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WWW.SAMHOTOO.COM

0755-8450 7348

AM9:00~PM17:30 (週末除外)

2024年5月

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SAMHO Tools Comprehensive Catalog

三河工具综合目录书
(可在网站下载)



www.samhotool.com



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2刃
2 Flutes

4刃
4 Flutes

平刀
Square

避空平刀
Long Neck
Square

球刀
Ball

避空球刀
Long Neck
Ball

圓角刀
Radius

避空圓角刀
Long Neck
Radius

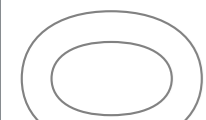
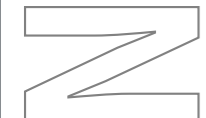
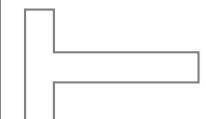
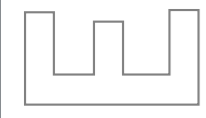
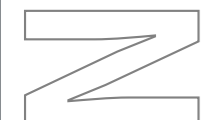
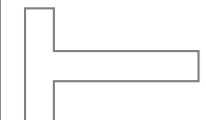
磨頭
Super Head

鑽頭
Drill Bits

銑牙刀
Thread
Cutter

SHG (金色系列65度)

● SHGS2刃平刀 (2 Flutes Square)		39
● SHGS4刃平刀 (4 Flutes Square)		42
● SHGLS2刃避空型平刀 (2 Flutes Long Neck Square)		46
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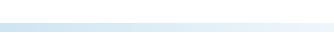
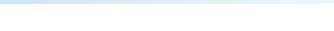
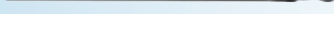
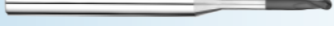
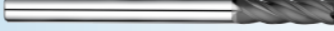
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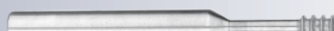
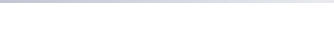
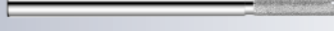
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塗層特性

Coating Characteristics

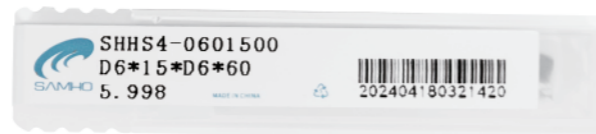
塗層名稱 Coating Name	HG	HT	HB	HD
成分 Ingredient	ALTiSi+N	ALTiSi+N	ALTiCR+N	Nano Diamond
顏色 Colour	古銅色 Bronze	古銅色 Bronze	黑灰色 Dark grey	黑灰色 Dark grey
特點 Characteristics	超高硬度、超抗氧化性、高密度強度 Ultra high hardness, super oxidation resistance, high density.	超高硬度、超抗氧化性、高密度強度 Ultra high hardness, super oxidation resistance, high density.	超低氧化性低摩擦 Ultra low oxidation low friction	超高耐磨性 Ultra high wear resistance
硬度 Hardness	3700 (HV)	3500 (HV)	3500 (HV)	10000 (HV)
摩擦係數 Coefficient of Friction	0.4	0.36	0.3	<0.1
氧化開始溫度 Oxidation Onset Temperature	1300	1200	1100	600
塗層厚度 Coating Thickness	2-4um	2-4um	2-4um	6-10um

SHH系列高精度

- 柄徑0-0.003mm
- 每一支刀帶检测结果

High precision SHH series

- Shank diameter tolerance 0-0.003 mm
- Test results for each end mill



SAMHO

SHHS2刃平刀 (2 Flutes Square)



MG

HG Coating

30

SD 0-0.003

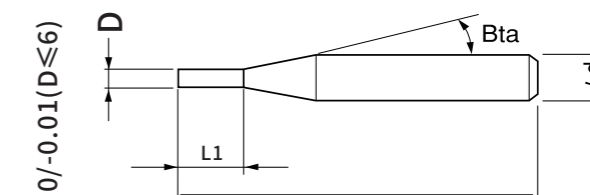
強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	★
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- *高硬淬火材料專用塗層+棒料;
- *在平面和側切時有非常好的光潔度;
- *在高硬度HRC48-65度材料加工壽命長。

- *Special coating + bar for high hard hardened materials;
- *Very good finish on flat surfaces and side cuts;
- *Long processing life in high hardness HRC48-65 degree materials.



2刃
2 Flutes

平刀
Square

合計8型號 (Total 8 models)

單位Unit (mm)

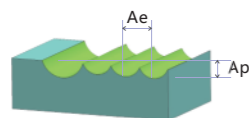
型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHHS2-0010020	0.1	0.2	-	12°	50	2	4	○
SHHS2-0020040	0.2	0.4	-	12°	50	2	4	○
SHHS2-0030060	0.3	0.6	-	12°	50	2	4	○
SHHS2-0040080	0.4	0.8	-	12°	50	2	4	○
SHHS2-0050100	0.5	1	-	12°	50	2	4	○
SHHS2-0060120	0.6	1.2	-	12°	50	2	4	○
SHHS2-0070140	0.7	1.4	-	12°	50	2	4	○
SHHS2-0080160	0.8	1.6	-	12°	50	2	4	○

*本系列產品新追加的尺寸。
*New size added from this series.

準庫存品。
○ Stocked items.

SHHS2-000切削条件表 (Milling Conditions)

SAMHO



切削参数 (Cutting Parameter)

被削材 Work Material	HRC48-55淬火钢 HRC48-55Hardened steels		HRC56-62淬火钢 HRC56-62Hardened steels		HRC63-70淬火钢 HRC63-70Hardened steels	
	转速(min-1) Speed	进给速度 (mm/min) Feed	转速(min-1) Speed	进给速度 (mm/min) Feed	转速(min-1) Speed	进给速度 (mm/min) Feed
直径(mm) Diameter						
0.1	40000	120	40000	100	40000	50
0.2	30000	150	30000	120	30000	80
0.3	30000	260	30000	200	26000	100
0.4	30000	400	30000	300	26000	120
0.5	26000	500	23000	400	20000	200
0.6	26000	500	23000	500	20000	300
0.7	26000	600	23000	500	18000	300
0.8	24000	700	20000	600	18000	300

侧面切削切深量(mm)Milling Amount for Side Milling(mm)

被削材 Work Material	Length of Cut 刃长	2.5D(刃长=直径*2.5)	4D(刃长=直径*4)
		2.5D (Length of Cut=Diameter*2.5)	4D (Length of Cut=Diameter*4)
45HRC以下 Below 45HRC		$a_e=0.07D$ $a_p=2D$	$a_e=0.07D$ $a_p=2D$
45HRC以上 Above 45HRC		$a_e=0.03D$ $a_p=1.5D$	$a_e=0.03D$ $a_p=1.5D$

D : 直径 Diameter (mm)
 a_p : 切深 Axial Depth (mm)
 a_e : 切宽 Radial Depth (mm)

備註:
 * 設備轉速不夠時, 請按比例降低轉速和進給;
 * 不銹鋼和超耐熱合金的加工推薦油性切削液;
 * 尖端為精密研磨。為避免破損, 對刀需謹慎;
 * 發生震動時, 請按比例降低轉速和進給;
 * 当材料硬度大于HRC58度时, 开粗建议用吹气, 精加工用油雾或吹气冷却。

Note:
 * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
 * Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
 * Recommend using a non-contact measuring device to avoid damaging the precision tip point;
 * Decrease both spindle speed and feed rate proportionally in case of chattering;
 * When the material hardness is greater than HRC58 degrees, it is recommended to use air blow cooling for roughing and oil mist or air blow cooling for finishing.

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SHHS4刃平刀 (4 Flutes Square)



MG

HG Coating

43-45

SD 0-0.003

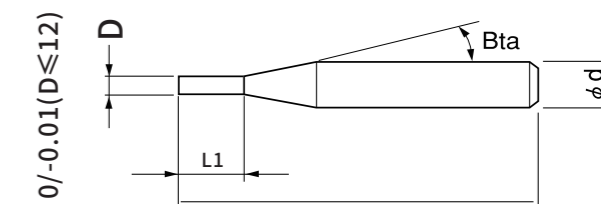
強烈推薦/推薦/建議 ★○○○
 Highly recommend/Recommend/Suggest

特長 (Specialty)

* 高硬淬火材料專用塗層+棒料;
 * 在平面和側切時有非常好的光潔度;
 * 在高硬度HRC48-65度材料加工壽命長。

* Special coating + bar for high hard hardened materials;
 * Very good finish on flat surfaces and side cuts;
 * Long life in cutting high hardness material of HRC48-65.

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	★
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	



合計24型號 (Total 24 models)

單位 Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHHS4-0100300	1.0	3	-	12°	50	4	4	○
SHHS4-0150400	1.5	4	-	12°	50	4	4	○
SHHS4-0200500	2.0	5	-	12°	50	4	4	○
SHHS4-0250600	2.5	6	-	12°	50	4	4	○
SHHS4-0300800-3	3.0	8	-	-	50	4	3	○
SHHS4-0300800-4	3.0	8	-	12°	50	4	4	○
SHHS4-0300800-6	3.0	8	-	12°	60	4	6	○
SHHS4-0401000-4	4.0	10	-	-	50	4	4	○
SHHS4-0401000-6	4.0	10	-	12°	60	4	6	○
SHHS4-0401000-75	4.0	10	-	12°	75	4	4	○
SHHS4-0501300	5.0	13	-	12°	60	4	6	○
SHHS4-0601500	6.0	15	-	-	60	4	6	○
SHHS4-0601500-75	6.0	15	-	-	75	4	6	○
SHHS4-0601500-100	6.0	15	-	-	100	4	6	○
SHHS4-0802000	8.0	20	-	-	60	4	8	○
SHHS4-0802000-75	8.0	20	-	-	75	4	8	○
SHHS4-0802000-100	8.0	20	-	-	100	4	8	○
SHHS4-0802000-150	8.0	20	-	-	150	4	8	○
SHHS4-1002500	10.0	25	-	-	75	4	10	○
SHHS4-1002500-100	10.0	25	-	-	100	4	10	○

Next page →

2刃
2 Flutes

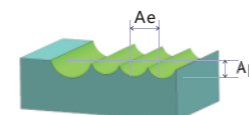
4刃
4 Flutes

平刀
Square

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 BTa Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHHS4-1002500-150	10.0	25	-	-	150	4	10	○
SHHS4-1203000	12.0	30	-	-	75	4	12	○
SHHS4-1203000-100	12.0	30	-	-	100	4	12	○
SHHS4-1203000-150	12.0	30	-	-	150	4	12	○

*本系列產品新追加的尺寸。
*New size added from this series.

準庫存品。
Stocked items.



切削参数 (Cutting Parameter)

被削材 Work Material	HRC48-55淬火钢 HRC48-55Hardened steels		HRC56-62淬火钢 HRC56-62Hardened steels		HRC63-70淬火钢 HRC63-70Hardened steels	
	直徑(mm) Diameter	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed
1.0	22000	600	20000	500	15000	400
1.5	18000	700	16000	600	12000	400
2.0	15000	900	12000	600	10000	500
2.5	13000	900	10000	600	9000	500
3.0	11000	1000	8000	700	7000	600
4.0	8500	1200	7500	800	6000	600
5.0	7500	1500	6000	1200	5000	600
6.0	6500	1800	5500	1000	4500	600
8.0	5000	2000	4000	1200	3500	700
10.0	4000	2000	3200	1500	2500	800
12.0	3500	2000	2500	1500	2200	800

側面切削切深量(mm) Milling Amount for Side Milling(mm)

被削材 Work Material	Length of Cut 刃長	2.5D (刃長=直徑*2.5) 2.5D (Length of Cut=Diameter*2.5)	4D (刃長=直徑*4) 4D (Length of Cut=Diameter*4)
	45HRC以下 Below 45HRC		$a_e=0.07D$ $a_p=2D$
45HRC以上 Above 45HRC		$a_e=0.03D$ $a_p=1.5D$	$a_e=0.03D$ $a_p=1.5D$

D : 直徑 Diameter (mm)

a_p : 切深 Axial Depth (mm)

a_e : 切寬 Radial Depth (mm)

備註:

- * 設備轉速不夠時，請按比例降低轉速和進給；
- * 不銹鋼和超耐熱合金的加工推薦油性切削液；
- * 尖端為精密研磨。為避免破損，對刀需謹慎；
- * 發生震動時，請按比例降低轉速和進給；
- * 当材料硬度大于HRC58度时，开粗建议用吹气，精加工用油雾或吹气冷却。

Note:

- *Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
- *Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
- *Recommend using a non-contact measuring device to avoid damaging the precision tip point;
- *Decrease both spindle speed and feed rate proportionally in case of chattering;
- *When the material hardness is greater than HRC58 degrees, it is recommended to use air blow cooling for roughing and oil mist or air blow cooling for finishing.

SHHLS2刃避空型平刀 (2 Flutes Long Neck Square)

SAMHO



MG

HG Coating

30

SD 0-0.003

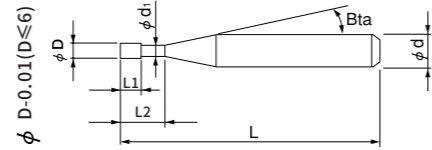
強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬硬鋼	Hardened steels (~55/~60/~70HRC)	★
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- *高硬淬火材料專用涂层+棒料;
- *深溝刃避空位置大圆弧过渡不容易断刀;
- *在高硬度HRC48-65度材料加工寿命长。

- *Special coating + bar for high hard hardened materials;
- *The large arc at the clearance avoids cutter damage;
- *Long life in cutting high hardness material of HRC48-65.



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.

合計23型號 (Total 23 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHHLS2-002005	0.2	0.3	0.5	12°	50	2	4	○
SHHLS2-002010	0.2	0.3	1	12°	50	2	4	○
SHHLS2-002015	0.2	0.3	1.5	12°	50	2	4	○
SHHLS2-003010	0.3	0.5	1	12°	50	2	4	○
SHHLS2-003015	0.3	0.5	1.5	12°	50	2	4	○
SHHLS2-003020	0.3	0.5	2	12°	50	2	4	○
SHHLS2-003030	0.3	0.5	3	12°	50	2	4	○
SHHLS2-004010	0.4	0.6	1	12°	50	2	4	○
SHHLS2-004020	0.4	0.6	2	12°	50	2	4	○
SHHLS2-004030	0.4	0.6	3	12°	50	2	4	○
SHHLS2-004040	0.4	0.6	4	12°	50	2	4	○
SHHLS2-005010	0.5	0.75	1	12°	50	2	4	○
SHHLS2-005020	0.5	0.75	2	12°	50	2	4	○
SHHLS2-005040	0.5	0.75	4	12°	50	2	4	○
SHHLS2-005060	0.5	0.75	6	12°	50	2	4	○
SHHLS2-006020	0.6	0.9	2	12°	50	2	4	○
SHHLS2-006040	0.6	0.9	4	12°	50	2	4	○
SHHLS2-006060	0.6	0.9	6	12°	50	2	4	○
SHHLS2-006080	0.6	0.9	8	12°	50	2	4	○

Next page →

SAMHO

SHHLS2刃避空型平刀 (2 Flutes Long Neck Square)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHHLS2-008020	0.8	1.2	2	12°	50	2	4	○
SHHLS2-008040	0.8	1.2	4	12°	50	2	4	○
SHHLS2-008060	0.8	1.2	6	12°	50	2	4	○
SHHLS2-008080	0.8	1.2	8	12°	50	2	4	○

*本系列產品新追加的尺寸。
*New size added from this series.

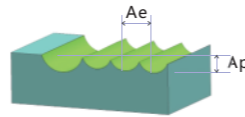
準庫存品。
Stocked items.

2刃
2 Flutes

避空平刀
Long Neck
Square

SHHLS2-000切削条件表 (Milling Conditions)

SAMHO



切削参数 (Cutting Parameter)

被削材 Work Material		HRC48-55 淬火鋼 HRC48-55 hardened steel				HRC56-62 淬火鋼 HRC56-62 hardened steel				HRC63-70 淬火鋼 HRC63-70 hardened steel			
直徑 Diameter	有效長(mm) Effective Length	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth
0.2	0.5	30000	200	0.003	0.1	30000	160	0.003	0.08	30000	120	0.003	0.06
0.2	1	30000	150	0.003	0.1	30000	120	0.003	0.08	30000	80	0.003	0.06
0.2	1.5	30000	100	0.002	0.1	30000	80	0.002	0.08	30000	60	0.002	0.06
0.3	1	30000	300	0.003	0.15	30000	250	0.003	0.12	30000	200	0.003	0.09
0.3	1.5	30000	200	0.003	0.15	30000	160	0.003	0.12	30000	120	0.003	0.09
0.3	2	30000	150	0.003	0.15	30000	120	0.003	0.12	25000	100	0.003	0.09
0.3	3	25000	50	0.002	0.15	25000	40	0.002	0.12	25000	30	0.002	0.09
0.4	1	30000	400	0.005	0.2	30000	350	0.005	0.16	25000	300	0.005	0.12
0.4	2	30000	320	0.005	0.2	25000	280	0.005	0.16	25000	220	0.005	0.12
0.4	3	25000	360	0.004	0.2	20000	220	0.003	0.16	18000	180	0.003	0.12
0.4	4	25000	200	0.003	0.2	20000	160	0.002	0.16	18000	120	0.002	0.12
0.5	1	25000	500	0.01	0.25	23000	450	0.007	0.2	20000	400	0.005	0.15
0.5	2	25000	420	0.01	0.25	23000	380	0.007	0.2	20000	320	0.005	0.15
0.5	4	25000	280	0.005	0.25	23000	240	0.003	0.2	20000	200	0.002	0.15
0.5	6	20000	200	0.003	0.25	18000	150	0.002	0.2	16000	100	0.002	0.15
0.6	2	25000	500	0.01	0.3	23000	400	0.007	0.25	18000	350	0.005	0.18
0.6	4	25000	400	0.005	0.3	23000	300	0.003	0.25	18000	250	0.002	0.18
0.6	6	20000	300	0.002	0.3	18000	200	0.002	0.25	16000	150	0.001	0.18
0.6	8	20000	300	0.002	0.3	18000	200	0.002	0.25	16000	150	0.001	0.18
0.8	2	25000	780	0.03	0.4	23000	650	0.02	0.32	20000	550	0.012	0.24
0.8	4	25000	700	0.025	0.4	23000	600	0.015	0.32	20000	500	0.007	0.24
0.8	6	20000	550	0.02	0.4	18000	450	0.01	0.32	16000	350	0.005	0.24
0.8	8	16000	400	0.007	0.4	14000	300	0.005	0.32	12000	200	0.003	0.24

2刃
2 Flutes

避空平刀
Long Neck
Square

備註:
 * 設備轉速不夠時, 請按比例降低轉速和進給;
 * 不銹鋼和超耐熱合金的加工推薦油性切削液;
 * 尖端為精密研磨。為避免破損, 對刀需謹慎;
 * 發生震動時, 請按比例降低轉速和進給;
 * 當材料硬度大於HRC58度時, 開粗建議用吹氣, 精加工用油霧或吹氣冷卻。

Note:
 * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
 * Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
 * Recommend using a non-contact measuring device to avoid damaging the precision tip point;
 * Decrease both spindle speed and feed rate proportionally in case of chattering;
 * When the material hardness is higher than HRC58, it is recommended to use air blow cooling for roughing and oil mist or air blow cooling for finishing.

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SHHLS4 避空型平刀 (4 Flutes Long Neck Square)

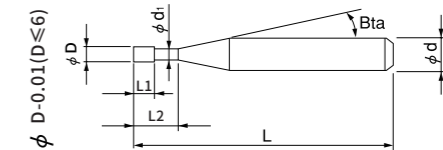


MG HG Coating 43-45 SD 0-0.003

強烈推薦/推薦/建議 ★○○○
 Highly recommend/Recommend/Suggest

特長 (Specialty)

- * 高硬淬火材料專用塗層+棒料;
- * 深溝刀避空位置大圆弧过渡不容易断刀;
- * 在高硬度HRC48-65度材料加工寿命长。
- * Special coating + bar for high hard hardened materials;
- * The large arc at the clearance avoids cutter damage;
- * Long life in cutting high hardness material of HRC48-65.



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
 The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.

合計26型號 (Total 26 models)

單位 Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHHLS4-010040	1.0	1.5	4	12°	50	4	4	○
SHHLS4-010060	1.0	1.5	6	12°	50	4	4	○
SHHLS4-010080	1.0	1.5	8	12°	50	4	4	○
SHHLS4-010100	1.0	1.5	10	12°	50	4	4	○
SHHLS4-010160	1.0	1.5	16	12°	50	4	4	○
SHHLS4-015040	1.5	2.3	4	12°	50	4	4	○
SHHLS4-015060	1.5	2.3	6	12°	50	4	4	○
SHHLS4-015080	1.5	2.3	8	12°	50	4	4	○
SHHLS4-015100	1.5	2.3	10	12°	50	4	4	○
SHHLS4-015160	1.5	2.3	16	12°	50	4	4	○
SHHLS4-020060	2.0	3.0	6	12°	50	4	4	○
SHHLS4-020080	2.0	3.0	8	12°	50	4	4	○
SHHLS4-020100	2.0	3.0	10	12°	50	4	4	○
SHHLS4-020120	2.0	3.0	12	12°	50	4	4	○
SHHLS4-020160	2.0	3.0	16	12°	50	4	4	○
SHHLS4-020200	2.0	3.0	20	12°	50	4	4	○
SHHLS4-030080	3.0	4.5	8	12°	50	4	4	○
SHHLS4-030100	3.0	4.5	10	12°	50	4	4	○
SHHLS4-030120	3.0	4.5	12	12°	50	4	4	○
SHHLS4-030160	3.0	4.5	16	12°	50	4	4	○
SHHLS4-030200	3.0	4.5	20	12°	50	4	4	○

4刃
4 Flutes

避空平刀
Long Neck
Square

SHHLS4刀避空型平刀 (4Flutes Long Neck Square)

SAMHO

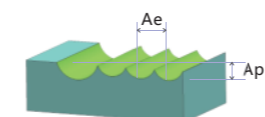
型號 Model Number	刀徑 D Outside Diameter	刀長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 BTa Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHHLS4-030080-6	3.0	4.5	8	12°	50	4	6	○
SHHLS4-030100-6	3.0	4.5	10	12°	50	4	6	○
SHHLS4-030120-6	3.0	4.5	12	12°	50	4	6	○
SHHLS4-030160-6	3.0	4.5	16	12°	50	4	6	○
SHHLS4-030200-6	3.0	4.5	20	12°	50	4	6	○

*本系列產品新追加的尺寸。

*New size added from this series.

準庫存品。

Stocked items.



切削参数 (Cutting Parameter)

被削材 Work Material		HRC48-55 淬火鋼 HRC48-55 hardened steel				HRC56-62 淬火鋼 HRC56-62 hardened steel				HRC63-70 淬火鋼 HRC63-70 hardened steel			
直徑 Diameter of Ball Nose	有效長(mm) Effective Length	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth
1.0	4	23000	900	0.04	0.5	18000	800	0.03	0.4	14000	500	0.02	0.3
1.0	6	18000	700	0.02	0.5	14000	600	0.01	0.4	10000	400	0.007	0.3
1.0	8	16000	600	0.02	0.5	12000	500	0.01	0.4	8000	340	0.005	0.3
1.0	10	14000	500	0.01	0.5	10000	400	0.007	0.4	6000	250	0.005	0.3
1.0	16	12000	320	0.006	0.5	9000	250	0.004	0.4	5500	150	0.003	0.3
1.5	4	20000	900	0.05	0.75	18000	800	0.04	0.6	4000	600	0.03	0.45
1.5	6	20000	800	0.04	0.75	18000	700	0.03	0.6	14000	500	0.02	0.45
1.5	8	18000	600	0.03	0.75	14000	600	0.03	0.6	10000	380	0.01	0.45
1.5	10	16000	500	0.03	0.75	14000	500	0.02	0.6	10000	350	0.01	0.45
1.5	16	10000	360	0.01	0.75	9000	300	0.007	0.6	6800	200	0.005	0.45
2.0	6	18000	900	0.06	1	15000	750	0.05	0.8	12000	600	0.03	0.6
2.0	8	16000	800	0.05	1	12000	600	0.04	0.8	9500	500	0.02	0.6
2.0	10	14000	700	0.05	1	12000	500	0.04	0.8	9500	450	0.02	0.6
2.0	12	12000	600	0.04	1	10000	500	0.03	0.8	8200	400	0.01	0.6
2.0	16	10000	500	0.03	1	9200	400	0.02	0.8	7500	340	0.007	0.6
2.0	20	9200	380	0.02	1	8500	340	0.01	0.8	6000	260	0.005	0.6
3.0	8	14000	900	0.1	1.5	10000	800	0.07	1.2	8000	600	0.05	0.9
3.0	10	14000	900	0.1	1.5	10000	800	0.07	1.2	8000	600	0.05	0.9
3.0	12	12000	800	0.08	1.5	9200	700	0.06	1.2	7200	500	0.04	0.9
3.0	16	10000	700	0.007	1.5	8500	600	0.05	1.2	6500	400	0.03	0.9
3.0	20	9000	700	0.07	1.5	7800	600	0.04	1.2	5800	400	0.02	0.9

備註:

* 設備轉速不夠時，請按比例降低轉速和進給；

* 不銹鋼和超耐熱合金的加工推薦油性切削液；

* 尖端為精密研磨。為避免破損，對刀需謹慎；

* 發生震動時，請按比例降低轉速和進給；

* 當材料硬度大於HRC58度時，開粗建議用吹氣，精加工用油霧或吹氣冷卻。

Note:

* Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;

* Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;

* Recommend using a non-contact measuring device to avoid damaging the precision tip point;

* Decrease both spindle speed and feed rate proportionally in case of chattering;

* When the material hardness is higher than HRC58, it is recommended to use air blow cooling for roughing and oil mist or air blow cooling for finishing.

4刃
4 Flutes

4刃
4 Flutes

避空平刀
Long Neck
Square

避空平刀
Long Neck
Square

SHHR2刃球刀 (2 Flutes Ball)

SAMHO



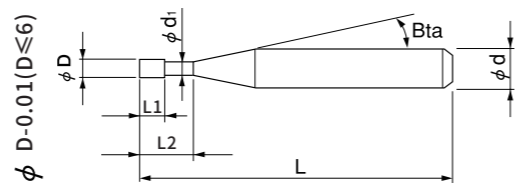
MG HG Coating 30 SD 0-0.003 R ±0.005 R ±0.007 R≤3 R4~10

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (-55/-60/-70HRC)	★
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- *高硬淬火材料專用塗層+棒料;
- *加工光潔度優良;
- *在高硬度HRC48-65度材料加工壽命長。
- *Special coating + bar for high hard hardened materials;
- *Excellent surface finishing;
- *Long life in cutting high hardness material of HRC48-65.



合計31型號 (Total 31 models)

單位 Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHHR2-002003	R0.1	0.3	-	12°	50	2	4	○
SHHR2-0030045	R0.15	0.45	-	12°	50	2	4	○
SHHR2-004006	R0.2	0.6	-	12°	50	2	4	○
SHHR2-005008	R0.25	0.8	-	12°	50	2	4	○
SHHR2-006009	R0.3	0.9	-	12°	50	2	4	○
SHHR2-008012	R0.4	1.2	-	12°	50	2	4	○
SHHR2-015015	R0.75	1.5	-	12°	50	2	4	○
SHHR2-020020	R1	2	-	12°	50	2	4	○
SHHR2-020040-6	R1	2	4	12°	60	2	6	○
SHHR2-030060-3	R1.5	3	6	-	50	2	3	○
SHHR2-030060-4	R1.5	3	6	12°	50	2	4	○
SHHR2-030060-6	R1.5	3	6	12°	60	2	6	○
SHHR2-040080	R2	4	8	-	50	2	4	○
SHHR2-040080-75	R2	4	8	-	75	2	4	○
SHHR2-040080-100	R2	4	8	-	100	2	4	○
SHHR2-040080-6	R2	4	8	12°	60	2	6	○
SHHR2-050100	R2.5	5	10	12°	60	2	6	○
SHHR2-060120	R3	6	12	-	60	2	6	○
SHHR2-060120-75	R3	6	12	-	75	2	6	○
SHHR2-060120-100	R3	6	12	-	100	2	6	○

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SHHR2刃球刀 (2 Flutes Ball)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHHR2-080160	R4	8	16	-	60	2	8	○
SHHR2-080160-75	R4	8	16	-	75	2	8	○
SHHR2-080160-100	R4	8	16	-	100	2	8	○
SHHR2-080160-150	R4	8	16	-	150	2	8	○
SHHR2-100200	R5	10	20	-	75	2	10	○
SHHR2-100200-100	R5	10	20	-	100	2	10	○
SHHR2-100200-150	R5	10	20	-	150	2	10	○
SHHR2-120240	R6	12	24	-	75	2	12	○
SHHR2-120240-100	R6	12	24	-	100	2	12	○
SHHR2-120240-150	R6	12	24	-	150	2	12	○

*本系列產品新追加的尺寸。
*New size added from this series.

準庫存品。
Stocked items.

2刃
2 Flutes

2刃
2 Flutes

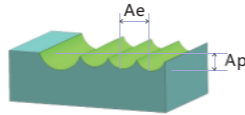
球刀
Ball

球刀
Ball

SHHLR2-000 切削条件表(Milling Conditions)

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切削参数(Cutting Parameter)



被削材 Work Material		HRC48-55 淬火鋼 HRC48-55 hardened steel				HRC56-60 淬火鋼 HRC56-60 hardened steel				HRC63-70 淬火鋼 HRC63-70 hardened steel			
半徑 Radius of Ball Nose	有效長(mm) Effective Length	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth
R0.1	0.3	40000	250	0.01	0.03	40000	250	0.01	0.03	36000	200	0.006	0.018
R0.15	0.45	40000	400	0.01	0.03	40000	350	0.01	0.03	36000	250	0.008	0.024
R0.2	0.6	40000	600	0.015	0.045	40000	550	0.015	0.045	36000	350	0.01	0.027
R0.25	0.8	40000	900	0.02	0.065	40000	800	0.015	0.05	30000	400	0.015	0.03
R0.3	0.9	40000	1400	0.045	0.15	36000	1200	0.025	0.13	25000	600	0.02	0.1
R0.4	1.2	35000	1600	0.06	0.21	30000	1600	0.04	0.17	20000	700	0.02	0.12
R0.5	1	30000	1800	0.1	0.3	24000	2000	0.1	0.3	16000	900	0.05	0.2
R0.75	1.5	30000	2200	0.2	0.5	18000	2000	0.12	0.4	11000	900	0.06	0.25
R1	4	28000	2600	0.3	0.7	14000	2000	0.15	0.5	11000	1000	0.08	0.35
R1.5	6	21000	3000	0.4	1	12000	2200	0.2	0.7	8500	1100	0.12	0.55
R2	8	18000	3200	0.5	1.3	9000	2200	0.25	0.95	7000	1200	0.15	0.55
R2.5	10	15000	3500	0.6	1.5	8000	2500	0.25	1.05	6500	1200	0.15	0.55
R3	12	13000	3500	0.7	1.8	6500	2500	0.3	1.3	5000	1500	0.2	1
R4	16	9500	3000	0.8	2.1	5500	2200	0.4	1.7	4000	1000	0.25	1.35
R5	20	7500	2500	0.9	2.5	4500	2000	0.5	2.1	3000	800	0.3	1.7
R6	24	6500	2000	0.9	3	4500	1700	0.6	2.6	2400	800	0.35	2

D : 直徑 Diameter (mm)
 ap : 切深 Axial Depth (mm)
 ae : 切寬 Radial Depth (mm)

備註:
 * 設備轉速不夠時, 請按比例降低轉速和進給;
 * 不銹鋼和超耐熱合金的加工推薦油性切削液;
 * 尖端為精密研磨。為避免破損, 對刀需謹慎;
 * 發生震動時, 請按比例降低轉速和進給;
 * 当材料硬度大于HRC58度时, 开粗建议用吹气, 精加工用油雾或吹气冷却。

Note:
 *Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
 *Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
 *Recommend using a non-contact measuring device to avoid damaging the precision tip point;
 *Decrease both spindle speed and feed rate proportionally in case of chattering;
 *When the material hardness is higher than HRC58, it is recommended to use air blow cooling for roughing and oil mist or air blow cooling for finishing.

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SHHLR2 刃避空型球刀 (2 Flutes Long Neck Ball)



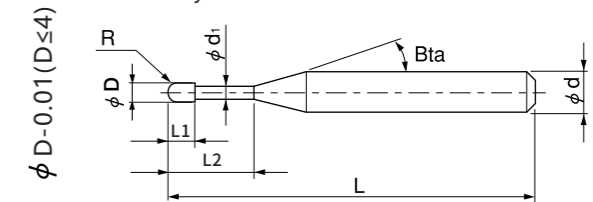
MG HG Coating 30 SD 0-0.003 R ±0.005

強烈推薦/推薦/建議 ★○○○
 Highly recommend/Recommend/Suggest

模貝鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	★
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

*高硬淬火材料專用塗層+棒料;
 *加工光潔度優良;
 *在高硬度HRC48-65度材料加工壽命長;
 *深溝刀避空位置大圓弧過渡不容易斷刀
 *Special coating + bar for high hard hardened materials;
 *Excellent surface finishing;
 *The large arc at the clearance avoids cutter damage;
 *The large arc transition in the avoidance position of the deep groove tool is not easy to break the tool.



合計77型號 (Total 77 models)

單位 Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHHLR2-002005	R0.1	0.2	0.5	12°	50	2	4	○
SHHLR2-002010	R0.1	0.2	1	12°	50	2	4	○
SHHLR2-002015	R0.1	0.2	1.5	12°	50	2	4	○
SHHLR2-003010	R0.15	0.3	1	12°	50	2	4	○
SHHLR2-003015	R0.15	0.3	1.5	12°	50	2	4	○
SHHLR2-003020	R0.15	0.3	2	12°	50	2	4	○
SHHLR2-003030	R0.15	0.3	3	12°	50	2	4	○
SHHLR2-004010	R0.2	0.4	1	12°	50	2	4	○
SHHLR2-004020	R0.2	0.4	2	12°	50	2	4	○
SHHLR2-004030	R0.2	0.4	3	12°	50	2	4	○
SHHLR2-004040	R0.2	0.4	4	12°	50	2	4	○
SHHLR2-005010	R0.25	0.5	1	12°	50	2	4	○
SHHLR2-005020	R0.25	0.5	2	12°	50	2	4	○
SHHLR2-005040	R0.25	0.5	4	12°	50	2	4	○
SHHLR2-005060	R0.25	0.5	6	12°	50	2	4	○
SHHLR2-005080	R0.25	0.5	8	12°	50	2	4	○
SHHLR2-006020	R0.3	0.6	2	12°	50	2	4	○
SHHLR2-006040	R0.3	0.6	4	12°	50	2	4	○
SHHLR2-006060	R0.3	0.6	6	12°	50	2	4	○
SHHLR2-006080	R0.3	0.6	8	12°	50	2	4	○

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SHHLR2刃避空型球刀 (2 Flutes Long Neck Ball)

SAMHO

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 BTa Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHHLR2-008020	R0.4	0.8	2	12°	50	2	4	○
SHHLR2-008040	R0.4	0.8	4	12°	50	2	4	○
SHHLR2-008060	R0.4	0.8	6	12°	50	2	4	○
SHHLR2-008080	R0.4	0.8	8	12°	50	2	4	○
SHHLR2-009020	R0.45	0.9	2	12°	50	2	4	○
SHHLR2-009040	R0.45	0.9	4	12°	50	2	4	○
SHHLR2-009060	R0.45	0.9	6	12°	50	2	4	○
SHHLR2-009080	R0.45	0.9	8	12°	50	2	4	○
SHHLR2-010020	R0.5	1	2	12°	50	2	4	○
SHHLR2-010040	R0.5	1	4	12°	50	2	4	○
SHHLR2-010060	R0.5	1	6	12°	50	2	4	○
SHHLR2-010080	R0.5	1	8	12°	50	2	4	○
SHHLR2-010100	R0.5	1	10	12°	50	2	4	○
SHHLR2-010120	R0.5	1	12	12°	50	2	4	○
SHHLR2-010140	R0.5	1	14	12°	50	2	4	○
SHHLR2-010160	R0.5	1	16	12°	50	2	4	○
SHHLR2-015040	R0.75	1.5	4	12°	50	2	4	○
SHHLR2-015060	R0.75	1.5	6	12°	50	2	4	○
SHHLR2-015080	R0.75	1.5	8	12°	50	2	4	○
SHHLR2-015100	R0.75	1.5	10	12°	50	2	4	○
SHHLR2-015120	R0.75	1.5	12	12°	50	2	4	○
SHHLR2-015140	R0.75	1.5	14	12°	50	2	4	○
SHHLR2-015160	R0.75	1.5	16	12°	50	2	4	○
SHHLR2-020040	R1	2	4	12°	50	2	4	○
SHHLR2-020060	R1	2	6	12°	50	2	4	○
SHHLR2-020080	R1	2	8	12°	50	2	4	○
SHHLR2-020100	R1	2	10	12°	50	2	4	○
SHHLR2-020120	R1	2	12	12°	50	2	4	○
SHHLR2-020160	R1	2	16	12°	50	2	4	○
SHHLR2-020040-6	R1	2	4	12°	60	2	6	○
SHHLR2-020060-6	R1	2	6	12°	60	2	6	○
SHHLR2-020080-6	R1	2	8	12°	60	2	6	○
SHHLR2-020100-6	R1	2	10	12°	60	2	6	○
SHHLR2-020120-6	R1	2	12	12°	60	2	6	○
SHHLR2-020160-6	R1	2	16	12°	60	2	6	○

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SHHLR2刃避空型球刀 (2 Flutes Long Neck Ball)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 BTa Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHHLR2-030060	R1.5	3	6	12°	50	2	4	○
SHHLR2-030080	R1.5	3	8	12°	50	2	4	○
SHHLR2-030100	R1.5	3	10	12°	50	2	4	○
SHHLR2-030120	R1.5	3	12	12°	50	2	4	○
SHHLR2-030160	R1.5	3	16	12°	50	2	4	○
SHHLR2-030200	R1.5	3	20	12°	50	2	4	○
SHHLR2-030060-6	R1.5	3	6	12°	60	2	6	○
SHHLR2-030080-6	R1.5	3	8	12°	60	2	6	○
SHHLR2-030100-6	R1.5	3	10	12°	60	2	6	○
SHHLR2-030120-6	R1.5	3	12	12°	60	2	6	○
SHHLR2-030160-6	R1.5	3	16	12°	60	2	6	○
SHHLR2-030200-6	R1.5	3	20	12°	60	2	6	○
SHHLR2-040080	R2	4	8	-	50	2	4	○
SHHLR2-040100	R2	4	10	-	50	2	4	○
SHHLR2-040120	R2	4	12	-	50	2	4	○
SHHLR2-040160	R2	4	16	-	50	2	4	○
SHHLR2-040200	R2	4	20	-	50	2	4	○
SHHLR2-040080-6	R2	4	8	12°	60	2	6	○
SHHLR2-040100-6	R2	4	10	12°	60	2	6	○
SHHLR2-040120-6	R2	4	12	12°	60	2	6	○
SHHLR2-040160-6	R2	4	16	12°	60	2	6	○
SHHLR2-040200-6	R2	4	20	12°	60	2	6	○

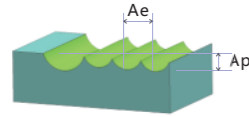
*本系列產品新追加的尺寸。
*New size added from this series.

準庫存品。
Stocked items.

避空球刀
Long Neck
Ball

SHHLR2-000切削条件表 (Milling Conditions)

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被削材 Work Material		HRC48-55 淬火鋼 HRC48-55 hardened steel				HRC56-62 淬火鋼 HRC56-62 hardened steel				HRC63-70 淬火鋼 HRC63-70 hardened steel			
半徑 Radius	有效長(mm) Effective Length	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth
R0.1	0.5	40000	300	0.01	0.01	40000	280	0.005	0.005	40000	200	0.003	0.003
R0.1	1	40000	250	0.003	0.005	40000	160	0.003	0.005	40000	120	0.003	0.003
R0.1	1.5	40000	150	0.003	0.005	40000	120	0.003	0.003	40000	80	0.002	0.002
R0.15	1	40000	350	0.01	0.015	40000	280	0.005	0.01	40000	200	0.003	0.007
R0.15	1.5	40000	250	0.003	0.005	40000	160	0.003	0.005	40000	120	0.003	0.005
R0.15	2	40000	150	0.003	0.005	40000	120	0.003	0.003	40000	80	0.002	0.002
R0.15	3	40000	100	0.002	0.003	40000	100	0.002	0.003	40000	80	0.002	0.002
R0.2	1	40000	600	0.02	0.05	40000	500	0.02	0.03	40000	400	0.01	0.02
R0.2	2	40000	500	0.02	0.03	40000	500	0.01	0.02	40000	300	0.005	0.01
R0.2	2	35000	300	0.008	0.02	33000	300	0.008	0.015	30000	200	0.005	0.007
R0.2	4	35000	250	0.005	0.01	30000	200	0.005	0.01	25000	150	0.003	0.005
R0.25	1	40000	800	0.02	0.05	36000	700	0.02	0.03	30000	400	0.01	0.02
R0.25	2	40000	800	0.02	0.05	36000	700	0.02	0.03	30000	400	0.01	0.02
R0.25	4	32000	400	0.01	0.02	30000	400	0.01	0.02	24000	200	0.005	0.01
R0.25	6	25000	350	0.005	0.01	24000	250	0.005	0.01	20000	160	0.003	0.005
R0.25	8	25000	150	0.002	0.003	24000	100	0.002	0.002	20000	80	0.001	0.002
R0.3	2	40000	1200	0.03	0.08	36000	1000	0.02	0.08	25000	600	0.02	0.08
R0.3	4	40000	800	0.02	0.05	32000	800	0.02	0.05	25000	400	0.01	0.03
R0.3	6	30000	500	0.01	0.02	26000	400	0.01	0.02	20000	300	0.005	0.01
R0.3	8	25000	300	0.005	0.005	20000	300	0.005	0.005	16000	200	0.003	0.003
R0.4	2	35000	1400	0.04	0.1	30000	1400	0.03	0.08	20000	700	0.02	0.08
R0.4	4	35000	1400	0.04	0.1	30000	1400	0.03	0.08	20000	700	0.02	0.08
R0.4	6	28000	1000	0.02	0.05	25000	800	0.02	0.03	18000	500	0.01	0.02
R0.4	8	22000	700	0.01	0.03	20000	600	0.01	0.02	14000	300	0.005	0.01
R0.45	2	35000	1400	0.04	0.1	30000	1400	0.03	0.08	20000	700	0.02	0.08
R0.45	4	35000	1400	0.04	0.1	30000	1400	0.03	0.08	20000	700	0.02	0.08
R0.45	6	28000	1000	0.02	0.05	25000	800	0.02	0.03	18000	500	0.01	0.02
R0.45	8	22000	700	0.01	0.03	20000	600	0.01	0.02	14000	300	0.005	0.01
R0.5	2	30000	1600	0.08	0.3	24000	1600	0.08	0.3	18000	1000	0.05	0.15
R0.5	4	30000	1600	0.08	0.2	24000	1600	0.06	0.2	18000	800	0.03	0.13
R0.5	6	30000	1200	0.05	0.1	22000	1000	0.03	0.1	18000	600	0.02	0.05
R0.5	8	24000	800	0.02	0.08	18000	500	0.01	0.08	15000	400	0.01	0.03
R0.5	10	22000	600	0.015	0.05	16000	400	0.01	0.05	15000	300	0.01	0.02
R0.5	12	20000	600	0.01	0.03	16000	400	0.01	0.03	15000	300	0.005	0.01
R0.5	14	20000	400	0.005	0.01	16000	300	0.005	0.01	15000	200	0.003	0.005
R0.5	16	18000	300	0.005	0.005	16000	200	0.005	0.005	14000	150	0.002	0.002

Next page →

2刃
2 Flutes

避空球刀
Long Neck
Ball

SHHLR2-000切削条件表 (Milling Conditions)

SAMHO

被削材 Work Material	HRC48-55 淬火鋼 HRC48-55 hardened steel				HRC56-62 淬火鋼 HRC56-62 hardened steel				HRC63-70 淬火鋼 HRC63-70 hardened steel				
	半徑 Radius	有效長(mm) Effective Length	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth
R0.75	4	30000	2000	0.1	0.3	24000	2000	0.1	0.2	18000	1200	0.06	0.15
R0.75	6	30000	2000	0.1	0.2	24000	2000	0.1	0.2	18000	1200	0.05	0.1
R0.75	8	24000	1400	0.1	0.15	20000	1000	0.05	0.08	16000	800	0.03	0.05
R0.75	10	24000	1400	0.1	0.1	20000	1000	0.05	0.05	16000	600	0.03	0.03
R0.75	12	20000	600	0.05	0.05	16000	400	0.03	0.05	15000	400	0.02	0.03
R0.75	14	20000	600	0.03	0.03	16000	400	0.02	0.02	15000	400	0.01	0.01
R0.75	16	20000	300	0.01	0.01	16000	200	0.005	0.005	14000	300	0.002	0.002
R1	4	24000	2600	0.15	0.4	22000	2400	0.15	0.3	18000	1400	0.1	0.2
R1	6	24000	2600	0.15	0.4	22000	2400	0.15	0.3	18000	1400	0.1	0.2
R1	8	20000	2400	0.1	0.3	18000	2400	0.1	0.2	16000	1400	0.07	0.15
R1	10	18000	1800	0.07	0.2	16000	1600	0.05	0.2	14000	1000	0.05	0.1
R1	12	16000	1600	0.05	0.15	14000	1400	0.05	0.1	12000	800	0.03	0.05
R1	16	16000	1600	0.05	0.1	14000	1400	0.05	0.05	12000	800	0.03	0.03
R1.5	6	20000	3000	0.2	0.5	18000	2600	0.2	0.4	14000	2000	0.15	0.3
R1.5	8	20000	3000	0.2	0.5	18000	2600	0.2	0.4	14000	2000	0.1	0.3
R1.5	10	20000	3000	0.2	0.5	18000	2600	0.15	0.3	14000	2000	0.07	0.2
R1.5	12	20000	3000	0.2	0.5	18000	2600	0.15	0.3	14000	1800	0.07	0.2
R1.5	16	18000	2400	0.1	0.4	16000	2000	0.1	0.3	12000	1600	0.05	0.1
R1.5	20	18000	2400	0.07	0.25	16000	2000	0.05	0.15	12000	1600	0.03	0.05
R2	8	16000	3000	0.2	1	14000	3000	0.2	0.8	12000	2600	0.2	0.6
R2	10	16000	3000	0.2	1	14000	3000	0.2	0.8	12000	2600	0.2	0.6
R2	12	16000	3000	0.2	1	14000	3000	0.2	0.8	12000	2600	0.2	0.6
R2	16	14000	2600	0.1	0.6	12000	2000	0.1	0.4	10000	2000	0.1	0.2
R2	20	14000	2600	0.07	0.4	12000	1200	0.05	0.3	10000	1600	0.03	0.1

2刃
2 Flutes

避空球刀
Long Neck
Ball

備註:

- * 設備轉速不夠時，請按比例降低轉速和進給;
- * 不銹鋼和超耐熱合金的加工推薦油性切削液;
- * 尖端為精密研磨。為避免破損，對刀需謹慎;
- * 發生震動時，請按比例降低轉速和進給;
- * 当材料硬度大于HRC58度時，開粗建議用吹氣，精加工用油霧或吹氣冷卻。

Note:

- * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
- * Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
- * Recommend using a non-contact measuring device to avoid damaging the precision tip point;
- * Decrease both spindle speed and feed rate proportionally in case of chattering;
- * When the material hardness is higher than HRC58, it is recommended to use air blow cooling for roughing and oil mist or air blow cooling for finishing.

SHHSR4刃圓角刀 (4 Flutes Radius)

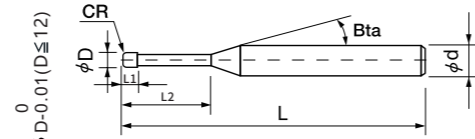
SAMHO



MG HG Coating 30 SD 0-0.003 R ±0.005 R ±0.007
D≤6 D8~12

特長 (Specialty)

- *高硬淬火材料專用塗層+棒料;
- *在平面和等高加工時有非常好的光潔度;
- *在高硬度HRC48-65度材料加工壽命長。
- *Special coating + bar for high hard hardened materials;
- *Excellent surface finishing for surface and contour milling;
- *Long life in cutting high hardness material of HRC48-65.



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (-55/-60/-70HRC)	★
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

合計72型號 (Total 72 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	R角 Radius	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 B _{Ta} Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHHSR4-010005030	1	R0.05	1	3	12°	50	4	4	○
SHHSR4-01001030	1	R0.1	1	3	12°	50	4	4	○
SHHSR4-01002030	1	R0.2	1	3	12°	50	4	4	○
SHHSR4-01501045	1.5	R0.1	1.5	4.5	12°	50	4	4	○
SHHSR4-01502045	1.5	R0.2	1.5	4.5	12°	50	4	4	○
SHHSR4-02001060	2	R0.1	2	6	12°	50	4	4	○
SHHSR4-02002060	2	R0.2	2	6	12°	50	4	4	○
SHHSR4-02003060	2	R0.3	2	6	12°	50	4	4	○
SHHSR4-02005060	2	R0.5	2	6	12°	50	4	4	○
SHHSR4-03001090	3	R0.1	3	9	12°	50	4	4	○
SHHSR4-03002090-3	3	R0.2	3	9	12°	50	4	3	○
SHHSR4-03002090	3	R0.2	3	9	12°	50	4	4	○
SHHSR4-03003090	3	R0.3	3	9	12°	50	4	4	○
SHHSR4-03005090-3	3	R0.5	3	9	12°	50	4	3	○
SHHSR4-03005090	3	R0.5	3	9	12°	50	4	4	○
SHHSR4-04001120	4	R0.1	4	12	-	50	4	4	○
SHHSR4-04002120	4	R0.2	4	12	-	50	4	4	○
SHHSR4-04003120	4	R0.3	4	12	-	50	4	4	○
SHHSR4-04005120	4	R0.5	4	12	-	50	4	4	○
SHHSR4-04005120-75	4	R0.5	4	12	-	75	4	4	○

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SHHSR4刃圓角刀 (4 Flutes Radius)

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型號 Model Number	刃徑 D Outside Diameter	R角 Radius	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 B _{Ta} Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHHSR4-04005120-100	4	R0.5	4	12	-	100	4	4	○
SHHSR4-04010120	4	R1	4	12	-	50	4	4	○
SHHSR4-04002120-6	4	R0.2	4	12	12°	60	4	6	○
SHHSR4-04005120-6	4	R0.5	4	12	12°	60	4	6	○
SHHSR4-05002150	5	R0.2	5	15	12°	60	4	6	○
SHHSR4-05005150	5	R0.5	5	15	12°	60	4	6	○
SHHSR4-06002200	6	R0.2	6	20	-	60	4	6	○
SHHSR4-06003200	6	R0.3	6	20	-	60	4	6	○
SHHSR4-06005200	6	R0.5	6	20	-	60	4	6	○
SHHSR4-06010200	6	R1	6	20	-	60	4	6	○
SHHSR4-06002200-75	6	R0.2	6	20	-	75	4	6	○
SHHSR4-06003200-75	6	R0.3	6	20	-	75	4	6	○
SHHSR4-06005200-75	6	R0.5	6	20	-	75	4	6	○
SHHSR4-06010200-75	6	R1	6	20	-	75	4	6	○
SHHSR4-06002200-100	6	R0.2	6	20	-	100	4	6	○
SHHSR4-06003200-100	6	R0.3	6	20	-	100	4	6	○
SHHSR4-06005200-100	6	R0.5	6	20	-	100	4	6	○
SHHSR4-06010200-100	6	R1	6	20	-	100	4	6	○
SHHSR4-08002240	8	R0.2	8	24	-	60	4	8	○
SHHSR4-08003240	8	R0.3	8	24	-	60	4	8	○
SHHSR4-08005240	8	R0.5	8	24	-	60	4	8	○
SHHSR4-08010240	8	R1	8	24	-	60	4	8	○
SHHSR4-08002240-75	8	R0.2	8	24	-	75	4	8	○
SHHSR4-08003240-75	8	R0.3	8	24	-	75	4	8	○
SHHSR4-08005240-75	8	R0.5	8	24	-	75	4	8	○
SHHSR4-08010240-75	8	R1	8	24	-	75	4	8	○
SHHSR4-08002240-100	8	R0.2	8	24	-	100	4	8	○
SHHSR4-08003240-100	8	R0.3	8	24	-	100	4	8	○
SHHSR4-08005240-100	8	R0.5	8	24	-	100	4	8	○
SHHSR4-08010240-100	8	R1	8	24	-	100	4	8	○
SHHSR4-08002240-150	8	R0.2	8	24	-	150	4	8	○
SHHSR4-08003240-150	8	R0.3	8	24	-	150	4	8	○
SHHSR4-08005240-150	8	R0.5	8	24	-	150	4	8	○
SHHSR4-08010240-150	8	R1	8	24	-	150	4	8	○

Next page →

SHHSR4刃圓角刀(4 Flutes Radius)

SAMHO

型號 Model Number	刃徑 D Outside Diameter	R角 Radius	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 BTa Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHHSR4-10002300	10	R0.2	10	30	-	75	4	10	○
SHHSR4-10005300	10	R0.5	10	30	-	75	4	10	○
SHHSR4-10010300	10	R1	10	30	-	75	4	10	○
SHHSR4-10002300-100	10	R0.2	10	30	-	100	4	10	○
SHHSR4-10005300-100	10	R0.5	10	30	-	100	4	10	○
SHHSR4-10010300-100	10	R1	10	30	-	100	4	10	○
SHHSR4-10002300-150	10	R0.2	10	30	-	150	4	10	○
SHHSR4-10005300-150	10	R0.5	10	30	-	150	4	10	○
SHHSR4-10010300-150	10	R1	10	30	-	150	4	10	○
SHHSR4-12002360	12	R0.2	12	36	-	75	4	12	○
SHHSR4-12005360	12	R0.5	12	36	-	75	4	12	○
SHHSR4-12010360	12	R1	12	36	-	75	4	12	○
SHHSR4-12002360-100	12	R0.2	12	36	-	100	4	12	○
SHHSR4-12005360-100	12	R0.5	12	36	-	100	4	12	○
SHHSR4-12010360-100	12	R1	12	36	-	100	4	12	○
SHHSR4-12002360-150	12	R0.2	12	36	-	150	4	12	○
SHHSR4-12005360-150	12	R0.5	12	36	-	150	4	12	○
SHHSR4-12010360-150	12	R1	12	36	-	150	4	12	○

*本系列產品新追加的尺寸。
*New size added from this series.

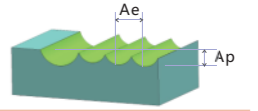
準庫存品。
Stocked items.

4刃
4 Flutes

圓角刀
Radius

SHHSR4-000切削条件表 (Milling Conditions)

SAMHO



被削材 Work Material		HRC48-55 淬火鋼 HRC48-55 hardened steel				HRC56-62 淬火鋼 HRC56-62 hardened steel				HRC63-70 淬火鋼 HRC63-70 hardened steel			
直徑 Diameter	圓角CR Radius	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth
1	R0.05	21000	1800	0.04	0.3	18000	1500	0.03	0.25	14000	1100	0.02	0.2
1	R0.1	21000	1800	0.04	0.3	18000	1500	0.03	0.25	14000	1100	0.02	0.2
1	R0.2	21000	1800	0.04	0.3	18000	1500	0.03	0.25	14000	1100	0.02	0.2
1.5	R0.1	19000	1800	0.045	0.5	16000	1500	0.03	0.4	13000	1100	0.02	0.3
1.5	R0.2	19000	1800	0.045	0.5	16000	1500	0.03	0.4	13000	1100	0.02	0.3
2	R0.1	18000	2100	0.06	0.6	15000	1800	0.05	0.5	12000	1300	0.03	0.35
2	R0.2	18000	2100	0.06	0.6	15000	1800	0.05	0.5	12000	1300	0.03	0.35
2	R0.3	18000	2100	0.06	0.6	15000	1800	0.05	0.5	12000	1300	0.03	0.35
2	R0.5	18000	2100	0.06	0.6	15000	1800	0.05	0.5	12000	1300	0.03	0.35
3	R0.1	11000	1700	0.09	0.8	9500	1400	0.06	0.7	7500	1000	0.04	0.6
3	R0.2	11000	1700	0.09	0.8	9500	1400	0.06	0.7	7500	1000	0.04	0.6
3	R0.3	11000	1700	0.09	0.8	9500	1400	0.06	0.7	7500	1000	0.04	0.6
3	R0.5	11000	1700	0.09	0.8	9500	1400	0.06	0.7	7500	1000	0.04	0.6
4	R0.1	10000	2100	0.15	1.2	8500	1800	0.08	1	7000	1300	0.06	0.8
4	R0.2	10000	2100	0.15	1.2	8500	1800	0.08	1	7000	1300	0.06	0.8
4	R0.3	10000	2100	0.15	1.2	8500	1800	0.08	1	7000	1300	0.06	0.8
4	R0.5	10000	2100	0.15	1.2	8500	1800	0.08	1	7000	1300	0.06	0.8
4	R1	10000	2100	0.15	1.2	8500	1800	0.08	1	7000	1300	0.06	0.8
5	R0.2	8000	2600	0.18	1.5	6000	2200	0.12	1.3	5000	1500	0.08	1
5	R0.5	8000	2600	0.18	1.5	6000	2200	0.12	1.3	5000	1500	0.08	1
6	R0.2	8000	2600	0.18	1.8	6000	2200	0.12	1.5	5000	1500	0.08	1.2
6	R0.3	8000	2600	0.18	1.8	6000	2200	0.12	1.5	5000	1500	0.08	1.2
6	R0.5	8000	2600	0.18	1.8	6000	2200	0.12	1.5	5000	1500	0.08	1.2
6	R1	8000	2600	0.18	1.8	6000	2200	0.12	1.5	5000	1500	0.08	1.2
8	R0.2	6000	2600	0.2	2.4	5000	2200	0.16	1.8	4000	1500	0.1	1.5
8	R0.3	6000	2600	0.2	2.4	5000	2200	0.16	1.8	4000	1500	0.1	1.5
8	R0.5	6000	2600	0.2	2.4	5000	2200	0.16	1.8	4000	1500	0.1	1.5
8	R1	6000	2600	0.2	2.4	5000	2200	0.16	1.8	4000	1500	0.1	1.5
10	R0.2	5000	2600	0.2	3	4000	2200	0.15	2.4	3000	1500	0.1	1.8
10	R0.3	5000	2600	0.2	3	4000	2200	0.15	2.4	3000	1500	0.1	1.8
10	R0.5	5000	2600	0.2	3	4000	2200	0.15	2.4	3000	1500	0.1	1.8
10	R1	5000	2600	0.2	3	4000	2200	0.15	2.4	3000	1500	0.1	1.8
12	R0.2	4000	3000	0.2	3.5	3000	2600	0.1	2.6	2000	1500	0.1	2
12	R0.3	4000	3000	0.2	3.5	3000	2600	0.1	2.6	2000	1500	0.1	2
12	R0.5	4000	3000	0.2	3.5	3000	2600	0.1	2.6	2000	1500	0.1	2
12	R1	4000	3000	0.2	3.5	3000	2600	0.1	2.6	2000	1500	0.1	2

4刃
4 Flutes

圓角刀
Radius

備註：
* 設備轉速不夠時，請按比例降低轉速和進給；
* 不銹鋼和超耐熱合金的加工推薦油性切削液；
* 當材料硬度大於HRC58度時，開粗建議用吹氣冷卻，
精加工用油霧或吹氣冷卻

Note:
* Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
* Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
* When the material hardness is higher than HRC58, it is recommended to use air blow cooling for roughing and oil mist or air blow cooling for finishing.

SHHLSR2刃避空型圓角刀 (2Flutes Long Neck Radius)

SAMHO



MG HG Coating 30 SD 0-0.003 R ±0.005

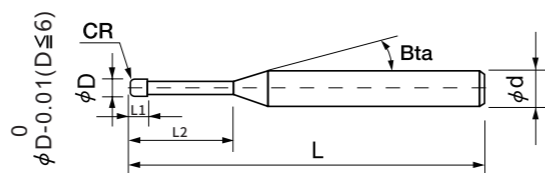
強烈推薦/推薦/建議 ★○○○

Highly recommend/Recommend/Suggest

模貝鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	★
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- *高硬淬火材料專用塗層+棒料;
- *在平面和等高加工時有非常好的光潔度;
- *在高硬度HRC48-65度材料加工壽命長;
- *深溝刀避空位置大圓弧過渡不容易斷刀
- *Special coating + bar for high hard hardened materials;
- *Excellent surface finishing when processing flat surfaces and contours;
- *The large arc at the clearance avoids cutter damage;
- *Long life in cutting high hardness material of HRC48-65.



合計41型號 (Total 41 models)

單位Unit (mm)

型號 Model Number	刀徑 D Outside Diameter	R角 Radius	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 B _{Ta} Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHHLSR2-002005005	D0.2	R0.05	0.2	0.5	12°	50	2	4	○
SHHLSR2-002005010	D0.2	R0.05	0.2	1	12°	50	2	4	○
SHHLSR2-002005015	D0.2	R0.05	0.2	1.5	12°	50	2	4	○
SHHLSR2-002005020	D0.2	R0.05	0.2	2	12°	50	2	4	○
SHHLSR2-003005005	D0.3	R0.05	0.3	0.5	12°	50	2	4	○
SHHLSR2-003005010	D0.3	R0.05	0.3	1	12°	50	2	4	○
SHHLSR2-003005015	D0.3	R0.05	0.3	1.5	12°	50	2	4	○
SHHLSR2-003005020	D0.3	R0.05	0.3	2	12°	50	2	4	○
SHHLSR2-003005030	D0.3	R0.05	0.3	3	12°	50	2	4	○
SHHLSR2-004005010	D0.4	R0.05	0.4	1	12°	50	2	4	○
SHHLSR2-004005020	D0.4	R0.05	0.4	2	12°	50	2	4	○
SHHLSR2-004005030	D0.4	R0.05	0.4	3	12°	50	2	4	○
SHHLSR2-004005040	D0.4	R0.05	0.4	4	12°	50	2	4	○
SHHLSR2-00401010	D0.4	R0.1	0.4	1	12°	50	2	4	○
SHHLSR2-00401020	D0.4	R0.1	0.4	2	12°	50	2	4	○
SHHLSR2-00401030	D0.4	R0.1	0.4	3	12°	50	2	4	○
SHHLSR2-00401040	D0.4	R0.1	0.4	4	12°	50	2	4	○
SHHLSR2-005005010	D0.5	R0.05	0.5	1	12°	50	2	4	○
SHHLSR2-005005020	D0.5	R0.05	0.5	2	12°	50	2	4	○
SHHLSR2-005005040	D0.5	R0.05	0.5	4	12°	50	2	4	○

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SHHLSR2刃避空型圓角刀 (2Flutes Long Neck Radius)

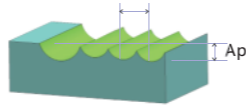
型號 Model Number	刀徑 D Outside Diameter	R角 Radius	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 B _{Ta} Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHHLSR2-005005060	D0.5	R0.05	0.5	6	12°	50	2	4	○
SHHLSR2-00501010	D0.5	R0.1	0.5	1	12°	50	2	4	○
SHHLSR2-00501020	D0.5	R0.1	0.5	2	12°	50	2	4	○
SHHLSR2-00501040	D0.5	R0.1	0.5	4	12°	50	2	4	○
SHHLSR2-00501060	D0.5	R0.1	0.5	6	12°	50	2	4	○
SHHLSR2-006005020	D0.6	R0.05	0.6	2	12°	50	2	4	○
SHHLSR2-006005040	D0.6	R0.05	0.6	4	12°	50	2	4	○
SHHLSR2-006005060	D0.6	R0.05	0.6	6	12°	50	2	4	○
SHHLSR2-006005080	D0.6	R0.05	0.6	8	12°	50	2	4	○
SHHLSR2-00601020	D0.6	R0.1	0.6	2	12°	50	2	4	○
SHHLSR2-00601040	D0.6	R0.1	0.6	4	12°	50	2	4	○
SHHLSR2-00601060	D0.6	R0.1	0.6	6	12°	50	2	4	○
SHHLSR2-00601080	D0.6	R0.1	0.6	8	12°	50	2	4	○
SHHLSR2-008005020	D0.8	R0.05	0.8	2	12°	50	2	4	○
SHHLSR2-008005040	D0.8	R0.05	0.8	4	12°	50	2	4	○
SHHLSR2-008005060	D0.8	R0.05	0.8	6	12°	50	2	4	○
SHHLSR2-008005080	D0.8	R0.05	0.8	8	12°	50	2	4	○
SHHLSR2-00801020	D0.8	R0.1	0.8	2	12°	50	2	4	○
SHHLSR2-00801040	D0.8	R0.1	0.8	4	12°	50	2	4	○
SHHLSR2-00801060	D0.8	R0.1	0.8	6	12°	50	2	4	○
SHHLSR2-00801080	D0.8	R0.1	0.8	8	12°	50	2	4	○

*本系列產品新追加的尺寸。
*New size added from this series.

準庫存品。
Stocked items.

SHHLSR2-000切削条件表 (Milling Conditions)

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切削参数 (Cutting Parameter)

被削材 Work Material			HRC48-55 淬火鋼 HRC48-55 hardened steel				HRC56-62 淬火鋼 HRC56-62 hardened steel				HRC63-70 淬火鋼 HRC63-70 hardened steel			
直徑 Diameter	圓角半徑 Radius of Ball Nose	有效長(mm) Effective Length	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth
D0.2	R0.05	0.5	30000	400	0.003	0.04	30000	320	0.003	0.02	30000	240	0.003	0.01
D0.2	R0.05	1	30000	300	0.003	0.04	30000	240	0.002	0.02	30000	160	0.002	0.01
D0.2	R0.05	1.5	30000	200	0.002	0.04	30000	160	0.002	0.02	30000	120	0.001	0.01
D0.2	R0.05	2	30000	100	0.002	0.04	30000	80	0.001	0.02	30000	60	0.001	0.01
D0.3	R0.05	0.5	30000	680	0.003	0.08	30000	560	0.003	0.04	30000	450	0.003	0.03
D0.3	R0.05	1	30000	600	0.003	0.08	30000	500	0.003	0.04	30000	400	0.003	0.03
D0.3	R0.05	1.5	30000	400	0.003	0.08	30000	320	0.003	0.04	30000	240	0.003	0.03
D0.3	R0.05	2	30000	300	0.003	0.08	30000	240	0.003	0.04	25000	200	0.003	0.03
D0.3	R0.05	3	25000	100	0.002	0.08	25000	80	0.002	0.04	20000	60	0.002	0.03
D0.4	R0.05	1	30000	800	0.005	0.1	28000	700	0.005	0.05	25000	600	0.005	0.04
D0.4	R0.05	2	30000	600	0.005	0.1	25000	500	0.005	0.05	25000	440	0.005	0.04
D0.4	R0.05	3	25000	500	0.004	0.1	23000	440	0.003	0.05	18000	320	0.003	0.04
D0.4	R0.05	4	25000	400	0.003	0.1	20000	320	0.002	0.05	18000	240	0.002	0.04
D0.4	R0.1	1	30000	800	0.005	0.1	28000	700	0.005	0.05	25000	600	0.005	0.04
D0.4	R0.1	2	30000	600	0.005	0.1	25000	500	0.005	0.05	25000	400	0.005	0.04
D0.4	R0.1	3	25000	500	0.004	0.1	23000	400	0.003	0.05	18000	320	0.003	0.04
D0.4	R0.1	4	25000	400	0.003	0.1	20000	320	0.002	0.05	18000	240	0.002	0.04
D0.5	R0.05	1	25000	1000	0.01	0.15	23000	900	0.007	0.1	20000	800	0.005	0.08
D0.5	R0.05	2	25000	840	0.01	0.15	23000	720	0.007	0.1	20000	600	0.005	0.08
D0.5	R0.05	4	25000	600	0.005	0.15	23000	480	0.003	0.1	20000	360	0.002	0.08
D0.5	R0.05	6	20000	320	0.003	0.15	18000	200	0.002	0.1	16000	140	0.001	0.08
D0.5	R0.1	1	25000	1000	0.01	0.15	23000	900	0.007	0.1	20000	800	0.005	0.08
D0.5	R0.1	2	25000	840	0.01	0.15	23000	720	0.007	0.1	20000	600	0.005	0.08
D0.5	R0.1	4	25000	600	0.005	0.15	23000	480	0.003	0.1	20000	360	0.002	0.08
D0.5	R0.1	6	20000	320	0.003	0.15	18000	200	0.002	0.1	16000	140	0.001	0.08
D0.6	R0.05	2	25000	1000	0.02	0.2	23000	800	0.01	0.15	20000	640	0.007	0.1
D0.6	R0.05	4	23000	800	0.015	0.2	20000	600	0.007	0.15	18000	400	0.005	0.1
D0.6	R0.05	6	20000	400	0.008	0.2	18000	300	0.005	0.15	12000	200	0.003	0.1
D0.6	R0.05	8	16000	300	0.005	0.2	14000	200	0.002	0.15	10000	160	0.001	0.1
D0.6	R0.1	2	25000	1000	0.02	0.2	23000	800	0.01	0.15	20000	640	0.007	0.1
D0.6	R0.1	4	23000	800	0.015	0.2	20000	600	0.007	0.15	18000	400	0.005	0.1
D0.6	R0.1	6	20000	400	0.008	0.2	18000	300	0.005	0.15	12000	200	0.003	0.1
D0.6	R0.1	8	16000	300	0.005	0.2	14000	200	0.002	0.15	10000	160	0.001	0.1
D0.8	R0.05	2	25000	1600	0.03	0.25	23000	1400	0.02	0.16	20000	1000	0.015	0.14
D0.8	R0.05	4	25000	1400	0.025	0.25	23000	1200	0.015	0.16	20000	800	0.01	0.14
D0.8	R0.05	6	20000	1100	0.02	0.25	18000	900	0.01	0.16	16000	650	0.007	0.14
D0.8	R0.05	8	16000	800	0.01	0.25	14000	600	0.005	0.16	12000	400	0.005	0.14

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2刃
2 Flutes

避空
圓角刀
Long Neck
Radius

SAMHO

SHHLSR2-000切削条件表 (Milling Conditions)

被削材 Work Material			HRC48-55 淬火鋼 HRC48-55 hardened steel				HRC56-62 淬火鋼 HRC56-62 hardened steel				HRC63-70 淬火鋼 HRC63-70 hardened steel			
直徑 Diameter	圓角半徑 Radius of Ball Nose	有效長(mm) Effective Length	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth
D0.8	R0.1	2	25000	1600	0.03	0.25	23000	1400	0.02	0.16	20000	1000	0.015	0.14
D0.8	R0.1	4	25000	1400	0.025	0.25	23000	1200	0.015	0.16	20000	800	0.01	0.14
D0.8	R0.1	6	20000	1100	0.02	0.25	18000	900	0.01	0.16	16000	650	0.007	0.14
D0.8	R0.1	8	16000	800	0.01	0.25	14000	600	0.005	0.16	12000	400	0.005	0.14

2刃
2 Flutes

D : 直徑 Diameter (mm)
ap : 切深 Axial Depth (mm)
ae : 切寬 Radial Depth (mm)

備註:
* 設備轉速不夠時, 請按比例降低轉速和進給;
* 不銹鋼和超耐熱合金的加工推薦油性切削液;
* 尖端為精密研磨。為避免破損, 對刀需謹慎;
* 發生震動時, 請按比例降低轉速和進給;
* 當材料硬度大於HRC58度時, 開粗建議用吹氣, 精加工用油霧或吹氣冷卻。

Note:
* Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
* Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
* Recommend using a non-contact measuring device to avoid damaging the precision tip point;
* Decrease both spindle speed and feed rate proportionally in case of chatter;
* When the material hardness is higher than HRC58, it is recommended to use air blow cooling for roughing and oil mist or air blow cooling for finishing.

避空
圓角刀
Long Neck
Radius

SHHLSR4刃避空型圓角刀(4Flutes Long Neck Radius)

SAMHO



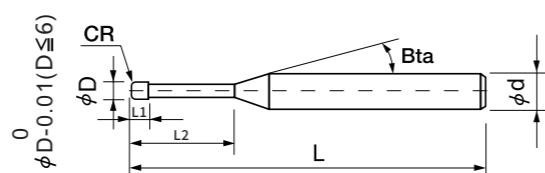
- MG
- HG Coating
- 30
- SD 0-0.003
- R ±0.005

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬硬鋼	Hardened steels (-55/-60/-70HRC)	★
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- *高硬淬火材料專用涂层+棒料;
- *在平面和等高加工時有非常好的光潔度;
- *在高硬度HRC48-65度材料加工壽命長;
- *深溝刀避空位置大圓弧過渡不容易斷刀
- *Special coating + bar for high hard hardened materials;
- *Excellent surface finishing when processing flat surfaces and contours;
- *The large arc at the clearance avoids cutter damage;
- *Long life in cutting high hardness material of HRC48-65.



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.

合計83型號 (Total 83 models)

單位 Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	R角 Radius	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHHLSR4-01001040	D1.0	R0.1	1.0	4	12°	50	4	4	○
SHHLSR4-01001060	D1.0	R0.1	1.0	6	12°	50	4	4	○
SHHLSR4-01001080	D1.0	R0.1	1.0	8	12°	50	4	4	○
SHHLSR4-01001100	D1.0	R0.1	1.0	10	12°	50	4	4	○
SHHLSR4-01001120	D1.0	R0.1	1.0	12	12°	50	4	4	○
SHHLSR4-01001160	D1.0	R0.1	1.0	16	12°	50	4	4	○
SHHLSR4-01002040	D1.0	R0.2	1.0	4	12°	50	4	4	○
SHHLSR4-01002060	D1.0	R0.2	1.0	6	12°	50	4	4	○
SHHLSR4-01002080	D1.0	R0.2	1.0	8	12°	50	4	4	○
SHHLSR4-01002100	D1.0	R0.2	1.0	10	12°	50	4	4	○
SHHLSR4-01002120	D1.0	R0.2	1.0	12	12°	50	4	4	○
SHHLSR4-01002160	D1.0	R0.2	1.0	16	12°	50	4	4	○
SHHLSR4-01501060	D1.5	R0.1	1.5	6	12°	50	4	4	○
SHHLSR4-01501080	D1.5	R0.1	1.5	8	12°	50	4	4	○
SHHLSR4-01501100	D1.5	R0.1	1.5	10	12°	50	4	4	○
SHHLSR4-01501120	D1.5	R0.1	1.5	12	12°	50	4	4	○
SHHLSR4-01501160	D1.5	R0.1	1.5	16	12°	50	4	4	○
SHHLSR4-01502060	D1.5	R0.2	1.5	6	12°	50	4	4	○
SHHLSR4-01502080	D1.5	R0.2	1.5	8	12°	50	4	4	○
SHHLSR4-01502100	D1.5	R0.2	1.5	10	12°	75	4	4	○

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SHHLSR4刃避空型圓角刀(4Flutes Long Neck Radius)

SAMHO

型號 Model Number	刃徑 D Outside Diameter	R角 Radius	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHHLSR4-01502120	D1.5	R0.2	1.5	12	12°	50	4	4	○
SHHLSR4-01502160	D1.5	R0.2	1.5	16	12°	50	4	4	○
SHHLSR4-02001060	D2.0	R0.1	2.0	6	12°	50	4	4	○
SHHLSR4-02001080	D2.0	R0.1	2.0	8	12°	50	4	4	○
SHHLSR4-02001100	D2.0	R0.1	2.0	10	12°	50	4	4	○
SHHLSR4-02001120	D2.0	R0.1	2.0	12	12°	50	4	4	○
SHHLSR4-02001160	D2.0	R0.1	2.0	16	12°	50	4	4	○
SHHLSR4-02002060	D2.0	R0.2	2.0	6	12°	50	4	4	○
SHHLSR4-02002080	D2.0	R0.2	2.0	8	12°	50	4	4	○
SHHLSR4-02002100	D2.0	R0.2	2.0	10	12°	50	4	4	○
SHHLSR4-02002120	D2.0	R0.2	2.0	12	12°	50	4	4	○
SHHLSR4-02002160	D2.0	R0.2	2.0	16	12°	50	4	4	○
SHHLSR4-03001060	D3.0	R0.1	3.0	6	12°	50	4	4	○
SHHLSR4-03001080	D3.0	R0.1	3.0	8	12°	50	4	4	○
SHHLSR4-03001100	D3.0	R0.1	3.0	10	12°	50	4	4	○
SHHLSR4-03001120	D3.0	R0.1	3.0	12	12°	50	4	4	○
SHHLSR4-03001160	D3.0	R0.1	3.0	16	12°	50	4	4	○
SHHLSR4-03001200	D3.0	R0.1	3.0	20	12°	50	4	4	○
SHHLSR4-03002060	D3.0	R0.2	3.0	6	12°	50	4	4	○
SHHLSR4-03002080	D3.0	R0.2	3.0	8	12°	50	4	4	○
SHHLSR4-03002100	D3.0	R0.2	3.0	10	12°	50	4	4	○
SHHLSR4-03002120	D3.0	R0.2	3.0	12	12°	50	4	4	○
SHHLSR4-03002160	D3.0	R0.2	3.0	16	12°	50	4	4	○
SHHLSR4-03002200	D3.0	R0.2	3.0	20	12°	50	4	4	○
SHHLSR4-03005060	D3.0	R0.5	3.0	6	12°	50	4	4	○
SHHLSR4-03005080	D3.0	R0.5	3.0	8	12°	50	4	4	○
SHHLSR4-03005100	D3.0	R0.5	3.0	10	12°	50	4	4	○
SHHLSR4-03005120	D3.0	R0.5	3.0	12	12°	50	4	4	○
SHHLSR4-03005160	D3.0	R0.5	3.0	16	12°	50	4	4	○
SHHLSR4-03005200	D3.0	R0.5	3.0	20	12°	50	4	4	○
SHHLSR4-03001060-6	D3.0	R0.1	3.0	6	12°	60	4	6	○
SHHLSR4-03001080-6	D3.0	R0.1	3.0	8	12°	60	4	6	○
SHHLSR4-03001100-6	D3.0	R0.1	3.0	10	12°	60	4	6	○
SHHLSR4-03001120-6	D3.0	R0.1	3.0	12	12°	60	4	6	○
SHHLSR4-03001160-6	D3.0	R0.1	3.0	16	12°	60	4	6	○
SHHLSR4-03001200-6	D3.0	R0.1	3.0	20	12°	60	4	6	○

Next page →

SHHLSR4刀避空型圓角刀(4Flutes Long Neck Radius)

SAMHO

型號 Model Number	刀徑 D Outside Diameter	R角 Radius	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 BTa Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHHLSR4-03002060-6	D3.0	R0.2	3.0	6	12°	60	4	6	○
SHHLSR4-03002080-6	D3.0	R0.2	3.0	8	12°	60	4	6	○
SHHLSR4-03002100-6	D3.0	R0.2	3.0	10	12°	60	4	6	○
SHHLSR4-03002120-6	D3.0	R0.2	3.0	12	12°	60	4	6	○
SHHLSR4-03002160-6	D3.0	R0.2	3.0	16	12°	60	4	6	○
SHHLSR4-03002200-6	D3.0	R0.2	3.0	20	12°	60	4	6	○
SHHLSR4-03005060-6	D3.0	R0.5	3.0	6	12°	60	4	6	○
SHHLSR4-03005080-6	D3.0	R0.5	3.0	8	12°	60	4	6	○
SHHLSR4-03005100-6	D3.0	R0.5	3.0	10	12°	60	4	6	○
SHHLSR4-03005120-6	D3.0	R0.5	3.0	12	12°	60	4	6	○
SHHLSR4-03005160-6	D3.0	R0.5	3.0	16	12°	60	4	6	○
SHHLSR4-03005200-6	D3.0	R0.5	3.0	20	12°	60	4	6	○
SHHLSR4-04001080-6	D4.0	R0.1	4.0	8	12°	60	4	6	○
SHHLSR4-04001100-6	D4.0	R0.1	4.0	10	12°	60	4	6	○
SHHLSR4-04001120-6	D4.0	R0.1	4.0	12	12°	60	4	6	○
SHHLSR4-04001160-6	D4.0	R0.1	4.0	16	12°	60	4	6	○
SHHLSR4-04001200-6	D4.0	R0.1	4.0	20	12°	60	4	6	○
SHHLSR4-04002080-6	D4.0	R0.2	4.0	8	12°	60	4	6	○
SHHLSR4-04002100-6	D4.0	R0.2	4.0	10	12°	60	4	6	○
SHHLSR4-04002120-6	D4.0	R0.2	4.0	12	12°	60	4	6	○
SHHLSR4-04002160-6	D4.0	R0.2	4.0	16	12°	60	4	6	○
SHHLSR4-04002200-6	D4.0	R0.2	4.0	20	12°	60	4	6	○
SHHLSR4-04005080-6	D4.0	R0.5	4.0	8	12°	60	4	6	○
SHHLSR4-04005100-6	D4.0	R0.5	4.0	10	12°	60	4	6	○
SHHLSR4-04005120-6	D4.0	R0.5	4.0	12	12°	60	4	6	○
SHHLSR4-04005160-6	D4.0	R0.5	4.0	16	12°	60	4	6	○
SHHLSR4-04005200-6	D4.0	R0.5	4.0	20	12°	60	4	6	○

*本系列產品新追加的尺寸。
*New size added from this series.

準庫存品。
Stocked items.

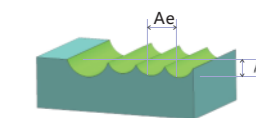
4刃
4 Flutes

避空
圓角刀
Long Neck
Radius

SHHLR4-000切削条件表(Milling Conditions)

SAMHO

切削参数(Cutting Parameter)



被削材 Work Material		HRC48-55 淬火鋼 HRC48-55 hardened steel					HRC56-62 淬火鋼 HRC56-62 hardened steel				HRC63-70 淬火鋼 HRC63-70 hardened steel			
直徑 Diameter	圓角半徑 Radius of Ball Nose	有效長(mm) Effective Length	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth
D1.0	R0.1	4	21000	1800	0.04	0.3	18000	1500	0.03	0.25	14000	1100	0.02	0.2
D1.0	R0.1	6	16000	1400	0.02	0.3	14000	1200	0.01	0.25	11000	850	0.007	0.2
D1.0	R0.1	8	15000	1100	0.015	0.3	13000	900	0.008	0.25	10000	650	0.005	0.2
D1.0	R0.1	10	13000	800	0.01	0.3	11000	700	0.006	0.25	9000	500	0.005	0.2
D1.0	R0.2	4	21000	1800	0.04	0.3	18000	1500	0.03	0.25	14000	1100	0.02	0.2
D1.0	R0.2	6	16000	1400	0.02	0.3	14000	1200	0.01	0.25	11000	850	0.007	0.2
D1.0	R0.2	8	15000	1100	0.015	0.3	13000	900	0.008	0.25	10000	650	0.005	0.2
D1.0	R0.2	10	13000	800	0.01	0.3	11000	700	0.006	0.25	9000	500	0.005	0.2
D1.5	R0.1	6	19000	1800	0.045	0.5	16000	1500	0.3	0.4	13000	1100	0.02	0.3
D1.5	R0.1	8	16000	1500	0.04	0.5	14000	1300	0.025	0.4	11000	900	0.01	0.3
D1.5	R0.1	10	15000	1300	0.03	0.5	13000	1100	0.02	0.4	10000	750	0.01	0.3
D1.5	R0.1	12	13000	1100	0.03	0.5	11000	950	0.02	0.4	9000	650	0.007	0.3
D1.5	R0.1	16	11000	800	0.02	0.5	9000	700	0.007	0.4	7000	500	0.005	0.3
D1.5	R0.2	6	19000	1800	0.045	0.5	16000	1500	0.3	0.4	13000	1100	0.02	0.3
D1.5	R0.2	8	16000	1500	0.04	0.5	14000	1300	0.025	0.4	11000	900	0.01	0.3
D1.5	R0.2	10	15000	1300	0.03	0.5	13000	1100	0.02	0.4	10000	750	0.01	0.3
D1.5	R0.2	12	13000	1100	0.03	0.5	11000	950	0.02	0.4	9000	650	0.007	0.3
D1.5	R0.2	16	11000	800	0.02	0.5	9000	700	0.007	0.4	7000	500	0.005	0.3
D2.0	R0.1	6	18000	2100	0.06	0.6	15000	1800	0.05	0.5	12000	1300	0.03	0.35
D2.0	R0.1	8	16000	1800	0.05	0.6	14000	1500	0.04	0.5	11000	1100	0.02	0.35
D2.0	R0.1	10	14000	1500	0.05	0.6	13000	1300	0.03	0.5	10000	950	0.015	0.35
D2.0	R0.1	12	13000	1400	0.04	0.6	11000	1200	0.03	0.5	9000	850	0.01	0.35
D2.0	R0.1	16	11000	1100	0.03	0.6	9500	950	0.02	0.5	7500	650	0.007	0.35
D2.0	R0.2	6	18000	2100	0.06	0.6	15000	1800	0.05	0.5	12000	1300	0.03	0.35
D2.0	R0.2	8	16000	1800	0.05	0.6	14000	1500	0.04	0.5	11000	1100	0.02	0.35
D2.0	R0.2	10	14000	1500	0.05	0.6	13000	1300	0.03	0.5	10000	950	0.015	0.35
D2.0	R0.2	12	13000	1400	0.04	0.6	11000	1200	0.03	0.5	9000	850	0.01	0.35
D2.0	R0.2	16	11000	1100	0.03	0.6	9500	950	0.02	0.5	7500	650	0.007	0.35
D3.0	R0.1	6	13000	2100	0.1	0.8	11000	1800	0.07	0.7	9000	1300	0.05	0.6
D3.0	R0.1	8	11000	1800	0.1	0.8	9500	1500	0.07	0.7	7500	1100	0.05	0.6
D3.0	R0.1	10	11000	1700	0.09	0.8	9500	1400	0.06	0.7	7500	1000	0.04	0.6
D3.0	R0.1	12	11000	1600	0.08	0.8	9500	1400	0.06	0.7	7500	1000	0.04	0.6
D3.0	R0.1	16	10000	1500	0.07	0.8	8500	1300	0.05	0.7	7000	900	0.03	0.6
D3.0	R0.1	20	8000	1100	0.05	0.8	7000	950	0.04	0.7	5500	700	0.02	0.6
D3.0	R0.2	6	13000	2100	0.1	0.8	11000	1800	0.07	0.7	9000	1300	0.05	0.6
D3.0	R0.2	8	11000	1800	0.1	0.8	9500	1500	0.07	0.7	7500	1100	0.05	0.6
D3.0	R0.2	10	11000	1700	0.09	0.8	9500	1400	0.06	0.7	7500	1000	0.04	0.6
D3.0	R0.2	12	11000	1600	0.08	0.8	9500	1400	0.06	0.7	7500	1000	0.04	0.6
D3.0	R0.2	16	10000	1500	0.07	0.8	8500	1300	0.05	0.7	7000	900	0.03	0.6

4刃
4 Flutes

避空
圓角刀
Long Neck
Radius

SHHLR4-000切削条件表 (Milling Conditions)

SAMHO

被削材 Work Material			HRC48-55 淬火鋼 HRC48-55 hardened steel				HRC55-62 淬火鋼 HRC55-62 hardened steel				HRC62-70 淬火鋼 HRC62-70 hardened steel			
直徑 Diameter	圓角半徑 Radius of Ball Nose	有效長(mm) Effective Length	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth
D3.0	R0.2	20	8000	1100	0.05	0.8	7000	950	0.04	0.7	5500	700	0.02	0.6
D3.0	R0.5	6	13000	2100	0.1	0.8	11000	1800	0.07	0.7	9000	1300	0.05	0.6
D3.0	R0.5	8	11000	1800	0.1	0.8	9500	1500	0.07	0.7	7500	1100	0.05	0.6
D3.0	R0.5	10	11000	1700	0.09	0.8	9500	1400	0.06	0.7	7500	1000	0.04	0.6
D3.0	R0.5	12	11000	1600	0.08	0.8	9500	1400	0.06	0.7	7500	1000	0.04	0.6
D3.0	R0.5	16	10000	1500	0.07	0.8	8500	1300	0.05	0.7	7000	900	0.03	0.6
D3.0	R0.5	20	8000	1100	0.05	0.8	7000	950	0.04	0.7	5500	700	0.02	0.6
D4.0	R0.1	8	10000	2100	0.15	1.2	8500	1800	0.08	1	7000	1300	0.06	0.8
D4.0	R0.1	10	10000	2100	0.15	1.2	8500	1800	0.08	1	7000	1300	0.06	0.8
D4.0	R0.1	12	10000	2100	0.15	1.2	8500	1800	0.08	1	7000	1300	0.06	0.8
D4.0	R0.1	16	8000	1800	0.1	1.2	7000	1500	0.06	1	5500	1100	0.05	0.8
D4.0	R0.1	20	7200	1500	0.09	1.2	6300	1300	0.06	1	5000	950	0.04	0.8
D4.0	R0.2	8	10000	2100	0.15	1.2	8500	1800	0.08	1	7000	1300	0.06	0.8
D4.0	R0.2	10	10000	2100	0.15	1.2	8500	1800	0.08	1	7000	1300	0.06	0.8
D4.0	R0.2	12	10000	2100	0.15	1.2	8500	1800	0.08	1	7000	1300	0.06	0.8
D4.0	R0.2	16	8000	1800	0.1	1.2	7000	1500	0.06	1	5500	1100	0.05	0.8
D4.0	R0.2	20	7200	1500	0.09	1.2	6300	1300	0.06	1	5000	950	0.04	0.8
D4.0	R0.5	8	0000	2100	0.15	1.2	8500	1800	0.08	1	7000	1300	0.06	0.8
D4.0	R0.5	10	10000	2100	0.15	1.2	8500	1800	0.08	1	7000	1300	0.06	0.8
D4.0	R0.5	12	10000	2100	0.15	1.2	8500	1800	0.08	1	7000	1300	0.06	0.8
D4.0	R0.5	16	8000	1800	0.1	1.2	7000	1500	0.06	1	5500	1100	0.05	0.8
D4.0	R0.5	20	7200	1500	0.09	1.2	6300	1300	0.06	1	5000	950	0.04	0.8

D：直徑 Diameter (mm)
ap：切深 Axial Depth (mm)
ae：切寬 Radial Depth (mm)

備註：
* 設備轉速不夠時，請按比例降低轉速和進給；
* 不銹鋼和超耐熱合金的加工推薦油性切削液；
* 尖端為精密研磨。為避免破損，對刀需謹慎；
* 發生震動時，請按比例降低轉速和進給；
* 當材料硬度大於HRC58度時，開粗建議用吹氣，精加工用油霧或吹氣冷卻。

Note:
* Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
* Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
* Recommend using a non-contact measuring device to avoid damaging the precision tip point;
* Decrease both spindle speed and feed rate proportionally in case of chattering;
* When the material hardness is higher than HRC58, it is recommended to use air blow cooling for roughing and oil mist or air blow cooling for finishing.

SAMHO

SHTISR4刀強力開粗圓角刀 (4 Flutes Radius for Excellent Roughing)

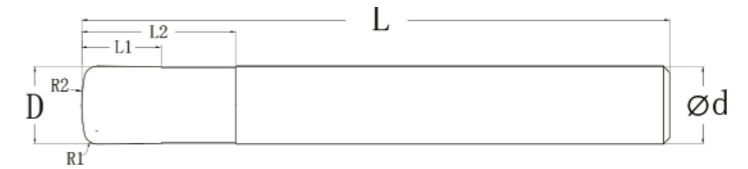


強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	○
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	○
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	○
超耐熱合金	Heat resistant alloys	○
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

* 高硬淬火材料專用塗層+棒料；
* 特殊圓弧底刃設計，開粗加工利器；
* 特別適用於難加工高硬度HRC48-65度模具鋼，鈦合金，不銹鋼，高溫合金等材料。
* Special coating + bar for high hard hardened materials;
* Special arc design at the blade bottom offers excellent roughing;
* Especially suitable for milling mold steel of high hardness HRC48-65, titanium alloy, stainless steel, heat resistant alloys and so on.



合計12型號 (Total 12 models)

單位 Unit (mm)

型號 Model Number	刀徑 D Outside Diameter	R1	R2	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 β _{Ta} Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
開粗SHTISR4-06010180	6	R1	R12	6	18	-	60	4	6	○
開粗SHTISR4-06015180	6	R1.5	R7.5	6	18	-	60	4	6	○
開粗SHTISR4-08010240-75	8	R1	R20	8	24	-	75	4	8	○
開粗SHTISR4-08020240-75	8	R2	R10.5	8	24	-	75	4	8	○
開粗SHTISR4-10010300	10	R1	R35	10	30	-	75	4	10	○
開粗SHTISR4-10020300	10	R2	R19	10	30	-	75	4	10	○
開粗SHTISR4-10010300-100	10	R1	R35	10	30	-	100	4	10	○
開粗SHTISR4-10020300-100	10	R2	R19	10	30	-	100	4	10	○
開粗SHTISR4-12010360	12	R1	R42	12	36	-	75	4	12	○
開粗SHTISR4-12020360	12	R2	R26	12	36	-	75	4	12	○
開粗SHTISR4-12010360-100	12	R1	R42	12	36	-	100	4	12	○
開粗SHTISR4-12020360-100	12	R2	R26	12	36	-	100	4	12	○

* 本系列產品新追加的尺寸。
* New size added from this series.

準庫存品。
Stocked items.

4切
4 Flutes

圓角刀
Radius

SHTISR4-000切削条件表 (Milling Conditions)

SAMHO

被削材 Work Material			HRC48-55 淬火鋼 HRC48-55 hardened steel				HRC56-62 淬火鋼 HRC56-62 hardened steel				HRC63-70 淬火鋼 HRC63-70 hardened steel			
直徑 Diameter	圓角半徑 Radius of Ball Nose	有效長(mm) Effective Length	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth
D6	R0.5	-	4200	4000	0.2	3.3	3200	2500	0.12	3.3	2500	1000	0.08	3
D6	R1	-	4200	4000	0.2	2	3200	2500	0.12	2	2500	1000	0.08	2
D6	R1.5	-	4200	4000	0.2	1.5	3200	2500	0.12	1.5	2500	1000	0.08	1.5
D8	R1	-	3200	5000	0.3	3	2400	2800	0.15	3	1800	1200	0.1	3
D8	R2	-	3200	5000	0.3	2	2400	2800	0.15	2	1800	1200	0.1	2
D10	R1	-	2500	5000	0.3	4	2000	2800	0.2	4	1600	1600	0.15	4
D10	R2	-	2500	5000	0.3	3	2000	2800	0.2	3	1600	1600	0.15	3
D12	R1	-	2100	5000	0.4	5	1600	2500	0.25	6	1300	1600	0.15	5
D12	R2	-	2100	5000	0.4	4	1600	2500	0.25	6	1300	1600	0.15	4

側面切削切深量(mm) Milling Amount for Side Milling(mm)

被削材 Work Material	Length of Cut 刃長	2.5D(刃長=直徑*2.5)	4D(刃長=直徑*4)
		2.5D (Length of Cut=Diameter*2.5)	4D (Length of Cut=Diameter*4)
45HRC以下 Below 45HRC		a _e =0.07D a _p =2D	a _e =0.07D a _p =2D
45HRC以上 Above 45HRC		a _e =0.03D a _p =1.5D	a _e =0.03D a _p =1.5D

D : 直徑 Diameter (mm)
a_p : 切深 Axial Depth (mm)
a_e : 切寬 Radial Depth (mm)

備註:
* 設備轉速不夠時, 請按比例降低轉速和進給;
* 不銹鋼和超耐熱合金的加工推薦油性切削液;
* 尖端為精密研磨。為避免破損, 對刀需謹慎;
* 發生震動時, 請按比例降低轉速和進給;
* 当材料硬度大于HRC58度时, 开粗建议用吹气, 精加工用油雾或吹气冷却。

Note:
* Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
* Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
* Recommend using a non-contact measuring device to avoid damaging the precision tip point;
* Decrease both spindle speed and feed rate proportionally in case of chattering;
* When the material hardness is greater than HRC58 degrees, it is recommended to use air blow cooling for roughing and oil mist or air blow cooling for finishing.

SHG系列高精度

- 柄徑0-0.003mm
- 每一支刀帶檢測結果

SHG series high precision
1. Shank diameter tolerance 0-0.003 mm
2. Test results for each end mill



案例

Case Studies

★ 分析報告: 材料 SKD11(HRC60.5度) Analysis Report: Material SKD11 (HRC60.5)

目的: D6R3 開粗壽命測試
加工機: 牧野V33(30000rpm)
冷卻方式: 氣冷
測試時間: 2021-10-30

Purpose: D6R3 Rough tool life test
Processing machine: Makino V33 (30000rpm)
Coolant: Air Blow
Test time: 2021-10-30

加工形狀:
Milling Shape:



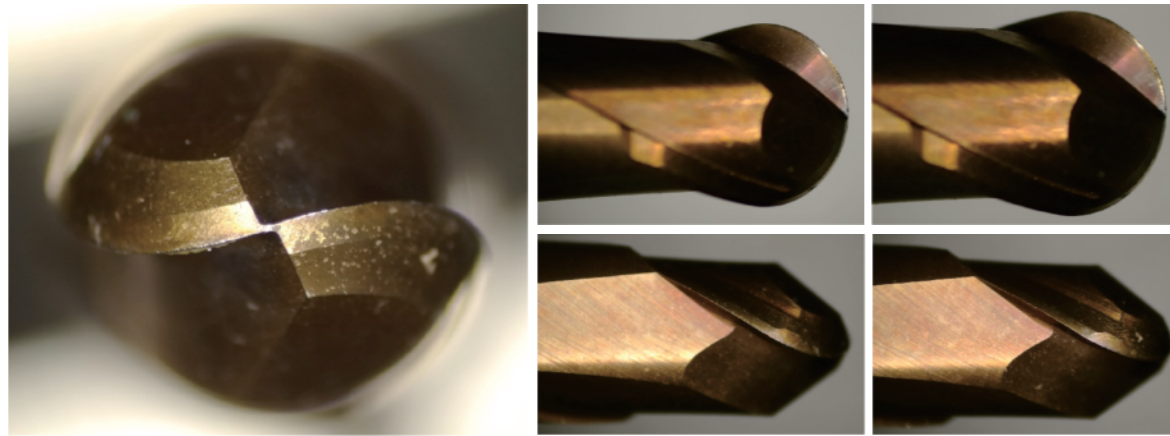
加工參數 Milling Parameters

使用工具 Tool	轉速 Spindle Speed	進給 Feed Rate	Q值 Step	切深 Axial Depth	切寬 Radial Depth	加工時間 Cycle Time
SHGR2-0600600 D6R3	(min-1) 7500	(mm/min) 2800		(a _p) mm 0.3	(a _e) mm 1.2	0:50:22

總結: HRC60度材料模具高效率開粗加工能輕鬆應對, 刀具壽命長, 不易磨損。
Summary: HRC60 hardened materials can be easily processed by the cutter with high efficiency roughing, long tool life and good wear resistance.

4刃
4 Flutes

圓角刀
Radius



★ 分析報告:材料 S136(HRC48-52)Analysis Report:Material S136(HRC48-52)

目的: D2R1 精加工測試 Purpose: D2R1 Finishing test
 加工機: 日本碌碌機(60000rpm) Processing machine: ROKU-ROKU machine (60000rpm)
 冷卻方式: 油霧 Coolant: Oil Mist
 測試時間: 2021-7-20 Test time: 2021-7-20

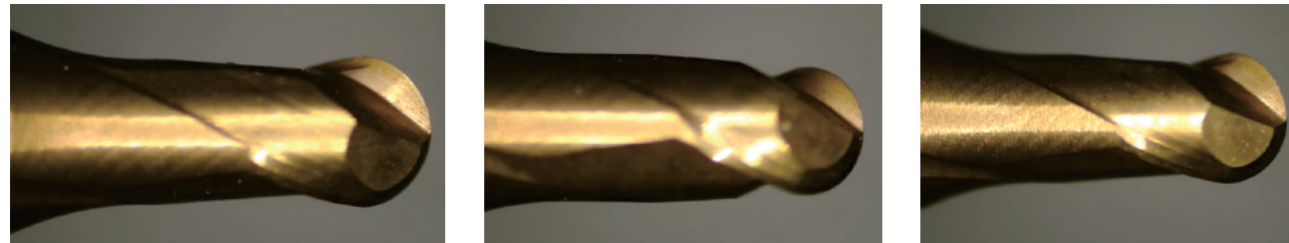
加工形狀:
Milling Shape:



加工參數 Milling Parameters

使用工具 Tool	轉速 Spindle Speed	進給 Feed Rate	Q值 Step	切深 Axial Depth	切寬 Radial Depth	加工時間 Cycle Time
HSGLR2-020040 D2R1*4	(min-1) 22000	(mm/min) 1000		(ap) mm 0.01	(ae) mm 0.01	

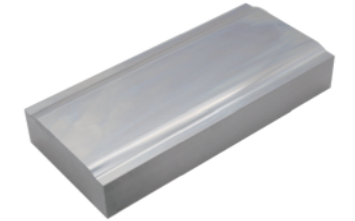
總結: 加工效果良好, 數據精度誤差±0.003mm, 表面光潔度統一, 達到了耳機模具要求。
 Summary: Good quality milling, data error only 0.003mm for two small planes on the workpiece after processing, uniform workpiece pitch and surface quality, meets the requirements of the earphone mold.



★ 分析報告:材料 M333(HRC48-52)Analysis Report:Material M333(HRC48-52)

目的: D6R3 壽命測試 Purpose: D6R3 tool life test
 加工機: 日本碌碌機(60000rpm) Processing machine: ROKU-ROKU machine (60000rpm)
 冷卻方式: 油霧 Coolant: Oil Mist
 測試時間: 2021-7-20 Test time: 2021-7-20

加工形狀:
Milling Shape:



加工參數 Milling Parameters

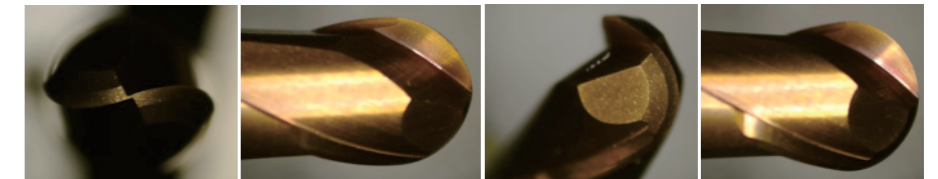
使用工具 Tool	轉速 Spindle Speed	進給 Feed Rate	Q值 Step	切深 Axial Depth	切寬 Radial Depth	加工時間 Cycle Time
D6R3 平行精加工 Parallel finishing	(min-1) 16000	(mm/min) 1600		(ap) mm 0.01	(ae) mm 0.02	

總結: 加工效果良好, 加工完之後, 刀具磨損輕微, 測數前後備小平面, 數據誤差0.001mm, 工件步距均勻, 光潔度統一, 沒有出現陰陽面。
 Summary: Good quality milling, less tool wear, data error only 0.001mm for two small planes on the workpiece after processing, uniform workpiece pitch and surface quality, no surface burrs.

工件效果圖 Workpiece View:



刀具狀況 Cutter Condition:



SHGS2刃平刀 (2 Flutes Square)

SAMHO

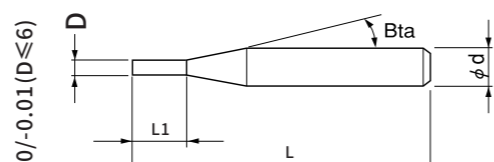


MG HG Coating 45 SD 0-0.003

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

特長 (Specialty)

- *模具鋼料加工用2刃平底立銑刀;
- *特殊排屑槽設計, 切削性優越, 從銅材到HRC60度材料都可加工。
- *2 Flutes Square End Mills for Mold Steels.;
- *The flute shape is specifically designed for outstanding chip evacuation, excellent milling performance, broad application range from Copper to Hardened Steels up to HRC60.



模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	○
合金鋼	Alloy steels (SK/SCM/SUS)	○
預硬鋼	Prehardened steels (NAK/HPM)	○
淬火鋼	Hardened steels (~55/~60/~70HRC)	○
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	○
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	○
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

合計15型號 (Total 15 models)

單位Unit (mm)

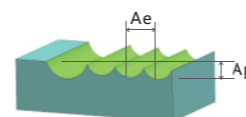
型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHGS2-0020040	0.2	0.4	-	12°	50	2	4	○
SHGS2-0030060	0.3	0.6	-	12°	50	2	4	○
SHGS2-0040080	0.4	0.8	-	12°	50	2	4	○
SHGS2-0050100	0.5	1	-	12°	50	2	4	○
SHGS2-0060120	0.6	1.2	-	12°	50	2	4	○
SHGS2-0070140	0.7	1.4	-	12°	50	2	4	○
SHGS2-0080160	0.8	1.6	-	12°	50	2	4	○
SHGS2-0100300	1.0	3	-	12°	50	2	4	○
SHGS2-0150400	1.5	4	-	12°	50	2	4	○
SHGS2-0200500	2.0	5	-	12°	50	2	4	○
SHGS2-0250600	2.5	6	-	12°	50	2	4	○
SHGS2-0300800-4	3	8	-	12°	50	2	4	○
SHGS2-0401000-4	4	10	-	-	50	2	4	○
SHGS2-0401000-6	4	10	-	12°	60	2	6	○
SHGS2-0601500	6	15	-	-	60	2	6	○

*本系列產品新追加的尺寸。
*New size added from this series.

○ 準庫存品。
○ Stocked items.

SAMHO

SHGS2-000切削条件表 (Milling Conditions)



側面切削 (Side Milling)

被削材 Work Material	HRC30-45 碳素鋼/預硬鋼 Prehardened Steels		HRC45-55 淬火鋼 Hardened Steels		HRC55-65 淬火鋼 Hardened Steels		
	直徑(mm) Diameter	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed
D1.0		10000	100	8000	60	7000	40
D1.5		8000	120	6000	60	5000	50
D2.0		7000	120	5000	60	4000	55
D2.5		6000	120	4500	60	3500	55
D3		5000	150	4000	80	3000	60
D4		4000	150	4000	100	2200	100
D4		4000	150	4000	100	2200	120
D6		3500	250	3000	200	2000	150

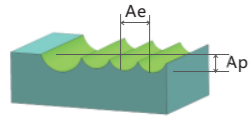
側面切削切深量(mm) Milling Amount for Side Milling (mm)

被削材 Work Material	Length of Cut 刃長	2.5D (刃長=直徑*2.5) 2.5D (Length of Cut=Diameter*2.5)	4D (刃長=直徑*4) 4D (Length of Cut=Diameter*4)
	45HRC以下 Below 45HRC		ae=0.07D ap=2D
45HRC以上 Above 45HRC		ae=0.03D ap=1.5D	ae=0.03D ap=1.5D

D: 直徑 Diameter (mm)
ap: 切深 Axial Depth (mm)
ae: 切寬 Radial Depth (mm)

備註:
* 設備轉速不夠時, 請按比例降低轉速和進給;
* 不銹鋼和超耐熱合金的加工推薦油性切削液;
* 尖端為精密研磨。為避免破損, 對刀需謹慎;
* 發生震動時, 請按比例降低轉速和進給。

Note:
* Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
* Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
* Recommend using a non-contact measuring device to avoid damaging the precision tip point;
* Decrease both spindle speed and feed rate proportionally in case of chattering.



等高切削 (Contour Milling)

被削材 Work Material	HRC30-45 碳素钢/预硬钢 Prehardened Steels		HRC45-55 淬火钢 Hardened Steels		HRC55-65 淬火钢 Hardened Steels	
	直径(mm) Diameter	转速(min-1) Speed	进给速度 (mm/min) Feed	转速(min-1) Speed	进给速度 (mm/min) Feed	转速(min-1) Speed
D0.2	30000	120	30000	120	20000	50
D0.3	30000	150	30000	150	16000	50
D0.4	30000	200	30000	200	16000	60
D0.5	26000	200	26000	200	14000	80
D0.6	24000	300	24000	300	14000	80
D0.7	20000	500	20000	500	12000	100
D0.8	16000	800	16000	800	10000	150
D1.0	13000	1000	13000	1000	8000	300
D1.5	13000	1200	13000	1200	8000	300
D2.0	12000	1500	12000	1500	8000	500
D2.5	12000	1500	12000	1500	8000	800
D3	11000	1800	11000	1800	8000	1000
D4	10000	2200	10000	2200	7500	1200
D4	10000	2200	10000	2200	7500	1200
D6	9000	2500	9000	2500	7000	1400

備註:
 * 設備轉速不夠時, 請按比例降低轉速和進給;
 * 不銹鋼和超耐熱合金的加工推薦油性切削液;
 * 尖端為精密研磨。為避免破損, 對刀需謹慎;
 * 發生震動時, 請按比例降低轉速和進給。

Note:
 * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
 * Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
 * Recommend using a non-contact measuring device to avoid damaging the precision tip point;
 * Decrease both spindle speed and feed rate proportionally in case of chattering.

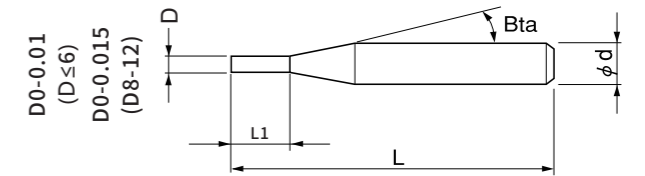


強烈推薦/推薦/建議 ★○○○
 Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	○
合金鋼	Alloy steels (SK/SCM/SUS)	○
預硬鋼	Prehardened steels (NAK/HPM)	○
淬火鋼	Hardened steels (~55/~60HRC)	○
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	○
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	○
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

* 模具鋼料加工用4刃平底立銑刀;
 * 從鋼材到HRC60度材料都可加工。
 * 4 Flutes Square End Mills for Mold Steels.
 * Broad application range from Copper to Hardened Steels (HRC60).



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
 The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.

合計32型號 (Total 32 models)

單位 Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHGS4-0100300	1.0	3	-	12°	50	4	4	○
SHGS4-0150400	1.5	4	-	12°	50	4	4	○
SHGS4-0200600	2.0	6	-	12°	50	4	4	○
SHGS4-0250600	2.5	6	-	12°	50	4	4	○
SHGS4-0300800-3	3	8	-	-	50	4	3	○
SHGS4-0300800-4	3	8	-	12°	50	4	4	○
SHGS4-0300800-6	3	8	-	12°	50	4	6	○
SHGS4-0401000-4	4	10	-	-	50	4	4	○
SHGS4-0401000-6	4	10	-	12°	60	4	6	○
SHGS4-0401000-75	4	10	-	-	75	4	4	○
SHGS4-0501300	5	13	-	12°	60	4	6	○
SHGS4-0601500	6	15	-	-	60	4	6	○
SHGS4-0601500-75	6	15	-	-	75	4	6	○
SHGS4-0601500-100	6	15	-	-	100	4	6	○
SHGS4-0802000	8	20	-	-	60	4	8	○
SHGS4-0802000-75	8	20	-	-	75	4	8	○

Next page →

2刃
2 Flutes

平刀
Square

4刃
4 Flutes

平刀
Square

合計32型號 (Total 32 models)

單位Unit (mm)

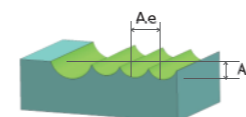
型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHGS4-0802000-100	8	20	-	-	100	4	8	○
SHGS4-0802000-150	8	20	-	-	150	4	8	○
SHGS4-1002500	10	25	-	-	75	4	10	○
SHGS4-1002500-100	10	25	-	-	100	4	10	○
SHGS4-1002500-150	10	25	-	-	150	4	10	○
SHGS4-1203000	12	30	-	-	75	4	12	○
SHGS4-1203000-100	12	30	-	-	100	4	12	○
SHGS4-1203000-150	12	30	-	-	150	4	12	○
SHGS4-1403500-100	14	35	-	-	100	4	14	○
SHGS4-1403500-150	14	35	-	-	150	4	14	○
SHGS4-1604000-100	16	40	-	-	100	4	16	○
SHGS4-1604000-150	16	40	-	-	150	4	16	○
SHGS4-1804500-100	18	45	-	-	100	4	18	○
SHGS4-1804500-150	18	45	-	-	150	4	18	○
SHGS4-2005000-100	20	50	-	-	100	4	20	○
SHGS4-2005000-150	20	50	-	-	150	4	20	○

*本系列產品新追加的尺寸。

*New size added from this series.

○ 準庫存品。

○ Stocked items.



側面切削 (Side Milling)

被削材 Work Material	HRC30-45 碳素鋼/預硬鋼 Prehardened Steels		HRC45-55 淬火鋼 Hardened Steels		HRC55-65 淬火鋼 Hardened Steels	
	直徑(mm) Diameter	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed
D1.0	10000	100	8000	60	7000	40
D1.5	8000	120	6000	60	5000	50
D2.0	6000	150	4500	80	4000	55
D2.5	5000	150	4000	80	3500	55
D3	5000	150	4000	80	3000	60
D4	4000	200	3000	150	3000	120
D5	3500	300	3000	200	2500	150
D6	3500	300	3000	200	2500	150
D8	3000	300	2500	200	2000	200
D10	2500	300	2500	200	2000	200
D12	2000	250	2000	200	2000	200
D14	2000	350	2000	300	1800	200
D16	1800	350	1800	300	1600	200
D18	1600	350	1600	300	1400	200
D20	1200	350	1200	300	1200	150

側面切削切深(mm) Milling Amount for Side Milling (mm)

被削材 Work Material	Length of Cut 刃長	2.5D (刃長=直徑*2.5) 2.5D (Length of Cut=Diameter*2.5)	4D (刃長=直徑*4) 4D (Length of Cut=Diameter*4)
	45HRC以下 Below 45HRC		$a_e=0.07D$ $a_p=2D$
45HRC以上 Above 45HRC		$a_e=0.03D$ $a_p=1.5D$	$a_e=0.03D$ $a_p=1.5D$

D: 直徑 Diameter (mm)

 a_p : 切深 Axial Depth (mm) a_e : 切寬 Radial Depth (mm)

等高切削 (Contour Milling)

被削材 Work Material	HRC30-45 碳素钢/预硬钢 Prehardened Steels		HRC45-55 淬硬钢 Hardened Steels		HRC55-65 淬硬钢 Hardened Steels	
	转速(min-1) Speed	进给速度 (mm/min) Feed	转速(min-1) Speed	进给速度 (mm/min) Feed	转速(min-1) Speed	进给速度 (mm/min) Feed
D1.0	13000	1000	13000	1000	8000	300
D1.5	13000	1200	13000	1200	8000	300
D2.0	12000	1500	12000	1500	8000	500
D2.5	12000	1500	12000	1500	8000	800
D3	11000	1800	11000	1800	8000	1000
D4	10000	2200	10000	2200	7500	1200
D5	9000	2500	9000	2500	7000	1500
D6	9000	2500	9000	2500	7000	1500
D8	8000	2500	8000	2500	6000	1800
D10	7000	2500	7000	2500	5500	1800
D12	6000	2500	6000	2500	5000	2000
D14	4000	2200	4000	2200	4000	2200
D16	3500	2200	3500	2200	3500	2200
D18	3000	2000	3000	2000	3000	2000
D20	2500	2000	2500	2000	2500	2000

備註:
 * 設備轉速不夠時, 請按比例降低轉速和進給;
 * 不銹鋼和超耐熱合金的加工推薦油性切削液;
 * 尖端為精密研磨。為避免破損, 對刀需謹慎;
 * 發生震動時, 請按比例降低轉速和進給。

Note:
 * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
 * Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
 * Recommend using a non-contact measuring device to avoid damaging the precision tip point;
 * Decrease both spindle speed and feed rate proportionally in case of chattering.



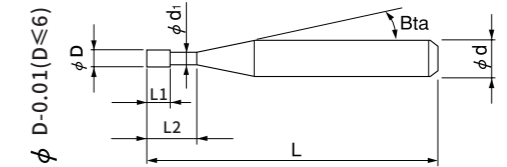
MG HG Coating 45 SD 0-0.003

強烈推薦/推薦/建議 ★○○○
 Highly recommend/Recommend/Suggest

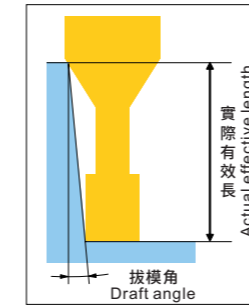
模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	○
合金鋼	Alloy steels (SK/SCM/SUS)	○
預硬鋼	Prehardened steels (NAK/HPM)	○
淬硬鋼	Hardened steels (~55/~60/~70HRC)	○
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	○
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	○
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- * 模具鋼料加工用避空型2刃平底立銑刀;
- * 從鋼材到HRC60度材料都可以加工。
- * 2 Flutes Long Neck Square End Mills for Mold Steels;
- * Broad application range from Copper to Hardened Steels (HRC60).



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
 The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.



合計37型號 (Total 37 models)

單位 Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHGLS2-002010	0.2	0.3	1	12°	50	2	4	○
SHGLS2-002015	0.2	0.3	1.5	12°	50	2	4	○
SHGLS2-002020	0.2	0.3	2	12°	50	2	4	○
SHGLS2-003010	0.3	0.5	1	12°	50	2	4	○
SHGLS2-003015	0.3	0.5	1.5	12°	50	2	4	○
SHGLS2-003020	0.3	0.5	2	12°	50	2	4	○
SHGLS2-003030	0.3	0.5	3	12°	50	2	4	○
SHGLS2-004010	0.4	0.6	1	12°	50	2	4	○
SHGLS2-004020	0.4	0.6	2	12°	50	2	4	○
SHGLS2-004030	0.4	0.6	3	12°	50	2	4	○

Next page →

4刃
4 Flutes

平刀
Square

2刃
2 Flutes

避空平刀
Long Neck Square

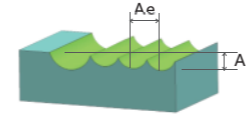
合計37型號 (Total 37 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHGLS2-004040	0.4	0.6	4	12°	50	2	4	○
SHGLS2-005010	0.5	0.75	1	12°	50	2	4	○
SHGLS2-005020	0.5	0.75	2	12°	50	2	4	○
SHGLS2-005040	0.5	0.75	4	12°	50	2	4	○
SHGLS2-005060	0.5	0.75	6	12°	50	2	4	○
SHGLS2-006020	0.6	0.9	2	12°	50	2	4	○
SHGLS2-006040	0.6	0.9	4	12°	50	2	4	○
SHGLS2-006060	0.6	0.9	6	12°	50	2	4	○
SHGLS2-006080	0.6	0.9	8	12°	50	2	4	○
SHGLS2-008020	0.8	1.2	2	12°	50	2	4	○
SHGLS2-008040	0.8	1.2	4	12°	50	2	4	○
SHGLS2-008060	0.8	1.2	6	12°	50	2	4	○
SHGLS2-008080	0.8	1.2	8	12°	50	2	4	○
SHGLS2-010040	1	1.5	4	12°	50	2	4	○
SHGLS2-010060	1	1.5	6	12°	50	2	4	○
SHGLS2-010080	1	1.5	8	12°	50	2	4	○
SHGLS2-010100	1	1.5	10	12°	50	2	4	○
SHGLS2-015040	1.5	2.3	4	12°	50	2	4	○
SHGLS2-015060	1.5	2.3	6	12°	50	2	4	○
SHGLS2-015080	1.5	2.3	8	12°	50	2	4	○
SHGLS2-015100	1.5	2.3	10	12°	50	2	4	○
SHGLS2-020040	2	3	4	12°	50	2	4	○
SHGLS2-020060	2	3	6	12°	50	2	4	○
SHGLS2-020080	2	3	8	12°	50	2	4	○
SHGLS2-020100	2	3	10	12°	50	2	4	○
SHGLS2-020120	2	3	12	12°	50	2	4	○
SHGLS2-020160	2	3	16	12°	50	2	4	○

*本系列產品新追加的尺寸。
*New size added from this series.

○ 準庫存品。
○ Stocked items.



被削材 Work Material		HRC30-45 碳素钢/预硬钢 Prehardened Steels		HRC45-55 淬火钢 Hardened Steels		HRC55-65 淬火钢 Hardened Steels	
直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed
D0.2	0.5	30000	120	30000	120	15000	15
D0.2	1	30000	120	30000	100	15000	10
D0.2	1.5	28000	120	28000	100	15000	10
D0.3	1	30000	150	30000	150	14000	20
D0.3	1.5	28000	120	26000	120	14000	15
D0.3	2	26000	120	22000	100	14000	15
D0.3	3	26000	100	20000	80	14000	10
D0.4	1	26000	300	26000	260	14000	80
D0.4	2	26000	220	24000	200	14000	60
D0.4	3	24000	180	20000	200	14000	40
D0.4	4	24000	150	18000	150	14000	20
D0.5	1	26000	400	20000	300	13000	100
D0.5	2	26000	300	18000	200	13000	80
D0.5	4	24000	180	16000	150	13000	50
D0.5	6	24000	150	15000	100	13000	30
D0.6	2	26000	500	20000	500	12000	120
D0.6	4	24000	300	16000	200	12000	80
D0.6	6	22000	200	16000	150	12000	50
D0.6	8	20000	150	14000	100	12000	20
D0.8	2	18000	600	18000	500	8000	200
D0.8	4	16000	400	14000	300	8000	120
D0.8	6	16000	300	14000	200	8000	100
D0.8	8	14000	150	13000	150	8000	60
D1.0	4	13000	800	12000	800	6500	240
D1.0	6	11000	600	10000	600	6500	200
D1.0	8	10000	300	9000	300	6500	150
D1.0	10	9000	150	8000	120	6500	100
D1.5	4	13000	1200	13000	1000	8000	600
D1.5	6	11000	800	11000	600	8000	500
D1.5	8	10000	500	10000	400	8000	400
D1.5	10	9000	400	9000	300	8000	200
D2.0	4	12000	1400	10000	1000	8000	1000
D2.0	6	12000	1200	10000	800	8000	800
D2.0	8	10000	1000	9000	600	8000	600

Next page →

被削材 Work Material		HRC30-45 碳素钢/预硬钢 Prehardened Steels		HRC45-55 淬火钢 Hardened Steels		HRC55-65 淬火钢 Hardened Steels	
直径(mm) Diameter	有效长(mm) Effective Length	转速(min-1) Speed	进给速度 (mm/min) Feed	转速(min-1) Speed	进给速度 (mm/min) Feed	转速(min-1) Speed	进给速度 (mm/min) Feed
D2.0	10	9500	600	8000	400	8000	300
D2.0	12	8500	400	7000	260	7000	200
D2.0	16	7000	300	6000	200	6000	100

備註:

- * 設備轉速不夠時，請按比例降低轉速和進給；
- * 不銹鋼和超耐熱合金的加工推薦油性切削液；
- * 尖端為精密研磨。為避免破損，對刀需謹慎。

Note:

- * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
- * Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
- * Recommend using a non-contact measuring device to avoid damaging the precision tip point.

2刃
2 Flutes

避空平刀
Long Neck
Square



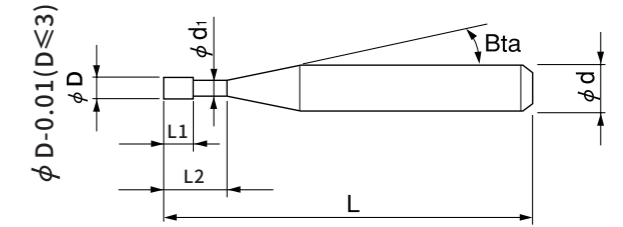
MG HG Coating 45 SD 0-0.003

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級(Grade)
碳素鋼	Carbon steels (S45C/S55C)	○
合金鋼	Alloy steels (SK/SCM/SUS)	○
預硬鋼	Prehardened steels (NAK/HPM)	○
淬火鋼	Hardened steels (~55/~60/~70HRC)	○
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	○
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	○
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- * 模具鋼料加工用避空型4刃平底立銑刀；
- * 從銅材到HRC65度材料都可以加工
- * 4 Flutes Long Neck Square End Mills for Mold Steels;
- * Broad application range from Copper to Hardened Materials up to HRC65.



4刃
4 Flutes

避空平刀
Long Neck
Square

合計24型號 (Total 24 models)

單位 Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHGLS4-010040	1.0	1.5	4	12°	50	4	4	○
SHGLS4-010060	1.0	1.5	6	12°	50	4	4	○
SHGLS4-010080	1.0	1.5	8	12°	50	4	4	○
SHGLS4-010100	1.0	1.5	10	12°	50	4	4	○
SHGLS4-015040	1.5	2.3	4	12°	50	4	4	○
SHGLS4-015060	1.5	2.3	6	12°	50	4	4	○
SHGLS4-015080	1.5	2.3	8	12°	50	4	4	○
SHGLS4-015100	1.5	2.3	10	12°	50	4	4	○
SHGLS4-020060	2.0	3.0	6	12°	50	4	4	○
SHGLS4-020080	2.0	3.0	8	12°	50	4	4	○
SHGLS4-020100	2.0	3.0	10	12°	50	4	4	○
SHGLS4-020120	2.0	3.0	12	12°	50	4	4	○
SHGLS4-020160	2.0	4.5	16	12°	50	4	4	○
SHGLS4-020200	2.0	4.5	20	12°	50	4	4	○
SHGLS4-030080	3.0	4.5	8	12°	50	4	4	○
SHGLS4-030100	3.0	4.5	10	12°	50	4	4	○
SHGLS4-030120	3.0	4.5	12	12°	50	4	4	○
SHGLS4-030160	3.0	4.5	16	12°	50	4	4	○
SHGLS4-030200	3.0	4.5	20	12°	50	4	4	○

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合計24型號 (Total 24 models)

單位Unit (mm)

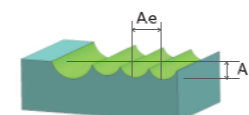
型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHGLS4-030080-6	3.0	4.5	8	12°	50	4	6	○
SHGLS4-030100-6	3.0	4.5	10	12°	50	4	6	○
SHGLS4-030120-6	3.0	4.5	12	12°	50	4	6	○
SHGLS4-030160-6	3.0	4.5	16	12°	50	4	6	○
SHGLS4-030200-6	3.0	4.5	20	12°	50	4	6	○

*本系列產品新追加的尺寸。

*New size added from this series.

○ 準庫存品。

○ Stocked items.



被削材 Work Material		HRC30-45 碳素钢/预硬钢 Prehardened Steels		HRC45-55 淬火钢 Hardened Steels		HRC55-65 淬火钢 Hardened Steels	
直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed
D1.0	4	13000	1300	12000	1200	8500	800
D1.0	6	11000	1000	10000	800	7000	500
D1.0	8	10000	800	8500	700	6000	400
D1.0	10	9000	500	7500	500	5500	300
D1.5	4	13000	1400	13000	1200	10000	1000
D1.5	6	11000	1200	10000	1000	8000	800
D1.5	8	10000	1000	9000	900	7000	600
D1.5	10	9000	900	8500	800	6500	500
D2.0	6	12000	1500	10000	1200	7000	800
D2.0	8	11000	1300	9000	1000	7000	600
D2.0	10	10000	1200	8000	800	6000	500
D2.0	12	9000	900	7000	700	6000	400
D2.0	16	7500	700	6000	600	5000	200
D2.0	20	7000	400	5500	300	3500	100
D3.0	8	8500	2000	8000	1800	6000	1000
D3.0	10	8500	2000	8000	1800	6000	1000
D3.0	12	8000	1800	7000	1600	5000	700
D3.0	16	7000	1400	6000	1200	4000	400
D3.0	20	6500	1200	5500	1000	3500	300
D3.0	8	8500	2000	8000	1800	6000	1000
D3.0	10	8500	2000	8000	1800	6000	1000
D3.0	12	8000	1800	7000	1600	5000	700
D3.0	16	7000	1400	6000	1200	4000	400
D3.0	20	6500	1200	5500	1000	3500	300

備註:

* 設備轉速不夠時, 請按比例降低轉速和進給;

* 不銹鋼和超耐熱合金的加工推薦油性切削液;

* 尖端為精密研磨。為避免破損, 對刀需謹慎。

Note:

* Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;

* Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;

* Recommend using a non-contact measuring device to avoid damaging the precision tip point.

4刃
4 Flutes避空平刀
Long Neck
Square4刃
4 Flutes避空平刀
Long Neck
Square



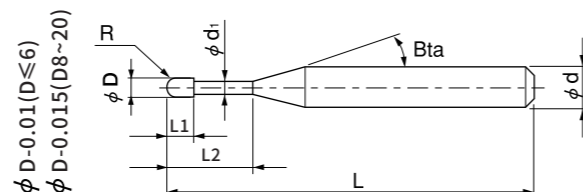
MG HG Coating 30 SD 0-0.003 R ±0.005 R ±0.007
R≤3 R4~10

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	○
合金鋼	Alloy steels (SK/SCM/SUS)	○
預硬鋼	Prehardened steels (NAK/HPM)	○
淬火鋼	Hardened steels (~55/~60/~70HRC)	○
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	○
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	○
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- * 模具鋼料加工用2刃球刀;
- * 獨特刃口設計, 特別是平緩面加工光潔度高;
- * 加工壽命性能優越, 全系列高精度公差。
- * 2 Flutes Ball End Mills for Mold Steel;
- * Unique flute design, to achieve excellent flat surface quality;
- * Outstanding milling performance and long tool life, high precision for the full series.



合計36型號 (Total 36 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 B _{Ta} Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHGR2-0030045	R0.15	0.45	--	12°	50	2	4	○
SHGR2-004006	R0.2	0.6	--	12°	50	2	4	○
SHGR2-005008	R0.25	0.8	--	12°	50	2	4	○
SHGR2-006009	R0.3	0.9	--	12°	50	2	4	○
SHGR2-0080012	R0.4	1.2	--	12°	50	2	4	○
SHGR2-010010	R0.5	1	--	12°	50	2	4	○
SHGR2-015015	R0.75	1.5	--	12°	50	2	4	○
SHGR2-020020	R1	2	--	12°	50	2	4	○
SHGR2-020020-6	R1	2	--	12°	60	2	6	○
SHGR2-030030-3	R1.5	3	--	-	50	2	3	○
SHGR2-030030-4	R1.5	3	--	12°	50	2	4	○
SHGR2-030030-6	R1.5	3	--	12°	60	2	6	○
SHGR2-040040-4	R2	4	--	-	50	2	4	○
SHGR2-040040-6	R2	4	--	12°	60	2	6	○
SHGR2-050100	R2.5	5	10	12°	60	2	6	○
SHGR2-060120	R3	6	12	-	60	2	6	○
SHGR2-060120-75	R3	6	12	-	75	2	6	○
SHGR2-060120-100	R3	6	12	-	100	2	6	○
SHGR2-080160	R4	8	16	-	60	2	8	○
SHGR2-080160-75	R4	8	16	-	75	2	8	○

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合計36型號 (Total 36 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 B _{Ta} Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHGR2-080160-100	R4	8	16	-	100	2	8	○
SHGR2-080160-150	R4	8	16	-	150	2	8	○
SHGR2-100200	R5	10	20	-	75	2	10	○
SHGR2-100200-100	R5	10	20	-	100	2	10	○
SHGR2-100200-150	R5	10	20	-	150	2	10	○
SHGR2-120240	R6	12	24	-	75	2	12	○
SHGR2-120240-100	R6	12	24	-	100	2	12	○
SHGR2-120240-150	R6	12	24	-	150	2	12	○
SHGR2-140280-100	R7	14	28	-	100	2	14	○
SHGR2-140280-150	R7	14	28	-	150	2	14	○
SHGR2-160320-100	R8	16	32	-	100	2	16	○
SHGR2-160320-150	R8	16	32	-	150	2	16	○
SHGR2-180360-100	R9	18	36	-	100	2	18	○
SHGR2-180360-150	R9	18	36	-	150	2	18	○
SHGR2-200400-100	R10	20	40	-	100	2	20	○
SHGR2-200400-150	R10	20	40	-	150	2	20	○

* 本系列產品新追加的尺寸。

* New size added from this series.

○ 準庫存品。

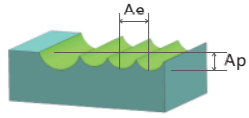
○ Stocked items.

2刃
2 Flutes

2刃
2 Flutes

球刀
Ball

球刀
Ball



被削材 Work Material	HRC30-45 碳素钢/预硬钢 Prehardened Steels				HRC45-55 淬火钢 Hardened Steels				HRC55-65 淬火钢 Hardened Steels			
	半径 Radius of Ball Nose	转速 (min-1) Speed	进给 (mm/min) Feed	Ap (mm) Axial Depth	Ae (mm) Radial Depth	转速 (min-1) Speed	进给 (mm/min) Feed	Ap (mm) Axial Depth	Ae (mm) Radial Depth	转速 (min-1) Speed	进给 (mm/min) Feed	Ap (mm) Axial Depth
R0.15	26000	300	0.01	0	24000	200	0.008	0.008	20000	200	0.005	0.005
R0.2	22000	400	0.015	0.015	22000	300	0.01	0.01	18000	300	0.008	0.008
R0.25	20000	400	0.015	0.015	22000	400	0.015	0.015	16000	400	0.008	0.008
R0.3	20000	800	0.02	0.02	20000	600	0.015	0.015	15000	500	0.015	0.015
R0.4	18000	1200	0.02	0.03	20000	800	0.02	0.02	13000	600	0.02	0.02
R0.5	16000	1200	0.03	0.04	18000	1000	0.02	0.03	12000	700	0.02	0.03
R0.75	16000	1500	0.03	0.05	16000	1200	0.02	0.04	10000	800	0.02	0.04
R1	15000	1800	0.03	0.05	14000	1800	0.02	0.05	9000	1200	0.02	0.04
R1	15000	1800	0.04	0.05	14000	1800	0.02	0.05	9000	1400	0.02	0.04
R1.5	14000	2200	0.04	0.07	13000	2200	0.03	0.06	9000	1200	0.02	0.05
R1.5	14000	2200	0.05	0.07	13000	2200	0.03	0.06	9000	1300	0.02	0.05
R1.5	14000	2200	0.04	0.07	13000	2200	0.03	0.06	9000	1500	0.02	0.05
R2	14000	2400	0.04	0.08	12000	2400	0.03	0.06	8000	1500	0.02	0.06
R2	14000	2400	0.05	0.08	12000	2400	0.03	0.06	8000	1500	0.02	0.06
R2.5	12000	2600	0.05	0.08	12000	2400	0.03	0.06	8000	1500	0.02	0.06
R3	12000	2600	0.05	0.08	10000	2600	0.03	0.08	7000	1800	0.02	0.08
R4	10000	3000	0.05	0.1	9000	2800	0.03	0.1	6500	2200	0.02	0.1
R5	9000	3000	0.05	0.12	8000	2800	0.03	0.12	6000	2200	0.02	0.1
R6	9000	3000	0.05	0.15	7000	2800	0.03	0.12	5000	2000	0.02	0.12
R7	7000	3000	0.08	0.15	6000	2800	0.03	0.15	4000	2000	0.02	0.15
R8	6000	3000	0.08	0.15	5500	2800	0.03	0.15	4000	2000	0.02	0.15
R9	5000	3000	0.08	0.15	4500	2800	0.03	0.15	4000	2000	0.02	0.15
R10	4500	3000	0.08	0.15	4000	2800	0.03	0.15	4000	2000	0.02	0.15

* 以上加工参数伸出长度按照3xD计算, 如果伸出长度超出请按比例降低转速和进给;
 * 不锈钢和超耐热合金的加工推荐油性切削液;
 * 设备转速不够时, 请按比例降低转速和进给。

Note:
 *The above milling parameters are calculated based on 3xD. Decrease both spindle speed and feed rate proportionally if the overhang length exceeds 3xD;
 *Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
 *Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed.

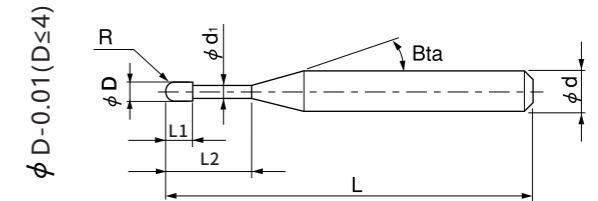


强烈推荐/推荐/建议 ★○○○
 Highly recommend/Recommend/Suggest

模具钢	DIE STEEL	推荐等级 (Grade)
碳素钢	Carbon steels (S45C/S55C)	○
合金钢	Alloy steels (SK/SCM/SUS)	○
预硬钢	Prehardened steels (NAK/HPM)	○
淬火钢	Hardened steels (~55/~60/~70HRC)	○
特殊材料	SPECIAL MATERIAL	
铝合金	Aluminum alloys	
石墨	Graphite	
铜	Copper	○
树脂	Plastics	
碳纤维	Carbon fiber	
钛合金	Titanium alloys	○
超耐热合金	Heat resistant alloys	
硬质合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- * 模具钢料加工用2刃避空型球刀;
- * 独特刃口设计, 特别是平缓面加工光洁度高;
- * 加工寿命性能优越, 全系列高精度公差。
- * 2 Flutes Long Neck Ball for Mold Steel;
- * Unique flute design, to achieve excellent flat surface quality;
- * Outstanding milling performance and long tool life high precision for the full series.



合计77型号 (Total 77 models)

单位 Unit (mm)

型号 Model Number	刃径 D Outside Diameter	刃长 L1 Length Of Cut	有效长 L2 Effective Length	锥度角 Bta Shank Taper Angle	全长 L Overall Length	刃数 T Number Of Flutes	柄径 d Shank Diameter	在庫 In Stock
SHGLR2-002005	R0.1	0.2	0.5	12°	50	2	4	○
SHGLR2-002010	R0.1	0.2	1	12°	50	2	4	○
SHGLR2-002015	R0.1	0.2	1.5	12°	50	2	4	○
SHGLR2-003010	R0.15	0.3	1	12°	50	2	4	○
SHGLR2-003015	R0.15	0.3	1.5	12°	50	2	4	○
SHGLR2-003020	R0.15	0.3	2	12°	50	2	4	○
SHGLR2-003030	R0.15	0.3	3	12°	50	2	4	○
SHGLR2-004010	R0.2	0.4	1	12°	50	2	4	○
SHGLR2-004020	R0.2	0.4	2	12°	50	2	4	○
SHGLR2-004030	R0.2	0.4	3	12°	50	2	4	○
SHGLR2-004040	R0.2	0.4	4	12°	50	2	4	○
SHGLR2-005010	R0.25	0.5	1	12°	50	2	4	○
SHGLR2-005020	R0.25	0.5	2	12°	50	2	4	○
SHGLR2-005040	R0.25	0.5	4	12°	50	2	4	○
SHGLR2-005060	R0.25	0.5	6	12°	50	2	4	○
SHGLR2-005080	R0.25	0.5	8	12°	50	2	4	○
SHGLR2-006020	R0.3	0.6	2	12°	50	2	4	○
SHGLR2-006040	R0.3	0.6	4	12°	50	2	4	○
SHGLR2-006060	R0.3	0.6	6	12°	50	2	4	○
SHGLR2-006080	R0.3	0.6	8	12°	50	2	4	○
SHGLR2-008020	R0.4	0.8	2	12°	50	2	4	○
SHGLR2-008040	R0.4	0.8	4	12°	50	2	4	○

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合計77型號 (Total 77 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 BTa Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHGLR2-008060	R0.4	0.8	6	12°	50	2	4	○
SHGLR2-008080	R0.4	0.8	8	12°	50	2	4	○
SHGLR2-009020	R0.45	0.9	2	12°	50	2	4	○
SHGLR2-009040	R0.45	0.9	4	12°	50	2	4	○
SHGLR2-009060	R0.45	0.9	6	12°	50	2	4	○
SHGLR2-009080	R0.45	0.9	8	12°	50	2	4	○
SHGLR2-010020	R0.5	1	2	12°	50	2	4	○
SHGLR2-010040	R0.5	1	4	12°	50	2	4	○
SHGLR2-010060	R0.5	1	6	12°	50	2	4	○
SHGLR2-010080	R0.5	1	8	12°	50	2	4	○
SHGLR2-010100	R0.5	1	10	12°	50	2	4	○
SHGLR2-010120	R0.5	1	12	12°	50	2	4	○
SHGLR2-010140	R0.5	1	14	12°	50	2	4	○
SHGLR2-010160	R0.5	1	16	12°	50	2	4	○
SHGLR2-015040	R0.75	1.5	4	12°	50	2	4	○
SHGLR2-015060	R0.75	1.5	6	12°	50	2	4	○
SHGLR2-015080	R0.75	1.5	8	12°	50	2	4	○
SHGLR2-015100	R0.75	1.5	10	12°	50	2	4	○
SHGLR2-015120	R0.75	1.5	12	12°	50	2	4	○
SHGLR2-015140	R0.75	1.5	14	12°	50	2	4	○
SHGLR2-015160	R0.75	1.5	16	12°	50	2	4	○
SHGLR2-020040	R1	2	4	12°	50	2	4	○
SHGLR2-020060	R1	2	6	12°	50	2	4	○
SHGLR2-020080	R1	2	8	12°	50	2	4	○
SHGLR2-020100	R1	2	10	12°	50	2	4	○
SHGLR2-020120	R1	2	12	12°	50	2	4	○
SHGLR2-020160	R1	2	16	12°	50	2	4	○
SHGLR2-020040-6	R1	2	4	12°	60	2	6	○
SHGLR2-020060-6	R1	2	6	12°	60	2	6	○
SHGLR2-020080-6	R1	2	8	12°	60	2	6	○
SHGLR2-020100-6	R1	2	10	12°	60	2	6	○
SHGLR2-020120-6	R1	2	12	12°	60	2	6	○
SHGLR2-020160-6	R1	2	16	12°	60	2	6	○
SHGLR2-030060	R1.5	3	6	12°	50	2	4	○

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合計77型號 (Total 77 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 BTa Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHGLR2-030080	R1.5	3	8	12°	50	2	4	○
SHGLR2-030100	R1.5	3	10	12°	50	2	4	○
SHGLR2-030120	R1.5	3	12	12°	50	2	4	○
SHGLR2-030160	R1.5	3	16	12°	50	2	4	○
SHGLR2-030200	R1.5	3	20	12°	50	2	4	○
SHGLR2-030060-6	R1.5	3	6	12°	60	2	6	○
SHGLR2-030080-6	R1.5	3	8	12°	60	2	6	○
SHGLR2-030100-6	R1.5	3	10	12°	60	2	6	○
SHGLR2-030120-6	R1.5	3	12	12°	60	2	6	○
SHGLR2-030160-6	R1.5	3	16	12°	60	2	6	○
SHGLR2-030200-6	R1.5	3	20	12°	60	2	6	○
SHGLR2-040080	R2	4	8	12°	50	2	4	○
SHGLR2-040100	R2	4	10	12°	50	2	4	○
SHGLR2-040120	R2	4	12	12°	50	2	4	○
SHGLR2-040160	R2	4	16	12°	50	2	4	○
SHGLR2-040200	R2	4	20	12°	50	2	4	○
SHGLR2-040080-6	R2	4	8	12°	60	2	6	○
SHGLR2-040100-6	R2	4	10	12°	60	2	6	○
SHGLR2-040120-6	R2	4	12	12°	60	2	6	○
SHGLR2-040160-6	R2	4	16	12°	60	2	6	○
SHGLR2-040200-6	R2	4	20	12°	60	2	6	○

*本系列產品新追加的尺寸。

*New size added from this series.

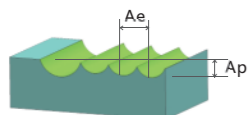
○準庫存品。

○Stocked items.

2刃
2 Flutes避空球刀
Long Neck
Ball2刃
2 Flutes避空球刀
Long Neck
Ball

SHGLR2-000切削条件表(Milling Conditions)

SAMHO

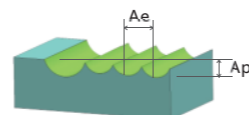


被削材 Work Material	HRC30-45 碳素钢/预硬钢 Prehardened Steels				HRC45-55 淬火钢 Hardened Steels				HRC55-65 淬火钢 Hardened Steels				
	半径 Radius of Ball Nose	有效長(mm) Effective Length	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial Depth	Ae (mm) Radial Depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial Depth
R0.1	0.5	30000	150	0.006	0.006	30000	120	0.006	0.006	30000	100	0.003	0.003
R0.1	1	30000	100	0.006	0.006	30000	100	0.003	0.003	26000	60	0.002	0.002
R0.1	1.5	30000	100	0.003	0.003	30000	100	0.003	0.003	24000	40	0.001	0.001
R0.15	1	28000	300	0.01	0.01	26000	200	0.006	0.006	26000	200	0.005	0.005
R0.15	1.5	28000	300	0.008	0.008	26000	200	0.004	0.004	26000	200	0.003	0.003
R0.15	2	24000	200	0.007	0.007	24000	150	0.003	0.003	24000	100	0.003	0.003
R0.15	3	20000	100	0.005	0.005	18000	100	0.003	0.003	18000	50	0.002	0.002
R0.2	1	24000	600	0.01	0.01	20000	500	0.01	0.01	18000	300	0.01	0.01
R0.2	2	24000	400	0.01	0.01	20000	400	0.008	0.01	18000	250	0.008	0.008
R0.2	3	20000	300	0.008	0.008	18000	300	0.006	0.006	18000	200	0.005	0.005
R0.2	4	18000	150	0.005	0.005	16000	150	0.003	0.003	18000	100	0.003	0.003
R0.25	1	22000	800	0.015	0.015	20000	600	0.01	0.01	16000	500	0.01	0.015
R0.25	2	22000	800	0.015	0.015	18000	600	0.01	0.01	16000	400	0.01	0.015
R0.25	4	18000	400	0.01	0.01	16000	300	0.008	0.008	15000	100	0.005	0.005
R0.25	6	14000	200	0.005	0.005	14000	150	0.008	0.008	15000	80	0.005	0.005
R0.25	8	14000	100	0.003	0.003	14000	100	0.003	0.003	15000	40	0.003	0.003
R0.3	2	20000	1000	0.02	0.02	20000	800	0.02	0.02	13000	700	0.02	0.02
R0.3	4	17000	500	0.015	0.015	15000	500	0.01	0.01	13000	300	0.01	0.01
R0.3	6	15000	400	0.01	0.01	13000	300	0.008	0.008	12000	200	0.008	0.008
R0.3	8	14000	200	0.005	0.005	13000	150	0.005	0.005	12000	100	0.003	0.005
R0.4	2	18000	1200	0.03	0.03	18000	1200	0.02	0.02	13000	700	0.02	0.02
R0.4	4	18000	800	0.02	0.02	18000	800	0.02	0.02	12000	600	0.01	0.03
R0.4	6	14000	500	0.01	0.01	16000	600	0.01	0.02	10000	500	0.01	0.02
R0.4	8	14000	300	0.01	0.01	15000	400	0.005	0.01	10000	300	0.008	0.02
R0.45	2	17000	1400	0.03	0.03	17000	1300	0.02	0.03	12000	700	0.02	0.03
R0.45	4	17000	1200	0.03	0.03	17000	1000	0.02	0.03	11000	600	0.01	0.03
R0.45	6	15000	800	0.02	0.02	13000	600	0.01	0.02	10000	500	0.01	0.02
R0.45	8	13000	500	0.01	0.01	12000	400	0.01	0.02	10000	400	0.01	0.02
R0.5	2	16000	1500	0.03	0.03	14000	1200	0.02	0.03	12000	800	0.02	0.03
R0.5	4	16000	1300	0.03	0.03	14000	1000	0.02	0.03	12000	700	0.02	0.03
R0.5	6	16000	1000	0.03	0.03	14000	800	0.02	0.03	11000	600	0.01	0.03
R0.5	8	14000	500	0.02	0.02	12000	500	0.01	0.02	10000	500	0.01	0.02
R0.5	10	12000	400	0.01	0.01	12000	400	0.01	0.02	10000	400	0.01	0.02
R0.5	12	11000	300	0.01	0.01	10000	300	0.01	0.02	9000	300	0.006	0.02
R0.5	14	10000	250	0.01	0.01	10000	200	0.008	0.01	9000	300	0.006	0.01

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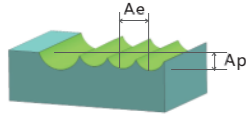
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SHGLR2-000切削条件表(Milling Conditions)



被削材 Work Material	HRC30-45 碳素钢/预硬钢 Prehardened Steels				HRC45-55 淬火钢 Hardened Steels				HRC55-65 淬火钢 Hardened Steels				
	半径 Radius of Ball Nose	有效長(mm) Effective Length	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial Depth	Ae (mm) Radial Depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial Depth
R0.5	16	10000	200	0.01	0.01	10000	200	0.005	0.01	9000	200	0.005	0.01
R0.75	4	16000	1600	0.03	0.06	16000	1400	0.02	0.04	10000	800	0.02	0.04
R0.75	6	16000	1400	0.03	0.06	14000	1200	0.02	0.04	10000	800	0.02	0.04
R0.75	8	16000	1200	0.03	0.05	13000	1000	0.02	0.04	9000	800	0.02	0.04
R0.75	10	12000	800	0.02	0.05	12000	600	0.01	0.04	9000	800	0.01	0.04
R0.75	12	10000	500	0.02	0.04	11000	500	0.01	0.04	8500	600	0.01	0.04
R0.75	14	10000	400	0.01	0.03	10000	400	0.01	0.02	8500	400	0.01	0.02
R0.75	16	8000	300	0.01	0.03	9000	300	0.01	0.01	8500	300	0.01	0.01
R1	4	16000	1800	0.03	0.06	16000	2000	0.03	0.06	10000	1500	0.02	0.04
R1	6	15000	1800	0.03	0.06	14000	1800	0.03	0.06	9000	1300	0.02	0.04
R1	8	15000	1800	0.03	0.06	14000	1800	0.03	0.06	9000	1300	0.02	0.04
R1	10	15000	1800	0.03	0.06	14000	1800	0.03	0.06	9000	1000	0.02	0.04
R1	12	13000	1600	0.03	0.06	12000	1400	0.02	0.06	8000	800	0.02	0.04
R1	16	10000	1000	0.02	0.06	10000	1000	0.02	0.06	8000	500	0.01	0.04
R1	4	16000	1800	0.03	0.06	16000	2000	0.03	0.06	10000	1500	0.02	0.04
R1	6	15000	1800	0.03	0.06	14000	1800	0.03	0.06	9000	1400	0.02	0.04
R1	8	15000	1800	0.03	0.06	14000	1800	0.03	0.06	9000	1400	0.02	0.04
R1	10	15000	1800	0.03	0.06	14000	1800	0.03	0.06	9000	1200	0.02	0.04
R1	12	13000	1600	0.03	0.06	12000	1400	0.02	0.06	8000	1000	0.02	0.04
R1	16	10000	1000	0.02	0.06	10000	1000	0.02	0.06	8000	600	0.01	0.04
R1.5	6	14000	2200	0.05	0.07	13000	2200	0.03	0.07	9000	1300	0.02	0.06
R1.5	8	14000	2200	0.05	0.07	13000	2200	0.03	0.07	9000	1300	0.02	0.06
R1.5	10	14000	2200	0.05	0.07	13000	2200	0.03	0.07	9000	1300	0.02	0.06
R1.5	12	14000	2200	0.04	0.07	13000	2200	0.03	0.07	9000	1300	0.02	0.06
R1.5	16	12000	2000	0.03	0.07	11000	2000	0.03	0.07	9000	1300	0.02	0.06
R1.5	20	11000	1000	0.03	0.07	10000	1000	0.02	0.07	8000	1000	0.02	0.06
R1.5	6	14000	2200	0.05	0.07	13000	2200	0.03	0.07	8000	1500	0.02	0.06
R1.5	8	14000	2200	0.05	0.07	13000	2200	0.03	0.07	8000	1500	0.02	0.06
R1.5	10	14000	2200	0.05	0.07	13000	2200	0.03	0.07	9000	1500	0.02	0.06
R1.5	12	14000	2200	0.04	0.07	13000	2200	0.03	0.07	9000	1500	0.02	0.06
R1.5	16	12000	2000	0.03	0.07	11000	2000	0.03	0.07	9000	1500	0.02	0.06
R1.5	20	11000	1000	0.03	0.07	10000	1000	0.02	0.07	8000	1000	0.02	0.06
R2	8	14000	2400	0.05	0.07	12000	2200	0.03	0.07	8000	1500	0.02	0.06
R2	10	14000	2400	0.05	0.07	12000	2200	0.03	0.07	8000	1500	0.02	0.06
R2	12	14000	2400	0.05	0.07	12000	2200	0.03	0.07	8000	1500	0.02	0.06

Next page →



被削材 Work Material		HRC30-45 碳素钢/预硬钢 Prehardened Steels				HRC45-55 淬火钢 Hardened Steels				HRC55-65 淬火钢 Hardened Steels			
半径 Radius of Ball Nose	有效长(mm) Effective Length	转速 (min-1) Speed	进给 (mm/min) Feed	Ap (mm) Axial Depth	Ae (mm) Radial Depth	转速 (min-1) Speed	进给 (mm/min) Feed	Ap (mm) Axial Depth	Ae (mm) Radial Depth	转速 (min-1) Speed	进给 (mm/min) Feed	Ap (mm) Axial Depth	Ae (mm) Radial Depth
R2	16	14000	2400	0.04	0.07	12000	2200	0.03	0.07	8000	1500	0.02	0.06
R2	20	12000	2000	0.04	0.07	11000	2000	0.03	0.07	8000	1500	0.02	0.06
R2	8	14000	2400	0.05	0.07	12000	2200	0.03	0.07	8000	1500	0.02	0.06
R2	10	14000	2400	0.05	0.07	12000	2200	0.03	0.07	8000	1500	0.02	0.06
R2	12	14000	2400	0.05	0.07	12000	2200	0.03	0.07	8000	1500	0.02	0.06
R2	16	14000	2200	0.04	0.07	12000	2200	0.03	0.07	8000	1500	0.02	0.06
R2	20	12000	2000	0.04	0.07	11000	2000	0.03	0.07	8000	1500	0.02	0.06

備註:
 *適合吹氣, 切削液、切削油、油霧冷卻;
 *HRC58以上材料加工時, 推薦使用吹氣和油霧。
 Note:
 * Suitable for air blow, water soluble coolant, oil coolant and oil mist;
 * Recommend air blow and oil mist for hardened materials above HRC58.



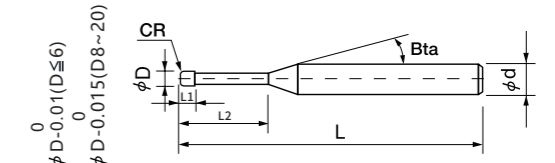
MG HG Coating 45 SD 0-0.003 R ±0.005 R ±0.007
 D≤6 D8~12

強烈推薦/推薦/建議 ★○○○
 Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	○
合金鋼	Alloy steels (SK/SCM/SUS)	○
預硬鋼	Prehardened steels (NAK/HPM)	○
淬火鋼	Hardened steels (~55/~60/~70HRC)	○
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	○
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	○
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- * 模具鋼料加工用4刃圓角刀;
- * 特殊的刃口設計, 平面和等高加工性能優越。
- * 4 Flutes Radius End Mills for Mold Steel;
- * Unique flute design, excellent performance on flat surface and contour milling.



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
 The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.

合計72型號 (Total 72 models)

單位 Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	圓角 CR Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHGSR4-01001030	1	1.5	3	R0.1	12°	50	4	4	○
SHGSR4-01002030	1	1.5	3	R0.2	12°	50	4	4	○
SHGSR4-01502045	1.5	2	4.5	R0.2	12°	50	4	4	○
SHGSR4-01503045	1.5	2	4.5	R0.3	12°	50	4	4	○
SHGSR4-01505045	1.5	2	4.5	R0.5	12°	50	4	4	○
SHGSR4-02002060	2	3	6	R0.2	12°	50	4	4	○
SHGSR4-02003060	2	3	6	R0.3	12°	50	4	4	○
SHGSR4-02005060	2	3	6	R0.5	12°	50	4	4	○
SHGSR4-02002060-6	2	3	6	R0.2	12°	60	4	6	○
SHGSR4-02003060-6	2	3	6	R0.3	12°	60	4	6	○
SHGSR4-02005060-6	2	3	6	R0.5	12°	60	4	6	○
SHGSR4-03002090	3	4.5	9	R0.2	12°	50	4	4	○
SHGSR4-03003090	3	4.5	9	R0.3	12°	50	4	4	○
SHGSR4-03005090	3	4.5	9	R0.5	12°	50	4	4	○
SHGSR4-03002090-6	3	4.5	9	R0.2	12°	60	4	6	○
SHGSR4-03003090-6	3	4.5	9	R0.3	12°	60	4	6	○
SHGSR4-03005090-6	3	4.5	9	R0.5	12°	60	4	6	○
SHGSR4-04002120	4	6	12	R0.2	-	50	4	4	○
SHGSR4-04003120	4	6	12	R0.3	-	50	4	4	○
SHGSR4-04005120	4	6	12	R0.5	-	50	4	4	○
SHGSR4-04002120-6	4	6	12	R0.2	12°	60	4	6	○
SHGSR4-04003120-6	4	6	12	R0.3	12°	60	4	6	○

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2刃
2 Flutes

4刃
4 Flutes

避空球刀
Long Neck
Ball

圓角刀
Radius

合計72型號 (Total 72 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	圓角CR Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHGSR4-04005120-6	4	6	12	R0.5	12°	60	4	6	○
SHGSR4-04005120-75	4	8	12	R0.5	-	75	4	4	○
SHGSR4-04010120-75	4	8	12	R1	-	75	4	4	○
SHGSR4-05005150	5	7.5	15	R0.5	12°	60	4	6	○
SHGSR4-05010150	5	7.5	15	R1	12°	60	4	6	○
SHGSR4-06002200	6	9	20	R0.2	-	60	4	6	○
SHGSR4-06005200	6	9	20	R0.5	-	60	4	6	○
SHGSR4-06010200	6	9	20	R1	-	60	4	6	○
SHGSR4-06002200-75	6	12	20	R0.2	-	75	4	6	○
SHGSR4-06005200-75	6	12	20	R0.5	-	75	4	6	○
SHGSR4-06010200-75	6	12	20	R1	-	75	4	6	○
SHGSR4-06002200-100	6	12	20	R0.2	-	100	4	6	○
SHGSR4-06005200-100	6	12	20	R0.5	-	100	4	6	○
SHGSR4-06010200-100	6	12	20	R1	-	100	4	6	○
SHGSR4-08005240	8	12	24	R0.5	-	60	4	8	○
SHGSR4-08010240	8	12	24	R1	-	60	4	8	○
SHGSR4-08005240-75	8	12	24	R0.5	-	75	4	8	○
SHGSR4-08010240-75	8	12	24	R1	-	75	4	8	○
SHGSR4-08005240-100	8	16	24	R0.5	-	100	4	8	○
SHGSR4-08010240-100	8	16	24	R1	-	100	4	8	○
SHGSR4-08005240-150	8	16	24	R0.5	-	150	4	8	○
SHGSR4-08010240-150	8	16	24	R1	-	150	4	8	○
SHGSR4-10005300	10	15	30	R0.5	-	75	4	10	○
SHGSR4-10010300	10	15	30	R1	-	75	4	10	○
SHGSR4-10005300-100	10	20	30	R0.5	-	100	4	10	○
SHGSR4-10010300-100	10	20	30	R1	-	100	4	10	○
SHGSR4-10005300-150	10	20	30	R0.5	-	150	4	10	○
SHGSR4-10010300-150	10	20	30	R1	-	150	4	10	○
SHGSR4-12005360	12	18	36	R0.5	-	75	4	12	○
SHGSR4-12010360	12	18	36	R1	-	75	4	12	○
SHGSR4-12005360-100	12	24	36	R0.5	-	100	4	12	○
SHGSR4-12010360-100	12	24	36	R1	-	100	4	12	○
SHGSR4-12005360-150	12	24	36	R0.5	-	150	4	12	○
SHGSR4-12010360-150	12	24	36	R1	-	150	4	12	○
SHGSR4-14010420-100	14	21	42	R1	-	100	4	14	○
SHGSR4-14020420-100	14	21	42	R2	-	100	4	14	○
SHGSR4-14010420-150	14	28	42	R1	-	150	4	14	○
SHGSR4-14020420-150	14	28	42	R2	-	150	4	14	○

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合計72型號 (Total 72 models)

單位Unit (mm)

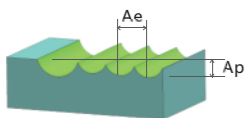
型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	圓角CR Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHGSR4-16010480-100	16	24	48	R1	-	100	4	16	○
SHGSR4-16020480-100	16	24	48	R2	-	100	4	16	○
SHGSR4-16010480-150	16	32	48	R1	-	150	4	16	○
SHGSR4-16020480-150	16	32	48	R2	-	150	4	16	○
SHGSR4-18010540-100	18	27	54	R1	-	100	4	18	○
SHGSR4-18020540-100	18	27	54	R2	-	100	4	18	○
SHGSR4-18010540-150	18	36	54	R1	-	150	4	18	○
SHGSR4-18020540-150	18	36	54	R2	-	150	4	18	○
SHGSR4-20010600-100	20	30	60	R1	-	100	4	20	○
SHGSR4-20020600-100	20	30	60	R2	-	100	4	20	○
SHGSR4-20010600-150	20	40	60	R1	-	150	4	20	○
SHGSR4-20020600-150	20	40	60	R2	-	150	4	20	○

*本系列產品新追加的尺寸。

*New size added from this series.

○準庫存品。

○ Stocked items.



被削材 Work Material	HRC30-45 碳素钢/预硬钢 Prehardened Steels		HRC45-55 淬火钢 Hardened Steels		HRC55-65 淬火钢 Hardened Steels	
	转速(min-1) Speed	进给速度 (mm/min) Feed	转速(min-1) Speed	进给速度 (mm/min) Feed	转速(min-1) Speed	进给速度 (mm/min) Feed
D1R0.2	15000	1000	12000	1000	10000	800
D1R0.3	15000	1000	12000	1000	10000	800
D1.5R0.2	14000	1500	12000	1200	10000	1000
D1.5R0.3	14000	1500	12000	1200	10000	1000
D1.5R0.5	14000	1500	12000	1200	10000	1000
D2R0.2	14000	1500	12000	1500	10000	1200
D2R0.3	14000	1500	12000	1500	10000	1200
D2R0.5	14000	1500	12000	1500	10000	1200
D2R0.2	14000	1800	12000	1800	10000	1200
D2R0.3	14000	1800	12000	1800	10000	1200
D2R0.5	14000	1800	12000	1800	10000	1200
D3R0.2	13000	1800	11000	1800	9000	1200
D3R0.3	13000	1800	11000	1800	9000	1200
D3R0.5	13000	1800	11000	1800	9000	1200
D3R0.2	13000	2000	11000	2000	9000	1400
D3R0.3	13000	2000	11000	2000	9000	1400
D3R0.5	13000	2000	11000	2000	9000	1400
D4R0.2	12000	2000	10000	2000	7500	1300
D4R0.3	12000	2000	10000	2000	7500	1300
D4R0.5	12000	2000	10000	2000	7500	1300
D4R0.2	12000	2200	10000	2000	7500	1500
D4R0.3	12000	2200	10000	2000	7500	1500
D4R0.5	12000	2200	10000	2000	7500	1500
D4R0.5	12000	2000	10000	2000	7500	1300
D4R1	12000	2000	10000	2000	7500	1300
D5R0.5	12000	2200	10000	2200	7500	1500
D5R1	12000	2200	10000	2200	7500	1500
D6R0.2	11000	2400	9000	2400	7000	1800
D6R0.5	11000	2400	9000	2400	7000	1800
D6R1	11000	2400	9000	2400	7000	1800
D6R0.2	11000	2400	9000	2400	7000	1800
D6R0.5	11000	2400	9000	2400	7000	1800
D6R1	11000	2400	9000	2400	7000	1800
D6R0.2	11000	2400	9000	2400	7000	1800
D6R0.5	11000	2400	9000	2400	7000	1800

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被削材 Work Material	HRC30-45 碳素钢/预硬钢 Prehardened Steels		HRC45-55 淬火钢 Hardened Steels		HRC55-65 淬火钢 Hardened Steels	
	转速(min-1) Speed	进给速度 (mm/min) Feed	转速(min-1) Speed	进给速度 (mm/min) Feed	转速(min-1) Speed	进给速度 (mm/min) Feed
D6R1	11000	2400	9000	2400	7000	1800
D8R0.5	9000	2600	8000	2600	6000	2000
D8R1	9000	2600	8000	2600	6000	2000
D8R0.5	9000	2600	8000	2600	6000	2000
D8R1	9000	2600	8000	2600	6000	2000
D8R0.5	9000	2600	8000	2600	6000	2000
D8R1	9000	2600	8000	2600	6000	2000
D8R0.5	9000	2600	8000	2600	6000	2000
D8R1	9000	2600	8000	2600	6000	2000
D10R0.5	8000	2600	7000	2600	5500	2000
D10R1	8000	2600	7000	2600	5500	2000
D10R0.5	8000	2600	7000	2600	5500	2000
D10R1	8000	2600	7000	2600	5500	2000
D10R0.5	8000	2600	7000	2600	5500	2000
D10R1	8000	2600	7000	2600	5500	2000
D12R0.5	7500	3000	6500	2600	5000	2000
D12R1	7500	3000	6500	2600	5000	2000
D12R0.5	7500	3000	6500	2600	5000	2000
D12R1	7500	3000	6500	2600	5000	2000
D12R0.5	7500	3000	6500	2600	5000	2000
D12R1	7500	3000	6500	2600	5000	2000
D14R1	6500	3000	6000	2800	4500	1800
D14R2	6500	3000	6000	2800	4500	1800
D14R1	6500	3000	6000	2800	4500	1800
D14R2	6500	3000	6000	2800	4500	1800
D16R1	5500	3200	5000	2800	4000	1800
D16R2	5500	3200	5000	2800	4000	1800
D16R1	5500	3200	5000	2800	4000	1800
D16R2	5500	3200	5000	2800	4000	1800
D18R1	4500	3000	4000	2800	3500	1800
D18R2	4500	3000	4000	2800	3500	1800
D18R1	4500	3000	4000	2800	3500	1800
D18R2	4500	3000	4000	2800	3500	1800
D20R1	4000	2800	3500	2600	3000	1800
D20R2	4000	2800	3500	2600	3000	1800
D20R1	4000	2800	3500	2600	3000	1800
D20R2	4000	2800	3500	2600	3000	1800

備註:

- * 設備轉速不夠時, 請按比例降低轉速和進給;
- * 不銹鋼和超耐熱合金的加工推薦油性切削液。

Note:

- * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
- * Recommend oil coolant for Stainless Steels and Heat Resistance Alloys.

4刃
4 Flutes

圓角刀
Radius

4刃
4 Flutes

圓角刀
Radius



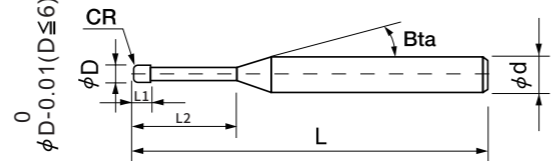
MG HG Coating 45 SD 0-0.003 R ±0.005

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級(Grade)
碳素鋼	Carbon steels (S45C/S55C)	○
合金鋼	Alloy steels (SK/SCM/SUS)	○
預硬鋼	Prehardened steels (NAK/HPM)	○
淬火鋼	Hardened steels (~55/-60/~70HRC)	○
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	○
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	○
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長(Specialty)

- *模具鋼料加工用4刃圓角刀;
- *特殊的刃口設計,平面和等高加工性能優越。
- *4 Flutes Radius End Mills for Mold Steel;
- *Unique flute design, excellent performance on flat surface and contour milling.



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.

合計69型號 (Total 69 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	圓角 CR Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHGLSR2-002005005	D0.2	0.2	0.5	R0.05	12°	50	2	4	○
SHGLSR2-002005010	D0.2	0.2	1	R0.05	12°	50	2	4	○
SHGLSR2-002005015	D0.2	0.2	1.5	R0.05	12°	50	2	4	○
SHGLSR2-002005020	D0.2	0.2	2	R0.05	12°	50	2	4	○
SHGLSR2-003005005	D0.3	0.3	0.5	R0.05	12°	50	2	4	○
SHGLSR2-003005010	D0.3	0.3	1	R0.05	12°	50	2	4	○
SHGLSR2-003005015	D0.3	0.3	1.5	R0.05	12°	50	2	4	○
SHGLSR2-003005020	D0.3	0.3	2	R0.05	12°	50	2	4	○
SHGLSR2-003005030	D0.3	0.3	3	R0.05	12°	50	2	4	○
SHGLSR2-004005010	D0.4	0.4	1	R0.05	12°	50	2	4	○
SHGLSR2-004005020	D0.4	0.4	2	R0.05	12°	50	2	4	○
SHGLSR2-004005030	D0.4	0.4	3	R0.05	12°	50	2	4	○
SHGLSR2-004005040	D0.4	0.4	4	R0.05	12°	50	2	4	○
SHGLSR2-00401010	D0.4	0.4	1	R0.1	12°	50	2	4	○
SHGLSR2-00401020	D0.4	0.4	2	R0.1	12°	50	2	4	○
SHGLSR2-00401030	D0.4	0.4	3	R0.1	12°	50	2	4	○
SHGLSR2-00401040	D0.4	0.4	4	R0.1	12°	50	2	4	○
SHGLSR2-005005010	D0.5	0.5	1	R0.05	12°	50	2	4	○
SHGLSR2-005005020	D0.5	0.5	2	R0.05	12°	50	2	4	○
SHGLSR2-005005040	D0.5	0.5	4	R0.05	12°	50	2	4	○
SHGLSR2-005005060	D0.5	0.5	6	R0.05	12°	50	2	4	○
SHGLSR2-00501010	D0.5	0.5	1	R0.1	12°	50	2	4	○

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合計69型號 (Total 69 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of cut	有效長 L2 Effective Length	圓角 CR Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHGLSR2-00501020	D0.5	0.5	2	R0.1	12°	50	2	4	○
SHGLSR2-00501040	D0.5	0.5	4	R0.1	12°	50	2	4	○
SHGLSR2-00501060	D0.5	0.5	6	R0.1	12°	50	2	4	○
SHGLSR2-006005020	D0.6	0.6	2	R0.05	12°	50	2	4	○
SHGLSR2-006005040	D0.6	0.6	4	R0.05	12°	50	2	4	○
SHGLSR2-006005060	D0.6	0.6	6	R0.05	12°	50	2	4	○
SHGLSR2-006005080	D0.6	0.6	8	R0.05	12°	50	2	4	○
SHGLSR2-00601020	D0.6	0.6	2	R0.1	12°	50	2	4	○
SHGLSR2-00601040	D0.6	0.6	4	R0.1	12°	50	2	4	○
SHGLSR2-00601060	D0.6	0.6	6	R0.1	12°	50	2	4	○
SHGLSR2-00601080	D0.6	0.6	8	R0.1	12°	50	2	4	○
SHGLSR2-008005020	D0.8	0.8	2	R0.05	12°	50	2	4	○
SHGLSR2-008005040	D0.8	0.8	4	R0.05	12°	50	2	4	○
SHGLSR2-008005060	D0.8	0.8	6	R0.05	12°	50	2	4	○
SHGLSR2-008005080	D0.8	0.8	8	R0.05	12°	50	2	4	○
SHGLSR2-00801020	D0.8	0.8	2	R0.1	12°	50	2	4	○
SHGLSR2-00801040	D0.8	0.8	4	R0.1	12°	50	2	4	○
SHGLSR2-00801060	D0.8	0.8	6	R0.1	12°	50	2	4	○
SHGLSR2-00801080	D0.8	0.8	8	R0.1	12°	50	2	4	○
SHGLSR2-01001040	D1.0	1.0	4	R0.1	12°	50	2	4	○
SHGLSR2-01001060	D1.0	1.0	6	R0.1	12°	50	2	4	○
SHGLSR2-01001080	D1.0	1.0	8	R0.1	12°	50	2	4	○
SHGLSR2-01001100	D1.0	1.0	10	R0.1	12°	50	2	4	○
SHGLSR2-01002040	D1.0	1.0	4	R0.2	12°	50	2	4	○
SHGLSR2-01002060	D1.0	1.0	6	R0.2	12°	50	2	4	○
SHGLSR2-01002080	D1.0	1.0	8	R0.2	12°	50	2	4	○
SHGLSR2-01002100	D1.0	1.0	10	R0.2	12°	50	2	4	○
SHGLSR2-01501040	D1.5	1.5	4	R0.1	12°	50	2	4	○
SHGLSR2-01501060	D1.5	1.5	6	R0.1	12°	50	2	4	○
SHGLSR2-01501080	D1.5	1.5	8	R0.1	12°	50	2	4	○
SHGLSR2-01501100	D1.5	1.5	10	R0.1	12°	50	2	4	○
SHGLSR2-01502040	D1.5	1.5	4	R0.2	12°	50	2	4	○
SHGLSR2-01502060	D1.5	1.5	6	R0.2	12°	50	2	4	○
SHGLSR2-01502080	D1.5	1.5	8	R0.2	12°	50	2	4	○
SHGLSR2-01502100	D1.5	1.5	10	R0.2	12°	50	2	4	○
SHGLSR2-02001040	D2.0	2.0	4	R0.1	12°	50	2	4	○
SHGLSR2-02001060	D2.0	2.0	6	R0.1	12°	50	2	4	○
SHGLSR2-02001080	D2.0	2.0	8	R0.1	12°	50	2	4	○

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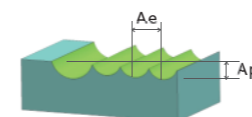
合計69型號 (Total 69 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	圓角CR Radius	錐度角Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHGLSR2-02001100	D2.0	2.0	10	R0.1	12°	50	2	4	○
SHGLSR2-02001120	D2.0	2.0	12	R0.1	12°	50	2	4	○
SHGLSR2-02001160	D2.0	2.0	16	R0.1	12°	50	2	4	○
SHGLSR2-02002040	D2.0	2.0	4	R0.2	12°	50	2	4	○
SHGLSR2-02002060	D2.0	2.0	6	R0.2	12°	50	2	4	○
SHGLSR2-02002080	D2.0	2.0	8	R0.2	12°	50	2	4	○
SHGLSR2-02002100	D2.0	2.0	10	R0.2	12°	50	2	4	○
SHGLSR2-02002120	D2.0	2.0	12	R0.2	12°	50	2	4	○
SHGLSR2-02002160	D2.0	2.0	16	R0.2	12°	50	2	4	○

*本系列產品新追加的尺寸。
*New size added from this series.

○ 準庫存品。
○ Stocked items.



被削材 Work Material		HRC30-45 碳素鋼/預硬鋼		HRC45-55 淬火鋼		HRC55-65 淬火鋼	
直徑/R角(mm) Diameter /Radius	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed
D0.2 R0.05	0.5	30000	200	30000	150	20000	60
D0.2 R0.05	1	30000	150	30000	100	15000	30
D0.2 R0.05	1.5	30000	120	27000	80	12000	25
D0.2 R0.05	2	30000	90	20000	60	10000	25
D0.3 R0.05	0.5	30000	350	28000	300	22000	150
D0.3 R0.05	1	30000	240	26000	200	22000	120
D0.3 R0.05	1.5	30000	180	26000	180	22000	100
D0.3 R0.05	2	30000	120	24000	120	18000	80
D0.3 R0.05	3	24000	80	18000	80	14000	50
D0.4 R0.05	1	26000	300	22000	300	22000	240
D0.4 R0.05	2	24000	260	20000	240	18000	180
D0.4 R0.05	3	22000	180	16000	160	16000	120
D0.4 R0.05	4	18000	120	14000	100	12000	60
D0.4 R0.1	1	26000	300	22000	300	22000	240
D0.4 R0.1	2	24000	220	20000	240	18000	180
D0.4 R0.1	3	22000	180	16000	160	16000	120
D0.4 R0.1	4	18000	120	14000	100	12000	60
D0.5 R0.05	1	20000	500	18000	400	16000	300
D0.5 R0.05	2	18000	360	15000	300	13000	200
D0.5 R0.05	4	16000	200	13000	180	10000	120
D0.5 R0.05	6	14000	120	12000	120	10000	80
D0.5 R0.1	1	20000	500	18000	400	16000	300
D0.5 R0.1	2	18000	360	15000	300	13000	200
D0.5 R0.1	4	16000	200	13000	180	10000	120
D0.5 R0.1	6	14000	120	12000	120	10000	80
D0.6 R0.05	2	16000	700	16000	600	15000	300
D0.6 R0.05	4	13000	400	12000	350	10000	160
D0.6 R0.05	6	11000	200	10000	200	9000	100
D0.6 R0.05	8	10000	120	10000	100	7000	50
D0.6 R0.1	2	16000	700	16000	600	15000	300
D0.6 R0.1	4	13000	400	12000	350	10000	160
D0.6 R0.1	6	11000	200	10000	200	9000	100
D0.6 R0.1	8	10000	120	10000	100	7000	50
D0.8 R0.05	2	16000	1200	16000	1000	12000	300
D0.8 R0.05	4	14000	800	13000	600	10000	200

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2刃
2 Flutes

2刃
2 Flutes

避空
圓角刀
Long Neck
Radius

避空
圓角刀
Long Neck
Radius

被削材 Work Material		HRC30-45 碳素钢/预硬钢		HRC45-55 淬火钢		HRC55-65 淬火钢	
直径/角(mm) Diameter /Radius	有效长(mm) Effective Length	转速(min-1) Speed	进给速度 (mm/min) Feed	转速(min-1) Speed	进给速度 (mm/min) Feed	转速(min-1) Speed	进给速度 (mm/min) Feed
D0.8 R0.05	6	13000	600	12000	500	8000	120
D0.8 R0.05	8	12000	300	10000	200	7000	50
D0.8 R0.1	2	16000	1200	16000	1000	12000	300
D0.8 R0.1	4	14000	800	13000	600	10000	200
D0.8 R0.1	6	13000	500	12000	400	8000	120
D0.8 R0.1	8	12000	300	10000	200	7000	50
D1.0 R0.1	4	13000	1000	12000	800	8000	400
D1.0 R0.1	6	11000	700	10000	600	7000	200
D1.0 R0.1	8	10000	500	8500	400	6000	150
D1.0 R0.1	10	8500	300	7500	300	5000	80
D1.0 R0.2	4	13000	1000	12000	800	8000	400
D1.0 R0.2	6	11000	700	10000	600	7000	200
D1.0 R0.2	8	10000	500	8500	400	6000	150
D1.0 R0.2	10	8500	300	7500	300	5000	80
D1.5 R0.1	4	13000	1000	12000	1000	9000	500
D1.5 R0.1	6	10000	1000	10000	900	7500	400
D1.5 R0.1	8	9000	800	8500	800	7000	200
D1.5 R0.1	10	8500	700	7500	600	6500	120
D1.5 R0.2	4	13000	1000	12000	1000	9000	500
D1.5 R0.2	6	10000	1000	10000	900	7500	400
D1.5 R0.2	8	9000	800	8500	800	7000	200
D1.5 R0.2	10	8500	700	7500	600	6500	120
D2.0 R0.1	4	13000	1500	13000	1500	10000	700
D2.0 R0.1	6	12000	1500	12000	1200	9000	500
D2.0 R0.1	8	11000	1000	10000	1000	8000	400
D2.0 R0.1	10	10000	900	9000	800	7000	350
D2.0 R0.1	12	9000	800	8000	650	7000	300
D2.0 R0.1	16	7500	600	7000	500	6500	150
D2.0 R0.2	4	13000	1500	13000	1500	10000	700
D2.0 R0.2	6	12000	1500	12000	1200	9000	500
D2.0 R0.2	8	11000	1000	10000	1000	8000	400
D2.0 R0.2	10	10000	900	9000	800	7000	350
D2.0 R0.2	12	9000	800	8000	650	7000	300
D2.0 R0.2	16	7500	600	7000	500	6500	150

備註：
* 設備轉速不夠時，請按比例降低轉速和進給；
* 不銹鋼和超耐熱合金的加工推薦油性切削液。

Note:
* Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
* Recommend oil coolant for Stainless Steels and Heat Resistance Alloys.



