EUROPE

V7 Ultra

STEEL INOX

High-Performance Solid Carbide End Mills

MORE PARTS LESS TIME

THE NEXT LEVEL OF PERFORMANCE

STRONGER PERFORMANCE
in deep slotting and heavy cutting applications

SUPERIOR CHIP EVACUATION
for stable and reliable machining

EXCELLENT FINISHING
without compromise

PRE-LAUNCH AVAILABLE
STARTING OCTOBER

FULL PRODUCT RANGE
OFFICIAL LAUNCH IN DECEMBER

YG

www.yg1.solutions

V7 Ultra

High-Performance Solid Carbide End Mills

KEY FEATURES

- **Positive Flute Shape**
  Providing lower cutting forces and less machining noise
- **Variable Helix & Pitch Design**
  Suppressing harmonics and allows for Roughing and Finishing with one tool
- **Y-Coating for Steel Variant**
  Proven performance from various other YG-1 ISO-P product lines

- **Special Clearance Geometry**
  Reduces machining vibrations while allowing more stable cutting edge
- **Advanced Core Geometry**
  Special wide core design for overall higher stability
- **C-Coating for Inox Variant**
  Increased tool life with ISO-M and ISO-S materials

V7 Ultra STEEL

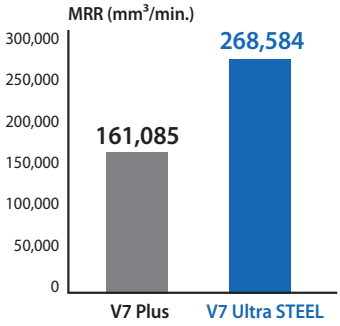
The next level of V7 PLUS, **V7 Ultra STEEL** delivers best-in-class cutting performance, **PARTICULARLY IN STEELS**, while offering universal versatility across a wide range of materials.
Featuring YG-1's latest design and advanced coating technology, V7 Ultra STEEL is engineered to deliver higher performance, improved tool life, and exceptional reliability.

Case Study

MRR increased by

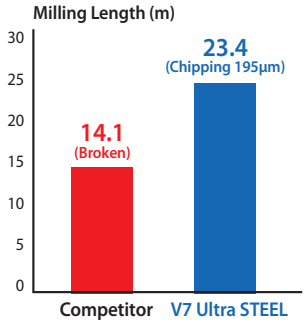
66.7%

- **Work Material**
  - DIN: 42CrMo4
  - ANSI: 4140
  - JIS: SCM440 (HRc30)
- **Test Result (Metal Removal Rate)**
  V7 Ultra STEEL: 268,584 mm^3/min.
  V7 Plus: 161,085 mm^3/min.



Case Study

- **Slotting**
- **Work Material**
  - DIN: 42CrMo4
  - ANSI: 4140
  - JIS: SCM440 (HRc30)
- **RPM:** 3,438 rev./min.
- **Feed:** 813 mm/min.
- **Cutting Depth:** 12.7 mm
- **Axial Depth:** 1.0D
- **Coolant:** Emulsion



V7 Ultra INOX

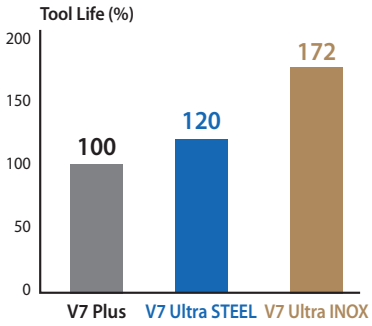
The next level of V7 PLUS, **V7 Ultra INOX** delivers outstanding performance and reliability in **STAINLESS STEEL MACHINING**.
Featuring YG-1's latest design and advanced coating technology, V7 Ultra INOX is the FIRST-CHOICE product for dedicated stainless steel applications.

Case Study

Tool life improved by

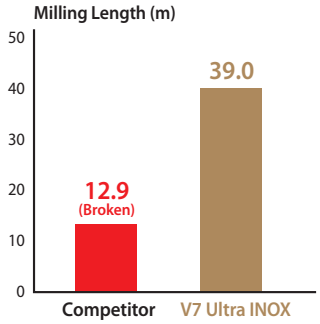
172%

- **Work Material**
  - DIN: X5CrNiMo17-12-2
  - ANSI: 316
  - JIS: SUS316
- **RPM:** 3,000 rev./min.
- **Feed:** 1,143 mm/min.
- **Test Result (Tool Life)**



