

GÜHRING

德國鈷領



GÜHRING Mould & Die

GÜHRING

模具加工 Mould & Die



8,000

employees worldwide

全球 8,000名員工、900個銷售人員

900

sales representatives worldwide



100,000

articles in the standard range

標準品約 100,000個品項



Quality

Made in Germany

德國製造 品質保證



1.1 billion

turnover

全球營業額達 11億歐元



2,400

tonnes of carbide annually

一年生產 2,400噸鎢鋼



48

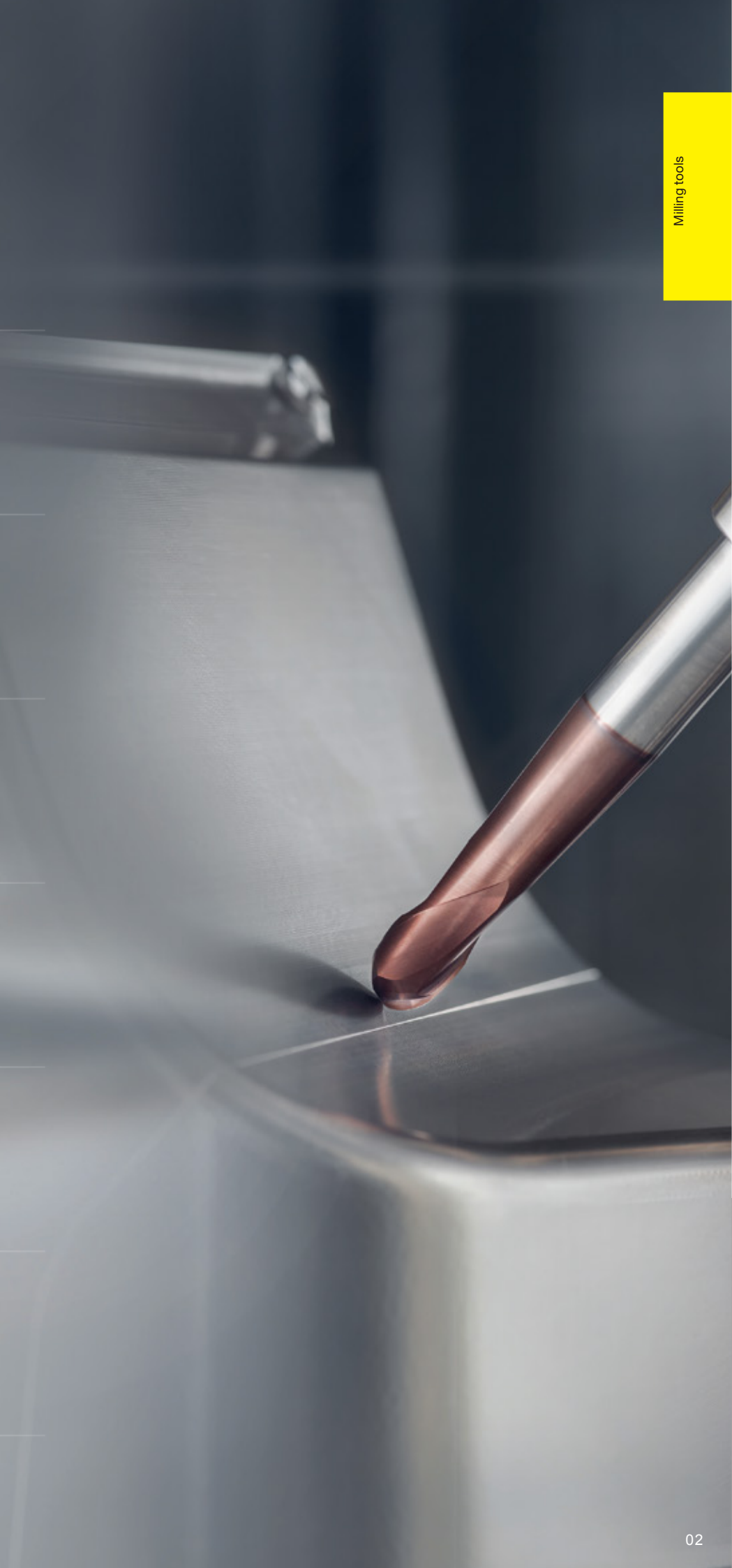
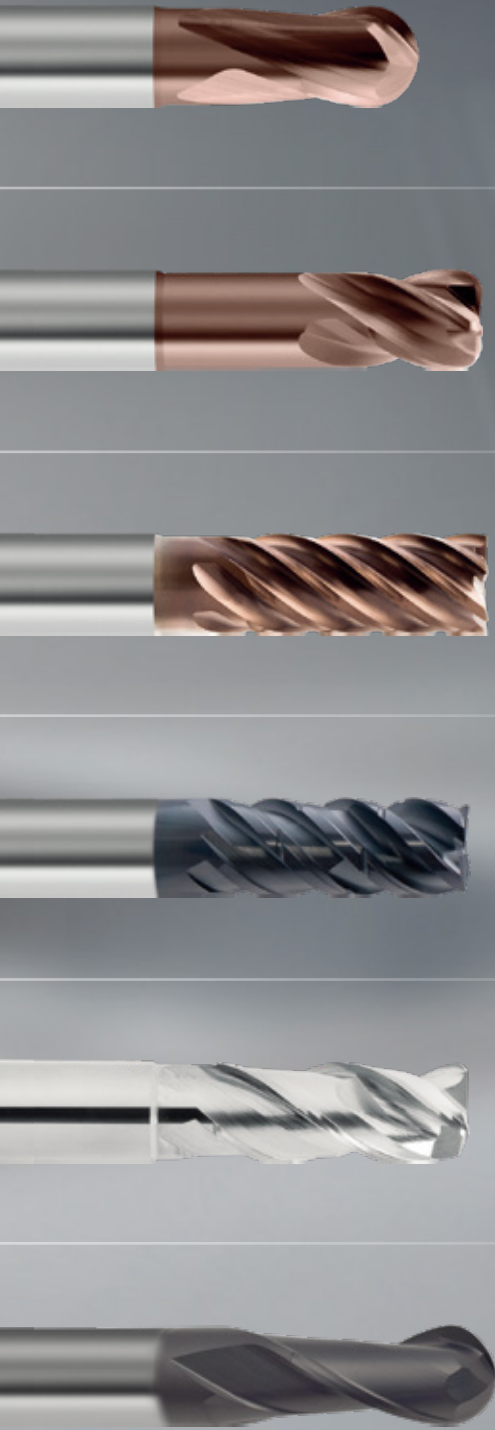
country subsidiaries

You benefit from 125 years of experience in tool development. Our range of cutting tools is well established in the market, has been specially optimised for the requirements of mould & die and has been expanded with additional dimensioning and new products. In addition to quantity, quality also matters, we have therefore invested in specialised production and measurement technologies at our site in Germany –for tools you can rely on.

德國鈷領有 125 年的刀具製造與開發經驗，我們的切削刀具已在市場上已經建立了良好的基礎，針對模具加工的要求進行了專門的改良優化，並且已經擴充了新的尺寸和新產品，除了產量之外品質也很重要，因此我們在德國工廠投資了專門的生產和量測設備—是您可以信賴的刀具。

GÜHRING

Perfection in Machining



G-MOLD



New milling cutters 新銑刀
specially designed for mould making
特殊設計用於模具加工

平順的縮頸間隙讓加工無干擾
Neck clearance with smooth transitions
for **interference-free ranges**.

光滑且刃口保護的 Signum & Perrox 塗層
可大大地延長刀具壽命和得到完美的工件表面
Maximum tool life and perfect
surfaces thanks to **smooth and
edge-resistant Signum & Perrox coating**.

The **GühroJet peripheral cooling**
allows perfect chip removal by means of
compressed air or internal cooling.
GühroJet 外圍冷卻設計，可以使用壓縮空氣
或內部冷卻液來完美去除切屑

The **ultra-hard carbide substrate**
designed for mould & die is around 200 HV
harder and finer-grained. The finest grains
guarantee stable, long-lasting cutting edges
and the best surfaces on the component
thanks to homogeneous wear behaviour.
專為模具加工設計的鎢鋼材質硬度約 200 HV，材質顆粒
更細，由於刃口均勻的磨耗，最細緻的碳化鎢顆粒確保了
加工刀具刃口的穩定與持久，且得到了工件最佳表面。

i G-Mold programme from p. 29

G-Mold

μ 65
65 B

Precision tool 高精度刀具

Form

B = Ballnose
T = Torus
F = Finisher
FR = Radiusfinisher
U = Universal
HF = High Feed

suitable for up to 適用於 HRC 硬度
48/55/65 HRC 48/55/65 的材質

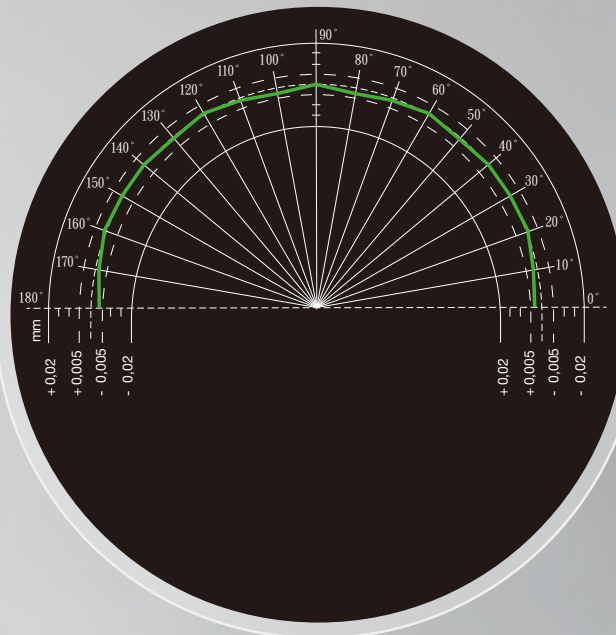
G- Mold μ 高精度銑刀
High-precision milling cutters

G-Mold μ

μ -precise radius accuracy
and line shape

for reproducible component shape accuracy

μ 級的半徑精度和線形，可得到高精度與重複性高的部件形狀



i G-Mold μ programme



P	M	K	N	S	H	Tool illustration	Z	Hardness	Cutting edge form	Length	Helix angle °	Tool material	Surface	d1/mm	Article no.	Page
Ball nose end mills G-Mold μ 65 B 球刀 鑄鐵/高硬度短屑材質用 中心出水 HRC 65u/ 25°/ -2°/ X																
○	●	●	●	●	●		2	65 HRC	$R_{\pm 0,005}$		25°	VHM	X	0.200 - 12.000	6815	09
○	●	●	●	●	●		2	65 HRC	$R_{\pm 0,005}$		25°	VHM	X	0.200 - 12.000	6816	10
○	●	●	●	●	●		2	65 HRC	$R_{\pm 0,005}$		25°	VHM	X	0.200 - 12.000	6817	11
○	●	●	●	●	●		2	65 HRC	$R_{\pm 0,005}$		25°	VHM	X	0.200 - 12.000	6818	12
○	●	●	●	●	●		2	65 HRC	$R_{\pm 0,005}$		25°	VHM	X	0.200 - 8.000	6819	13
Ball nose end mills G-Mold 65 B 球刀 鑄鐵/高硬度短屑材質用 中心出水 HRC 65/ 30°/ -7°/ XY																
○	●	●	●	●	●		2	65 HRC	$R_{\pm 0,01}$		30°	VHM	XY	0.500 - 12.000	6832	14
○	●	●	●	●	●		2	65 HRC	$R_{\pm 0,01}$		30°	VHM	XY	0.500 - 12.000	6833	15
○	●	●	●	●	●		2	65 HRC	$R_{\pm 0,01}$		30°	VHM	XY	0.500 - 10.000	6834	16
○	●	●	●	●	●		4	65 HRC	$R_{\pm 0,02}$		30°	VHM	XY	1.000 - 12.000	6835	17
○	●	●	●	●	●		4	65 HRC	$R_{\pm 0,02}$		30°	VHM	XY	1.000 - 12.000	6836	18
Ball nose end mills G-Mold 55 B 球刀 泛用型 HRC 55/ 30°/ +8°/ XY																
●	●	○	●	●	●		2	55 HRC	$R_{\pm 0,01}$		30°	VHM	XY	0.500 - 12.000	6844	19
●	●	○	●	●	●		2	55 HRC	$R_{\pm 0,01}$		30°	VHM	XY	0.500 - 12.000	6845	20
●	●	○	●	●	●		2	55 HRC	$R_{\pm 0,01}$		30°	VHM	XY	0.500 - 10.000	6846	21
●	●	○	●	●	●		2	55 HRC	$R_{\pm 0,01}$		30°	VHM	XY	0.500 - 8.000	6847	22
●	●	○	●	●	●		4	55 HRC	$R_{\pm 0,02}$		30°	VHM	XY	1.000 - 12.000	6848	23
●	●	○	●	●	●		4	55 HRC	$R_{\pm 0,02}$		30°	VHM	XY	1.000 - 12.000	6849	24



P	M	K	N	S	H	Tool illustration	Z	Hardness	Cutting edge form	Length	Helix angle °	Tool material	Surface	d1/mm	Article no.	Page
						Torus end mills G-Mold μ 65 T	圓鼻刀 鑄鐵/高硬度短屑材質用 HRC 65u/ 36°/ +0°/ X									
○	●	●	●	●	●		2-4	65 HRC	$R_{\pm 0,005}$		36°	VHM	X	0.300 - 12.000	6820	25
○	●	●	●	●	●		2-4	65 HRC	$R_{\pm 0,005}$		36°	VHM	X	0.300 - 12.000	6821	26
○	●	●	●	●	●		2-4	65 HRC	$R_{\pm 0,005}$		36°	VHM	X	0.300 - 12.000	6822	27
○	●	●	●	●	●		2-4	65 HRC	$R_{\pm 0,005}$		36°	VHM	X	0.300 - 12.000	6823	28
○	●	●	●	●	●		2-4	65 HRC	$R_{\pm 0,005}$		36°	VHM	X	0.300 - 8.000	6824	29
						Torus end mills G-Mold 65 T	圓鼻刀 鑄鐵/高硬度短屑材質用 HRC 65/ 30°/ -7°/ X									
○	●	●	●	●	●		4	65 HRC	$R_{\pm 0,01}$		30°	VHM	X	1.000 - 12.000	6837	30
○	●	●	●	●	●		4	65 HRC	$R_{\pm 0,01}$		30°	VHM	X	1.000 - 12.000	6838	31
						Torus end mills G-Mold 55 T	圓鼻刀 泛用型 HRC 55/ 30°/ +8°/ XY									
●	●	●	○	●	●		2	55 HRC	$R_{\pm 0,01}$		30°	VHM	XY	0.500 - 12.000	6850	32, 33
●	●	●	○	●	●		2	55 HRC	$R_{\pm 0,01}$		30°	VHM	XY	0.500 - 12.000	6851	34, 35

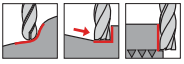


P	M	K	N	S	H	Tool illustration	Z	Hardness	Cutting edge form	Length	Helix angle °	Tool material	Surface	d1/mm	Article no.	Page
Torus end mills G-Mold 55 T						圓鼻刀 泛用型 HRC 55/ 30°/ +8°/ XY										
•	•	•	•	•	•		2	55 HRC	R±0,01		30°	VHM	XY	1.000 - 10.000	6852	36
•	•	•	•	•	•		2	55 HRC	R±0,01		30°	VHM	XY	1.000 - 8.000	6853	37
•	•	•	•	•	•		4	55 HRC	R±0,01		30°	VHM	XY	1.000 - 12.000	6854	38
•	•	•	•	•	•		4	55 HRC	R±0,01		30°	VHM	XY	1.000 - 12.000	6855	39
High feed end mills G-Mold 65 HF						4刃圓鼻刀 中心出水 泛用型 HRC 65/ 30°/ -7°/ XY										
•	•	•	•	•	•		4	65 HRC			30°	VHM	XY	1.000 - 16.000	6830	40
•	•	•	•	•	•		4	65 HRC			30°	VHM	XY	1.000 - 16.000	6814	41
•	•	•	•	•	•		4	65 HRC			30°	VHM	XY	1.000 - 16.000	6831	42
Finishing end mills G-Mold μ 48 F						4~6刃側銑刀 泛用型 HRC 48u/ 40°/ +12°/ X										
•	•	•	•	•	•		4-6	48 HRC	45°		40°	VHM	X	3.000 - 20.000	6825	43
•	•	•	•	•	•		4-6	48 HRC	45°	3xD	40°	VHM	X	3.000 - 20.000	6826	44
Finishing end mills G-Mold μ 65 F						4~6刃側銑刀 鑄鐵/高硬度短屑材質用 HRC 65u/ 42°/ -3°/ X										
•	•	•	•	•	•		4-6	65 HRC	45°		42°	VHM	X	3.000 - 20.000	6827	45
•	•	•	•	•	•		4-6	65 HRC	45°	3xD	42°	VHM	X	3.000 - 20.000	6828	46
Finishing end mills G-Mold 65 F						6刃側銑刀 鑄鐵/高硬度短屑材質用 HRC 65/ 42°/ -3°/ Y										
•	•	•	•	•	•		6	65 HRC	45°		42°	VHM	Y	3.000 - 20.000	6945	47
•	•	•	•	•	•		6	65 HRC	45°		42°	VHM	Y	3.000 - 20.000	6946	48
Finishing end mills with corner radius G-Mold 65 FR						6刃側銑刀 鑄鐵/高硬度短屑材質用 HRC 65/ 42°/ -3°/ Y										
•	•	•	•	•	•		6	65 HRC	R±0,02		42°	VHM	Y	3.000 - 16.000	6947	49



P	M	K	N	S	H	Tool illustration	Z	Hardness	Cutting edge form	Length	Helix angle °	Tool material	Surface	d1/mm	Article no.	Page
○	●	●	●	●	●	Finishing end mills with corner radius G-Mold 65 FR 6刃側銑刀 加長型 鑄鐵/高硬度短屑 材質用 HRC 65/ 42°/ -3°/ Y	6	65 HRC	R±0,02		42°	VHM	Y	3.000 - 16.000	6948	50
○	●	●	●	●	●	Ratio end mills G-Mold 65 U 4刃不等分割 雙螺旋角側銑刀 鑄鐵/高硬度短屑 材質用 HRC 65/ 40/42°/ -3°/ Y	4	65 HRC	45°		40° 42°	VHM	Y	3.000 - 20.000	6944	51
●	●	●	○	●	●	Micro-precision milling cutters MicroMill μ 55 小徑3~4刃細頸銑刀 泛用型 HRC 55u/ 30°/ +4°/ X	3-4	55 HRC	45°		30°	VHM	X	0.200 - 3.000	6829	53, 54

Ball nose end mills G-Mold μ 65 B

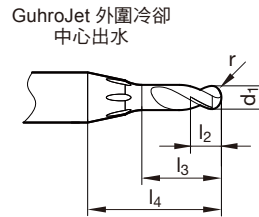
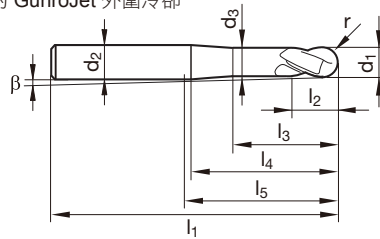


P	○
M	○
K	●
N	○
S	○
H	●

GÜHRING NAVIGATOR

Cutting data page 55-58 切削參數請參閱 55-58頁

- High-precision ball nose end mills for maximum form accuracy
- exact tolerance of the radius contour $r = 0.5 \times d1 \pm 0.005$ mm
- \varnothing tolerance $d1$ of $\varnothing 0.2-3$ mm $+0.000/-0.010$ mm
- with GührJet peripheral cooling from $\varnothing 0.2-3$ mm
- centre cutting
- neck clearance
- 高精度球型銑刀，確保最高形狀精度
- 半徑輪廓的精確公差 $r = 0.5 \times d1 \pm 0.005$ mm
- \varnothing 公差 $d1$ 從 $\varnothing 0.2-3$ mm $+0.000/-0.010$ mm
- 帶有 $\varnothing 0.2-3$ mm 的 GührJet 外圍冷卻
- 端刀過中心可切削
- 頸部縮頸研磨



GührJet 外圍冷卻
中心出水



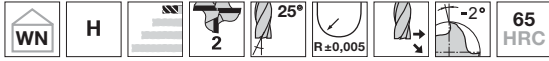
HRC 65u
2刃球刀

Article no. **6815**

d1 _{-0,005 -0,015}	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
0.20	4.00	0.18	50	0.2	0.50	9.2	22.0	0.10	11.80	2	6815 0.200	1,120
0.30	4.00	0.28	50	0.3	0.75	9.1	22.0	0.15	11.60	2	6815 0.300	1,120
0.40	4.00	0.38	50	0.4	1.00	9.1	22.0	0.20	11.40	2	6815 0.400	1,120
0.50	4.00	0.45	50	0.5	1.25	9.2	22.0	0.25	11.00	2	6815 0.500	1,120
0.60	4.00	0.55	50	0.6	1.50	9.2	22.0	0.30	10.80	2	6815 0.600	1,120
0.80	4.00	0.75	50	0.8	2.00	9.1	22.0	0.40	10.40	2	6815 0.800	1,120
1.00	4.00	0.92	50	1.0	2.50	9.2	22.0	0.50	9.70	2	6815 1.000	1,120
1.20	4.00	1.12	50	1.2	3.00	9.3	22.0	0.60	9.10	2	6815 1.200	1,120
1.50	4.00	1.40	50	1.5	4.00	9.6	22.0	0.75	8.00	2	6815 1.500	1,120
1.80	4.00	1.70	50	1.8	4.50	9.4	22.0	0.90	7.30	2	6815 1.800	1,120
2.00	6.00	1.85	50	2.0	5.00	14.2	14.0	1.00	8.60	2	6815 2.000	1,240
2.50	6.00	2.35	50	2.5	6.50	14.6	15.0	1.25	7.40	2	6815 2.500	1,240
3.00	6.00	2.85	50	3.0	7.50	14.4	14.0	1.50	6.60	2	6815 3.000	1,240
4.00	6.00	3.80	50	4.0	12.50	15.5	14.0	2.00	4.20	2	6815 4.000	1,240
5.00	6.00	4.80	50	5.0	15.00	16.6	14.0	2.50	2.00	2	6815 5.000	1,240
6.00	6.00	5.70	54	6.0	17.00	17.6	18.0	3.00		2	6815 6.000	1,240
8.00	8.00	7.70	58	8.0	22.00	22.6	22.0	4.00		2	6815 8.000	1,480
10.00	10.00	9.50	72	10.0	25.00	25.9	32.0	5.00		2	6815 10.000	2,020
12.00	12.00	11.50	73	12.0	30.00	30.9	28.0	6.00		2	6815 12.000	2,740

Ball nose end mills G-Mold μ 65 B

鑄鐵/ 高硬度短屑材質用

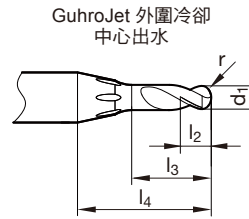
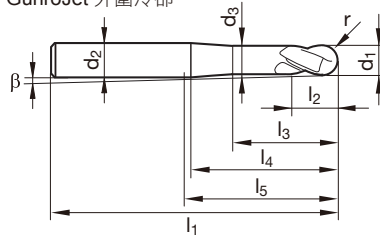


P	○
M	
K	●
N	
S	
H	●

GÜHRING NAVIGATOR

Cutting data page 55-58 切削參數請參閱 55-58頁

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- centre cutting
- neck clearance
- 高精度球型銑刀，確保最高形狀精度
- 半徑輪廓的精確公差 $r = 0.5 \times d1 \pm 0.005$ mm
- \varnothing 公差 $d1$ 從 $\varnothing 0.2-3$ mm $+0.000/-0.010$ mm
- 帶有 $\varnothing 0.2-3$ mm 的 GühroJet 外圍冷卻
- 端刃過中心可切削
- 頸部縮頸研磨



Tool material	Solid carbide
Surface	⊗
Type	H
Shank form	HA

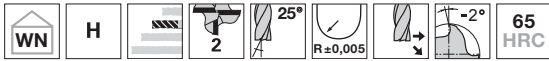
**HRC 65u**
2刃球刀

Article no.

6816

$d1_{-0.005/-0.015}$	$d2_{h5}$	$d3$	$l1$	$l2$	$l3$	$l4$	$l5$	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
0.20	4.00	0.18	50	0.2	0.75	9.5	22.0	0.10	11.40	2	6816 0.200	1,160
0.30	4.00	0.28	50	0.3	1.00	9.4	22.0	0.15	11.30	2	6816 0.300	1,160
0.40	4.00	0.38	50	0.4	1.50	9.6	22.0	0.20	10.80	2	6816 0.400	1,160
0.50	4.00	0.45	50	0.5	1.50	9.5	22.0	0.25	10.70	2	6816 0.500	1,160
0.60	4.00	0.55	50	0.6	2.00	9.7	22.0	0.30	10.20	2	6816 0.600	1,160
0.80	4.00	0.75	50	0.8	3.00	10.1	22.0	0.40	9.30	2	6816 0.800	1,160
1.00	4.00	0.92	50	1.0	3.00	9.7	22.0	0.50	9.20	2	6816 1.000	1,160
1.20	4.00	1.12	50	1.2	4.00	10.3	22.0	0.60	8.20	2	6816 1.200	1,160
1.50	4.00	1.40	50	1.5	6.00	11.6	22.0	0.75	6.50	2	6816 1.500	1,160
1.80	4.00	1.70	50	1.8	6.00	10.9	22.0	0.90	6.20	2	6816 1.800	1,160
2.00	6.00	1.85	50	2.0	6.00	15.2	15.0	1.00	8.00	2	6816 2.000	1,290
2.50	6.00	2.35	50	2.5	8.00	16.1	16.0	1.25	6.70	2	6816 2.500	1,290
3.00	6.00	2.85	57	3.0	10.00	16.9	21.0	1.50	5.50	2	6816 3.000	1,290
4.00	6.00	3.80	57	4.0	14.00	17.0	21.0	2.00	3.80	2	6816 4.000	1,290
5.00	6.00	4.80	57	5.0	18.00	19.6	21.0	2.50	1.60	2	6816 5.000	1,290
6.00	6.00	5.70	57	6.0	20.00	20.6	21.0	3.00		2	6816 6.000	1,290
8.00	8.00	7.70	63	8.0	26.00	26.6	27.0	4.00		2	6816 8.000	1,540
10.00	10.00	9.50	72	10.0	31.00	31.9	32.0	5.00		2	6816 10.000	2,090
12.00	12.00	11.50	83	12.0	37.00	37.9	38.0	6.00		2	6816 12.000	2,830

Ball nose end mills G-Mold μ 65 B

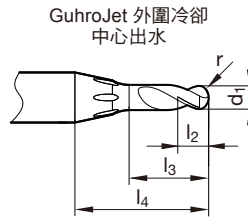
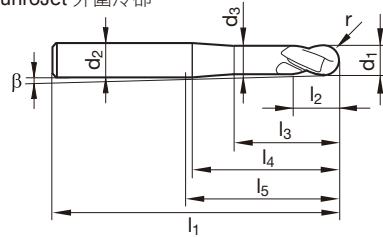


P	○
M	○
K	●
N	○
S	○
H	●

GÜHRING NAVIGATOR

Cutting data page 55-58 切削參數請參閱 55-58頁

- High-precision ball nose end mills for maximum form accuracy
- exact tolerance of the radius contour $r = 0.5 \times d1 \pm 0.005 \text{ mm}$
- \varnothing tolerance $d1$ of $\varnothing 0.2\text{-}3 \text{ mm} +0.000/-0.010 \text{ mm}$
- with GühroJet peripheral cooling from $\varnothing 0.2\text{-}3 \text{ mm}$
- centre cutting
- neck clearance
- 高精度球型銑刀，確保最高形狀精度
- 半徑輪廓的精確公差 $r = 0.5 \times d1 \pm 0.005 \text{ mm}$
- \varnothing 公差 $d1$ 從 $\varnothing 0.2\text{-}3 \text{ mm} +0.000/-0.010 \text{ mm}$
- 帶有 $\varnothing 0.2\text{-}3 \text{ mm}$ 的 GühroJet 外圍冷卻
- 端刀過中心可切削
- 頸部縮頸研磨



HRC 65u
2刃球刀



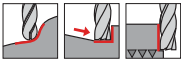
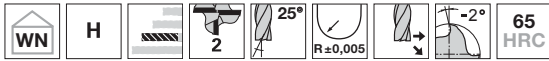
Article no.

6817

$d1_{-0.005/-0.015}$	$d2 \text{ h5}$	$d3$	$l1$	$l2$	$l3$	$l4$	$l5$	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
0.20	4.00	0.18	50	0.2	1.0	9.7	22.0	0.10	11.20	2	6817 0.200	1,200
0.30	4.00	0.28	50	0.3	1.5	9.9	22.0	0.15	10.70	2	6817 0.300	1,200
0.40	4.00	0.38	50	0.4	2.0	10.1	22.0	0.20	10.30	2	6817 0.400	1,200
0.50	4.00	0.45	50	0.5	2.5	10.5	22.0	0.25	9.60	2	6817 0.500	1,200
0.60	4.00	0.55	50	0.6	3.0	10.7	22.0	0.30	9.20	2	6817 0.600	1,200
0.80	4.00	0.75	50	0.8	4.0	11.1	22.0	0.40	8.50	2	6817 0.800	1,200
1.00	4.00	0.92	50	1.0	5.0	11.7	22.0	0.50	7.60	2	6817 1.000	1,200
1.20	4.00	1.12	50	1.2	6.0	12.3	22.0	0.60	6.80	2	6817 1.200	1,200
1.50	4.00	1.40	50	1.5	8.0	13.6	22.0	0.75	5.50	2	6817 1.500	1,200
1.80	4.00	1.70	50	1.8	9.0	13.9	22.0	0.90	4.80	2	6817 1.800	1,200
2.00	6.00	1.85	50	2.0	10.0	19.2	19.0	1.00	6.20	2	6817 2.000	1,330
2.50	6.00	2.35	50	2.5	12.5	20.6	21.0	1.25	5.10	2	6817 2.500	1,330
3.00	6.00	2.85	65	3.0	15.0	21.9	29.0	1.50	4.20	2	6817 3.000	1,330
4.00	6.00	3.80	65	4.0	20.0	23.0	29.0	2.00	2.70	2	6817 4.000	1,330
5.00	6.00	4.80	65	5.0	25.0	26.6	29.0	2.50	1.10	2	6817 5.000	1,330
6.00	6.00	5.70	65	6.0	25.0	25.6	29.0	3.00		2	6817 6.000	1,330
8.00	8.00	7.70	75	8.0	30.0	30.6	39.0	4.00		2	6817 8.000	1,590
10.00	10.00	9.50	90	10.0	40.0	40.9	50.0	5.00		2	6817 10.000	2,160
12.00	12.00	11.50	100	12.0	40.0	40.9	55.0	6.00		2	6817 12.000	2,930

Ball nose end mills G-Mold μ 65 B

鑄鐵/ 高硬度短屑材質用

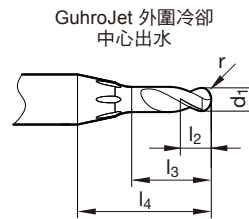
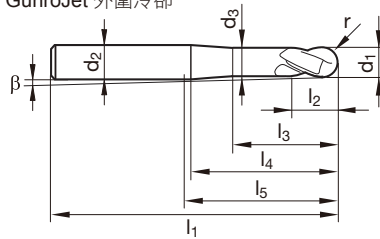


P	○
M	
K	●
N	
S	
H	●

GÜHRING NAVIGATOR

Cutting data page 55-58 切削參數請參閱 55-58頁

- High-precision ball nose end mills for maximum form accuracy
- exact tolerance of the radius contour $r = 0.5 \times d1 \pm 0.005 \text{ mm}$
- \varnothing tolerance $d1$ of $\varnothing 0.2\text{-}3 \text{ mm} +0.000\text{-}0.010 \text{ mm}$
- with GühroJet peripheral cooling from $\varnothing 0.2\text{-}3 \text{ mm}$
- centre cutting
- neck clearance
- 高精度球型銑刀，確保最高形狀精度
- 半徑輪廓的精確公差 $r = 0,5 \times d1 \pm 0.005 \text{ mm}$
- \varnothing 公差 $d1$ 從 $\varnothing 0.2\text{-}3 \text{ mm} +0.000\text{-}0.010 \text{ mm}$
- 帶有 $\varnothing 0.2\text{-}3 \text{ mm}$ 的 GühroJet 外圍冷卻
- 端刃過中心可切削
- 頸部縮頸研磨



Tool material	Solid carbide
Surface	⊗
Type	H
Shank form	HA

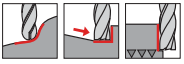
**HRC 65u**
2刃球刀

Article no.

6818

$d1_{-0,015}^{-0,005}$	$d2 \text{ h}5$	$d3$	$l1$	$l2$	$l3$	$l4$	$l5$	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
0.20	4.00	0.18	50	0.2	1.25	10.0	22.0	0.10	10.80	2	6818 0.200	1,410
0.30	4.00	0.28	50	0.3	2.00	10.4	22.0	0.15	10.20	2	6818 0.300	1,410
0.40	4.00	0.38	50	0.4	3.00	11.1	22.0	0.20	9.30	2	6818 0.400	1,410
0.50	4.00	0.45	50	0.5	3.00	11.0	22.0	0.25	9.20	2	6818 0.500	1,410
0.60	4.00	0.55	50	0.6	4.00	11.7	22.0	0.30	8.40	2	6818 0.600	1,410
0.80	4.00	0.75	50	0.8	5.00	12.1	22.0	0.40	7.70	2	6818 0.800	1,410
1.00	4.00	0.92	50	1.0	7.00	13.7	22.0	0.50	6.40	2	6818 1.000	1,410
1.20	4.00	1.12	50	1.2	8.00	14.3	22.0	0.60	5.80	2	6818 1.200	1,410
1.50	4.00	1.40	50	1.5	10.00	15.6	22.0	0.75	4.80	2	6818 1.500	1,410
1.80	4.00	1.70	55	1.8	12.00	16.9	27.0	0.90	3.90	2	6818 1.800	1,410
2.00	6.00	1.85	57	2.0	12.00	21.2	21.0	1.00	5.60	2	6818 2.000	1,560
2.50	6.00	2.35	57	2.5	15.00	23.1	23.0	1.25	4.50	2	6818 2.500	1,560
3.00	6.00	2.85	65	3.0	18.00	24.9	29.0	1.50	3.60	2	6818 3.000	1,560
4.00	6.00	3.80	65	4.0	24.00	27.0	29.0	2.00	2.30	2	6818 4.000	1,560
5.00	6.00	4.80	80	5.0	30.00	31.6	44.0	2.50	0.90	2	6818 5.000	1,560
6.00	6.00	5.70	80	6.0	30.00	30.6	44.0	3.00		2	6818 6.000	1,560
8.00	8.00	7.70	90	8.0	40.00	40.6	54.0	4.00		2	6818 8.000	1,860
10.00	10.00	9.50	100	10.0	50.00	50.9	60.0	5.00		2	6818 10.000	2,530
12.00	12.00	11.50	120	12.0	60.00	60.9	75.0	6.00		2	6818 12.000	3,430

Ball nose end mills G-Mold μ 65 B

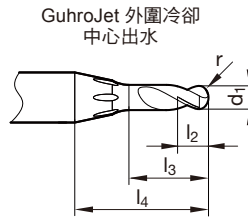
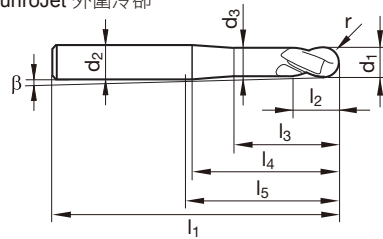


P	○
M	○
K	●
N	○
S	○
H	●

GÜHRING NAVIGATOR

Cutting data page 55-58 切削參數請參閱 55-58頁

- High-precision ball nose end mills for maximum form accuracy
- exact tolerance of the radius contour $r = 0.5 \times d1 \pm 0.005 \text{ mm}$
- \varnothing tolerance $d1$ of $\varnothing 0.2\text{-}3 \text{ mm} +0.000/-0.010 \text{ mm}$
- with GühroJet peripheral cooling from $\varnothing 0.2\text{-}3 \text{ mm}$
- centre cutting
- neck clearance
- 高精度球型銑刀，確保最高形狀精度
- 半徑輪廓的精確公差 $r = 0.5 \times d1 \pm 0.005 \text{ mm}$
- \varnothing 公差 $d1$ 從 $\varnothing 0.2\text{-}3 \text{ mm} +0.000/-0.010 \text{ mm}$
- 帶有 $\varnothing 0.2\text{-}3 \text{ mm}$ 的 GühroJet 外圍冷卻
- 端刀過中心可切削
- 頸部縮頸研磨



HRC 65u
2刃球刀



Article no.

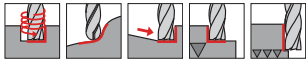
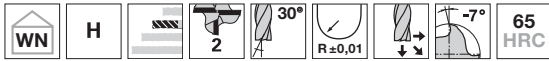
6819

d1 _{-0.005} 0.015	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
0.20	4.00	0.18	50	0.2	1.5	10.2	22.0	0.10	10.60	2	6819 0.200	1,450
0.30	4.00	0.28	50	0.3	3.0	11.4	22.0	0.15	9.30	2	6819 0.300	1,450
0.40	4.00	0.38	50	0.4	4.0	12.1	22.0	0.20	8.60	2	6819 0.400	1,450
0.50	4.00	0.45	50	0.5	5.0	13.0	22.0	0.25	7.80	2	6819 0.500	1,450
0.60	4.00	0.55	50	0.6	6.0	13.7	22.0	0.30	7.20	2	6819 0.600	1,450
0.80	4.00	0.75	50	0.8	8.0	15.1	22.0	0.40	6.20	2	6819 0.800	1,450
1.00	4.00	0.92	50	1.0	10.0	16.7	22.0	0.50	5.30	2	6819 1.000	1,450
1.20	4.00	1.12	55	1.2	12.0	18.3	27.0	0.60	4.50	2	6819 1.200	1,450
1.50	4.00	1.40	55	1.5	16.0	21.6	27.0	0.75	3.40	2	6819 1.500	1,450
1.80	4.00	1.70	63	1.8	20.0	24.9	35.0	0.90	2.60	2	6819 1.800	1,450
2.00	6.00	1.85	65	2.0	20.0	29.2	29.0	1.00	4.00	2	6819 2.000	1,610
2.50	6.00	2.35	65	2.5	20.0	28.1	29.0	1.25	3.70	2	6819 2.500	1,610
3.00	6.00	2.85	70	3.0	25.0	31.9	34.0	1.50	2.80	2	6819 3.000	1,610
4.00	6.00	3.80	75	4.0	32.0	35.0	39.0	2.00	1.70	2	6819 4.000	1,610
5.00	6.00	4.80	80	5.0	42.0	43.6	44.0	2.50	0.70	2	6819 5.000	1,610
6.00	6.00	5.70	100	6.0	40.0	40.6	64.0	3.00		2	6819 6.000	1,610
8.00	8.00	7.70	100	8.0	40.0	40.6	64.0	4.00		2	6819 8.000	1,920



Ball nose end mills G-Mold 65 B

鑄鐵/ 高硬度短屑材質用



P	○
M	
K	●
N	
S	
H	●

GÜHRING NAVIGATOR

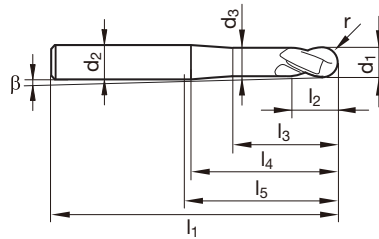
Cutting data page 55-58 切削參數請參閱 55-58頁

- neck clearance
- centre cutting
- 端刃過中心可切削
- 頸部縮頸研磨

Tool material	Solid carbide
Surface	
Type	H
Shank form	HA



HRC 65
2刃球刀



Article no.

6832

d1 ^{-0,01} _{-0,03}	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
0.50	4.00	0.45	45	0.5	2.5	9.1	17.0	0.25	10.80	2	6832 0.500	660
0.80	4.00	0.75	45	0.8	3.2	9.3	17.0	0.40	9.70	2	6832 0.800	660
1.00	4.00	0.92	45	1.0	4.0	9.7	17.0	0.50	8.70	2	6832 1.000	660
1.50	4.00	1.40	45	1.5	6.0	10.9	17.0	0.75	6.50	2	6832 1.500	660
2.00	6.00	1.85	54	2.0	8.0	13.7	18.0	1.00	8.30	2	6832 2.000	730
3.00	6.00	2.85	54	3.0	12.0	16.3	18.0	1.50	5.20	2	6832 3.000	730
4.00	6.00	3.80	57	4.0	14.0	17.0	21.0	2.00	3.30	2	6832 4.000	730
5.00	6.00	4.80	57	5.0	17.0	18.6	21.0	2.50	1.50	2	6832 5.000	730
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	3.00		2	6832 6.000	730
8.00	8.00	7.70	63	8.0	26.0	26.6	27.0	4.00		2	6832 8.000	870
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	5.00		2	6832 10.000	1,180
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	6.00		2	6832 12.000	1,600

Milling tools

Ball nose end mills G-Mold 65 B

鑄鐵/ 高硬度短屑材質用



P	○
M	○
K	●
N	○
S	○
H	●

GÜHRING NAVIGATOR

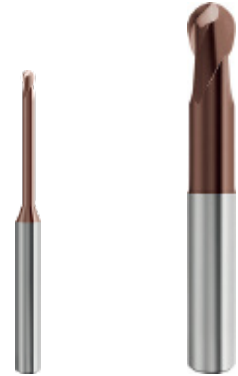
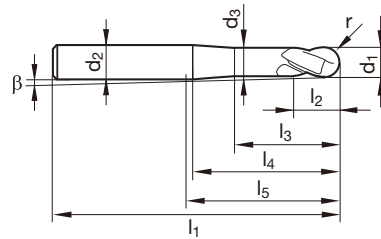
Cutting data page 55-58 切削參數請參閱 55-58頁

- neck clearance
- centre cutting
- 端刀過中心可切削
- 頸部縮頸研磨

Tool material	Solid carbide
Surface	
Type	H
Shank form	HA



HRC 65
2刃球刀



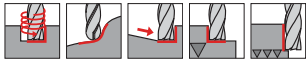
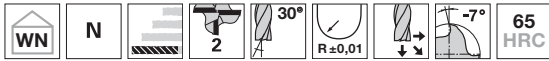
Article no. **6833**

d1 ^{-0.01} / _{-0.03}	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
0.50	4.00	0.45	50	0.5	3.6	10.2	22.0	0.25	9.70	2	6833 0.500	750
0.80	4.00	0.75	50	0.8	5.0	11.1	22.0	0.40	8.20	2	6833 0.800	750
1.00	4.00	0.92	50	1.0	6.5	12.2	22.0	0.50	7.00	2	6833 1.000	750
1.50	4.00	1.40	50	1.5	10.0	14.9	22.0	0.75	4.80	2	6833 1.500	750
2.00	6.00	1.85	57	2.0	13.0	18.7	21.0	1.00	6.10	2	6833 2.000	840
3.00	6.00	2.85	65	3.0	20.0	24.3	29.0	1.50	3.50	2	6833 3.000	840
4.00	6.00	3.80	75	4.0	25.0	28.0	39.0	2.00	2.00	2	6833 4.000	840
5.00	6.00	4.80	75	5.0	31.0	32.6	39.0	2.50	0.80	2	6833 5.000	840
6.00	6.00	5.70	75	6.0	38.0	38.6	39.0	3.00		2	6833 6.000	840
8.00	8.00	7.70	90	8.0	53.0	53.6	54.0	4.00		2	6833 8.000	1,000
10.00	10.00	9.50	100	10.0	59.0	59.9	60.0	5.00		2	6833 10.000	1,360
12.00	12.00	11.50	120	12.0	74.0	74.9	75.0	6.00		2	6833 12.000	1,840



Ball nose end mills G-Mold 65 B

鑄鐵/ 高硬度短屑材質用



P	○
M	
K	●
N	
S	
H	●

GÜHRING NAVIGATOR

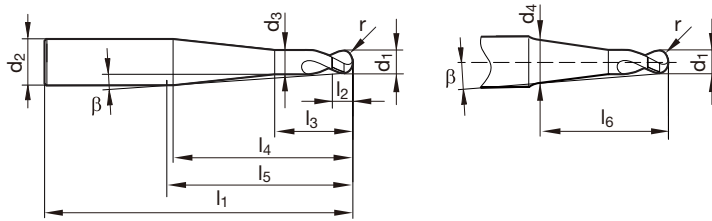
Cutting data page 55-58 切削參數請參閱 55-58頁

- neck clearance
- centre cutting
- 端刃過中心可切削
- 頸部縮頸研磨

Tool material	Solid carbide
Surface	
Type	N
Shank form	HA



HRC 65
2刃球刀



Article no.

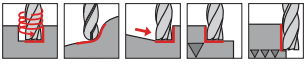
6834

d1 ^{-0,01} _{-0,03}	d2 h5	d3	d4	l1	l2	l3	l4	l5	l6	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
0.50	4.00	0.45	1.47	50	0.5	1.3	14.7	22.0	10.0	0.25	3.00	2	6834 0.500	820
0.80	4.00	0.75	2.38	50	0.8	2.0	19.0	22.0	16.0	0.40	3.00	2	6834 0.800	820
1.00	4.00	0.92	2.99	63	1.0	2.5	21.9	35.0	20.0	0.50	3.00	2	6834 1.000	820
1.50	4.00	1.40		63	1.5	3.8	25.6	35.0		0.75	3.00	2	6834 1.500	820
2.00	6.00	1.85		80	2.0	5.0	40.1	44.0		1.00	3.00	2	6834 2.000	910
3.00	6.00	2.85		80	3.0	7.5	31.1	44.0		1.50	3.00	2	6834 3.000	910
4.00	6.00	3.80		80	4.0	10.0	22.0	44.0		2.00	3.00	2	6834 4.000	910
5.00	8.00	4.80		90	5.0	12.5	32.1	54.0		2.50	3.00	2	6834 5.000	1,090
6.00	8.00	5.70		90	6.0	15.0	43.1	54.0		3.00	1.50	2	6834 6.000	1,090
8.00	10.00	7.70		100	8.0	20.0	44.1	60.0		4.00	1.50	2	6834 8.000	1,470
10.00	12.00	9.50		120	10.0	25.0	45.1	75.0		5.00	1.50	2	6834 10.000	2,000

Milling tools

Ball nose end mills G-Mold 65 B

鑄鐵/ 高硬度短屑材質用



P	○
M	○
K	●
N	○
S	○
H	●

GÜHRING NAVIGATOR

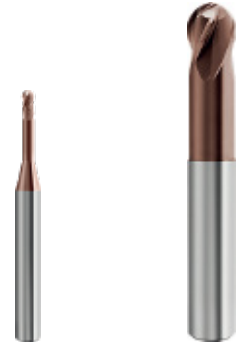
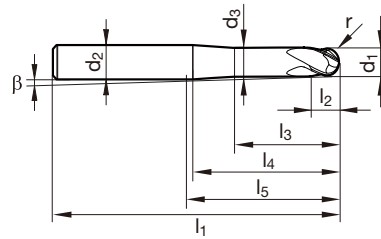
Cutting data page 55-58 切削參數請參閱 55-58頁

- 4 face cutting edges up to the centre
- neck clearance
- centre cutting
- 4 切削刃到中心
- 端刃過中心可切削
- 頸部縮頸研磨

Tool material	Solid carbide
Surface	
Type	H
Shank form	HA



HRC 65
4刃球刀



Article no. **6835**

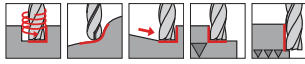
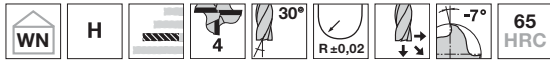
d1 ^{-0.01} _{-0.03}	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z
mm	mm	mm	mm	mm	mm	mm	mm	mm	°	
1.00	4.00	0.92	45	1.0	4.0	9.7	17.0	0.50	8.70	4
1.50	4.00	1.40	45	1.5	6.0	10.9	17.0	0.75	6.50	4
2.00	6.00	1.85	54	2.0	8.0	13.7	18.0	1.00	8.30	4
3.00	6.00	2.85	54	3.0	12.0	16.3	18.0	1.50	5.20	4
4.00	6.00	3.80	57	4.0	14.0	17.0	21.0	2.00	3.30	4
5.00	6.00	4.80	57	5.0	17.0	18.6	21.0	2.50	1.50	4
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	3.00		4
8.00	8.00	7.70	63	8.0	26.0	26.6	27.0	4.00		4
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	5.00		4
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	6.00		4

Order no.	價格
6835 1.000	750
6835 1.500	750
6835 2.000	840
6835 3.000	840
6835 4.000	840
6835 5.000	840
6835 6.000	840
6835 8.000	1,000
6835 10.000	1,360
6835 12.000	1,840



Ball nose end mills G-Mold 65 B

鑄鐵/ 高硬度短屑材質用



P	○
M	
K	●
N	
S	
H	●

GÜHRING NAVIGATOR

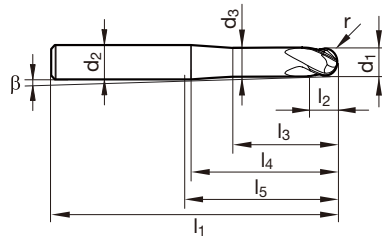
Cutting data page 55-58 切削參數請參閱 55-58頁

- 4 face cutting edges up to the centre
- neck clearance
- centre cutting
- 4 切削刃到中心
- 端刃過中心可切削
- 頸部縮頸研磨

Tool material	Solid carbide
Surface	
Type	H
Shank form	HA



HRC 65
4刃球刀



Article no.