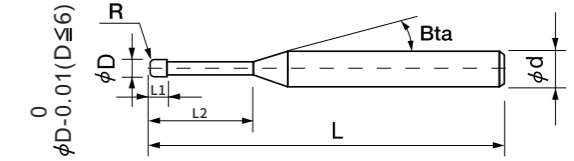
MG HG Coating 45 SD 0-0.003 R ±0.005

強烈推薦/推薦/建議 ★☆☆
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	○
合金鋼	Alloy steels (SK/SCM/SUS)	○
預硬鋼	Prehardened steels (NAK/HPM)	○
淬火鋼	Hardened steels (~55/~60/~70HRC)	○
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	○
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	○
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- * 模具鋼料加工用避空型4刃圓角刀；
- * 特殊的刃口設計，平面和等高加工性能優越。
- * 4 Flutes Long Neck Radius End Mills for Mold Steels.
- * Unique flute design, excellent performance on flat surface and contour milling..



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.

合計79型號 (Total 79 models)

單位 Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	圓角CR Radius	錐度角Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHGLSR4-01001040	D1.0	1.0	4	R0.1	12°	50	4	4	○
SHGLSR4-01001060	D1.0	1.0	6	R0.1	12°	50	4	4	○
SHGLSR4-01001080	D1.0	1.0	8	R0.1	12°	50	4	4	○
SHGLSR4-01001100	D1.0	1.0	10	R0.1	12°	50	4	4	○
SHGLSR4-01001120	D1.0	1.0	12	R0.1	12°	50	4	4	○
SHGLSR4-01002040	D1.0	1.0	4	R0.2	12°	50	4	4	○
SHGLSR4-01002060	D1.0	1.0	6	R0.2	12°	50	4	4	○
SHGLSR4-01002080	D1.0	1.0	8	R0.2	12°	50	4	4	○
SHGLSR4-01002100	D1.0	1.0	10	R0.2	12°	50	4	4	○
SHGLSR4-01002120	D1.0	1.0	12	R0.2	12°	50	4	4	○
SHGLSR4-01501060	D1.5	1.5	6	R0.1	12°	50	4	4	○
SHGLSR4-01501080	D1.5	1.5	8	R0.1	12°	50	4	4	○
SHGLSR4-01501100	D1.5	1.5	10	R0.1	12°	50	4	4	○
SHGLSR4-01501120	D1.5	1.5	12	R0.1	12°	50	4	4	○
SHGLSR4-01502060	D1.5	1.5	6	R0.2	12°	50	4	4	○
SHGLSR4-01502080	D1.5	1.5	8	R0.2	12°	50	4	4	○
SHGLSR4-01502100	D1.5	1.5	10	R0.2	12°	50	4	4	○
SHGLSR4-01502120	D1.5	1.5	12	R0.2	12°	50	4	4	○
SHGLSR4-02001060	D2.0	2.0	6	R0.1	12°	50	4	4	○
SHGLSR4-02001080	D2.0	2.0	8	R0.1	12°	50	4	4	○

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合計79型號 (Total 79 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	圓角CR Radius	錐度角Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHGLSR4-02001100	D2.0	2.0	10	R0.1	12°	50	4	4	○
SHGLSR4-02001120	D2.0	2.0	12	R0.1	12°	50	4	4	○
SHGLSR4-02001160	D2.0	2.0	16	R0.1	12°	50	4	4	○
SHGLSR4-02002060	D2.0	2.0	6	R0.2	12°	50	4	4	○
SHGLSR4-02002080	D2.0	2.0	8	R0.2	12°	50	4	4	○
SHGLSR4-02002100	D2.0	2.0	10	R0.2	12°	50	4	4	○
SHGLSR4-02002120	D2.0	2.0	12	R0.2	12°	50	4	4	○
SHGLSR4-02002160	D2.0	2.0	16	R0.2	12°	50	4	4	○
SHGLSR4-03001060	D3.0	3.0	6	R0.1	12°	50	4	4	○
SHGLSR4-03001080	D3.0	3.0	8	R0.1	12°	50	4	4	○
SHGLSR4-03001100	D3.0	3.0	10	R0.1	12°	50	4	4	○
SHGLSR4-03001120	D3.0	3.0	12	R0.1	12°	50	4	4	○
SHGLSR4-03001160	D3.0	3.0	16	R0.1	12°	50	4	4	○
SHGLSR4-03001200	D3.0	3.0	20	R0.1	12°	50	4	4	○
SHGLSR4-03002060	D3.0	3.0	6	R0.2	12°	50	4	4	○
SHGLSR4-03002080	D3.0	3.0	8	R0.2	12°	50	4	4	○
SHGLSR4-03002100	D3.0	3.0	10	R0.2	12°	50	4	4	○
SHGLSR4-03002120	D3.0	3.0	12	R0.2	12°	50	4	4	○
SHGLSR4-03002160	D3.0	3.0	16	R0.2	12°	50	4	4	○
SHGLSR4-03002200	D3.0	3.0	20	R0.2	12°	50	4	4	○
SHGLSR4-03005060	D3.0	3.0	6	R0.5	12°	50	4	4	○
SHGLSR4-03005080	D3.0	3.0	8	R0.5	12°	50	4	4	○
SHGLSR4-03005100	D3.0	3.0	10	R0.5	12°	50	4	4	○
SHGLSR4-03005120	D3.0	3.0	12	R0.5	12°	50	4	4	○
SHGLSR4-03005160	D3.0	3.0	16	R0.5	12°	50	4	4	○
SHGLSR4-03005200	D3.0	3.0	20	R0.5	12°	50	4	4	○
SHGLSR4-03001060-6	D3.0	3.0	6	R0.1	12°	60	4	6	○
SHGLSR4-03001080-6	D3.0	3.0	8	R0.1	12°	60	4	6	○
SHGLSR4-03001100-6	D3.0	3.0	10	R0.1	12°	60	4	6	○
SHGLSR4-03001120-6	D3.0	3.0	12	R0.1	12°	60	4	6	○
SHGLSR4-03001160-6	D3.0	3.0	16	R0.1	12°	60	4	6	○
SHGLSR4-03001200-6	D3.0	3.0	20	R0.1	12°	60	4	6	○
SHGLSR4-03002060-6	D3.0	3.0	6	R0.2	12°	60	4	6	○
SHGLSR4-03002080-6	D3.0	3.0	8	R0.2	12°	60	4	6	○
SHGLSR4-03002100-6	D3.0	3.0	10	R0.2	12°	60	4	6	○
SHGLSR4-03002120-6	D3.0	3.0	12	R0.2	12°	60	4	6	○
SHGLSR4-03002160-6	D3.0	3.0	16	R0.2	12°	60	4	6	○
SHGLSR4-03002200-6	D3.0	3.0	20	R0.2	12°	60	4	6	○

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合計79型號 (Total 79 models)

單位Unit (mm)

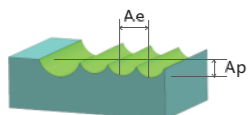
型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	圓角CR Radius	錐度角Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHGLSR4-03005060-6	D3.0	3.0	6	R0.5	12°	60	4	6	○
SHGLSR4-03005080-6	D3.0	3.0	8	R0.5	12°	60	4	6	○
SHGLSR4-03005100-6	D3.0	3.0	10	R0.5	12°	60	4	6	○
SHGLSR4-03005120-6	D3.0	3.0	12	R0.5	12°	60	4	6	○
SHGLSR4-03005160-6	D3.0	3.0	16	R0.5	12°	60	4	6	○
SHGLSR4-03005200-6	D3.0	3.0	20	R0.5	12°	60	4	6	○
SHGLSR4-04001080-6	D4.0	4.0	8	R0.1	12°	60	4	6	○
SHGLSR4-04001100-6	D4.0	4.0	10	R0.1	12°	60	4	6	○
SHGLSR4-04001120-6	D4.0	4.0	12	R0.1	12°	60	4	6	○
SHGLSR4-04001160-6	D4.0	4.0	16	R0.1	12°	60	4	6	○
SHGLSR4-04001200-6	D4.0	4.0	20	R0.1	12°	60	4	6	○
SHGLSR4-04002080-6	D4.0	4.0	8	R0.2	12°	60	4	6	○
SHGLSR4-04002100-6	D4.0	4.0	10	R0.2	12°	60	4	6	○
SHGLSR4-04002120-6	D4.0	4.0	12	R0.2	12°	60	4	6	○
SHGLSR4-04002160-6	D4.0	4.0	16	R0.2	12°	60	4	6	○
SHGLSR4-04002200-6	D4.0	4.0	20	R0.2	12°	60	4	6	○
SHGLSR4-04005080-6	D4.0	4.0	8	R0.5	12°	60	4	6	○
SHGLSR4-04005100-6	D4.0	4.0	10	R0.5	12°	60	4	6	○
SHGLSR4-04005120-6	D4.0	4.0	12	R0.5	12°	60	4	6	○
SHGLSR4-04005160-6	D4.0	4.0	16	R0.5	12°	60	4	6	○
SHGLSR4-04005200-6	D4.0	4.0	20	R0.5	12°	60	4	6	○

*本系列產品新追加的尺寸。

*New size added from this series.

○準庫存品。

○ Stocked items.



被削材 Work Material		HRC30-45 碳素钢/预硬钢		HRC45-55 淬火钢		HRC55-65 淬火钢	
直径/R角(mm) Diameter /Radius	有效长(mm) Effective Length	转速(min-1) Speed	进给速度 (mm/min) Feed	转速(min-1) Speed	进给速度 (mm/min) Feed	转速(min-1) Speed	进给速度 (mm/min) Feed
D1.0R0.1	4	13000	1300	12000	1000	8500	700
D1.0R0.1	6	11000	1000	10000	900	7000	500
D1.0R0.1	8	10000	800	8500	700	6000	400
D1.0R0.1	10	8500	500	7500	450	5500	300
D1.0R0.1	12	7500	300	7000	200	5500	150
D1.0R0.2	4	13000	1300	12000	1000	8500	700
D1.0R0.2	6	11000	1000	10000	900	7000	500
D1.0R0.2	8	10000	800	8500	700	6000	400
D1.0R0.2	10	8500	500	7500	450	5500	300
D1.0R0.2	12	7500	300	7000	200	5500	150
D1.5R0.1	6	12000	1300	10000	1200	8000	500
D1.5R0.1	8	10000	1000	9000	1000	7000	400
D1.5R0.1	10	9000	900	8500	900	6500	300
D1.5R0.1	12	8500	800	7500	750	6000	200
D1.5R0.2	6	12000	1500	10000	1200	8000	500
D1.5R0.2	8	10000	1000	9000	1000	7000	400
D1.5R0.2	10	9000	900	8500	900	6500	300
D1.5R0.2	12	8500	800	7500	750	6000	200
D2.0R0.1	6	13000	1800	12000	1500	9000	700
D2.0R0.1	8	11000	1500	10000	1100	8000	600
D2.0R0.1	10	10000	1200	9000	1000	7500	500
D2.0R0.1	12	9000	1000	8500	950	7000	400
D2.0R0.1	16	8000	800	7000	700	6000	200
D2.0R0.2	6	13000	1800	12000	1500	9000	700
D2.0R0.2	8	11000	1500	10000	1100	8000	600
D2.0R0.2	10	10000	1200	9000	1000	7500	500
D2.0R0.2	12	9000	1000	8500	950	7000	400
D2.0R0.2	16	8000	800	7000	700	6000	200
D3.0R0.1	6	13000	2200	12000	2000	10000	1000
D3.0R0.1	8	12000	2200	11000	2000	10000	900
D3.0R0.1	10	11000	2000	10000	1800	9000	800
D3.0R0.1	12	10000	2000	10000	1800	8000	700
D3.0R0.1	16	9000	1600	8500	1400	7000	600
D3.0R0.1	20	8500	1400	8000	1200	6500	500
D3.0R0.2	6	13000	2200	12000	2000	10000	1000
D3.0R0.2	8	12000	2200	11000	2000	10000	900
D3.0R0.2	10	11000	2000	10000	1800	9000	800
D3.0R0.2	12	10000	2000	10000	1800	8000	700
D3.0R0.2	16	9000	1600	8500	1400	7000	600
D3.0R0.2	20	8500	1400	8000	1200	6500	500
D4.0 R0.1	8	11000	2200	10000	2000	7500	900
D4.0 R0.1	10	11000	2200	10000	2000	7500	900
D4.0 R0.1	12	10000	2000	9000	2000	7000	800
D4.0 R0.1	16	8500	1800	8000	1600	6500	700
D4.0 R0.1	20	7500	1600	7000	1400	6500	600
D4.0 R0.2	8	11000	2200	10000	2000	7500	900
D4.0 R0.2	10	11000	2200	10000	2000	7500	900
D4.0 R0.2	12	10000	2000	9000	2000	7000	800

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被削材 Work Material		HRC30-45 碳素钢/预硬钢		HRC45-55 淬火钢		HRC55-65 淬火钢	
直径/R角(mm) Diameter /Radius	有效长(mm) Effective Length	转速(min-1) Speed	进给速度 (mm/min) Feed	转速(min-1) Speed	进给速度 (mm/min) Feed	转速(min-1) Speed	进给速度 (mm/min) Feed
D3.0 R0.2	8	12000	2200	11000	2000	10000	1900
D3.0 R0.2	10	11000	2000	10000	1800	9000	800
D3.0 R0.2	12	10000	2000	10000	1800	8000	700
D3.0 R0.2	16	9000	1600	8500	1400	7000	600
D3.0 R0.2	20	8500	1400	8000	1200	6500	500
D3.0 R0.5	6	13000	2200	12000	2000	10000	1000
D3.0 R0.5	8	12000	2200	11000	2000	10000	900
D3.0 R0.5	10	11000	2000	10000	1800	9000	800
D3.0 R0.5	12	10000	2000	10000	1800	8000	700
D3.0 R0.5	16	9000	1600	8500	1400	7000	600
D3.0 R0.5	20	8500	1400	8000	1200	6500	500
D3.0 R0.1	6	13000	2200	12000	2000	10000	1000
D3.0 R0.1	8	12000	2200	11000	2000	10000	900
D3.0 R0.1	10	11000	2000	10000	1800	9000	800
D3.0 R0.1	12	10000	2000	10000	1800	8000	700
D3.0 R0.1	16	9000	1600	8500	1400	7000	600
D3.0 R0.1	20	8500	1400	8000	1200	6500	500
D3.0 R0.2	6	13000	2200	12000	2000	10000	1000
D3.0 R0.2	8	12000	2200	11000	2000	10000	900
D3.0 R0.2	10	11000	2000	10000	1800	9000	800
D3.0 R0.2	12	10000	2000	10000	1800	8000	700
D3.0 R0.2	16	9000	1600	8500	1400	7000	600
D3.0 R0.2	20	8500	1400	8000	1200	6500	500
D3.0 R0.5	6	13000	2200	12000	2000	10000	1000
D3.0 R0.5	8	12000	2200	11000	2000	10000	900
D3.0 R0.5	10	11000	2000	10000	1800	9000	800
D3.0 R0.5	12	10000	2000	10000	1800	8000	700
D3.0 R0.5	16	9000	1600	8500	1400	7000	600
D3.0 R0.5	20	8500	1400	8000	1200	6500	500
D4.0 R0.1	8	11000	2200	10000	2000	7500	900
D4.0 R0.1	10	11000	2200	10000	2000	7500	900
D4.0 R0.1	12	10000	2000	9000	2000	7000	800
D4.0 R0.1	16	8500	1800	8000	1600	6500	700
D4.0 R0.1	20	7500	1600	7000	1400	6500	600
D4.0 R0.2	8	11000	2200	10000	2000	7500	900
D4.0 R0.2	10	11000	2200	10000	2000	7500	900
D4.0 R0.2	12	10000	2000	9000	2000	7000	800

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4刃
4 Flutes

避空
圆角刀
Long Neck
Radius

4刃
4 Flutes

避空
圆角刀
Long Neck
Radius

被削材 Work Material		HRC30-45 碳素钢/预硬钢 Prehardened Steels		HRC45-55 淬火钢 Hardened Steels		HRC55-65 淬火钢 Hardened Steels	
直径/R角(mm) Diameter /Radius	有效长(mm) Effective Length	转速(min-1) Speed	进给速度 (mm/min) Feed	转速(min-1) Speed	进给速度 (mm/min) Feed	转速(min-1) Speed	进给速度 (mm/min) Feed
D4.0 R0.2	16	8500	1800	8000	1600	6500	700
D4.0 R0.2	20	7500	1600	7000	1400	6500	600
D4.0 R0.5	8	11000	2200	10000	2000	7500	900
D4.0 R0.5	10	11000	2200	10000	2000	7500	900
D4.0 R0.5	12	10000	2000	9000	2000	7000	800
D4.0 R0.5	16	8500	1800	8000	1600	6500	700
D4.0 R0.5	20	7500	1600	7000	1400	6500	600

備註:

- * 設備轉速不夠時，請按比例降低轉速和進給；
- * 不銹鋼和超耐熱合金的加工推薦油性切削液。

Note:

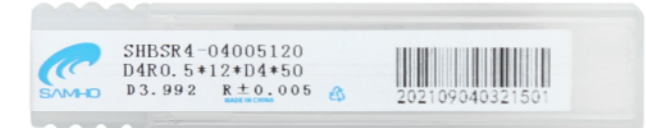
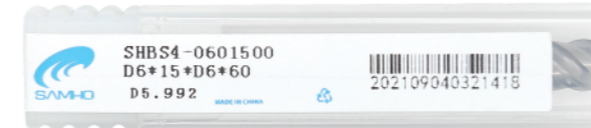
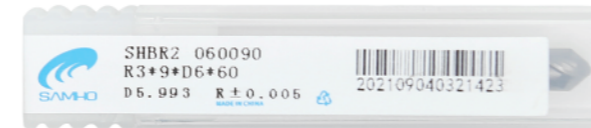
- * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
- * Recommend oil coolant for Stainless Steels and Heat Resistance Alloys.

SHB系列高精度

1. 柄徑0-0.003mm
2. 每一支刀帶檢測結果

SHB series high precision

1. Shank diameter tolerance 0-0.003 mm
2. Test results for each end mill



案例

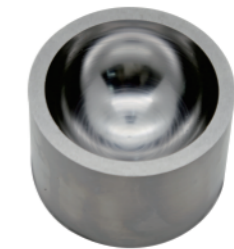
Case Studies

★ 分析報告: 材料 M333(HRC48-52) Analysis Report: Material M333(HRC48-52)

目的: D1R0.5 壽命測試
加工機: 碌碌機(60000rpm)
冷卻方式: 油霧
測試時間: 2021-10-30

Purpose: D1R0.5 life test
Processing machine: ROKU-ROKU CNC (60000rpm)
Coolant: Oil Mist
Test time: 2021-10-30

加工形狀:
Milling Shape:

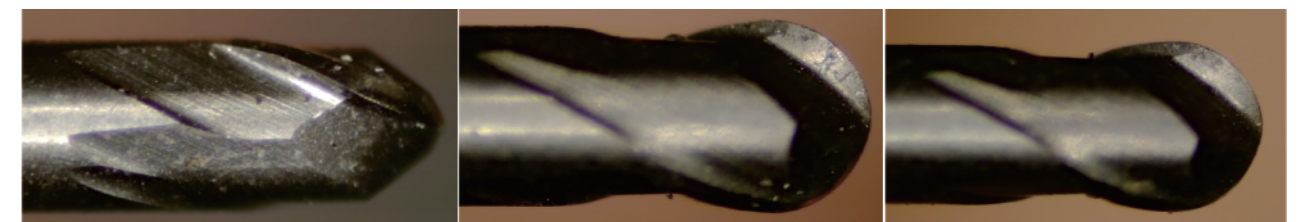


加工參數 Milling Parameters

使用工具 Tool	轉速 Spindle Speed	進給 Feed Rate	Q值 Step	切深 Axial Depth	切寬 Radial Depth	加工時間 Cycle Time
SHBLR2-010040 R0.5*4*D4*50 精加工 Finishing milling	(min-1) 18000	(mm/min) 800		(ap) mm 0.01	(ae) mm 0.01	9:35:22

總結: 加工時間近10小時, 刀具磨損輕微(幾乎看不出磨損), 工件光潔度良好, 實測尺寸精度±0.003mm。
Summary: Slightly worn out after test for 10hours, good surface finishing, actual measured tolerance ±0.003mm.

刀具狀況 Cutter Condition:



★ 分析報告:材料 S136 (HRC48-52) Analysis Report:Material S136 (HRC48-52)

目的: D6R0.5 虎口精度測試 Purpose: D6R0.5 Accuracy test
 加工機: 碌碌機(36000rpm) Processing machine: ROKU-ROKU CNC (36000rpm)
 冷卻方式: 油冷 Coolant: Oil Coolant
 測試時間: 2021-12-28 Test time: 2021-12-28

加工形狀:
Milling Shape:

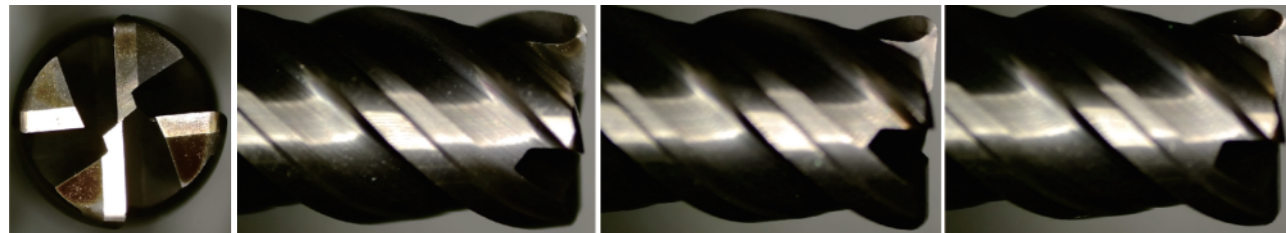


加工參數 Milling Parameters

使用工具 Tool	轉速 Spindle Speed	進給 Feed Rate	Q值 Step	切深 Axial Depth	切寬 Radial Depth	加工時間 Cycle Time
D6R0.5 等高精加工 Contour finishing	(min-1) 10000	(mm/min) 800		(ap) mm 0.05	(ae) mm 0.03	01:35:09

總結: 刀在工業顯微鏡下顯示輕微磨損, 光潔度良好, 工件尺寸公差±0.005mm。
 Summary: Slightly worn out can be viewed under industrial microscope, good surface finishing, tolerance ±0.005mm.

刀具狀況 Cutter Condition:



★ 分析報告:材料 S136 (HRC48-52) Analysis Report:Material S136 (HRC48-52)

目的: D6 測試 Purpose: D6 test
 加工機: 碌碌機(36000rpm) Processing machine: ROKU-ROKU CNC (36000rpm)
 冷卻方式: 油冷 Coolant: Oil Coolant
 測試時間: 2021-12-28 Test time: 2021-12-28

加工形狀:
Milling Shape:

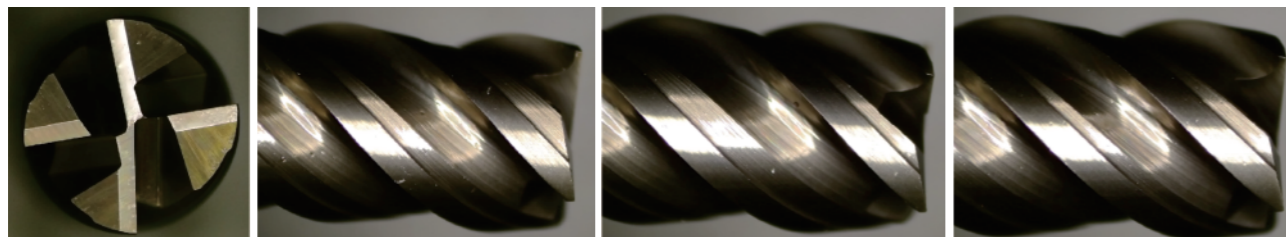


加工參數 Milling Parameters

使用工具 Tool	轉速 Spindle Speed	進給 Feed Rate	Q值 Step	切深 Axial Depth	切寬 Radial Depth	加工時間 Cycle Time
D6側刃加工 Side milling	(min-1) 3500	(mm/min) 300		(ap) mm 12	(ae) mm 0.01	00:15:09

總結: 不等分刃刀設計, 側切刀具壽命久, 工件表面光潔度高。
 Summary: Variable flute design, long life for side milling, good surface finishing.

刀具狀況 Cutter Condition:

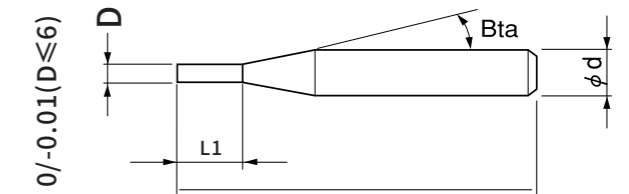


強烈推薦/推薦/建議 ★○○○
 Highly recommend/Recommend/Suggest

模具鋼 DIE STEEL	推薦等級 (Grade)
碳素鋼 Carbon steels (S45C/S55C)	○
合金鋼 Alloy steels (SK/SCM/SUS)	○
預硬鋼 Prehardened steels (NAK/HPM)	○
淬火鋼 Hardened steels (~55/~60/~70HRC)	○
特殊材料 SPECIAL MATERIAL	
鋁合金 Aluminum alloys	○
石墨 Graphite	
銅 Copper	○
樹脂 Plastics	
碳纖維 Carbon fiber	
鈦合金 Titanium alloys	○
超耐熱合金 Heat resistant alloys	
硬質合金 Cemented carbide	
硬脆材 Hard brittle (non-metallic) material	

特長 (Specialty)

- *特殊U型排屑槽設計;
- *超微細顆粒鎢鋼原材料;
- *最新HB塗層超低摩擦性能, 加工HRC28°~HRC52°模具鋼, 壽命光潔度優異。
- *Special U-shaped chip evacuation groove design;
- *Tungsten steel with ultra-fine particles;
- *New HB coating with low friction for HRC28~HRC52 mold steel, long life and excellent surface finishing.



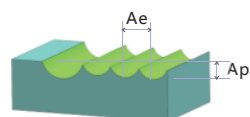
合計15型號 (Total 15 models)

單位 Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 B _{Ta} Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBS2-0020040	0.2	0.4	-	12°	50	2	4	○
SHBS2-0030060	0.3	0.6	-	12°	50	2	4	○
SHBS2-0040080	0.4	0.8	-	12°	50	2	4	○
SHBS2-0050100	0.5	1	-	12°	50	2	4	○
SHBS2-0060150	0.6	1.5	-	12°	50	2	4	○
SHBS2-0070180	0.7	1.8	-	12°	50	2	4	○
SHBS2-0080200	0.8	2	-	12°	50	2	4	○
SHBS2-0100300	1.0	3	-	12°	50	2	4	○
SHBS2-0150400	1.5	4	-	12°	50	2	4	○
SHBS2-0200500	2.0	5	-	12°	50	2	4	○
SHBS2-0250650	2.5	6.5	-	12°	50	2	4	○
SHBS2-0300800-4	3	8	-	12°	50	2	4	○
SHBS2-0401000-4	4	10	-	-	50	2	4	○
SHBS2-0401000-6	4	10	-	12°	60	2	6	○
SHBS2-0601500	6	15	-	-	60	2	6	○

*本系列產品新追加的尺寸。
 *New size added from this series.

○ 準庫存品。
 ○ Stocked items.



側面切削 (Side Milling)

被削材 Work Material	銅 無氧銅 紫銅 Copper Oxygen-free Copper Red Copper		HRC30-45碳素鋼/預硬鋼 HRC30-45 carbon steel and prehardened steel		HRC45-55淬火鋼 HRC45-55 hardened steel	
	直徑(mm) Diameter	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed
D1.0	10000	150	10000	100	8000	60
D1.5	8000	180	8000	120	6000	60
D2.0	8000	200	7000	120	5000	60
D2.5	6000	300	6000	120	4500	60
D3	7000	300	5000	150	4000	80
D4	7000	300	4000	150	4000	100
D4	7000	300	4000	150	4000	100
D6	7000	300	3500	250	3000	200

側面切削切深量(mm) Milling Amount for Side Milling (mm)

被削材 Work Material	Length of Cut 刃長	2.5D(刃長=直徑*2.5) 2.5D (Length of Cut=Diameter*2.5)	4D(刃長=直徑*4) 4D (Length of Cut=Diameter*4)
	45HRC以下 Below 45HRC		$a_e=0.07D$ $a_p=2D$
45HRC以上 Above 45HRC		$a_e=0.03D$ $a_p=1.5D$	$a_e=0.03D$ $a_p=1.5D$

D: 直徑 Diameter (mm)

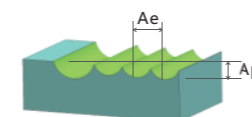
 a_p : 切深 Axial Depth (mm) a_e : 切寬 Radial Depth (mm)

備註:

- * 設備轉速不夠時, 請按比例降低轉速和進給;
- * 不銹鋼和超耐熱合金的加工推薦油性切削液;
- * 尖端為精密研磨。為避免破損, 對刀需謹慎;
- * 發生震動時, 請按比例降低轉速和進給。

Note:

- * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
- * Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
- * Recommend using a non-contact measuring device to avoid damaging the precision tip point;
- * Decrease both spindle speed and feed rate proportionally in case of chattering.



等高切削 (Contour Milling)

被削材 Work Material	銅 無氧銅 紫銅 Copper Oxygen-free Copper Red Copper		HRC30-45碳素鋼/預硬鋼 HRC30-45 carbon steel and prehardened steel		HRC45-55淬火鋼 HRC45-55 hardened steel	
	直徑(mm) Diameter	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed
D0.2	30000	200	30000	120	30000	120
D0.3	30000	220	30000	150	30000	150
D0.3	30000	300	30000	200	30000	200
D0.3	26000	300	26000	200	26000	200
D0.3	24000	500	24000	300	24000	300
D0.3	20000	500	20000	500	20000	500
D0.3	16000	800	16000	800	16000	800
D0.3	13000	1000	13000	1000	13000	1000
D0.3	13000	1200	13000	1200	13000	1200
D0.3	12000	1500	12000	1500	12000	1500
D0.3	12000	1500	12000	1500	12000	1500
D0.3	11000	1800	11000	1800	11000	1800
D0.3	10000	2200	10000	2200	10000	2200
D0.3	10000	2200	10000	2200	10000	2200
D0.3	9000	2500	9000	2500	9000	2500

備註:

- * 設備轉速不夠時, 請按比例降低轉速和進給;
- * 不銹鋼和超耐熱合金的加工推薦油性切削液;
- * 尖端為精密研磨。為避免破損, 對刀需謹慎;
- * 發生震動時, 請按比例降低轉速和進給。

Note:

- * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
- * Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
- * Recommend using a non-contact measuring device to avoid damaging the precision tip point;
- * Decrease both spindle speed and feed rate proportionally in case of chattering.

SHBS4刃平刀 (4 Flutes Square)

SAMHO



- MG
- HB Coating
- 42~43
- SD 0-0.003
- 不等分割 Variable pitch
- 不等螺旋 Unequal spiral

強烈推薦/推薦/建議 ★○○○

Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	○
合金鋼	Alloy steels (SK/SCM/SUS)	○
預硬鋼	Prehardened steels (NAK/HPM)	○
淬火鋼	Hardened steels (~55/~60HRC)	○
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	○
石墨	Graphite	
銅	Copper	○
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	○
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

*獨特U型排屑槽設計,有效降低切削負載,擁有更好的排屑性能,獲得更高的金屬去除率。

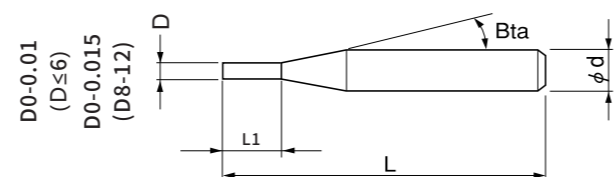
*獨特HB系列塗層,獲得更耐磨,更高的耐熱性。

*適合HRC28~52模具鋼,不銹鋼加工。

*Unique U-shaped chip removal groove design can effectively reduce cutting load, have better chip removal performance, and obtain higher metal removal rate.

*Unique HB series coating for more wear resistance and higher heat resistance.

*Suitable for HRC28~52 die steel, stainless steel processing.



合計32型號 (Total 32 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBS4-0100300	1.0	3	12°	50	4	4	○
SHBS4-0150400	1.5	4	12°	50	4	4	○
SHBS4-0200500	2.0	5	12°	50	4	4	○
SHBS4-0250650	2.5	6.5	12°	50	4	4	○
SHBS4-0300800-3	3	8	-	50	4	3	○
SHBS4-0300800-4	3	8	12°	50	4	4	○
SHBS4-0300800-6	3	8	12°	50	4	6	○
SHBS4-0401000-4	4	10	-	50	4	4	○
SHBS4-0401000-6	4	10	12°	50	4	6	○
SHBS4-0401200-75	4	12	-	75	4	4	○
SHBS4-0501300	5	13	12°	50	4	6	○
SHBS4-0601500	6	15	-	50	4	6	○
SHBS4-0601500-75	6	15	-	75	4	6	○
SHBS4-0601500-100	6	15	-	100	4	6	○
SHBS4-0802000	8	20	-	60	4	8	○
SHBS4-0802000-75	8	20	-	75	4	8	○

Next page →

SAMHO

SHBS4刃平刀 (4 Flutes Square)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBS4-0802000-100	8	20	-	100	4	8	○
SHBS4-0802000-150	8	20	-	150	4	8	○
SHBS4-1002500	10	25	-	75	4	10	○
SHBS4-1002500-100	10	25	-	100	4	10	○
SHBS4-1002500-150	10	25	-	150	4	10	○
SHBS4-1203000	12	30	-	75	4	12	○
SHBS4-1203000-100	12	30	-	100	4	12	○
SHBS4-1203000-150	12	30	-	150	4	12	○
SHBS4-1403500-100	14	35	-	100	4	14	○
SHBS4-1405500-150	14	55	-	150	4	14	○
SHBS4-1604000-100	16	40	-	100	4	16	○
SHBS4-1606000-150	16	60	-	150	4	16	○
SHBS4-1804500-150	18	45	-	100	4	18	○
SHBS4-1806500-150	18	65	-	150	4	18	○
SHBS4-2005000-100	20	50	-	100	4	20	○
SHBS4-2007000-150	20	70	-	150	4	20	○

*本系列產品新追加的尺寸。

*New size added from this series.

○準庫存品。

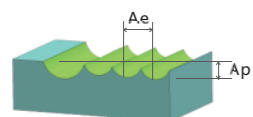
○ Stocked items.

4刃
4 Flutes

4刃
4 Flutes

平刀
Square

平刀
Square



側面切削 (Side Milling)

被削材 Work Material	銅 無氧銅 紫銅 Oxygen-free Copper Red Copper		HRC30-45碳素鋼/預硬鋼 HRC30-45 carbon steel and prehardened steel		HRC45-55淬火鋼 HRC45-55 hardened steel	
	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed
直徑(mm) Diameter						
D1.0	10000	220	10000	100	8000	60
D1.5	8000	240	8000	120	6000	60
D2.0	8000	300	6000	150	4500	80
D2.5	8000	300	5000	150	4000	80
D 3	7000	400	5000	150	4000	80
D 4	7000	500	4000	200	3000	150
D 5	7000	500	3500	300	3000	200
D 6	7000	500	3500	300	3000	200
D 8	6500	600	3000	300	2500	200
D 10	6000	600	2500	300	2500	200
D 12	6000	600	2000	250	2000	200
D 14	4000	600	2000	350	2000	300
D 16	4000	600	1800	350	1800	300
D 18	3000	400	1600	350	1600	300
D 20	3000	400	1200	350	1200	300

側面切削切深量(mm) Milling Amount for Side Milling (mm)

被削材 Work Material	Length of Cut 刃長	2.5D(刃長=直徑*2.5)	4D(刃長=直徑*4)
		2.5D (Length of Cut=Diameter*2.5)	4D (Length of Cut=Diameter*4)
45HRC以下 Below 45HRC		$a_e=0.07D$ $a_p=2D$	$a_e=0.07D$ $a_p=2D$
45HRC以上 Above 45HRC		$a_e=0.03D$ $a_p=1.5D$	$a_e=0.03D$ $a_p=1.5D$

D: 直徑 Diameter (mm)
 a_p : 切深 Axial Depth (mm)
 a_e : 切寬 Radial Depth (mm)

4刃
4 Flutes

平刀
Square

等高切削 (Contour Milling)

被削材 Work Material	銅 無氧銅 紫銅 Oxygen-free Copper Red Copper		HRC30-45碳素鋼/預硬鋼 HRC30-45 carbon steel and prehardened steel		HRC45-55淬火鋼 HRC45-55 hardened steel	
	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed
直徑(mm) Diameter						
D1.0	13000	1000	13000	1000	13000	1000
D1.5	13000	1200	13000	1200	13000	1200
D2.0	12000	1500	12000	1500	12000	1500
D2.5	12000	1500	12000	1500	12000	1500
D 3	11000	1800	11000	1800	11000	1800
D 4	10000	2200	10000	2200	10000	2200
D 5	9000	2500	9000	2500	9000	2500
D 6	9000	2500	9000	2500	9000	2500
D 8	8000	2500	8000	2500	8000	2500
D10	7000	2500	7000	2500	7000	2500
D12	6000	2500	6000	2500	6000	2500
D14	4000	2200	4000	2200	4000	2200
D16	3500	2200	3500	2200	3500	2200
D18	3000	2000	3000	2000	3000	2000
D20	2500	2000	2500	2000	2500	2000

備註:
 * 設備轉速不夠時, 請按比例降低轉速和進給;
 * 不銹鋼和超耐熱合金的加工推薦油性切削液;
 * 尖端為精密研磨。為避免破損, 對刀需謹慎;
 * 發生震動時, 請按比例降低轉速和進給。

Note:
 * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
 * Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
 * Recommend using a non-contact measuring device to avoid damaging the precision tip point;
 * Decrease both spindle speed and feed rate proportionally in case of chattering.

4刃
4 Flutes

平刀
Square

SHBLS2刃避空型平刀 (2 Flutes Long Neck Square)

SAMHO



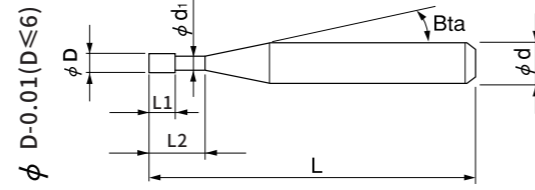
- MG
- HB Coating
- 30
- SD 0-0.003

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

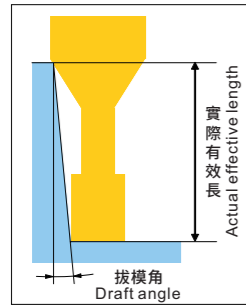
模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	○
合金鋼	Alloy steels (SK/SCM/SUS)	○
預硬鋼	Prehardened steels (NAK/HPM)	○
淬火鋼	Hardened steels (-55/-60/-70HRC)	○
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	○
石墨	Graphite	
銅	Copper	○
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	○
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- *獨特U型排屑槽設計, 有效降低切削負載, 擁有更好的排屑性能, 獲得更高的金屬去除率。
- *獨特HB系列塗層, 獲得更耐磨, 更高的耐熱性。
- *適合HRC28~52模具鋼, 不銹鋼加工。
- *Unique U-shaped chip removal groove design can effectively reduce cutting load, have better chip removal performance, and obtain higher metal removal rate.
- *Unique HB series coating for more wear resistance and higher heat resistance.
- *Suitable for HRC28~52 die steel, stainless steel processing.



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.



合計37型號 (Total 37 models)

單位 Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBLS2-002005	0.2	0.3	0.5	12°	50	2	4	○
SHBLS2-002010	0.2	0.3	1	12°	50	2	4	○
SHBLS2-002015	0.2	0.3	1.5	12°	50	2	4	○
SHBLS2-003010	0.3	0.5	1	12°	50	2	4	○
SHBLS2-003015	0.3	0.5	1.5	12°	50	2	4	○
SHBLS2-003020	0.3	0.5	2	12°	50	2	4	○
SHBLS2-003030	0.3	0.5	3	12°	50	2	4	○
SHBLS2-004010	0.4	0.6	1	12°	50	2	4	○
SHBLS2-004020	0.4	0.6	2	12°	50	2	4	○
SHBLS2-004030	0.4	0.6	3	12°	50	2	4	○

Next page →

SAMHO

SHBLS2刃避空型平刀 (2 Flutes Long Neck Square)

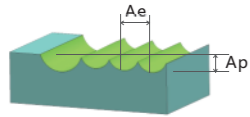
型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBLS2-004040	0.4	0.6	4	12°	50	2	4	○
SHBLS2-005010	0.5	0.75	1	12°	50	2	4	○
SHBLS2-005020	0.5	0.75	2	12°	50	2	4	○
SHBLS2-005040	0.5	0.75	4	12°	50	2	4	○
SHBLS2-005060	0.5	0.75	6	12°	50	2	4	○
SHBLS2-006020	0.6	0.9	2	12°	50	2	4	○
SHBLS2-006040	0.6	0.9	4	12°	50	2	4	○
SHBLS2-006060	0.6	0.9	6	12°	50	2	4	○
SHBLS2-006080	0.6	0.9	8	12°	50	2	4	○
SHBLS2-008020	0.8	1.2	2	12°	50	2	4	○
SHBLS2-008040	0.8	1.2	4	12°	50	2	4	○
SHBLS2-008060	0.8	1.2	6	12°	50	2	4	○
SHBLS2-008080	0.8	1.2	8	12°	50	2	4	○
SHBLS2-010040	1.0	1.5	4	12°	50	2	4	○
SHBLS2-010060	1.0	1.5	6	12°	50	2	4	○
SHBLS2-010080	1.0	1.5	8	12°	50	2	4	○
SHBLS2-010100	1.0	1.5	10	12°	50	2	4	○
SHBLS2-015040	1.5	2.3	4	12°	50	2	4	○
SHBLS2-015060	1.5	2.3	6	12°	50	2	4	○
SHBLS2-015080	1.5	2.3	8	12°	50	2	4	○
SHBLS2-015100	1.5	2.3	10	12°	50	2	4	○
SHBLS2-020040	2.0	3.0	4	12°	50	2	4	○
SHBLS2-020060	2.0	3.0	6	12°	50	2	4	○
SHBLS2-020080	2.0	3.0	8	12°	50	2	4	○
SHBLS2-020100	2.0	3.0	10	12°	50	2	4	○
SHBLS2-020120	2.0	3.0	12	12°	50	2	4	○
SHBLS2-020160	2.0	3.0	16	12°	50	2	4	○

*本系列產品新追加的尺寸。
*New size added from this series.

○準庫存品。
○ Stocked items.

2刃
2 Flutes

避空平刀
Long Neck
Square



2刃
2 Flutes

避空平刀
Long Neck
Square

被削材 Work Material		銅 無氧銅 紫銅 Copper Oxygen-free Copper Red Copper		HRC30-45碳素鋼/預硬鋼 HRC30-45 carbon steel and prehardened steel		HRC45-55淬火鋼 HRC45-55 hardened steel	
直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed
D0.2	0.5	30000	120	30000	120	30000	120
D0.2	1	30000	120	30000	120	30000	100
D0.2	1.5	28000	120	28000	120	28000	100
D0.3	1	30000	150	30000	150	30000	150
D0.3	1.5	28000	120	28000	120	26000	120
D0.3	2	26000	120	26000	120	22000	100
D0.3	3	26000	100	26000	100	20000	80
D0.4	1	26000	300	26000	300	26000	260
D0.4	2	26000	220	26000	220	24000	200
D0.4	3	24000	180	24000	180	20000	200
D0.4	4	24000	150	24000	150	18000	150
D0.5	1	26000	400	26000	400	20000	300
D0.5	2	26000	300	26000	300	18000	200
D0.5	4	24000	180	24000	180	16000	150
D0.5	6	24000	150	24000	150	15000	100
D0.6	2	26000	500	26000	500	20000	500
D0.6	4	24000	300	24000	300	16000	200
D0.6	6	22000	200	22000	200	16000	150
D0.6	8	20000	150	20000	150	14000	100
D0.8	2	18000	600	18000	600	18000	500
D0.8	4	16000	400	16000	400	14000	300
D0.8	6	16000	300	16000	300	14000	200
D0.8	8	14000	150	14000	150	13000	150
D1.0	4	13000	800	13000	800	12000	800
D1.0	6	11000	600	11000	600	10000	600
D1.0	8	10000	300	10000	300	9000	300
D1.0	10	9000	150	9000	150	8000	120
D1.5	4	13000	1200	13000	1200	13000	1000
D1.5	6	11000	800	11000	800	11000	600
D1.5	8	10000	500	10000	500	10000	400
D1.5	10	9000	400	9000	400	9000	300
D2.0	4	12000	1400	12000	1400	10000	1000
D2.0	6	12000	1200	12000	1200	10000	800
D2.0	8	10000	1000	10000	1000	9000	600

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被削材 Work Material		銅 無氧銅 紫銅 Copper Oxygen-free Copper Red Copper		HRC30-45碳素鋼/預硬鋼 HRC30-45 carbon steel and prehardened steel		HRC45-55淬火鋼 HRC45-55 hardened steel	
直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed
D2.0	10	9500	600	9500	600	8000	400
D2.0	12	8500	400	8500	400	7000	260
D2.0	16	7000	300	7000	300	6000	200

2刃
2 Flutes

避空平刀
Long Neck
Square

備註:

- * 設備轉速不夠時，請按比例降低轉速和進給；
- * 不銹鋼和超耐熱合金的加工推薦油性切削液；
- * 尖端為精密研磨。為避免破損，對刀需謹慎。

Note:

- * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
- * Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
- * Recommend using a non-contact measuring device to avoid damaging the precision tip point.

SHBLS4刃避空型平刀 (4 Flutes Long Neck Square)

SAMHO



MG HB Coating 30 SD 0-0.003

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	○
合金鋼	Alloy steels (SK/SCM/SUS)	○
預硬鋼	Prehardened steels (NAK/HPM)	○
淬火鋼	Hardened steels (~55/~60/~70HRC)	○
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	○
石墨	Graphite	
銅	Copper	○
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	○
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

*獨特U型排屑槽設計, 有效降低切削負載, 擁有更好的排屑性能, 獲得更高的金屬去除率。

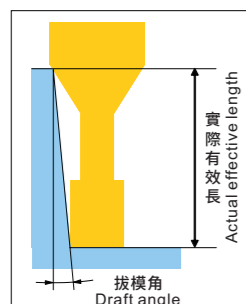
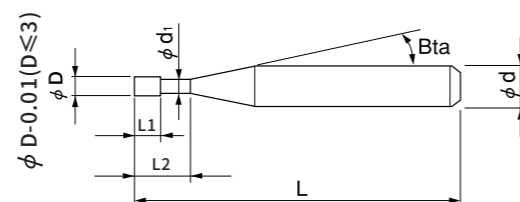
*獨特HB系列塗層, 獲得更耐磨, 更高的耐熱性。

*適合HRC28~52模具鋼, 不銹鋼加工。

*Unique U-shaped chip removal groove design can effectively reduce cutting load, have better chip removal performance, and obtain higher metal removal rate.

*Unique HB series coating for more wear resistance and higher heat resistance.

*Suitable for HRC28~52 die steel, stainless steel processing.



合計24型號 (Total 24 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBLS4-010040	1.0	1.5	4	12°	50	4	4	○
SHBLS4-010060	1.0	1.5	6	12°	50	4	4	○
SHBLS4-010080	1.0	1.5	8	12°	50	4	4	○
SHBLS4-010100	1.0	1.5	10	12°	50	4	4	○
SHBLS4-015040	1.5	2.3	4	12°	50	4	4	○
SHBLS4-015060	1.5	2.3	6	12°	50	4	4	○
SHBLS4-015080	1.5	2.3	8	12°	50	4	4	○
SHBLS4-015100	1.5	2.3	10	12°	50	4	4	○
SHBLS4-020060	2.0	3.0	6	12°	50	4	4	○
SHBLS4-020080	2.0	3.0	8	12°	50	4	4	○

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SAMHO

SHBLS4刃避空型平刀 (4 Flutes Long Neck Square)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBLS4-020100	2.0	3.0	10	12°	50	4	4	○
SHBLS4-020120	2.0	3.0	12	12°	50	4	4	○
SHBLS4-020160	2.0	3.0	16	12°	50	4	4	○
SHBLS4-020200	2.0	3.0	20	12°	50	4	4	○
SHBLS4-030080	3.0	4.5	8	12°	50	4	4	○
SHBLS4-030100	3.0	4.5	10	12°	50	4	4	○
SHBLS4-030120	3.0	4.5	12	12°	50	4	4	○
SHBLS4-030160	3.0	4.5	16	12°	50	4	4	○
SHBLS4-030200	3.0	4.5	20	12°	50	4	4	○
SHBLS4-030080-6	3.0	4.5	8	12°	50	4	6	○
SHBLS4-030100-6	3.0	4.5	10	12°	50	4	6	○
SHBLS4-030120-6	3.0	4.5	12	12°	50	4	6	○
SHBLS4-030160-6	3.0	4.5	16	12°	50	4	6	○
SHBLS4-030200-6	3.0	4.5	20	12°	50	4	6	○

*本系列產品新追加的尺寸。

*New size added from this series.

○準庫存品。

○ Stocked items.

4刃
4 Flutes

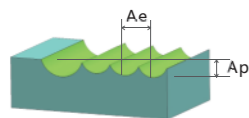
4刃
4 Flutes

避空平刀
Long Neck
Square

避空平刀
Long Neck
Square

SHBLS4-000 切削条件表(Milling Conditions)

SAMHO



被削材 Work Material		銅 無氧銅 紫銅 Copper Oxygen-free Copper Red Copper		HRC30-45碳素鋼/預硬鋼 HRC30-45 carbon steel and prehardened steel		HRC45-55淬火鋼 HRC45-55 hardened steel	
直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed
D1.0	4	13000	1300	13000	1300	12000	1200
D1.0	6	11000	1000	11000	1000	10000	800
D1.0	8	10000	800	10000	800	8500	700
D1.0	10	9000	500	9000	500	7500	500
D1.5	4	13000	1400	13000	1400	13000	1200
D1.5	6	11000	1200	11000	1200	10000	1000
D1.5	8	10000	1000	10000	1000	9000	900
D1.5	10	9000	900	9000	900	8500	800
D2.0	6	12000	1500	12000	1500	10000	1200
D2.0	8	11000	1300	11000	1300	9000	1000
D2.0	10	10000	1200	10000	1200	8000	800
D2.0	12	9000	900	9000	900	7000	700
D2.0	16	7500	700	7500	700	6000	600
D2.0	20	7000	400	7000	400	5500	300
D3.0	8	8500	2000	8500	2000	8000	1800
D3.0	10	8500	2000	8500	2000	8000	1800
D3.0	12	8000	1800	8000	1800	7000	1600
D3.0	16	7000	1400	7000	1400	6000	1200
D3.0	20	6500	1200	6500	1200	5500	1000
D3.0	8	8500	2000	8500	2000	8000	1800
D3.0	10	8500	2000	8500	2000	8000	1800
D3.0	12	8000	1800	8000	1800	7000	1600
D3.0	16	7000	1400	7000	1400	6000	1200
D3.0	20	6500	1200	6500	1200	5500	1000

4刃
4 Flutes

避空平刀
Long Neck
Square

備註:
 * 設備轉速不夠時,請按比例降低轉速和進給;
 * 不銹鋼和超耐熱合金的加工推薦油性切削液;
 * 尖端為精密研磨。為避免破損,對刀需謹慎。
 Note:
 * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
 * Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
 * Recommend using a non-contact measuring device to avoid damaging the precision tip point.

SAMHO

SHBR2刃球刀(2 Flutes Ball)



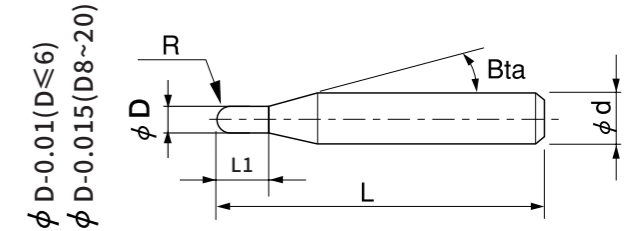
MG HB Coating 30 SD 0-0.003 R ±0.005 R ±0.007 R ≤3 R4~10

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

特長(Specialty)

模具鋼	DIE STEEL	推薦等級(Grade)
碳素鋼	Carbon steels (S45C/S55C)	○
合金鋼	Alloy steels (SK/SCM/SUS)	○
預硬鋼	Prehardened steels (NAK/HPM)	○
淬火鋼	Hardened steels (~55/~60/~70HRC)	○
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	○
石墨	Graphite	○
銅	Copper	○
樹脂	Plastics	○
碳纖維	Carbon fiber	○
鈦合金	Titanium alloys	○
超耐熱合金	Heat resistant alloys	○
硬質合金	Cemented carbide	○
硬脆材	Hard brittle (non-metallic) material	○

- *獨特可變前角設計;
- *超細微顆粒鎢鋼原材料;
- *特別適用於汽車模具加工。
- *Unique variable rake angle design;
- *Tungsten steel with ultra-fine particles;
- *Suitable for Automotive Mold milling.



2刃
2 Flutes

合計32型號 (Total 32 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBR2-002003	R0.1	0.3	12°	50	2	4	○
SHBR2-0030045	R0.15	0.45	12°	50	2	4	○
SHBR2-004006	R0.2	0.6	12°	50	2	4	○
SHBR2-005008	R0.25	0.8	12°	50	2	4	○
SHBR2-006009	R0.3	0.9	12°	50	2	4	○
SHBR2-008012	R0.4	1.2	12°	50	2	4	○
SHBR2-010015	R0.5	1.5	12°	50	2	4	○
SHBR2-015023	R0.75	2.3	12°	50	2	4	○
SHBR2-020030	R1	3	12°	50	2	4	○
SHBR2-030045-3	R1.5	4.5	-	50	2	3	○
SHBR2-030045-4	R1.5	4.5	12°	50	2	4	○
SHBR2-030045-6	R1.5	4.5	12°	50	2	6	○
SHBR2-040060-4	R2	6	-	50	2	4	○
SHBR2-040060-6	R2	6	12°	50	2	6	○
SHBR2-050075	R2.5	7.5	12°	50	2	6	○
SHBR2-060090	R3	9	-	50	2	6	○
SHBR2-060090-75	R3	9	-	75	2	6	○
SHBR2-060090-100	R3	9	-	100	2	6	○
SHBR2-080120	R4	12	-	60	2	8	○
SHBR2-080120-75	R4	12	-	75	2	8	○

球刀
Ball

Next page →

SHBR2刃球刀 (2 Flutes Ball)

SAMHO

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	錐度角 BTa Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBR2-080120-100	R4	12	-	100	2	8	○
SHBR2-080120-150	R4	12	-	150	2	8	○
SHBR2-100150	R5	15	-	75	2	10	○
SHBR2-100150-100	R5	15	-	100	2	10	○
SHBR2-100150-150	R5	15	-	150	2	10	○
SHBR2-120180	R6	18	-	75	2	12	○
SHBR2-120180-100	R6	18	-	100	2	12	○
SHBR2-120180-150	R6	18	-	150	2	12	○
SHBR2-140200-150	R7	20	-	150	2	14	○
SHBR2-160240-150	R8	24	-	150	2	16	○
SHBR2-180250-150	R9	25	-	150	2	18	○
SHBR2-200300-150	R10	30	-	150	2	20	○

*本系列產品新追加的尺寸。
*New size added from this series.

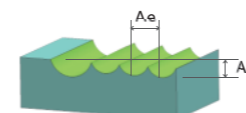
○ 準庫存品。
○ Stocked items.

2刃
2 Flutes

球刀
Ball

SHBR2-000切削条件表(Milling Conditions)

SAMHO



被削材 Work Material	銅 無氧銅 紫銅 Copper Oxygen-free Copper Red Copper				HRC30-45碳素鋼/預硬鋼 HRC30-45 carbon steel and prehardened steel				HRC45-55淬火鋼 HRC45-55 hardened steel			
	半徑 Radius of Ball Nose	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth
R1	30000	150	0.006	0.006	30000	150	0.006	0.006	30000	150	0.006	0.006
R0.15	26000	300	0.01	0	26000	300	0.01	0	24000	200	0.008	0.008
R0.2	22000	400	0.015	0.015	22000	400	0.015	0.015	22000	300	0.01	0.01
R0.25	20000	400	0.015	0.015	20000	400	0.015	0.015	22000	400	0.015	0.015
R0.3	20000	800	0.02	0.02	20000	800	0.02	0.02	20000	600	0.015	0.015
R0.4	18000	1200	0.02	0.03	18000	1200	0.02	0.03	20000	800	0.02	0.02
R0.5	16000	1200	0.03	0.04	16000	1200	0.03	0.04	18000	1000	0.02	0.03
R0.75	16000	1500	0.03	0.05	16000	1500	0.03	0.05	16000	1200	0.02	0.04
R1	15000	1800	0.03	0.05	15000	1800	0.03	0.05	14000	1800	0.02	0.05
R1	15000	1800	0.04	0.05	15000	1800	0.04	0.05	14000	1800	0.02	0.05
R1.5	14000	2200	0.04	0.07	14000	2200	0.04	0.07	13000	2200	0.03	0.06
R1.5	14000	2200	0.05	0.07	14000	2200	0.05	0.07	13000	2200	0.03	0.06
R1.5	14000	2200	0.04	0.07	14000	2200	0.04	0.07	13000	2200	0.03	0.06
R2	14000	2400	0.04	0.08	14000	2400	0.04	0.08	12000	2400	0.03	0.06
R2	14000	2400	0.05	0.08	14000	2400	0.05	0.08	12000	2400	0.03	0.06
R2.5	12000	2600	0.05	0.08	12000	2600	0.05	0.08	12000	2400	0.03	0.06
R3	12000	2600	0.05	0.08	12000	2600	0.05	0.08	10000	2600	0.03	0.08
R4	10000	3000	0.05	0.1	10000	3000	0.05	0.1	9000	2800	0.03	0.1
R5	9000	3000	0.05	0.12	9000	3000	0.05	0.12	8000	2800	0.03	0.12
R6	9000	3000	0.05	0.15	9000	3000	0.05	0.15	7000	2800	0.03	0.12
R7	7000	3000	0.08	0.15	7000	3000	0.08	0.15	6000	2800	0.03	0.15
R8	6000	3000	0.08	0.15	6000	3000	0.08	0.15	5500	2800	0.03	0.15
R9	5000	3000	0.08	0.15	5000	3000	0.08	0.15	4500	2800	0.03	0.15
R10	4500	3000	0.08	0.15	4500	3000	0.08	0.15	4000	2800	0.03	0.15

* 以上加工參數伸出長度按照3d計算, 如果伸出長超出請按比例降低轉速和進給;
* 不銹鋼和超耐熱合金的加工推薦油性切削液;
* 設備轉速不夠時, 請按比例降低轉速和進給。

Note:

*The above milling parameters are calculated based on 3D. Decrease both spindle speed and feed rate proportionally if the overhang length exceeds 3xD;
*Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
*Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed.

2刃
2 Flutes

球刀
Ball

SHBR2刃避空型球刀 (2 Flutes Long Neck Ball)

SAMHO



MG HB Coating 30 SD 0-0.003 R ±0.005

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	○
合金鋼	Alloy steels (SK/SCM/SUS)	○
預硬鋼	Prehardened steels (NAK/HPM)	○
淬火鋼	Hardened steels (~55/-60/~70HRC)	○
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	○
石墨	Graphite	
銅	Copper	○
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	○
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

*獨特U型排屑槽設計, 有效降低切削負載, 擁有更好的排屑性能, 獲得更高的金屬去除率。

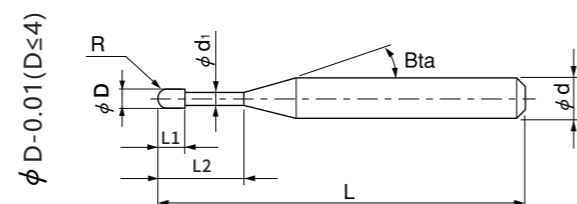
*獨特HB系列塗層, 獲得更耐磨, 更高的耐熱性。

*適合HRC28~52模具鋼, 不銹鋼加工。

*Unique U-shaped chip removal groove design can effectively reduce cutting load, have better chip removal performance, and obtain higher metal removal rate.

*Unique HB series coating for more wear resistance and higher heat resistance.

*Suitable for HRC28~52 die steel, stainless steel processing.



合計77型號 (Total 77 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 B _{Ta} Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBLR2-002005	R0.1	0.2	0.5	12°	50	2	4	○
SHBLR2-002010	R0.1	0.2	1	12°	50	2	4	○
SHBLR2-002015	R0.1	0.2	1.5	12°	50	2	4	○
SHBLR2-003010	R0.15	0.3	1	12°	50	2	4	○
SHBLR2-003015	R0.15	0.3	1.5	12°	50	2	4	○
SHBLR2-003020	R0.15	0.3	2	12°	50	2	4	○
SHBLR2-003030	R0.15	0.3	3	12°	50	2	4	○
SHBLR2-004010	R0.2	0.4	1	12°	50	2	4	○
SHBLR2-004020	R0.2	0.4	2	12°	50	2	4	○
SHBLR2-004030	R0.2	0.4	3	12°	50	2	4	○
SHBLR2-004040	R0.2	0.4	4	12°	50	2	4	○
SHBLR2-005010	R0.25	0.5	1	12°	50	2	4	○
SHBLR2-005020	R0.25	0.5	2	12°	50	2	4	○
SHBLR2-005040	R0.25	0.5	4	12°	50	2	4	○
SHBLR2-005060	R0.25	0.5	6	12°	50	2	4	○
SHBLR2-005080	R0.25	0.5	8	12°	50	2	4	○
SHBLR2-006020	R0.3	0.6	2	12°	50	2	4	○
SHBLR2-006040	R0.3	0.6	4	12°	50	2	4	○
SHBLR2-006060	R0.3	0.6	6	12°	50	2	4	○
SHBLR2-006080	R0.3	0.6	8	12°	50	2	4	○
SHBLR2-008020	R0.4	0.8	2	12°	50	2	4	○
SHBLR2-008040	R0.4	0.8	4	12°	50	2	4	○

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SAMHO

SHBLR2刃避空型球刀 (2 Flutes Long Neck Ball)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of cut	有效長 L2 Effective Length	錐度角 B _{Ta} Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBLR2-008060	R0.4	0.8	6	12°	50	2	4	○
SHBLR2-008080	R0.4	0.8	8	12°	50	2	4	○
SHBLR2-009020	R0.45	0.9	2	12°	50	2	4	○
SHBLR2-009040	R0.45	0.9	4	12°	50	2	4	○
SHBLR2-009060	R0.45	0.9	6	12°	50	2	4	○
SHBLR2-009080	R0.45	0.9	8	12°	50	2	4	○
SHBLR2-010020	R0.5	1	2	12°	50	2	4	○
SHBLR2-010040	R0.5	1	4	12°	50	2	4	○
SHBLR2-010060	R0.5	1	6	12°	50	2	4	○
SHBLR2-010080	R0.5	1	8	12°	50	2	4	○
SHBLR2-010100	R0.5	1	10	12°	50	2	4	○
SHBLR2-010120	R0.5	1	12	12°	50	2	4	○
SHBLR2-010140	R0.5	1	14	12°	50	2	4	○
SHBLR2-010160	R0.5	1	16	12°	50	2	4	○
SHBLR2-015040	R0.75	1.5	4	12°	50	2	4	○
SHBLR2-015060	R0.75	1.5	6	12°	50	2	4	○
SHBLR2-015080	R0.75	1.5	8	12°	50	2	4	○
SHBLR2-015100	R0.75	1.5	10	12°	50	2	4	○
SHBLR2-015120	R0.75	1.5	12	12°	50	2	4	○
SHBLR2-015140	R0.75	1.5	14	12°	50	2	4	○
SHBLR2-015160	R0.75	1.5	16	12°	50	2	4	○
SHBLR2-020040	R1	2	4	12°	50	2	4	○
SHBLR2-020060	R1	2	6	12°	50	2	4	○
SHBLR2-020080	R1	2	8	12°	50	2	4	○
SHBLR2-020100	R1	2	10	12°	50	2	4	○
SHBLR2-020120	R1	2	12	12°	50	2	4	○
SHBLR2-020160	R1	2	16	12°	50	2	4	○
SHBLR2-020040-6	R1	2	4	12°	60	2	6	○
SHBLR2-020060-6	R1	2	6	12°	60	2	6	○
SHBLR2-020080-6	R1	2	8	12°	60	2	6	○
SHBLR2-020100-6	R1	2	10	12°	60	2	6	○
SHBLR2-020120-6	R1	2	12	12°	60	2	6	○
SHBLR2-020160-6	R1	2	16	12°	60	2	6	○
SHBLR2-030060	R1.5	3	6	12°	50	2	4	○

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2刃
2 Flutes

2刃
2 Flutes

避空球刀
Long Neck
Ball

避空球刀
Long Neck
Ball

SHBLR2刃避空型球刀 (2 Flutes Long Neck Ball)

SAMHO

型號 Model Number	刀徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 BTa Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBLR2-030080	R1.5	3	8	12°	50	2	4	○
SHBLR2-030100	R1.5	3	10	12°	50	2	4	○
SHBLR2-030120	R1.5	3	12	12°	50	2	4	○
SHBLR2-030160	R1.5	3	16	12°	50	2	4	○
SHBLR2-030200	R1.5	3	20	12°	50	2	4	○
SHBLR2-030060-6	R1.5	3	6	12°	60	2	6	○
SHBLR2-030080-6	R1.5	3	8	12°	60	2	6	○
SHBLR2-030100-6	R1.5	3	10	12°	60	2	6	○
SHBLR2-030120-6	R1.5	3	12	12°	60	2	6	○
SHBLR2-030160-6	R1.5	3	16	12°	60	2	6	○
SHBLR2-030200-6	R1.5	3	20	12°	60	2	6	○
SHBLR2-040080	R2	4	8	12°	50	2	4	○
SHBLR2-040100	R2	4	10	12°	50	2	4	○
SHBLR2-040120	R2	4	12	12°	50	2	4	○
SHBLR2-040160	R2	4	16	12°	50	2	4	○
SHBLR2-040200	R2	4	20	12°	50	2	4	○
SHBLR2-040080-6	R2	4	8	12°	60	2	6	○
SHBLR2-040100-6	R2	4	10	12°	60	2	6	○
SHBLR2-040120-6	R2	4	12	12°	60	2	6	○
SHBLR2-040160-6	R2	4	16	12°	60	2	6	○
SHBLR2-040200-6	R2	4	20	12°	60	2	6	○

2刃
2 Flutes

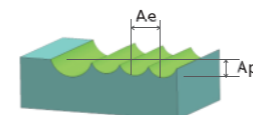
避空球刀
Long Neck Ball

*本系列產品新追加的尺寸。
*New size added from this series.

○ 準庫存品。
○ Stocked items.

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SHBLR2-000切削条件表(Milling Conditions)



被削材 Work Material		銅無氧銅紫銅 Copper Oxygen-free Copper Red Copper				HRC30-45碳素鋼/預硬鋼 HRC30-45 carbon steel and prehardened steel				HRC45-55淬火鋼 HRC45-55 hardened steel			
半徑 Radius of Ball Nose	有效長(mm) Effective Length	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radial depth
R0.1	0.5	30000	150	0.006	0.006	30000	150	0.006	0.006	30000	120	0.006	0.006
R0.1	1	30000	100	0.006	0.006	30000	100	0.006	0.006	30000	100	0.003	0.003
R0.1	1.5	30000	100	0.003	0.003	30000	100	0.003	0.003	30000	100	0.003	0.003
R0.15	1	28000	300	0.01	0.01	28000	300	0.01	0.01	26000	200	0.006	0.006
R0.15	1.5	28000	300	0.008	0.008	28000	300	0.008	0.008	26000	200	0.004	0.004
R0.15	2	24000	200	0.007	0.007	24000	200	0.007	0.007	24000	150	0.003	0.003
R0.15	3	20000	100	0.005	0.005	20000	100	0.005	0.005	18000	100	0.003	0.003
R0.2	1	24000	600	0.01	0.02	24000	600	0.01	0.02	20000	500	0.01	0.01
R0.2	2	24000	400	0.01	0.015	24000	400	0.01	0.015	20000	400	0.008	0.01
R0.2	3	20000	300	0.008	0.008	20000	300	0.008	0.008	18000	300	0.006	0.006
R0.2	4	18000	150	0.005	0.005	18000	150	0.005	0.005	16000	150	0.003	0.003
R0.25	1	22000	800	0.015	0.02	22000	800	0.015	0.02	20000	600	0.01	0.01
R0.25	2	22000	800	0.015	0.02	22000	800	0.015	0.02	18000	600	0.01	0.01
R0.25	4	18000	400	0.01	0.01	18000	400	0.01	0.01	16000	300	0.008	0.008
R0.25	6	14000	200	0.005	0.005	14000	200	0.005	0.005	14000	150	0.008	0.008
R0.25	8	14000	100	0.003	0.003	14000	100	0.003	0.003	14000	100	0.003	0.003
R0.3	2	20000	1000	0.02	0.02	20000	1000	0.02	0.02	20000	800	0.02	0.02
R0.3	4	17000	500	0.015	0.02	17000	500	0.015	0.02	15000	500	0.01	0.01
R0.3	6	15000	400	0.01	0.02	15000	400	0.01	0.02	13000	300	0.008	0.008
R0.3	8	14000	200	0.005	0.01	14000	200	0.005	0.01	13000	150	0.005	0.005
R0.4	2	18000	1200	0.03	0.03	18000	1200	0.03	0.03	18000	1200	0.02	0.02
R0.4	4	18000	800	0.02	0.03	18000	800	0.02	0.03	18000	800	0.02	0.02
R0.4	6	14000	500	0.01	0.03	14000	500	0.01	0.03	16000	600	0.01	0.02
R0.4	8	14000	300	0.01	0.02	14000	300	0.01	0.02	15000	400	0.005	0.01
R0.45	2	17000	1400	0.03	0.04	17000	1400	0.03	0.04	17000	1300	0.02	0.03
R0.45	4	17000	1200	0.03	0.04	17000	1200	0.03	0.04	17000	1000	0.02	0.03
R0.45	6	15000	800	0.02	0.03	15000	800	0.02	0.03	13000	600	0.01	0.02
R0.45	8	13000	500	0.01	0.03	13000	500	0.01	0.03	12000	400	0.01	0.02
R0.5	2	16000	1500	0.03	0.05	16000	1500	0.03	0.05	14000	1200	0.02	0.03
R0.5	4	16000	1300	0.03	0.05	16000	1300	0.03	0.05	14000	1000	0.02	0.03
R0.5	6	16000	1000	0.03	0.05	16000	1000	0.03	0.05	14000	800	0.02	0.03
R0.5	8	14000	500	0.02	0.04	14000	500	0.02	0.04	12000	500	0.01	0.02
R0.5	10	12000	400	0.01	0.03	12000	400	0.01	0.03	12000	400	0.01	0.02
R0.5	12	11000	300	0.01	0.02	11000	300	0.01	0.02	10000	300	0.01	0.02
R0.5	14	10000	250	0.01	0.02	10000	250	0.01	0.02	10000	200	0.008	0.01

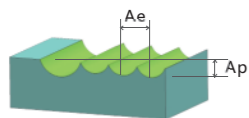
2刃
2 Flutes

避空球刀
Long Neck Ball

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SHBLR2-000切削条件表(Milling Conditions)

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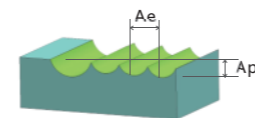
2刃
2 Flutes

被削材 Work Material		銅 無氧銅 紫銅 Copper Oxygen-free Copper Red Copper				HRC30-45碳素鋼/預硬鋼 HRC30-45 carbon steel and prehardened steel				HRC45-55淬火鋼 HRC45-55 hardened steel			
半徑 Radius of Ball Nose	有效長(mm) Effective Length	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radidl depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radidl depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radidl depth
R0.5	16	10000	200	0.01	0.01	110000	200	0.01	0.01	10000	200	0.005	0.01
R0.75	4	16000	1600	0.03	0.06	16000	1600	0.03	0.06	16000	1400	0.02	0.04
R0.75	6	16000	1400	0.03	0.06	16000	1400	0.03	0.06	14000	1200	0.02	0.04
R0.75	8	16000	1200	0.03	0.05	16000	1200	0.03	0.05	13000	1000	0.02	0.04
R0.75	10	12000	800	0.02	0.05	12000	800	0.02	0.05	12000	600	0.01	0.04
R0.75	12	10000	500	0.02	0.04	10000	500	0.02	0.04	11000	500	0.01	0.04
R0.75	14	10000	400	0.01	0.03	10000	400	0.01	0.03	10000	400	0.01	0.02
R0.75	16	8000	300	0.01	0.03	8000	300	0.01	0.03	9000	300	0.01	0.01
R1	4	16000	1800	0.03	0.06	16000	1800	0.03	0.06	16000	2000	0.03	0.06
R1	6	15000	1800	0.03	0.06	15000	1800	0.03	0.06	14000	1800	0.03	0.06
R1	8	15000	1800	0.03	0.06	15000	1800	0.03	0.06	14000	1800	0.03	0.06
R1	10	15000	1800	0.03	0.06	15000	1800	0.03	0.06	14000	1800	0.03	0.06
R1	12	13000	1600	0.03	0.06	13000	1600	0.03	0.06	12000	1400	0.02	0.06
R1	16	10000	1000	0.02	0.06	10000	1000	0.02	0.06	10000	1000	0.02	0.06
R1	4	16000	1800	0.03	0.06	16000	1800	0.03	0.06	16000	2000	0.03	0.06
R1	6	15000	1800	0.03	0.06	15000	1800	0.03	0.06	14000	1800	0.03	0.06
R1	8	15000	1800	0.03	0.06	15000	1800	0.03	0.06	14000	1800	0.03	0.06
R1	10	15000	1800	0.03	0.06	15000	1800	0.03	0.06	14000	1800	0.03	0.06
R1	12	13000	1600	0.03	0.06	13000	1600	0.03	0.06	12000	1400	0.02	0.06
R1	16	10000	1000	0.02	0.06	10000	1000	0.02	0.06	10000	1000	0.02	0.06
R1.5	6	14000	2200	0.05	0.07	14000	2200	0.05	0.07	13000	2200	0.03	0.07
R1.5	8	14000	2200	0.05	0.07	14000	2200	0.05	0.07	13000	2200	0.03	0.07
R1.5	10	14000	2200	0.05	0.07	14000	2200	0.05	0.07	13000	2200	0.03	0.07
R1.5	12	14000	2200	0.04	0.07	14000	2200	0.04	0.07	13000	2200	0.03	0.07
R1.5	16	12000	2000	0.03	0.07	12000	2000	0.03	0.07	11000	2000	0.03	0.07
R1.5	20	11000	1000	0.03	0.07	11000	1000	0.03	0.07	10000	1000	0.02	0.07
R1.5	6	14000	2200	0.05	0.07	14000	2200	0.05	0.07	13000	2200	0.03	0.07
R1.5	8	14000	2200	0.05	0.07	14000	2200	0.05	0.07	13000	2200	0.03	0.07
R1.5	10	14000	2200	0.05	0.07	14000	2200	0.05	0.07	13000	2200	0.03	0.07
R1.5	12	14000	2200	0.04	0.07	14000	2200	0.04	0.07	13000	2200	0.03	0.07
R1.5	16	12000	2000	0.03	0.07	12000	2000	0.03	0.07	11000	2000	0.03	0.07
R1.5	20	11000	1000	0.03	0.07	11000	1000	0.03	0.07	10000	1000	0.02	0.07
R2	8	14000	2400	0.05	0.07	14000	2400	0.05	0.07	12000	2200	0.03	0.07
R2	10	14000	2400	0.05	0.07	14000	2400	0.05	0.07	12000	2200	0.03	0.07
R2	12	14000	2400	0.05	0.07	14000	2400	0.05	0.07	12000	2200	0.03	0.07

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SHBLR2-000切削条件表(Milling Conditions)



2刃
2 Flutes

被削材 Work Material		銅 無氧銅 紫銅 Copper Oxygen-free Copper Red Copper				HRC30-45碳素鋼/預硬鋼 HRC30-45 carbon steel and prehardened steel				HRC45-55淬火鋼 HRC45-55 hardened steel			
半徑 Radius of Ball Nose	有效長(mm) Effective Length	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radidl depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radidl depth	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm) Axial depth	Ae (mm) Radidl depth
R2	16	14000	2400	0.04	0.07	14000	2400	0.04	0.07	12000	2200	0.03	0.07
R2	20	12000	2000	0.04	0.07	12000	2000	0.04	0.07	11000	2000	0.03	0.07
R2	8	14000	2400	0.05	0.07	14000	2400	0.05	0.07	12000	2200	0.03	0.07
R2	10	14000	2400	0.05	0.07	14000	2400	0.05	0.07	12000	2200	0.03	0.07
R2	12	14000	2400	0.05	0.07	14000	2400	0.05	0.07	12000	2200	0.03	0.07
R2	16	14000	2200	0.04	0.07	14000	2200	0.04	0.07	12000	2200	0.03	0.07
R2	20	12000	2000	0.04	0.07	12000	2000	0.04	0.07	11000	2000	0.03	0.07

備註:
* 設備轉速不夠時, 請按比例降低轉速和進給;
* 不銹鋼和超耐熱合金的加工推薦油性切削液。

Note:
* Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
* Recommend oil coolant for Stainless Steels and Heat Resistance Alloys.

避空球刀
Long Neck
Ball

SHBSR4刃圓角刀 (4 Flutes Radius)

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MG HB Coating 45 SD 0-0.003 R ±0.005 R ±0.007
R≤3 R4~10

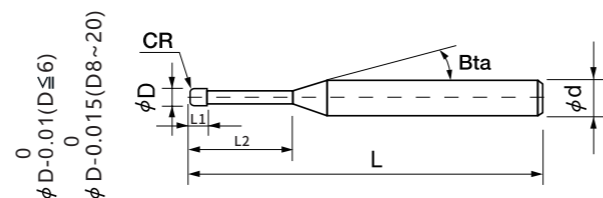
強烈推薦/推薦/建議 ★○○○

Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	○
合金鋼	Alloy steels (SK/SCM/SUS)	○
預硬鋼	Prehardened steels (NAK/HPM)	○
淬火鋼	Hardened steels (~55/~60/~70HRC)	○
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	○
石墨	Graphite	○
銅	Copper	○
樹脂	Plastics	○
碳纖維	Carbon fiber	○
鈦合金	Titanium alloys	○
超耐熱合金	Heat resistant alloys	○
硬質合金	Cemented carbide	○
硬脆材	Hard brittle (non-metallic) material	○

特長 (Specialty)

- *特殊u型排屑槽設計;
- *超細微顆粒鎢鋼原材料;
- *特別適用於汽車模具加工。
- *Special U-shaped chip evacuation groove design;
- *Tungsten steel with ultra-fine particles;
- *Suitable for Automotive Mold milling.



合計64型號 (Total 64 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	圓角 CR Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBSR4-01001020	1	2	R0.1	12°	50	4	4	○
SHBSR4-01002020	1	2	R0.2	12°	50	4	4	○
SHBSR4-01502030	1.5	3	R0.2	12°	50	4	4	○
SHBSR4-01503030	1.5	3	R0.3	12°	50	4	4	○
SHBSR4-01505030	1.5	3	R0.5	12°	50	4	4	○
SHBSR4-02002040	2	4	R0.2	12°	50	4	4	○
SHBSR4-02003040	2	4	R0.3	12°	50	4	4	○
SHBSR4-02005040	2	4	R0.5	12°	50	4	4	○
SHBSR4-02002040-6	2	4	R0.2	12°	50	4	6	○
SHBSR4-02003040-6	2	4	R0.3	12°	50	4	6	○
SHBSR4-02005040-6	2	4	R0.5	12°	50	4	6	○
SHBSR4-03002060	3	6	R0.2	12°	50	4	4	○
SHBSR4-03003060	3	6	R0.3	12°	50	4	4	○
SHBSR4-03005060	3	6	R0.5	12°	50	4	4	○
SHBSR4-03002060-6	3	6	R0.2	12°	50	4	6	○
SHBSR4-03003060-6	3	6	R0.3	12°	50	4	6	○
SHBSR4-03005060-6	3	6	R0.5	12°	50	4	6	○
SHBSR4-04002080	4	8	R0.2	-	50	4	4	○
SHBSR4-04003080	4	8	R0.3	-	50	4	4	○
SHBSR4-04005080	4	8	R0.5	-	50	4	4	○
SHBSR4-04002080-6	4	8	R0.2	12°	50	4	6	○
SHBSR4-04003080-6	4	8	R0.3	12°	50	4	6	○

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SHBSR4刃圓角刀 (4 Flutes Radius)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	圓角 CR Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBSR4-04005080-6	4	8	R0.5	12°	50	4	6	○
SHBSR4-04005080-75	4	8	R0.5	-	75	4	4	○
SHBSR4-04010080-75	4	8	R1	-	75	4	4	○
SHBSR4-05005100	5	10	R0.5	12°	50	4	6	○
SHBSR4-05010100	5	10	R1	12°	50	4	6	○
SHBSR4-06002120	6	12	R0.2	-	50	4	6	○
SHBSR4-06005120	6	12	R0.5	-	50	4	6	○
SHBSR4-06010120	6	12	R1	-	50	4	6	○
SHBSR4-06002120-75	6	12	R0.2	-	75	4	6	○
SHBSR4-06005120-75	6	12	R0.5	-	75	4	6	○
SHBSR4-06010120-75	6	12	R1	-	75	4	6	○
SHBSR4-06002120-100	6	12	R0.2	-	100	4	6	○
SHBSR4-06005120-100	6	12	R0.5	-	100	4	6	○
SHBSR4-06010120-100	6	12	R1	-	100	4	6	○
SHBSR4-08005160	8	16	R0.5	-	60	4	8	○
SHBSR4-08010160	8	16	R1	-	60	4	8	○
SHBSR4-08005160-75	8	16	R0.5	-	75	4	8	○
SHBSR4-08010160-75	8	16	R1	-	75	4	8	○
SHBSR4-08005200-100	8	20	R0.5	-	100	4	8	○
SHBSR4-08010200-100	8	20	R1	-	100	4	8	○
SHBSR4-08005200-150	8	20	R0.5	-	150	4	8	○
SHBSR4-08010200-150	8	20	R1	-	150	4	8	○
SHBSR4-10005200	10	20	R0.5	-	75	4	10	○
SHBSR4-10010200	10	20	R1	-	75	4	10	○
SHBSR4-10005250-100	10	25	R0.5	-	100	4	10	○
SHBSR4-10010250-100	10	25	R1	-	100	4	10	○
SHBSR4-10005250-150	10	25	R0.5	-	150	4	10	○
SHBSR4-10010250-150	10	25	R1	-	150	4	10	○
SHBSR4-12005240	12	24	R0.5	-	75	4	12	○
SHBSR4-12010240	12	24	R1	-	75	4	12	○
SHBSR4-12005300-100	12	30	R0.5	-	100	4	12	○
SHBSR4-12010300-100	12	30	R1	-	100	4	12	○
SHBSR4-12005300-150	12	30	R0.5	-	150	4	12	○
SHBSR4-12010300-150	12	30	R1	-	150	4	12	○
SHBSR4-14010350-150	14	35	R1	-	150	4	14	○
SHBSR4-14020350-150	14	35	R2	-	150	4	14	○
SHBSR4-16010400-150	16	40	R1	-	150	4	16	○
SHBSR4-16020400-150	16	40	R2	-	150	4	16	○

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4刃
4 Flutes

4刃
4 Flutes

圓角刀
Radius

圓角刀
Radius

合計64型號 (Total 64 models)

單位Unit (mm)

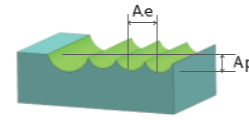
型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	圓角CR Radius	錐度角Bta Shank Taper Angle	全長 L Overall Length	刃數T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBSR4-18010450-150	18	45	R1	-	150	4	18	○
SHBSR4-18020450-150	18	45	R2	-	150	4	18	○
SHBSR4-20010400-150	20	40	R1	-	150	4	20	○
SHBSR4-20020400-150	20	40	R2	-	150	4	20	○

*本系列產品新追加的尺寸。

*New size added from this series.

○ 準庫存品。

○ Stocked items.



被削材 Work Material	銅 無氧銅 紫銅 Copper Oxygen-free Copper Red Copper		HRC30-45碳素鋼/預硬鋼 HRC30-45 carbon steel and prehardened steel		HRC45-55淬火鋼 HRC45-55 hardened steel	
	直徑/R角(mm) Diameter /Radius	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed
D1 R0.1	15000	1000	15000	1000	12000	1000
D1 R0.2	15000	1000	15000	1000	12000	1000
D1.5 R0.2	14000	1500	14000	1500	12000	1200
D1.5 R0.3	14000	1500	14000	1500	12000	1200
D1.5 R0.5	14000	1500	14000	1500	12000	1200
D2 R0.2	14000	1500	14000	1500	12000	1500
D2 R0.3	14000	1500	14000	1500	12000	1500
D2 R0.5	14000	1500	14000	1500	12000	1500
D2 R0.2	14000	1800	14000	1800	12000	1800
D2 R0.3	14000	1800	14000	1800	12000	1800
D2 R0.5	14000	1800	14000	1800	12000	1800
D3 R0.2	13000	1800	13000	1800	11000	1800
D3 R0.3	13000	1800	13000	1800	11000	1800
D3 R0.5	13000	1800	13000	1800	11000	1800
D3 R0.2	13000	2000	13000	2000	11000	2000
D3 R0.3	13000	2000	13000	2000	11000	2000
D3 R0.5	13000	2000	13000	2000	11000	2000
D4 R0.2	12000	2000	12000	2000	10000	2000
D4 R0.3	12000	2000	12000	2000	10000	2000
D4 R0.5	12000	2000	12000	2000	10000	2000
D4 R0.2	12000	2200	12000	2200	10000	2000
D4 R0.3	12000	2200	12000	2200	10000	2000
D4 R0.5	12000	2200	12000	2200	10000	2000
D4 R0.5	12000	2000	12000	2000	10000	2000
D4 R1	12000	2000	12000	2000	10000	2000
D5 R0.5	12000	2200	12000	2200	10000	2200
D5 R1	12000	2200	12000	2200	10000	2200
D6 R0.2	11000	2400	11000	2400	9000	2400
D6 R0.5	11000	2400	11000	2400	9000	2400
D6 R1	11000	2400	11000	2400	9000	2400
D6 R0.2	11000	2400	11000	2400	9000	2400
D6 R0.5	11000	2400	11000	2400	9000	2400
D6 R1	11000	2400	11000	2400	9000	2400
D6 R0.2	11000	2400	11000	2400	9000	2400
D6 R0.5	11000	2400	11000	2400	9000	2400

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SHBSR4-000切削条件表 (Milling Conditions)

SAMHO

被削材 Work Material	銅 無氧銅 紫銅 Copper Oxygen-free Copper Red Copper		HRC30-45碳素鋼/預硬鋼 HRC30-45 carbon steel and prehardened steel		HRC45-55淬火鋼 HRC45-55 hardened steel		
	直徑/R角(mm) Diameter /Radius	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed
D6 R1		11000	2400	11000	2400	9000	2400
D8 R0.5		9000	2600	9000	2600	8000	2600
D8 R1		9000	2600	9000	2600	8000	2600
D8 R0.5		9000	2600	9000	2600	8000	2600
D8 R1		9000	2600	9000	2600	8000	2600
D8 R0.5		9000	2600	9000	2600	8000	2600
D8 R1		9000	2600	9000	2600	8000	2600
D8 R0.5		9000	2600	9000	2600	8000	2600
D8 R1		9000	2600	9000	2600	8000	2600
D10 R0.5		8000	2600	8000	2600	7000	2600
D10 R1		8000	2600	8000	2600	7000	2600
D10 R0.5		8000	2600	8000	2600	7000	2600
D10 R1		8000	2600	8000	2600	7000	2600
D10 R0.5		8000	2600	8000	2600	7000	2600
D10 R1		8000	2600	8000	2600	7000	2600
D12 R0.5		7500	3000	7500	3000	6500	2600
D12 R1		7500	3000	7500	3000	6500	2600
D12 R0.5		7500	3000	7500	3000	6500	2600
D12 R1		7500	3000	7500	3000	6500	2600
D12 R0.5		7500	3000	7500	3000	6500	2600
D12 R1		7500	3000	7500	3000	6500	2600
D14 R1		6500	3000	6500	3000	6000	2800
D14 R2		6500	3000	6500	3000	6000	2800
D16 R1		5500	3200	5500	3200	5000	2800
D16 R2		5500	3200	5500	3200	5000	2800
D18 R1		4500	3000	4500	3000	4000	2800
D18 R2		4500	3000	4500	3000	4000	2800
D20 R1		4000	2800	4000	2800	3500	2600
D20 R2		4000	2800	4000	2800	3500	2600

備註:

- * 以上加工參數伸出長度按照3xD計算, 如果伸出長超出請按比例降低轉速和進給;
- * 設備轉速不夠時, 請按比例降低轉速和進給;
- * 不銹鋼和超耐熱合金的加工推薦油性切削液。

Note:

- *The above milling parameters are calculated based on 3xD. Decrease both spindle speed and feed rate proportionally if the overhang length exceeds 3xD;
- *Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
- *Recommend oil coolant for Stainless Steels and Heat Resistance Alloys.

4刃
4 Flutes

圓角刀
Radius

SHBLSR2刃避空型圓角刀 (2Flutes Long Neck Radius)

SAMHO



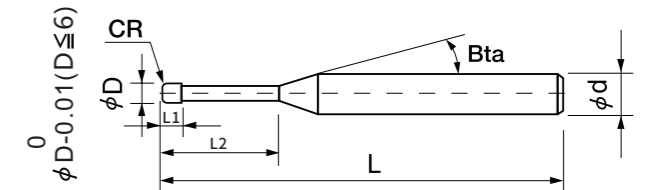
MG HB Coating 3.5 SD 0-0.003 R ±0.005

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	○
合金鋼	Alloy steels (SK/SCM/SUS)	○
預硬鋼	Prehardened steels (NAK/HPM)	○
淬火鋼	Hardened steels (-55/-60/-70HRC)	○
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	○
石墨	Graphite	○
銅	Copper	○
樹脂	Plastics	○
碳纖維	Carbon fiber	○
鈦合金	Titanium alloys	○
超耐熱合金	Heat resistant alloys	○
硬質合金	Cemented carbide	○
硬脆材	Hard brittle (non-metallic) material	○

特長 (Specialty)

- *獨特U型排屑槽設計, 有效降低切削負載, 擁有更好的排屑性能, 獲得更高的金屬去除率。
- *獨特HB系列塗層, 獲得更耐磨, 更高的耐熱性。
- *適合HRC28~52模具鋼, 不銹鋼加工。
- *Unique U-shaped chip removal groove design can effectively reduce cutting load, have better chip removal performance, and obtain higher metal removal rate.
- *Unique HB series coating for more wear resistance and higher heat resistance.
- *Suitable for HRC28-52 die steel, stainless steel processing.



合計69型號 (Total 69 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	圓角 CR Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBLSR2-002005005	D0.2	0.16	0.5	R0.05	12°	50	2	4	○
SHBLSR2-002005010	D0.2	0.16	1	R0.05	12°	50	2	4	○
SHBLSR2-002005015	D0.2	0.16	1.5	R0.05	12°	50	2	4	○
SHBLSR2-002005020	D0.2	0.16	2	R0.05	12°	50	2	4	○
SHBLSR2-003005005	D0.3	0.25	0.5	R0.05	12°	50	2	4	○
SHBLSR2-003005010	D0.3	0.25	1	R0.05	12°	50	2	4	○
SHBLSR2-003005015	D0.3	0.25	1.5	R0.05	12°	50	2	4	○
SHBLSR2-003005020	D0.3	0.25	2	R0.05	12°	50	2	4	○
SHBLSR2-003005030	D0.3	0.25	3	R0.05	12°	50	2	4	○
SHBLSR2-004005010	D0.4	0.32	1	R0.05	12°	50	2	4	○
SHBLSR2-004005020	D0.4	0.32	2	R0.05	12°	50	2	4	○
SHBLSR2-004005030	D0.4	0.32	3	R0.05	12°	50	2	4	○
SHBLSR2-004005040	D0.4	0.32	4	R0.05	12°	50	2	4	○
SHBLSR2-00401010	D0.4	0.32	1	R0.1	12°	50	2	4	○
SHBLSR2-00401020	D0.4	0.32	2	R0.1	12°	50	2	4	○
SHBLSR2-00401030	D0.4	0.32	3	R0.1	12°	50	2	4	○
SHBLSR2-00401040	D0.4	0.32	4	R0.1	12°	50	2	4	○
SHBLSR2-005005010	D0.5	0.4	1	R0.05	12°	50	2	4	○
SHBLSR2-005005020	D0.5	0.4	2	R0.05	12°	50	2	4	○
SHBLSR2-005005040	D0.5	0.4	4	R0.05	12°	50	2	4	○
SHBLSR2-005005060	D0.5	0.4	6	R0.05	12°	50	2	4	○
SHBLSR2-00501010	D0.5	0.4	1	R0.1	12°	50	2	4	○

2刃
2 Flutes

避空
圓角刀
Long Neck
Radius

Next page →

SHBLSR2刃避空型圓角刀(2Flutes Long Neck Radius)

SAMHO

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	圓角CR Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBLSR2-00501020	D0.5	0.4	2	R0.1	12°	50	2	4	○
SHBLSR2-00501040	D0.5	0.4	4	R0.1	12°	50	2	4	○
SHBLSR2-00501060	D0.5	0.4	6	R0.1	12°	50	2	4	○
SHBLSR2-006005020	D0.6	0.5	2	R0.05	12°	50	2	4	○
SHBLSR2-006005040	D0.6	0.5	4	R0.05	12°	50	2	4	○
SHBLSR2-006005060	D0.6	0.5	6	R0.05	12°	50	2	4	○
SHBLSR2-006005080	D0.6	0.5	8	R0.05	12°	50	2	4	○
SHBLSR2-00601020	D0.6	0.5	2	R0.1	12°	50	2	4	○
SHBLSR2-00601040	D0.6	0.5	4	R0.1	12°	50	2	4	○
SHBLSR2-00601060	D0.6	0.5	6	R0.1	12°	50	2	4	○
SHBLSR2-00601080	D0.6	0.5	8	R0.1	12°	50	2	4	○
SHBLSR2-008005020	D0.8	0.65	2	R0.05	12°	50	2	4	○
SHBLSR2-008005040	D0.8	0.65	4	R0.05	12°	50	2	4	○
SHBLSR2-008005060	D0.8	0.65	6	R0.05	12°	50	2	4	○
SHBLSR2-008005080	D0.8	0.65	8	R0.05	12°	50	2	4	○
SHBLSR2-00801020	D0.8	0.65	2	R0.1	12°	50	2	4	○
SHBLSR2-00801040	D0.8	0.65	4	R0.1	12°	50	2	4	○
SHBLSR2-00801060	D0.8	0.65	6	R0.1	12°	50	2	4	○
SHBLSR2-00801080	D0.8	0.65	8	R0.1	12°	50	2	4	○
SHBLSR2-01001040	D1.0	1.0	4	R0.1	12°	50	2	4	○
SHBLSR2-01001060	D1.0	1.0	6	R0.1	12°	50	2	4	○
SHBLSR2-01001080	D1.0	1.0	8	R0.1	12°	50	2	4	○
SHBLSR2-01001100	D1.0	1.0	10	R0.1	12°	50	2	4	○
SHBLSR2-01002040	D1.0	1.0	4	R0.2	12°	50	2	4	○
SHBLSR2-01002060	D1.0	1.0	6	R0.2	12°	50	2	4	○
SHBLSR2-01002080	D1.0	1.0	8	R0.2	12°	50	2	4	○
SHBLSR2-01002100	D1.0	1.0	10	R0.2	12°	50	2	4	○
SHBLSR2-01501040	D1.5	1.5	4	R0.1	12°	50	2	4	○
SHBLSR2-01501060	D1.5	1.5	6	R0.1	12°	50	2	4	○
SHBLSR2-01501080	D1.5	1.5	8	R0.1	12°	50	2	4	○
SHBLSR2-01501100	D1.5	1.5	10	R0.1	12°	50	2	4	○
SHBLSR2-01502040	D1.5	1.5	4	R0.2	12°	50	2	4	○
SHBLSR2-01502060	D1.5	1.5	6	R0.2	12°	50	2	4	○
SHBLSR2-01502080	D1.5	1.5	8	R0.2	12°	50	2	4	○
SHBLSR2-01502100	D1.5	1.5	10	R0.2	12°	50	2	4	○
SHBLSR2-02001040	D2.0	2.0	4	R0.1	12°	50	2	4	○
SHBLSR2-02001060	D2.0	2.0	6	R0.1	12°	50	2	4	○
SHBLSR2-02001080	D2.0	2.0	8	R0.1	12°	50	2	4	○

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SHBLSR2刃避空型圓角刀(2Flutes Long Neck Radius)

SAMHO

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	圓角CR Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBLSR2-02001100	D2.0	2.0	10	R0.1	12°	50	2	4	○
SHBLSR2-02001120	D2.0	2.0	12	R0.1	12°	50	2	4	○
SHBLSR2-02001160	D2.0	2.0	16	R0.1	12°	50	2	4	○
SHBLSR2-02002040	D2.0	2.0	4	R0.2	12°	50	2	4	○
SHBLSR2-02002060	D2.0	2.0	6	R0.2	12°	50	2	4	○
SHBLSR2-02002080	D2.0	2.0	8	R0.2	12°	50	2	4	○
SHBLSR2-02002100	D2.0	2.0	10	R0.2	12°	50	2	4	○
SHBLSR2-02002120	D2.0	2.0	12	R0.2	12°	50	2	4	○
SHBLSR2-02002160	D2.0	2.0	16	R0.2	12°	50	2	4	○

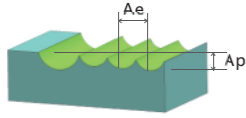
*本系列產品新追加的尺寸。
*New size added from this series.

○準庫存品。
○Stocked items.

2刃
2 Flutes避空
圓角刀
Long Neck
Radius2刃
2 Flutes避空
圓角刀
Long Neck
Radius

SHBLSR2-000切削条件表(Milling Conditions)

SAMHO



被削材 Work Material		銅 無氧銅 紫銅 Oxygen-free Copper Red Copper		HRC30-45碳素鋼/預硬鋼 HRC30-45 carbon steel and prehardened steel		HRC45-55淬火鋼 HRC45-55 hardened steel	
直徑/R角(mm) Diameter /Radius	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed
D0.2 R0.05	0.5	30000	200	30000	200	30000	150
D0.2 R0.05	1	30000	150	30000	150	30000	100
D0.2 R0.05	1.5	30000	120	30000	120	27000	80
D0.2 R0.05	2	30000	90	30000	90	20000	60
D0.3 R0.05	0.5	30000	350	30000	350	28000	300
D0.3 R0.05	1	30000	240	30000	240	26000	200
D0.3 R0.05	1.5	30000	180	30000	180	26000	180
D0.3 R0.05	2	30000	120	30000	120	24000	120
D0.3 R0.05	3	24000	80	24000	80	18000	80
D0.4 R0.05	1	26000	300	26000	300	22000	300
D0.4 R0.05	2	24000	260	24000	260	20000	240
D0.4 R0.05	3	22000	180	22000	180	16000	160
D0.4 R0.05	4	18000	120	18000	120	14000	100
D0.4 R0.1	1	26000	300	26000	300	22000	300
D0.4 R0.1	2	24000	220	24000	220	20000	240
D0.4 R0.1	3	22000	180	22000	180	16000	160
D0.4 R0.1	4	18000	120	18000	120	14000	100
D0.5 R0.05	1	20000	500	20000	500	18000	400
D0.5 R0.05	2	18000	360	18000	360	15000	300
D0.5 R0.05	4	16000	200	16000	200	13000	180
D0.5 R0.05	6	14000	120	14000	120	12000	120
D0.5 R0.1	1	20000	500	20000	500	18000	400
D0.5 R0.1	2	18000	360	18000	360	15000	300
D0.5 R0.1	4	16000	200	16000	200	13000	180
D0.5 R0.1	6	14000	120	14000	120	12000	120
D0.6 R0.05	2	16000	700	16000	700	16000	600
D0.6 R0.05	4	13000	400	13000	400	12000	350
D0.6 R0.05	6	11000	200	11000	200	10000	200
D0.6 R0.05	8	10000	120	10000	120	10000	100
D0.6 R0.1	2	16000	700	16000	700	16000	600
D0.6 R0.1	4	13000	400	13000	400	12000	350
D0.6 R0.1	6	11000	200	11000	200	10000	200
D0.6 R0.1	8	10000	120	10000	120	10000	100
D0.8 R0.05	2	16000	1200	16000	1200	16000	1000
D0.8 R0.05	4	14000	800	14000	800	13000	600

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SAMHO

SHBLSR2-000切削条件表(Milling Conditions)

被削材 Work Material		銅 無氧銅 紫銅 Oxygen-free Copper Red Copper		HRC30-45碳素鋼/預硬鋼 HRC30-45 carbon steel and prehardened steel		HRC45-55淬火鋼 HRC45-55 hardened steel	
直徑/R角(mm) Diameter /Radius	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed
D0.8 R0.05	6	13000	600	13000	600	12000	500
D0.8 R0.05	8	12000	300	12000	300	10000	200
D0.8 R0.1	2	16000	1200	16000	1200	16000	1000
D0.8 R0.1	4	14000	800	14000	800	13000	600
D0.8 R0.1	6	13000	500	13000	500	12000	400
D0.8 R0.1	8	12000	300	12000	300	10000	200
D1.0 R0.1	4	13000	1000	13000	1000	12000	800
D1.0 R0.1	6	11000	700	11000	700	10000	600
D1.0 R0.1	8	10000	500	10000	500	8500	400
D1.0 R0.1	10	8500	300	8500	300	7500	300
D1.0 R0.2	4	13000	1000	13000	1000	12000	800
D1.0 R0.2	6	11000	700	11000	700	10000	600
D1.0 R0.2	8	10000	500	10000	500	8500	400
D1.0 R0.2	10	8500	300	8500	300	7500	300
D1.5 R0.1	4	13000	1000	13000	1000	12000	1000
D1.5 R0.1	6	10000	1000	10000	1000	10000	900
D1.5 R0.1	8	9000	800	9000	800	8500	800
D1.5 R0.1	10	8500	700	8500	700	7500	600
D1.5 R0.2	4	13000	1000	13000	1000	12000	1000
D1.5 R0.2	6	10000	1000	10000	1000	10000	900
D1.5 R0.2	8	9000	800	9000	800	8500	800
D1.5 R0.2	10	8500	700	8500	700	7500	600
D2.0 R0.1	4	13000	1500	13000	1500	13000	1500
D2.0 R0.1	6	12000	1500	12000	1500	12000	1200
D2.0 R0.1	8	11000	1000	11000	1000	10000	1000
D2.0 R0.1	10	10000	900	10000	900	9000	800
D2.0 R0.1	12	9000	800	9000	800	8000	650
D2.0 R0.1	16	7500	600	7500	600	7000	500
D2.0 R0.2	4	13000	1500	13000	1500	13000	1500
D2.0 R0.2	6	12000	1500	12000	1500	12000	1200
D2.0 R0.2	8	11000	1000	11000	1000	10000	1000
D2.0 R0.2	10	10000	900	10000	900	9000	800
D2.0 R0.2	12	9000	800	9000	800	8000	650
D2.0 R0.2	16	7500	600	7500	600	7000	500

備註:

- *設備轉速不夠時,請按比例降低轉速和進給;
- *不銹鋼和超耐熱合金的加工推薦油性切削液。

Note:

- *Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
- *Recommend oil coolant for Stainless Steels and Heat Resistance Alloys.

2刃
2 Flutes

2刃
2 Flutes

避空
圓角刀
Long Neck
Radius

避空
圓角刀
Long Neck
Radius

SHBLSR4刀避空型圓角刀 (4 Flutes Long Neck Radius)

SAMHO



MG HB Coating 45 SD 0-0.003 R ±0.005

強烈推薦/推薦/建議 ★☆☆

Highly recommend/Recommend/Suggest

特長 (Specialty)

*獨特U型排屑槽設計, 有效降低切削負載, 擁有更好的排屑性能, 獲得更高的金屬去除率。

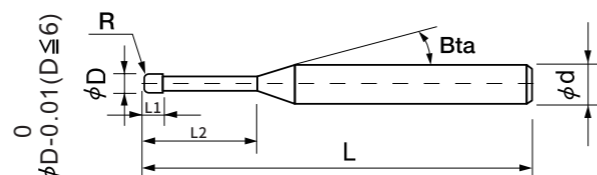
*獨特HB系列塗層, 獲得更耐磨, 更高的耐熱性。

*適合HRC28~52模具鋼, 不銹鋼加工。

*Unique U-shaped chip removal groove design can effectively reduce cutting load, have better chip removal performance, and obtain higher metal removal rate.

*Unique HB series coating for more wear resistance and higher heat resistance.

*Suitable for HRC28~52 die steel, stainless steel processing.



模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	○
合金鋼	Alloy steels (SK/SCM/SUS)	○
預硬鋼	Prehardened steels (NAK/HMP)	○
淬火鋼	Hardened steels (~55/~60/~70HRC)	○
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	○
石墨	Graphite	
銅	Copper	○
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	○
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

合計79型號 (Total 79 models)

單位 Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	圓角CR Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBLSR4-01001040	D1.0	1.0	4	R0.1	12°	50	4	4	○
SHBLSR4-01001060	D1.0	1.0	6	R0.1	12°	50	4	4	○
SHBLSR4-01001080	D1.0	1.0	8	R0.1	12°	50	4	4	○
SHBLSR4-01001100	D1.0	1.0	10	R0.1	12°	50	4	4	○
SHBLSR4-01001120	D1.0	1.0	12	R0.1	12°	50	4	4	○
SHBLSR4-01002040	D1.0	1.0	4	R0.2	12°	50	4	4	○
SHBLSR4-01002060	D1.0	1.0	6	R0.2	12°	50	4	4	○
SHBLSR4-01002080	D1.0	1.0	8	R0.2	12°	50	4	4	○
SHBLSR4-01002100	D1.0	1.0	10	R0.2	12°	50	4	4	○
SHBLSR4-01002120	D1.0	1.0	12	R0.2	12°	50	4	4	○
SHBLSR4-01501060	D1.5	1.5	6	R0.1	12°	50	4	4	○
SHBLSR4-01501080	D1.5	1.5	8	R0.1	12°	50	4	4	○
SHBLSR4-01501100	D1.5	1.5	10	R0.1	12°	50	4	4	○
SHBLSR4-01501120	D1.5	1.5	12	R0.1	12°	50	4	4	○
SHBLSR4-01502060	D1.5	1.5	6	R0.2	12°	50	4	4	○
SHBLSR4-01502080	D1.5	1.5	8	R0.2	12°	50	4	4	○
SHBLSR4-01502100	D1.5	1.5	10	R0.2	12°	50	4	4	○
SHBLSR4-01502120	D1.5	1.5	12	R0.2	12°	50	4	4	○
SHBLSR4-02001060	D2.0	2.0	6	R0.1	12°	50	4	4	○
SHBLSR4-02001080	D2.0	2.0	8	R0.1	12°	50	4	4	○

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SHBLSR4刀避空型圓角刀 (4 Flutes Long Neck Radius)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length of cut	有效長 L2 Effective length	圓角CR Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number of flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBLSR4-02001100	D2.0	2.0	10	R0.1	12°	50	4	4	○
SHBLSR4-02001120	D2.0	2.0	12	R0.1	12°	50	4	4	○
SHBLSR4-02001160	D2.0	2.0	16	R0.1	12°	50	4	4	○
SHBLSR4-02002060	D2.0	2.0	6	R0.2	12°	50	4	4	○
SHBLSR4-02002080	D2.0	2.0	8	R0.2	12°	50	4	4	○
SHBLSR4-02002100	D2.0	2.0	10	R0.2	12°	50	4	4	○
SHBLSR4-02002120	D2.0	2.0	12	R0.2	12°	50	4	4	○
SHBLSR4-02002160	D2.0	2.0	16	R0.2	12°	50	4	4	○
SHBLSR4-03001060	D3.0	3.0	6	R0.1	12°	50	4	4	○
SHBLSR4-03001080	D3.0	3.0	8	R0.1	12°	50	4	4	○
SHBLSR4-03001100	D3.0	3.0	10	R0.1	12°	50	4	4	○
SHBLSR4-03001120	D3.0	3.0	12	R0.1	12°	50	4	4	○
SHBLSR4-03001160	D3.0	3.0	16	R0.1	12°	50	4	4	○
SHBLSR4-03001200	D3.0	3.0	20	R0.1	12°	50	4	4	○
SHBLSR4-03002060	D3.0	3.0	6	R0.2	12°	50	4	4	○
SHBLSR4-03002080	D3.0	3.0	8	R0.2	12°	50	4	4	○
SHBLSR4-03002100	D3.0	3.0	10	R0.2	12°	50	4	4	○
SHBLSR4-03002120	D3.0	3.0	12	R0.2	12°	50	4	4	○
SHBLSR4-03002160	D3.0	3.0	16	R0.2	12°	50	4	4	○
SHBLSR4-03002200	D3.0	3.0	20	R0.2	12°	50	4	4	○
SHBLSR4-03005060	D3.0	3.0	6	R0.5	12°	50	4	4	○
SHBLSR4-03005080	D3.0	3.0	8	R0.5	12°	50	4	4	○
SHBLSR4-03005100	D3.0	3.0	10	R0.5	12°	50	4	4	○
SHBLSR4-03005120	D3.0	3.0	12	R0.5	12°	50	4	4	○
SHBLSR4-03005160	D3.0	3.0	16	R0.5	12°	50	4	4	○
SHBLSR4-03005200	D3.0	3.0	20	R0.5	12°	50	4	4	○
SHBLSR4-03001060-6	D3.0	3.0	6	R0.1	12°	60	4	6	○
SHBLSR4-03001080-6	D3.0	3.0	8	R0.1	12°	60	4	6	○
SHBLSR4-03001100-6	D3.0	3.0	10	R0.1	12°	60	4	6	○
SHBLSR4-03001120-6	D3.0	3.0	12	R0.1	12°	60	4	6	○
SHBLSR4-03001160-6	D3.0	3.0	16	R0.1	12°	60	4	6	○
SHBLSR4-03001200-6	D3.0	3.0	20	R0.1	12°	60	4	6	○
SHBLSR4-03002060-6	D3.0	3.0	6	R0.2	12°	60	4	6	○
SHBLSR4-03002080-6	D3.0	3.0	8	R0.2	12°	60	4	6	○
SHBLSR4-03002100-6	D3.0	3.0	10	R0.2	12°	60	4	6	○
SHBLSR4-03002120-6	D3.0	3.0	12	R0.2	12°	60	4	6	○
SHBLSR4-03002160-6	D3.0	3.0	16	R0.2	12°	60	4	6	○
SHBLSR4-03002200-6	D3.0	3.0	20	R0.2	12°	60	4	6	○

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SHBLSR4刀避空型圓角刀 (4 Flutes Long Neck Radius)

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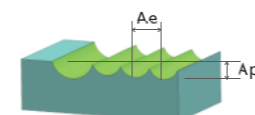
型號 Model Number	刀徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	圓角CR Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHBLSR4-03005060-6	D3.0	3.0	6	R0.5	12°	60	4	6	○
SHBLSR4-03005080-6	D3.0	3.0	8	R0.5	12°	60	4	6	○
SHBLSR4-03005100-6	D3.0	3.0	10	R0.5	12°	60	4	6	○
SHBLSR4-03005120-6	D3.0	3.0	12	R0.5	12°	60	4	6	○
SHBLSR4-03005160-6	D3.0	3.0	16	R0.5	12°	60	4	6	○
SHBLSR4-03005200-6	D3.0	3.0	20	R0.5	12°	60	4	6	○
SHBLSR4-04001080-6	D4.0	4.0	8	R0.1	12°	60	4	6	○
SHBLSR4-04001100-6	D4.0	4.0	10	R0.1	12°	60	4	6	○
SHBLSR4-04001120-6	D4.0	4.0	12	R0.1	12°	60	4	6	○
SHBLSR4-04001160-6	D4.0	4.0	16	R0.1	12°	60	4	6	○
SHBLSR4-04001200-6	D4.0	4.0	20	R0.1	12°	60	4	6	○
SHBLSR4-04002080-6	D4.0	4.0	8	R0.2	12°	60	4	6	○
SHBLSR4-04002100-6	D4.0	4.0	10	R0.2	12°	60	4	6	○
SHBLSR4-04002120-6	D4.0	4.0	12	R0.2	12°	60	4	6	○
SHBLSR4-04002160-6	D4.0	4.0	16	R0.2	12°	60	4	6	○
SHBLSR4-04002200-6	D4.0	4.0	20	R0.2	12°	60	4	6	○
SHBLSR4-04005080-6	D4.0	4.0	8	R0.5	12°	60	4	6	○
SHBLSR4-04005100-6	D4.0	4.0	10	R0.5	12°	60	4	6	○
SHBLSR4-04005120-6	D4.0	4.0	12	R0.5	12°	60	4	6	○
SHBLSR4-04005160-6	D4.0	4.0	16	R0.5	12°	60	4	6	○
SHBLSR4-04005200-6	D4.0	4.0	20	R0.5	12°	60	4	6	○

*本系列產品新追加的尺寸。
*New size added from this series.

○ 準庫存品。
○ Stocked items.

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SHBLSR4切削条件表(Milling Conditions)



被削材 Work Material		銅 無氧銅 紫銅 Copper Oxygen-free Copper Red Copper		HRC30-45碳素鋼/預硬鋼 HRC30-45 carbon steel and prehardened steel		HRC45-55淬火鋼 HRC45-55 hardened steel	
直徑/R角(mm) Diameter /Radius	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed
D1.0 R0.1	4	13000	1300	13000	1300	12000	1000
D1.0 R0.1	6	11000	1000	11000	1000	10000	900
D1.0 R0.1	8	10000	800	10000	800	8500	700
D1.0 R0.1	10	8500	500	8500	500	7500	450
D1.0 R0.1	12	7500	300	7500	300	7000	200
D1.0 R0.2	4	13000	1300	13000	1300	12000	1000
D1.0 R0.2	6	11000	1000	11000	1000	10000	900
D1.0 R0.2	8	10000	800	10000	800	8500	700
D1.0 R0.2	10	8500	500	8500	500	7500	450
D1.5 R0.2	12	7500	300	7500	300	7000	200
D1.5 R0.1	6	12000	1300	12000	1300	10000	1200
D1.5 R0.1	8	10000	1000	10000	1000	9000	1000
D1.5 R0.1	10	9000	900	9000	900	8500	900
D1.5 R0.1	12	8500	800	8500	800	7500	750
D1.5 R0.2	6	12000	1500	12000	1500	10000	1200
D1.5 R0.2	8	10000	1000	10000	1000	9000	1000
D1.5 R0.2	10	9000	900	9000	900	8500	900
D2.0 R0.2	12	8500	800	8500	800	7500	750
D2.0 R0.1	6	13000	1800	13000	1800	12000	1500
D2.0 R0.1	8	11000	1500	11000	1500	10000	1100
D2.0 R0.1	10	10000	1200	10000	1200	9000	1000
D2.0 R0.1	12	9000	1000	9000	1000	8500	950
D2.0 R0.1	16	8000	800	8000	800	7000	700
D2.0 R0.2	6	13000	1800	13000	1800	12000	1500
D2.0 R0.2	8	11000	1500	11000	1500	10000	1100
D2.0 R0.2	10	10000	1200	10000	1200	9000	1000
D2.0 R0.2	12	9000	1000	9000	1000	8500	950
D3.0 R0.2	16	8000	800	8000	800	7000	700
D3.0 R0.1	6	13000	2200	13000	2200	12000	2000
D3.0 R0.1	8	12000	2200	12000	2200	11000	2000
D3.0 R0.1	10	11000	2000	11000	2000	10000	1800
D3.0 R0.1	12	10000	2000	10000	2000	10000	1800
D3.0 R0.1	16	9000	1600	9000	1600	8500	1400
D3.0 R0.1	20	8500	1400	8500	1400	8000	1200
D3.0 R0.2	6	13000	2200	13000	2200	12000	2000

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4刃
4 Flutes

4刃
4 Flutes

避空
圓角刀
Long Neck
Radius

避空
圓角刀
Long Neck
Radius

SHBLSR4切削条件表(Milling Conditions)

SAMHO

被削材 Work Material		銅 無氧銅 紫銅 Copper Oxygen-free Copper Red Copper		HRC30-45碳素鋼/預硬鋼 HRC30-45 carbon steel and prehardened steel		HRC45-55淬火鋼 HRC45-55 hardened steel	
直徑/R角(mm) Diameter /Radius	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed
D3.0 R0.2	8	12000	2200	12000	2200	11000	2000
D3.0 R0.2	10	11000	2000	11000	2000	10000	1800
D3.0 R0.2	12	10000	2000	10000	2000	10000	1800
D3.0 R0.2	16	9000	1600	9000	1600	8500	1400
D3.0 R0.2	20	8500	1400	8500	1400	8000	1200
D3.0 R0.5	6	13000	2200	13000	2200	12000	2000
D3.0 R0.5	8	12000	2200	12000	2200	11000	2000
D3.0 R0.5	10	11000	2000	11000	2000	10000	1800
D3.0 R0.5	12	10000	2000	10000	2000	10000	1800
D3.0 R0.5	16	9000	1600	9000	1600	8500	1400
D3.0 R0.5	20	8500	1400	8500	1400	8000	1200
D3.0 R0.1	6	13000	2200	13000	2200	12000	2000
D3.0 R0.1	8	12000	2200	12000	2200	11000	2000
D3.0 R0.1	10	11000	2000	11000	2000	10000	1800
D3.0 R0.1	12	10000	2000	10000	2000	10000	1800
D3.0 R0.1	16	9000	1600	9000	1600	8500	1400
D3.0 R0.1	20	8500	1400	8500	1400	8000	1200
D3.0 R0.2	6	13000	2200	13000	2200	12000	2000
D3.0 R0.2	8	12000	2200	12000	2200	11000	2000
D3.0 R0.2	10	11000	2000	11000	2000	10000	1800
D3.0 R0.2	12	10000	2000	10000	2000	10000	1800
D3.0 R0.2	16	9000	1600	9000	1600	8500	1400
D3.0 R0.2	20	8500	1400	8500	1400	8000	1200
D3.0 R0.5	6	13000	2200	13000	2200	12000	2000
D3.0 R0.5	8	12000	2200	12000	2200	11000	2000
D3.0 R0.5	10	11000	2000	11000	2000	10000	1800
D3.0 R0.5	12	10000	2000	10000	2000	10000	1800
D3.0 R0.5	16	9000	1600	9000	1600	8500	1400
D4.0 R0.5	20	8500	1400	8500	1400	8000	1200
D4.0 R0.1	8	11000	2200	11000	2200	10000	2000
D4.0 R0.1	10	11000	2200	11000	2200	10000	2000
D4.0 R0.1	12	10000	2000	10000	2000	9000	2000
D4.0 R0.1	16	8500	1800	8500	1800	8000	1600
D4.0 R0.1	20	7500	1600	7500	1600	7000	1400
D4.0 R0.2	8	11000	2200	11000	2200	10000	2000
D4.0 R0.2	10	11000	2200	11000	2200	10000	2000
D4.0 R0.2	12	10000	2000	10000	2000	9000	2000

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SHBLSR4切削条件表(Milling Conditions)

被削材 Work Material		銅 無氧銅 紫銅 Copper Oxygen-free Copper Red Copper		HRC30-45碳素鋼/預硬鋼 HRC30-45 carbon steel and prehardened steel		HRC45-55淬火鋼 HRC45-55 hardened steel	
直徑/R角(mm) Diameter /Radius	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed	轉速(min-1) Speed	進給速度 (mm/min) Feed
D4.0 R0.2	16	8500	1800	8500	1800	8000	1600
D4.0 R0.2	20	7500	1600	7500	1600	7000	1400
D4.0 R0.5	8	11000	2200	11000	2200	10000	2000
D4.0 R0.5	10	11000	2200	11000	2200	10000	2000
D4.0 R0.5	12	10000	2000	10000	2000	9000	2000
D4.0 R0.5	16	8500	1800	8500	1800	8000	1600
D4.0 R0.5	20	7500	1600	7500	1600	7000	1400

備註:

- * 設備轉速不夠時, 請按比例降低轉速和進給;
- * 不銹鋼和超耐熱合金的加工推薦油性切削液。

Note:

- * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
- * Recommend oil coolant for Stainless Steels and Heat Resistance Alloys.