Case Study

- **Slotting**
- **Work Material**
  - DIN: X5CrNi1810 (X4CrNi18-10)
  - ANSI: 304
  - JIS: SUS304
- **RPM:** 2,674 rev./min.
- **Feed:** 635 mm/min.
- **Cutting Depth:** 12.7 mm
- **Axial Depth:** 1.0D
- **Coolant:** Emulsion



Full Product Range Available in December

V7 Ultra STEEL (4-Flute)

Shape	Length	Series No.		Mill Diameter Range (mm)	
		Plain	Flat	Min.	Max.
BALL NOSE	Standard Length	GML23	GML30	2	20
CORNER RADIUS	Short Length	GML24	GML31	3	20
CORNER RADIUS	Long Length	GML25	GML32	3	25
CORNER RADIUS	Standard Length with Neck	GML26	GML33	3	20
SQUARE	Short Length	GML27	GML34	2	20
SQUARE	Long Length	GML28	GML35	3	25
SQUARE	Standard Length with Neck	★ GML29	★ GML36	2	20

V7 Ultra INOX (4-Flute)

Shape	Length	Series No.		Mill Diameter Range (mm)	
		Plain	Flat	Min.	Max.
SQUARE with Chamfer	Short Length	HHK93	HHK94	3	20
SQUARE with Chamfer	Long Length	HHK95	HHK96	3	20
SQUARE with Chamfer	Standard Length with Neck	★ HHK97	★ HHK98	3	20

★ Please refer to the back page for detailed specifications of pre-launch products

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These items will be available starting in October.

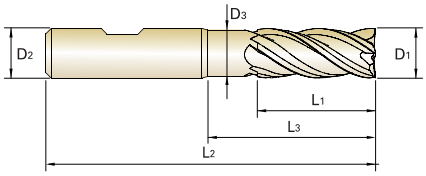
V7 ULTRA STEEL

High-Performance Solid Carbide End Mills

Y-COATED SOLID CARBIDE END MILLS
4-FLUTE WITH EXTENDED NECK

PLAIN SHANK **GML29**

FLAT SHANK **GML36**

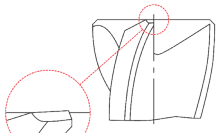


CARBIDE | 4 | 35°/37° | PLAIN | FLAT | C x 45° | Y Coating

Unit : mm

EDP No.		Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter	Chamfer Size
PLAIN	FLAT	D_1	D_2	L_1	L_3	L_2	D_3	
GML29901	**GML36901**	**3.0**	6	8	14	57	2.7	0.10
GML29903	**GML36903**	**4.0**	6	11	16	57	3.7	0.15
GML29905	**GML36905**	**5.0**	6	13	18	57	4.7	0.15
GML29908	**GML36908**	**6.0**	6	13	21	57	5.5	0.20
GML29912	**GML36912**	**8.0**	8	19	27	63	7.5	0.20
GML29916	**GML36916**	**10.0**	10	22	32	72	9.2	0.30
GML29920	**GML36920**	**12.0**	12	26	38	83	11.0	0.35
GML29924	**GML36924**	**16.0**	16	32	44	92	15.0	0.40
GML29928	**GML36928**	**20.0**	20	38	54	104	19.0	0.50

Size	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
Up to Ø12	0 ~ -0.020	h5 (≥Ø12 : h6)
Over Ø12	0 ~ -0.030	



Enforced Cutting Edge

4-FLUTE - SIDE CUTTING & SLOTTING

◎ : Excellent ○ : Good

ISO	VDI 3323	Material Description	Recom-mended	Side Cutting Ae	Side Cutting Ap	Slotting Ae	Slotting Ap	Para-meter	Diameter (Ø) 3	4	5	6	8	10	12	16	20
P	1-4	Non-alloy steel	◎	0.5D	1.5D (1.2D)	1.0D	1.0D (0.8D)	Vc	158	158	158	158	158	158	158	158	158
								fz	0.018	0.025	0.032	0.038	0.053	0.063	0.073	0.089	0.100
								RPM	16764	12573	10059	8382	6287	5029	4191	3143	2515
								FEED	1234	1247	1287	1287	1328	1271	1220	1117	1006
	5		◎	0.5D	1.5D (1.2D)	1.0D	1.0D (0.8D)	Vc	126	126	126	126	126	126	126	126	126
								fz	0.015	0.021	0.026	0.032	0.044	0.054	0.062	0.077	0.089
								RPM	13369	10027	8021	6685	5013	4011	3342	2507	2005
								FEED	813	834	847	856	882	860	824	770	712
	6-7	Low alloy steel	◎	0.5D	1.5D (1.2D)	1.0D	1.0D (0.8D)	Vc	158	158	158	158	158	158	158	158	158
								fz	0.018	0.025	0.032	0.038	0.053	0.063	0.073	0.089	0.100
								RPM	16764	12573	10059	8382	6287	5029	4191	3143	2515
								FEED	1234	1247	1287	1287	1328	1271	1220	1117	1006
	8-9		◎	0.5D	1.5D (1.2D)	1.0D	1.0D (0.8D)	Vc	126	126	126	126	126	126	126	126	126
								fz	0.015	0.021	0.026	0.032	0.044	0.054	0.062	0.077	0.089
								RPM	13369	10027	8021	6685	5013	4011	3342	2507	2005
								FEED	813	834	847	856	882	860	824	770	712
	10 - 11.1	High alloyed steel, and tool steel	◎	0.5D	1.5D (1.2D)	1.0D	1.0D (0.8D)	Vc	108	108	108	108	108	108	108	108	108
								fz	0.014	0.019	0.024	0.029	0.039	0.047	0.055	0.067	0.078
								RPM	11459	8594	6875	5730	4297	3438	2865	2149	1719
								FEED	660	660	660	660	674	649	633	578	534
M	12 - 13	Stainless steel	○	0.5D	1.5D (1.2D)	1.0D	1.0D (0.8D)	Vc	72	72	72	72	72	72	72	72	72
								fz	0.013	0.017	0.022	0.026	0.035	0.042	0.050	0.062	0.071
								RPM	7639	5730	4584	3820	2865	2292	1910	1432	1146
								FEED	391	385	396	391	403	389	379	353	326
	14.1		○	0.5D	1.5D (1.2D)	1.0D	1.0D (0.8D)	Vc	92	92	92	92	92	92	92	92	92
								fz	0.015	0.021	0.026	0.032	0.044	0.054	0.062	0.077	0.089
								RPM	9740	7305	5844	4870	3653	2922	2435	1826	1461
								FEED	592	608	617	623	643	626	600	561	519
	14.2		○	0.5D	1.5D (1.2D)	1.0D	1.0D (0.8D)	Vc	72	72	72	72	72	72	72	72	72
								fz	0.013	0.017	0.022	0.026	0.035	0.042	0.050	0.062	0.071
								RPM	7639	5730	4584	3820	2865	2292	1910	1432	1146
								FEED	391	385	396	391	403	389	379	353	326
K	15 - 20	Grey cast iron Nodular cast iron Malleable cast iron	○	0.5D	1.5D (1.2D)	1.0D	1.0D (0.8D)	Vc	122	122	122	122	122	122	122	122	122
								fz	0.018	0.025	0.032	0.038	0.053	0.063	0.073	0.089	0.100
								RPM	12892	9669	7735	6446	4834	3867	3223	2417	1934
								FEED	949	959	990	990	1021	978	939	859	773

* ( ) : Short length & Neck Type * Feed to be reduced by approximately 50% if Length of Cut (L.O.C.) is over 3xD
* If product's Length of Cut (L.O.C.) is below 2D, it must be applied L.O.C. x 90%

Vc = m/min. fz = mm/tooth
RPM = rev./min. FEED = mm/min.

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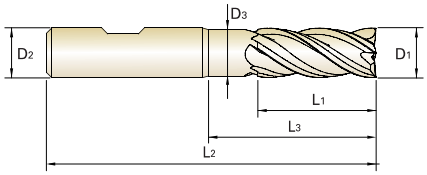
C-COATED SOLID CARBIDE END MILLS
4-FLUTE WITH EXTENDED NECK

PLAIN SHANK **HHK97**

FLAT SHANK **HHK98**

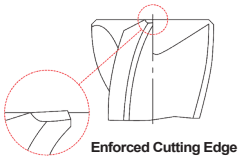


CARBIDE | 4 | 35°/37° | PLAIN | FLAT | C x 45° | C Coating

Unit : mm

EDP No.		Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter	Chamfer Size
PLAIN	FLAT	D_1	D_2	L_1	L_3	L_2	D_3	
HHK97901	**HHK98901**	**3.0**	6	8	14	57	2.7	0.10
HHK97902	**HHK98902**	**4.0**	6	11	16	57	3.7	0.15
HHK97903	**HHK98903**	**5.0**	6	13	18	57	4.7	0.15
HHK97904	**HHK98904**	**6.0**	6	13	21	57	5.5	0.20
HHK97905	**HHK98905**	**8.0**	8	19	27	63	7.5	0.20
HHK97906	**HHK98906**	**10.0**	10	22	32	72	9.2	0.30
HHK97907	**HHK98907**	**12.0**	12	26	38	83	11.0	0.35
HHK97908	**HHK98908**	**16.0**	16	32	44	92	15.0	0.40
HHK97909	**HHK98909**	**20.0**	20	38	54	104	19.0	0.50

Size	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
Up to Ø12	0 ~ -0.020	h5 (≥Ø12 : h6)
Over Ø12	0 ~ -0.030	



4-FLUTE - SIDE CUTTING & SLOTTING

◎ : Excellent ○ : Good

ISO	VDI 3323	Material Description	Recom-mended	Side Cutting Ae	Side Cutting Ap	Slotting Ae	Slotting Ap	Para-meter	Diameter (Ø) 3	4	5	6	8	10	12	16	20
P	1-4	Non-alloy steel	○	0.5D	1.5D (1.2D)	1.0D	1.0D (0.8D)	Vc	158	158	158	158	158	158	158	158	158
								fz	0.018	0.025	0.032	0.038	0.053	0.063	0.073	0.089	0.100
								RPM	16764	12573	10059	8382	6287	5029	4191	3143	2515
								FEED	1234	1247	1287	1287	1328	1271	1220	1117	1006
	5		○	0.5D	1.5D (1.2D)	1.0D	1.0D (0.8D)	Vc	126	126	126	126	126	126	126	126	126
								fz	0.015	0.021	0.026	0.032	0.044	0.054	0.062	0.077	0.089
								RPM	13369	10027	8021	6685	5013	4011	3342	2507	2005
								FEED	813	834	847	856	882	860	824	770	712
	6-7	Low alloy steel	○	0.5D	1.5D (1.2D)	1.0D	1.0D (0.8D)	Vc	158	158	158	158	158	158	158	158	158
								fz	0.018	0.025	0.032	0.038	0.053	0.063	0.073	0.089	0.100
								RPM	16764	12573	10059	8382	6287	5029	4191	3143	2515
								FEED	1234	1247	1287	1287	1328	1271	1220	1117	1006
	8-9		○	0.5D	1.5D (1.2D)	1.0D	1.0D (0.8D)	Vc	126	126	126	126	126	126	126	126	126
								fz	0.015	0.021	0.026	0.032	0.044	0.054	0.062	0.077	0.089
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								fz	0.014	0.019	0.024	0.029	0.039	0.047	0.055	0.067	0.078
								RPM	11459	8594	6875	5730	4297	3438	2865	2149	1719
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								fz	0.013	0.017	0.022	0.026	0.035	0.042	0.050	0.062	0.071
								RPM	7639	5730	4584	3820	2865	2292	1910	1432	1146
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	14.1		◎	0.5D	1.5D (1.2D)	1.0D	1.0D (0.8D)	Vc	92	92	92	92	92	92	92	92	92
								fz	0.015	0.021	0.026	0.032	0.044	0.054	0.062	0.077	0.089
								RPM	9740	7305	5844	4870	3653	2922	2435	1826	1461
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	14.2		◎	0.5D	1.5D (1.2D)	1.0D	1.0D (0.8D)	Vc	72	72	72	72	72	72	72	72	72
								fz	0.013	0.017	0.022	0.026	0.035	0.042	0.050	0.062	0.071
								RPM	7639	5730	4584	3820	2865	2292	1910	1432	1146
								FEED	391	385	396	391	403	389	379	353	326
S	31 - 35	Heat Resistant Super Alloys	○	0.25D	1.0D	1.0D	0.5D	Vc	29	29	29	29	29	29	29	29	29
								fz	0.008	0.011	0.014	0.017	0.023	0.028	0.033	0.041	0.047
								RPM	3056	2292	1833	1528	1146	917	764	573	458
								FEED	98	103	106	103	106	103	100	94	87
	36 - 37	Titanium Alloys	○	0.35D	1.0D	1.0D	0.5D	Vc	50	50	50	50	50	50	50	50	50
								fz	0.010	0.014	0.018	0.022	0.032	0.039	0.046	0.057	0.066
								RPM	5252	3939	3151	2626	1970	1576	1313	985	788
								FEED	218	214	232	235	252	247	239	224	207

* ( ) : Short length & Neck Type * Feed to be reduced by approximately 50% if Length of Cut (L.O.C.) is over 3xD
* If product's Length of Cut (L.O.C.) is below 2D, it must be applied L.O.C. x 90%

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