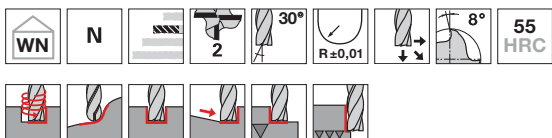
6836

d1 ^{+0,01} _{-0,03}	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
1.00	4.00	0.92	50	1.0	6.5	12.2	25.0	0.50	7.00	4	6836 1.000	850
1.50	4.00	1.40	50	1.5	10.0	14.9	25.5	0.75	4.80	4	6836 1.500	850
2.00	6.00	1.85	57	2.0	13.0	18.7	29.5	1.00	6.10	4	6836 2.000	950
3.00	6.00	2.85	65	3.0	20.0	24.3	34.5	1.50	3.50	4	6836 3.000	950
4.00	6.00	3.80	75	4.0	25.0	28.0	40.6	2.00	2.00	4	6836 4.000	950
5.00	6.00	4.80	75	5.0	31.0	32.6	41.6	2.50	0.80	4	6836 5.000	950
6.00	6.00	5.70	75	6.0	38.0	38.6	39.0	3.00		4	6836 6.000	950
8.00	8.00	7.70	90	8.0	53.0	53.6	54.0	4.00		4	6836 8.000	1,130
10.00	10.00	9.50	100	10.0	59.0	59.9	60.0	5.00		4	6836 10.000	1,530
12.00	12.00	11.50	120	12.0	74.0	74.9	75.0	6.00		4	6836 12.000	2,080

Milling tools

Ball nose end mills G-Mold 55 B

泛用型



- P •
- M •
- K •
- N ○
- S •
- H •

GÜHRING NAVIGATOR

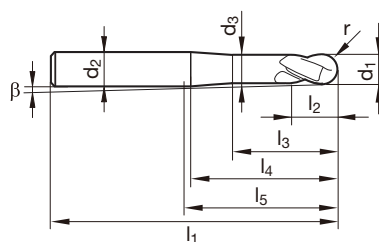
Cutting data page 55-58 切削參數請參閱 55-58頁

- neck clearance
- centre cutting
- 端刀過中心可切削
- 頸部縮頸研磨

Tool material	Solid carbide
Surface	
Type	N
Shank form	HA



HRC 55
2刃球刀



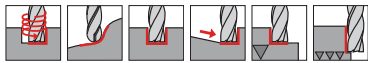
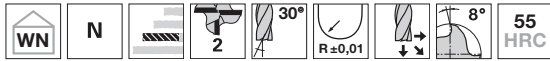
Article no. **6844**

d1 ^{-0.01} _{-0.03}	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
0.50	4.00	0.45	45	0.5	2.5	9.1	17.0	0.25	10.80	2	6844 0.500	660
0.80	4.00	0.75	45	0.8	3.2	9.3	17.0	0.40	9.70	2	6844 0.800	660
1.00	4.00	0.92	45	1.0	4.0	9.7	17.0	0.50	8.70	2	6844 1.000	660
1.50	4.00	1.40	45	1.5	6.0	10.9	17.0	0.75	6.50	2	6844 1.500	660
2.00	6.00	1.85	54	2.0	8.0	13.7	18.0	1.00	8.30	2	6844 2.000	730
3.00	6.00	2.85	54	3.0	12.0	16.3	18.0	1.50	5.20	2	6844 3.000	730
4.00	6.00	3.80	57	4.0	14.0	17.0	21.0	2.00	3.30	2	6844 4.000	730
5.00	6.00	4.80	57	5.0	17.0	18.6	21.0	2.50	1.50	2	6844 5.000	730
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	3.00		2	6844 6.000	730
8.00	8.00	7.70	63	8.0	26.0	26.6	27.0	4.00		2	6844 8.000	870
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	5.00		2	6844 10.000	1,180
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	6.00		2	6844 12.000	1,600



Ball nose end mills G-Mold 55 B

泛用型



- P** •
- M** •
- K** •
- N** ○
- S** •
- H** •

GÜHRING NAVIGATOR

Cutting data page 55-58 切削參數請參閱 55-58頁

- neck clearance
- centre cutting
- 端刃過中心可切削
- 頸部縮頸研磨

Tool material **Solid carbide**

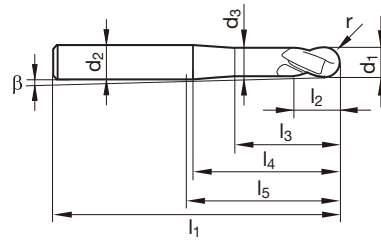
Surface

Type **N**

Shank form **HA**



HRC 55
2刃球刀



Article no.

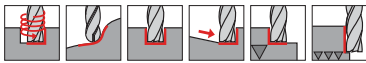
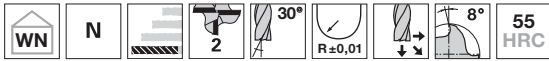
6845

d1 ^{-0.01} _{-0.03}	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
0.50	4.00	0.45	50	0.5	3.6	10.2	22.0	0.25	9.70	2	6845 0.500	750
0.80	4.00	0.75	50	0.8	5.0	11.1	22.0	0.40	8.20	2	6845 0.800	750
1.00	4.00	0.92	50	1.0	6.5	12.2	22.0	0.50	7.00	2	6845 1.000	750
1.50	4.00	1.40	50	1.5	10.0	14.9	22.0	0.75	4.80	2	6845 1.500	750
2.00	6.00	1.85	57	2.0	13.0	18.7	21.0	1.00	6.10	2	6845 2.000	840
3.00	6.00	2.85	65	3.0	20.0	24.3	29.0	1.50	3.50	2	6845 3.000	840
4.00	6.00	3.80	75	4.0	25.0	28.0	39.0	2.00	2.00	2	6845 4.000	840
5.00	6.00	4.80	75	5.0	31.0	32.6	39.0	2.50	0.80	2	6845 5.000	840
6.00	6.00	5.70	75	6.0	38.0	38.6	39.0	3.00		2	6845 6.000	840
8.00	8.00	7.70	90	8.0	53.0	53.6	54.0	4.00		2	6845 8.000	1,000
10.00	10.00	9.50	100	10.0	59.0	59.9	60.0	5.00		2	6845 10.000	1,360
12.00	12.00	11.50	120	12.0	74.0	74.9	75.0	6.00		2	6845 12.000	1,840

Milling tools

泛用型

Ball nose end mills G-Mold 55 B



- P** •
- M** •
- K** •
- N** ○
- S** •
- H** •

GÜHRING NAVIGATOR

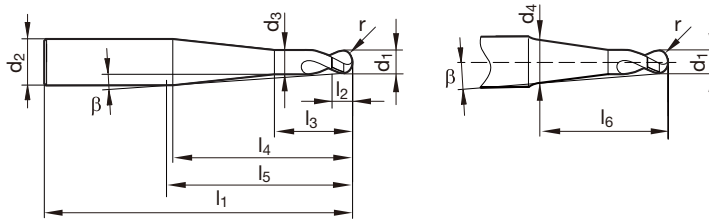
Cutting data page 55-58 切削參數請參閱 55-58頁

- neck clearance
- centre cutting
- 端刀過中心可切削
- 頸部縮頸研磨

Tool material	Solid carbide
Surface	
Type	N
Shank form	HA



HRC 55
2刃球刀



Article no. **6846**

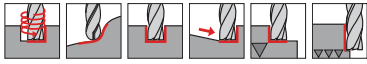
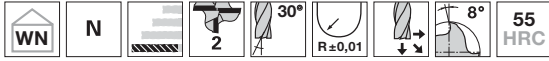
d1 _{-0.03} ^{0.01}	d2 h5	d3	d4	l1	l2	l3	l4	l5	l6	r	β	Z
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	°	
0.50	4.00	0.45	0.96	50	0.5	1.3	15.7	22.0	10.0	0.25	1.50	2
0.80	4.00	0.75	1.56	50	0.8	2.0	20.5	22.0	16.0	0.40	1.50	2
1.00	4.00	0.92	1.97	63	1.0	2.5	23.8	35.0	20.0	0.50	1.50	2
1.50	4.00	1.40	2.98	63	1.5	3.8	31.9	35.0	30.0	0.75	1.50	2
2.00	6.00	1.85	3.99	80	2.0	5.0	43.7	44.0	40.0	1.00	1.50	2
3.00	6.00	2.85	4.96	80	3.0	7.5	41.9	44.0	40.0	1.50	1.50	2
4.00	6.00	3.80		80	4.0	10.0	42.1	44.0		2.00	1.50	2
5.00	8.00	4.80	6.91	90	5.0	12.5	42.0	54.0	40.0	2.50	1.50	2
6.00	8.00	5.70		90	6.0	15.0	43.1	54.0		3.00	1.50	2
8.00	10.00	7.70		100	8.0	20.0	44.1	60.0		4.00	1.50	2
10.00	12.00	9.50		120	10.0	25.0	45.1	75.0		5.00	1.50	2

Order no.	價格
6846 0.500	820
6846 0.800	820
6846 1.000	820
6846 1.500	820
6846 2.000	910
6846 3.000	910
6846 4.000	910
6846 5.000	1,090
6846 6.000	1,090
6846 8.000	1,470
6846 10.000	2,000



Ball nose end mills G-Mold 55 B

泛用型



- P** •
- M** •
- K** •
- N** ○
- S** •
- H** •

GÜHRING NAVIGATOR

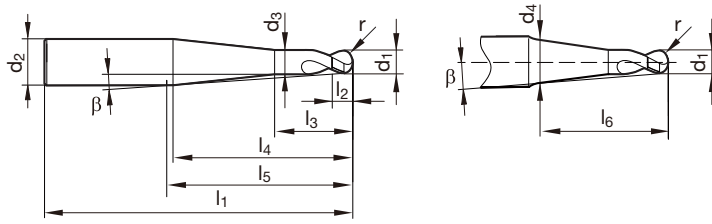
Cutting data page 55-58 切削參數請參閱 55-58頁

- neck clearance
- centre cutting
- 端刃過中心可切削
- 頸部縮頸研磨

Tool material	Solid carbide
Surface	
Type	N
Shank form	HA



HRC 55
2刃球刀



Article no.

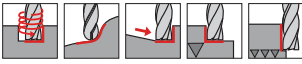
6847

d1 ^{-0,01} _{-0,03}	d2 h5	d3	d4	l1	l2	l3	l4	l5	l6	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
0.50	4.00	0.45	0.79	50	0.5	1.3	16.0	22.0	10.0	0.25	1.00	2	6847 0.500	820
0.80	4.00	0.75	1.29	50	0.8	2.0	21.0	22.0	16.0	0.40	1.00	2	6847 0.800	820
1.00	4.00	0.92	1.63	63	1.0	2.5	24.4	35.0	20.0	0.50	1.00	2	6847 1.000	820
1.50	4.00	1.40	2.47	63	1.5	3.8	32.8	35.0	30.0	0.75	1.00	2	6847 1.500	820
2.00	6.00	1.85	3.31	80	2.0	5.0	45.0	44.0	40.0	1.00	1.00	2	6847 2.000	910
3.00	6.00	2.85	4.29	80	3.0	7.5	43.2	44.0	40.0	1.50	1.00	2	6847 3.000	910
4.00	6.00	3.80	5.28	80	4.0	10.0	41.3	44.0	40.0	2.00	1.00	2	6847 4.000	910
5.00	8.00	4.80	6.61	90	5.0	12.5	52.6	54.0	50.0	2.50	1.00	2	6847 5.000	1,090
6.00	8.00	5.70	7.59	90	6.0	15.0	50.8	54.0	50.0	3.00	1.00	2	6847 6.000	1,090
8.00	10.00	7.70		100	8.0	20.0	64.2	60.0		4.00	1.00	2	6847 8.000	1,470

Milling tools

Ball nose end mills G-Mold 55 B

泛用型



- P** •
- M** •
- K** •
- N** ○
- S** •
- H** •

GÜHRING NAVIGATOR

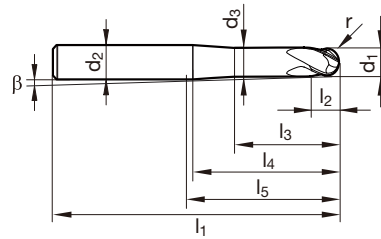
Cutting data page 55-58 切削參數請參閱 55-58頁

- 4 face cutting edges up to the centre
- neck clearance
- centre cutting
- 4 切削刃到中心
- 端刃過中心可切削
- 頸部縮頸研磨

Tool material	Solid carbide
Surface	
Type	N
Shank form	HA



HRC 55
4刃球刀



Article no. **6848**

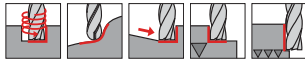
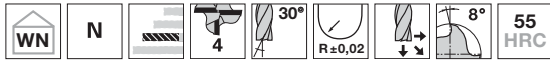
d1 ^{-0.01} _{-0.03}	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z
mm	mm	mm	mm	mm	mm	mm	mm	mm	°	
1.00	4.00	0.92	45	1.0	4.0	9.7	17.0	0.50	8.70	4
1.50	4.00	1.40	45	1.5	6.0	10.9	17.0	0.75	6.50	4
2.00	6.00	1.85	54	2.0	8.0	13.7	18.0	1.00	8.30	4
3.00	6.00	2.85	54	3.0	12.0	16.3	18.0	1.50	5.20	4
4.00	6.00	3.80	57	4.0	14.0	17.0	21.0	2.00	3.30	4
5.00	6.00	4.80	57	5.0	17.0	18.6	21.0	2.50	1.50	4
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	3.00		4
8.00	8.00	7.70	63	8.0	26.0	26.6	27.0	4.00		4
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	5.00		4
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	6.00		4

Order no.	價格
6848 1.000	750
6848 1.500	750
6848 2.000	840
6848 3.000	840
6848 4.000	840
6848 5.000	840
6848 6.000	840
6848 8.000	1,000
6848 10.000	1,360
6848 12.000	1,840



Ball nose end mills G-Mold 55 B

泛用型



- P •
- M •
- K •
- N ○
- S •
- H •

GÜHRING NAVIGATOR

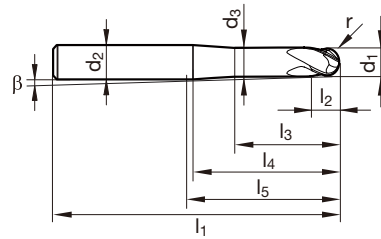
Cutting data page 55-58 切削參數請參閱 55-58頁

- 4 face cutting edges up to the centre
- neck clearance
- centre cutting
- 4 切削刃到中心
- 端刃過中心可切削
- 頸部縮頸研磨

Tool material	Solid carbide
Surface	
Type	N
Shank form	HA



HRC 55
4刃球刀



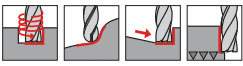
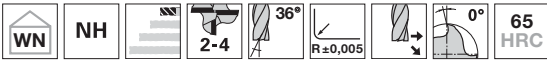
Article no.

6849

d1 ^{-0,01} _{-0,03}	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
1.00	4.00	0.92	50	1.0	6.5	12.2	25.0	0.50	7.00	4	6849 1.000	850
1.50	4.00	1.40	50	1.5	10.0	14.9	25.5	0.75	4.80	4	6849 1.500	850
2.00	6.00	1.85	57	2.0	13.0	18.7	29.5	1.00	6.10	4	6849 2.000	950
3.00	6.00	2.85	65	3.0	20.0	24.3	34.5	1.50	3.50	4	6849 3.000	950
4.00	6.00	3.80	75	4.0	25.0	28.0	40.5	2.00	2.00	4	6849 4.000	950
5.00	6.00	4.80	75	5.0	31.0	32.6	41.5	2.50	0.80	4	6849 5.000	950
6.00	6.00	5.70	75	6.0	38.0	38.6	39.0	3.00		4	6849 6.000	950
8.00	8.00	7.70	90	8.0	53.0	53.6	54.0	4.00		4	6849 8.000	1,130
10.00	10.00	9.50	100	10.0	59.0	59.9	60.0	5.00		4	6849 10.000	1,530
12.00	12.00	11.50	120	12.0	74.0	74.9	75.0	6.00		4	6849 12.000	2,080

Milling tools

Torus end mills G-Mold μ 65 T

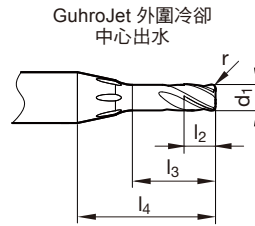
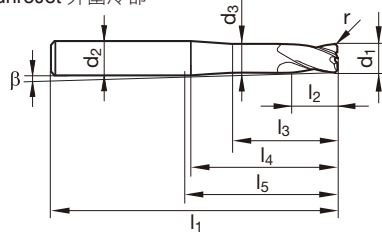


P	○
M	○
K	●
N	○
S	○
H	●

GÜHRING NAVIGATOR

Cutting data page 55-58 切削參數請參閱 55-58頁

- High-precision ball nose end mills for maximum form accuracy
- exact tolerance of the radius contour $r = \pm 0.005$ mm
- \varnothing tolerance d_1 of $\varnothing 0.2-3$ mm $+0.000/-0.010$ mm
- with GührJet peripheral cooling from $\varnothing 0.3-3$ mm
- centre cutting
- neck clearance
- 高精度圓鼻銑刀，確保最高形狀精度
- 半徑輪廓的精確公差 $r = \pm 0.005$ mm
- \varnothing 公差 d_1 從 $\varnothing 0.2-3$ mm $+0.000/-0.010$ mm
- 帶有 $\varnothing 0.3-3$ mm 的 GührJet 外圍冷卻
- 端刀過中心可切削
- 頸部縮頸研磨



HRC 65u
2-4刃 圓鼻刀

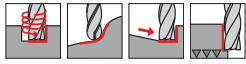
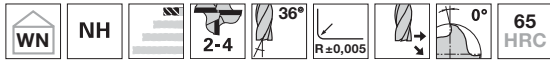
Article no. **6820**

d1 f8	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
0.30	4.00	0.28	50	0.3	0.75	9.1	22,0	0.05	11.50	2	6820 0.300	1,160
0.50	4.00	0.45	50	0.5	1.25	9.2	22,0	0.05	10.80	2	6820 0.500	1,160
0.50	4.00	0.45	50	0.5	1.25	9.2	22,0	0.10	10.80	2	6820 0.501	1,160
0.60	4.00	0.55	50	0.6	1.50	9.2	22,0	0.05	10.50	2	6820 0.600	1,160
0.60	4.00	0.55	50	0.6	1.50	9.2	22,0	0.10	10.50	2	6820 0.601	1,160
0.80	4.00	0.75	50	0.8	2.00	9.1	22,0	0.05	10.00	2	6820 0.800	1,160
0.80	4.00	0.75	50	0.8	2.00	9.1	22,0	0.10	10.00	2	6820 0.801	1,160
0.80	4.00	0.75	50	0.8	2.00	9.1	22,0	0.20	10.20	2	6820 0.802	1,160
1.00	4.00	0.92	50	1.0	2.50	9.2	22,0	0.10	9.30	2	6820 1.001	1,160
1.00	4.00	0.92	50	1.0	2.50	9.2	22,0	0.20	9.40	2	6820 1.002	1,160
1.00	4.00	0.92	50	1.0	2.50	9.2	22,0	0.30	9.50	2	6820 1.003	1,160
1.50	4.00	1.40	50	1.5	4.00	9.6	27,0	0.10	7.50	2	6820 1.501	1,160
1.50	4.00	1.40	50	1.5	4.00	9.6	27,0	0.20	7.50	2	6820 1.502	1,160
1.50	4.00	1.40	50	1.5	4.00	9.6	27,0	0.50	7.80	2	6820 1.505	1,160
2.00	6.00	1.85	50	2.0	5.00	14.2	29,0	0.20	8.10	2	6820 2.002	1,290
2.00	6.00	1.85	50	2.0	5.00	14.2	29,0	0.50	8.30	2	6820 2.005	1,290
2.50	6.00	2.35	50	2.5	6.00	14.1	29,0	0.20	7.10	2	6820 2.502	1,290
2.50	6.00	2.35	50	2.5	6.00	14.1	29,0	0.50	7.30	2	6820 2.505	1,290
3.00	6.00	2.85	50	3.0	8.00	14.9	34,0	0.20	5.80	2	6820 3.002	1,290
3.00	6.00	2.85	50	3.0	8.00	14.9	34,0	0.30	5.80	2	6820 3.003	1,290
3.00	6.00	2.85	50	3.0	8.00	14.9	34,0	0.50	5.90	2	6820 3.005	1,290
4.00	6.00	3.80	50	4.0	10.00	13.0	39,0	0.20	4.40	4	6820 4.002	1,290
4.00	6.00	3.80	50	4.0	10.00	13.0	39,0	0.50	4.50	4	6820 4.005	1,290
4.00	6.00	3.80	50	4.0	10.00	13.0	39,0	1.00	4.70	4	6820 4.010	1,290
5.00	6.00	4.80	50	5.0	12.50	14.1	44,0	0.50	2.10	4	6820 5.005	1,290
6.00	6.00	5.70	54	6.0	15.00	15.6	64,0	0.20		4	6820 6.002	1,290
6.00	6.00	5.70	54	6.0	15.00	15.6	64,0	0.50		4	6820 6.005	1,290
6.00	6.00	5.70	54	6.0	15.00	15.6	64,0	1.00		4	6820 6.010	1,290
8.00	8.00	7.70	58	8.0	20.00	20.6	64,0	0.50		4	6820 8.005	1,540
8.00	8.00	7.70	58	8.0	20.00	20.6	64,0	0.80		4	6820 8.008	1,540
8.00	8.00	7.70	58	8.0	20.00	20.6	64,0	1.00		4	6820 8.010	1,540
10.00	10.00	9.50	72	10.0	25.00	25.9	32,0	0.50		4	6820 10.005	2,090
10.00	10.00	9.50	72	10.0	25.00	25.9	32,0	1.00		4	6820 10.010	2,090
10.00	10.00	9.50	72	10.0	25.00	25.9	32,0	2.00		4	6820 10.020	2,090
12.00	12.00	11.50	73	12.0	30.00	30.9	28,0	0.50		4	6820 12.005	2,830
12.00	12.00	11.50	73	12.0	30.00	30.9	28,0	1.00		4	6820 12.010	2,830
12.00	12.00	11.50	73	12.0	30.00	30.9	28,0	2.00		4	6820 12.020	2,830



Torus end mills G-Mold μ 65 T

鑄鐵/ 高硬度短屑材質用

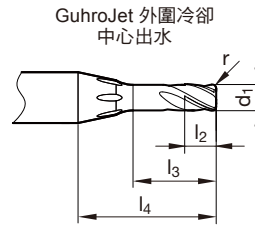
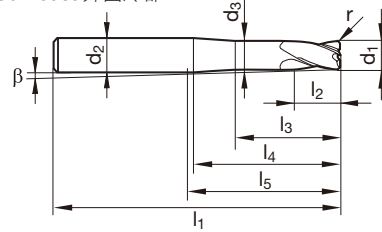


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GÜHRING NAVIGATOR

Cutting data page 55-58 切削參數請參閱 55-58頁

- High-precision ball nose end mills for maximum form accuracy
- exact tolerance of the radius contour $r = \pm 0.005 \text{ mm}$
- \varnothing tolerance d_1 of $\varnothing 0.2\text{-}3 \text{ mm} +0.000\text{-}0.010 \text{ mm}$
- with GühroJet peripheral cooling from $\varnothing 0.3\text{-}3 \text{ mm}$
- centre cutting
- neck clearance
- 高精度圓鼻銑刀，確保最高形狀精度
- 半徑輪廓的精確公差 $r = \pm 0.005 \text{ mm}$
- \varnothing 公差 d_1 從 $\varnothing 0.2\text{-}3 \text{ mm} +0.000\text{-}0.010 \text{ mm}$
- 帶有 $\varnothing 0.3\text{-}3 \text{ mm}$ 的 GühroJet 外圍冷卻
- 端刃過中心可切削
- 頸部縮頸研磨



HRC 65u
2- 4刃 圓鼻刀



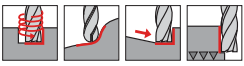
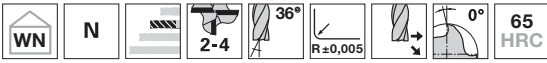
Milling tools

Article no.

6821

d1 f8	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
0.30	4.00	0.28	50	0.3	1.0	9.4	22.0	0.05	11.20	2	6821 0.300	1,200
0.50	4.00	0.45	50	0.5	1.5	9.5	22.0	0.05	10.50	2	6821 0.500	1,200
0.50	4.00	0.45	50	0.5	1.5	9.5	22.0	0.10	10.50	2	6821 0.501	1,200
0.60	4.00	0.55	50	0.6	2.0	9.7	22.0	0.05	10.00	2	6821 0.600	1,200
0.60	4.00	0.55	50	0.6	2.0	9.7	22.0	0.10	10.00	2	6821 0.601	1,200
0.80	4.00	0.75	50	0.8	3.0	10.1	22.0	0.05	9.00	2	6821 0.800	1,200
0.80	4.00	0.75	50	0.8	3.0	10.1	22.0	0.10	9.10	2	6821 0.801	1,200
0.80	4.00	0.75	50	0.8	3.0	10.1	22.0	0.20	9.10	2	6821 0.802	1,200
1.00	4.00	0.92	50	1.0	3.0	9.7	22.0	0.10	8.80	2	6821 1.001	1,200
1.00	4.00	0.92	50	1.0	3.0	9.7	22.0	0.20	8.90	2	6821 1.002	1,200
1.00	4.00	0.92	50	1.0	3.0	9.7	22.0	0.30	9.00	2	6821 1.003	1,200
1.50	4.00	1.40	50	1.5	6.0	11.6	27.0	0.10	6.20	2	6821 1.501	1,200
1.50	4.00	1.40	50	1.5	6.0	11.6	27.0	0.20	6.20	2	6821 1.502	1,200
1.50	4.00	1.40	50	1.5	6.0	11.6	27.0	0.50	6.40	2	6821 1.505	1,200
2.00	6.00	1.85	50	2.0	6.0	15.2	29.0	0.20	7.60	2	6821 2.002	1,330
2.00	6.00	1.85	50	2.0	6.0	15.2	29.0	0.50	7.70	2	6821 2.005	1,330
2.50	6.00	2.35	50	2.5	8.0	16.1	29.0	0.20	6.20	2	6821 2.502	1,330
2.50	6.00	2.35	50	2.5	8.0	16.1	29.0	0.50	6.40	2	6821 2.505	1,330
3.00	6.00	2.85	57	3.0	10.0	16.9	34.0	0.20	5.10	2	6821 3.002	1,330
3.00	6.00	2.85	57	3.0	10.0	16.9	34.0	0.30	5.10	2	6821 3.003	1,330
3.00	6.00	2.85	57	3.0	10.0	16.9	34.0	0.50	5.20	2	6821 3.005	1,330
4.00	6.00	3.80	57	4.0	14.0	17.0	39.0	0.20	3.40	4	6821 4.002	1,330
4.00	6.00	3.80	57	4.0	14.0	17.0	39.0	0.50	3.40	4	6821 4.005	1,330
4.00	6.00	3.80	57	4.0	14.0	17.0	39.0	1.00	3.50	4	6821 4.010	1,330
5.00	6.00	4.80	57	5.0	18.0	19.6	44.0	0.50	1.50	4	6821 5.005	1,330
6.00	6.00	5.70	57	6.0	20.0	20.6	64.0	0.20		4	6821 6.002	1,330
6.00	6.00	5.70	57	6.0	20.0	20.6	64.0	0.50		4	6821 6.005	1,330
6.00	6.00	5.70	57	6.0	20.0	20.6	64.0	1.00		4	6821 6.010	1,330
8.00	8.00	7.70	63	8.0	26.0	26.6	64.0	0.50		4	6821 8.005	1,590
8.00	8.00	7.70	63	8.0	26.0	26.6	64.0	0.80		4	6821 8.008	1,590
8.00	8.00	7.70	63	8.0	26.0	26.6	64.0	1.00		4	6821 8.010	1,590
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	0.50		4	6821 10.005	2,160
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	1.00		4	6821 10.010	2,160
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	2.00		4	6821 10.020	2,160
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	0.50		4	6821 12.005	2,930
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	1.00		4	6821 12.010	2,930
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	2.00		4	6821 12.020	2,930

Torus end mills G-Mold μ 65 T

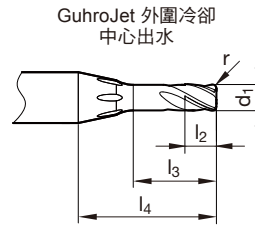
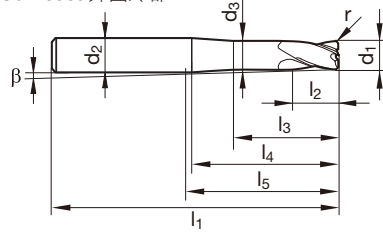


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GÜHRING NAVIGATOR

Cutting data page 55-58 切削參數請參閱 55-58頁

- High-precision ball nose end mills for maximum form accuracy
- exact tolerance of the radius contour $r = \pm 0.005$ mm
- \varnothing tolerance d_1 of $\varnothing 0.2-3$ mm $+0.000/-0.010$ mm
- with GühroJet peripheral cooling from $\varnothing 0.3-3$ mm
- centre cutting
- neck clearance
- 高精度圓鼻銑刀，確保最高形狀精度
- 半徑輪廓的精確公差 $r = \pm 0.005$ mm
- \varnothing 公差 d_1 從 $\varnothing 0.2-3$ mm $+0.000/-0.010$ mm
- 帶有 $\varnothing 0.3-3$ mm 的 GühroJet 外圍冷卻
- 端刀過中心可切削
- 頸部縮頸研磨



GühroJet 外圍冷卻
中心出水



HRC 65u
2-4刃 圓鼻刀

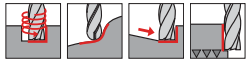
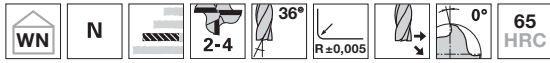
Article no.

6822

d1 f8	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
0.30	4.00	0.28	50	0.3	1.5	9.9	22,0	0.05	10.60	2	6822 0.300	1,240
0.50	4.00	0.45	50	0.5	2.5	10.5	22,0	0.05	9.50	2	6822 0.500	1,240
0.50	4.00	0.45	50	0.5	2.5	10.5	22,0	0.10	9.50	2	6822 0.501	1,240
0.60	4.00	0.55	50	0.6	3.0	10.7	22,0	0.05	9.00	2	6822 0.600	1,240
0.60	4.00	0.55	50	0.6	3.0	10.7	22,0	0.10	9.10	2	6822 0.601	1,240
0.80	4.00	0.75	50	0.8	4.0	11.1	22,0	0.05	8.20	2	6822 0.800	1,240
0.80	4.00	0.75	50	0.8	4.0	11.1	22,0	0.10	8.20	2	6822 0.801	1,240
0.80	4.00	0.75	50	0.8	4.0	11.1	22,0	0.20	8.30	2	6822 0.802	1,240
1.00	4.00	0.92	50	1.0	5.0	11.7	22,0	0.10	7.30	2	6822 1.001	1,240
1.00	4.00	0.92	50	1.0	5.0	11.7	22,0	0.20	7.40	2	6822 1.002	1,240
1.00	4.00	0.92	50	1.0	5.0	11.7	22,0	0.30	7.50	2	6822 1.003	1,240
1.50	4.00	1.40	50	1.5	8.0	13.6	27,0	0.10	5.30	2	6822 1.501	1,240
1.50	4.00	1.40	50	1.5	8.0	13.6	27,0	0.20	5.30	2	6822 1.502	1,240
1.50	4.00	1.40	50	1.5	8.0	13.6	27,0	0.50	5.40	2	6822 1.505	1,240
2.00	6.00	1.85	50	2.0	10.0	19.2	29,0	0.20	6.00	2	6822 2.002	1,380
2.00	6.00	1.85	50	2.0	10.0	19.2	29,0	0.50	6.10	2	6822 2.005	1,380
2.50	6.00	2.35	50	2.5	12.5	20.6	29,0	0.20	4.90	2	6822 2.502	1,380
2.50	6.00	2.35	50	2.5	12.5	20.6	29,0	0.50	4.90	2	6822 2.505	1,380
3.00	6.00	2.85	65	3.0	15.0	21.9	34,0	0.20	3.90	2	6822 3.002	1,380
3.00	6.00	2.85	65	3.0	15.0	21.9	34,0	0.30	3.90	2	6822 3.003	1,380
3.00	6.00	2.85	65	3.0	15.0	21.9	34,0	0.50	4.00	2	6822 3.005	1,380
4.00	6.00	3.80	65	4.0	20.0	23.0	39,0	0.20	2.50	4	6822 4.002	1,380
4.00	6.00	3.80	65	4.0	20.0	23.0	39,0	0.50	2.50	4	6822 4.005	1,380
4.00	6.00	3.80	65	4.0	20.0	23.0	39,0	1.00	2.60	4	6822 4.010	1,380
5.00	6.00	4.80	65	5.0	25.0	26.6	44,0	0.50	1.10	4	6822 5.005	1,380
6.00	6.00	5.70	65	6.0	25.0	25.6	64,0	0.20		4	6822 6.002	1,380
6.00	6.00	5.70	65	6.0	25.0	25.6	64,0	0.50		4	6822 6.005	1,380
6.00	6.00	5.70	65	6.0	25.0	25.6	64,0	1.00		4	6822 6.010	1,380
8.00	8.00	7.70	75	8.0	30.0	30.6	64,0	0.50		4	6822 8.005	1,640
8.00	8.00	7.70	75	8.0	30.0	30.6	64,0	0.80		4	6822 8.008	1,640
8.00	8.00	7.70	75	8.0	30.0	30.6	64,0	1.00		4	6822 8.010	1,640
10.00	10.00	9.50	90	10.0	40.0	40.9	50,0	0.50		4	6822 10.005	2,230
10.00	10.00	9.50	90	10.0	40.0	40.9	50,0	1.00		4	6822 10.010	2,230
10.00	10.00	9.50	90	10.0	40.0	40.9	50,0	2.00		4	6822 10.020	2,230
12.00	12.00	11.50	100	12.0	40.0	40.9	55,0	0.50		4	6822 12.005	3,030
12.00	12.00	11.50	100	12.0	40.0	40.9	55,0	1.00		4	6822 12.010	3,030
12.00	12.00	11.50	100	12.0	40.0	40.9	55,0	2.00		4	6822 12.020	3,030

Torus end mills G-Mold μ 65 T

鑄鐵/ 高硬度短屑材質用

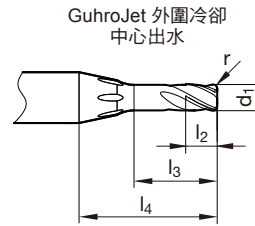
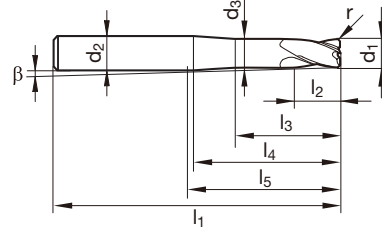


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GÜHRING NAVIGATOR

Cutting data page 55-58 切削參數請參閱 55-58頁

- High-precision ball nose end mills for maximum form accuracy
- exact tolerance of the radius contour $r = \pm 0.005$ mm
- \varnothing tolerance d_1 of $\varnothing 0.2-3$ mm $+0.000/-0.010$ mm
- with GührJet peripheral cooling from $\varnothing 0.3-3$ mm
- centre cutting
- neck clearance
- 高精度圓鼻銑刀，確保最高形狀精度
- 半徑輪廓的精確公差 $r = \pm 0.005$ mm
- \varnothing 公差 d_1 從 $\varnothing 0.2-3$ mm $+0.000/-0.010$ mm
- 帶有 $\varnothing 0.3-3$ mm 的 GührJet 外圍冷卻
- 端刃過中心可切削
- 頸部縮頸研磨

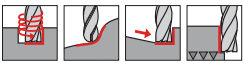
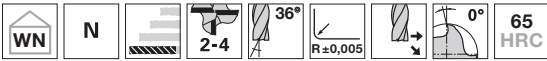
GührJet 外圍冷卻
中心出水**HRC 65u**
2- 4刃 圓鼻刀

Article no.

6823

d1 f8	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
0.30	4.00	0.28	50	0.3	2.0	10.4	22.0	0.05	10.10	2	68230.300	1,450
0.50	4.00	0.45	50	0.5	3.0	11.0	22.0	0.05	9.00	2	68230.500	1,450
0.50	4.00	0.45	50	0.5	3.0	11.0	22.0	0.10	9.10	2	68230.501	1,450
0.60	4.00	0.55	50	0.6	4.0	11.7	22.0	0.05	8.30	2	68230.600	1,450
0.60	4.00	0.55	50	0.6	4.0	11.7	22.0	0.10	8.30	2	6823 0.601	1,450
0.80	4.00	0.75	50	0.8	5.0	12.1	22.0	0.05	7.50	2	6823 0.800	1,450
0.80	4.00	0.75	50	0.8	5.0	12.1	22.0	0.10	7.60	2	6823 0.801	1,450
0.80	4.00	0.75	50	0.8	5.0	12.1	22.0	0.20	7.60	2	6823 0.802	1,450
1.00	4.00	0.92	50	1.0	8.0	14.7	22.0	0.10	5.80	2	6823 1.001	1,450
1.00	4.00	0.92	50	1.0	8.0	14.7	22.0	0.20	5.90	2	6823 1.002	1,450
1.00	4.00	0.92	50	1.0	8.0	14.7	22.0	0.30	5.90	2	6823 1.003	1,450
1.50	4.00	1.40	50	1.5	10.0	15.6	27.0	0.10	4.60	2	6823 1.501	1,450
1.50	4.00	1.40	50	1.5	10.0	15.6	27.0	0.20	4.60	2	6823 1.502	1,450
1.50	4.00	1.40	50	1.5	10.0	15.6	27.0	0.50	4.70	2	6823 1.505	1,450
2.00	6.00	1.85	57	2.0	12.0	21.2	29.0	0.20	5.40	2	6823 2.002	1,610
2.00	6.00	1.85	57	2.0	12.0	21.2	29.0	0.50	5.50	2	6823 2.005	1,610
2.50	6.00	2.35	57	2.5	15.0	23.1	29.0	0.20	4.30	2	6823 2.502	1,610
2.50	6.00	2.35	57	2.5	15.0	23.1	29.0	0.50	4.40	2	6823 2.505	1,610
3.00	6.00	2.85	65	3.0	18.0	24.9	34.0	0.20	3.40	2	6823 3.002	1,610
3.00	6.00	2.85	65	3.0	18.0	24.9	34.0	0.30	3.50	2	6823 3.003	1,610
3.00	6.00	2.85	65	3.0	18.0	24.9	34.0	0.50	3.50	2	6823 3.005	1,610
4.00	6.00	3.80	65	4.0	24.0	27.0	39.0	0.20	2.10	4	6823 4.002	1,610
4.00	6.00	3.80	65	4.0	24.0	27.0	39.0	0.50	2.10	4	6823 4.005	1,610
4.00	6.00	3.80	65	4.0	24.0	27.0	39.0	1.00	2.20	4	6823 4.010	1,610
5.00	6.00	4.80	80	5.0	30.0	31.6	44.0	0.50	0.90	4	6823 5.005	1,610
6.00	6.00	5.70	80	6.0	30.0	30.6	64.0	0.20		4	6823 6.002	1,610
6.00	6.00	5.70	80	6.0	30.0	30.6	64.0	0.50		4	6823 6.005	1,610
6.00	6.00	5.70	80	6.0	30.0	30.6	64.0	1.00		4	6823 6.010	1,610
8.00	8.00	7.70	90	8.0	40.0	40.6	64.0	0.50		4	6823 8.005	1,920
8.00	8.00	7.70	90	8.0	40.0	40.6	64.0	0.80		4	6823 8.008	1,920
8.00	8.00	7.70	90	8.0	40.0	40.6	64.0	1.00		4	6823 8.010	1,920
10.00	10.00	9.50	100	10.0	50.0	50.9	60.0	0.50		4	6823 10.005	2,610
10.00	10.00	9.50	100	10.0	50.0	50.9	60.0	1.00		4	6823 10.010	2,610
10.00	10.00	9.50	100	10.0	50.0	50.9	60.0	2.00		4	6823 10.020	2,610
12.00	12.00	11.50	120	12.0	60.0	60.9	75.0	0.50		4	6823 12.005	3,550
12.00	12.00	11.50	120	12.0	60.0	60.9	75.0	1.00		4	6823 12.010	3,550
12.00	12.00	11.50	120	12.0	60.0	60.9	75.0	2.00		4	6823 12.020	3,550

Torus end mills G-Mold μ 65 T

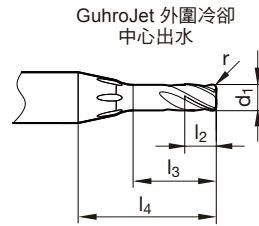
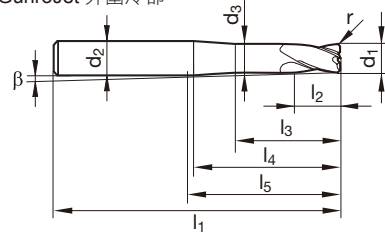


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GÜHRING NAVIGATOR

Cutting data page 55-58 切削參數請參閱 55-58頁

- High-precision ball nose end mills for maximum form accuracy
- exact tolerance of the radius contour $r = \pm 0.005$ mm
- \varnothing tolerance d_1 of $\varnothing 0.2-3$ mm $+0.000/-0.010$ mm
- with GührJet peripheral cooling from $\varnothing 0.3-3$ mm
- centre cutting
- neck clearance
- 高精度圓鼻銑刀，確保最高形狀精度
- 半徑輪廓的精確公差 $r = \pm 0.005$ mm
- \varnothing 公差 d_1 從 $\varnothing 0.2-3$ mm $+0.000/-0.010$ mm
- 帶有 $\varnothing 0.3-3$ mm 的 GührJet 外圍冷卻
- 端刀過中心可切削
- 頸部縮頸研磨



GührJet 外圍冷卻
中心出水

HRC 65u
2-4 刃 圓鼻刀



Article no.

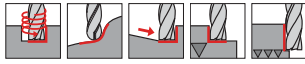
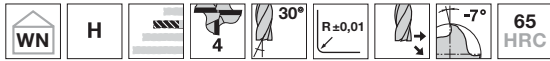
6824

d1 f8	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
0.30	4.00	0.28	50	0.3	3.0	11.4	22.0	0.05	9.20	2	6824 0.300	1,500
0.50	4.00	0.45	50	0.5	5.0	13.0	22.0	0.05	7.70	2	6824 0.500	1,500
0.50	4.00	0.45	50	0.5	5.0	13.0	22.0	0.10	7.70	2	6824 0.501	1,500
0.60	4.00	0.55	50	0.6	6.0	13.7	22.0	0.05	7.10	2	6824 0.600	1,500
0.60	4.00	0.55	50	0.6	6.0	13.7	22.0	0.10	7.10	2	6824 0.601	1,500
0.80	4.00	0.75	50	0.8	8.0	15.1	22.0	0.05	6.00	2	6824 0.800	1,500
0.80	4.00	0.75	50	0.8	8.0	15.1	22.0	0.10	6.10	2	6824 0.801	1,500
0.80	4.00	0.75	50	0.8	8.0	15.1	22.0	0.20	6.10	2	6824 0.802	1,500
1.00	4.00	0.92	50	1.0	10.0	16.7	22.0	0.10	5.10	2	6824 1.001	1,500
1.00	4.00	0.92	50	1.0	10.0	16.7	22.0	0.20	5.20	2	6824 1.002	1,500
1.00	4.00	0.92	50	1.0	10.0	16.7	22.0	0.30	5.20	2	6824 1.003	1,500
1.50	4.00	1.40	55	1.5	16.0	21.6	27.0	0.10	3.30	2	6824 1.501	1,500
1.50	4.00	1.40	55	1.5	16.0	21.6	27.0	0.20	3.30	2	6824 1.502	1,500
1.50	4.00	1.40	55	1.5	16.0	21.6	27.0	0.50	3.30	2	6824 1.505	1,500
2.00	6.00	1.85	65	2.0	20.0	29.2	29.0	0.20	3.90	2	6824 2.002	1,660
2.00	6.00	1.85	65	2.0	20.0	29.2	29.0	0.50	3.90	2	6824 2.005	1,660
2.50	6.00	2.35	65	2.5	20.0	28.1	29.0	0.20	3.50	2	6824 2.502	1,660
2.50	6.00	2.35	65	2.5	20.0	28.1	29.0	0.50	3.60	2	6824 2.505	1,660
3.00	6.00	2.85	70	3.0	25.0	31.9	34.0	0.20	2.70	2	6824 3.002	1,660
3.00	6.00	2.85	70	3.0	25.0	31.9	34.0	0.30	2.70	2	6824 3.003	1,660
3.00	6.00	2.85	70	3.0	25.0	31.9	34.0	0.50	2.70	2	6824 3.005	1,660
4.00	6.00	3.80	75	4.0	32.0	35.0	39.0	0.20	1.60	4	6824 4.002	1,660
4.00	6.00	3.80	75	4.0	32.0	35.0	39.0	0.50	1.60	4	6824 4.005	1,660
4.00	6.00	3.80	75	4.0	32.0	35.0	39.0	1.00	1.60	4	6824 4.010	1,660
5.00	6.00	4.80	80	5.0	42.0	43.6	44.0	0.50	0.60	4	6824 5.005	1,660
6.00	6.00	5.70	100	6.0	40.0	40.6	64.0	0.20		4	6824 6.002	1,660
6.00	6.00	5.70	100	6.0	40.0	40.6	64.0	0.50		4	6824 6.005	1,660
6.00	6.00	5.70	100	6.0	40.0	40.6	64.0	1.00		4	6824 6.010	1,660
8.00	8.00	7.70	100	8.0	40.0	40.6	64.0	0.50		4	6824 8.005	1,980
8.00	8.00	7.70	100	8.0	40.0	40.6	64.0	0.80		4	6824 8.008	1,980
8.00	8.00	7.70	100	8.0	40.0	40.6	64.0	1.00		4	6824 8.010	1,980



Torus end mills G-Mold 65 T

鑄鐵/ 高硬度短屑材質用



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GÜHRING NAVIGATOR

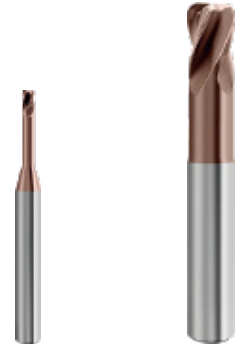
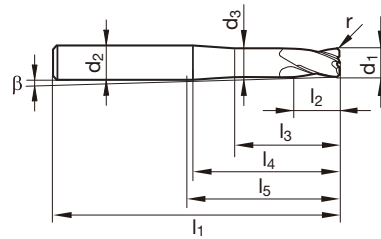
Cutting data page 55-58 切削參數請參閱 55-58頁

- neck clearance
- centre cutting
- 頸部縮頸研磨
- 端刀過中心，可切削

Tool material	Solid carbide
Surface	⊗
Type	H
Shank form	HA



HRC 65
4刃 圓鼻刀

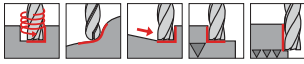
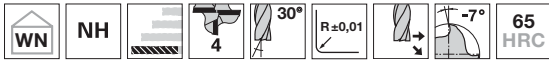


Article no. **6837**

d1 f8	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
1.00	4.00	0.92	45	1.0	4.0	9.7	17.0	0.10	8.80	4	6837 1.001	750
1.00	4.00	0.92	45	1.0	4.0	9.7	17.0	0.20	8.90	4	6837 1.002	750
1.50	4.00	1.40	45	1.5	6.0	10.9	17.0	0.20	6.60	4	6837 1.502	750
2.00	6.00	1.85	54	2.0	8.0	13.7	18.0	0.10	8.30	4	6837 2.001	840
2.00	6.00	1.85	54	2.0	8.0	13.7	18.0	0.20	8.40	4	6837 2.002	840
2.00	6.00	1.85	54	2.0	8.0	13.7	18.0	0.50	8.60	4	6837 2.005	840
3.00	6.00	2.85	54	3.0	12.0	16.3	18.0	0.10	5.30	4	6837 3.001	840
3.00	6.00	2.85	54	3.0	12.0	16.3	18.0	0.30	5.30	4	6837 3.003	840
3.00	6.00	2.85	54	3.0	12.0	16.3	18.0	0.50	5.40	4	6837 3.005	840
4.00	6.00	3.80	57	4.0	14.0	17.0	21.0	0.20	3.40	4	6837 4.002	840
4.00	6.00	3.80	57	4.0	14.0	17.0	21.0	0.30	3.40	4	6837 4.003	840
4.00	6.00	3.80	57	4.0	14.0	17.0	21.0	0.50	3.40	4	6837 4.005	840
5.00	6.00	4.80	57	5.0	17.0	18.6	21.0	0.20	1.50	4	6837 5.002	840
5.00	6.00	4.80	57	5.0	17.0	18.6	21.0	0.50	1.50	4	6837 5.005	840
5.00	6.00	4.80	57	5.0	17.0	18.6	21.0	1.00	1.60	4	6837 5.010	840
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	0.20		4	6837 6.002	840
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	0.30		4	6837 6.003	840
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	0.50		4	6837 6.005	840
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	1.00		4	6837 6.010	840
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	1.50		4	6837 6.015	840
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	2.00		4	6837 6.020	840
8.00	8.00	7.70	63	8.0	26.0	26.6	27.0	0.30		4	6837 8.003	1,000
8.00	8.00	7.70	63	8.0	26.0	26.6	27.0	0.50		4	6837 8.005	1,000
8.00	8.00	7.70	63	8.0	26.0	26.6	27.0	1.00		4	6837 8.010	1,000
8.00	8.00	7.70	63	8.0	26.0	26.6	27.0	1.50		4	6837 8.015	1,000
8.00	8.00	7.70	63	8.0	26.0	26.6	27.0	2.00		4	6837 8.020	1,000
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	0.30		4	6837 10.003	1,360
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	0.50		4	6837 10.005	1,360
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	1.00		4	6837 10.010	1,360
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	1.50		4	6837 10.015	1,360
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	2.00		4	6837 10.020	1,360
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	3.00		4	6837 10.030	1,360
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	0.50		4	6837 12.005	1,840
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	1.00		4	6837 12.010	1,840
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	2.00		4	6837 12.020	1,840
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	3.00		4	6837 12.030	1,840
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	4.00		4	6837 12.040	1,840

Milling tools

Torus end mills G-Mold 65 T



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H	●

GÜHRING NAVIGATOR

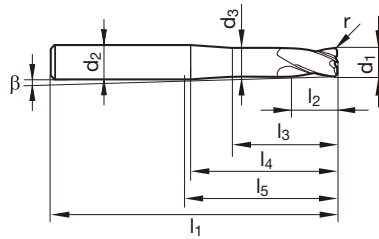
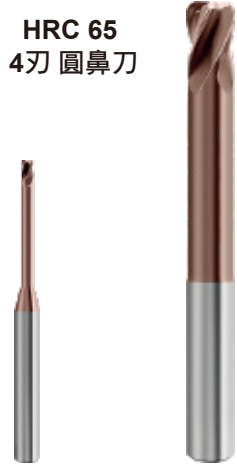
Cutting data page 55-58 切削參數請參閱 55-58頁

- neck clearance
- centre cutting
- 頸部縮頸研磨
- 端刃過中心，可切削

Tool material	Solid carbide
Surface	⊗
Type	NH
Shank form	HA



HRC 65
4刃 圓鼻刀



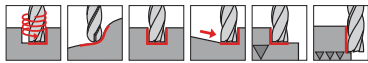
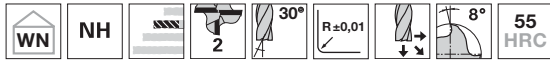
Article no. **6838**

d1 f8	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
1.00	4.00	0.92	50	1.0	6.5	12.2	22.0	0.10	7.00	4	6838 1.001	850
1.00	4.00	0.92	50	1.0	6.5	12.2	22.0	0.20	7.10	4	6838 1.002	850
1.50	4.00	1.40	50	1.5	10.0	14.9	22.0	0.20	4.80	4	6838 1.502	850
2.00	6.00	1.85	57	2.0	13.0	18.7	21.0	0.10	6.10	4	6838 2.001	950
2.00	6.00	1.85	57	2.0	13.0	18.7	21.0	0.20	6.10	4	6838 2.002	950
2.00	6.00	1.85	57	2.0	13.0	18.7	21.0	0.50	6.20	4	6838 2.005	950
3.00	6.00	2.85	65	3.0	20.0	24.3	29.0	0.10	3.50	4	6838 3.001	950
3.00	6.00	2.85	65	3.0	20.0	24.3	29.0	0.30	3.50	4	6838 3.003	950
3.00	6.00	2.85	65	3.0	20.0	24.3	29.0	0.50	3.60	4	6838 3.005	950
4.00	6.00	3.80	75	4.0	25.0	28.0	39.0	0.20	2.00	4	6838 4.002	950
4.00	6.00	3.80	75	4.0	25.0	28.0	39.0	0.30	2.00	4	6838 4.003	950
4.00	6.00	3.80	75	4.0	25.0	28.0	39.0	0.50	2.00	4	6838 4.005	950
5.00	6.00	4.80	75	5.0	31.0	32.6	39.0	0.20	0.80	4	6838 5.002	950
5.00	6.00	4.80	75	5.0	31.0	32.6	39.0	0.50	0.90	4	6838 5.005	950
5.00	6.00	4.80	75	5.0	31.0	32.6	39.0	1.00	0.90	4	6838 5.010	950
6.00	6.00	5.70	75	6.0	38.0	38.6	39.0	0.20		4	6838 6.002	950
6.00	6.00	5.70	75	6.0	38.0	38.6	39.0	0.30		4	6838 6.003	950
6.00	6.00	5.70	75	6.0	38.0	38.6	39.0	0.50		4	6838 6.005	950
6.00	6.00	5.70	75	6.0	38.0	38.6	39.0	1.00		4	6838 6.010	950
6.00	6.00	5.70	75	6.0	38.0	38.6	39.0	1.50		4	6838 6.015	950
6.00	6.00	5.70	75	6.0	38.0	38.6	39.0	2.00		4	6838 6.020	950
8.00	8.00	7.70	90	8.0	53.0	53.6	54.0	0.30		4	6838 8.003	1,130
8.00	8.00	7.70	90	8.0	53.0	53.6	54.0	0.50		4	6838 8.005	1,130
8.00	8.00	7.70	90	8.0	53.0	53.6	54.0	1.00		4	6838 8.010	1,130
8.00	8.00	7.70	90	8.0	53.0	53.6	54.0	1.50		4	6838 8.015	1,130
8.00	8.00	7.70	90	8.0	53.0	53.6	54.0	2.00		4	6838 8.020	1,130
10.00	10.00	9.50	100	10.0	59.0	59.9	60.0	0.30		4	6838 10.003	1,530
10.00	10.00	9.50	100	10.0	59.0	59.9	60.0	0.50		4	6838 10.005	1,530
10.00	10.00	9.50	100	10.0	59.0	59.9	60.0	1.00		4	6838 10.010	1,530
10.00	10.00	9.50	100	10.0	59.0	59.9	60.0	1.50		4	6838 10.015	1,530
10.00	10.00	9.50	100	10.0	59.0	59.9	60.0	2.00		4	6838 10.020	1,530
10.00	10.00	9.50	100	10.0	59.0	59.9	60.0	3.00		4	6838 10.030	1,530
12.00	12.00	11.50	120	12.0	74.0	74.9	75.0	0.50		4	6838 12.005	2,080
12.00	12.00	11.50	120	12.0	74.0	74.9	75.0	1.00		4	6838 12.010	2,080
12.00	12.00	11.50	120	12.0	74.0	74.9	75.0	2.00		4	6838 12.020	2,080
12.00	12.00	11.50	120	12.0	74.0	74.9	75.0	3.00		4	6838 12.030	2,080
12.00	12.00	11.50	120	12.0	74.0	74.9	75.0	4.00		4	6838 12.040	2,080