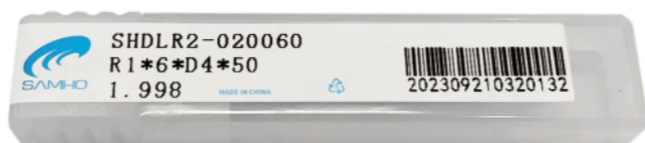
4刃
4 Flutes4刃
4 Flutes避空
圓角刀
Long Neck
Radius避空
圓角刀
Long Neck
Radius

SHD系列高精度

1. 柄徑0-0.003mm
2. 每一支刀帶檢測結果

High precision SHD series

1. Shank diameter tolerance 0-0.003 mm
2. Test results for each end mill



案例

Case Studies

★ 分析報告: 材料: 紅銅 Analysis Report: Copper

目的: 壽命和光潔度測試
加工機: 北京精雕(26000rpm)
冷卻方式: 油冷
測試時間: 2023-08-24

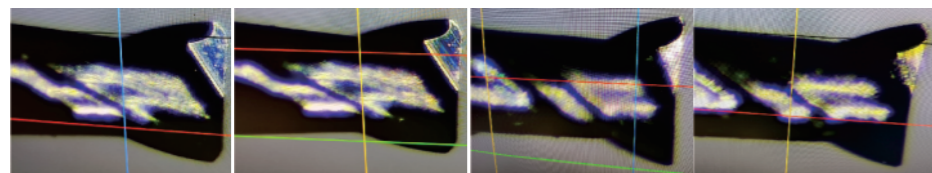
Purpose: Life and surface finish test
Processing machine: Beijing Jingdiao(26000rpm)
Coolant: Oil cooling
Test time: 2023-08-24

加工參數 Milling Parameters

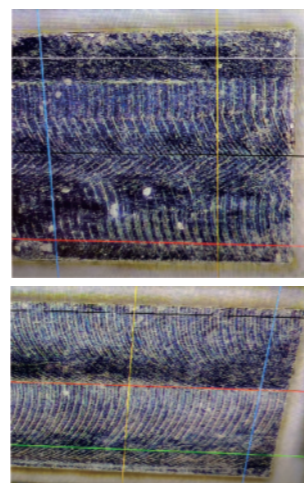
使用工具 Tool	轉速 Spindle Speed	進給 Feed Rate	Q值 Step	切深 Axial Depth	切寬 Radial Depth	加工時間 Cycle Time
D0.4R0.05	(min-1)	(mm/min)		(ap) mm	(ae) mm	
	20000	600		0.01	0.015	06:02:00

使用工具 Tool	轉速 Spindle Speed	進給 Feed Rate	Q值 Step	切深 Axial Depth	切寬 Radial Depth	加工時間 Cycle Time
D0.5	(min-1)	(mm/min)		(ap) mm	(ae) mm	
	20000	600		0.01	0.015	06:02:00

刀具狀況 Cutter Condition



加工形狀 Milling Shape



工件實物 Real Workpiece



SHDS2刃平刀 (2 Flutes Square)

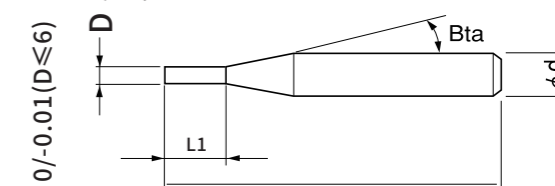


強烈推薦/推薦/建議 ★○○
Highly recommend/Recommend/Suggest

特長 (Specialty)

- * 專用幾何現狀, 刃口鋒利, 擁有高效切削和排屑。
- * 塗層具有良好熱穩定性, 高溫環境下保持其硬度和機械性能。
- * 較低的摩擦係數, 減少切削過程中的磨損, 提供更好的表面質量。
- * Special geometry design, sharp cutting edge, highly efficient milling and chip evacuation;
- * The coating, with good thermal stability, makes it maintain the hardness and mechanical properties under high temperature;
- * Lower coefficient of friction reduces wear during cutting and provides better surface quality;

模具鋼 DIE STEEL	推薦等級 (Grade)
碳素鋼 Carbon steels (S45C/S55C)	
合金鋼 Alloy steels (SK/SCM/SUS)	
預硬鋼 Prehardened steels (NAK/HPM)	
淬火鋼 Hardened steels (~55/~60/~70HRC)	
特殊材料 SPECIAL MATERIAL	
鋁合金 Aluminum alloys	○
石墨 Graphite	○
銅 Copper	★
樹脂 Plastics	○
碳纖維 Carbon fiber	
鈦合金 Titanium alloys	
超耐熱合金 Heat resistant alloys	
硬質合金 Cemented carbide	
硬脆材 Hard brittle (non-metallic) material	



合計16型號 (Total 16 models)

單位 Unit (mm)

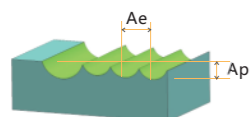
型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 B _{Ta} Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHDS2-0010020	0.1	0.2	-	12°	50	2	4	○
SHDS2-0020040	0.2	0.4	-	12°	50	2	4	○
SHDS2-0030060	0.3	0.6	-	12°	50	2	4	○
SHDS2-0040080	0.4	0.8	-	12°	50	2	4	○
SHDS2-0050100	0.5	1	-	12°	50	2	4	○
SHDS2-0060150	0.6	1.5	-	12°	50	2	4	○
SHDS2-0070180	0.7	1.8	-	12°	50	2	4	○
SHDS2-0080200	0.8	2	-	12°	50	2	4	○
SHDS2-0100300	1.0	3	-	12°	50	2	4	○
SHDS2-0150400	1.5	4	-	12°	50	2	4	○
SHDS2-0200500	2.0	5	-	12°	50	2	4	○
SHDS2-0250600	2.5	6	-	12°	50	2	4	○
SHDS2-0300800-4	3	8	-	12°	50	2	4	○
SHDS2-0401000-4	4	10	-	-	50	2	4	○
SHDS2-0401000-6	4	10	-	12°	60	2	6	○
SHDS2-0601500	6	15	-	-	60	2	6	○

* 本系列產品新追加的尺寸。
* New size added from this series.

○ 準庫存品。
○ Stocked items.

2刃
2 Flutes

平刀
Square



側面切削 (Side Milling)

被削材 Work Material	無氧銅 & 紅銅 Oxygen-free & Copper	
直徑(mm) Diameter	轉速(min-1) Speed	進給速度(mm/min) Feed
D1.0	10000	150
D1.5	8000	180
D2.0	8000	200
D2.5	6000	300
D3	7000	300
D4	7000	300
D4	7000	300
D6	7000	300

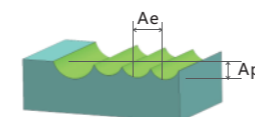
側面切削切深量(mm) Milling Amount for Side Milling (mm)

被削材 Work Material	Length of Cut 刃長	2.5D (刃長=直徑*2.5) 2.5D (Length of Cut=Diameter*2.5)	4D (刃長=直徑*4) 4D (Length of Cut=Diameter*4)
	45HRC以下 Below 45HRC		$a_e=0.07D$ $a_p=2D$
45HRC以上 Above 45HRC		$a_e=0.03D$ $a_p=1.5D$	$a_e=0.03D$ $a_p=1.5D$

D: 直徑 Diameter (mm)
 a_p : 切深 Axial Depth (mm)
 a_e : 切寬 Radial Depth (mm)

備註:
 * 設備轉速不夠時, 請按比例降低轉速和進給;
 * 不銹鋼和超耐熱合金的加工推薦油性切削液。

Note:
 * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
 * Recommend oil coolant for Stainless Steels and Heat Resistance Alloys.



等高切削 (Contour Milling)

被削材 Work Material	無氧銅 & 紅銅 Oxygen-free & Copper	
直徑(mm) Diameter	轉速(min-1) Speed	進給速度(mm/min) Feed
D0.1	40000	180
D0.2	40000	300
D0.3	36000	500
D0.4	30000	700
D0.5	32000	800
D0.6	26000	800
D0.7	26000	800
D0.8	22000	1000
D1.0	18000	1200
D1.5	16000	1500
D2.0	16000	1800
D2.5	14000	1800
D3	12000	2200
D4	12000	2200
D4	12000	2200
D6	10000	2400

備註:
 * 設備轉速不夠時, 請按比例降低轉速和進給;
 * 不銹鋼和超耐熱合金的加工推薦油性切削液;
 * 尖端為精密研磨。為避免破損, 對刀需謹慎;
 * 發生震動時, 請按比例降低轉速和進給。

Note:
 * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
 * Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
 * Recommend using a non-contact measuring device to avoid damaging the precision tip point;
 * Decrease both spindle speed and feed rate proportionally in case of chattering.

2刃
2 Flutes

平刀
Square

2刃
2 Flutes

平刀
Square

SHDS4刀平刀 (4 Flutes Square)

SAMHO



MG

DLC Coating

37.5

SD 0-0.003

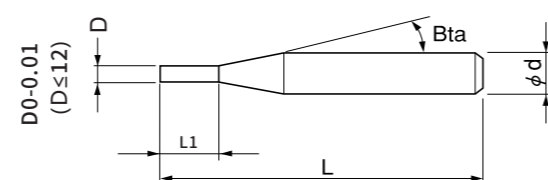
強烈推薦/推薦/建議 ★○○

Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (-55/-60/-70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	○
石墨	Graphite	
銅	Copper	★
樹脂	Plastics	○
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- *專用幾何現狀, 刃口鋒利, 擁有高效切削和排屑。
- *塗層具有良好熱穩定性, 高溫環境下保持其硬度和機械性能。
- *較低的摩擦係數, 減少切削過程中的磨損, 提供更好的表面質量。
- * Special geometry design, sharp cutting edge, highly efficient milling and chip evacuation;
- * The coating, with good thermal stability, makes it maintain the hardness and mechanical properties under high temperature;
- * Lower coefficient of friction reduces wear during cutting and provides better surface quality;



合計24型號 (Total 24 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHDS4-0100250	1.0	2.5	12°	50	4	4	○
SHDS4-0150450	1.5	4.5	12°	50	4	4	○
SHDS4-0200600	2.0	6	12°	50	4	4	○
SHDS4-0250700	2.5	7	12°	50	4	4	○
SHDS4-0300800-3	3	8	-	50	4	3	○
SHDS4-0300800-4	3	8	12°	50	4	4	○
SHDS4-0300800-6	3	8	12°	50	4	6	○
SHDS4-0401000-4	4	10	-	50	4	4	○
SHDS4-0401000-6	4	10	12°	50	4	6	○
SHDS4-0401200-75	4	12	12°	75	4	4	○
SHDS4-0501300	5	13	12°	50	4	6	○
SHDS4-0601500	6	15	-	50	4	6	○
SHDS4-0601800-75	6	18	-	75	4	6	○
SHDS4-0601800-100	6	18	-	100	4	6	○
SHDS4-0802000	8	20	-	60	4	8	○
SHDS4-0802400-75	8	24	-	75	4	8	○

Next page →

SAMHO

SHDS4刀平刀 (4 Flutes Square)

合計24型號 (Total 24 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHDS4-0802400-100	8	24	-	100	4	8	○
SHDS4-0802400-150	8	24	-	150	4	8	○
SHDS4-1002500	10	25	-	75	4	10	○
SHDS4-1003000-100	10	30	-	100	4	10	○
SHDS4-1003000-150	10	30	-	150	4	10	○
SHDS4-1203000	12	30	-	75	4	12	○
SHDS4-1205000-100	12	50	-	100	4	12	○
SHDS4-1205000-150	12	50	-	150	4	12	○

*本系列產品新追加的尺寸。
*New size added from this series.

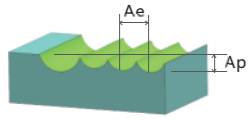
○ 準庫存品。
○ Stocked items.

4刃
4 Flutes

4刃
4 Flutes

平刀
Square

平刀
Square



側面切削 (Side Milling)

被削材 Work Material	無氧銅 & 紅銅 Oxygen-free & Copper	
	直徑(mm) Diameter	轉速(min-1) Speed
D1.0	10000	220
D1.5	8000	240
D2.0	8000	300
D2.5	8000	300
D3	7000	400
D4	7000	500
D5	7000	500
D6	7000	500
D8	6500	600
D10	5500	600
D12	5000	600

側面切削切深量(mm) Milling Amount for Side Milling (mm)

被削材 Work Material	Length of Cut 刃長	2.5D (刃長=直徑*2.5)	4D (刃長=直徑*4)
		2.5D (Length of Cut=Diameter*2.5)	4D (Length of Cut=Diameter*4)
45HRC以下 Below 45HRC		$a_e=0.07D$ $a_p=2D$	$a_e=0.07D$ $a_p=2D$
45HRC以上 Above 45HRC		$a_e=0.03D$ $a_p=1.5D$	$a_e=0.03D$ $a_p=1.5D$

D: 直徑 Diameter (mm)
 a_p : 切深 Axial Depth (mm)
 a_e : 切寬 Radial Depth (mm)

等高切削 (Contour Milling)

被削材 Work Material	無氧銅 & 紅銅 Oxygen-free & Copper	
	直徑(mm) Diameter	轉速(min-1) Speed
D1.0	18000	1600
D1.5	16000	1800
D2.0	16000	1800
D2.5	14000	2200
D3	12000	2200
D4	10000	2200
D5	9000	2500
D6	9000	2500
D8	8000	2500
D10	7000	2500
D12	6000	2500

備註:

- * 設備轉速不夠時，請按比例降低轉速和進給；
- * 不銹鋼和超耐熱合金的加工推薦油性切削液；
- * 尖端為精密研磨。為避免破損，對刀需謹慎；
- * 發生震動時，請按比例降低轉速和進給。

Note:

- * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
- * Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
- * Recommend using a non-contact measuring device to avoid damaging the precision tip point;
- * Decrease both spindle speed and feed rate proportionally in case of chattering.

SHDLS2刀避空型平刀 (2 Flutes Long Neck Square)

SAMHO



MG

DLC Coating

30

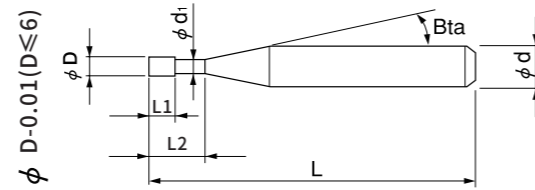
SD 0-0.003

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

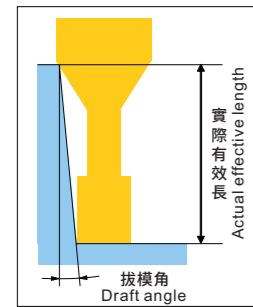
模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	○
石墨	Graphite	
銅	Copper	★
樹脂	Plastics	○
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- * 專用幾何現狀，刃口鋒利，擁有高效切削和排屑。
- * 塗層具有良好熱穩定性，高溫環境下保持其硬度和機械性能。
- * 較低的摩擦係數，減少切削過程中的磨損，提供更好的表面質量。
- * Special geometry design, sharp cutting edge, highly efficient milling and chip evacuation;
- * The coating, with good thermal stability, makes it maintain the hardness and mechanical properties under high temperature;
- * Lower coefficient of friction reduces wear during cutting and provides better surface quality;



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.



合計34型號 (Total 34 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 B _{Ta} Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHDLS2-001010	0.1	0.15	1	12°	50	2	4	○
SHDLS2-002005	0.2	0.3	0.5	12°	50	2	4	○
SHDLS2-002010	0.2	0.3	1	12°	50	2	4	○
SHDLS2-002015	0.2	0.3	1.5	12°	50	2	4	○
SHDLS2-003010	0.3	0.5	1	12°	50	2	4	○
SHDLS2-003015	0.3	0.5	1.5	12°	50	2	4	○
SHDLS2-003020	0.3	0.5	2	12°	50	2	4	○
SHDLS2-003030	0.3	0.5	3	12°	50	2	4	○
SHDLS2-003040	0.3	0.5	4	12°	50	2	4	○
SHDLS2-003050	0.3	0.5	5	12°	50	2	4	○

Next page →

SAMHO

SHDLS2刀避空型平刀 (2 Flutes Long Neck Square)

合計34型號 (Total 34 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 B _{Ta} Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHDLS2-004010	0.4	0.6	1	12°	50	2	4	○
SHDLS2-004020	0.4	0.6	2	12°	50	2	4	○
SHDLS2-004030	0.4	0.6	3	12°	50	2	4	○
SHDLS2-004040	0.4	0.6	4	12°	50	2	4	○
SHDLS2-005020	0.5	0.75	2	12°	50	2	4	○
SHDLS2-005030	0.5	0.75	3	12°	50	2	4	○
SHDLS2-005040	0.5	0.75	4	12°	50	2	4	○
SHDLS2-005050	0.5	0.75	5	12°	50	2	4	○
SHDLS2-005060	0.5	0.75	6	12°	50	2	4	○
SHDLS2-005080	0.5	0.75	8	12°	50	2	4	○
SHDLS2-006020	0.6	0.9	2	12°	50	2	4	○
SHDLS2-006030	0.6	0.9	3	12°	50	2	4	○
SHDLS2-006040	0.6	0.9	4	12°	50	2	4	○
SHDLS2-006060	0.6	0.9	6	12°	50	2	4	○
SHDLS2-006080	0.6	0.9	8	12°	50	2	4	○
SHDLS2-007020	0.7	1	2	12°	50	2	4	○
SHDLS2-007040	0.7	1	4	12°	50	2	4	○
SHDLS2-007060	0.7	1	6	12°	50	2	4	○
SHDLS2-007080	0.7	1	8	12°	50	2	4	○
SHDLS2-008030	0.8	1.2	3	12°	50	2	4	○
SHDLS2-008040	0.8	1.2	4	12°	50	2	4	○
SHDLS2-008060	0.8	1.2	6	12°	50	2	4	○
SHDLS2-008080	0.8	1.2	8	12°	50	2	4	○
SHDLS2-008100	0.8	1.2	10	12°	50	2	4	○

*本系列產品新追加的尺寸。
*New size added from this series.

○準庫存品。
○Stocked items.

2刃
2 Flutes

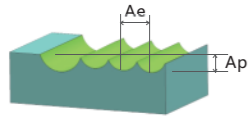
2刃
2 Flutes

避空平刀
Long Neck
Square

避空平刀
Long Neck
Square

SHDLS2-000 切削条件表(Milling Conditions)

SAMHO



被削材 Work Material		無氧銅 & 紅銅 Oxygen-free & Copper	
直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度(mm/min) Feed
D 0.1	1	30000	100
D 0.2	0.5	36000	400
D 0.2	1	32000	300
D 0.2	1.5	28000	300
D 0.3	1	36000	500
D 0.3	1.5	36000	400
D 0.3	2	32000	350
D 0.3	3	26000	200
D 0.3	4	22000	150
D 0.3	5	20000	100
D 0.4	1	36000	700
D 0.4	2	36000	600
D 0.4	3	32000	400
D 0.4	4	26000	300
D 0.5	2	36000	800
D 0.5	3	32000	700
D 0.5	4	26000	500
D 0.5	5	20000	400
D 0.5	6	16000	300
D 0.5	8	14000	200
D 0.6	2	32000	800
D 0.6	3	30000	800
D 0.6	4	26000	700
D 0.6	6	20000	400
D 0.6	8	14000	200
D 0.7	2	32000	1000
D 0.7	4	26000	1000
D 0.7	6	20000	600
D 0.7	8	14000	300
D 0.8	3	30000	1300
D 0.8	4	24000	1100
D 0.8	6	20000	900
D 0.8	8	16000	600
D 0.8	10	12000	300

備註:
 * 設備轉速不夠時, 請按比例降低轉速和進給;
 * 不銹鋼和超耐熱合金的加工推薦油性切削液;
 * 尖端為精密研磨。為避免破損, 對刀需謹慎。

Note:
 *Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
 *Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
 *Recommend using a non-contact measuring device to avoid damaging the precision tip point.

SAMHO

SHDLS4刀避空型平刀 (4 Flutes Long Neck Square)



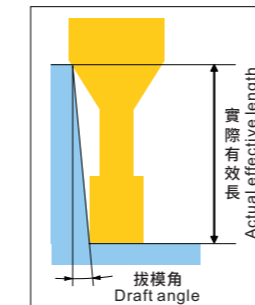
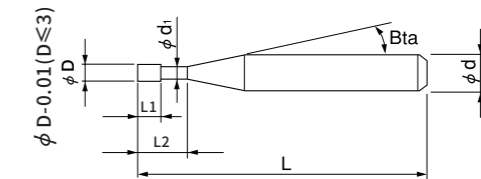
MG DLC Coating 37.5 SD 0-0.003

強烈推薦/推薦/建議 ★○○○
 Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	○
石墨	Graphite	
銅	Copper	★
樹脂	Plastics	○
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- * 專用幾何現狀, 刃口鋒利, 擁有高效切削和排屑。
- * 塗層具有良好熱穩定性, 高溫環境下保持其硬度和機械性能。
- * 較低的摩擦係數, 減少切削過程中的磨損, 提供更好的表面質量。
- * Special geometry design, sharp cutting edge, highly efficient milling and chip evacuation;
- * The coating, with good thermal stability, makes it maintain the hardness and mechanical properties under high temperature;
- * Lower coefficient of friction reduces wear during cutting and provides better surface quality;



合計24型號 (Total 24 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHDLS4-010040	1.0	1.5	4	12°	50	4	4	○
SHDLS4-010060	1.0	1.5	6	12°	50	4	4	○
SHDLS4-010080	1.0	1.5	8	12°	50	4	4	○
SHDLS4-010100	1.0	1.5	10	12°	50	4	4	○
SHDLS4-010120	1.0	1.5	12	12°	50	4	4	○
SHDLS4-015040	1.5	2.3	4	12°	50	4	4	○
SHDLS4-015060	1.5	2.3	6	12°	50	4	4	○
SHDLS4-015080	1.5	2.3	8	12°	50	4	4	○
SHDLS4-015100	1.5	2.3	10	12°	50	4	4	○
SHDLS4-015120	1.5	2.3	12	12°	50	4	4	○

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合計24型號 (Total 24 models)

單位Unit (mm)

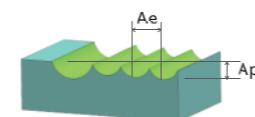
型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHDLS4-020060	2.0	3.0	6	12°	50	4	4	○
SHDLS4-020080	2.0	3.0	8	12°	50	4	4	○
SHDLS4-020100	2.0	3.0	10	12°	50	4	4	○
SHDLS4-020120	2.0	3.0	12	12°	50	4	4	○
SHDLS4-020160	2.0	3.0	16	12°	50	4	4	○
SHDLS4-020200	2.0	3.0	20	12°	50	4	4	○
SHDLS4-030100	3.0	4.5	10	12°	50	4	4	○
SHDLS4-030120	3.0	4.5	12	12°	50	4	4	○
SHDLS4-030160	3.0	4.5	16	12°	50	4	4	○
SHDLS4-030200	3.0	4.5	20	12°	50	4	4	○
SHDLS4-030100-6	3.0	4.5	10	12°	50	4	6	○
SHDLS4-030120-6	3.0	4.5	12	12°	50	4	6	○
SHDLS4-030160-6	3.0	4.5	16	12°	50	4	6	○
SHDLS4-030200-6	3.0	4.5	20	12°	50	4	6	○

*本系列產品新追加的尺寸。

*New size added from this series.

○ 準庫存品。

○ Stocked items.

4刃
2 Flutes避空平刀
Long Neck
Square

被削材 Work Material		無氧銅 & 紅銅 Oxygen-free & Copper	
直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度(mm/min) Feed
D1.0	4	18000	1500
D1.0	6	16000	1300
D1.0	8	12000	1000
D1.0	10	10000	800
D1.0	12	8000	500
D1.5	4	18000	1800
D1.5	6	18000	1800
D1.5	8	16000	1500
D1.5	10	16000	1300
D1.5	12	10000	800
D2.0	6	16000	2000
D2.0	8	16000	2000
D2.0	10	16000	1800
D2.0	12	16000	1800
D2.0	16	12000	1300
D2.0	20	8000	800
D3.0	10	14000	2000
D3.0	12	14000	2000
D3.0	16	12000	1800
D3.0	20	12000	1800
D3.0	10	14000	2000
D3.0	12	14000	2000
D3.0	16	12000	1800
D3.0	20	12000	1800

備註:

* 設備轉速不夠時, 請按比例降低轉速和進給;

* 不銹鋼和超耐熱合金的加工推薦油性切削液;

* 尖端為精密研磨。為避免破損, 對刀需謹慎。

Note:

* Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;

* Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;

* Recommend using a non-contact measuring device to avoid damaging the precision tip point.

4刃
2 Flutes避空平刀
Long Neck
Square

SHDR2刃球刀 (2 Flutes Ball)

SAMHO



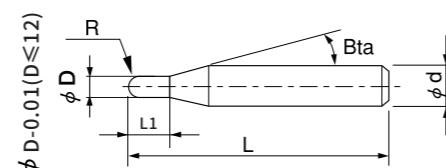
MG DLC Coating 30 SD 0-0.003 R ±0.005 R ±0.007 R≤3 R4~10

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (-55/-60/-70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	○
石墨	Graphite	
銅	Copper	★
樹脂	Plastics	○
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- * 專用幾何現狀，刃口鋒利，擁有高效切削和排屑。
- * 塗層具有良好熱穩定性，高溫環境下保持其硬度和機械性能。
- * 較低的摩擦係數，減少切削過程中的磨損，提供更好的表面質量。
- * Special geometry design, sharp cutting edge, highly efficient milling and chip evacuation;
- * The coating, with good thermal stability, makes it maintain the hardness and mechanical properties under high temperature;
- * Lower coefficient of friction reduces wear during cutting and provides better surface quality;



合計31型號 (Total 31 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	錐度角 B _{Ta} Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHDR2-002002	R0.1	0.2	12°	50	2	4	○
SHDR2-003003	R0.15	0.3	12°	50	2	4	○
SHDR2-004006	R0.2	0.6	12°	50	2	4	○
SHDR2-005008	R0.25	0.8	12°	50	2	4	○
SHDR2-006009	R0.3	0.9	12°	50	2	4	○
SHDR2-008012	R0.4	1.2	12°	50	2	4	○
SHDR2-010015	R0.5	1.5	12°	50	2	4	○
SHDR2-012018	R0.6	1.8	12°	50	2	4	○
SHDR2-015023	R0.75	2.3	12°	50	2	4	○
SHDR2-020030	R1	3	12°	50	2	4	○
SHDR2-030045-3	R1.5	4.5	-	50	2	3	○
SHDR2-030045-4	R1.5	4.5	12°	50	2	4	○
SHDR2-030045-6	R1.5	4.5	12°	50	2	6	○
SHDR2-040060	R2	6	-	50	2	4	○
SHDR2-040060-75	R2	6	-	75	2	4	○
SHDR2-040060-100	R2	6	-	100	2	4	○
SHDR2-040060-6	R2	6	12°	50	2	6	○
SHDR2-050075	R2.5	7.5	12°	50	2	6	○
SHDR2-060090	R3	9	-	50	2	6	○
SHDR2-060090-75	R3	9	-	75	2	6	○

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SAMHO

SHDR2刃球刀 (2 Flutes Ball)

合計31型號 (Total 31 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	錐度角 B _{Ta} Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHDR2-060090-100	R3	9	-	100	2	6	○
SHDR2-080120	R4	12	-	60	2	8	○
SHDR2-080120-75	R4	12	-	75	2	8	○
SHDR2-080160-100	R4	16	-	100	2	8	○
SHDR2-080160-150	R4	16	-	150	2	8	○
SHDR2-100150	R5	15	-	75	2	10	○
SHDR2-100200-100	R5	20	-	100	2	10	○
SHDR2-100200-150	R5	20	-	150	2	10	○
SHDR2-120180	R6	18	-	75	2	12	○
SHDR2-120240-100	R6	24	-	100	2	12	○
SHDR2-120240-150	R6	24	-	150	2	12	○

- * 本系列產品新追加的尺寸。
- * New size added from this series.

- 準庫存品。
- Stocked items.

2刃
2 Flutes

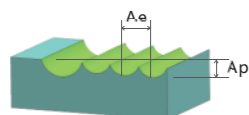
2刃
2 Flutes

球刀
Ball

球刀
Ball

SHDR2-000切削条件表(Milling Conditions)

SAMHO



被削材 Work Material	無氧銅 & 紅銅 Oxygen-free & Copper			
直徑(mm) Diameter	轉速(min-1) Speed	(mm/min) Feed	Ap(mm) Axial depth	Ae(mm) Radial depth
D0.2	30000	150	0.006	0.006
D0.3	26000	300	0.01	0
D0.4	22000	400	0.015	0.015
D0.5	20000	400	0.015	0.015
D0.6	20000	800	0.02	0.02
D0.8	18000	1200	0.02	0.03
D1	16000	1200	0.03	0.04
D1.5	16000	1500	0.03	0.05
D2	15000	1800	0.03	0.05
D2	15000	1800	0.04	0.05
D3	14000	2200	0.04	0.07
D3	14000	2200	0.05	0.07
D3	14000	2200	0.04	0.07
D4	14000	2400	0.04	0.08
D4	14000	2400	0.05	0.08
D5	12000	2600	0.05	0.08
D6	12000	2600	0.05	0.08
D8	10000	3000	0.05	0.1
D10	9000	3000	0.05	0.12
D12	9000	3000	0.05	0.15

* 以上加工參數伸出長度按照3d計算, 如果伸出長超出請按比例降低轉速和進給;
 * 不銹鋼和超耐熱合金的加工推薦油性切削液;
 * 設備轉速不夠時, 請按比例降低轉速和進給。

Note:
 *The above milling parameters are calculated based on 3D. Decrease both spindle speed and feed rate proportionally if the overhang length exceeds 3xD;
 *Recommend oil coolant for Stainless Steels and Heat Resistance Alloys;
 *Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed.

2刃
2 Flutes

球刀
Ball

SAMHO

SHDLR2刃避空型球刀 (2 Flutes Long Neck Ball)



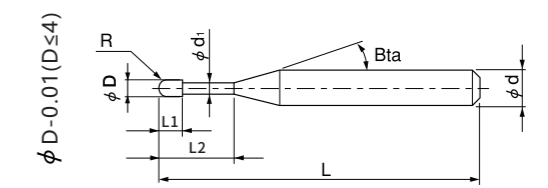
MG DLC Coating 30 SD 0-0.003 R ±0.005

強烈推薦/推薦/建議 ★○○
 Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	○
石墨	Graphite	
銅	Copper	★
樹脂	Plastics	○
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- *專用幾何現狀, 刃口鋒利, 擁有高效切削和排屑。
- *塗層具有良好熱穩定性, 高溫環境下保持其硬度和機械性能。
- *較低的摩擦係數, 減少切削過程中的磨損, 提供更好的表面質量。
- * Special geometry design, sharp cutting edge, highly efficient milling and chip evacuation;
- * The coating, with good thermal stability, makes it maintain the hardness and mechanical properties under high temperature;
- * Lower coefficient of friction reduces wear during cutting and provides better surface quality;



合計74型號 (Total 74 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHDLR2-002005	R0.1	0.16	0.5	12°	50	2	4	○
SHDLR2-002010	R0.1	0.16	1	12°	50	2	4	○
SHDLR2-002020	R0.1	0.16	2	12°	50	2	4	○
SHDLR2-003010	R0.15	0.25	1	12°	50	2	4	○
SHDLR2-003020	R0.15	0.25	2	12°	50	2	4	○
SHDLR2-003030	R0.15	0.25	3	12°	50	2	4	○
SHDLR2-003040	R0.15	0.25	4	12°	50	2	4	○
SHDLR2-003060	R0.15	0.25	6	12°	50	2	4	○
SHDLR2-004010	R0.2	0.32	1	12°	50	2	4	○
SHDLR2-004020	R0.2	0.32	2	12°	50	2	4	○
SHDLR2-004030	R0.2	0.32	3	12°	50	2	4	○
SHDLR2-004040	R0.2	0.32	4	12°	50	2	4	○
SHDLR2-004060	R0.2	0.32	6	12°	50	2	4	○
SHDLR2-005020	R0.25	0.4	2	12°	50	2	4	○
SHDLR2-005030	R0.25	0.4	3	12°	50	2	4	○
SHDLR2-005040	R0.25	0.4	4	12°	50	2	4	○
SHDLR2-005060	R0.25	0.4	6	12°	50	2	4	○
SHDLR2-005080	R0.25	0.4	8	12°	50	2	4	○
SHDLR2-006020	R0.3	0.45	2	12°	50	2	4	○
SHDLR2-006030	R0.3	0.45	3	12°	50	2	4	○
SHDLR2-006040	R0.3	0.45	4	12°	50	2	4	○
SHDLR2-006060	R0.3	0.45	6	12°	50	2	4	○

2刃
2 Flutes

避空球刀
Long Neck Ball

Next page →

合計74型號 (Total 74 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of cut	有效長 L2 Effective Length	錐度角 BTa Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHDLR2-006080	R0.3	0.45	8	12°	50	2	4	○
SHDLR2-006080	R0.3	0.45	10	12°	50	2	4	○
SHDLR2-008020	R0.4	0.6	2	12°	50	2	4	○
SHDLR2-008040	R0.4	0.6	4	12°	50	2	4	○
SHDLR2-008060	R0.4	0.6	6	12°	50	2	4	○
SHDLR2-008080	R0.4	0.6	8	12°	50	2	4	○
SHDLR2-008100	R0.4	0.6	10	12°	50	2	4	○
SHDLR2-010020	R0.5	0.8	2	12°	50	2	4	○
SHDLR2-010030	R0.5	0.8	3	12°	50	2	4	○
SHDLR2-010040	R0.5	0.8	4	12°	50	2	4	○
SHDLR2-010060	R0.5	0.8	6	12°	50	2	4	○
SHDLR2-010080	R0.5	0.8	8	12°	50	2	4	○
SHDLR2-010100	R0.5	0.8	10	12°	50	2	4	○
SHDLR2-010120	R0.5	0.8	12	12°	50	2	4	○
SHDLR2-010140	R0.5	0.8	14	12°	50	2	4	○
SHDLR2-010160	R0.5	0.8	16	12°	50	2	4	○
SHDLR2-015040	R0.75	1.2	4	12°	50	2	4	○
SHDLR2-015060	R0.75	1.2	6	12°	50	2	4	○
SHDLR2-015080	R0.75	1.2	8	12°	50	2	4	○
SHDLR2-015100	R0.75	1.2	10	12°	50	2	4	○
SHDLR2-015120	R0.75	1.2	12	12°	50	2	4	○
SHDLR2-015140	R0.75	1.2	14	12°	50	2	4	○
SHDLR2-015160	R0.75	1.2	16	12°	50	2	4	○
SHDLR2-020040	R1	1.6	4	12°	50	2	4	○
SHDLR2-020060	R1	1.6	6	12°	50	2	4	○
SHDLR2-020080	R1	1.6	8	12°	50	2	4	○
SHDLR2-020100	R1	1.6	10	12°	50	2	4	○
SHDLR2-020120	R1	1.6	12	12°	50	2	4	○
SHDLR2-020160	R1	1.6	16	12°	50	2	4	○
SHDLR2-020040-6	R1	1.6	4	12°	60	2	6	○
SHDLR2-020060-6	R1	1.6	6	12°	60	2	6	○
SHDLR2-020080-6	R1	1.6	8	12°	60	2	6	○
SHDLR2-020100-6	R1	1.6	10	12°	60	2	6	○
SHDLR2-020120-6	R1	1.6	12	12°	60	2	6	○

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合計74型號 (Total 74 models)

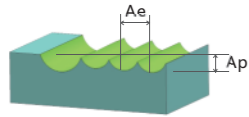
單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 BTa Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHDLR2-020140-6	R1	1.6	16	12°	60	2	6	○
SHDLR2-030060	R1.5	2.4	6	12°	50	2	4	○
SHDLR2-030080	R1.5	2.4	8	12°	50	2	4	○
SHDLR2-030100	R1.5	2.4	10	12°	50	2	4	○
SHDLR2-030120	R1.5	2.4	12	12°	50	2	4	○
SHDLR2-030160	R1.5	2.4	16	12°	50	2	4	○
SHDLR2-030200	R1.5	2.4	20	12°	50	2	4	○
SHDLR2-030060-6	R1.5	2.4	6	12°	60	2	6	○
SHDLR2-030080-6	R1.5	2.4	8	12°	60	2	6	○
SHDLR2-030100-6	R1.5	2.4	10	12°	60	2	6	○
SHDLR2-030120-6	R1.5	2.4	12	12°	60	2	6	○
SHDLR2-030160-6	R1.5	2.4	16	12°	60	2	6	○
SHDLR2-030200-6	R1.5	2.4	20	12°	60	2	6	○
SHDLR2-040080-6	R2	4	8	12°	60	2	6	○
SHDLR2-040100-6	R2	4	10	12°	60	2	6	○
SHDLR2-040120-6	R2	4	12	12°	60	2	6	○
SHDLR2-040160-6	R2	4	16	12°	60	2	6	○
SHDLR2-040200-6	R2	4	20	12°	60	2	6	○

*本系列產品新追加的尺寸。
*New size added from this series.○準庫存品。
○ Stocked items.2刃
2 Flutes避空球刀
Long Neck
Ball2刃
2 Flutes避空球刀
Long Neck
Ball

SHDLR2-000切削条件表(Milling Conditions)

SAMHO



被削材 Work Material	無氧銅 & 紅銅 Oxygen-free & Copper				
	直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	(mm/min) Feed	Ap(mm) Axial depth
D0.2	0.5	30000	150	0.006	0.006
D0.2	1	30000	100	0.006	0.006
D0.2	1.5	30000	100	0.003	0.003
D0.3	1	28000	300	0.01	0.01
D0.3	1.5	28000	300	0.008	0.008
D0.3	2	24000	200	0.007	0.007
D0.3	3	20000	100	0.005	0.005
D0.3	3	20000	100	0.005	0.005
D0.4	1	24000	600	0.01	0.02
D0.4	2	24000	400	0.01	0.015
D0.4	3	20000	300	0.008	0.008
D0.4	4	18000	150	0.005	0.005
D0.4	4	18000	150	0.005	0.005
D0.5	1	22000	800	0.015	0.02
D0.5	2	22000	800	0.015	0.02
D0.5	4	18000	400	0.01	0.01
D0.5	6	14000	200	0.005	0.005
D0.5	8	14000	100	0.003	0.003
D0.6	2	20000	1000	0.02	0.02
D0.6	4	17000	500	0.015	0.02
D0.6	6	15000	400	0.01	0.02
D0.6	8	14000	200	0.005	0.01
D0.6	8	14000	200	0.005	0.01
D0.6	8	14000	200	0.005	0.01
D0.8	2	18000	1200	0.03	0.03
D0.8	4	18000	800	0.02	0.03
D0.8	6	14000	500	0.01	0.03
D0.8	8	14000	300	0.01	0.02
D0.8	8	14000	300	0.01	0.02
D1.0	2	16000	1500	0.03	0.05
D1.0	4	16000	1300	0.03	0.05
D1.0	4	16000	1300	0.03	0.05
D1.0	6	16000	1000	0.03	0.05
D1.0	8	14000	500	0.02	0.04
D1.0	10	12000	400	0.01	0.03

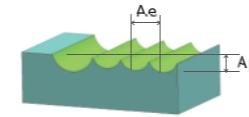
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2刃
2 Flutes

避空球刀
Long Neck
Ball

SHDLR2-000切削条件表(Milling Conditions)

SAMHO



被削材 Work Material	無氧銅 & 紅銅 Oxygen-free & Copper				
	直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	(mm/min) Feed	Ap(mm) Axial depth
D1.0	12	11000	300	0.01	0.02
D1.0	14	10000	250	0.01	0.02
D1.0	16	10000	200	0.01	0.01
D1.5	4	16000	1600	0.03	0.06
D1.5	6	16000	1400	0.03	0.06
D1.5	8	16000	1200	0.03	0.05
D1.5	10	12000	800	0.02	0.05
D1.5	12	10000	500	0.02	0.04
D1.5	14	10000	400	0.01	0.03
D1.5	16	8000	300	0.01	0.03
D2	4	16000	1800	0.03	0.06
D2	6	15000	1800	0.03	0.06
D2	8	15000	1800	0.03	0.06
D2	10	15000	1800	0.03	0.06
D2	12	13000	1600	0.03	0.06
D2	16	10000	1000	0.02	0.06
D2	4	16000	1800	0.03	0.06
D2	6	15000	1800	0.03	0.06
D2	8	15000	1800	0.03	0.06
D2	10	15000	1800	0.03	0.06
D2	12	13000	1600	0.03	0.06
D2	16	10000	1000	0.02	0.06
D3	6	14000	2200	0.05	0.07
D3	8	14000	2200	0.05	0.07
D3	10	14000	2200	0.05	0.07
D3	12	14000	2200	0.04	0.07
D3	16	12000	2000	0.03	0.07
D3	20	11000	1000	0.03	0.07
D3	6	14000	2200	0.05	0.07
D3	8	14000	2200	0.05	0.07
D3	10	14000	2200	0.05	0.07
D3	12	14000	2200	0.04	0.07
D3	16	12000	2000	0.03	0.07
D3	20	11000	1000	0.03	0.07
D4	8	14000	2400	0.05	0.07

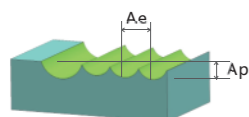
Next page →

2刃
2 Flutes

避空球刀
Long Neck
Ball

SHDLR2-000切削条件表(Milling Conditions)

SAMHO



被削材 Work Material	無氧銅 & 紅銅 Oxygen-free & Copper				
直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	(mm/min) Feed	Ap(mm) Axial depth	Ae(mm) Radial depth
D4	10	14000	2400	0.05	0.07
D4	12	14000	2400	0.05	0.07
D4	16	14000	2200	0.04	0.07
D4	20	12000	2000	0.04	0.07

備註:

- * 設備轉速不夠時，請按比例降低轉速和進給;
- * 不銹鋼和超耐熱合金的加工推薦油性切削液。

Note:

- * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
- * Recommend oil coolant for Stainless Steels and Heat Resistance Alloys.

SAMHO

SHDSR4刀圓角刀 (4 Flutes Radius)



MG

DLC
Coating

37.5

SD
0-0.003

R
±0.005

R
±0.007

R≤3

R4~10

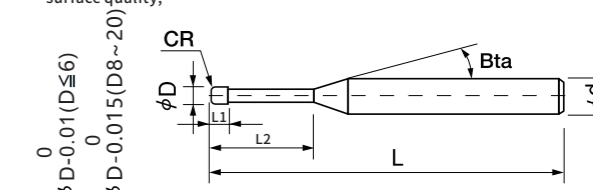
強烈推薦/推薦/建議 ★○○

Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	○
石墨	Graphite	
銅	Copper	★
樹脂	Plastics	○
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- * 專用幾何現狀，刃口鋒利，擁有高效切削和排屑。
- * 塗層具有良好熱穩定性，高溫環境下保持其硬度和機械性能。
- * 較低的摩擦係數，減少切削過程中的磨損，提供更好的表面質量。
- * Special geometry design, sharp cutting edge, highly efficient milling and chip evacuation;
- * The coating, with good thermal stability, makes it maintain the hardness and mechanical properties under high temperature;
- * Lower coefficient of friction reduces wear during cutting and provides better surface quality;



4刃
4 Flutes

合計49型號 (Total 49 models)

單位 Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	圓角 CR Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHDSR4-01001020	1	2	R0.1	12°	50	4	4	○
SHDSR4-01002020	1	2	R0.2	12°	50	4	4	○
SHDSR4-01501030	1.5	3	R0.1	12°	50	4	4	○
SHDSR4-01502030	1.5	3	R0.2	12°	50	4	4	○
SHDSR4-02001040	2	4	R0.1	12°	50	4	4	○
SHDSR4-02002040	2	4	R0.2	12°	50	4	4	○
SHDSR4-02003040	2	4	R0.3	12°	50	4	4	○
SHDSR4-02005040	2	4	R0.5	12°	50	4	4	○
SHDSR4-03001060	3	6	R0.1	12°	50	4	4	○
SHDSR4-03002060	3	6	R0.2	12°	50	4	4	○
SHDSR4-03003060	3	6	R0.3	12°	50	4	4	○
SHDSR4-03005060	3	6	R0.5	12°	50	4	4	○
SHDSR4-04001080	4	8	R0.1	-	50	4	4	○
SHDSR4-04002080	4	8	R0.2	-	50	4	4	○
SHDSR4-04003080	4	8	R0.3	-	50	4	4	○
SHDSR4-04005080	4	8	R0.5	-	50	4	4	○
SHDSR4-04005080-75	4	8	R0.5	-	75	4	4	○
SHDSR4-04005080-100	4	8	R0.5	-	100	4	4	○
SHDSR4-05002100	5	10	R0.2	12°	50	4	6	○
SHDSR4-05005100	5	10	R0.5	12°	50	4	6	○
SHDSR4-06002120	6	12	R0.2	12°	50	4	6	○
SHDSR4-06005120	6	12	R0.5	12°	50	4	6	○

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圓角刀
Radius

2刃
2 Flutes

避空球刀
Long Neck
Ball

被削材 Work Material	無氧銅 & 紅銅 Oxygen-free & Copper	
直徑(mm) Diameter	轉速(min-1) Speed	進給速度(mm/min) Feed
D10	8000	2600
D10	8000	2600
D10	8000	2600
D10	8000	2600
D10	8000	2600
D12	7500	3000
D12	7500	3000
D12	7500	3000
D12	7500	3000
D12	7500	3000
D12	7500	3000
D12	7500	3000
D12	7500	3000

備註:

* 以上加工參數伸出長度按照3d計算, 如果伸出長超出請按比例降低轉速和進給;

* 設備轉速不夠時, 請按比例降低轉速和進給;

* 不銹鋼和超耐熱合金的加工推薦油性切削液。

Note:

*The above milling parameters are calculated based on 3xD. Decrease both spindle speed and feed rate proportionally if the overhang length exceeds 3xD;

*Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;

*Recommend oil coolant for Stainless Steels and Heat Resistance Alloys.



MG

DLC
Coating

30

SD
0-0.003R
±0.005

強烈推薦/推薦/建議 ★○○

Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	○
石墨	Graphite	
銅	Copper	★
樹脂	Plastics	○
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

* 專用幾何現狀, 刃口鋒利, 擁有高效切削和排屑。

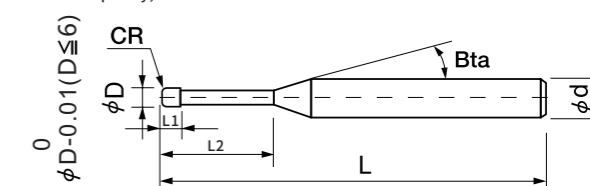
* 塗層具有良好熱穩定性, 高溫環境下保持其硬度和機械性能。

* 較低的摩擦係數, 減少切削過程中的磨損, 提供更好的表面質量。

* Special geometry design, sharp cutting edge, highly efficient milling and chip evacuation;

* The coating, with good thermal stability, makes it maintain the hardness and mechanical properties under high temperature;

* Lower coefficient of friction reduces wear during cutting and provides better surface quality;



合計71型號 (Total 71 models)

單位 Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	圓角CR Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHDLSR2-003005010	D0.3	0.25	1	R0.05	12°	50	2	4	○
SHDLSR2-003005020	D0.3	0.25	2	R0.05	12°	50	2	4	○
SHDLSR2-004005010	D0.4	0.32	1	R0.05	12°	50	2	4	○
SHDLSR2-004005020	D0.4	0.32	2	R0.05	12°	50	2	4	○
SHDLSR2-004005030	D0.4	0.32	3	R0.05	12°	50	2	4	○
SHDLSR2-004005040	D0.4	0.32	4	R0.05	12°	50	2	4	○
SHDLSR2-00401010	D0.4	0.32	1	R0.1	12°	50	2	4	○
SHDLSR2-00401020	D0.4	0.32	2	R0.1	12°	50	2	4	○
SHDLSR2-00401030	D0.4	0.32	3	R0.1	12°	50	2	4	○
SHDLSR2-00401040	D0.4	0.32	4	R0.1	12°	50	2	4	○
SHDLSR2-005005010	D0.5	0.4	1	R0.05	12°	50	2	4	○
SHDLSR2-005005020	D0.5	0.4	2	R0.05	12°	50	2	4	○
SHDLSR2-005005030	D0.5	0.4	3	R0.05	12°	50	2	4	○
SHDLSR2-005005040	D0.5	0.4	4	R0.05	12°	50	2	4	○
SHDLSR2-00501010	D0.5	0.4	1	R0.1	12°	50	2	4	○
SHDLSR2-00501020	D0.5	0.4	2	R0.1	12°	50	2	4	○
SHDLSR2-00501030	D0.5	0.4	3	R0.1	12°	50	2	4	○
SHDLSR2-00501040	D0.5	0.4	4	R0.1	12°	50	2	4	○
SHDLSR2-006005020	D0.6	0.5	2	R0.05	12°	50	2	4	○
SHDLSR2-006005030	D0.6	0.5	3	R0.05	12°	50	2	4	○
SHDLSR2-006005040	D0.6	0.5	4	R0.05	12°	50	2	4	○
SHDLSR2-006005060	D0.6	0.5	6	R0.05	12°	50	2	4	○

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2刃
2 Flutes避空
圓角刀
Long Neck
Radius4刃
4 Flutes圓角刀
Radius

合計71型號 (Total 71 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	圓角CR Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHDLSR2-00601020	D0.6	0.5	2	R0.1	12°	50	2	4	○
SHDLSR2-00601030	D0.6	0.5	3	R0.1	12°	50	2	4	○
SHDLSR2-00601040	D0.6	0.5	4	R0.1	12°	50	2	4	○
SHDLSR2-00601060	D0.6	0.5	6	R0.1	12°	50	2	4	○
SHDLSR2-008005020	D0.8	0.65	2	R0.05	12°	50	2	4	○
SHDLSR2-008005030	D0.8	0.65	3	R0.05	12°	50	2	4	○
SHDLSR2-008005040	D0.8	0.65	4	R0.05	12°	50	2	4	○
SHDLSR2-008005060	D0.8	0.65	6	R0.05	12°	50	2	4	○
SHDLSR2-008005080	D0.8	0.65	8	R0.05	12°	50	2	4	○
SHDLSR2-00801020	D0.8	0.65	2	R0.1	12°	50	2	4	○
SHDLSR2-00801030	D0.8	0.65	3	R0.1	12°	50	2	4	○
SHDLSR2-00801040	D0.8	0.65	4	R0.1	12°	50	2	4	○
SHDLSR2-00801060	D0.8	0.65	6	R0.1	12°	50	2	4	○
SHDLSR2-00801080	D0.8	0.65	8	R0.1	12°	50	2	4	○
SHDLSR2-00802020	D0.8	0.65	2	R0.2	12°	50	2	4	○
SHDLSR2-00802030	D0.8	0.65	3	R0.2	12°	50	2	4	○
SHDLSR2-00802040	D0.8	0.65	4	R0.2	12°	50	2	4	○
SHDLSR2-00802060	D0.8	0.65	6	R0.2	12°	50	2	4	○
SHDLSR2-00802080	D0.8	0.65	8	R0.2	12°	50	2	4	○
SHDLSR2-01001040	D1.0	1.0	4	R0.1	12°	50	2	4	○
SHDLSR2-01001060	D1.0	1.0	6	R0.1	12°	50	2	4	○
SHDLSR2-01001080	D1.0	1.0	8	R0.1	12°	50	2	4	○
SHDLSR2-01001100	D1.0	1.0	10	R0.1	12°	50	2	4	○
SHDLSR2-01001120	D1.0	1.0	12	R0.1	12°	50	2	4	○
SHDLSR2-01002040	D1.0	1.0	4	R0.2	12°	50	2	4	○
SHDLSR2-01002060	D1.0	1.0	6	R0.2	12°	50	2	4	○
SHDLSR2-01002080	D1.0	1.0	8	R0.2	12°	50	2	4	○
SHDLSR2-01002100	D1.0	1.0	10	R0.2	12°	50	2	4	○
SHDLSR2-01002120	D1.0	1.0	12	R0.2	12°	50	2	4	○
SHDLSR2-01501040	D1.5	1.5	4	R0.1	12°	50	2	4	○
SHDLSR2-01501060	D1.5	1.5	6	R0.1	12°	50	2	4	○
SHDLSR2-01501080	D1.5	1.5	8	R0.1	12°	50	2	4	○
SHDLSR2-01501100	D1.5	1.5	10	R0.1	12°	50	2	4	○
SHDLSR2-01501120	D1.5	1.5	12	R0.1	12°	50	2	4	○
SHDLSR2-01502040	D1.5	1.5	4	R0.2	12°	50	2	4	○
SHDLSR2-01502060	D1.5	1.5	6	R0.2	12°	50	2	4	○
SHDLSR2-01502080	D1.5	1.5	8	R0.2	12°	50	2	4	○
SHDLSR2-01502100	D1.5	1.5	10	R0.2	12°	50	2	4	○

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合計71型號 (Total 71 models)

單位Unit (mm)

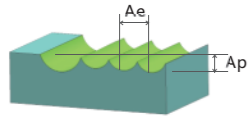
型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	圓角CR Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHDLSR2-01502120	D1.5	1.5	12	R0.2	12°	50	2	4	○
SHDLSR2-02001060	D2.0	2.0	6	R0.1	12°	50	2	4	○
SHDLSR2-02001080	D2.0	2.0	8	R0.1	12°	50	2	4	○
SHDLSR2-02001100	D2.0	2.0	10	R0.1	12°	50	2	4	○
SHDLSR2-02001120	D2.0	2.0	12	R0.1	12°	50	2	4	○
SHDLSR2-02001160	D2.0	2.0	16	R0.1	12°	50	2	4	○
SHDLSR2-02002060	D2.0	2.0	6	R0.2	12°	50	2	4	○
SHDLSR2-02002080	D2.0	2.0	8	R0.2	12°	50	2	4	○
SHDLSR2-02002100	D2.0	2.0	10	R0.2	12°	50	2	4	○
SHDLSR2-02002120	D2.0	2.0	12	R0.2	12°	50	2	4	○
SHDLSR2-02002160	D2.0	2.0	16	R0.2	12°	50	2	4	○

*本系列產品新追加的尺寸。

*New size added from this series.

○準庫存品。

○Stocked items.



2刃
2 Flutes

被削材 Work Material		無氧銅 & 紅銅 Oxygen-free & Copper	
直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度(mm/min) Feed
D0.3	1	30000	240
D0.3	2	30000	120
D0.4	1	26000	300
D0.4	2	24000	260
D0.4	3	22000	180
D0.4	4	18000	120
D0.4	1	26000	300
D0.4	2	24000	220
D0.4	3	22000	180
D0.4	4	18000	120
D0.5	1	20000	500
D0.5	2	18000	360
D0.5	4	16000	200
D0.5	6	14000	120
D0.5	1	20000	500
D0.5	2	18000	360
D0.5	4	16000	200
D0.5	6	14000	120
D0.6	2	16000	700
D0.6	4	13000	400
D0.6	6	11000	200
D0.6	8	10000	120
D0.6	2	16000	700
D0.6	4	13000	400
D0.6	6	11000	200
D0.6	8	10000	120
D0.8	2	16000	1200
D0.8	4	14000	800
D0.8	6	13000	600
D0.8	8	12000	300
D0.8	2	16000	1200
D0.8	4	14000	800
D0.8	6	13000	500
D0.8	8	12000	300
D0.8	2	16000	1200
D0.8	4	14000	800

Next page →

避空
圓角刀
Long Neck
Radius

2刃
2 Flutes

被削材 Work Material		無氧銅 & 紅銅 Oxygen-free & Copper	
直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度(mm/min) Feed
D0.8	6	13000	500
D0.8	8	12000	300
D1.0	4	13000	1000
D1.0	6	11000	700
D1.0	8	10000	500
D1.0	10	8500	300
D1.0	10	8500	300
D1.0	4	13000	1000
D1.0	6	11000	700
D1.0	8	10000	500
D1.0	10	8500	300
D1.0	10	8500	300
D1.5	4	13000	1000
D1.5	6	10000	1000
D1.5	8	9000	800
D1.5	10	8500	700
D1.5	10	8500	700
D1.5	4	13000	1000
D1.5	6	10000	1000
D1.5	8	9000	800
D1.5	10	8500	700
D1.5	10	8500	700
D2	6	12000	1500
D2	8	11000	1000
D2	10	10000	900
D2	12	9000	800
D2	16	7500	600
D2	6	12000	1500
D2	8	11000	1000
D2	10	10000	900
D2	12	9000	800
D2	16	7500	600

避空
圓角刀
Long Neck
Radius

備註：
* 設備轉速不夠時，請按比例降低轉速和進給；
* 不銹鋼和超耐熱合金的加工推薦油性切削液。

Note:
*Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
*Recommend oil coolant for Stainless Steels and Heat Resistance Alloys.

SHDLSR4刀避空型圓角刀 (4 Flutes Long Neck Radius)

SAMHO

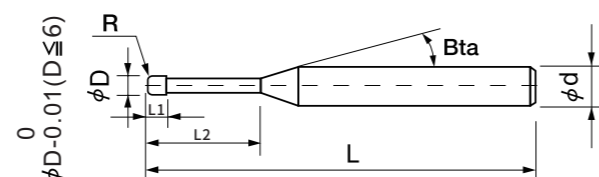


MG DLC Coating 37.5 SD 0-0.003 R ±0.005

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

特長 (Specialty)

- * 專用幾何現狀, 刃口鋒利, 擁有高效切削和排屑。
- * 塗層具有良好熱穩定性, 高溫環境下保持其硬度和機械性能。
- * 較低的摩擦係數, 減少切削過程中的磨損, 提供更好的表面質量。
- * Special geometry design, sharp cutting edge, highly efficient milling and chip evacuation;
- * The coating, with good thermal stability, makes it maintain the hardness and mechanical properties under high temperature;
- * Lower coefficient of friction reduces wear during cutting and provides better surface quality;



模貝鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	○
石墨	Graphite	
銅	Copper	★
樹脂	Plastics	○
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

合計69型號 (Total 69 models)

單位 Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	圓角 CR Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHDLSR4-01001040	D1.0	1.0	4	R0.1	12°	50	4	4	○
SHDLSR4-01001060	D1.0	1.0	6	R0.1	12°	50	4	4	○
SHDLSR4-01001080	D1.0	1.0	8	R0.1	12°	50	4	4	○
SHDLSR4-01001100	D1.0	1.0	10	R0.1	12°	50	4	4	○
SHDLSR4-01001120	D1.0	1.0	12	R0.1	12°	50	4	4	○
SHDLSR4-01002040	D1.0	1.0	4	R0.2	12°	50	4	4	○
SHDLSR4-01002060	D1.0	1.0	6	R0.2	12°	50	4	4	○
SHDLSR4-01002080	D1.0	1.0	8	R0.2	12°	50	4	4	○
SHDLSR4-01002100	D1.0	1.0	10	R0.2	12°	50	4	4	○
SHDLSR4-01002120	D1.0	1.0	12	R0.2	12°	50	4	4	○
SHDLSR4-01501040	D1.5	1.5	4	R0.1	12°	50	4	4	○
SHDLSR4-01501060	D1.5	1.5	6	R0.1	12°	50	4	4	○
SHDLSR4-01501080	D1.5	1.5	8	R0.1	12°	50	4	4	○
SHDLSR4-01501100	D1.5	1.5	10	R0.1	12°	50	4	4	○
SHDLSR4-01501120	D1.5	1.5	12	R0.1	12°	50	4	4	○
SHDLSR4-01502040	D1.5	1.5	4	R0.2	12°	50	4	4	○
SHDLSR4-01502060	D1.5	1.5	6	R0.2	12°	50	4	4	○
SHDLSR4-01502080	D1.5	1.5	8	R0.2	12°	50	4	4	○
SHDLSR4-01502100	D1.5	1.5	10	R0.2	12°	50	4	4	○
SHDLSR4-01502120	D1.5	1.5	12	R0.2	12°	50	4	4	○

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SAMHO

SHDLSR4刀避空型圓角刀 (4 Flutes Long Neck Radius)

合計69型號 (Total 69 models)

單位 Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length of cut	有效長 L2 Effective length	圓角 CR Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number of flutes	柄徑 d Shank Diameter	在庫 In Stock
SHDLSR4-02001060	D2.0	2.0	6	R0.1	12°	50	4	4	○
SHDLSR4-02001080	D2.0	2.0	8	R0.1	12°	50	4	4	○
SHDLSR4-02001100	D2.0	2.0	10	R0.1	12°	50	4	4	○
SHDLSR4-02001120	D2.0	2.0	12	R0.1	12°	50	4	4	○
SHDLSR4-02001160	D2.0	2.0	16	R0.1	12°	50	4	4	○
SHDLSR4-02002060	D2.0	2.0	6	R0.2	12°	50	4	4	○
SHDLSR4-02002080	D2.0	2.0	8	R0.2	12°	50	4	4	○
SHDLSR4-02002100	D2.0	2.0	10	R0.2	12°	50	4	4	○
SHDLSR4-02002120	D2.0	2.0	12	R0.2	12°	50	4	4	○
SHDLSR4-02002160	D2.0	2.0	16	R0.2	12°	50	4	4	○
SHDLSR4-03001080	D3.0	3.0	8	R0.1	12°	50	4	4	○
SHDLSR4-03001100	D3.0	3.0	10	R0.1	12°	50	4	4	○
SHDLSR4-03001120	D3.0	3.0	12	R0.1	12°	50	4	4	○
SHDLSR4-03001160	D3.0	3.0	16	R0.1	12°	50	4	4	○
SHDLSR4-03001200	D3.0	3.0	20	R0.1	12°	50	4	4	○
SHDLSR4-03002080	D3.0	3.0	8	R0.2	12°	50	4	4	○
SHDLSR4-03002100	D3.0	3.0	10	R0.2	12°	50	4	4	○
SHDLSR4-03002120	D3.0	3.0	12	R0.2	12°	50	4	4	○
SHDLSR4-03002160	D3.0	3.0	16	R0.2	12°	50	4	4	○
SHDLSR4-03002200	D3.0	3.0	20	R0.2	12°	50	4	4	○
SHDLSR4-03005080	D3.0	3.0	8	R0.5	12°	50	4	4	○
SHDLSR4-03005100	D3.0	3.0	10	R0.5	12°	50	4	4	○
SHDLSR4-03005120	D3.0	3.0	12	R0.5	12°	50	4	4	○
SHDLSR4-03005160	D3.0	3.0	16	R0.5	12°	50	4	4	○
SHDLSR4-03005200	D3.0	3.0	20	R0.5	12°	50	4	4	○
SHDLSR4-03001080-6	D3.0	3.0	8	R0.1	12°	50	4	6	○
SHDLSR4-03001100-6	D3.0	3.0	10	R0.1	12°	60	4	6	○
SHDLSR4-03001120-6	D3.0	3.0	12	R0.1	12°	60	4	6	○
SHDLSR4-03001160-6	D3.0	3.0	16	R0.1	12°	60	4	6	○
SHDLSR4-03001200-6	D3.0	3.0	20	R0.1	12°	60	4	6	○
SHDLSR4-03002080-6	D3.0	3.0	8	R0.2	12°	60	4	6	○
SHDLSR4-03002100-6	D3.0	3.0	10	R0.2	12°	60	4	6	○
SHDLSR4-03002120-6	D3.0	3.0	12	R0.2	12°	60	4	6	○
SHDLSR4-03002160-6	D3.0	3.0	16	R0.2	12°	60	4	6	○
SHDLSR4-03002200-6	D3.0	3.0	20	R0.2	12°	60	4	6	○
SHDLSR4-03005080-6	D3.0	3.0	8	R0.5	12°	60	4	6	○
SHDLSR4-03005100-6	D3.0	3.0	10	R0.5	12°	60	4	6	○
SHDLSR4-03005120-6	D3.0	3.0	12	R0.5	12°	60	4	6	○

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合計69型號 (Total 69 models)

單位Unit (mm)

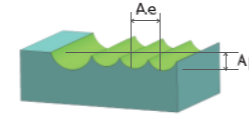
型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	圓角CR Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
SHDLSR4-03005160-6	D3.0	3.0	16	R0.5	12°	60	4	6	○
SHDLSR4-03005200-6	D3.0	3.0	20	R0.5	12°	60	4	6	○
SHDLSR4-04001120-6	D4.0	4.0	12	R0.1	12°	60	4	6	○
SHDLSR4-04001160-6	D4.0	4.0	16	R0.1	12°	60	4	6	○
SHDLSR4-04001200-6	D4.0	4.0	20	R0.1	12°	60	4	6	○
SHDLSR4-04002120-6	D4.0	4.0	12	R0.2	12°	60	4	6	○
SHDLSR4-04002160-6	D4.0	4.0	16	R0.2	12°	60	4	6	○
SHDLSR4-04002200-6	D4.0	4.0	20	R0.2	12°	60	4	6	○
SHDLSR4-04005120-6	D4.0	4.0	12	R0.5	12°	60	4	6	○
SHDLSR4-04005160-6	D4.0	4.0	16	R0.5	12°	60	4	6	○
SHDLSR4-04005200-6	D4.0	4.0	20	R0.5	12°	60	4	6	○

*本系列產品新追加的尺寸。

*New size added from this series.

○ 準庫存品。

○ Stocked items.



被削材 Work Material		無氧銅 & 紅銅 Oxygen-free & Copper	
直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度(mm/min) Feed
D1.0	4	13000	1300
D1.0	6	11000	1000
D1.0	8	10000	800
D1.0	10	8500	500
D1.0	12	7500	300
D1.0	4	13000	1300
D1.0	6	11000	1000
D1.0	8	10000	800
D1.0	10	8500	500
D1.0	12	7500	300
D1.5	6	12000	1300
D1.5	8	10000	1000
D1.5	10	9000	900
D1.5	12	8500	800
D1.5	6	12000	1500
D1.5	8	10000	1000
D1.5	10	9000	900
D1.5	12	8500	800
D2.0	6	13000	1800
D2.0	8	11000	1500
D2.0	10	10000	1200
D2.0	12	9000	1000
D2.0	16	8000	800
D2.0	6	13000	1800
D2.0	8	11000	1500
D2.0	10	10000	1200
D2.0	12	9000	1000
D2.0	16	8000	800
D3.0	6	13000	2200
D3.0	8	12000	2200
D3.0	12	10000	2000
D3.0	16	9000	1600
D3.0	20	8500	1400
D3.0	6	13000	2200
D3.0	8	12000	2200

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被削材 Work Material		無氧銅 & 紅銅 Oxygen-free & Copper	
直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度(mm/min) Feed
D3.0	12	10000	2000
D3.0	16	9000	1600
D3.0	20	8500	1400
D3.0	6	13000	2200
D3.0	8	12000	2200
D3.0	12	10000	2000
D3.0	16	9000	1600
D3.0	20	8500	1400
D3.0	6	13000	2200
D3.0	8	12000	2200
D3.0	12	10000	2000
D3.0	16	9000	1600
D3.0	20	8500	1400
D3.0	6	13000	2200
D3.0	8	12000	2200
D3.0	12	10000	2000
D3.0	16	9000	1600
D3.0	20	8500	1400
D3.0	6	13000	2200
D3.0	8	12000	2200
D3.0	12	10000	2000
D3.0	16	9000	1600
D3.0	20	8500	1400
D3.0	6	13000	2200
D3.0	8	12000	2200
D3.0	12	10000	2000
D3.0	16	9000	1600
D3.0	20	8500	1400
D4.0	8	11000	2200
D4.0	10	11000	2200
D4.0	20	7500	1600
D4.0	8	11000	2200
D4.0	10	11000	2200
D4.0	20	7500	1600
D4.0	8	11000	2200
D4.0	10	11000	2200
D4.0	20	7500	1600

備註:

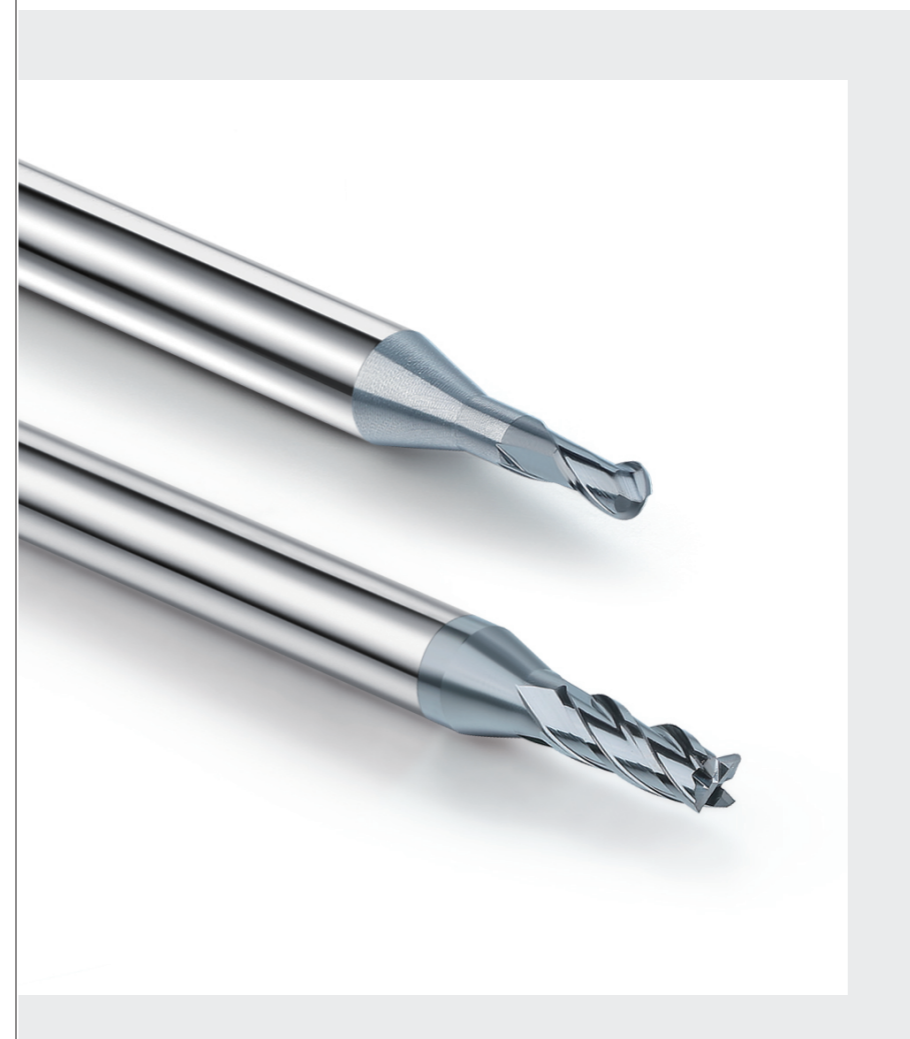
* 設備轉速不夠時, 請按比例降低轉速和進給;

* 不銹鋼和超耐熱合金的加工推薦油性切削液。

Note:

*Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;

*Recommend oil coolant for Stainless Steels and Heat Resistance Alloys.



鎢銅加工專用

Cutting Tools

For Tungsten Copper

平底刀
Square

- CGS2-000
- CGS4-000
- CGLS 2-000
- CGLS 4-000

球刀
Ball

- CGR2-000
- CGLR 2-000

圓角刀
Radius

- CGSR 4-000
- CGLSR 2-000
- CGLSR 4-000

牌号	Cu%(WT)	密度 (min)	导电率 (min)	硬度 (min)	导热系数	热膨胀系数
CuW55	45±2	12.30g/cm ³	49% IACS	125HB	~260(W/mK)	~11.7 (10-6/K)
CuW60	40±2	12.75g/cm ³	47% IACS	140HB		
CuW65	35±2	3.30g/cm ³	44% IACS	155HB		
CuW70	30±2	13.80g/cm ³	42% IACS	175HB	~240(W/mK)	~9.7 (10-6/K)
CuW75	25±2	14.50g/cm ³	38% IACS	195HB	200~230 (W/mK)	9.0~9.5 (10-6/K)
CuW80	20±2	15.15g/cm ³	34% IACS	220HB	190~210 (W/mK)	8.0~8.5 (10-6/K)
CuW85	15±2	15.90g/cm ³	30% IACS	240HB	180~200 (W/mK)	7.0~7.5 (10-6/K)

4刃
4 Flutes避空
圓角刀
Long Neck
Radius

CG 系列 (钨铜专用刀)

CGS Series (Tungsten Copper Special End Mill)



*可預訂高精度版本;
*標籤上標有實測的外徑和R精度。

*High-precision version can be ordered;
*The measured outer diameter and R accuracy are marked on the label.

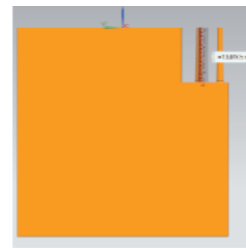
案例

Example

★ 分析報告: 材料 鎢銅(W75) Analysis Report: Material Tungsten copper (W75)

目的: D2 測試 Purpose: D2 test
加工機: 日本碌碌機(36000rpm) Processing machine: ROKU-ROKU machine (36000rpm)
冷卻方式: 油冷 Coolant: Oil coolant
測試時間: 2021-12-28 Test time: 2021-12-28

加工形狀:
Milling Shape:

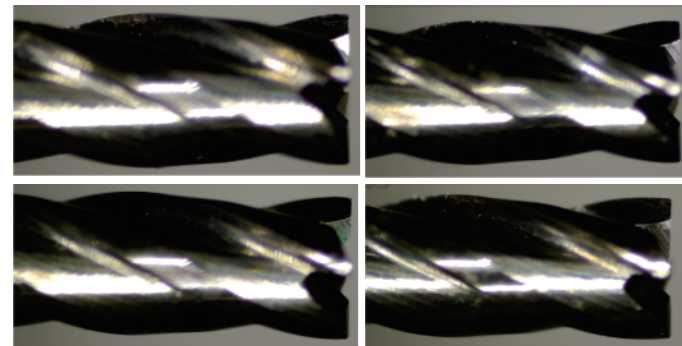


加工參數 Milling Parameters

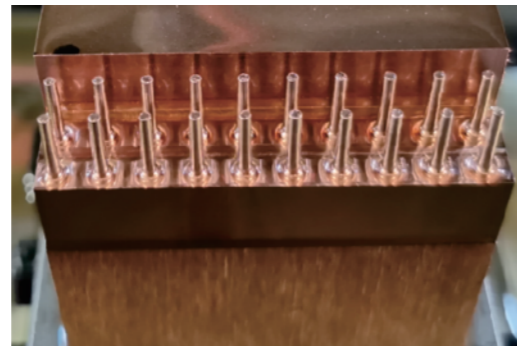
使用工具 Tool	轉速 Spindle Speed	進給 Feed Rate	Q值 Step	切深 Axial Depth	切寬 Radial Depth	加工時間 Cycle Time
CGLS4-020140D2*14 等高加工 Contour processing	(min-1) 8000	(mm/min) 600		(ap) mm 0.03	(ae) mm 0.5	01:45:09

總結工件尺寸均控制在0.01以下, 柱子無變形, 彈刀現象, 光潔度良好, 口部無毛刺。
Summary: The tolerance of the workpiece is controlled less than 0.01. No deformation, no chattering, good surface finishing and no burrs.

刀具狀況 Cutter Condition:



工件實物 Real Workpiece:



SAMHO

CGS2刃平刀 (2 Flutes Square)

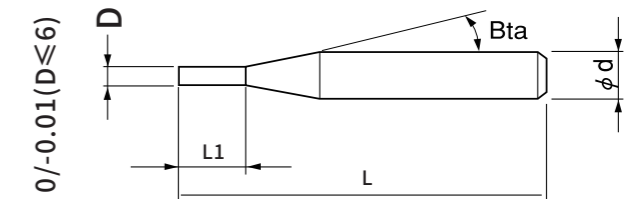


強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

特長 (Specialty)

- * 针对钨铜开发的超細微顆粒鎢鋼原材料;
- * 针对钨铜开发的特殊刃型设计和专用涂层, 实现了钨铜材料的高光潔度和超长寿命。
- * Ultra-fine micro-particles tungsten steel raw materials developed for tungsten copper;
- * The special flute design and coating achieve high surface finish and ultra-long life of tungsten copper material.

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	
樹脂	Plastics	
鎢銅	Tungsten copper	★
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	



合計13型號 (Total 13 models)

單位 Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 B _{Ta} Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
CGS2-0010030	0.1	0.3	-	15°	50	2	4	○
CGS2-0020060	0.2	0.6	-	15°	50	2	4	○
CGS2-0030090	0.3	0.9	-	15°	50	2	4	○
CGS2-0040120	0.4	1.2	-	15°	50	2	4	○
CGS2-0050150	0.5	1.5	-	15°	50	2	4	○
CGS2-0060180	0.6	1.8	-	15°	50	2	4	○
CGS2-0080240	0.8	2.4	-	15°	50	2	4	○
CGS2-0100300	1	3	-	15°	50	2	4	○
CGS2-0154500	1.5	4.5	-	15°	50	2	4	○
CGS2-0200600	2	6	-	15°	50	2	4	○
CGS2-0300900	3	9	-	15°	50	2	4	○
CGS2-0401200	4	12	-	-	50	2	4	○
CGS2-0601600	6	16	-	-	60	2	6	○

*本系列產品新追加的尺寸。
*New size added from this series.

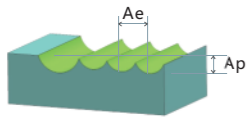
○ 準庫存品。
○ Stocked items.

2刃
2 Flutes

平刀
Square

CGS2-000切削条件表 (Milling Conditions)

SAMHO



側面切削 (Side Milling)

被削材 Work Material	鎢銅 Tungsten Copper		
	直徑(mm) Diameter	轉速(min-1) Spindle	(mm/min) Feed
	D1.0	8000	100
	D1.5	6000	150
	D2.0	5000	200
	D3.0	5000	300
	D4.0	5000	400
	D6.0	4000	400

等高切削 (Contour Milling)

被削材 Work Material	鎢銅 Tungsten Copper		
	直徑(mm) Diameter	轉速(min-1) Speed	進給速度 (mm/min) Feed
	D 0.1	30000	120
	D 0.2	30000	150
	D 0.3	30000	200
	D 0.4	26000	200
	D 0.5	24000	300
	D 0.6	20000	500
	D 0.8	16000	800
	D 1.0	13000	1000
	D 1.5	13000	1200
	D 2.0	12000	1500
	D 3.0	11000	1800
	D 4.0	10000	2200
	D 6.0	9000	2500

備註:
 * 設備轉速不夠時, 請按比例降低轉速和進給;
 * 尖端為精密研磨。為避免破損, 對刀需謹慎;
 * 發生震動時, 請按比例降低轉速和進給。

Note:
 * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
 * Recommend using a non-contact measuring device to avoid damaging the precision tip point;
 * Decrease both spindle speed and feed rate proportionally in case of chattering.

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CGS4刀平刀 (4 Flutes Square)

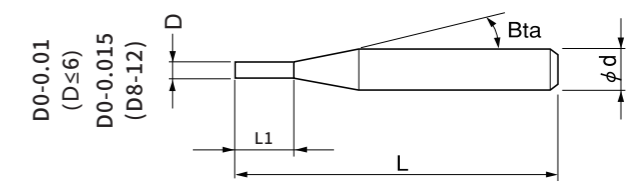


強烈推薦/推薦/建議 ★○○○
 Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬硬鋼	Hardened steels (~55/~60/~70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	
樹脂	Plastics	
鎢銅	Tungsten copper	★
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

* 针对钨铜开发的超細微顆粒鎢銅原材料;
 * 针对钨铜开发的特殊刀型设计和专用涂层, 实现了钨铜材料的高光洁度和超长寿命。
 * Ultra-fine micro-particles tungsten steel raw materials developed for tungsten copper;
 * The special flute design and coating achieve high surface finish and ultra-long life of tungsten copper material.



合計16型號 (Total 16 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
CGS4-0100300	1	3	-	15°	50	4	4	○
CGS4-0150450	1.5	4.5	-	15°	50	4	4	○
CGS4-0200600	2	6	-	15°	50	4	4	○
CGS4-0300900-3	3	9	-	-	60	4	3	○
CGS4-0300900	3	9	-	15°	50	4	4	○
CGS4-0301200	3	12	-	15°	75	4	4	○
CGS4-0401200	4	12	-	15°	50	4	4	○
CGS4-0401600	4	16	-	15°	75	4	4	○
CGS4-0601600	6	16	-	-	50	4	6	○
CGS4-0601800	6	18	-	-	75	4	6	○
CGS4-0802000	8	20	-	-	60	4	8	○
CGS4-0802500	8	25	-	-	75	4	8	○
CGS4-0803000	8	30	-	-	100	4	8	○
CGS4-1002500	10	25	-	-	75	4	10	○
CGS4-1003000	10	30	-	-	100	4	10	○
CGS4-1204000	12	40	-	-	100	4	12	○

* 本系列產品新追加的尺寸。
 * New size added from this series.

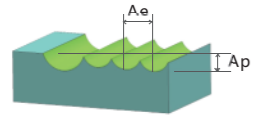
○ 準庫存品。
 ○ Stocked items.

2刃
2 Flutes

平刀
Square

4刃
4 Flutes

平刀
Square



側面切削 (Side Milling)

被削材 Work Material	鎢銅 Tungsten Copper	
直徑(mm) Diameter	轉速(min-1) Speed	進給速度 (mm/min) Feed
D1.0	8000	150
D1.0	6000	150
D2.0	5000	200
D3.0	5000	200
D3.0	5000	300
D3.0	4000	200
D4.0	5000	400
D4.0	5000	300
D6.0	4000	400
D6.0	4000	300
D8.0	3000	400
D8.0	3000	300
D10.0	2000	300
D10.0	2000	300
D12.0	1800	300

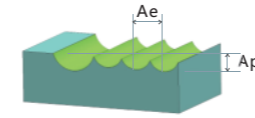
側面切削切深量(mm) Milling Amount for Side Milling (mm)

被削材 Work Material	Length of Cut 刃長	2.5D (刃長=直徑*2.5) 2.5D (Length of Cut=Diameter*2.5)	4D (刃長=直徑*4) 4D (Length of Cut=Diameter*4)
	45HRC以下 45HRC or below		$a_e=0.07D$ $a_p=2D$
45HRC以上 45HRC or above		$a_e=0.03D$ $a_p=1.5D$	$a_e=0.03D$ $a_p=1.5D$

D: 直徑 Diameter (mm)
 ap: 切深 Axial Depth (mm)
 ae: 切寬 Radial Depth (mm)

4刃
4 Flutes

平刀
Square



等高切削 (Contour Milling)

被削材 Work Material	鎢銅 Tungsten Copper	
直徑(mm) Diameter	轉速(min-1) Speed	進給速度 (mm/min) Feed
D1.0	13000	1000
D1.5	13000	1200
D2.0	12000	1500
D3.0	12000	1800
D3.0	12000	1800
D3.0	10000	1800
D4.0	10000	2200
D4.0	9000	2200
D6.0	9000	2500
D6.0	8000	2500
D8.0	8000	2500
D8.0	7000	2500
D10.0	7000	2800
D10.0	7000	2800
D12.0	6000	2500

備註:

- * 設備轉速不夠時，請按比例降低轉速和進給；
- * 尖端為精密研磨。為避免破損，對刀需謹慎；
- * 發生震動時，請按比例降低轉速和進給。

Note:

- * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
- * Recommend using a non-contact measuring device to avoid damaging the precision tip point;
- * Decrease both spindle speed and feed rate proportionally in case of chattering.

4刃
4 Flutes

平刀
Square

CGLS2刀避空型平刀 (2 Flutes Long Neck Square)

SAMHO



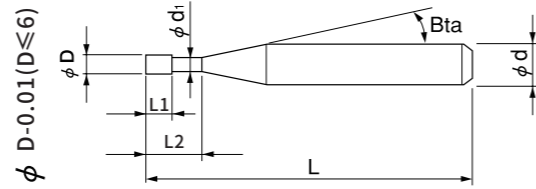
- MG
- DLC Coating
- 30
- SD 0-0.005

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

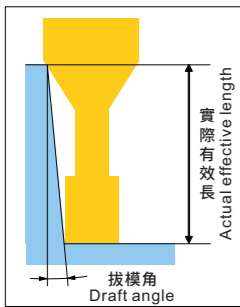
模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	
樹脂	Plastics	
鎢銅	Tungsten copper	★
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- * 针对钨铜开发的超細微顆粒鎢銅原材料;
- * 针对钨铜开发的特殊刃型设计和专用涂层, 实现了钨铜材料的高光洁度和超长寿命。
- * Ultra-fine micro-particles tungsten steel raw materials developed for tungsten copper;
- * The special flute design and coating achieve high surface finish and ultra-long life of tungsten copper material.



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.



合計31型號 (Total 31 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 B _{Ta} Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
CGLS2-002010	0.2	0.4	1	15°	50	2	4	○
CGLS2-002015	0.2	0.4	1.5	15°	50	2	4	○
CGLS2-003015	0.3	0.6	1.5	15°	50	2	4	○
CGLS2-003020	0.3	0.6	2	15°	50	2	4	○
CGLS2-004020	0.4	0.8	2	15°	50	2	4	○
CGLS2-004040	0.4	0.8	4	15°	50	2	4	○
CGLS2-004060	0.4	0.8	6	15°	50	2	4	○
CGLS2-005020	0.5	1.0	2	15°	50	2	4	○
CGLS2-005040	0.5	1.0	4	15°	50	2	4	○
CGLS2-005060	0.5	1.0	6	15°	50	2	4	○

Next page →

SAMHO

CGLS2刀避空型平刀 (2 Flutes Long Neck Square)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 B _{Ta} Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
CGLS2-006020	0.6	1.2	2	15°	50	2	4	○
CGLS2-006040	0.6	1.2	4	15°	50	2	4	○
CGLS2-006060	0.6	1.2	6	15°	50	2	4	○
CGLS2-006080	0.6	1.2	8	15°	50	2	4	○
CGLS2-006100	0.6	1.2	10	15°	50	2	4	○
CGLS2-010040	1.0	2	4	15°	50	2	4	○
CGLS2-010060	1.0	2	6	15°	50	2	4	○
CGLS2-010080	1.0	2	8	15°	50	2	4	○
CGLS2-010100	1.0	2	10	15°	50	2	4	○
CGLS2-010120	1.0	2	12	15°	50	2	4	○
CGLS2-010160	1.0	2	16	15°	50	2	4	○
CGLS2-010200	1.0	2	20	15°	50	2	4	○
CGLS2-015060	1.5	3	6	15°	50	2	4	○
CGLS2-015100	1.5	3	10	15°	50	2	4	○
CGLS2-015160	1.5	3	16	15°	50	2	4	○
CGLS2-015200	1.5	3	20	15°	50	2	4	○
CGLS2-020080	2.0	4	8	15°	50	2	4	○
CGLS2-020100	2.0	4	10	15°	50	2	4	○
CGLS2-020120	2.0	4	12	15°	50	2	4	○
CGLS2-020160	2.0	4	16	15°	50	2	4	○
CGLS2-020200	2.0	4	20	15°	50	2	4	○

*本系列產品新追加的尺寸。
*New size added from this series.

○準庫存品。
○Stocked items.

2刃
2 Flutes

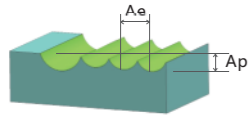
2刃
2 Flutes

避空平刀
Long Neck
Square

避空平刀
Long Neck
Square

CGS2-000切削条件表 (Milling Conditions)

SAMHO



加工参数 (Processing Parameters)

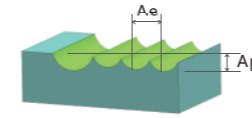
被削材 Work Material		錫銅 Tungsten Copper	
直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度 (mm/min) Feed
D0.2	1	30000	120
D0.2	1.5	30000	100
D0.3	1.5	26000	120
D0.3	2	22000	100
D0.4	2	24000	200
D0.4	4	18000	150
D0.4	6	16000	100
D0.5	2	18000	200
D0.5	4	16000	150
D0.5	6	15000	100
D0.6	2	20000	500
D0.6	4	16000	200
D0.6	6	16000	150
D0.6	8	14000	100
D0.6	10	14000	80
D1.0	4	12000	800
D1.0	6	10000	600
D1.0	8	9000	300
D1.0	10	8000	120
D1.0	12	8000	100
D1.0	16	7000	80
D1.0	20	7000	60
D1.5	6	11000	1000
D1.5	10	9000	600
D1.5	16	8000	300
D1.5	20	7000	100
D2.0	8	10000	1500
D2.0	10	9000	1000
D2.0	12	9000	800
D2.0	16	8000	600
D2.0	20	7000	300

備註：
* 設備轉速不夠時，請按比例降低轉速和進給；
* 尖端為精密研磨。為避免破損，對刀需謹慎。

Note:
* Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
* Recommend using a non-contact measuring device to avoid damaging the precision tip point.

CGS2-000切削条件表 (Milling Conditions)

SAMHO



加工参数 (Processing Parameters)

被削材 Work Material		錫銅 Tungsten Copper	
直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度 (mm/min) Feed
D0.2	1	30000	120
D0.2	1.5	30000	100
D0.3	1.5	26000	120
D0.3	2	22000	100
D0.4	2	24000	200
D0.4	4	18000	150
D0.4	6	16000	100
D0.5	2	18000	200
D0.5	4	16000	150
D0.5	6	15000	100
D0.6	2	20000	500
D0.6	4	16000	200
D0.6	6	16000	150
D0.6	8	14000	100
D0.6	10	14000	80
D1.0	4	12000	800
D1.0	6	10000	600
D1.0	8	9000	300
D1.0	10	8000	120
D1.0	12	8000	100
D1.0	16	7000	80
D1.0	20	7000	60
D1.5	6	11000	1000
D1.5	10	9000	600
D1.5	16	8000	300
D1.5	20	7000	100
D2.0	8	10000	1500
D2.0	10	9000	1000
D2.0	12	9000	800
D2.0	16	8000	600
D2.0	20	7000	300

備註：
* 設備轉速不夠時，請按比例降低轉速和進給；
* 尖端為精密研磨。為避免破損，對刀需謹慎。

Note:
* Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
* Recommend using a non-contact measuring device to avoid damaging the precision tip point.

2刃
2 Flutes

避空平刀
Long Neck
Square

2刃
2 Flutes

避空平刀
Long Neck
Square

CGLS4刀避空型平刀 (4 Flutes Long Neck Square)

SAMHO



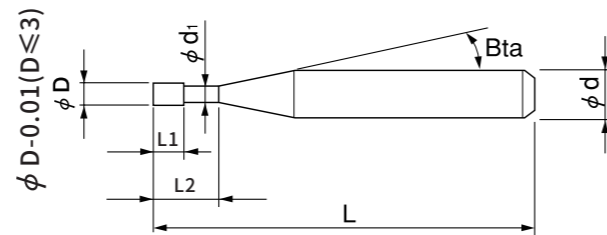
MG DLC Coating 30 SD 0-0.005

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (-55/-60/-70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	
樹脂	Plastics	
鎢鋼	Tungsten copper	★
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- * 针对钨铜开发的超細微顆粒鎢鋼原材料;
- * 针对钨铜开发的特殊刃型设计和专用涂层, 实现了钨铜材料的高光潔度和超长寿命。
- * Ultra-fine micro-particles tungsten steel raw materials developed for tungsten copper;
- * The special flute design and coating achieve high surface finish and ultra-long life of tungsten copper material.



合計19型號 (Total 19 models)

單位 Unit (mm)

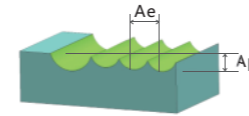
型號 Model Number	刀徑 D Outside Diameter	刃長 L1 Length Of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number Of Flutes	柄徑 d Shank Diameter	在庫 In Stock
CGLS4-010040	1	2	4	15°	50	4	4	○
CGLS4-010060	1	2	6	15°	50	4	4	○
CGLS4-010080	1	2	8	15°	50	4	4	○
CGLS4-010100	1	2	10	15°	50	4	4	○
CGLS4-010120	1	2	12	15°	50	4	4	○
CGLS4-010160	1	2	16	15°	50	4	4	○
CGLS4-010200	1	2	20	15°	50	4	4	○
CGLS4-015060	1.5	3	6	15°	50	4	4	○
CGLS4-015100	1.5	3	10	15°	50	4	4	○
CGLS4-015160	1.5	3	16	15°	50	4	4	○
CGLS4-015200	1.5	3	20	15°	50	4	4	○
CGLS4-020080	2	4	8	15°	50	4	4	○
CGLS4-020100	2	4	10	15°	50	4	4	○
CGLS4-020120	2	4	12	15°	50	4	4	○
CGLS4-020160	2	4	16	15°	50	4	4	○
CGLS4-020200	2	4	20	15°	50	4	4	○
CGLS4-030120	3	9	12	15°	50	4	4	○
CGLS4-030160	3	9	16	15°	50	4	4	○
CGLS4-030200	3	9	20	15°	50	4	4	○

*本系列產品新追加的尺寸。
*New size added from this series.

○ 準庫存品。
○ Stocked items.

CGS4-000切削条件表 (Milling Conditions)

SAMHO



加工參數 (Processing Parameters)

被削材 Work Material		鎢銅 Tungsten Copper	
直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度 (mm/min) Feed
D1.0	4	12000	800
D1.0	6	10000	600
D1.0	8	9000	300
D1.0	10	8000	120
D1.0	12	8000	100
D1.0	16	7000	80
D1.0	20	7000	60
D1.5	6	11000	1000
D1.5	10	9000	600
D1.5	16	8000	300
D1.5	20	7000	100
D2.0	8	10000	1500
D2.0	10	9000	1000
D2.0	12	9000	800
D2.0	16	8000	600
D2.0	20	7000	300
D3.0	12	10000	1800
D3.0	16	8000	1200
D3.0	20	7000	800

備註:

- * 設備轉速不夠時, 請按比例降低轉速和進給;
- * 尖端為精密研磨。為避免破損, 對刀需謹慎。

Note:

- * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
- * Recommend using a non-contact measuring device to avoid damaging the precision tip point.

4刃
4 Flutes

4刃
4 Flutes

避空平刀
Long Neck
Square

避空平刀
Long Neck
Square

CGR2刃球刀 (2 Flutes Ball)

SAMHO



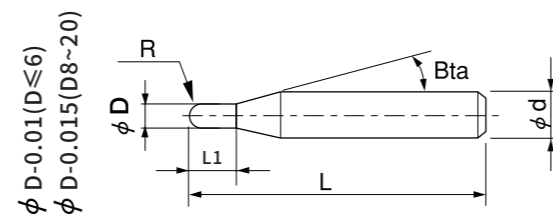
MG DLC Coating 30 SD 0-0.005 R ±0.005 R ±0.007
R≤3 R4~10

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	
樹脂	Plastics	
鎢銅	Tungsten copper	★
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- * 针对钨铜开发的超細微顆粒鎢鋼原材料;
- * 针对钨铜开发的特殊刃型设计和专用涂层, 实现了钨铜材料的高光洁度和超长寿命。
- * Ultra-fine micro-particles tungsten steel raw materials developed for tungsten copper;
- * The special flute design and coating achieve high surface finish and ultra-long life of tungsten copper material.



合計21型號 (Total 21 models)

單位Unit (mm)

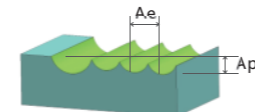
型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length of Cut	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number of Flutes	柄徑 d Shank Diameter	在庫 In Stock
CGR2-002004	R0.1	0.4	15°	50	2	4	○
CGR2-003006	R0.15	0.6	15°	50	2	4	○
CGR2-004008	R0.2	0.8	15°	50	2	4	○
CGR2-005010	R0.25	1	15°	50	2	4	○
CGR2-006012	R0.3	1.2	15°	50	2	4	○
CGR2-008016	R0.4	1.6	15°	50	2	4	○
CGR2-010020	R0.5	2	15°	50	2	4	○
CGR2-015030	R0.75	3	15°	50	2	4	○
CGR2-020040	R1	4	15°	70	2	4	○
CGR2-030060-3	R1.5	6	15°	60	2	3	○
CGR2-030060	R1.5	6	15°	60	2	4	○
CGR2-040080	R2	8	-	50	2	4	○
CGR2-040080-75	R2	8	-	75	2	4	○
CGR2-040080-100	R2	8	-	100	2	4	○
CGR2-060120	R3	12	-	60	2	6	○
CGR2-060120-75	R3	12	-	75	2	6	○
CGR2-060120-100	R3	12	-	100	2	6	○
CGR2-080180	R4	18	-	75	2	6	○
CGR2-080180-100	R4	18	-	100	2	8	○
CGR2-100200	R5	20	-	100	2	10	○
CGR2-120300	R6	30	-	100	2	12	○

*本系列產品新追加的尺寸。
*New size added from this series.

○ 準庫存品。
○ Stocked items.

SAMHO

CGR2-000切削条件表 (Milling Conditions)



加工參數 (Processing Parameters)

被削材 Work Material	鎢銅 Tungsten Copper				
	半徑 Radius of Ball Nose	轉速 (min-1) Speed	進給速度 (mm/min) Feed	Ap (mm)	Ae (mm)
	R0.1	30000	150	0.006	0.006
	R0.15	26000	200	0.006	0.006
	R0.2	26000	300	0.006	0.006
	R0.25	22000	400	0.015	0.015
	R0.3	20000	600	0.015	0.015
	R0.4	20000	800	0.02	0.02
	R0.5	18000	1000	0.02	0.03
	R0.75	16000	1200	0.02	0.04
	R1	14000	1800	0.02	0.05
	R1.5	13000	2200	0.03	0.06
	R1.5	13000	2200	0.03	0.06
	R2	12000	2400	0.03	0.06
	R2	12000	2400	0.03	0.06
	R3	10000	2600	0.03	0.08
	R4	9000	2800	0.03	0.1
	R5	8000	2800	0.03	0.12
	R6	7000	2800	0.03	0.12

備註:

- * 以上加工參數伸出長度按照3d計算, 如果伸出長超出請按比例降低轉速和進給;
- * 設備轉速不夠時, 請按比例降低轉速和進給。

Note:

- * Decrease both spindle speed and feed rate proportionally if overhang length exceeds 3xd;
- * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed.

2刃
2 Flutes

2刃
2 Flutes

球刀
Ball

球刀
Ball

CGLR2刀避空型球刀 (2 Flutes Long Neck Ball)

SAMHO



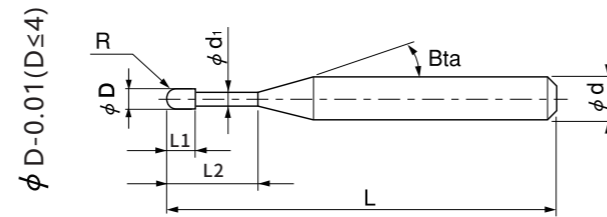
MG DLC Coating 30 SD 0-0.005 R ±0.005

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	
樹脂	Plastics	
鎢銅	Tungsten copper	★
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- * 针对钨铜开发的超細微顆粒鎢鋼原材料;
- * 针对钨铜开发的特殊刃型设计和专用涂层, 实现了钨铜材料的高光洁度和超长寿命。
- * Ultra-fine micro-particles tungsten steel raw materials developed for tungsten copper;
- * The special flute design and coating achieve high surface finish and ultra-long life of tungsten copper material.



合計56型號 (Total 56 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length of Cut	有效長 L2 Effective Length	錐度角 B _{Ta} Shank Taper Angle	全長 L Overall Length	刃數 T Number of Flutes	柄徑 d Shank Diameter	在庫 In Stock
CGLR2-002005	R0.1	0.2	0.5	15°	50	2	4	○
CGLR2-002010	R0.1	0.2	1	15°	50	2	4	○
CGLR2-002015	R0.1	0.2	1.5	15°	50	2	4	○
CGLR2-003010	R0.15	0.3	1	15°	50	2	4	○
CGLR2-003015	R0.15	0.3	1.5	15°	50	2	4	○
CGLR2-003020	R0.15	0.3	2	15°	50	2	4	○
CGLR2-003030	R0.15	0.3	3	15°	50	2	4	○
CGLR2-004010	R0.2	0.4	1	15°	50	2	4	○
CGLR2-004020	R0.2	0.4	2	15°	50	2	4	○
CGLR2-004030	R0.2	0.4	3	15°	50	2	4	○
CGLR2-004040	R0.2	0.4	4	15°	50	2	4	○
CGLR2-005010	R0.25	0.5	1	15°	50	2	4	○
CGLR2-005020	R0.25	0.5	2	15°	50	2	4	○
CGLR2-005040	R0.25	0.5	4	15°	50	2	4	○
CGLR2-005060	R0.25	0.5	6	15°	50	2	4	○
CGLR2-005080	R0.25	0.5	8	15°	50	2	4	○
CGLR2-006020	R0.3	0.6	2	15°	50	2	4	○
CGLR2-006040	R0.3	0.6	4	15°	50	2	4	○
CGLR2-006060	R0.3	0.6	6	15°	50	2	4	○
CGLR2-006080	R0.3	0.6	8	15°	50	2	4	○
CGLR2-008020	R0.4	0.8	2	15°	50	2	4	○
CGLR2-008040	R0.4	0.8	4	15°	50	2	4	○

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SAMHO

CGLR2刀避空型球刀 (2 Flutes Long Neck Ball)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length of Cut	有效長 L2 Effective Length	錐度角 B _{Ta} Shank Taper Angle	全長 L Overall Length	刃數 T Number of Flutes	柄徑 d Shank Diameter	在庫 In Stock
CGLR2-008060	R0.4	0.8	6	15°	50	2	4	○
CGLR2-008080	R0.4	0.8	8	15°	50	2	4	○
CGLR2-010020	R0.5	1	2	15°	50	2	4	○
CGLR2-010040	R0.5	1	4	15°	50	2	4	○
CGLR2-010060	R0.5	1	6	15°	50	2	4	○
CGLR2-010080	R0.5	1	8	15°	50	2	4	○
CGLR2-010100	R0.5	1	10	15°	50	2	4	○
CGLR2-010120	R0.5	1	12	15°	50	2	4	○
CGLR2-010140	R0.5	1	14	15°	50	2	4	○
CGLR2-010160	R0.5	1	16	15°	50	2	4	○
CGLR2-015040	R0.75	1.5	4	15°	50	2	4	○
CGLR2-015060	R0.75	1.5	6	15°	50	2	4	○
CGLR2-015080	R0.75	1.5	8	15°	50	2	4	○
CGLR2-015100	R0.75	1.5	10	15°	50	2	4	○
CGLR2-015120	R0.75	1.5	12	15°	50	2	4	○
CGLR2-015140	R0.75	1.5	14	15°	50	2	4	○
CGLR2-015160	R0.75	1.5	16	15°	50	2	4	○
CGLR2-020040	R1	2	4	15°	50	2	4	○
CGLR2-020060	R1	2	6	15°	50	2	4	○
CGLR2-020080	R1	2	8	15°	50	2	4	○
CGLR2-020100	R1	2	10	15°	50	2	4	○
CGLR2-020120	R1	2	12	15°	50	2	4	○
CGLR2-020160	R1	2	16	15°	50	2	4	○
CGLR2-030060	R1.5	3	6	15°	50	2	4	○
CGLR2-030080	R1.5	3	8	15°	50	2	4	○
CGLR2-030100	R1.5	3	10	15°	50	2	4	○
CGLR2-030120	R1.5	3	12	15°	50	2	4	○
CGLR2-030160	R1.5	3	16	15°	50	2	4	○
CGLR2-030200	R1.5	3	20	15°	50	2	4	○
CGLR2-040080	R2	4	8	--	50	2	4	○
CGLR2-040100	R2	4	10	--	50	2	4	○
CGLR2-040120	R2	4	12	--	50	2	4	○
CGLR2-040160	R2	4	16	--	50	2	4	○
CGLR2-040200	R2	4	20	-	50	2	4	○

*本系列產品新追加的尺寸。
*New size added from this series.

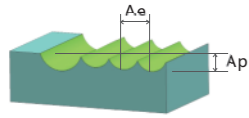
○ 準庫存品。
○ Stocked items.

2刃
2 Flutes

2刃
2 Flutes

避空球刀
Long Neck
Ball

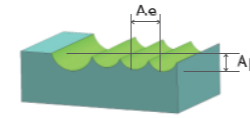
避空球刀
Long Neck
Ball



加工參數 (Processing Parameters)

被削材 Work Material		鎢銅 Tungsten Copper			
半徑 Radius of Ball Nose	有效長 (mm) Effective Length	轉速 (min-1) Speed	進給速度 (mm/min) Feed	Ap (mm)	Ae (mm)
R0.1	0.5	30000	120	0.006	0.006
R0.1	1	30000	100	0.003	0.003
R0.1	1.5	30000	100	0.003	0.003
R0.15	1	26000	200	0.006	0.006
R0.15	1.5	26000	200	0.004	0.004
R0.15	2	24000	150	0.003	0.003
R0.15	3	18000	100	0.003	0.003
R0.2	1	2400	300	0.01	0.01
R0.2	2	20000	200	0.008	0.01
R0.2	3	18000	150	0.006	0.006
R0.2	4	16000	150	0.003	0.003
R0.25	1	20000	600	0.01	0.01
R0.25	2	18000	600	0.01	0.01
R0.25	4	16000	300	0.008	0.008
R0.25	6	14000	150	0.008	0.008
R0.25	8	14000	100	0.003	0.003
R0.3	2	20000	800	0.02	0.02
R0.3	4	15000	500	0.01	0.01
R0.3	6	13000	300	0.008	0.008
R0.3	8	13000	150	0.005	0.005
R0.4	2	18000	1200	0.02	0.02
R0.4	4	18000	800	0.02	0.02
R0.4	6	16000	600	0.01	0.02
R0.4	8	15000	400	0.005	0.01
R0.5	2	14000	1200	0.02	0.03
R0.5	4	14000	1000	0.02	0.03
R0.5	6	14000	800	0.02	0.03
R0.5	8	12000	500	0.01	0.02
R0.5	10	12000	400	0.01	0.02
R0.5	12	10000	300	0.01	0.02
R0.5	14	10000	200	0.008	0.01
R0.5	16	10000	200	0.005	0.01
R0.75	4	16000	1400	0.02	0.04

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加工參數 (Processing Parameters)

被削材 Work Material		鎢銅 Tungsten Copper			
半徑 Radius of Ball Nose	有效長 (mm) Effective Length	轉速 (min-1) Speed	進給速度 (mm/min) Feed	Ap (mm)	Ae (mm)
R0.75	6	14000	1200	0.02	0.04
R0.75	8	13000	1000	0.02	0.04
R0.75	10	12000	600	0.01	0.04
R0.75	12	11000	500	0.01	0.04
R0.75	14	10000	400	0.01	0.02
R0.75	16	9000	300	0.01	0.01
R1	4	16000	2000	0.03	0.06
R1	6	14000	1800	0.03	0.06
R1	8	14000	1800	0.03	0.06
R1	10	14000	1800	0.03	0.06
R1	12	12000	1400	0.02	0.06
R1	16	10000	1000	0.02	0.06
R1.5	6	16000	2000	0.03	0.06
R1.5	8	14000	1800	0.03	0.06
R1.5	10	14000	1800	0.03	0.06
R1.5	12	14000	1800	0.03	0.06
R1.5	16	12000	1400	0.02	0.06
R1.5	20	10000	1000	0.02	0.06
R2	8	12000	2200	0.03	0.07
R2	10	12000	2200	0.03	0.07
R2	12	12000	2200	0.03	0.07
R2	16	12000	2200	0.03	0.07
R2	20	11000	2000	0.03	0.07

備註:

- * 設備轉速不夠時，請按比例降低轉速和進給；
- * 不銹鋼和超耐熱合金的加工推薦油性切削液。

Note:

- *Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
- *Recommend using a non-contact measuring device to avoid damaging the precision tip point.

2刃
2 Flutes

2刃
2 Flutes

避空球刀
Long Neck
Ball

避空球刀
Long Neck
Ball

CGSR4刃圓角刀 (4 Flutes Radius)

SAMHO



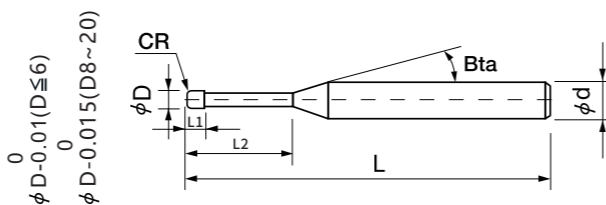
MG DLC Coating 30 SD 0-0.005 R ±0.005 R ±0.007 D≤6 D8~12

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬硬鋼	Hardened steels (~55/~60/~70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	
樹脂	Plastics	
鎢銅	Tungsten copper	★
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- * 针对钨铜开发的超細微顆粒鎢銅原材料;
- * 针对钨铜开发的特殊刃型设计和专用涂层, 实现了钨铜材料的高光洁度和超长寿命。
- * Ultra-fine micro-particles tungsten steel raw materials developed for tungsten copper;
- * The special flute design and coating achieve high surface finish and ultra-long life of tungsten copper material.



合計35型號 (Total 35 models)

單位 Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length of Cut	圓角CR Corner Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number of Flutes	柄徑 d Shank Diameter	在庫 In Stock
CGSR4-03002090-3	3	9	0.2	-	50	4	3	○
CGSR4-03002090	3	9	0.2	15°	50	4	4	○
CGSR4-03005090-3	3	9	0.5	15°	50	4	3	○
CGSR4-03005090	3	9	0.5	15°	50	4	4	○
CGSR4-04001120	4	12	0.1	-	50	4	4	○
CGSR4-04001120-75	4	12	0.1	-	75	4	4	○
CGSR4-04001120-100	4	12	0.1	-	100	4	4	○
CGSR4-04002120	4	12	0.2	-	50	4	4	○
CGSR4-04002120-75	4	12	0.2	-	75	4	4	○
CGSR4-04002120-100	4	12	0.2	-	100	4	4	○
CGSR4-04005120	4	12	0.5	-	50	4	4	○
CGSR4-04005120-75	4	12	0.5	-	75	4	4	○
CGSR4-04005120-100	4	12	0.5	-	100	4	4	○
CGSR4-06002160	6	16	0.2	-	60	4	6	○
CGSR4-06002160-75	6	16	0.2	-	75	4	6	○
CGSR4-06002160-100	6	16	0.2	-	100	4	6	○
CGSR4-06005160	6	16	0.5	-	50	4	6	○
CGSR4-06005160-75	6	16	0.5	-	75	4	6	○
CGSR4-06005160-100	6	16	0.5	-	100	4	6	○
CGSR4-08005200-75	8	20	0.5	-	75	4	8	○
CGSR4-08005000-100	8	20	0.5	-	100	4	8	○
CGSR4-08005200-150	8	20	0.5	-	150	4	8	○

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CGSR4刃圓角刀 (4 Flutes Radius)

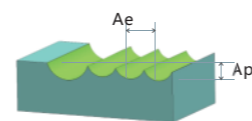
合計35型號 (Total 35 models)

單位 Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length of Cut	圓角CR Corner Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number of Flutes	柄徑 d Shank Diameter	在庫 In Stock
CGSR4-08010200-75	8	20	1	-	75	4	8	○
CGSR4-08010200-100	8	20	1	-	100	4	8	○
CGSR4-08010200-150	8	20	1	-	150	4	8	○
CGSR4-10005250-75	10	25	0.5	-	75	4	10	○
CGSR4-10005250-100	10	25	0.5	-	100	4	10	○
CGSR4-10005250-150	10	25	0.5	-	150	4	10	○
CGSR4-10010250-75	10	25	1	-	75	4	10	○
CGSR4-10010250-100	10	25	1	-	100	4	10	○
CGSR4-10010250-150	10	25	1	-	150	4	10	○
CGSR4-12005300-100	12	30	0.5	-	100	4	12	○
CGSR4-12005300-150	12	30	0.5	-	150	4	12	○
CGSR4-12010300-100	12	30	1	-	100	4	12	○
CGSR4-12010300-150	12	30	1	-	150	4	12	○

* 本系列產品新追加的尺寸。
* New size added from this series.

○ 準庫存品。
○ Stocked items.



側面切削 (Side Milling)

被削材 Work Material	鎢銅 Tungsten Copper	
直徑 (mm) Diameter	轉速 (min-1) Speed	(mm/min) Feed
D3	11000	1800
D4	10000	2000
D6	9000	2400
D8	8000	2600
D10	7000	2600
D12	6500	2600

備註:

- * 以上加工參數伸出長度按照3d計算, 如果伸出長超出請按比例降低轉速和進給;
- * 設備轉速不夠時, 請按比例降低轉速和進給。

Note:

- * Decrease both spindle speed and feed rate proportionally if overhang length exceeds 3xd;
- * Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed.

4刃
4 Flutes

4刃
4 Flutes

圓角刀
Radius

圓角刀
Radius

CGLSR2刀避空型圓角刀(2Flutes Long Neck Radius)

SAMHO

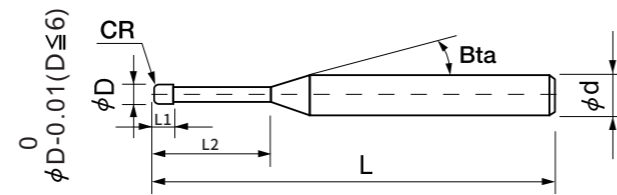


- MG
- DLC Coating
- 30
- SD 0-0.005
- R ±0.005

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

特長(Specialty)

- * 针对钨铜开发的超細微顆粒鎢鋼原材料;
- * 针对钨铜开发的特殊刃型设计和专用涂层, 实现了钨铜材料的高光洁度和超长寿命。
- * Ultra-fine micro-particles tungsten steel raw materials developed for tungsten copper;
- * The special flute design and coating achieve high surface finish and ultra-long life of tungsten copper material.



模具鋼	DIE STEEL	推薦等級(Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (-55/-60/-70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	
樹脂	Plastics	
鎢銅	Tungsten copper	★
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

合計22型號 (Total 22 models)

單位Unit (mm)

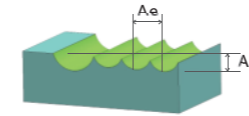
型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length of Cut	有效長 L2 Effective Length	圓角CR Corner Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number of Flutes	柄徑 d Shank Diameter	在庫 In Stock
CGLSR2-002005005	D0.2	0.4	0.5	R0.05	15°	50	2	4	○
CGLSR2-002005010	D0.2	0.4	1	R0.05	15°	50	2	4	○
CGLSR2-003005005	D0.3	1	0.5	R0.05	15°	50	2	4	○
CGLSR2-003005010	D0.3	1	1	R0.05	15°	50	2	4	○
CGLSR2-005005020	D0.5	1	2	R0.05	15°	50	2	4	○
CGLSR2-005005040	D0.5	1	4	R0.05	15°	50	2	4	○
CGLSR2-005005060	D0.5	1	6	R0.05	15°	50	2	4	○
CGLSR2-00501020	D0.5	1	2	R0.1	15°	50	2	4	○
CGLSR2-00501040	D0.5	1	4	R0.1	15°	50	2	4	○
CGLSR2-00501060	D0.5	1	6	R0.1	15°	50	2	4	○
CGLSR2-006005020	D0.6	1	2	R0.05	15°	50	2	4	○
CGLSR2-006005040	D0.6	1	4	R0.05	15°	50	2	4	○
CGLSR2-006005060	D0.6	1	6	R0.05	15°	50	2	4	○
CGLSR2-00601020	D0.6	1	2	R0.1	15°	50	2	4	○
CGLSR2-00601040	D0.6	1	4	R0.1	15°	50	2	4	○
CGLSR2-00601060	D0.6	1	6	R0.1	15°	50	2	4	○
CGLSR2-008005020	D0.8	1	2	R0.05	15°	50	2	4	○
CGLSR2-008005040	D0.8	1	4	R0.05	15°	50	2	4	○
CGLSR2-008005060	D0.8	1	6	R0.05	15°	50	2	4	○
CGLSR2-00801020	D0.8	1	2	R0.1	15°	50	2	4	○
CGLSR2-00801040	D0.8	1	4	R0.1	15°	50	2	4	○
CGLSR2-00801060	D0.8	1	6	R0.1	15°	50	2	4	○

*本系列產品新追加的尺寸。
*New size added from this series.

