# TitaNox-POWER END MILLS

PLAIN SHANK **GMG40** SERIES
FLAT SHANK **GMG41** SERIES

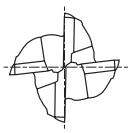
## CARBIDE, 4 FLUTE CORNER RADIUS with DOUBLE CORE

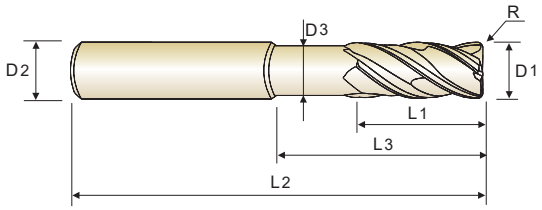
**VOLLHARTMETALL, 4 SCHNEIDEN ECKRADIUS MIT DOPPELKERN**
**CARBURE, 4 DENTS, TORIQUE AVEC ÂME DOUBLE**
**FRESA IN MD, 4 TAGLIENTI, TORICA, DOUBLE CORE**

- Double core end mill has a unique flute design for excellent chip evacuation and higher rigidity.
- The double core adds stability and aids chip flow, reducing tool deflection, improving dimensional stability and workpiece accuracy.

- Der Doppelkern hat ein einzigartiges Schneiden Design für eine exzellente Spanabfuhr und bessere Zähigkeit.
- Der Doppelkern erhöht die Stabilität und unterstützt den Spänefluss, reduziert die Werkzeugabdrängung, verbessert die Formstabilität und die Werkstückgenauigkeit.






CARBIDE | 4 | 43°/45° | PLAIN | FLAT | Y Coating

p.C449~C450

| Recommended ToolHolder | Flat Shank | Plain Shank |
|---|---|---|
| | END MILL HOLDER | POWER MILLING CHUCK |
| | - | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER |
| | - | ER COLLET CHUCK |

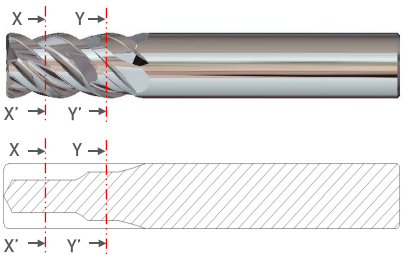
Unit : mm

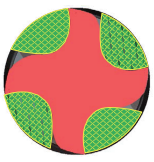
| EDP No. | | Corner Radius | Mill Diameter | Shank Diameter | Length of Cut | Length Below Shank | Overall Length | Neck Diameter |
|---|---|---|---|---|---|---|---|---|
| PLAIN | FLAT | R | $D_1$ | $D_2$ | $L_1$ | $L_3$ | $L_2$ | $D_3$ |
| GMG40060 | GMG41060 | R0.5 | **6.0** | 6 | 13 | 20 | 57 | 5.5 |
| GMG40901 | GMG41901 | R1.0 | **6.0** | 6 | 13 | 20 | 57 | 5.5 |
| GMG40080 | GMG41080 | R0.5 | **8.0** | 8 | 19 | 25 | 63 | 7.5 |
| GMG40902 | GMG41902 | R1.0 | **8.0** | 8 | 19 | 25 | 63 | 7.5 |
| GMG40903 | GMG41903 | R1.5 | **8.0** | 8 | 19 | 25 | 63 | 7.5 |
| GMG40904 | GMG41904 | R2.0 | **8.0** | 8 | 19 | 25 | 63 | 7.5 |
| GMG40100 | GMG41100 | R0.5 | **10.0** | 10 | 22 | 30 | 72 | 9.2 |
| GMG40905 | GMG41905 | R1.0 | **10.0** | 10 | 22 | 30 | 72 | 9.2 |
| GMG40906 | GMG41906 | R1.5 | **10.0** | 10 | 22 | 30 | 72 | 9.2 |
| GMG40907 | GMG41907 | R2.0 | **10.0** | 10 | 22 | 30 | 72 | 9.2 |
| GMG40120 | GMG41120 | R0.5 | **12.0** | 12 | 26 | 35 | 83 | 11.0 |
| GMG40908 | GMG41908 | R1.0 | **12.0** | 12 | 26 | 35 | 83 | 11.0 |
| GMG40909 | GMG41909 | R1.5 | **12.0** | 12 | 26 | 35 | 83 | 11.0 |
| GMG40910 | GMG41910 | R2.0 | **12.0** | 12 | 26 | 35 | 83 | 11.0 |
| GMG40911 | GMG41911 | R3.0 | **12.0** | 12 | 26 | 35 | 83 | 11.0 |
| GMG40140 | GMG41140 | R1.0 | **14.0** | 14 | 26 | 35 | 83 | 13.0 |
| GMG40912 | GMG41912 | R2.0 | **14.0** | 14 | 26 | 35 | 83 | 13.0 |
| GMG40160 | GMG41160 | R1.0 | **16.0** | 16 | 35 | 43 | 92 | 15.0 |