Torus end mills G-Mold 55 T

泛用型



P	•
M	•
K	•
N	○
S	•
H	•

GÜHRING NAVIGATOR

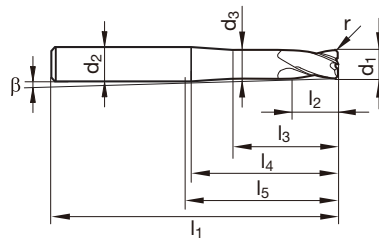
Cutting data page 55-58 切削參數請參閱 55-58頁

- neck clearance
- centre cutting
- 頸部縮頸研磨
- 端刀過中心，可切削

Tool material	Solid carbide
Surface	
Type	NH
Shank form	HA



HRC 55
2刃 圓鼻刀



Article no. **6850**

d1 f8	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
0.50	4.00	0.45	45	0.5	3.0	9.6	17.0	0.10	10.40	2	6850 0.501	660
1.00	4.00	0.92	45	1.0	4.0	9.7	17.0	0.10	8.80	2	6850 1.001	660
1.00	4.00	0.92	45	1.0	4.0	9.7	17.0	0.20	8.90	2	6850 1.002	660
1.50	4.00	1.40	45	1.5	6.0	10.9	17.0	0.20	6.60	2	6850 1.502	660
2.00	6.00	1.85	54	2.0	8.0	13.7	18.0	0.10	8.30	2	6850 2.001	740
2.00	6.00	1.85	54	2.0	8.0	13.7	18.0	0.20	8.40	2	6850 2.002	740
2.00	6.00	1.85	54	2.0	8.0	13.7	18.0	0.50	8.60	2	6850 2.005	770
3.00	6.00	2.85	54	3.0	12.0	16.3	18.0	0.10	5.30	2	6850 3.001	770
3.00	6.00	2.85	54	3.0	12.0	16.3	18.0	0.30	5.30	2	6850 3.003	770
3.00	6.00	2.85	54	3.0	12.0	16.3	18.0	0.50	5.40	2	6850 3.005	770
4.00	6.00	3.80	57	4.0	14.0	17.0	21.0	0.20	3.40	2	6850 4.002	770
4.00	6.00	3.80	57	4.0	14.0	17.0	21.0	0.30	3.40	2	6850 4.003	770
4.00	6.00	3.80	57	4.0	14.0	17.0	21.0	0.50	3.40	2	6850 4.005	770
5.00	6.00	4.80	57	5.0	17.0	18.6	21.0	0.20	1.50	2	6850 5.002	770
5.00	6.00	4.80	57	5.0	17.0	18.6	21.0	0.50	1.50	2	6850 5.005	770
5.00	6.00	4.80	57	5.0	17.0	18.6	21.0	1.00	1.60	2	6850 5.010	770
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	0.20		2	6850 6.002	770
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	0.30		2	6850 6.003	770
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	0.50		2	6850 6.005	770
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	1.00		2	6850 6.010	770
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	1.50		2	6850 6.015	770
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	2.00		2	6850 6.020	770
8.00	8.00	7.70	63	8.0	26.0	26.6	27.0	0.30		2	6850 8.003	910
8.00	8.00	7.70	63	8.0	26.0	26.6	27.0	0.50		2	6850 8.005	910
8.00	8.00	7.70	63	8.0	26.0	26.6	27.0	1.00		2	6850 8.010	910
8.00	8.00	7.70	63	8.0	26.0	26.6	27.0	1.50		2	6850 8.015	910
8.00	8.00	7.70	63	8.0	26.0	26.6	27.0	2.00		2	6850 8.020	910
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	0.30		2	6850 10.003	1,240
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	0.50		2	6850 10.005	1,240
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	1.00		2	6850 10.010	1,240
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	1.50		2	6850 10.015	1,240
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	2.00		2	6850 10.020	1,240
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	3.00		2	6850 10.030	1,240
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	0.50		2	6850 12.005	1,680
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	1.00		2	6850 12.010	1,680
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	2.00		2	6850 12.020	1,680

Milling tools



Milling tools

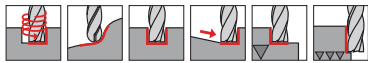
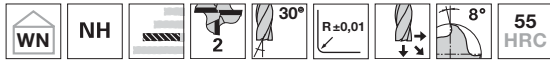
Article no. 6850

d1 f8	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	3.00		2	6850 12.030	1,680
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	4.00		2	6850 12.040	1,680



Torus end mills G-Mold 55 T

泛用型



- P** •
- M** •
- K** •
- N** ○
- S** •
- H** •

GÜHRING NAVIGATOR

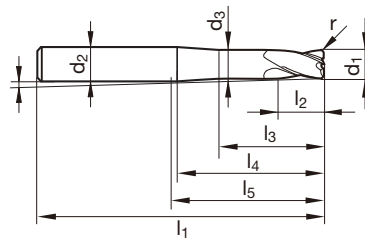
Cutting data page 55-58 切削參數請參閱 55-58頁

- neck clearance
- centre cutting
- 頸部縮頸研磨
- 端刀過中心，可切削

Tool material	Solid carbide
Surface	
Type	NH
Shank form	HA



HRC 55
2刃 圓鼻刀



Article no. **6851**

d1 f8	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
0.50	4.00	0.45	50	0.5	3.6	10.2	22.0	0.10	9.80	2	6851 0.501	790
1.00	4.00	0.92	50	1.0	6.5	12.2	22.0	0.10	7.00	2	6851 1.001	790
1.00	4.00	0.92	50	1.0	6.5	12.2	22.0	0.20	7.10	2	6851 1.002	790
1.50	4.00	1.40	50	1.5	10.0	14.9	22.0	0.20	4.80	2	6851 1.502	790
2.00	6.00	1.85	57	2.0	13.0	18.7	21.0	0.10	6.10	2	6851 2.001	870
2.00	6.00	1.85	57	2.0	13.0	18.7	21.0	0.20	6.10	2	6851 2.002	870
2.00	6.00	1.85	57	2.0	13.0	18.7	21.0	0.50	6.20	2	6851 2.005	870
3.00	6.00	2.85	65	3.0	20.0	24.3	29.0	0.10	3.50	2	6851 3.001	870
3.00	6.00	2.85	65	3.0	20.0	24.3	29.0	0.30	3.50	2	6851 3.003	870
3.00	6.00	2.85	65	3.0	20.0	24.3	29.0	0.50	3.60	2	6851 3.005	870
4.00	6.00	3.80	75	4.0	25.0	28.0	39.0	0.20	2.00	2	6851 4.002	870
4.00	6.00	3.80	75	4.0	25.0	28.0	39.0	0.30	2.00	2	6851 4.003	870
4.00	6.00	3.80	75	4.0	25.0	28.0	39.0	0.50	2.00	2	6851 4.005	870
5.00	6.00	4.80	75	5.0	31.0	32.6	39.0	0.20	0.80	2	6851 5.002	870
5.00	6.00	4.80	75	5.0	31.0	32.6	39.0	0.50	0.90	2	6851 5.005	870
5.00	6.00	4.80	75	5.0	31.0	32.6	39.0	1.00	0.90	2	6851 5.010	870
6.00	6.00	5.70	75	6.0	38.0	38.6	39.0	0.20		2	6851 6.002	870
6.00	6.00	5.70	75	6.0	38.0	38.6	39.0	0.30		2	6851 6.003	870
6.00	6.00	5.70	75	6.0	38.0	38.6	39.0	0.50		2	6851 6.005	870
6.00	6.00	5.70	75	6.0	38.0	38.6	39.0	1.00		2	6851 6.010	870
6.00	6.00	5.70	75	6.0	38.0	38.6	39.0	1.50		2	6851 6.015	870
6.00	6.00	5.70	75	6.0	38.0	38.6	39.0	2.00		2	6851 6.020	870
8.00	8.00	7.70	90	8.0	53.0	53.6	54.0	0.30		2	6851 8.003	1,040
8.00	8.00	7.70	90	8.0	53.0	53.6	54.0	0.50		2	6851 8.005	1,040
8.00	8.00	7.70	90	8.0	53.0	53.6	54.0	1.00		2	6851 8.010	1,040
8.00	8.00	7.70	90	8.0	53.0	53.6	54.0	1.50		2	6851 8.015	1,040
8.00	8.00	7.70	90	8.0	53.0	53.6	54.0	2.00		2	6851 8.020	1,040
10.00	10.00	9.50	100	10.0	59.0	59.9	60.0	0.30		2	6851 10.003	1,420
10.00	10.00	9.50	100	10.0	59.0	59.9	60.0	0.50		2	6851 10.005	1,420
10.00	10.00	9.50	100	10.0	59.0	59.9	60.0	1.00		2	6851 10.010	1,420
10.00	10.00	9.50	100	10.0	59.0	59.9	60.0	1.50		2	6851 10.015	1,420
10.00	10.00	9.50	100	10.0	59.0	59.9	60.0	2.00		2	6851 10.020	1,420
10.00	10.00	9.50	100	10.0	59.0	59.9	60.0	3.00		2	6851 10.030	1,420
12.00	12.00	11.50	120	12.0	74.0	74.9	75.0	0.50		2	6851 12.005	1,920
12.00	12.00	11.50	120	12.0	74.0	74.9	75.0	1.00		2	6851 12.010	1,920
12.00	12.00	11.50	120	12.0	74.0	74.9	75.0	2.00		2	6851 12.020	1,920



Article no.

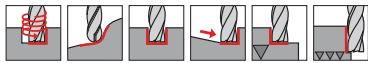
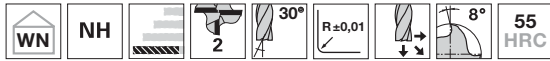
6851

d1 f8	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
12.00	12.00	11.50	120	12.0	74.0	74.9	75.0	3.00		2	6851 12.030	1,920
12.00	12.00	11.50	120	12.0	74.0	74.9	75.0	4.00		2	6851 12.040	1,920



Torus end mills G-Mold 55 T

泛用型



- P** •
- M** •
- K** •
- N** ○
- S** •
- H** •

GÜHRING NAVIGATOR

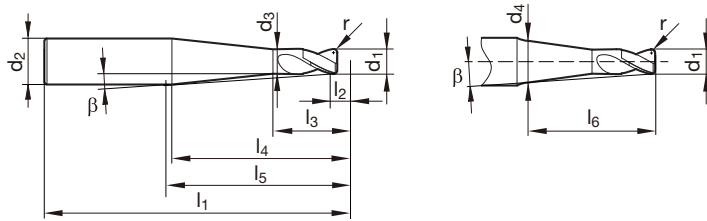
Cutting data page 55-58 切削參數請參閱 55-58頁

- neck clearance
- centre cutting
- 頸部縮頸研磨
- 端刀過中心，可切削

Tool material	Solid carbide
Surface	
Type	NH
Shank form	HA



HRC 55
2刃圓鼻刀



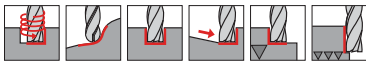
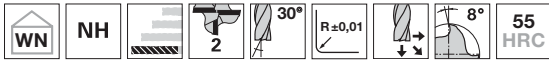
Article no.

6852

d1 f8	d2 h5	d3	d4	l1	l2	l3	l4	l5	l6	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
1.00	4.00	0.92	1.99	50	1.0	2.5	23.7	22.0	20.0	0.20	1.50	2	6852 1.002	850
2.00	6.00	1.85	4.04	80	2.0	5.0	43.6	44.0	40.0	0.20	1.50	2	6852 2.002	950
2.00	6.00	1.85	4.04	80	2.0	5.0	43.6	44.0	40.0	0.50	1.50	2	6852 2.005	950
3.00	6.00	2.85	5.04	80	3.0	7.5	41.8	44.0	40.0	0.20	1.50	2	6852 3.002	950
3.00	6.00	2.85	5.04	80	3.0	7.5	41.8	44.0	40.0	0.50	1.50	2	6852 3.005	950
4.00	6.00	3.80		80	4.0	10.0	40.1	44.0		0.20	1.50	2	6852 4.002	950
4.00	6.00	3.80		80	4.0	10.0	40.1	44.0		0.50	1.50	2	6852 4.005	950
6.00	8.00	5.70		90	6.0	15.0	40.1	54.0		0.20	1.50	2	6852 6.002	1,130
6.00	8.00	5.70		90	6.0	15.0	40.1	54.0		0.50	1.50	2	6852 6.005	1,130
6.00	8.00	5.70		90	6.0	15.0	40.1	54.0		1.00	1.50	2	6852 6.010	1,130
8.00	10.00	7.70		100	8.0	20.0	40.1	60.0		0.30	1.50	2	6852 8.003	1,530
8.00	10.00	7.70		100	8.0	20.0	40.1	60.0		0.50	1.50	2	6852 8.005	1,530
8.00	10.00	7.70		100	8.0	20.0	40.1	60.0		1.00	1.50	2	6852 8.010	1,530
10.00	12.00	9.50		120	10.0	25.0	40.1	75.0		0.50	1.50	2	6852 10.005	2,080
10.00	12.00	9.50		120	10.0	25.0	40.1	75.0		1.00	1.50	2	6852 10.010	2,080
10.00	12.00	9.50		120	10.0	25.0	40.1	75.0		1.50	1.50	2	6852 10.015	2,080
10.00	12.00	9.50		120	10.0	25.0	40.1	75.0		2.00	1.50	2	6852 10.020	2,080

Milling tools

Torus end mills G-Mold 55 T



- P** •
- M** •
- K** •
- N** ○
- S** •
- H** •

GÜHRING NAVIGATOR

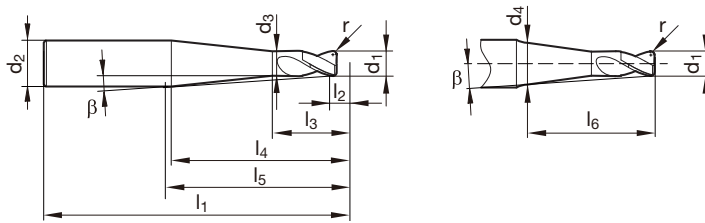
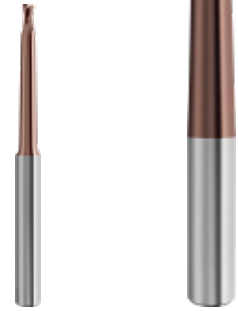
Cutting data page 55-58 切削參數請參閱 55-58頁

- neck clearance
- centre cutting
- 頸部縮頸研磨
- 端刃過中心，可切削

Tool material	Solid carbide
Surface	
Type	NH
Shank form	HA



HRC 55
2刃 圓鼻刀



Article no. **6853**

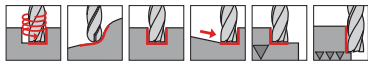
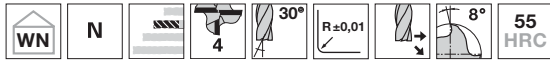
d1 f8	d2 h5	d3	d4	l1	l2	l3	l4	l5	l6	r	β	Z
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	°	
1.00	4.00	0.92	1.65	63	1.0	2.5	24.4	35.0	20.0	0.20	1.00	2
2.00	6.00	1.85	3.35	80	2.0	5.0	44.9	44.0	40.0	0.20	1.00	2
2.00	6.00	1.85	3.35	80	2.0	5.0	44.9	44.0	40.0	0.50	1.00	2
3.00	6.00	2.85	4.35	80	3.0	7.5	43.1	44.0	40.0	0.20	1.00	2
3.00	6.00	2.85	4.35	80	3.0	7.5	43.1	44.0	40.0	0.50	1.00	2
4.00	6.00	3.80	5.35	80	4.0	10.0	41.2	44.0	40.0	0.20	1.00	2
4.00	6.00	3.80	5.35	80	4.0	10.0	41.2	44.0	40.0	0.50	1.00	2
6.00	8.00	5.70	7.70	100	6.0	15.0	50.6	64.0	50.0	0.20	1.00	2
6.00	8.00	5.70	7.70	100	6.0	15.0	50.6	64.0	50.0	0.50	1.00	2
8.00	10.00	7.70		100	8.0	20.0	60.2	60.0		0.50	1.00	2
8.00	10.00	7.70		100	8.0	20.0	60.2	60.0		1.00	1.00	2

Order no.	價格
6853 1.002	850
6853 2.002	950
6853 2.005	950
6853 3.002	950
6853 3.005	950
6853 4.002	950
6853 4.005	950
6853 6.002	1,130
6853 6.005	1,130
6853 8.005	1,530
6853 8.010	1,530



Torus end mills G-Mold 55 T

泛用型



P	•
M	•
K	•
N	○
S	•
H	•

GÜHRING NAVIGATOR

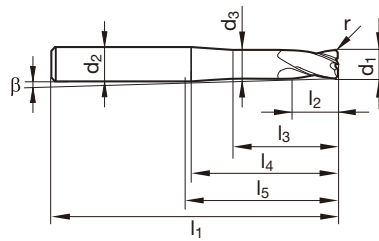
Cutting data page 55-58 切削參數請參閱 55-58頁

- neck clearance
- centre cutting
- 頸部縮頸研磨
- 端刀過中心，可切削

Tool material	Solid carbide
Surface	
Type	N
Shank form	HA



HRC 55
4刃 圓鼻刀

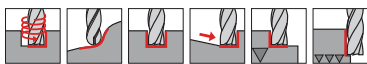
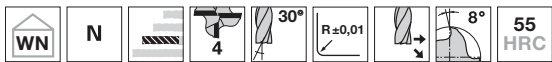


Article no. **6854**

d1 f8	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
1.00	4.00	0.92	45	1.0	4.0	9.7	17.0	0.10	8.80	4	6854 1.001	750
1.00	4.00	0.92	45	1.0	4.0	9.7	17.0	0.20	8.90	4	6854 1.002	750
1.50	4.00	1.40	45	1.5	6.0	10.9	17.0	0.20	6.60	4	6854 1.502	750
2.00	6.00	1.85	54	2.0	8.0	13.7	18.0	0.10	8.30	4	6854 2.001	840
2.00	6.00	1.85	54	2.0	8.0	13.7	18.0	0.20	8.40	4	6854 2.002	840
2.00	6.00	1.85	54	2.0	8.0	13.7	18.0	0.50	8.60	4	6854 2.005	840
3.00	6.00	2.85	54	3.0	12.0	16.3	18.0	0.10	5.30	4	6854 3.001	840
3.00	6.00	2.85	54	3.0	12.0	16.3	18.0	0.30	5.30	4	6854 3.003	840
3.00	6.00	2.85	54	3.0	12.0	16.3	18.0	0.50	5.40	4	6854 3.005	840
4.00	6.00	3.80	57	4.0	14.0	17.0	21.0	0.20	3.40	4	6854 4.002	840
4.00	6.00	3.80	57	4.0	14.0	17.0	21.0	0.30	3.40	4	6854 4.003	840
4.00	6.00	3.80	57	4.0	14.0	17.0	21.0	0.50	3.40	4	6854 4.005	840
5.00	6.00	4.80	57	5.0	17.0	18.6	21.0	0.20	1.50	4	6854 5.002	840
5.00	6.00	4.80	57	5.0	17.0	18.6	21.0	0.50	1.50	4	6854 5.005	840
5.00	6.00	4.80	57	5.0	17.0	18.6	21.0	1.00	1.60	4	6854 5.010	840
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	0.20		4	6854 6.002	840
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	0.30		4	6854 6.003	840
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	0.50		4	6854 6.005	840
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	1.00		4	6854 6.010	840
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	1.50		4	6854 6.015	840
6.00	6.00	5.70	57	6.0	20.0	20.6	21.0	2.00		4	6854 6.020	840
8.00	8.00	7.70	63	8.0	26.0	26.6	27.0	0.30		4	6854 8.003	1,000
8.00	8.00	7.70	63	8.0	26.0	26.6	27.0	0.50		4	6854 8.005	1,000
8.00	8.00	7.70	63	8.0	26.0	26.6	27.0	1.00		4	6854 8.010	1,000
8.00	8.00	7.70	63	8.0	26.0	26.6	27.0	1.50		4	6854 8.015	1,000
8.00	8.00	7.70	63	8.0	26.0	26.6	27.0	2.00		4	6854 8.020	1,000
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	0.30		4	6854 10.003	1,360
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	0.50		4	6854 10.005	1,360
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	1.00		4	6854 10.010	1,360
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	1.50		4	6854 10.015	1,360
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	2.00		4	6854 10.020	1,360
10.00	10.00	9.50	72	10.0	31.0	31.9	32.0	3.00		4	6854 10.030	1,360
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	0.50		4	6854 12.005	1,840
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	1.00		4	6854 12.010	1,840
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	2.00		4	6854 12.020	1,840
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	3.00		4	6854 12.030	1,840
12.00	12.00	11.50	83	12.0	37.0	37.9	38.0	4.00		4	6854 12.040	1,840

泛用型

Torus end mills G-Mold 55 T



- P** •
- M** •
- K** •
- N** ○
- S** •
- H** •

GÜHRING NAVIGATOR

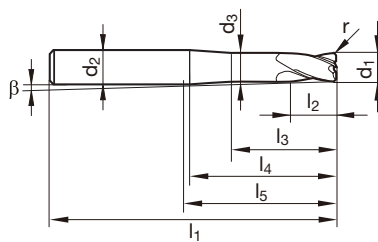
Cutting data page 55-58 切削參數請參閱 55-58頁

- neck clearance
- centre cutting
- 頸部縮頸研磨
- 端刃過中心，可切削

Tool material	Solid carbide
Surface	
Type	N
Shank form	HA



HRC 55
4刃圓鼻刀



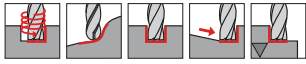
Article no. **6855**

d1 f8	d2 h5	d3	l1	l2	l3	l4	l5	r	β	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm	mm	°			
1.00	4.00	0.92	50	1.0	6.5	12.2	20.0	0.10	7.00	4	6855 1.001	850
1.00	4.00	0.92	50	1.0	6.5	12.2	20.0	0.20	7.10	4	6855 1.002	850
1.50	4.00	1.40	50	1.5	10.0	14.9	20.0	0.20	4.80	4	6855 1.502	850
2.00	6.00	1.85	57	2.0	13.0	18.7	17.0	0.10	6.10	4	6855 2.001	950
2.00	6.00	1.85	57	2.0	13.0	18.7	17.0	0.20	6.10	4	6855 2.002	950
2.00	6.00	1.85	57	2.0	13.0	18.7	17.0	0.50	6.20	4	6855 2.005	950
3.00	6.00	2.85	65	3.0	20.0	24.3	25.0	0.10	3.50	4	6855 3.001	950
3.00	6.00	2.85	65	3.0	20.0	24.3	25.0	0.30	3.50	4	6855 3.003	950
3.00	6.00	2.85	65	3.0	20.0	24.3	25.0	0.50	3.60	4	6855 3.005	950
4.00	6.00	3.80	75	4.0	25.0	28.0	35.0	0.20	2.00	4	6855 4.002	950
4.00	6.00	3.80	75	4.0	25.0	28.0	35.0	0.30	2.00	4	6855 4.003	950
4.00	6.00	3.80	75	4.0	25.0	28.0	35.0	0.50	2.00	4	6855 4.005	950
5.00	6.00	4.80	75	5.0	31.0	32.6	35.0	0.20	0.80	4	6855 5.002	950
5.00	6.00	4.80	75	5.0	31.0	32.6	35.0	0.50	0.90	4	6855 5.005	950
5.00	6.00	4.80	75	5.0	31.0	32.6	35.0	1.00	0.90	4	6855 5.010	950
6.00	6.00	5.70	75	6.0	38.0	38.6	35.0	0.20		4	6855 6.002	950
6.00	6.00	5.70	75	6.0	38.0	38.6	35.0	0.30		4	6855 6.003	950
6.00	6.00	5.70	75	6.0	38.0	38.6	35.0	0.50		4	6855 6.005	950
6.00	6.00	5.70	75	6.0	38.0	38.6	35.0	1.00		4	6855 6.010	950
6.00	6.00	5.70	75	6.0	38.0	38.6	35.0	1.50		4	6855 6.015	950
6.00	6.00	5.70	75	6.0	38.0	38.6	35.0	2.00		4	6855 6.020	950
8.00	8.00	7.70	90	8.0	53.0	53.6	50.0	0.30		4	6855 8.003	1,130
8.00	8.00	7.70	90	8.0	53.0	53.6	50.0	0.50		4	6855 8.005	1,130
8.00	8.00	7.70	90	8.0	53.0	53.6	50.0	1.00		4	6855 8.010	1,130
8.00	8.00	7.70	90	8.0	53.0	53.6	50.0	1.50		4	6855 8.015	1,130
8.00	8.00	7.70	90	8.0	53.0	53.6	50.0	2.00		4	6855 8.020	1,130
10.00	10.00	9.50	100	10.0	59.0	59.9	55.0	0.30		4	6855 10.003	1,530
10.00	10.00	9.50	100	10.0	59.0	59.9	55.0	0.50		4	6855 10.005	1,530
10.00	10.00	9.50	100	10.0	59.0	59.9	55.0	1.00		4	6855 10.010	1,530
10.00	10.00	9.50	100	10.0	59.0	59.9	55.0	1.50		4	6855 10.015	1,530
10.00	10.00	9.50	100	10.0	59.0	59.9	55.0	2.00		4	6855 10.020	1,530
10.00	10.00	9.50	100	10.0	59.0	59.9	55.0	3.00		4	6855 10.030	1,530
12.00	12.00	11.50	120	12.0	74.0	74.9	75.0	0.50		4	6855 12.005	2,080
12.00	12.00	11.50	120	12.0	74.0	74.9	75.0	1.00		4	6855 12.010	2,080
12.00	12.00	11.50	120	12.0	74.0	74.9	75.0	2.00		4	6855 12.020	2,080
12.00	12.00	11.50	120	12.0	74.0	74.9	75.0	3.00		4	6855 12.030	2,080
12.00	12.00	11.50	120	12.0	74.0	74.9	75.0	4.00		4	6855 12.040	2,080



High feed end mills G-Mold 65 HF

泛用型：低切深/大進給 粗加工用

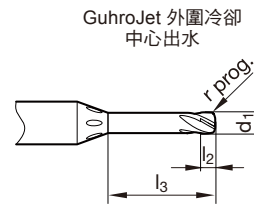
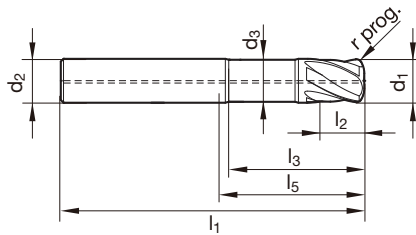


P	•
M	•
K	•
N	•
S	•
H	•

GÜHRING NAVIGATOR

Cutting data page 55-58 切削參數請參閱 55-58頁

- for high-feed roughing with low ap and maximum fz
- with central internal cooling from $\varnothing 4$ mm
- with GühroJet peripheral cooling from $\varnothing 1-3$ mm
- neck clearance
- without centre cutting
- 用於低ap和最大fz的高進給粗加工
- 從 $\varnothing 4$ mm的中央內部冷卻
- 帶有 $\varnothing 1-3$ mm的GuhroJet外圍冷卻
- 頸部縮頸研磨
- 端刃無過中心



Tool material	Solid carbide
Surface	
Type	H
Shank form	HA

**HRC 65 HF**
4刃圓鼻刀

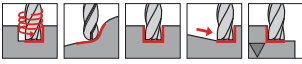
Article no.

6830

d1 h10	d2 h6	d3	l1	l2	l3	l5	r prog.	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm			
1.00	4.00	0.92	50	0.6	5.0	22.0	0.18	4	6830 1.000	930
1.50	4.00	1.40	50	1.0	7.5	22.0	0.25	4	6830 1.500	930
2.00	6.00	1.85	57	1.2	10.0	21.0	0.35	4	6830 2.000	1,020
2.50	6.00	2.35	57	1.5	12.5	21.0	0.40	4	6830 2.500	1,020
3.00	6.00	2.85	57	2.0	15.0	21.0	0.50	4	6830 3.000	1,020
4.00	6.00	3.80	57	3.0	18.0	21.0	0.80	4	6830 4.000	1,020
5.00	6.00	4.80	57	4.0	20.0	21.0	0.80	4	6830 5.000	1,020
6.00	6.00	5.70	57	5.0	20.0	21.0	1.00	4	6830 6.000	1,020
8.00	8.00	7.70	63	6.0	26.0	27.0	1.50	4	6830 8.000	1,310
10.00	10.00	9.50	72	8.0	30.0	32.0	2.00	4	6830 10.000	1,750
12.00	12.00	11.50	83	10.0	36.0	38.0	2.00	4	6830 12.000	2,190
16.00	16.00	15.50	92	12.0	42.0	44.0	2.50	4	6830 16.000	3,640

High feed end mills G-Mold 65 HF

泛用型：低切深/ 大進給 粗加工用

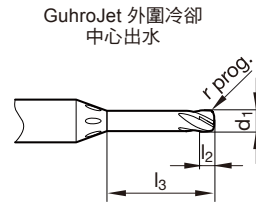
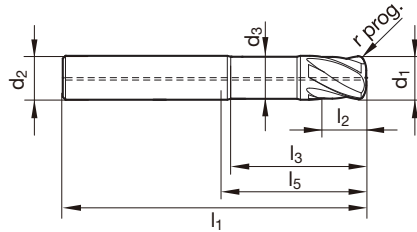


- P** •
- M** •
- K** •
- N** •
- S** •
- H** •

GÜHRING NAVIGATOR

Cutting data page 55-58 切削參數請參閱 55-58頁

- for high-feed roughing with low ap and maximum fz
- with central internal cooling from Ø 4 mm
- with GühroJet peripheral cooling from Ø 1-3 mm
- neck clearance
- without centre cutting
- 用於低ap和最大fz的高進給粗加工
- 從Ø 4 mm的中央內部冷卻
- 帶有 Ø 1-3 mm 的 GühroJet 外圍冷卻
- 頸部縮頸研磨
- 端刃無過中心



GühroJet 外圍冷卻
中心出水

HRC 65 HF
4刃 圓鼻刀



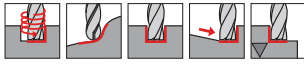
Article no. **6814**

d1 h10	d2 h6	d3	l1	l2	l3	l5	r prog.	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm			
1.00	4.00	0.92	50	0.6	8.0	24.8	0.18	4	6814 1.000	1,070
1.50	4.00	1.40	50	1.0	12.0	25.2	0.25	4	6814 1.500	1,070
2.00	6.00	1.85	57	1.2	16.0	29.1	0.35	4	6814 2.000	1,170
2.50	6.00	2.35	65	1.5	20.0	33.5	0.40	4	6814 2.500	1,170
3.00	6.00	2.85	65	2.0	24.0	34.0	0.50	4	6814 3.000	1,170
4.00	6.00	3.80	65	3.0	26.0	29.0	0.80	4	6814 4.000	1,170
5.00	6.00	4.80	65	4.0	27.0	29.0	0.80	4	6814 5.000	1,170
6.00	6.00	5.70	65	5.0	28.0	29.0	1.00	4	6814 6.000	1,170
8.00	8.00	7.70	75	6.0	38.0	39.0	1.50	4	6814 8.000	1,510
10.00	10.00	9.50	100	8.0	58.0	60.0	2.00	4	6814 10.000	2,010
12.00	12.00	11.50	100	10.0	53.0	55.0	2.00	4	6814 12.000	2,520
16.00	16.00	15.50	125	12.0	75.0	77.0	2.50	4	6814 16.000	4,190



High feed end mills G-Mold 65 HF

泛用型：低切深/ 大進給 粗加工用

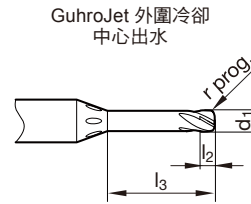
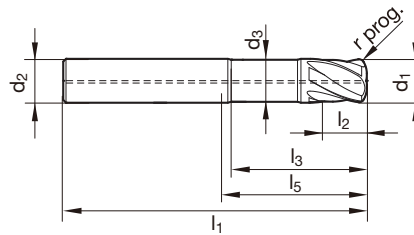


P	•
M	•
K	•
N	•
S	•
H	•

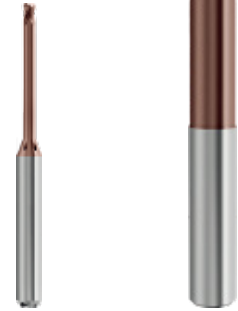
GÜHRING NAVIGATOR

Cutting data page 55-58 切削參數請參閱 55-58頁

- for high-feed roughing with low a_p and maximum f_z
- with central internal cooling from $\varnothing 4$ mm
- with GühroJet peripheral cooling from $\varnothing 1-3$ mm
- neck clearance
- without centre cutting
- 用於低 a_p 和最大 f_z 的高進給粗加工
- 從 $\varnothing 4$ mm的中央內部冷卻
- 帶有 $\varnothing 1-3$ mm的 GühroJet 外圍冷卻
- 頸部縮頸研磨
- 端刃無過中心



Tool material	Solid carbide
Surface	
Type	H
Shank form	HA

**HRC 65 HF**
4刃圓鼻刀

Article no.

6831

d1 h10	d2 h6	d3	l1	l2	l3	l5	r prog.	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm			
1.00	4.00	0.92	50	0.6	10.0	22.0	0.18	4	6831 1.000	1,210
1.50	4.00	1.40	50	1.0	15.0	22.0	0.25	4	6831 1.500	1,210
2.00	6.00	1.85	65	1.2	20.0	29.0	0.35	4	6831 2.000	1,320
2.50	6.00	2.35	65	1.5	25.0	29.0	0.40	4	6831 2.500	1,320
3.00	6.00	2.85	80	2.0	30.0	44.0	0.50	4	6831 3.000	1,320
4.00	6.00	3.80	80	3.0	32.0	44.0	0.80	4	6831 4.000	1,320
5.00	6.00	4.80	80	4.0	40.0	44.0	0.80	4	6831 5.000	1,320
6.00	6.00	5.70	80	5.0	43.0	44.0	1.00	4	6831 6.000	1,320
8.00	8.00	7.70	100	6.0	63.0	64.0	1.50	4	6831 8.000	1,710
10.00	10.00	9.50	120	8.0	78.0	80.0	2.00	4	6831 10.000	2,270
12.00	12.00	11.50	120	10.0	73.0	75.0	2.00	4	6831 12.000	2,840
16.00	16.00	15.50	150	12.0	100.0	102.0	2.50	4	6831 16.000	4,730

Finishing end mills G-Mold μ 48 F



- P** •
- M** •
- K** •
- N** •
- S** •
- H** ○

GÜHRING NAVIGATOR

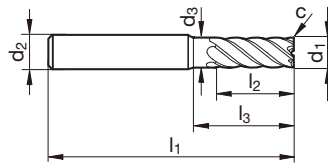
Cutting data page 55-58 切削參數請參閱 55-58頁

- restricted tolerances for maximum component accuracy
- max. taper 0.005 mm
- neck clearance
- \varnothing 3-8 mm with centre cutting
- \varnothing 10-20 mm without centre cutting
- 工件加工面可得到最佳精度
- 最大錐度0.005 mm
- 頸部縮頸研磨
- \varnothing 3-8 mm，端刃可中心切削
- \varnothing 10-20 mm 端刃無過中心

Tool material	Solid carbide
Surface	
Type	NH
Shank form	HA



HRC 48u
多刃側銑刀

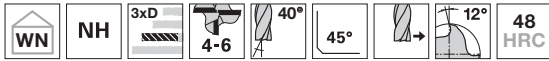


Article no. **6825**

d1 f8	d2 h5	d3	l1	l2	l3	c	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm x 45°			
3.00	6.00	2.85	57	8.0	15.0	0.06	4	6825 3.000	1,560
4.00	6.00	3.80	57	11.0	18.0	0.08	4	6825 4.000	1,560
5.00	6.00	4.80	57	13.0	18.0	0.10	4	6825 5.000	1,560
6.00	6.00	5.70	57	13.0	20.0	0.12	4	6825 6.000	1,600
8.00	8.00	7.70	63	19.0	26.0	0.08	6	6825 8.000	2,200
10.00	10.00	9.50	72	22.0	30.0	0.10	6	6825 10.000	3,160
12.00	12.00	11.50	83	26.0	36.0	0.12	6	6825 12.000	4,330
16.00	16.00	15.50	92	32.0	42.0	0.16	6	6825 16.000	7,660
20.00	20.00	19.50	104	38.0	52.0	0.20	6	6825 20.000	10,990

Finishing end mills G-Mold μ 48 F

泛用型

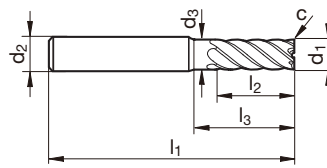


P	•
M	•
K	•
N	•
S	•
H	○

GÜHRING NAVIGATOR

Cutting data page 55-58 切削參數請參閱 55-58頁

- restricted tolerances for maximum component accuracy
- max. taper 0.005 mm
- neck clearance
- \varnothing 3-8 mm with centre cutting
- \varnothing 10-20 mm without centre cutting
- 工件加工面可得到最佳精度
- 最大錐度0.005 mm
- 頸部縮頸研磨
- \varnothing 3-8 mm 端刃可中心切削
- \varnothing 10-20 mm 端刃無過中心



Tool material	Solid carbide
Surface	
Type	NH
Shank form	HA

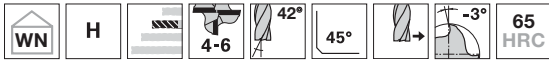

HRC 48u
 多刃側銑刀


Article no.

6826

d1 f8	d2 h5	d3	l1	l2	l3	c	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm x 45°			
3.00	6.00	2.85	65	12.0	24.0	0.06	4	6826 3.000	1,730
4.00	6.00	3.80	65	16.0	26.0	0.08	4	6826 4.000	1,730
5.00	6.00	4.80	65	18.0	26.0	0.10	4	6826 5.000	1,760
6.00	6.00	5.70	65	21.0	28.0	0.12	4	6826 6.000	1,760
8.00	8.00	7.70	75	26.0	38.0	0.08	6	6826 8.000	2,420
10.00	10.00	9.50	80	30.0	38.0	0.10	6	6826 10.000	3,490
12.00	12.00	11.50	93	36.0	46.0	0.12	6	6826 12.000	4,780
16.00	16.00	15.50	108	48.0	58.0	0.16	6	6826 16.000	8,450
20.00	20.00	19.50	126	60.0	74.0	0.20	6	6826 20.000	12,130

Finishing end mills G-Mold μ 65 F



P	○
M	○
K	●
N	○
S	○
H	●

GÜHRING NAVIGATOR

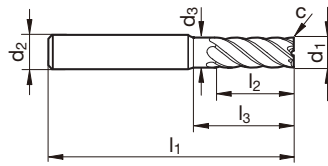
Cutting data page 55-58 切削參數請參閱 55-58頁

- restricted tolerances for maximum component accuracy
- max. taper 0.005 mm
- neck clearance
- Ø 3-8 mm with centre cutting
- Ø 10-20 mm without centre cutting
- 工件加工面可得到最佳精度
- 最大錐度0.005 mm
- 頸部縮頸研磨
- Ø 3-8 mm，端刃可中心切削
- Ø 10-20 mm 端刃無過中心

Tool material	Solid carbide
Surface	⊗
Type	H
Shank form	HA



HRC 65u
多刃側銑刀

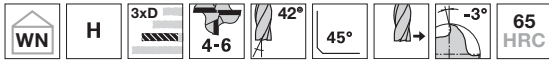


Article no. **6827**

d1 f8	d2	d3	l1	l2	l3	c	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm x 45°			
3.00	6.00	2.85	57	8.0	15.0	0.06	4	6827 3.000	1,560
4.00	6.00	3.80	57	11.0	18.0	0.08	4	6827 4.000	1,560
5.00	6.00	4.80	57	13.0	18.0	0.10	4	6827 5.000	1,560
6.00	6.00	5.70	57	13.0	20.0	0.12	4	6827 6.000	1,600
8.00	8.00	7.70	63	19.0	26.0	0.08	6	6827 8.000	2,200
10.00	10.00	9.50	72	22.0	30.0	0.10	6	6827 10.000	3,160
12.00	12.00	11.50	83	26.0	36.0	0.12	6	6827 12.000	4,330
16.00	16.00	15.50	92	32.0	42.0	0.16	6	6827 16.000	7,660
20.00	20.00	19.50	104	38.0	52.0	0.20	6	6827 20.000	10,990

Finishing end mills G-Mold μ 65 F

鑄鐵/ 高硬度短屑材質用

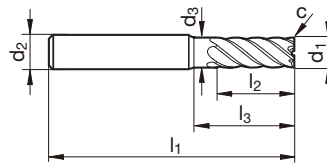


P	○
M	
K	●
N	
S	
H	●

GÜHRING NAVIGATOR

Cutting data page 55-58 切削參數請參閱 55-58頁

- restricted tolerances for maximum component accuracy
- max. taper 0.005 mm
- neck clearance
- \varnothing 3-8 mm with centre cutting
- \varnothing 10-20 mm without centre cutting
- 工件加工面可得到最佳精度
- 最大錐度0.005 mm
- 頸部縮頸研磨
- \varnothing 3-8 mm 端刃可中心切削
- \varnothing 10-20 mm 端刃無過中心



Tool material	Solid carbide
Surface	
Type	H
Shank form	HA



HRC 65u
多刃側銑刀



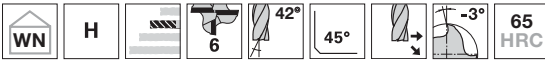
Article no.

6828

d1 f8	d2	d3	l1	l2	l3	c	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm x 45°			
3.00	6.00	2.85	65	12.0	24.0	0.06	4	6828 3.000	1,730
4.00	6.00	3.80	65	16.0	26.0	0.08	4	6828 4.000	1,730
5.00	6.00	4.80	65	18.0	26.0	0.10	4	6828 5.000	1,730
6.00	6.00	5.70	65	21.0	28.0	0.12	4	6828 6.000	1,760
8.00	8.00	7.70	75	26.0	38.0	0.08	6	6828 8.000	2,420
10.00	10.00	9.50	80	30.0	38.0	0.10	6	6828 10.000	3,490
12.00	12.00	11.50	93	36.0	46.0	0.12	6	6828 12.000	4,780
16.00	16.00	15.50	108	48.0	58.0	0.16	6	6828 16.000	8,450
20.00	20.00	19.50	126	60.0	74.0	0.20	6	6828 20.000	12,130

Finishing end mills G-Mold 65 F

鑄鐵/ 高硬度短屑材質用



P	○
M	○
K	●
N	○
S	○
H	●

GÜHRING NAVIGATOR

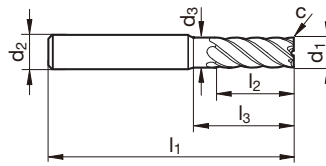
Cutting data page 55-58 切削參數請參閱 55-58頁

- without centre cutting
- neck clearance
- 端面刃無過中心
- 頸部縮頸研磨

Tool material	Solid carbide
Surface	Y
Type	H
Shank form	HA



HRC 65
多刃側銑刀



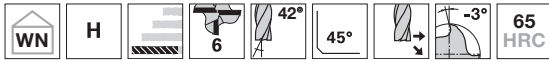
Article no. **6945**

d1 f8	d2 h5	d3	l1	l2	l3	c	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm x 45°			
3.00	6.00	2.85	57	8.0	12.0	0.03	6	6945 3.000	660
4.00	6.00	3.80	57	11.0	15.0	0.04	6	6945 4.000	660
5.00	6.00	4.80	57	13.0	18.0	0.05	6	6945 5.000	660
6.00	6.00	5.70	57	13.0	20.0	0.06	6	6945 6.000	680
8.00	8.00	7.70	63	19.0	26.0	0.08	6	6945 8.000	930
10.00	10.00	9.50	72	22.0	31.0	0.10	6	6945 10.000	1,340
12.00	12.00	11.50	83	26.0	37.0	0.12	6	6945 12.000	1,830
14.00	14.00	13.50	83	26.0	37.0	0.14	6	6945 14.000	2,540
16.00	16.00	15.50	92	32.0	43.0	0.16	6	6945 16.000	3,250
20.00	20.00	19.50	104	38.0	53.0	0.20	6	6945 20.000	4,660



Finishing end mills G-Mold 65 F

鑄鐵/ 高硬度短屑材質用



P	○
M	
K	●
N	
S	
H	●

GÜHRING NAVIGATOR

Cutting data page 55-58 切削參數請參閱 55-58頁

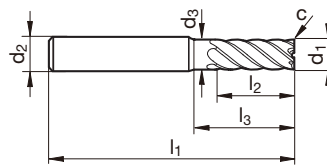
- without centre cutting
- neck clearance
- 端面刃無過中心
- 頸部縮頸研磨

Tool material **Solid carbide**

Surface

Type H

Shank form HA

NEW**HRC 65**
多刃側銑刀

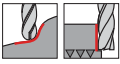
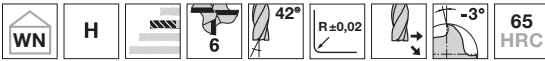
Article no.

6946

d1 f8	d2 h5	d3	l1	l2	l3	c	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm x 45°			
3.00	6.00	2.85	65	11.0	21.0	0.03	6	6946 3.000	830
4.00	6.00	3.80	65	14.0	26.0	0.04	6	6946 4.000	830
5.00	6.00	4.80	75	17.0	32.0	0.05	6	6946 5.000	830
6.00	6.00	5.70	75	20.0	38.0	0.06	6	6946 6.000	850
8.00	8.00	7.70	90	28.0	53.0	0.08	6	6946 8.000	1,160
10.00	10.00	9.50	100	31.0	59.0	0.10	6	6946 10.000	1,680
12.00	12.00	11.50	114	36.0	68.0	0.12	6	6946 12.000	2,290
14.00	14.00	13.50	100	42.0	54.0	0.14	6	6946 14.000	3,170
16.00	16.00	15.50	125	52.0	76.0	0.16	6	6946 16.000	4,060
20.00	20.00	19.50	150	62.0	100.0	0.20	6	6946 20.000	5,820

Finishing end mills with corner radius G-Mold 65 FR

鑄鐵/ 高硬度短屑材質用



P	○
M	○
K	●
N	○
S	○
H	●

GÜHRING NAVIGATOR

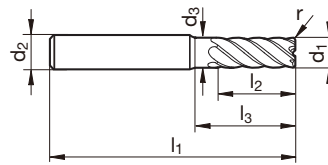
Cutting data page 55-58 切削參數請參閱 55-58頁

- without centre cutting
- neck clearance
- 端面刃無過中心
- 頸部縮頸研磨

Tool material	Solid carbide
Surface	Y
Type	H
Shank form	HA



HRC 65
多刃圓鼻側銑刀



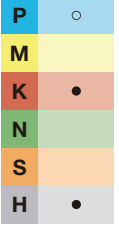
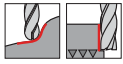
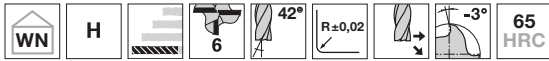
Article no. **6947**

d1 f8	d2 h5	d3	l1	l2	l3	r	Z	Order no.	價格
3.00	6.00	2.85	57	8.0	12.0	0.10	6	6947 3.001	800
3.00	6.00	2.85	57	8.0	12.0	0.30	6	6947 3.003	800
3.00	6.00	2.85	57	8.0	12.0	0.50	6	6947 3.005	800
4.00	6.00	3.80	57	11.0	15.0	0.20	6	6947 4.002	800
4.00	6.00	3.80	57	11.0	15.0	0.50	6	6947 4.005	800
5.00	6.00	4.80	57	13.0	18.0	0.20	6	6947 5.002	800
5.00	6.00	4.80	57	13.0	18.0	0.50	6	6947 5.005	800
6.00	6.00	5.70	57	13.0	20.0	0.20	6	6947 6.002	810
6.00	6.00	5.70	57	13.0	20.0	0.50	6	6947 6.005	810
6.00	6.00	5.70	57	13.0	20.0	1.00	6	6947 6.010	810
8.00	8.00	7.70	63	19.0	26.0	0.30	6	6947 8.003	1,120
8.00	8.00	7.70	63	19.0	26.0	0.50	6	6947 8.005	1,120
8.00	8.00	7.70	63	19.0	26.0	1.00	6	6947 8.010	1,120
10.00	10.00	9.50	72	22.0	31.0	0.30	6	6947 10.003	1,610
10.00	10.00	9.50	72	22.0	31.0	0.50	6	6947 10.005	1,610
10.00	10.00	9.50	72	22.0	31.0	1.00	6	6947 10.010	1,610
10.00	10.00	9.50	72	22.0	31.0	1.50	6	6947 10.015	1,610
12.00	12.00	11.50	83	26.0	37.0	0.50	6	6947 12.005	2,200
12.00	12.00	11.50	83	26.0	37.0	1.00	6	6947 12.010	2,200
12.00	12.00	11.50	83	26.0	37.0	1.50	6	6947 12.015	2,200
16.00	16.00	15.50	92	32.0	43.0	0.50	6	6947 16.005	3,890
16.00	16.00	15.50	92	32.0	43.0	1.00	6	6947 16.010	3,890
16.00	16.00	15.50	92	32.0	43.0	2.00	6	6947 16.020	3,890



Finishing end mills with corner radius G-Mold 65 FR

鑄鐵/ 高硬度短屑材質用

**GÜHRING NAVIGATOR**

Cutting data page 55-58 切削參數請參閱 55-58頁

- without centre cutting
- neck clearance
- 端面刃無過中心
- 頸部縮頸研磨

Tool material **Solid carbide**

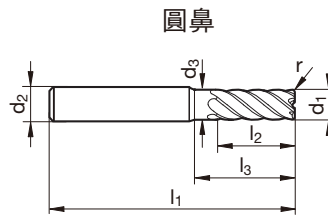
Surface

Type H

Shank form HA



HRC 65 FR 6刃圓鼻側銑刀
精加工使用

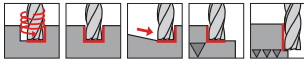
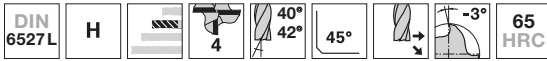


Article no.

6948

d1 f8	d2 h5	d3	l1	l2	l3	r	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm			
3.00	6.00	2.85	75	8.0	25.0	0.20	6	6948 3.002	990
4.00	6.00	3.80	75	11.0	30.0	0.20	6	6948 4.002	990
5.00	6.00	4.80	75	13.0	35.0	0.20	6	6948 5.002	990
6.00	6.00	5.70	80	13.0	42.0	0.50	6	6948 6.005	1,020
8.00	8.00	7.70	100	19.0	62.0	0.50	6	6948 8.005	1,400
10.00	10.00	9.50	120	22.0	78.0	0.50	6	6948 10.005	2,010
12.00	12.00	11.50	150	26.0	101.0	1.00	6	6948 12.010	2,750
16.00	16.00	15.50	150	32.0	101.0	1.00	6	6948 16.010	4,870

Ratio end mills G-Mold 65 U



P	○
M	○
K	●
N	○
S	○
H	●

GÜHRING NAVIGATOR

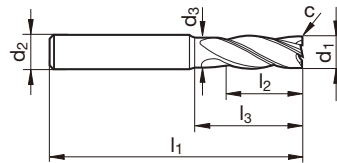
Cutting data page 55-58 切削參數請參閱 55-58頁

- slotting up to max. 65 HRC
- neck clearance
- centre cutting
- 最高加工硬度 HRC 65
- 頸部縮頸研磨
- 端面刃過中心

Tool material	Solid carbide	
Surface	Y	Y
Type	H	H
Shank form	HA	HB



HRC 65 U 4刃
不等分割 雙螺旋角



Article no. **6943** **6944**

d1 f9	d2 h5	d3	l1	l2	l3	c	Z
mm	mm	mm	mm	mm	mm	mm x 45°	
3.00	6.00	2.85	57	8.0	12.0	0.06	4
4.00	6.00	3.80	57	11.0	15.0	0.08	4
5.00	6.00	4.80	57	13.0	18.0	0.10	4
6.00	6.00	5.70	57	13.0	20.0	0.12	4
8.00	8.00	7.70	63	19.0	26.0	0.16	4
10.00	10.00	9.50	72	22.0	31.0	0.20	4
12.00	12.00	11.50	83	26.0	37.0	0.24	4
16.00	16.00	15.50	92	32.0	43.0	0.32	4
20.00	20.00	19.50	104	38.0	53.0	0.40	4

Order no.	價格	Order no.	價格
69,43 3.000	660	6944 3.000	690
69,43 4.000	660	6944 4.000	690
69,43 5.000	660	6944 5.000	690
69,43 6.000	680	6944 6.000	710
69,43 8.000	930	6944 8.000	970
69,43 10.000	1,340	6944 10.000	1,400
69,43 12.000	1,830	6944 12.000	1,920
69,43 16.000	3,250	6944 16.000	3,390
69,43 20.000	4,660	6944 20.000	4,870

G-Mold μ

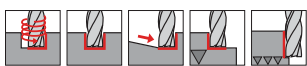
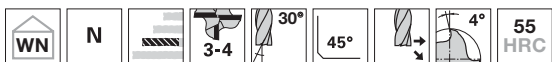
from \varnothing 0.2–3 mm
with GühroJet
peripheral cooling

- + increased service life and process reliability thanks to GühroJet
- + large selection of full and corner radii as well as corner chamfers in up to 5 different lengths
- + top surfaces and accuracies thanks to tight tolerances and precise concentricity
- + GühroJet的獨特冷卻設計延長了刀具壽命和加工的穩定性
- + 多種尺寸的球刀、圓鼻刀、刃口倒角可以選擇，以及 5種不同的長度可以選用
- + 刃口高表面精度研磨、嚴格的公差和同心度要求



Micro-precision milling cutters MicroMill μ 55

HRC 55度以下材質適用 (泛用型)



P	•
M	•
K	•
N	○
S	•
H	•

GÜHRING NAVIGATOR

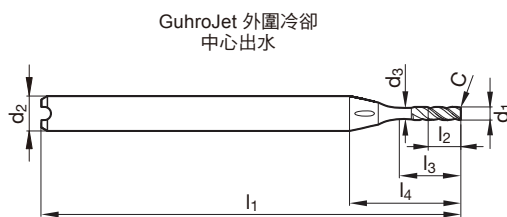
Cutting data page 55-58 切削參數請參閱 55-58頁

- High-precision micro-precision milling cutters with 3 different ranges l_3
- with internal cooling: GührJet peripheral cooling with 6 or 4 exits
- neck clearance
- centre cutting
- 高精度微小徑銼刀，具有 3個不同加工深度範圍的 l_3
- 帶內部冷卻：GührJet 外圍冷卻 6 或 4 個出口
- 頸部縮頸研磨
- 端面刃過中心

Tool material	Solid carbide
Surface	X
Type	N
Shank form	HA



HRC 55u 3~4刃
微小徑 長頸深溝型



Article no. 6829

d1 -0,008	d2 h5	d3	l1	l2	l3	l4	c	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm x 45°			
0.20	4.00	0.18	45	0.20	0.40	9.1	0.00	3	68290.201	1,380
0.20	4.00	0.18	45	0.20	0.75	9.5	0.00	3	68290.202	1,510
0.20	4.00	0.18	45	0.20	1.00	9.7	0.00	3	6829 0.203	1,640
0.25	4.00	0.23	45	0.25	0.50	9.0	0.00	3	6829 0.251	1,380
0.25	4.00	0.23	45	0.25	0.90	9.4	0.00	3	6829 0.252	1,510
0.25	4.00	0.23	45	0.25	1.25	9.7	0.00	3	6829 0.253	1,640
0.30	4.00	0.28	45	0.30	0.60	9.0	0.00	3	6829 0.301	1,380
0.30	4.00	0.28	45	0.30	1.10	9.5	0.00	3	6829 0.302	1,510
0.30	4.00	0.28	45	0.30	1.50	9.9	0.00	3	6829 0.303	1,640
0.40	4.00	0.38	45	0.40	0.80	8.9	0.01	4	6829 0.401	1,380
0.40	4.00	0.38	45	0.40	1.40	9.5	0.01	4	6829 0.402	1,510
0.40	4.00	0.38	45	0.40	2.00	10.1	0.01	4	6829 0.403	1,640
0.50	4.00	0.45	45	0.50	1.00	9.0	0.01	4	6829 0.501	1,380
0.50	4.00	0.45	45	0.50	1.80	9.8	0.01	4	6829 0.502	1,510
0.50	4.00	0.45	45	0.50	2.50	10.5	0.01	4	6829 0.503	1,640
0.60	4.00	0.55	45	0.60	1.20	8.9	0.01	4	6829 0.601	1,380
0.60	4.00	0.55	45	0.60	2.10	9.8	0.01	4	6829 0.602	1,510
0.60	4.00	0.55	45	0.60	3.00	10.7	0.01	4	6829 0.603	1,640
0.80	4.00	0.75	45	0.80	1.60	8.7	0.01	4	6829 0.801	1,380
0.80	4.00	0.75	45	0.80	2.80	9.9	0.01	4	6829 0.802	1,510
0.80	4.00	0.75	45	0.80	4.00	11.1	0.01	4	6829 0.803	1,640
1.00	4.00	0.92	45	1.00	2.00	8.7	0.02	4	6829 1.001	1,380
1.00	4.00	0.92	45	1.00	3.50	10.2	0.02	4	6829 1.002	1,510
1.00	4.00	0.92	45	1.00	5.00	11.7	0.02	4	6829 1.003	1,640
1.20	4.00	1.12	50	1.20	2.40	8.7	0.01	4	6829 1.201	1,400
1.20	4.00	1.12	50	1.20	4.20	10.5	0.01	4	6829 1.202	1,540
1.20	4.00	1.12	50	1.20	6.00	12.3	0.01	4	6829 1.203	1,670
1.50	4.00	1.40	50	1.50	3.00	8.6	0.01	4	6829 1.501	1,400
1.50	4.00	1.40	50	1.50	5.50	11.1	0.01	4	6829 1.502	1,540
1.50	4.00	1.40	50	1.50	7.50	13.1	0.01	4	6829 1.503	1,670
1.80	4.00	1.70	50	1.80	3.60	8.5	0.01	4	6829 1.801	1,400
1.80	4.00	1.70	50	1.80	6.50	11.4	0.01	4	6829 1.802	1,540
1.80	4.00	1.70	50	1.80	9.00	13.9	0.01	4	6829 1.803	1,670
2.00	6.00	1.85	50	2.00	4.00	13.2	0.02	4	6829 2.001	1,420
2.00	6.00	1.85	57	2.00	7.50	16.7	0.02	4	6829 2.002	1,560
2.00	6.00	1.85	57	2.00	10.00	19.2	0.02	4	6829 2.003	1,700






Article no.

6829




d1 -0,008	d2 h5	d3	l1	l2	l3	l4	c	Z	Order no.	價格
mm	mm	mm	mm	mm	mm	mm	mm x 45°			
2.20	6.00	2.05	50	2.20	4.40	13.2	0.02	4	6829 2.201	1,420
2.20	6.00	2.05	57	2.20	8.00	16.8	0.02	4	6829 2.202	1,560
2.20	6.00	2.05	57	2.20	11.00	19.8	0.02	4	6829 2.203	1,700
2.50	6.00	2.35	50	2.50	5.00	13.1	0.02	4	6829 2.501	1,420
2.50	6.00	2.35	57	2.50	9.00	17.1	0.02	4	6829 2.502	1,560
2.50	6.00	2.35	57	2.50	12.50	20.6	0.02	4	6829 2.503	1,700
3.00	6.00	2.85	50	3.00	6.00	12.9	0.03	4	6829 3.001	1,420
3.00	6.00	2.85	57	3.00	11.00	17.9	0.03	4	6829 3.002	1,560
3.00	6.00	2.85	57	3.00	15.00	21.9	0.03	4	6829 3.003	1,700

Milling tools

Milling conditions:

	適合低切深 高切削速度與高進給 stable machining conditions low cutting depth, high cutting values
	短刀型刀具 short tools
	長刀型刀具 long tools

Correction factors:

	中等長度 medium length tools	切削速度/ 進給 調整 v_c -25% f_z -25%
	加長型 extra length tools	切削速度/ 進給 調整 v_c -50% f_z -50%
	中等長度 uncoated tools	切削速度/ 進給 調整 v_c -60% f_z -25%



Material	Hardness	Type	Application	a_p max.	a_e max.	v_c	f_z (mm/tooth) with nom. Ø											
							1	2	3	4	5	6	8	10	12			
Struct./free-cutting steels, unall. heat-treat/case hard. steels 1.0035 S185, 1.0486 P275N, 1.0345 P235GH, 1.0050, 1.0070, 1.8937 1.0718 11SMnPb30, 1.0736 11SMn37 1.0402 C22, 1.1178 C30E 1.0503 C45, 1.1191 C30E 1.0301 C10, 1.1121 C10E 1.1750 C75W, 1.2076 102Cr6, 1.2307 29CrMoV9	≤ 850 N/mm ²	G-Mold 55	Roughing	0.10xD	0.30xD	240	0.015	0.030	0.045	0.060	0.075	0.090	0.120	0.150	0.180			
		G-Mold 55	(Pre-)Finishing	0.05xD	0.10xD	340	0.011	0.021	0.032	0.042	0.053	0.063	0.084	0.105	0.126			
		G-Mold 55	Fine finishing	0.01xD	0.02xD	360	0.011	0.021	0.032	0.042	0.053	0.063	0.084	0.105	0.126			
Free-cutting steels, unall. case hard. steels, nitr. steels 1.0727 46 S20, 1.0728 60 S20, 1.0757 46SPb20 1.0601 C60, 1.1221 C60E 1.7043 38Cr4 1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5 1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	850-1,200 N/mm ²	G-Mold 55	Roughing	0.10xD	0.30xD	220	0.015	0.030	0.045	0.060	0.075	0.090	0.120	0.150	0.180			
		G-Mold 55	(Pre-)Finishing	0.05xD	0.10xD	310	0.011	0.021	0.032	0.042	0.053	0.063	0.084	0.105	0.126			
		G-Mold 55	Fine finishing	0.01xD	0.02xD	330	0.011	0.021	0.032	0.042	0.053	0.063	0.084	0.105	0.126			
Alloyed heat-treatable. tool and high speed steels 1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2379 X155CrVMo12-1 1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3 Spring steel = 1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4	850-1,400 N/mm ²	G-Mold 55	Roughing	0.10xD	0.30xD	200	0.012	0.024	0.036	0.048	0.060	0.072	0.096	0.120	0.144			
		G-Mold 55	(Pre-)Finishing	0.05xD	0.10xD	280	0.008	0.017	0.025	0.034	0.042	0.050	0.067	0.084	0.101			
		G-Mold 55	Fine finishing	0.01xD	0.02xD	300	0.008	0.017	0.025	0.034	0.042	0.050	0.067	0.084	0.101			
Hardened steel Tool steel. heat-treatable steel. spring steel. high-speed steel. case hardened steel. etc. e.g.: 1.2344 X40CrMoV5-1; 1.2767 X45NiCrMo4; 1.2379 X155CrVMo12-1; 1.2080 X210Cr12; 1.3343 S 6-5-2	≤ 55 HRC	G-Mold 55	Roughing	0.06xD	0.20xD	140	0.013	0.025	0.038	0.051	0.064	0.076	0.102	0.127	0.152			
		G-Mold 55	(Pre-)Finishing	0.02xD	0.05xD	220	0.009	0.018	0.027	0.036	0.044	0.053	0.071	0.089	0.107			
		G-Mold 55	Fine finishing	0.01xD	0.02xD	220	0.009	0.018	0.027	0.036	0.044	0.053	0.071	0.089	0.107			
	55-65 HRC	G-Mold 65	Roughing	0.06xD	0.20xD	100	0.010	0.020	0.030	0.040	0.050	0.060	0.080	0.100	0.120			
		G-Mold 65	(Pre-)Finishing	0.02xD	0.05xD	170	0.007	0.014	0.021	0.028	0.035	0.042	0.056	0.070	0.084			
		G-Mold 65	Fine finishing	0.01xD	0.02xD	170	0.007	0.013	0.020	0.026	0.033	0.039	0.052	0.065	0.078			
Stainless steel 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X10CrNiS18-9 USA = 303, 410, 420F, 430, 430F	≤ 750 N/mm ²	G-Mold 55	Roughing	0.10xD	0.30xD	160	0.013	0.026	0.039	0.052	0.065	0.078	0.104	0.130	0.156			
		G-Mold 55	(Pre-)Finishing	0.05xD	0.10xD	230	0.009	0.018	0.027	0.036	0.046	0.055	0.073	0.091	0.109			
		G-Mold 55	Fine finishing	0.01xD	0.02xD	240	0.009	0.018	0.027	0.036	0.046	0.055	0.073	0.091	0.109			
Stainless steel 1.4301X5CrNi18-10, 1.4303 X5CrNi18-12 1.4310 XCrNi18-8 USA = 304, 304L, 420	750-850 N/mm ²	G-Mold 55	Roughing	0.06xD	0.20xD	110	0.012	0.024	0.036	0.048	0.060	0.072	0.096	0.120	0.144			
		G-Mold 55	(Pre-)Finishing	0.02xD	0.05xD	160	0.008	0.017	0.025	0.034	0.042	0.050	0.067	0.084	0.101			
		G-Mold 55	Fine finishing	0.01xD	0.02xD	170	0.008	0.016	0.023	0.031	0.039	0.047	0.062	0.078	0.094			
Stainless steel 1.4438 X2CrNiMo18-15-4, 1.4404 X2CrNiMo17-12-2, 1.4571 X6CrNiTi18-10 USA = 310, 316, 316B, 316L, 317	≥ 850 N/mm ²	G-Mold 55	Roughing	0.06xD	0.20xD	80	0.010	0.020	0.030	0.040	0.050	0.060	0.080	0.100	0.120			
		G-Mold 55	(Pre-)Finishing	0.02xD	0.05xD	120	0.007	0.014	0.021	0.028	0.035	0.042	0.056	0.070	0.084			
		G-Mold 55	Fine finishing	0.01xD	0.02xD	130	0.007	0.013	0.020	0.026	0.033	0.039	0.052	0.065	0.078			
Special alloys (nickel based "Ni") Inconel, Monel, Hastelloy	≤ 1,300 N/mm ²	G-Mold 55	Roughing	0.06xD	0.20xD	45	0.012	0.024	0.036	0.048	0.061	0.073	0.097	0.121	0.145			
		G-Mold 55	(Pre-)Finishing	0.02xD	0.05xD	60	0.008	0.017	0.025	0.034	0.042	0.051	0.068	0.085	0.102			
		G-Mold 55	Fine finishing	0.01xD	0.02xD	80	0.008	0.016	0.024	0.031	0.039	0.047	0.063	0.079	0.094			
Titanium alloys ("Ti") 3.7024 Ti99.5, 3.7114 TiAl5Sn2.5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7164 TiAl6V4, 3.7184 TiAl4Mo4Sn2.5	≤ 1,300 N/mm ²	G-Mold 55	Roughing	0.06xD	0.20xD	90	0.013	0.026	0.039	0.052	0.065	0.078	0.104	0.130	0.156			
		G-Mold 55	(Pre-)Finishing	0.02xD	0.05xD	130	0.009	0.018	0.027	0.036	0.046	0.055	0.073	0.091	0.109			
		G-Mold 55	Fine finishing	0.01xD	0.02xD	140	0.009	0.018	0.027	0.036	0.046	0.055	0.073	0.091	0.109			
Cast/grey cast iron, spher.graphite/mall, cast iron 0.6010 EN-GL100 (GG10), 0.6020 EN-GJL-200 (GG20), 0.7050 EN-GJS-500-7 (GGG50), 0.8535 EN-GJMW-350-4 (GTW35)	≤ 240 HB	G-Mold 55	Roughing	0.10xD	0.30xD	220	0.015	0.030	0.045	0.060	0.075	0.090	0.120	0.150	0.180			
		G-Mold 55	(Pre-)Finishing	0.05xD	0.10xD	310	0.011	0.021	0.032	0.042	0.053	0.063	0.084	0.105	0.126			
		G-Mold 55	Fine finishing	0.01xD	0.02xD	330	0.011	0.021	0.032	0.042	0.053	0.063	0.084	0.105	0.126			
Cast/grey cast iron, spher.graphite/mall, cast iron 0.6025 EN-GL250 (GG25), 0.6035 EN-GJL-350 (GG35), 0.7070 EN-GJS-700-2 (GGG70), 0.8170 EN-GJMB-700-2 (GTS70)	≥ 240 HB	G-Mold 55	Roughing	0.10xD	0.30xD	155	0.012	0.023	0.035	0.047	0.059	0.070	0.094	0.117	0.140			
		G-Mold 55	(Pre-)Finishing	0.05xD	0.10xD	210	0.008	0.016	0.025	0.033	0.041	0.049	0.066	0.082	0.098			
		G-Mold 55	Fine finishing	0.01xD	0.02xD	240	0.008	0.016	0.025	0.033	0.041	0.049	0.066	0.082	0.098			
Aluminium, Al-wrought alloys, Al-alloys 3.0255 Al99.5, 3.2315 AlMgSi1, 3.3515 AlMg1 3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1.5	≤ 7% Si	G-Mold 55	Roughing	0.10xD	0.30xD	600	0.016	0.032	0.048	0.064	0.080	0.096	0.128	0.160	0.192			
		G-Mold 55	(Pre-)Finishing	0.05xD	0.10xD	800	0.011	0.022	0.034	0.045	0.056	0.067	0.090	0.112	0.134			
		G-Mold 55	Fine finishing	0.01xD	0.02xD	900	0.011	0.022	0.034	0.045	0.056	0.067	0.090	0.112	0.134			
Aluminium-cast alloys 3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9 3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	≥ 7% Si	G-Mold 55	Roughing	0.10xD	0.30xD	300	0.015	0.030	0.045	0.060	0.075	0.090	0.120	0.150	0.180			
		G-Mold 55	(Pre-)Finishing	0.05xD	0.10xD	400	0.011	0.021	0.032	0.042	0.053	0.063	0.084	0.105	0.126			
		G-Mold 55	Fine finishing	0.01xD	0.02xD	500	0.011	0.021	0.032	0.042	0.053	0.063	0.084	0.105	0.126			
Magnesium-alloys MgMn2, G-MgAl8Zn1, G-MgAl6Zn3	-	G-Mold 55	Roughing	0.10xD	0.30xD	180	0.013	0.026	0.039	0.052	0.065	0.078	0.104	0.130	0.156			
		G-Mold 55	(Pre-)Finishing	0.05xD	0.10xD	260	0.009	0.018	0.027	0.036	0.046	0.055	0.073	0.091	0.109			
		G-Mold 55	Fine finishing	0.01xD	0.02xD	270	0.009	0.018	0.027	0.036	0.046	0.055	0.073	0.091	0.109			
Non-ferr. met. (copper, short-/long-chipp., brass/bronze) 2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb 2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 ... 2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0.5 2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 ... 2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10	≤ 850 N/mm ²	G-Mold 55	Roughing	0.10xD	0.30xD	200	0.016	0.032	0.048	0.064	0.080	0.096	0.128	0.160	0.192			
		G-Mold 55	(Pre-)Finishing	0.05xD	0.10xD	280	0.011	0.022	0.034	0.045	0.056	0.067	0.090	0.112	0.134			
		G-Mold 55	Fine finishing	0.01xD	0.02xD	300	0.011	0.022	0.034	0.045	0.056	0.067	0.090	0.112	0.134			



Milling conditions:

	適合低切深 高切削速度與高進給 stable machining conditions low cutting depth, high cutting values
	短刃型刀具 short tools
	長刃型刀具 long tools

Correction factors:

	中等長度 medium length tools	切削速度 / 進給 調整 v _c -25% f _z -25%
	加長型 extra length tools	切削速度 / 進給 調整 v _c -50% f _z -50%
	中等長度 uncoated tools	切削速度 / 進給 調整 v _c -60% f _z -25%



Milling tools


Material	Hardness	Type	Application	a _p max.	a _e max.	v _c	f _z (mm/tooth) with nom. Ø											
							1	2	3	4	5	6	8	10	12			
Struct./free-cutting steels, unall. heat-treat/case hard. steels 1.0035 S185, 1.0486 P275N, 1.0345 P235GH, 1.0050, 1.0070, 1.8937 1.0718 11SMnPb30, 1.0736 11SMn37 1.0402 C22, 1.1178 C30E 1.0503 C45, 1.1191 C30E 1.0301 C10, 1.1121 C10E 1.1750 C75W, 1.2076 102Cr6, 1.2307 29CrMoV9	≤ 850 N/mm ²	G-Mold 55	Roughing	0.05xD	0.40xD	156	0.015	0.030	0.045	0.060	0.075	0.090	0.120	0.150	0.180			
		G-Mold 55	(Pre-)Finishing	0.03xD	0.25xD	220	0.011	0.021	0.032	0.042	0.053	0.063	0.084	0.105	0.126			
		G-Mold 55	Fine finishing	0.01xD	0.15xD	230	0.011	0.021	0.032	0.042	0.053	0.063	0.084	0.105	0.126			
Free-cutting steels, unall. case hard. steels, nitr. steels 1.0727 46 S20, 1.0728 60 S20, 1.0757 46SPb20 1.0601 C60, 1.1221 C60E 1.7043 38Cr4 1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5 1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	850-1,200 N/mm ²	G-Mold 55	Roughing	0.05xD	0.40xD	143	0.015	0.030	0.045	0.060	0.075	0.090	0.120	0.150	0.180			
		G-Mold 55	(Pre-)Finishing	0.03xD	0.25xD	210	0.011	0.021	0.032	0.042	0.053	0.063	0.084	0.105	0.126			
		G-Mold 55	Fine finishing	0.01xD	0.15xD	210	0.011	0.021	0.032	0.042	0.053	0.063	0.084	0.105	0.126			
Alloyed heat-treatable. tool and high speed steels 1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2379 X155CrVMo12-1 1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3 Spring steel = 1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4	850-1,400 N/mm ²	G-Mold 55	Roughing	0.05xD	0.40xD	130	0.012	0.024	0.036	0.048	0.060	0.072	0.096	0.120	0.144			
		G-Mold 55	(Pre-)Finishing	0.03xD	0.25xD	190	0.008	0.017	0.025	0.034	0.042	0.050	0.067	0.084	0.101			
		G-Mold 55	Fine finishing	0.01xD	0.15xD	190	0.008	0.017	0.025	0.034	0.042	0.050	0.067	0.084	0.101			
Hardened steel Tool steel, heat-treatable steel, spring steel, high-speed steel, case hardened steel, etc. e.g.: 1.2344 X40CrMoV5-1; 1.2767 X45NiCrMo4; 1.2379 X155CrVMo12-1; 1.2080 X210Cr12; 1.3343 S 6-5-2	≤ 55 HRC	G-Mold 55	Roughing	0.04xD	0.30xD	90	0.013	0.025	0.038	0.051	0.064	0.076	0.102	0.127	0.152			
		G-Mold 55	(Pre-)Finishing	0.03xD	0.20xD	140	0.009	0.018	0.027	0.036	0.044	0.053	0.071	0.089	0.107			
		G-Mold 55	Fine finishing	0.01xD	0.15xD	140	0.009	0.018	0.027	0.036	0.044	0.053	0.071	0.089	0.107			
	55-65 HRC	G-Mold 65	Roughing	0.03xD	0.25xD	70	0.010	0.020	0.030	0.040	0.050	0.060	0.080	0.100	0.120			
		G-Mold 65	(Pre-)Finishing	0.02xD	0.20xD	110	0.007	0.014	0.021	0.028	0.035	0.042	0.056	0.070	0.084			
		G-Mold 65	Fine finishing	0.01xD	0.10xD	120	0.007	0.013	0.020	0.026	0.033	0.039	0.052	0.065	0.078			
Stainless steel 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X10CrNiS18-9 USA = 303, 410, 420F, 430, 430F	≤ 750 N/mm ²	G-Mold 55	Roughing	0.05xD	0.40xD	105	0.013	0.026	0.039	0.052	0.065	0.078	0.104	0.130	0.156			
		G-Mold 55	(Pre-)Finishing	0.03xD	0.25xD	150	0.009	0.018	0.027	0.036	0.046	0.055	0.073	0.091	0.109			
		G-Mold 55	Fine finishing	0.01xD	0.15xD	150	0.009	0.018	0.027	0.036	0.046	0.055	0.073	0.091	0.109			
Stainless steel 1.4301X5CrNi18-10, 1.4303 X5CrNi18-12 1.4310 XCrNi18-8 USA = 304, 304L, 420	750-850 N/mm ²	G-Mold 55	Roughing	0.04xD	0.30xD	75	0.012	0.024	0.036	0.048	0.060	0.072	0.096	0.120	0.144			
		G-Mold 55	(Pre-)Finishing	0.03xD	0.25xD	110	0.008	0.017	0.025	0.034	0.042	0.050	0.067	0.084	0.101			
		G-Mold 55	Fine finishing	0.01xD	0.10xD	120	0.008	0.016	0.023	0.031	0.039	0.047	0.062	0.078	0.094			
Stainless steel 1.4438 X2CrNiMo18-15-4, 1.4404 X2CrNiMo17-12-2, 1.4571 X6CrNiTi18-10 USA = 310, 316, 316B, 316L, 317	≥ 850 N/mm ²	G-Mold 55	Roughing	0.04xD	0.25xD	55	0.010	0.020	0.030	0.040	0.050	0.060	0.080	0.100	0.120			
		G-Mold 55	(Pre-)Finishing	0.03xD	0.20xD	80	0.007	0.014	0.021	0.028	0.035	0.042	0.056	0.070	0.084			
		G-Mold 55	Fine finishing	0.01xD	0.10xD	90	0.007	0.013	0.020	0.026	0.033	0.039	0.052	0.065	0.078			
Special alloys (nickel based "Ni") Nimonic, Inconel, Monel, Hastelloy	≤ 1,300 N/mm ²	G-Mold 55	Roughing	0.04xD	0.25xD	30	0.012	0.024	0.036	0.048	0.061	0.073	0.097	0.121	0.145			
		G-Mold 55	(Pre-)Finishing	0.03xD	0.20xD	40	0.008	0.017	0.025	0.034	0.042	0.051	0.068	0.085	0.102			
		G-Mold 55	Fine finishing	0.01xD	0.10xD	50	0.008	0.016	0.024	0.031	0.039	0.047	0.063	0.079	0.094			
Titanium alloys ("Ti") 3.7024 Ti99.5, 3.7114 TiAl5Sn2.5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7164 TiAl6V4, 3.7184 TiAl4Mo4Sn2.5	≤ 1,300 N/mm ²	G-Mold 55	Roughing	0.05xD	0.30xD	60	0.013	0.026	0.039	0.052	0.065	0.078	0.104	0.130	0.156			
		G-Mold 55	(Pre-)Finishing	0.03xD	0.20xD	90	0.009	0.018	0.027	0.036	0.046	0.055	0.073	0.091	0.109			
		G-Mold 55	Fine finishing	0.01xD	0.15xD	90	0.009	0.018	0.027	0.036	0.046	0.055	0.073	0.091	0.109			
Cast/grey cast iron, spher.graphite/mall, cast iron 0.6010 EN-GL100 (GG10), 0.6020 EN-GJL-200 (GG20), 0.7050 EN-GJS-500-7 (GGG50), 0.8535 EN-GJMW-350-4 (GTW35)	≤ 240 HB	G-Mold 55	Roughing	0.05xD	0.40xD	140	0.015	0.030	0.045	0.060	0.075	0.090	0.120	0.150	0.180			
		G-Mold 55	(Pre-)Finishing	0.03xD	0.25xD	200	0.011	0.021	0.032	0.042	0.053	0.063	0.084	0.105	0.126			
		G-Mold 55	Fine finishing	0.01xD	0.15xD	210	0.011	0.021	0.032	0.042	0.053	0.063	0.084	0.105	0.126			
Cast/grey cast iron, spher.graphite/mall, cast iron 0.6025 EN-GL250 (GG25), 0.6035 EN-GJL-350 (GG35), 0.7070 EN-GJS-700-2 (GGG70), 0.8170 EN-GJMB-700-2 (GTS70)	≥ 240 HB	G-Mold 55	Roughing	0.05xD	0.40xD	100	0.012	0.023	0.035	0.047	0.059	0.070	0.094	0.117	0.140			
		G-Mold 55	(Pre-)Finishing	0.03xD	0.25xD	140	0.008	0.016	0.025	0.033	0.041	0.049	0.066	0.082	0.098			
		G-Mold 55	Fine finishing	0.01xD	0.15xD	150	0.008	0.016	0.025	0.033	0.041	0.049	0.066	0.082	0.098			
Aluminium, Al-wrought alloys, Al-alloys 3.0255 Al99.5, 3.2315 AlMgSi1, 3.3515 AlMg1 3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1.5	≤ 7% Si	G-Mold 55	Roughing	0.05xD	0.40xD	390	0.016	0.032	0.048	0.064	0.080	0.096	0.128	0.160	0.192			
		G-Mold 55	(Pre-)Finishing	0.03xD	0.25xD	500	0.011	0.022	0.034	0.045	0.056	0.067	0.090	0.112	0.134			
		G-Mold 55	Fine finishing	0.01xD	0.15xD	500	0.011	0.022	0.034	0.045	0.056	0.067	0.090	0.112	0.134			
Aluminium-cast alloys 3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9 3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	≥ 7% Si	G-Mold 55	Roughing	0.05xD	0.40xD	155	0.015	0.030	0.045	0.060	0.075	0.090	0.120	0.150	0.180			
		G-Mold 55	(Pre-)Finishing	0.03xD	0.25xD	200	0.011	0.021	0.032	0.042	0.053	0.063	0.084	0.105	0.126			
		G-Mold 55	Fine finishing	0.01xD	0.15xD	300	0.011	0.021	0.032	0.042	0.053	0.063	0.084	0.105	0.126			
Magnesium-alloys MgMn2, G-MgAl8Zn1, G-MgAl6Zn3	-	G-Mold 55	Roughing	0.05xD	0.40xD	115	0.013	0.026	0.039	0.052	0.065	0.078	0.104	0.130	0.156			
		G-Mold 55	(Pre-)Finishing	0.03xD	0.25xD	170	0.009	0.018	0.027	0.036	0.046	0.055	0.073	0.091	0.109			
		G-Mold 55	Fine finishing	0.01xD	0.15xD	170	0.009	0.018	0.027	0.036	0.046	0.055	0.073	0.091	0.109			
Non-ferr. met. (copper, short-/long-chipp., brass/bronze) 2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb 2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 ... 2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0.5 2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 ... 2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10	≤ 850 N/mm ²	G-Mold 55	Roughing	0.05xD	0.40xD	130	0.016	0.032	0.048	0.064	0.080	0.096	0.128	0.160	0.192			
		G-Mold 55	(Pre-)Finishing	0.03xD	0.25xD	190	0.011	0.022	0.034	0.045	0.056	0.067	0.090	0.112	0.134			
		G-Mold 55	Fine finishing	0.01xD	0.15xD	100	0.011	0.022	0.034	0.045	0.056	0.067	0.090	0.112	0.134			


Milling conditions:

HSC 適合低切深 高切削速度與高進給
stable machining conditions
low cutting depth, high cutting values

 長刀型刀具
long tools

Correction factors:

 加長型
medium length tools

 中等長度
extra length tools

切削速度 / 進給 調整
 v_c -25% f_z -25%
 a_p max. -20%

切削速度 / 進給 調整
 v_c -50% f_z -50%
 a_p max. -50%

切深減少 50%



Material	Hardness	Application	a_e max.	v_c	f_z (mm/tooth) with nom. Ø									
					1	2	3	4	6	8	10	12	16	
Struct./free-cutting steels, unall. heat-treat/case hard. steels 1.0035 S185, 1.0486 P275N, 1.0345 P235GH, 1.0050, 1.0070, 1.8937 1.0718 11SMnPb30, 1.0736 11SMn37 1.0402 C22, 1.1178 C30E 1.0503 C45, 1.1191 C30E 1.0301 C10, 1.1121 C10E 1.1750 C75W, 1.2076 102Cr6, 1.2307 29CrMoV9	≤ 850 N/mm ²	Slotting	1.00xD	200	0.035	0.070	0.105	0.140	0.240	0.320	0.40	0.48	0.64	
		Roughing	0.60xD	250	0.042	0.084	0.126	0.168	0.288	0.384	0.48	0.58	0.77	
		Pre-finishing	0.40xD	300	0.032	0.063	0.095	0.126	0.216	0.288	0.36	0.43	0.58	
Free-cutting steels, unall. case hard. steels, nitr. steels 1.0727 46 S20, 1.0728 60 S20, 1.0757 46SPb20 1.0601 C60, 1.1221 C60E 1.7043 38Cr4 1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5 1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	850-1,200 N/mm ²	Slotting	1.00xD	170	0.030	0.060	0.090	0.120	0.210	0.280	0.35	0.42	0.56	
		Roughing	0.60xD	220	0.036	0.072	0.108	0.144	0.252	0.336	0.42	0.50	0.67	
		Pre-finishing	0.40xD	250	0.027	0.054	0.081	0.108	0.189	0.252	0.32	0.38	0.50	
Alloyed heat-treatable. tool and high speed steels 1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2379 X155CrVMo12-1 1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3 Spring steel = 1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4	850-1,400 N/mm ²	Slotting	1.00xD	130	0.025	0.050	0.075	0.100	0.180	0.240	0.30	0.36	0.48	
		Roughing	0.60xD	170	0.030	0.060	0.090	0.120	0.216	0.288	0.36	0.43	0.58	
		Pre-finishing	0.40xD	190	0.023	0.045	0.068	0.090	0.162	0.216	0.27	0.32	0.43	
Hardened steel Tool steel, heat-treatable steel, spring steel, high-speed steel, case hardened steel, etc. e.g.: 1.2344 X40CrMoV5-1; 1.2767 X45NiCrMo4; 1.2379 X155CrVMo12-1; 1.2080 X210Cr12; 1.3343 S 6-5-2	≤ 55 HRC	Slotting	1.00xD	100	0.020	0.040	0.060	0.080	0.150	0.200	0.25	0.30	0.40	
		Roughing	0.40xD	120	0.024	0.048	0.072	0.096	0.180	0.240	0.30	0.36	0.48	
		Pre-finishing	0.30xD	150	0.018	0.036	0.054	0.072	0.135	0.180	0.23	0.27	0.36	
	55-65 HRC	Slotting	1.00xD	60	0.010	0.020	0.030	0.040	0.090	0.120	0.15	0.18	0.24	
		Roughing	0.30xD	90	0.012	0.024	0.036	0.048	0.108	0.144	0.18	0.22	0.29	
		Pre-finishing	0.20xD	100	0.009	0.018	0.027	0.036	0.081	0.108	0.14	0.16	0.22	
Stainless steel 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X10CrNiS18-9 USA = 303, 410, 420F, 430, 430F	≤ 750 N/mm ²	Slotting	1xD	100	0.030	0.060	0.090	0.120	0.210	0.280	0.35	0.42	0.56	
		Roughing	0.40xD	130	0.036	0.072	0.108	0.144	0.252	0.336	0.42	0.50	0.67	
		Pre-finishing	0.30xD	150	0.027	0.054	0.081	0.108	0.189	0.252	0.32	0.38	0.50	
Stainless steel 1.4301X5CrNi18-10, 1.4303 X5CrNi18-12 1.4310 XCrNi18-8 USA = 304, 304L, 420	750-850 N/mm ²	Slotting	1xD	80	0.027	0.054	0.081	0.108	0.192	0.256	0.32	0.38	0.51	
		Roughing	0.40xD	100	0.032	0.065	0.097	0.130	0.230	0.307	0.38	0.46	0.61	
		Pre-finishing	0.30xD	120	0.024	0.049	0.073	0.097	0.173	0.230	0.29	0.35	0.46	
Stainless steel 1.4438 X2CrNiMo18-15-4, 1.4404 X2CrNiMo17-12-2, 1.4571 X6CrNiTi18-10 USA = 310, 316, 316B, 316L, 317	≥ 850 N/mm ²	Slotting	1xD	60	0.020	0.040	0.060	0.080	0.150	0.200	0.25	0.30	0.40	
		Roughing	0.40xD	70	0.024	0.048	0.072	0.096	0.180	0.240	0.30	0.36	0.48	
		Pre-finishing	0.30xD	90	0.018	0.036	0.054	0.072	0.135	0.180	0.23	0.27	0.36	
Special alloys (nickel based "Ni") Nimonic, Inconel, Monel, Hastelloy	≤ 1,300 N/mm ²	Slotting	1xD	30	0.010	0.020	0.030	0.040	0.090	0.120	0.15	0.18	0.24	
		Roughing	0.30xD	35	0.012	0.024	0.036	0.048	0.108	0.144	0.18	0.22	0.29	
		Pre-finishing	0.20xD	40	0.009	0.018	0.027	0.036	0.081	0.108	0.14	0.16	0.22	
Titanium alloys ("Ti") 3.7024 Ti99.5, 3.7114 TiAl5Sn2.5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7164 TiAl6V4, 3.7184 TiAl4Mo4Sn2.5	≤ 1,300 N/mm ²	Slotting	1xD	60	0.020	0.040	0.060	0.080	0.150	0.200	0.25	0.30	0.40	
		Roughing	0.40xD	80	0.024	0.048	0.072	0.096	0.180	0.240	0.30	0.36	0.48	
		Pre-finishing	0.30xD	90	0.018	0.036	0.054	0.072	0.135	0.180	0.23	0.27	0.36	
Cast/grey cast iron, spher.graphite/mall, cast iron 0.6010 EN-GL100 (GG10), 0.6020 EN-GJL-200 (GG20), 0.7050 EN-GJS-500-7 (GGG50), 0.8535 EN-GJMW-350-4 (GTW35)	≤ 240 HB	Slotting	1.00xD	170	0.030	0.060	0.090	0.120	0.210	0.280	0.35	0.42	0.56	
		Roughing	0.60xD	220	0.036	0.072	0.108	0.144	0.252	0.336	0.42	0.50	0.67	
		Pre-finishing	0.40xD	250	0.027	0.054	0.081	0.108	0.189	0.252	0.32	0.38	0.50	
Cast/grey cast iron, spher.graphite/mall, cast iron 0.6025 EN-GL250 (GG25), 0.6035 EN-GJL-350 (GG35), 0.7070 EN-GJS-700-2 (GGG70), 0.8170 EN-GJMB-700-2 (GTS70)	≥ 240 HB	Slotting	1.00xD	140	0.027	0.054	0.081	0.108	0.192	0.256	0.32	0.38	0.51	
		Roughing	0.60xD	180	0.032	0.065	0.097	0.130	0.230	0.307	0.38	0.46	0.61	
		Pre-finishing	0.40xD	210	0.024	0.049	0.073	0.097	0.173	0.230	0.29	0.35	0.46	

Material	Hardness	a_p max. (mm) with nom. Ø									
		1	2	3	4	6	8	10	12	16	
P	less than 850 N/mm ²	0.06	0.12	0.18	0.24	0.36	0.48	0.60	0.72	0.96	
	more than 850 N/mm ²	0.05	0.10	0.15	0.20	0.30	0.40	0.50	0.60	0.80	
K	less than 240 HB	0.06	0.12	0.18	0.24	0.36	0.48	0.60	0.72	0.96	
	more than 240 HB	0.05	0.10	0.15	0.20	0.30	0.40	0.50	0.60	0.80	
H	less than 55 HRC	0.04	0.08	0.12	0.16	0.24	0.32	0.40	0.48	0.64	
	55-65 HRC	0.03	0.07	0.10	0.12	0.18	0.24	0.30	0.36	0.48	
M	less than 850 N/mm ²	0.04	0.08	0.12	0.16	0.24	0.32	0.40	0.48	0.64	
	more than 850 N/mm ²	0.03	0.07	0.10	0.12	0.18	0.24	0.30	0.36	0.48	
S	Ti alloys	0.03	0.07	0.10	0.12	0.18	0.24	0.30	0.36	0.48	



Milling conditions:

	stable machining conditions high drive power
	short tools
	long tools

Correction factors:

	a_p Roughing > 1.5xD	v_c -25%	f_z -25%
	medium length tools	v_c -40%	f_z -40%
	extra length tools	v_c -60%	f_z -55%
	uncoated tools	v_c -50%	f_z -25%



Material	Hardness	Type	Application	a_e max.	v_c	f_z (mm/tooth) with nom. Ø								
						3	4	6	8	10	12	16	20	25
Struct./free-cutting steels, unall. heat-treat/case hard. steels 1.0035 S185, 1.0486 P275N, 1.0345 P235GH, 1.0050, 1.0070, 1.8937 1.0718 11SMnPb30, 1.0736 11SMn37 1.0402 C22, 1.1178 C30E 1.0503 C45, 1.1191 C30E 1.0301 C10, 1.1121 C10E 1.1750 C75W, 1.2076 102Cr6, 1.2307 29CrMoV9	≤ 850 N/mm ²	GH Z3	Slotting	1xD	120	0.012	0.016	0.024	0.032	0.045	0.054	0.07	0.09	0.11
		GH Z3	Roughing	0.75xD	140	0.014	0.018	0.028	0.037	0.052	0.062	0.08	0.10	0.13
		G-Mold 48 F	Finishing	0.02xD	240	0.013	0.018	0.026	0.035	0.050	0.059	0.08	0.10	0.12
Free-cutting steels, unall. case hard. steels, nitr. steels 1.0727 46 S20, 1.0728 60 S20, 1.0757 46SPb20 1.0601 C60, 1.1221 C60E 1.7043 38Cr4 1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5 1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	850-1,200 N/mm ²	GH Z3	Slotting	1xD	105	0.012	0.016	0.024	0.032	0.045	0.054	0.07	0.09	0.11
		GH Z3	Roughing	0.75xD	130	0.014	0.018	0.028	0.037	0.052	0.062	0.08	0.10	0.13
		G-Mold 48 F	Finishing	0.02xD	210	0.013	0.018	0.026	0.035	0.050	0.059	0.08	0.10	0.12
Alloyed heat-treatable, tool and high speed steels 1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2379 X155CrVMo12-1 1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3 Spring steel = 1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4	850-1,400 N/mm ²	GH Z3	Slotting	1xD	90	0.011	0.015	0.023	0.030	0.042	0.050	0.07	0.08	0.11
		GH Z3	Roughing	0.75xD	110	0.013	0.017	0.026	0.035	0.048	0.058	0.08	0.10	0.12
		G-Mold 48 F	Finishing	0.02xD	180	0.013	0.017	0.025	0.033	0.046	0.055	0.07	0.09	0.12
Hardened steel Tool steel, heat-treatable steel, spring steel, high-speed steel, case hardened steel, etc. e.g.: 1.2344 X40CrMoV5-1; 1.2767 X45NiCrMo4; 1.2379 X155CrVMo12-1; 1.2080 X210Cr12; 1.3343 S 6-5-2	≤ 55 HRC	G-Mold 65 U	Slotting	1xD	52	0.010	0.013	0.019	0.026	0.035	0.042	0.06	0.07	0.09
		G-Mold 65 F	Roughing	0.03xD	100	0.024	0.032	0.048	0.064	0.088	0.105	0.14	0.18	0.22
		G-Mold 65 F	Finishing	0.01xD	110	0.010	0.013	0.019	0.026	0.035	0.042	0.06	0.07	0.09
Stainless steel 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X10CrNiS18-9 USA = 303, 410, 420F, 430, 430F	≤ 750 N/mm ²	GH Z3	Slotting	1xD	80	0.011	0.015	0.023	0.030	0.042	0.050	0.07	0.08	0.11
		GH Z3	Roughing	0.75xD	100	0.013	0.017	0.026	0.035	0.048	0.058	0.08	0.10	0.12
		G-Mold 48 F	Finishing	0.02xD	160	0.013	0.017	0.025	0.033	0.046	0.055	0.07	0.09	0.12
Stainless steel 1.4301X5CrNi18-10, 1.4303 X5CrNi18-12 1.4310 XCrNi18-8 USA = 304, 304L, 420	750-850 N/mm ²	GH Z3	Slotting	1xD	55	0.011	0.014	0.021	0.028	0.038	0.046	0.06	0.08	0.10
		GH Z3	Roughing	0.75xD	70	0.012	0.016	0.024	0.032	0.044	0.052	0.07	0.09	0.11
		G-Mold 48 F	Finishing	0.02xD	110	0.012	0.015	0.023	0.031	0.042	0.050	0.07	0.08	0.10
Stainless steel 1.4438 X2CrNiMo18-15-4, 1.4404 X2CrNiMo17-12-2, 1.4571 X6CrNiTi18-10 USA = 310, 316, 316B, 316L, 317	≥ 850 N/mm ²	GH Z3	Slotting	1xD	40	0.010	0.013	0.020	0.026	0.035	0.042	0.06	0.07	0.09
		GH Z3	Roughing	0.60xD	50	0.012	0.016	0.024	0.032	0.042	0.050	0.07	0.08	0.11
		G-Mold 48 F	Finishing	0.01xD	80	0.010	0.013	0.020	0.026	0.035	0.042	0.06	0.07	0.09
Special alloys (nickel based "Ni") Nimonic, Inconel, Monel, Hastelloy	≤ 1,300 N/mm ²	GH Z3	Slotting	1xD	20	0.008	0.010	0.015	0.020	0.030	0.036	0.05	0.06	0.08
		GH Z3	Roughing	0.60xD	30	0.009	0.012	0.018	0.024	0.036	0.043	0.06	0.07	0.09
		G-Mold 48 F	Finishing	0.01xD	40	0.008	0.010	0.015	0.020	0.030	0.036	0.05	0.06	0.08
Titanium alloys ("Ti") 3.7024 Ti99.5, 3.7114 TiAl5Sn2.5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7164 TiAl6V4, 3.7184 TiAl4Mo4Sn2.5	≤ 1,300 N/mm ²	GH Z3	Slotting	1xD	40	0.010	0.013	0.020	0.026	0.038	0.046	0.06	0.08	0.10
		GH Z3	Roughing	0.60xD	50	0.012	0.016	0.024	0.032	0.046	0.055	0.07	0.09	0.11
		G-Mold 48 F	Finishing	0.02xD	80	0.011	0.015	0.022	0.029	0.042	0.050	0.07	0.08	0.10
Cast/grey cast iron, spher.graphite/mall, cast iron 0.6010 EN-GL100 (GG10), 0.6020 EN-GJL-200 (GG20), 0.7050 EN-GJS-500-7 (GGG50), 0.8535 EN-GJMW-350-4 (GTW35)	≤ 240 HB	GH Z3	Slotting	1xD	105	0.012	0.016	0.024	0.032	0.045	0.054	0.07	0.09	0.11
		GH Z3	Roughing	0.75xD	130	0.014	0.018	0.028	0.037	0.052	0.062	0.08	0.10	0.13
		G-Mold 48 F	Finishing	0.02xD	210	0.013	0.018	0.026	0.035	0.050	0.059	0.08	0.10	0.12
Cast/grey cast iron, spher.graphite/mall, cast iron 0.6025 EN-GL250 (GG25), 0.6035 EN-GJL-350 (GG35), 0.7070 EN-GJS-700-2 (GGG70), 0.8170 EN-GJMB-700-2 (GTS70)	≥ 240 HB	GH Z3	Slotting	1xD	90	0.011	0.015	0.023	0.030	0.042	0.050	0.07	0.08	0.11
		GH Z3	Roughing	0.75xD	110	0.013	0.017	0.026	0.035	0.048	0.058	0.08	0.10	0.12
		G-Mold 48 F	Finishing	0.02xD	180	0.013	0.017	0.025	0.033	0.046	0.055	0.07	0.09	0.12
Aluminium, Al-wrought alloys, Al-alloys 3.0255 Al99.5, 3.2315 AlMgSi1, 3.3515 AlMg1 3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1.5	≤ 5% Si	GH Z3	Slotting	1xD	300	0.015	0.020	0.030	0.040	0.055	0.066	0.09	0.11	0.14
		GH Z3	Roughing	0.75xD	400	0.017	0.023	0.035	0.046	0.063	0.076	0.10	0.13	0.16
		G-Mold 48 F	Finishing	0.02xD	600	0.017	0.022	0.033	0.044	0.061	0.073	0.10	0.12	0.15
Aluminium-cast alloys 3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9 3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	≥ 5% Si	GH Z3	Slotting	1xD	180	0.014	0.018	0.027	0.036	0.050	0.060	0.08	0.10	0.13
		GH Z3	Roughing	0.75xD	300	0.016	0.021	0.031	0.041	0.058	0.069	0.09	0.12	0.14
		G-Mold 48 F	Finishing	0.02xD	360	0.015	0.020	0.030	0.040	0.055	0.066	0.09	0.11	0.14
Magnesium-alloys MgMn2, G-MgAl8Zn1, G-MgAl6Zn3	-	GH Z3	Slotting	1xD	150	0.013	0.017	0.025	0.034	0.045	0.054	0.07	0.09	0.11
		GH Z3	Roughing	0.75xD	180	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00
		G-Mold 48 F	Finishing	0.02xD	300	0.014	0.018	0.028	0.037	0.050	0.059	0.08	0.10	0.12
Non-ferr. met. (copper, short-/long-chipp., brass/bronze) 2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPB 2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 ... 2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0.5 2.1090 CuSn7ZnPB, 2.1170 CuPb5Sn5, 2.1176 ... 2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10	≤ 850 N/mm ²	GH Z3	Slotting	1xD	200	0.014	0.018	0.027	0.036	0.050	0.060	0.08	0.10	0.13
		GH Z3	Roughing	0.75xD	230	0.016	0.021	0.031	0.041	0.058	0.069	0.09	0.12	0.14
		G-Mold 48 F	Finishing	0.02xD	400	0.015	0.020	0.030	0.040	0.055	0.066	0.09	0.11	0.14

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