.0029	.0032	.0033
					RPM	6408	4806	3845	3204	2403
					FEED	78.7185	70.9605	66.303	61.308	47.6865
	14.1	Stainless steel	0.05D	2.0D	SFM(Vc)	435	435	435	435	435
					fz	.0017	.0021	.0024	.0027	.0028
					RPM	4419	3313.8	2651.4	2209.5	1656.9
					FEED	45.9315	41.103	38.52	35.7525	27.99
	14.2		0.05D	2.0D	SFM(Vc)	395	395	395	395	395
					fz	.0017	.0021	.0024	.0027	.0028
					RPM	4034	3026	2420	2017	1513
					FEED	41.93	37.52	35.16	32.64	25.37
S	31-35	Heat Resistant Super Alloys	0.05D	2.0D	SFM(Vc)	95	95	95	95	95
					fz	.0014	.0016	.0019	.0022	.0023
					RPM	990	742.5	594	495	371.7
					FEED	8.1855	7.191	6.8085	6.5475	5.0445
	36-37	Titanium Alloys	0.05D	2.0D	SFM(Vc)	345	345	345	345	345
					fz	.0014	.0016	.0019	.0022	.0023
					RPM	3493	2620	2096	1747	1310
					FEED	28.88	25.68	24.01	23.31	18.10



YU-VP20

BEST VALUE IN THE WORLD OF CUTTING TOOLS



FOR TOUGH STEEL, CAST IRON, STAINLESS STEEL AND EXOTIC MATERIALS:
NOTHING CUTS IT BETTER

V7 Plus^A

**INDUSTRY-LEADING
HIGH-PERFORMANCE
CARBIDE END MILLS:**

- 4 Flute & 6 Flute
- Square, Chamfer, Radius, Ball Nose
- Standard & Extended Length
- Plain & Weldon Flat Shanks
- Inch & Metric Sizes

NEW

6 Flute Chip Splitter
Size Expansion in 1/2" x 1/2" x 1-1/4" x 3"

**Over 1,500 Items
in Stock.**



**When The Cut Calls For
High-Performance Carbide,
We Have More Options
To Meet Your Needs.**



YG-1 is the undisputed world leader in carbide end mill offerings. And now, with our newly expanded V7 Plus A line, you have even more high-performance choices than ever before. Choose from a full array of 4 Flute and 6 Flute standard-stocked or custom-designed solutions. No matter what your machining challenge, we have a product for you.

How Our Innovative V7 Plus A Design Started a **REVOLUTION** in End Mill Technology

We didn't create the great cutting performance of our V7 Plus A end mills line by just doing what others have done. We engineered our line from the tip of flute to end of shank with performance-enhancing technology in mind. It's what makes the V7 Plus A line the top choice in end mill performance.

For excellent performance in stainless steels, mild steels, low/medium hardness materials and exotic materials to boot, the V7 Plus A's advanced geometry provides:

- ▶ Excellent material removal rates and surface finishes
- ▶ Unequal indexing for reduced chatter (harmonics) and improved stability
- ▶ Advanced coating for superior performance and tool life
- ▶ Improved flute geometry for impressive chip formation and evacuation
- ▶ Noticeably smooth operation in high-speed machining and peel-milling applications
- ▶ Superior slotting and profiling in most ferrous materials for more flexible use
- ▶ Excellent performance in high-speed trochoidal milling applications for improved accuracy, reduced vibration and better heat displacement
- ▶ Premium-grade carbide substrate for longer tool life

GUIDE TO ICONS

The tool is made of
micrograin carbide



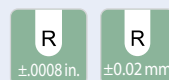
No. of Flutes



Cutting Conditions



Tolerance of Ball Radius



Helix Angle



Type of Shank



Plain
shank



Weldon
flat

Tool Ends



Square

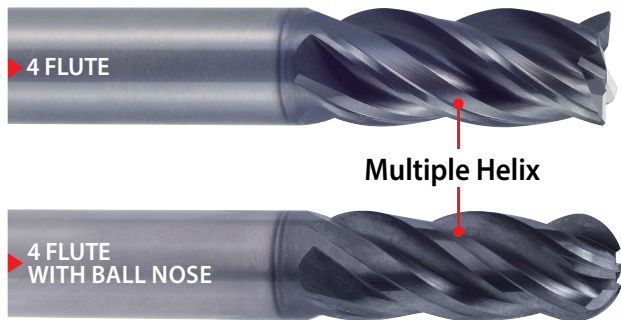
Chamfer



Radius

Ball

V7 Plus A 4 FLUTE END MILLS



Setting a Higher Standard in 4 Flute Design

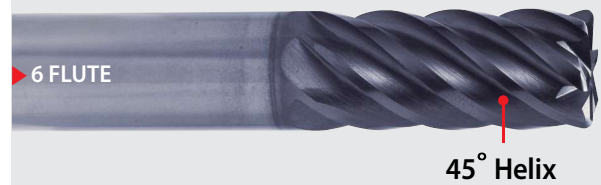
You asked for it. Now you can have state-of-the-art performance in an innovative 4 Flute design. First, you'll notice reduced vibration, optimal chip formation and excellent chip evacuation. And best of all, you'll get longer tool life in heavy cutting conditions. Available in ball nose, too.

NEW

V7 Plus A 6 FLUTE CHIP SPLITTER

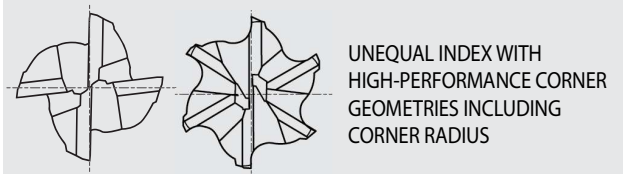


V7 Plus A 6 FLUTE END MILLS



Better by Every Measure

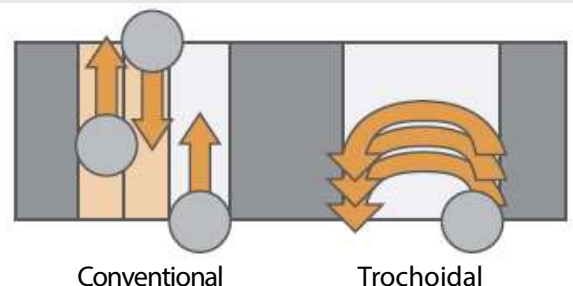
From its higher stability for lower vibration to its improved performance in high-speed and trochoidal milling applications, the V7 Plus A 6 Flute solid carbide, 45-degree helix, was designed with longer tool life and higher productivity in mind.



Trochoidal Milling

With our V7 Plus A 6 Flute's unique cutting geometry, we made it easier to apply a small radial width-of-cut along with higher cutting speeds and excellent feed per tooth. That's why we perform better in trochoidal milling application. Here's why:

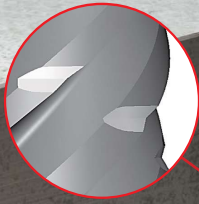
- ▶ Smaller arc engagement provides lower cutting force and better heat displacement
- ▶ More flutes provide deeper depth of cut for more productivity and reduced wear
- ▶ Stability-inducing geometry reduces vibration for increased accuracy and longer tool life
- ▶ Aggressive feed-per-tooth provides excellent chip evacuation





6 FLUTE CHIP SPLITTER

V7 Plus^A



Shorter Chip

Special Chip Splitter Design
Shorter Chip Length at High Axial
Machining, improving
Chip Removal from both the
Component and the Machine

Do Chips a Complete Makeover

The New V7 Plus Chip Splitter reduces vibrations and realizes outstanding machining performance and surface finish by applying unequal index design which is the strength of V7 Plus.

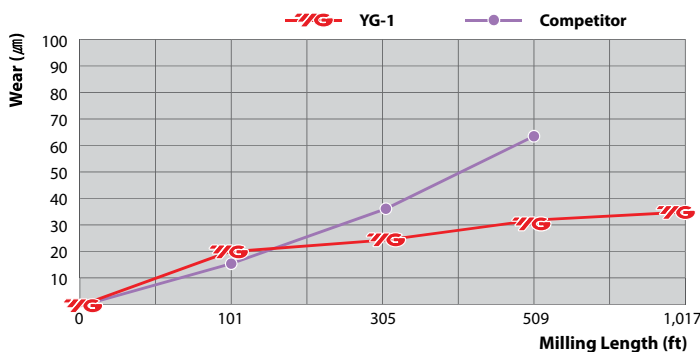
Furthermore, the optimized chip splitter design shortens the length of the chips into approximately 1/3 than other End Mills that leads to excellent chip evacuation, as well.

As the V7 Plus Chip Splitter shows a superior performance in high-speed machining and trochoidal milling.

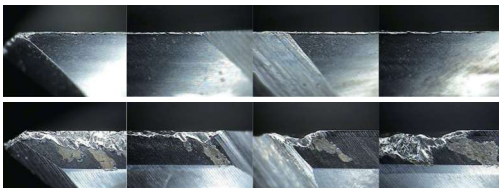
HIGH-PERFORMANCE SOLID CARBIDE 6 FLUTE CHIP SPLITTER

CASE STUDY

6 Flute Chip Splitter vs Competitor



YG



Competitor

	V7 Plus A	Competitor
Wear (µm)	32.49	88.26
Milling Length (ft.)	1,017	509
Size (mm)	Ø12 x Ø12 x 48 x 120 with chip Splitter	
Work Material	- JIS : S45C(HRc30) - DIN : C45	- WR : 1.0503 - AISI : 1405
Cutting Speed/RPM	722 ft/min. / 5,836 rev./min.	
FEED	124 in./min.	
Milling Method	Trochoidal Cutting	
Milling Depth	Axial: 1.417 in., Radial: .024 in	
Coolant	Wet Cut	
Overhang	2.204 in.	
Machine	Machining Center	