▶ NEXT PAGE

| Mill Dia. Tolerance (mm) | Shank Dia. Tolerance |
|---|---|
| 0 ~ - 0.03 | h5<br>* Shank Dia.≥Ø12 : h6 |

**◆ 2 STEP CORE**



**<SECTION X-X'> EXCELLENT CHIP EVACUATION**



**<SECTION Y-Y'> HIGHER RIGIDITY**

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| 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 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 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 | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | | | | |

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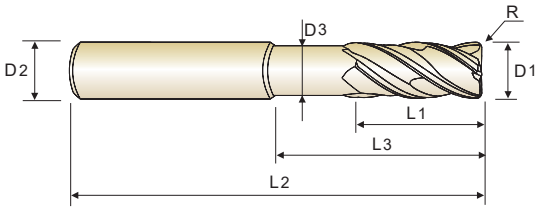


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p.C449~C450

Recommended ToolHolder

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|---|---|---|
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Unit : mm

| EDP No. | | Corner Radius | Mill Diameter | Shank Diameter | Length of Cut | Length Below Shank | Overall Length | Neck Diameter |
|---|---|---|---|---|---|---|---|---|
| PLAIN | FLAT | R | $D_1$ | $D_2$ | $L_1$ | $L_3$ | $L_2$ | $D_3$ |
| GMG40913 | GMG41913 | R1.5 | **16.0** | 16 | 35 | 43 | 92 | 15.0 |
| GMG40914 | GMG41914 | R2.0 | **16.0** | 16 | 35 | 43 | 92 | 15.0 |
| GMG40915 | GMG41915 | R3.0 | **16.0** | 16 | 35 | 43 | 92 | 15.0 |
| GMG40916 | GMG41916 | R4.0 | **16.0** | 16 | 35 | 43 | 92 | 15.0 |
| GMG40200 | GMG41200 | R1.0 | **20.0** | 20 | 44 | 56 | 110 | 19.0 |
| GMG40917 | GMG41917 | R1.5 | **20.0** | 20 | 44 | 56 | 110 | 19.0 |
| GMG40918 | GMG41918 | R2.0 | **20.0** | 20 | 44 | 56 | 110 | 19.0 |
| GMG40919 | GMG41919 | R3.0 | **20.0** | 20 | 44 | 56 | 110 | 19.0 |
| GMG40920 | GMG41920 | R3.5 | **20.0** | 20 | 44 | 56 | 110 | 19.0 |
| GMG40921 | GMG41921 | R4.0 | **20.0** | 20 | 44 | 56 | 110 | 19.0 |
| GMG40250 | GMG41250 | R1.0 | **25.0** | 25 | 55 | 70 | 130 | 24.0 |
| GMG40922 | GMG41922 | R1.5 | **25.0** | 25 | 55 | 70 | 130 | 24.0 |
| GMG40923 | GMG41923 | R2.0 | **25.0** | 25 | 55 | 70 | 130 | 24.0 |
| GMG40924 | GMG41924 | R3.0 | **25.0** | 25 | 55 | 70 | 130 | 24.0 |
| GMG40925 | GMG41925 | R4.0 | **25.0** | 25 | 55 | 70 | 130 | 24.0 |

| Mill Dia. Tolerance (mm) | Shank Dia. Tolerance |
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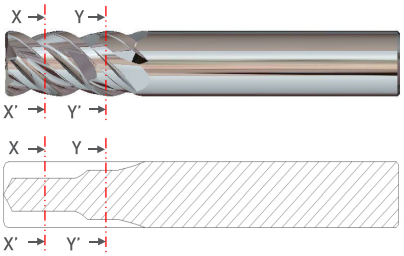
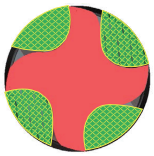
### ◆ 2 STEP CORE



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| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
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| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | | | | |