High-speed milling cutter with indexable inserts

Four cutting edges for the best possible results

Maximum removal rates thanks to stable cutting insert

When maximum cost-effectiveness and process reliability are required for roughing with high chip removal rates, the GHM high-speed milling cutter with indexable inserts is the first choice.

This is ensured by the stable and high-quality holder tools, equipped with double-sided cutting plates. These high-performance cutting plates impress with four usable cutting edges and ensure the best machining results.

x **Machining time** reduced by 25 %

X double-sided indexable insert with four usable cutting edges **刀片兩面共四個角可以使用**

X two different types of inserts for ISO P & K and ISO M & S **兩種刀片選擇，P&K及 M&S**

4 usable cutting edges **四個切削角可以使用**

process-reliable
M3 Torx Plus screw
可靠性高
M3 Torx Plus螺絲鎖固

powerful
HiPIMS coating
強力型
HiPIMS 塗層

available in the diameter range
Ø 16.0 – 80.0 mm
外徑範圍
Ø 16.0–80.0 mm

carrier available as
straight shank, screw-in & shell milling cutter
直柄、螺絲鎖固、殼型面銑刀盤等三種形式

Application example 實際加工案例

Component:	塑膠射出模具 Injection moulding tool, Toolox33
Tool:	#28001, Ø 25 mm
Customer target:	Reduction of machining time
Difficulty:	Dry machining, cooling with air 乾式切削 空氣冷卻

Cutting data:

Gühring	Competition
v_c 200 m/min	v_c 180 m/min
f_z 1.2 mm	f_z 1.0 mm
a_p 0.9 mm	a_p 0.8 mm

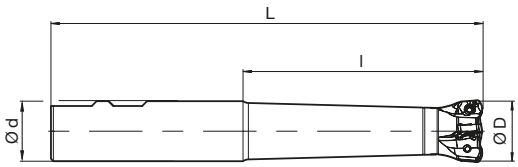
High feed milling cutters with indexable inserts, straight shank Weldon

Article no. **28000**

直柄 側固型

NEW WN HB R

for double-sided indexable inserts type XNMX 07



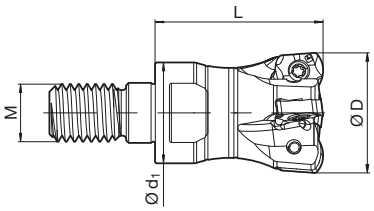
D mm	d mm	l mm	L mm	刃數 Z	Description	Article no. 28000 Order no.	價格
16	16	50	150	2	GHM.016.050.C.016.02.07	28000 16.000	8,300
20	20	90	160	3	GHM.020.090.C.020.03.07	28000 20.000	9,500
25	25	100	180	4	GHM.025.100.C.025.04.07	28000 25.000	10,400
32	32	120	200	5	GHM.032.120.C.032.05.07	28000 32.000	12,000

High feed milling cutters with indexable inserts, screw-in thread Article no. **28001**

螺絲鎖固型

NEW WN R

for double-sided indexable inserts type XNMX 07



需配合內螺紋鎖固型刀桿，例如＃4199

				刃數	Article no.	28001	
D mm	M	L mm	d1 mm	Z	Description	Order no.	價格
16	M 8	25	13	2	GHM.016.025.M.08.02.07	28001 16.000	7,800
20	M10	28	18	3	GHM.020.028.M.10.03.07	28001 20.000	9,300
25	M12	35	21	4	GHM.025.035.M.12.04.07	28001 25.000	10,300
32	M16	35	29	5	GHM.032.035.M.16.05.07	28001 32.000	11,900
35	M16	35	29	5	GHM.035.035.M.16.05.07	28001 35.000	12,100
35	M16	35	29	6	GHM.035.035.M.16.06.07	28001 35.001	12,400
40	M16	35	29	5	GHM.040.035.M.16.05.07	28001 40.000	12,400
40	M16	35	29	6	GHM.040.035.M.16.06.07	28001 40.001	13,100
42	M16	35	29	7	GHM.042.035.M.16.07.07	28001 42.000	14,200

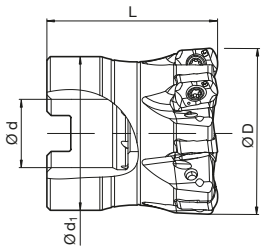
High feed milling cutters with indexable inserts, shell milling cutter

Article no. **28002**

殼型面銑刀盤型

NEW WN R

for double-sided indexable inserts type XNMX 07



需配合面銑刀盤刀桿，例如＃4230 BT；＃4361 HSK-A

D mm	d mm	L mm	d1 mm	刃數 Z	Description	Article no. 28002 Order no.	價格
40	16	40	36	7	GHM.040.040.F.16.07.07	28002 40.000	13,400
50	22	40	42	6	GHM.050.040.F.22.06.07	28002 50.000	13,500
50	22	40	42	8	GHM.050.040.F.22.08.07	28002 50.001	15,600
52	22	40	40	8	GHM.052.040.F.22.08.07	28002 52.000	16,000
63	22	40	48	9	GHM.063.040.F.22.09.07	28002 63.000	17,700
80	27	50	60	10	GHM.080.050.F.27.10.07	28002 80.000	21,300

Indexable inserts XNMX, double-sided

Article no. **28003**

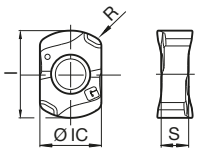
P &K類材質用刀片

cutting data see page 103

P	M	K	N	S	H
●	○	●		○	

NEW VHM XNMX WN

4 usable cutting edges • stable cutting edge • type PK2011
兩面4個角可以使用



Article no. **28003**

IC mm	PR mm	R mm	l mm	S mm	Size	Description	Order no.	價格
7.05	1.9	1.0	10	3.6	07	XNMX 07T319 T	28003 7.000	900

Indexable inserts XNMX, double-sided

Article no. **28004**

M ＆S 類材質用刀片

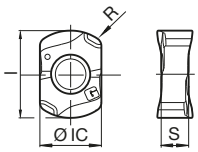
cutting data see page 104

P	M	K	N	S	H
●	●	○		○	

NEW VHM XNMX WN

4 usable cutting edges • stable cutting edge • type MP3021

兩面4個角可以使用



IC mm	PR mm	R mm	l mm	S mm	Size	Description	Article no.	Order no.	價格
7.05	1.9	1.0	10	3.6	07	XNMX 07T319 T	28004	28004 7.000	900

Tool holders for screw-in milling cutters HSK-A

Article no. **4199**

NEW HSK-A

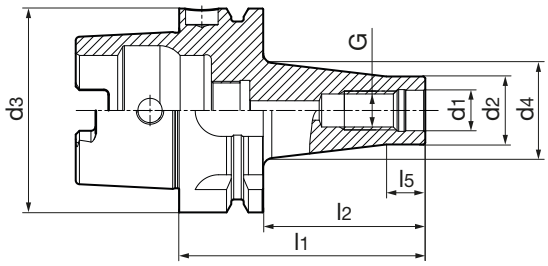
Product information:

HSK-A according to ISO 12164-1 / DIN 69893-1 • balancing quality: G 2.5 / 25,000 rev./min or rev. ≤ 1 gmm • concentricity < 5 µm, l2 from 150 mm < 7 µm

Suitable accessories separately available:

• coolant supply set art. no. 4949

HSK-A 內螺紋鎖固型刀桿



d3 mm	G	d1 mm	d2 mm	d4 mm	l1 mm	l2 mm	l5 mm	kg	Article no. 4199 Order no.	價格
63.0	M 8	8.5	13	23	76.0	32.0	12	0.71	4199 8.063	12,000
63.0	M10	10.5	18	25	76.0	32.0	12	0.75	4199 10.063	16,000
63.0	M12	12.5	21	30	76.0	32.0	12	0.79	4199 12.063	20,000
63.0	M16	17.0	29	34	76.0	32.0	12	0.88	4199 16.063	23,000
63.0	M 8	8.5	13	30	126.0	32.0	12	0.89	4199 8.163	14,000
63.0	M10	10.5	18	35	126.0	32.0	12	1.02	4199 10.163	17,000
63.0	M 8	8.5	13	32	176.0	32.0	12	1.07	4199 8.263	12,000
63.0	M12	12.5	21	38	126.0	32.0	12	1.10	4199 12.163	16,000
63.0	M16	17.0	29	40	126.0	32.0	12	1.28	4199 16.163	20,000
63.0	M10	10.5	18	45	176.0	32.0	12	1.51	4199 10.263	23,000
63.0	M12	12.5	21	45	176.0	32.0	12	1.57	4199 12.263	14,000
63.0	M16	17.0	29	48	176.0	32.0	12	1.89	4199 16.263	17,000
100.0	M 8	8.5	13	28	79.0	50.0	12	2.09	4199 8.100	12,000
100.0	M10	10.5	18	30	79.0	50.0	12	2.13	4199 10.100	16,000
100.0	M12	12.5	21	33	79.0	50.0	12	2.16	4199 12.100	20,000
100.0	M16	17.0	29	34	79.0	50.0	12	2.23	4199 16.100	23,000
100.0	M 8	8.5	13	30	129.0	50.0	12	2.24	4199 8.101	14,000
100.0	M 8	8.5	13	30	179.0	50.0	12	2.37	4199 8.102	17,000
100.0	M10	10.5	18	35	129.0	50.0	12	2.37	4199 10.101	12,000
100.0	M12	12.5	21	38	129.0	50.0	12	2.45	4199 12.101	16,000
100.0	M16	17.0	29	40	129.0	50.0	12	2.64	4199 16.101	20,000
100.0	M10	10.5	18	38	179.0	50.0	12	2.66	4199 10.102	23,000
100.0	M12	12.5	21	45	179.0	50.0	12	2.91	4199 12.102	14,000
100.0	M16	17.0	29	50	179.0	50.0	12	3.31	4199 16.102	17,000

High feed milling cutters ISO P & K

Correction factors	Factor V_c	Factor fz
stable machining conditions	+ 25 %	+ 25 %
short projection (< 3xD)	0 %	0 %
mid projection (≥ 3xD)	- 25 %	- 25 %
long projection (≥ 5xD)	- 40 %	- 40 %

Machining group	Application	v_c (m/min)	a_p max. (mm)	a_e max.	f_z (mm)
P1.1.1 Unalloyed steel, annealed, 0.15 % C, Rm 420 N/mm², 125 HB	Roughing	200	1	0.6xD	1.200
P1.1.2 Unalloyed steel, heat-treated, 0.15 % C, Rm 420 N/mm², 125 HB	Roughing	200	1	0.6xD	1.200
P1.1.3 Unalloyed steel, annealed, 0.45 % C, Rm 640 N/mm², 190 HB	Roughing	200	1	0.6xD	1.200
P1.1.4 Unalloyed steel, heat-treated, 0.45 % C, Rm 640 N/mm², 190 HB	Roughing	200	1	0.6xD	1.200
P1.1.5 Unalloyed steel, heat-treated, 0.45 % C, Rm 850 N/mm², 250 HB	Roughing	180	1	0.6xD	1.200
P1.1.6 Unalloyed steel, annealed, 0.75 % C, Rm 915 N/mm², 270 HB	Roughing	180	1	0.6xD	1.200
P1.1.7 Unalloyed steel, heat-treated, 0.75 % C, Rm 1020 N/mm², 300 HB	Roughing	160	1	0.6xD	1.200
P2.1.1 Low-alloy steel, annealed, Rm 610 N/mm², 180 HB	Roughing	170	1	0.6xD	1.200
P2.1.2 Low-alloy steel, heat-treated, Rm 930 N/mm², 275 HB	Roughing	170	1	0.6xD	1.200
P2.1.3 Low-alloy steel, heat-treated, Rm 1020 N/mm², 300 HB	Roughing	155	1	0.6xD	1.200
P2.1.4 Low-alloy steel, heat-treated, Rm 1190 N/mm², 350 HB	Roughing	155	1	0.6xD	1.200
P3.1.1 High-alloy steel and tool steel, annealed, Rm 680 N/mm², 200 HB	Roughing	160	1	0.6xD	1.050
P3.1.2 High-alloy steel and tool steel, hardened and tempered, Rm 1100 N/mm², 325 HB	Roughing	145	1	0.6xD	1.050
M1.1.1 Stainless steel, ferritic/martensitic, with machining additives					
M1.1.2 Stainless steel, ferritic/martensitic, annealed, Rm 680 N/mm², 200 HB					
M1.1.3 Stainless steel, ferritic/martensitic, heat-treated, Rm 810 N/mm², 240 HB					
M2.1.1 Stainless steel, austenitic, quenched, 180 HB					
M2.2.1 Duplex steel, high-strength stainless steels					
K1.1.1 Grey cast iron, pearlitic/ferritic, 180 HB	Roughing	255	1	0.6xD	1.200
K1.1.2 Grey cast iron, pearlitic/martensitic, 260 HB	Roughing	230	1	0.6xD	1.200
K1.2.1 Cast iron with spheroidal graphite, ferritic, 160 HB	Roughing	255	1	0.6xD	1.200
K1.2.2 Cast iron with spheroidal graphite, pearlitic, 250 HB	Roughing	230	1	0.6xD	1.200
K1.3.1 Malleable cast iron, ferritic, 130 HB	Roughing	255	1	0.6xD	1.200
K1.3.2 Malleable cast iron, pearlitic, 230 HB	Roughing	230	1	0.6xD	1.200
K2.1.1 Vermicular graphite cast iron (GJV)	Roughing	230	1	0.6xD	1.200
K2.2.1 Austenitic-ferritic spheroidal graphite cast iron (ADI)	Roughing	210	1	0.6xD	1.200
N1.1.1 Wrought aluminium alloys, non-hardened, 60 HB					
N1.1.2 Wrought aluminium alloys, hardened, 100 HB					
N2.1.1 Aluminium casting alloys, non-hardened, ≤ 12 % Si, 75 HB					
N2.1.2 Aluminium casting alloys, hardened, ≤ 12 % Si, 90 HB					
N2.1.3 Aluminium casting alloys, non-hardened, > 12 % Si, 130 HB					
N3.1.1 Copper and copper alloys: Free-machining alloy, Pb > 1 %					
N3.1.2 Copper and copper alloys: CuZn, CuSnZn					
N3.1.3 Copper and copper alloys: CuSn, lead-free copper and copper electrolyte					
N4.1.1 Non-metallic materials: Duroplastics, fibre-reinforced plastics					
N4.1.2 Non-metallic materials: Hard rubber, wood, etc.					
N4.1.3 Non-metallic materials: Graphite					
S1.1.1 Heat-resistant alloys, Fe-based, annealed, 200 HB					
S1.1.2 Heat-resistant alloys, Fe-based, hardened, 280 HB					
S1.1.3 Heat-resistant alloys, Ni- or Co-based, annealed, 250 HB					
S1.1.4 Heat-resistant alloys, Ni- or Co-based, hardened, 350 HB					
S1.1.5 Heat-resistant alloys, Ni- or Co-based, cast, 320 HB					
S2.1.1 Titanium alloys, pure titanium, Rm 400 N/mm²					
S2.1.2 Titanium alloys, Alpha and Beta alloys, hardened, Rm 1050 N/mm²					
H1.1.1 Hardened steel, hardened and tempered, < 55 HRC					
H1.1.2 Hardened steel, hardened and tempered, < 60 HRC					
H1.1.3 Hardened steel, hardened and tempered, > 60 HRC					
H2.1.1 Chilled cast iron, 400 HB					
H2.1.2 Chilled cast iron, hardened and tempered, < 55 HRC					

All the values stated are guide values. You can find detailed cutting values online in our Gühring Navigator at navigator.guehring.de.

High feed milling cutters ISO M & S

Correction factors	Factor V_c	Factor fz
stable machining conditions	+ 25 %	+ 25 %
short projection (< 3xD)	0 %	0 %
mid projection (≥ 3xD)	- 25 %	- 25 %
long projection (≥ 5xD)	- 40 %	- 40 %

Machining group	Application	v_c (m/min)	a_p max. (mm)	a_e max.	f_z (mm)
P1.1.1 Unalloyed steel, annealed, 0.15 % C, Rm 420 N/mm², 125 HB					
P1.1.2 Unalloyed steel, heat-treated, 0.15 % C, Rm 420 N/mm², 125 HB					
P1.1.3 Unalloyed steel, annealed, 0.45 % C, Rm 640 N/mm², 190 HB					
P1.1.4 Unalloyed steel, heat-treated, 0.45 % C, Rm 640 N/mm², 190 HB					
P1.1.5 Unalloyed steel, heat-treated, 0.45 % C, Rm 850 N/mm², 250 HB					
P1.1.6 Unalloyed steel, annealed, 0.75 % C, Rm 915 N/mm², 270 HB					
P1.1.7 Unalloyed steel, heat-treated, 0.75 % C, Rm 1020 N/mm², 300 HB					
P2.1.1 Low-alloy steel, annealed, Rm 610 N/mm², 180 HB					
P2.1.2 Low-alloy steel, heat-treated, Rm 930 N/mm², 275 HB					
P2.1.3 Low-alloy steel, heat-treated, Rm 1020 N/mm², 300 HB					
P2.1.4 Low-alloy steel, heat-treated, Rm 1190 N/mm², 350 HB					
P3.1.1 High-alloy steel and tool steel, annealed, Rm 680 N/mm², 200 HB					
P3.1.2 High-alloy steel and tool steel, hardened and tempered, Rm 1100 N/mm², 325 HB					
M1.1.1 Stainless steel, ferritic/martensitic, with machining additives	Roughing	130	1	0.6xD	1.200
M1.1.2 Stainless steel, ferritic/martensitic, annealed, Rm 680 N/mm², 200 HB	Roughing	120	1	0.6xD	1.080
M1.1.3 Stainless steel, ferritic/martensitic, heat-treated, Rm 810 N/mm², 240 HB	Roughing	120	1	0.6xD	1.080
M2.1.1 Stainless steel, austenitic, quenched, 180 HB	Roughing	110	1	0.6xD	1.050
M2.2.1 Duplex steel, high-strength stainless steels	Roughing	90	1	0.6xD	0.840
K1.1.1 Grey cast iron, pearlitic/ferritic, 180 HB					
K1.1.2 Grey cast iron, pearlitic/martensitic, 260 HB					
K1.2.1 Cast iron with spheroidal graphite, ferritic, 160 HB					
K1.2.2 Cast iron with spheroidal graphite, pearlitic, 250 HB					
K1.3.1 Malleable cast iron, ferritic, 130 HB					
K1.3.2 Malleable cast iron, pearlitic, 230 HB					
K2.1.1 Vermicular graphite cast iron (GJV)					
K2.2.1 Austenitic-ferritic spheroidal graphite cast iron (ADI)					
N1.1.1 Wrought aluminium alloys, non-hardened, 60 HB					
N1.1.2 Wrought aluminium alloys, hardened, 100 HB					
N2.1.1 Aluminium casting alloys, non-hardened, ≤ 12 % Si, 75 HB					
N2.1.2 Aluminium casting alloys, hardened, ≤ 12 % Si, 90 HB					
N2.1.3 Aluminium casting alloys, non-hardened, > 12 % Si, 130 HB					
N3.1.1 Copper and copper alloys: Free-machining alloy, Pb > 1 %					
N3.1.2 Copper and copper alloys: CuZn, CuSnZn					
N3.1.3 Copper and copper alloys: CuSn, lead-free copper and copper electrolyte					
N4.1.1 Non-metallic materials: Duroplastics, fibre-reinforced plastics					
N4.1.2 Non-metallic materials: Hard rubber, wood, etc.					
N4.1.3 Non-metallic materials: Graphite					
S1.1.1 Heat-resistant alloys, Fe-based, annealed, 200 HB	Roughing	60	1	0.6xD	1.200
S1.1.2 Heat-resistant alloys, Fe-based, hardened, 280 HB	Roughing	60	1	0.6xD	1.200
S1.1.3 Heat-resistant alloys, Ni- or Co-based, annealed, 250 HB	Roughing	60	1	0.6xD	1.200
S1.1.4 Heat-resistant alloys, Ni- or Co-based, hardened, 350 HB	Roughing	55	1	0.6xD	1.080
S1.1.5 Heat-resistant alloys, Ni- or Co-based, cast, 320 HB	Roughing	55	1	0.6xD	1.080
S2.1.1 Titanium alloys, pure titanium, Rm 400 N/mm²	Roughing	50	1	0.6xD	1.050
S2.1.2 Titanium alloys, Alpha and Beta alloys, hardened, Rm 1050 N/mm²	Roughing	40	1	0.6xD	0.840
H1.1.1 Hardened steel, hardened and tempered, < 55 HRC					
H1.1.2 Hardened steel, hardened and tempered, < 60 HRC					
H1.1.3 Hardened steel, hardened and tempered, > 60 HRC					
H2.1.1 Chilled cast iron, 400 HB					
H2.1.2 Chilled cast iron, hardened and tempered, < 55 HRC					

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