○ 準庫存品。
○ Stocked items.

CGLSR2-000切削條件表(Milling Conditions)

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被削材 Work Material		鎢銅 Tungsten Copper	
直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度 (mm/min) Feed
D0.2	0.5	30000	150
D0.2	1	30000	100
0.3	0.5	28000	300
0.3	1	26000	200
D0.5	2	15000	300
D0.5	4	13000	180
D0.5	6	12000	120
D0.5	2	15000	300
D0.5	4	13000	180
D0.5	6	12000	120
D0.6	2	16000	600
D0.6	4	12000	350
D0.6	6	10000	200
D0.6	2	16000	600
D0.6	4	12000	350
D0.6	6	10000	200
D0.8	2	16000	1000
D0.8	4	13000	600
D0.8	6	12000	500
D0.8	2	16000	1000
D0.8	4	13000	600
D0.8	6	12000	400

備註:

* 設備轉速不夠時, 請按比例降低轉速和進給。

Note:

* Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed.

2刃
2 Flutes

2刃
2 Flutes

避空
圓角刀
Long Neck
Radius

避空
圓角刀
Long Neck
Radius

CGLSR4刃避空型圓角刀 (4 Flutes Long Neck Radius)

SAMHO



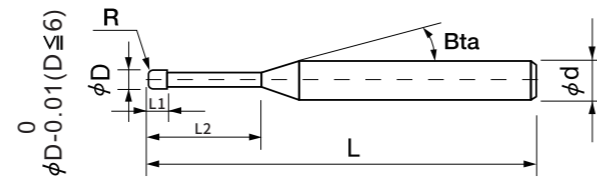
MG DLC Coating 30 SD 0-0.005 R ±0.005

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
碳素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	
銅	Copper	
樹脂	Plastics	
鎢銅	Tungsten copper	★
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- * 针对钨铜开发的超細微顆粒鎢鋼原材料;
- * 针对钨铜开发的特殊刃型设计和专用涂层, 实现了钨铜材料的高光洁度和超长寿命。
- * Ultra-fine micro-particles tungsten steel raw materials developed for tungsten copper;
- * The special flute design and coating achieve high surface finish and ultra-long life of tungsten copper material.



合計51型號 (Total 51 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length of Cut	有效長 L2 Effective Length	圓角CR Corner Radius	錐度角Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number of Flutes	柄徑 d Shank Diameter	在庫 In Stock
CGLSR4-010005040	1	2	4	0.05	15°	50	4	4	○
CGLSR4-010005060	1	2	6	0.05	15°	50	4	4	○
CGLSR4-010005080	1	2	8	0.05	15°	50	4	4	○
CGLSR4-010005100	1	2	10	0.05	15°	50	4	4	○
CGLSR4-01001040	1	2	4	0.1	15°	50	4	4	○
CGLSR4-01001060	1	2	6	0.1	15°	50	4	4	○
CGLSR4-01001080	1	2	8	0.1	15°	50	4	4	○
CGLSR4-01001100	1	2	10	0.1	15°	50	4	4	○
CGLSR4-01501060	1.5	3	6	0.1	15°	50	4	4	○
CGLSR4-01501080	1.5	3	8	0.1	15°	50	4	4	○
CGLSR4-01501100	1.5	3	10	0.1	15°	50	4	4	○
CGLSR4-01501120	1.5	3	12	0.1	15°	50	4	4	○
CGLSR4-01501160	1.5	3	16	0.1	15°	50	4	4	○
CGLSR4-01502060	1.5	3	6	0.2	15°	50	4	4	○
CGLSR4-01502080	1.5	3	8	0.2	15°	50	4	4	○
CGLSR4-01502100	1.5	3	10	0.2	15°	50	4	4	○
CGLSR4-01502120	1.5	3	12	0.2	15°	50	4	4	○
CGLSR4-01502160	1.5	3	16	0.2	15°	50	4	4	○
CGLSR4-02001060	2	4	6	0.1	15°	50	4	4	○

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CGLSR4刃避空型圓角刀 (4 Flutes Long Neck Radius)

合計51型號 (Total 51 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length of Cut	有效長 L2 Effective Length	圓角CR Corner Radius	錐度角Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number of Flutes	柄徑 d Shank Diameter	在庫 In Stock
CGLSR4-02001080	2	4	8	0.1	15°	50	4	4	○
CGLSR4-02001100	2	4	10	0.1	15°	50	4	4	○
CGLSR4-02001120	2	4	12	0.1	15°	50	4	4	○
CGLSR4-02001160	2	4	16	0.1	15°	50	4	4	○
CGLSR4-02001200	2	4	20	0.1	15°	50	4	4	○
CGLSR4-02002060	2	4	6	0.2	15°	50	4	4	○
CGLSR4-02002080	2	4	8	0.2	15°	50	4	4	○
CGLSR4-02002100	2	4	10	0.2	15°	50	4	4	○
CGLSR4-02002120	2	4	12	0.2	15°	50	4	4	○
CGLSR4-02002160	2	4	16	0.2	15°	50	4	4	○
CGLSR4-02002200	2	4	20	0.2	15°	50	4	4	○
CGLSR4-02005060	2	4	6	0.5	15°	50	4	4	○
CGLSR4-02005080	2	4	8	0.5	15°	50	4	4	○
CGLSR4-02005100	2	4	10	0.5	15°	50	4	4	○
CGLSR4-02005120	2	4	12	0.5	15°	50	4	4	○
CGLSR4-02005160	2	4	16	0.5	15°	50	4	4	○
CGLSR4-02005200	2	4	20	0.5	15°	50	4	4	○
CGLSR4-03001120	3	6	12	0.1	15°	50	4	4	○
CGLSR4-03001160	3	6	16	0.1	15°	50	4	4	○
CGLSR4-03001200	3	6	20	0.1	15°	50	4	4	○
CGLSR4-03001250	3	6	25	0.1	15°	60	4	4	○
CGLSR4-03001300	3	6	30	0.1	15°	75	4	4	○
CGLSR4-03002120	3	6	12	0.2	15°	50	4	4	○
CGLSR4-03002160	3	6	16	0.2	15°	50	4	4	○
CGLSR4-03002200	3	6	20	0.2	15°	50	4	4	○
CGLSR4-03002250	3	6	25	0.2	15°	60	4	4	○
CGLSR4-03002300	3	6	30	0.2	15°	75	4	4	○
CGLSR4-03005120	3	6	12	0.5	15°	50	4	4	○
CGLSR4-03005160	3	6	16	0.5	15°	50	4	4	○
CGLSR4-03005200	3	6	20	0.5	15°	50	4	4	○
CGLSR4-03005250	3	6	25	0.5	15°	60	4	4	○
CGLSR4-03005300	3	6	30	0.5	15°	75	4	4	○

*本系列產品新追加的尺寸。
*New size added from this series.

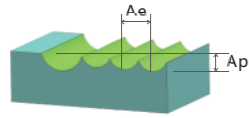
○準庫存品。
○ Stocked items.

4刃
4 Flutes

4刃
4 Flutes

避空
圓角刀
Long Neck
Radius

避空
圓角刀
Long Neck
Radius



被削材 Work Material		鎢銅 Tungsten Copper	
直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度 (mm/min) Feed
D1	4	12000	800
D1	6	10000	600
D1	8	8500	400
D1	10	7500	300
D1	4	12000	800
D1	6	10000	600
D1	8	8500	400
D1	10	7500	300
D1.5	6	10000	1200
D1.5	8	8500	800
D1.5	10	7500	500
D1.5	12	7000	300
D1.5	16	6000	300
D1.5	6	10000	1200
D1.5	8	8500	800
D1.5	10	7500	500
D1.5	12	7000	300
D1.5	16	6000	300
D2.0	6	12000	1500
D2.0	8	10000	1100
D2.0	10	9000	1000
D2.0	12	8500	800
D2.0	16	7000	600
D2.0	20	7000	400
D2.0	6	12000	1500
D2.0	8	10000	1100
D2.0	10	9000	1000
D2.0	12	8500	800
D2.0	16	7000	600
D2.0	20	7000	400
D2.0	6	12000	1500
D2.0	8	10000	1100
D2.0	10	9000	1000
D2.0	12	8500	800
D2.0	16	7000	600

Next page →

被削材 Work Material		鎢銅 Tungsten Copper	
直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度 (mm/min) Feed
D2.0	20	7000	400
D3.0	12	10000	1800
D3.0	16	8500	1400
D3.0	20	8000	1200
D3.0	25	7000	800
D3.0	30	6000	500
D3.0	12	10000	1800
D3.0	16	8500	1400
D3.0	20	8000	1200
D3.0	25	7000	800
D3.0	30	6000	500
D3.0	12	10000	1800
D3.0	16	8500	1400
D3.0	20	8000	1200
D3.0	25	7000	800
D3.0	30	6000	500

備註:

* 設備轉速不夠時, 請按比例降低轉速和進給。

Note:

* Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed.

4刃
4 Flutes

避空
圓角刀
Long Neck
Radius

產品應用領域

Product Application Field

SAMHO系列金剛石塗層銑刀，採用独有的多层纳米金剛石塗層技術，具有高硬度，最低摩擦係數最高導熱率，最低的化學反應特性，覆以6-10um加厚的金剛石塗層，保證了強勁的耐磨性。

SAMHO series diamond-coated milling cutters use unique multi-layer nano-diamond coating technology. It has high hardness, lowest friction coefficient, highest thermal conductivity, and lowest chemical reaction characteristics. It is coated with a 6-10um thickened coating to ensure strong wear resistance.



GRAS系列(石墨刀專用)

GRAS Series (Graphite Special End Mill)



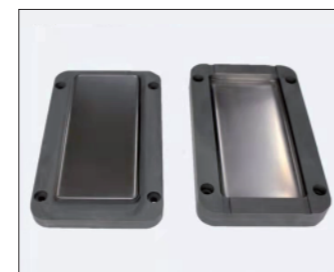
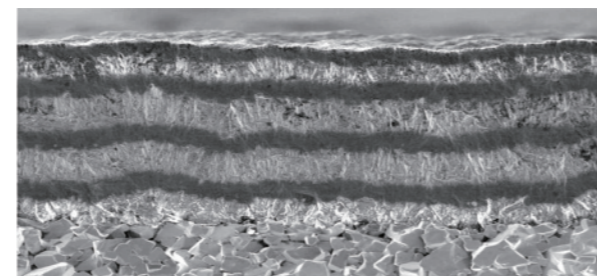
*可預訂高精度版本；
*標籤上標有實測的外徑和R精度。

*High-precision version can be ordered;
*Diameter and Ball R accuracy measurement are printed on the label.

塗層

Coating

塗層表面光滑，多層金剛石結構。
Layer surface is smooth, multi-layer diamond Coating.



SAMHO

GRAS2刃平刀(2 Flutes Square)



MG

DIA Coating

30

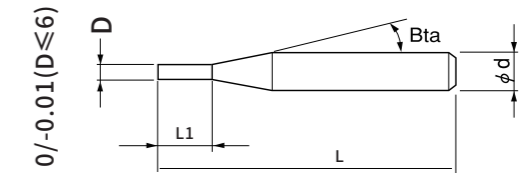
SD 0-0.005

強烈推薦/推薦/建議 ★○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級(Grade)
炭素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (-55/-60/-70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	★
銅	Copper	
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長(Specialty)

- *石墨加工用2刃平頭立銑刀；
- *新開發的鑽石塗層實現出眾的耐磨性能。
- *2 Flute square end mills for milling graphite；
- *New diamond coating offers excellent wear resistance.



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.

合計8型號 (Total 8 models)

單位Unit (mm)

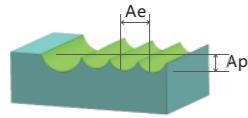
型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number of Flutes	柄徑 d Shank Diameter	在庫 In Stock
GRAS2-0020060	0.2	0.6	-	15°	50	2	4	○
GRAS2-0050150	0.5	1.5	-	15°	50	2	4	○
GRAS2-0100300	1	3	-	15°	50	2	4	○
GRAS2-0150450	1.5	4.5	-	15°	50	2	4	○
GRAS2-0200600	2	6	-	15°	50	2	4	○
GRAS2-0300900	3	9	-	15°	50	2	4	○
GRAS2-0401200	4	12	-	-	50	2	4	○
GRAS2-0601800	6	18	-	-	60	2	6	○

*本系列產品新追加的尺寸。
*New size added from this series.

*標準庫存品。
*Stocked items.

2刃
2 Flutes

平刀
Square



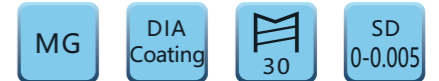
被削材 Work Material		石墨 Graphite					
直徑(mm) Diameter	伸出長度(mm) Overhang	轉速(min-1) Speed	進給速度 (mm/min) Feed	側面切削Side Milling		溝槽切削Slotting	
				Ap(mm)	Ae(mm)	Ap(mm)	Ae(mm)
D0.2	4D	28000	800	1D	0.05D	0.05D	--
D0.2	15D	28000	800	0.5D	0.05D	0.05D	--
D0.2	25D	26000	800	0.5D	0.05D	0.05D	--
D0.5	4D	28000	1000	1D	0.05D	0.1D	--
D0.5	15D	26000	1000	0.5D	0.05D	0.1D	--
D0.5	25D	24000	1000	0.5D	0.05D	0.1D	--
D1	4D	24000	1200	1D	0.05D	0.3D	--
D1	15D	24000	1200	0.4D	0.04D	0.2D	--
D1	25D	20000	1200	0.2D	0.03D	0.15D	--
D1.5	4D	22000	1500	1D	0.05D	0.3D	--
D1.5	10D	22000	1500	0.5D	0.05D	0.2D	--
D1.5	15D	18000	1500	0.5D	0.05D	0.15D	--
D2	4D	20000	1800	1D	0.05D	0.3D	--
D2	10D	20000	1800	0.5D	0.05D	0.2D	--
D2	15D	16000	1200	0.2D	0.04D	0.2D	--
D3	4D	20000	3000	1D	0.05D	0.3D	--
D3	10D	20000	2400	0.5D	0.05D	0.2D	--
D3	15D	18000	2000	0.3D	0.05D	0.2D	--
D4	4D	18000	2200	1.5D	0.05D	0.3D	--
D4	8D	15000	2000	0.7D	0.05D	0.2D	--
D4	12D	12000	1600	0.4D	0.05D	0.2D	--
D6	4D	13000	3000	2D	0.05D	0.3D	--
D6	8D	13000	3000	1D	0.05D	0.2D	--
D6	12D	8000	2000	0.6D	0.03D	0.2D	--

備註:
*加工石墨請使用專用機床;
*推薦冷卻方式為氣冷。

Notes:
*Use a milling machine dedicated for graphite;
*Recommend air blow for graphite.

2刃
2 Flutes

平刀
Square

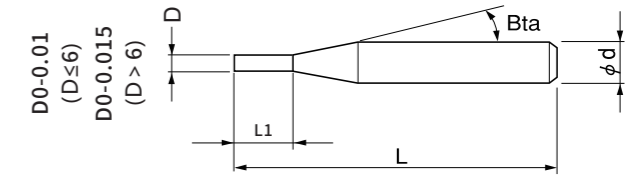


強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
炭素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	★
銅	Copper	
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- *石墨加工用4刃平底立銑刀;
- *新開發的鑽石塗層實現出眾的耐磨性能。
- *4 Flute square end mills for milling graphite;
- *New diamond coating offers excellent wear resistance.



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.

4刃
4 Flutes

合計20型號 (Total 20 models)

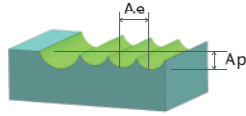
單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number of Flutes	柄徑 d Shank Diameter	在庫 In Stock
GRAS4-0100300	1	3	-	15°	50	4	4	○
GRAS4-0150450	1.5	4.5	-	15°	50	4	4	○
GRAS4-0200600	2	6	-	15°	50	4	4	○
GRAS4-0300900-3	3	9	-	15°	60	4	3	○
GRAS4-0300900	3	9	-	15°	50	4	4	○
GRAS4-0301200	3	12	-	15°	75	4	4	○
GRAS4-0401200	4	12	-	15°	60	4	4	○
GRAS4-0401600	4	16	-	15°	75	4	4	○
GRAS4-0602000	6	20	-	-	60	4	6	○
GRAS4-0602500	6	25	-	-	75	4	6	○
GRAS4-0603000	6	30	-	-	100	4	6	○
GRAS4-0802500	8	25	-	-	75	4	8	○
GRAS4-0803000	8	30	-	-	100	4	8	○
GRAS4-0803500	8	35	-	-	150	4	8	○
GRAS4-1003000	10	30	-	-	75	4	10	○
GRAS4-1003000-100	10	30	-	-	100	4	10	○
GRAS4-1004000-150	10	40	-	-	150	4	10	○
GRAS4-1204000-100	12	40	-	-	100	4	12	○
GRAS4-1205000-150	12	50	-	-	150	4	12	○
GRAS4-1205000-180	12	50	-	-	180	4	12	○

*本系列產品新追加的尺寸。
*New size added from this series.

*標準庫存品。
*Stocked items.

平刀
Square



被削材 Work Material		石墨 Graphite					
直徑(mm) Diameter	伸出長度(mm) Overhang	轉速(min-1) Speed	進給速度 (mm/min) Feed	側面切削Side Milling		溝槽切削Slotting	
				Ap(mm)	Ae(mm)	Ap(mm)	Ae(mm)
D1	4D	24000	1200	1D	0.05D	0.3D	--
D1	15D	24000	1200	0.5D	0.05D	0.2D	--
D1	25D	20000	1200	0.5D	0.05D	0.2D	--
D1.5	4D	22000	1500	1D	0.05D	0.3D	--
D1.5	10D	22000	1500	0.5D	0.05D	0.2D	--
D1.5	15D	18000	1500	0.5D	0.05D	0.2D	--
D2	4D	20000	1800	1D	0.05D	0.3D	--
D2	10D	20000	1800	0.5D	0.05D	0.2D	--
D2	15D	16000	1200	0.3D	0.05D	0.2D	--
D3	4D	20000	3000	1D	0.05D	0.3D	--
D3	10D	20000	2400	0.5D	0.05D	0.2D	--
D3	15D	18000	2000	0.3D	0.05D	0.2D	--
D4	4D	18000	2200	1.5D	0.05D	0.3D	--
D4	8D	15000	2000	0.7D	0.05D	0.2D	--
D4	12D	12000	1600	0.4D	0.05D	0.2D	--
D6	4D	13000	3000	2D	0.05D	0.3D	--
D6	8D	13000	3000	1D	0.05D	0.2D	--
D6	12D	8000	2000	0.6D	0.03D	0.2D	--
D8	4D	10000	3000	2D	0.05D	0.5D	--
D8	8D	10000	3000	1D	0.05D	0.3D	--
D8	12D	6000	2000	0.6D	0.03D	0.2D	--
D10	4D	8500	1600	2D	0.05D	0.5D	--
D10	8D	8500	1600	1D	0.05D	0.3D	--
D10	12D	6000	1200	0.6D	0.03D	0.2D	--
D12	4D	7500	1600	2D	0.05D	0.5D	--
D12	8D	7000	1600	1D	0.05D	0.3D	--
D12	12D	6000	1200	0.6D	0.03D	0.2D	--

備註:
*加工石墨請使用專用機床;
*推薦冷卻方式為氣冷。

Notes:
*Use a milling machine dedicated for graphite;
*Recommend air blow for graphite.

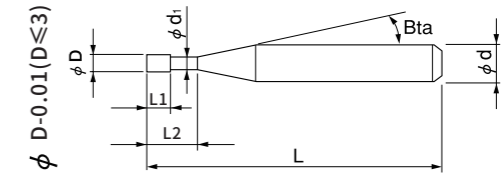


強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

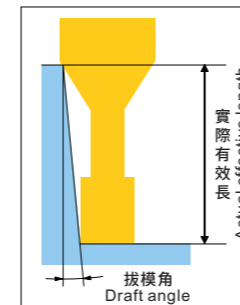
模具鋼	DIE STEEL	推薦等級(Grade)
炭素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	★
銅	Copper	
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長(Specialty)

*石墨加工用避空型2刃平底立銑刀;
*新開發的鑽石塗層實現出眾的耐磨性能。
*2 flutes long neck square end mills for milling graphite;
*New diamond coating offers excellent wear resistance.



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.



合計30型號(Total 30 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number of Flutes	柄徑 d Shank Diameter	在庫 In Stock
GRALS2-002010	0.2	0.4	1	15°	50	2	4	○
GRALS2-003020	0.3	0.6	2	15°	50	2	4	○
GRALS2-004020	0.4	0.8	2	15°	50	2	4	○
GRALS2-004040	0.4	0.8	4	15°	50	2	4	○
GRALS2-004060	0.4	0.8	6	15°	50	2	4	○
GRALS2-005020	0.5	1	2	15°	50	2	4	○
GRALS2-005040	0.5	1	4	15°	50	2	4	○
GRALS2-005060	0.5	1	6	15°	50	2	4	○
GRALS2-006020	0.6	1.2	2	15°	50	2	4	○
GRALS2-006040	0.6	1.2	4	15°	50	2	4	○

*本系列產品新追加的尺寸。
*New size added from this series.

*標準庫存品。
*Stocked items.

Next page →

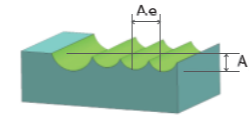
型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number of Flutes	柄徑 d Shank Diameter	在庫 In Stock
GRALS2-006060	0.6	1.2	6	15°	50	2	4	○
GRALS2-006080	0.6	1.2	8	15°	50	2	4	○
GRALS2-006100	0.6	1.2	10	15°	50	2	4	○
GRALS2-010040	1	2	4	15°	50	2	4	○
GRALS2-010060	1	2	6	15°	50	2	4	○
GRALS2-010080	1	2	8	15°	50	2	4	○
GRALS2-010100	1	2	10	15°	50	2	4	○
GRALS2-010160	1	2	16	15°	50	2	4	○
GRALS2-010210	1	2	21	15°	55	2	4	○
GRALS2-015060	1.5	3	6	15°	50	2	4	○
GRALS2-015100	1.5	3	10	15°	50	2	4	○
GRALS2-015160	1.5	3	16	15°	50	2	4	○
GRALS2-015210	1.5	3	21	15°	55	2	4	○
GRALS2-020060	2	4	6	15°	50	2	4	○
GRALS2-020100	2	4	10	15°	50	2	4	○
GRALS2-020160	2	4	16	15°	50	2	4	○
GRALS2-020210	2	4	21	15°	55	2	4	○
GRALS2-020260	2	4	26	15°	55	2	4	○
GRALS2-030160	3	6	16	15°	70	2	3/4	○
GRALS2-030320	3	6	32	15°	80	2	3/4	○

*本系列產品新追加的尺寸。
*New size added from this series.

*標準庫存品。
*Stocked items.

2刃
2 Flutes

避空平刀
Long Neck
Square



被削材 Work Material		石墨 Graphite					
直徑(mm) Diameter	有效長(mm) Effective Length	轉速(min-1) Speed	進給速度 (mm/min) Feed	側面切削Side Milling		溝槽切削Slotting	
				Ap(mm)	Ae(mm)	Ap(mm)	Ae(mm)
D0.2	1	32000	300	0.2	0.01	0.006	--
D0.3	2	32000	300	0.3	0.015	0.01	--
D0.4	2	32000	350	0.4	0.02	0.02	--
D0.4	4	32000	200	0.4	0.02	0.02	--
D0.4	6	32000	150	0.4	0.02	0.02	--
D0.5	2	32000	600	0.5	0.02	0.02	--
D0.5	4	32000	450	0.5	0.02	0.02	--
D0.5	6	32000	300	0.5	0.02	0.02	--
D0.6	2	32000	700	0.6	0.03	0.03	--
D0.6	4	32000	600	0.6	0.03	0.03	--
D0.6	6	32000	400	0.6	0.03	0.03	--
D0.6	8	26000	200	0.6	0.03	0.03	--
D0.6	10	24000	100	0.6	0.03	0.03	--
D1	4	32000	1000	1	0.05	0.05	--
D1	6	26000	800	1	0.05	0.05	--
D1	8	20000	600	1	0.05	0.05	--
D1	10	20000	400	1	0.05	0.05	--
D1	16	15000	300	1	0.05	0.05	--
D1	21	12000	150	1	0.05	0.05	--
D1.5	6	22000	1500	1.5	0.075	0.1	--
D1.5	10	18000	1200	1.5	0.075	0.1	--
D1.5	16	15000	600	1.5	0.075	0.075	--
D1.5	21	10000	300	1.5	0.075	0.075	--
D2	6	24000	1800	2	0.1	0.15	--
D2	10	20000	1800	2	0.1	0.15	--
D2	16	18000	1200	2	0.1	0.15	--
D2	21	15000	600	2	0.1	0.1	--
D2	26	12000	400	2	0.1	0.1	--
D3	16	22000	2000	3	0.15	0.3	--
D3	32	15000	1000	3	0.15	0.2	--

備註：
*加工石墨請使用專用機床；
*推薦冷卻方式為氣冷。

Notes：
*Use a milling machine dedicated for graphite;
*Recommend air blow for graphite.

2刃
2 Flutes

避空平刀
Long Neck
Square

GRALS4刃避空型平刀 (4 Flutes Long Neck Square)

SAMHO

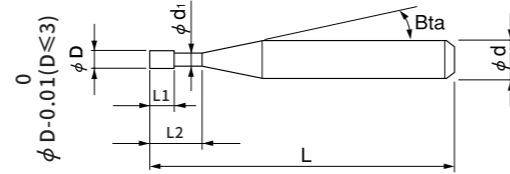


MG DIA Coating 30 SD 0-0.005

強烈推薦/推薦/建議 ★○○○
Highly recommend/Recommend/Suggest

特長 (Specialty)

- *特殊刀刃設計+新研發鑽石塗層;
- *塗層在深腔加工時性能優越。
- *Special blade design + newly developed diamond coating;
- *Superior performance in deep cavity processing.



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.

模具鋼	DIE STEEL	推薦等級 (Grade)
炭素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	★
銅	Copper	
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

合計23型號 (Total 23 models)

單位 Unit (mm)

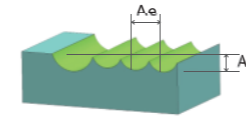
型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number of Flutes	柄徑 d Shank Diameter	在庫 In Stock
GRALS4-010040	1	3	4	15°	50	4	4	○
GRALS4-010060	1	3	6	15°	50	4	4	○
GRALS4-010100	1	3	10	15°	50	4	4	○
GRALS4-010150	1	3	15	15°	50	4	4	○
GRALS4-010200-60	1	3	20	15°	60	4	4	○
GRALS4-010060-60	1	3	6	15°	60	4	4	○
GRALS4-010100-60	1	3	10	15°	60	4	4	○
GRALS4-010150-60	1	3	15	15°	60	4	4	○
GRALS4-010100-75	1	3	10	15°	75	4	4	○
GRALS4-010150-75	1	3	15	15°	75	4	4	○
GRALS4-010200-75	1	3	20	15°	75	4	4	○
GRALS4-015060	1.5	4	6	15°	50	4	4	○
GRALS4-015100	1.5	4	10	15°	50	4	4	○
GRALS4-015150	1.5	4	15	15°	50	4	4	○
GRALS4-015200	1.5	4	20	15°	50	4	4	○
GRALS4-020080	2	6	8	15°	50	4	4	○
GRALS4-020100	2	6	10	15°	50	4	4	○
GRALS4-020150	2	6	15	15°	50	4	4	○
GRALS4-020200	2	6	20	15°	60	4	4	○
GRALS4-020250	2	6	25	15°	60	4	4	○
GRALS4-030150	3	9	15	15°	50	4	3/4	○
GRALS4-030200	3	9	20	15°	60	4	3/4	○
GRALS4-030300	3	9	30	15°	75	4	3/4	○

*本系列產品新追加的尺寸。
*New size added from this series.

*標準庫存品。
*Stocked items.

SAMHO

GRALS4-000切削條件表 (Milling Conditions)



被削材 Work Material		石墨 Graphite					
直徑 (mm) Diameter	有效長 (mm) Effective Length	轉速 (min-1) Speed	進給速度 (mm/min) Feed	側面切削 Side Milling		溝槽切削 Slotting	
				Ap (mm)	Ae (mm)	Ap (mm)	Ae (mm)
D1	4	26000	1200	1.5	0.05	0.075	--
D1	6	24000	1000	1	0.05	0.075	--
D1	10	20000	600	1	0.05	0.05	--
D1	15	15000	400	1	0.05	0.05	--
D1	20	12000	150	1	0.05	0.05	--
D1	6	24000	1000	1	0.05	0.075	--
D1	10	20000	600	1	0.05	0.05	--
D1	15	15000	400	1	0.05	0.05	--
D1	10	18000	500	1	0.05	0.05	--
D1	15	15000	300	1	0.05	0.05	--
D1	20	10000	150	1	0.05	0.05	--
D1.5	6	22000	1500	2	0.075	0.15	--
D1.5	10	18000	1200	1.5	0.075	0.1	--
D1.5	15	15000	600	1.5	0.075	0.1	--
D1.5	20	10000	300	1.5	0.075	0.1	--
D2	8	20000	1800	3	0.1	0.2	--
D2	10	20000	1800	2	0.1	0.15	--
D2	15	18000	1200	2	0.1	0.15	--
D2	20	12000	600	2	0.1	0.1	--
D2	25	10000	400	2	0.1	0.1	--
D3	15	20000	2000	3	0.15	0.3	--
D3	20	18000	1600	3	0.15	0.2	--
D3	30	15000	1000	3	0.15	0.2	--

備註:
*加工石墨請使用專用機床;
*推薦冷卻方式為氣冷。

Notes:
*Use a milling machine dedicated for graphite;
*Recommend air blow for graphite.

4刃
4 Flutes

4刃
4 Flutes

避空平刀
Long Neck
Square

避空平刀
Long Neck
Square

GRAR2刀球刀 (2 Flutes Ball)

SAMHO

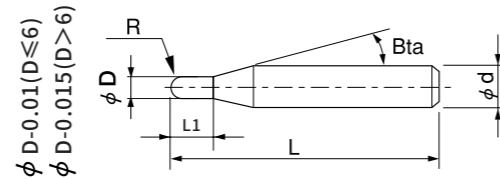


MG DIA Coating 30 SD 0-0.005 R ±0.005 R ±0.007
D≤6 D8~12

強烈推薦/推薦/建議 ★ ◎ ○
Highly recommend/Recommend/Suggest

特長 (Specialty)

- *石墨加工用2刃球刀;
- *新開發鑽石塗層實現出眾的耐磨性能;
- *超細鑽石塗層顆粒, 加工光潔度優越。
- *2 flutes ball type for graphite machining;
- *New diamond coating offers excellent resistance to wear and abrasion;
- *Ultra-fine diamond coating particles.



模具鋼	DIE STEEL	推薦等級 (Grade)
炭素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	★
銅	Copper	
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

合計20型號 (Total 20 models)

單位 Unit (mm)

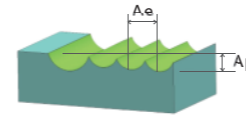
型號 Model Number	球刀半徑 D Radius of Ball Nose	刃長 L1 Length of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number of flutes	柄徑 d Shank Diameter	在庫 In Stock
GRAR2-0100300	R0.5	3	-	15°	50	2	4	○
GRAR2-0150500	R0.75	5	-	15°	50	2	4	○
GRAR2-0200600	R1	6	-	15°	50	2	4	○
GRAR2-0300600	R1.5	6	-	15°	60	2	3/4	○
GRAR2-0301000	R1.5	10	-	15°	75	2	3/4	○
GRAR2-0301500	R1.5	15	-	15°	100	2	3/4	○
GRAR2-0400800	R2	8	-	-	60	2	4	○
GRAR2-0401000	R2	10	-	-	75	2	4	○
GRAR2-0401500	R2	15	-	-	100	2	4	○
GRAR2-0601200	R3	12	-	-	75	2	6	○
GRAR2-0601500	R3	15	-	-	100	2	6	○
GRAR2-0801800	R4	18	-	-	75	2	6	○
GRAR2-0801800-100	R4	18	-	-	100	2	8	○
GRAR2-0802500	R4	25	-	-	150	2	8	○
GRAR2-1002000	R5	20	-	-	100	2	10	○
GRAR2-1003000	R5	30	-	-	150	2	10	○
GRAR2-1003000-180	R5	30	-	-	180	2	10	○
GRAR2-1203000	R6	30	-	-	100	2	12	○
GRAR2-1203000-150	R6	30	-	-	150	2	12	○
GRAR2-1203000-180	R6	30	-	-	180	2	12	○

*本系列產品新追加的尺寸。
*New size added from this series.

*標準庫存品。
*Stocked items.

GRAR2-000切削條件表 (Milling Conditions)

SAMHO



被削材 Work Material		石墨 Graphite							
直徑/R角(mm) Diameter /Radius	伸出長度 (mm) Overhang	粗加工 Roughing				精加工 Finishing			
		轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm)	Ae (mm)	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm)	Ae (mm)
R0.5	3	22000	800	0.07	0.2	22000	1500	0.1	0.06
R0.75	5	22000	1200	0.15	0.4	22000	1800	0.1	0.06
R1	6	18000	2500~1800	0.15	0.5	18000	2000	0.1	0.08
R1.5	16~40	18000~10000	3500~2000	0.3	0.9	18000~10000	3500~2000	0.1	0.1
R1.5	16~40	18000~10000	3500~2000	0.3	0.9	18000~10000	3500~2000	0.1	0.1
R1.5	40~70	10000~5500	2000~1200	0.2	0.7	10000~5500	2000~1200	0.1	0.1
R2	16~40	18000~10000	3500~2000	0.4	1.2	18000~10000	3500~2000	0.1	0.1
R2	16~40	18000~10000	3500~2000	0.4	1.2	18000~10000	3500~2000	0.1	0.1
R2	40~70	10000~5500	2000~1200	0.25	0.8	10000~5500	2000~1200	0.1	0.1
R3	24~36	17000~10000	3500~3000	0.6	1.8	17000~10000	3500~3000	0.15	0.12
R3	36~70	10000~5500	3000~1600	0.4	1.5	9000~5500	3000~1600	0.15	0.12
R4	20~40	15000~12000	4000~3000	0.8	2.5	15000~12000	4000~3000	0.18	0.15
R4	40~70	12000~6000	3000~2500	0.8	2.5	12000~6000	3500~2500	0.18	0.15
R4	70~110	6000~4000	2500~1200	0.4	1.2	6000~4000	2500~1200	0.18	0.15
R5	40~60	12000~6000	3500~2500	1	3	12000~6000	4000~2500	0.2	0.2
R5	60~110	6000~4000	2500~1800	0.8	2.5	6000~4000	2500~1800	0.2	0.2
R5	110~150	4000~2000	1500~450	0.6	1.9	4000~2000	1800~900	0.2	0.2
R6	48~72	10000~6000	3500~2500	1.2	3.6	10000~6000	4000~2500	0.2	0.24
R6	72~110	6000~4000	2500~1800	1.2	3.6	6000~4000	2500~1800	0.2	0.24
R6	110~150	4000~2000	1800~450	0.9	2.8	4000~2000	2000~1000	0.2	0.24

備註:
*設備轉速不夠時,同比例下調進給和切深;
*溝槽加工時,進給降低50%;
*推薦冷卻方式為氣冷。

Remark:
*Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
*Decrease feed rate by 50% when slot machining;
*Recommend air blow.

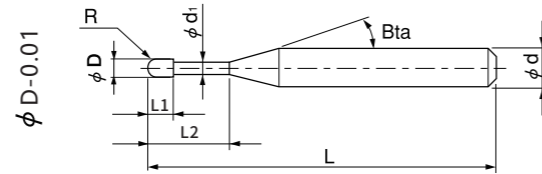


強烈推薦/推薦/建議 ★ ◎ ○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
炭素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	★
銅	Copper	
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- * 石墨加工用2刃避空型球刀;
- * 新開發鑽石塗層實現出眾的耐磨性能;
- * 超細鑽石塗層顆粒, 加工光潔度優越。
- * 2 flutes long neck ball type for graphite machining
- * New diamond coating offers excellent resistance to wear and abrasion;
- * Ultra-fine diamond coating particles.



合計52型號 (Total 52 models)

單位 Unit (mm)

型號 Model Number	球刀半徑 D Radius of Ball Nose	刃長 L1 Length of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number of Flutes	柄徑 d Shank Diameter	在庫 In Stock
GRALR2-002020	R0.1	0.15	2	15°	50	2	4	○
GRALR2-003020	R0.15	0.2	2	15°	50	2	4	○
GRALR2-004020	R0.2	0.32	2	15°	50	2	4	○
GRALR2-004030	R0.2	0.32	3	15°	50	2	4	○
GRALR2-004040	R0.2	0.32	4	15°	50	2	4	○
GRALR2-004050	R0.2	0.32	5	15°	50	2	4	○
GRALR2-005020	R0.25	0.4	2	15°	50	2	4	○
GRALR2-005030	R0.25	0.4	3	15°	50	2	4	○
GRALR2-005060	R0.25	0.4	6	15°	50	2	4	○
GRALR2-005100	R0.25	0.4	10	15°	50	2	4	○
GRALR2-006020	R0.3	0.48	2	15°	50	2	4	○
GRALR2-006030	R0.3	0.48	3	15°	50	2	4	○
GRALR2-006040	R0.3	0.48	4	15°	50	2	4	○
GRALR2-006060	R0.3	0.48	6	15°	50	2	4	○
GRALR2-006100	R0.3	0.48	10	15°	50	2	4	○
GRALR2-006120	R0.3	0.48	12	15°	50	2	4	○
GRALR2-008100	R0.4	0.64	10	15°	50	2	4	○
GRALR2-008120	R0.4	0.64	12	15°	50	2	4	○
GRALR2-008160	R0.4	0.64	16	15°	50	2	4	○
GRALR2-010030	R0.5	0.8	3	15°	50	2	4	○

*本系列產品新追加的尺寸。
*New size added from this series.

*標準庫存品。
*Stocked items.

Next page →

型號 Model Number	球刀半徑 D Radius of Ball Nose	刃長 L1 Length of Cut	有效長 L2 Effective Length	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number of Flutes	柄徑 d Shank Diameter	在庫 In Stock
GRALR2-010050	R0.5	0.8	5	15°	50	2	4	○
GRALR2-010060	R0.5	0.8	6	15°	50	2	4	○
GRALR2-010080	R0.5	0.8	8	15°	50	2	4	○
GRALR2-010100	R0.5	0.8	10	15°	60	2	4	○
GRALR2-010120	R0.5	0.8	12	15°	50	2	4	○
GRALR2-010160	R0.5	0.8	16	15°	50	2	4	○
GRALR2-010200	R0.5	1.5	20	15°	60	2	4	○
GRALR2-015060	R0.75	1.2	6	15°	50	2	4	○
GRALR2-015100	R0.75	1.2	10	15°	50	2	4	○
GRALR2-015160	R0.75	1.2	16	15°	50	2	4	○
GRALR2-020040	R1	1.6	4	15°	50	2	4	○
GRALR2-020080	R1	1.6	8	15°	50	2	4	○
GRALR2-020100	R1	1.6	10	15°	50	2	4	○
GRALR2-020120	R1	1.6	12	15°	50	2	4	○
GRALR2-020160	R1	1.6	16	15°	50	2	4	○
GRALR2-020200	R1	3	20	15°	70	2	4	○
GRALR2-020250	R1	1.6	25	15°	65	2	4	○
GRALR2-020300	R1	3	30	15°	70	2	4	○
GRALR2-020350	R1	3	35	15°	70	2	4	○
GRALR2-020400	R1	1.6	40	15°	80	2	4	○
GRALR2-030160	R1.5	2.4	16	15°	60	2	4	○
GRALR2-030200	R1.5	2.4	20	15°	60	2	4	○
GRALR2-030250	R1.5	2.4	25	15°	70	2	4	○
GRALR2-030300	R1.5	4.5	30	15°	80	2	4	○
GRALR2-030400	R1.5	4.5	40	15°	80	2	4	○
GRALR2-040160	R2	3.2	16	15°	70	2	4	○
GRALR2-040200	R2	3.2	20	15°	70	2	4	○
GRALR2-040250	R2	3.2	25	15°	70	2	4	○
GRALR2-040300	R2	3.2	30	15°	70	2	4	○
GRALR2-040400	R2	6	40	15°	100	2	4	○
GRALR2-040500	R2	6	50	-	100	2	4	○
GRALR2-040600	R2	6	60	-	100	2	4	○

*本系列產品新追加的尺寸。
*New size added from this series.

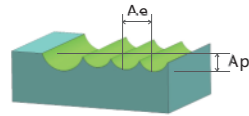
*標準庫存品。
*Stocked items.

2刃
2 Flutes

2刃
2 Flutes

避空球刀
Long Neck
Ball

避空球刀
Long Neck
Ball

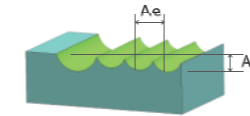


被削材 Work Material		石墨 Graphite							
直径/R角(mm) Diameter /Radius	有效长(mm) Effective Length	粗加工Roughing				精加工Finishing			
		转速(min-1) Speed	进给(mm/min) Feed	Ap(mm)	Ae(mm)	转速(min-1) Speed	进给(mm/min) Feed	Ap(mm)	Ae(mm)
R0.1	2	26000	300	0.02	0.05	28000	500	0.015	0.015
R0.15	2	26000	300	0.02	0.05	28000	500	0.02	0.02
R0.2	2	26000	400	0.03	0.08	28000	600	0.04	0.03
R0.2	3	26000	400	0.03	0.06	28000	600	0.03	0.03
R0.2	4	26000	400	0.03	0.06	28000	600	0.02	0.03
R0.2	5	26000	400	0.03	0.06	28000	600	0.02	0.03
R0.25	2	26000	400	0.03	0.1	28000	800	0.05	0.04
R0.25	3	26000	400	0.03	0.1	28000	800	0.05	0.04
R0.25	6	26000	400	0.03	0.08	28000	800	0.03	0.04
R0.25	10	24000	400	0.03	0.06	28000	800	0.02	0.04
R0.3	2	26000	600	0.03	0.1	28000	800	0.06	0.04
R0.3	3	26000	400	0.03	0.1	28000	800	0.06	0.04
R0.3	4	26000	400	0.03	0.1	28000	800	0.04	0.04
R0.3	6	26000	400	0.03	0.1	28000	800	0.03	0.04
R0.3	10	24000	400	0.03	0.08	28000	800	0.02	0.04
R0.3	12	22000	400	0.03	0.08	28000	800	0.02	0.04
R0.4	10	24000	600	0.07	0.15	28000	1000	0.05	0.06
R0.4	12	22000	400	0.05	0.12	28000	1000	0.05	0.06
R0.4	16	20000	500	0.03	0.1	28000	1000	0.03	0.06
R0.5	3	26000	1200	0.1	0.3	28000	1500	0.1	0.06
R0.5	5	26000	1200	0.1	0.3	28000	1500	0.08	0.06
R0.5	6	26000	1000	0.1	0.3	28000	1200	0.05	0.06
R0.5	8	24000	1000	0.1	0.2	28000	1200	0.05	0.06
R0.5	10	24000	800	0.1	0.2	28000	1200	0.05	0.06
R0.5	12	22000	600	0.07	0.2	28000	1000	0.05	0.06
R0.5	16	20000	500	0.07	0.18	28000	1000	0.05	0.06
R0.5	20	18000	500	0.07	0.15	28000	1000	0.03	0.06
R0.75	6	26000	1800	0.15	0.45	26000	1800	0.08	0.08
R0.75	10	26000	1500	0.15	0.45	26000	1800	0.08	0.08
R0.75	16	26000	1200	0.15	0.45	26000	1800	0.06	0.08
R1	4	24000	2000	0.2	0.6	24000	2000	0.1	0.08
R1	8	24000	2000	0.2	0.6	24000	2000	0.1	0.08
R1	10	24000	2000	0.2	0.6	24000	2000	0.1	0.08
R1	12	24000	2000	0.2	0.6	24000	2000	0.08	0.08

Next page →

2刃
2 Flutes

避空球刀
Long Neck
Ball



被削材 Work Material		石墨 Graphite							
直径/R角(mm) Diameter /Radius	有效长(mm) Effective Length	粗加工Roughing				精加工Finishing			
		转速(min-1) Speed	进给(mm/min) Feed	Ap(mm)	Ae(mm)	转速(min-1) Speed	进给(mm/min) Feed	Ap(mm)	Ae(mm)
R1	16	22000	1800	0.2	0.6	24000	2000	0.08	0.08
R1	20	18000	1300	0.2	0.6	24000	1800	0.06	0.08
R1	25	15000	1200	0.15	0.5	24000	1800	0.06	0.08
R1	30	15000	1000	0.15	0.5	24000	1500	0.06	0.08
R1	35	9000	1000	0.1	0.3	24000	1500	0.06	0.08
R1	40	7000	800	0.1	0.3	24000	1200	0.04	0.08
R1.5	16	18000	2000	0.3	0.9	22000	2500	0.12	0.1
R1.5	20	18000	2000	0.3	0.9	22000	2500	0.1	0.1
R1.5	25	15000	1700	0.2	0.7	20000	2200	0.07	0.1
R1.5	30	15000	1700	0.2	0.7	18000	2200	0.07	0.1
R1.5	40	12000	1500	0.2	0.7	18000	2200	0.05	0.1
R2	16	18000	2500	0.4	1.2	18000	2500	0.12	0.1
R2	20	18000	2500	0.4	1.2	18000	2500	0.1	0.1
R2	25	15000	2500	0.4	1.2	18000	2500	0.1	0.1
R2	30	15000	2500	0.4	1.2	18000	2500	0.1	0.1
R2	40	10000	1700	0.3	1	15000	2200	0.08	0.1
R2	50	9000	1500	0.25	0.8	15000	2200	0.08	0.1
R2	60	8000	1500	0.25	0.8	15000	2000	0.08	0.1

備註:
*設備轉速不夠時,同比例下調進給和切深;
*溝槽加工時,進給降低50%;
*推薦冷卻方式為氣冷。

Remark:
*Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;
*Decrease feed rate by 50% when slot machining;
*Recommend air blow.

2刃
2 Flutes

避空球刀
Long Neck
Ball

GRASR 4刃圓角刀 (4 Flutes Radius)

SAMHO

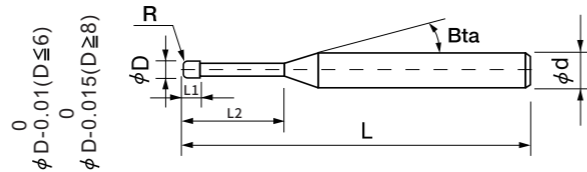


MG DIA Coating 30 SD 0-0.005 R ±0.005 R ±0.01
D≤6 D8~12

強烈推薦/推薦/建議 ★ ◎ ○
Highly recommend/Recommend/Suggest

特長 (Specialty)

- *石墨加工用4刃圓角刀;
- *新開發鑽石塗層實現出眾的耐磨性能;
- *超細鑽石塗層顆粒,加工光潔度優越。
- *4 flutes radius type end mills for graphite machining;
- *New diamond coating offers excellent resistance to wear and abrasion;
- *Ultra-fine diamond coating particles.



模具鋼	DIE STEEL	推薦等級 (Grade)
炭素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	★
銅	Copper	
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

合計42型號 (Total 42 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length of Cut	有效長 L2 Effective Length	圓角 Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number of Flutes	柄徑 d Shank Diameter	在庫 In Stock
GRASR4-0302100-60	3	10	-	0.2	15°	60	4	3/4	○
GRASR4-0302100-75	3	10	-	0.2	15°	75	4	3/4	○
GRASR4-0302100-100	3	10	-	0.2	15°	100	4	3/4	○
GRASR4-0305100-60	3	10	-	0.5	15°	60	4	3/4	○
GRASR4-0305100-75	3	10	-	0.5	15°	75	4	3/4	○
GRASR4-0305100-100	3	10	-	0.5	15°	100	4	3/4	○
GRASR4-04001120-60	4	12	-	0	-	60	4	4	○
GRASR4-04001120-75	4	12	-	0	-	75	4	4	○
GRASR4-04001120-100	4	12	-	0	-	100	4	4	○
GRASR4-04002120-60	4	12	-	0.2	-	60	4	4	○
GRASR4-04002120-75	4	12	-	0.2	-	75	4	4	○
GRASR4-04002120-100	4	12	-	0.2	-	100	4	4	○
GRASR4-04005120-60	4	12	-	0.5	-	60	4	4	○
GRASR4-04005120-75	4	12	-	0.5	-	75	4	4	○
GRASR4-04005120-100	4	12	-	0.5	-	100	4	4	○
GRASR4-06002200-60	6	20	-	0.2	-	60	4	6	○
GRASR4-06002200-75	6	20	-	0.2	-	75	4	6	○
GRASR4-06002250-100	6	25	-	0.2	-	100	4	6	○
GRASR4-06003200-60	6	20	-	0.3	-	60	4	6	○
GRASR4-06003200-75	6	20	-	0.3	-	75	4	6	○

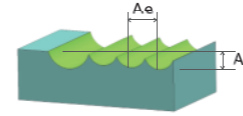
*本系列產品新追加的尺寸。
*New size added from this series.

*標準庫存品。
*Stocked items.

Next page →

SAMHO

GRASR 4刃圓角刀 (4 Flutes Radius)



合計42型號 (Total 42 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length of Cut	有效長 L2 Effective Length	圓角 Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number of Flutes	柄徑 d Shank Diameter	在庫 In Stock
GRASR4-06003250-100	6	25	-	0.3	-	100	4	6	○
GRASR4-06005200-60	6	20	-	0.5	-	60	4	6	○
GRASR4-06005200-75	6	20	-	0.5	-	75	4	6	○
GRASR4-06005250-100	6	25	-	0.5	-	100	4	6	○
GRASR4-08005250-75	8	25	-	0.5	-	75	4	8	○
GRASR4-08005300-100	8	30	-	0.5	-	100	4	8	○
GRASR4-08005350-150	8	35	-	0.5	-	150	4	8	○
GRASR4-08010250-75	8	30	-	1	-	75	4	8	○
GRASR4-08010300-100	8	30	-	1	-	100	4	8	○
GRASR4-08010350-150	8	35	-	1	-	150	4	8	○
GRASR4-10005250-75	10	25	-	0.5	-	75	4	10	○
GRASR4-10005300-100	10	30	-	0.5	-	100	4	10	○
GRASR4-10005400-150	10	40	-	0.5	-	150	4	10	○
GRASR4-10010250-75	10	25	-	1	-	75	4	10	○
GRASR4-10010300-100	10	30	-	1	-	100	4	10	○
GRASR4-10010400-150	10	40	-	1	-	150	4	10	○
GRASR4-12005400-100	12	40	-	0.5	-	100	4	12	○
GRASR4-12005500-150	12	50	-	0.5	-	150	4	12	○
GRASR4-12005500-180	12	50	-	0.5	-	180	4	12	○
GRASR4-12010400-100	12	40	-	1	-	100	4	12	○
GRASR4-12010500-150	12	50	-	1	-	150	4	12	○
GRASR4-12010500-180	12	50	-	1	-	180	4	12	○

*本系列產品新追加的尺寸。
*New size added from this series.

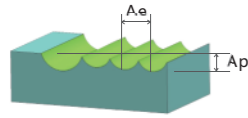
*標準庫存品。
*Stocked items.

4刃
4 Flutes

4刃
4 Flutes

圓角刀
Radius

圓角刀
Radius



被削材 Work Material		石墨 Graphite							
直徑/R角(mm) Diameter/ Radius	伸出長度 (mm) Overhang	粗加工Roughing				精加工Finishing			
		轉速(min-1) Speed	進給(mm/min) Feed	Ap(mm)	Ae(mm)	轉速(min-1) Speed	進給(mm/min) Feed	Ap(mm)	Ae(mm)
3R0.2	12~24	15000~12000	3000~2500	0.3	1.8	15000~12000	3000~2500	0.12	0.12
3R0.2	24~42	12000~6000	2500~1500	0.2	1.8	12000~6000	2500~1500	0.12	0.12
3R0.2	42~70	6000~4000	1500~1000	0.15	1.8	6000~4000	1500~1000	0.12	0.12
3R0.5	12~24	15000~12000	3000~2500	0.3	1.8	15000~12000	3000~2500	0.12	0.12
3R0.5	24~42	12000~6000	2500~1500	0.2	1.8	12000~6000	2500~1500	0.12	0.12
3R0.5	42~70	6000~4000	1500~1000	0.15	1.8	6000~4000	1500~1000	0.12	0.12
4R0.1	18~24	14000~12000	3000~2500	0.3	2	14000~12000	3000~2500	0.08	0.12
4R0.1	24~42	12000~6000	2500~1500	0.3	2	12000~6000	2500~1500	0.08	0.12
4R0.1	42~70	6000~4000	1500~1000	0.2	2	6000~4000	1500~1000	0.08	0.12
4R0.2	18~24	14000~12000	3000~2500	0.3	2	14000~12000	3000~2500	0.12	0.12
4R0.2	24~42	12000~6000	2500~1500	0.3	2	12000~6000	2500~1500	0.12	0.12
4R0.2	42~70	6000~4000	1500~1000	0.2	2	6000~4000	1500~1000	0.12	0.12
6R0.5	18~24	14000~12000	3000~2500	0.3	2	14000~12000	3000~2500	0.12	0.12
6R0.5	24~42	12000~6000	2500~1500	0.3	2	12000~6000	2500~1500	0.12	0.12
6R0.5	42~70	6000~4000	1500~1000	0.2	2	6000~4000	1500~1000	0.12	0.12
6R0.2	18~30	12000~9000	4000~3500	1	2.4	12000~9000	4000~3500	0.1	0.12
6R0.2	30~42	9000~7000	3500~2500	1	2.4	9000~7000	3500~2500	0.1	0.12
6R0.2	42~70	7000~4000	2500~1500	0.6	2.4	7000~4000	2500~1500	0.1	0.12
6R0.3	18~30	12000~9000	4000~3500	1	2.4	12000~9000	4000~3500	0.12	0.12
6R0.3	30~42	9000~7000	3500~2500	1	2.4	9000~7000	3500~2500	0.12	0.12
6R0.3	42~70	7000~4000	2500~1500	0.6	2.4	7000~4000	2500~1500	0.12	0.12
8R0.5	18~30	12000~9000	4000~3500	1.5	3.6	12000~9000	4000~3500	0.15	0.12
8R0.5	30~42	9000~7000	3500~2500	1.2	3.6	9000~7000	3500~2500	0.15	0.12
8R0.5	42~70	7000~4000	2500~1500	1.2	3.6	7000~4000	2500~1500	0.15	0.12
8R0.5	24~32	10000~8000	4000~3500	1.8	4.8	10000~8000	4000~3500	0.18	0.12
8R0.5	32~56	8000~5000	3500~2000	1.8	4.8	8000~5000	3500~2000	0.18	0.12
8R0.5	56~110	5000~2000	2000~1000	1.8	4.8	5000~2000	2000~1000	0.18	0.12
10R1	24~32	10000~8000	4000~3500	1.8	4.8	10000~8000	4000~3500	0.18	0.12
10R1	32~56	8000~5000	3500~2000	1.8	4.8	8000~5000	3500~2000	0.18	0.12
10R1	56~110	5000~2000	2000~1000	1.8	4.8	5000~2000	2000~1000	0.18	0.12
10R0.5	24~40	10000~8000	4000~3500	2	6	10000~8000	4000~3500	0.18	0.12
10R0.5	40~70	8000~5000	3500~2000	2	6	8000~5000	3500~2000	0.18	0.12
10R0.5	70~110	5000~2000	2000~1000	2	6	5000~2000	2000~1200	0.18	0.12
R1	24~40	10000~8000	4000~3500	2	6	10000~8000	4000~3500	0.18	0.12
R1	40~70	8000~5000	3500~2000	2	6	8000~5000	3500~2000	0.18	0.12
10R1	70~110	5000~2000	2000~1000	2	6	5000~2000	2000~1000	0.18	0.12
12R0.5	48~72	7000~5000	3500~2500	3	8	7000~5000	3500~2500	0.18	0.12
12R0.5	72~110	5000~4000	2500~1800	3	8	5000~4000	2500~1800	0.18	0.12
12R0.5	110~150	4000~2000	1800~450	3	8	4000~2000	1800~1200	0.18	0.12
12R1	48~72	7000~5000	3500~2500	3	8	7000~5000	3500~2500	0.18	0.12
12R1	72~110	5000~4000	2500~1800	3	8	5000~4000	2500~1800	0.18	0.12
12R1	110~150	4000~2000	1800~450	3	8	4000~2000	1800~1200	0.18	0.12

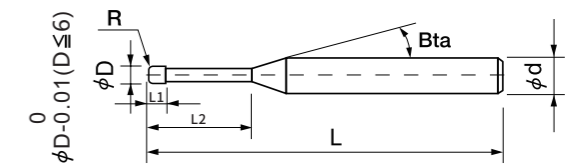


強烈推薦/推薦/建議 ★○○
Highly recommend/Recommend/Suggest

模具鋼	DIE STEEL	推薦等級 (Grade)
炭素鋼	Carbon steels (S45C/S55C)	
合金鋼	Alloy steels (SK/SCM/SUS)	
預硬鋼	Prehardened steels (NAK/HPM)	
淬火鋼	Hardened steels (~55/~60/~70HRC)	
特殊材料	SPECIAL MATERIAL	
鋁合金	Aluminum alloys	
石墨	Graphite	★
銅	Copper	
樹脂	Plastics	
碳纖維	Carbon fiber	
鈦合金	Titanium alloys	
超耐熱合金	Heat resistant alloys	
硬質合金	Cemented carbide	
硬脆材	Hard brittle (non-metallic) material	

特長 (Specialty)

- *石墨加工用避空型2/4刃圓角刀;
- *新開發鑽石塗層實現出眾的耐磨性能;
- *超細鑽石塗層顆粒,加工光潔度優越。
- *2/4 flutes long neck radius end mills for graphite machining;
- *New diamond coating offers excellent resistance to wear and abrasion;
- *Ultra-fine diamond coating particles.



合計39型號 (Total 39 models)

單位Unit (mm)

型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length of Cut	有效長 L2 Effective Length	圓角 Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number of Flutes	柄徑 d Shank Diameter	在庫 In Stock
GRALSR2-005005040	0.5	1	4	0.05	15°	50	2	4	○
GRALSR4-010005060	1	3	6	0.05	15°	60	4	4	○
GRALSR4-010005100	1	3	10	0.05	15°	60	4	4	○
GRALSR4-010005150	1	3	15	0.05	15°	60	4	4	○
GRALSR4-010005200	1	3	20	0.05	15°	50	4	4	○
GRALSR4-01001060	1	3	6	0.1	15°	60	4	4	○
GRALSR4-01001100	1	3	10	0.1	15°	60	4	4	○
GRALSR4-01001150	1	3	15	0.1	15°	60	4	4	○
GRALSR4-01001200	1	3	20	0.1	15°	50	4	4	○
GRALSR4-01501100	1.5	3	10	0.1	15°	60	4	4	○
GRALSR4-01501150	1.5	3	15	0.1	15°	60	4	4	○
GRALSR4-01501200	1.5	3	20	0.1	15°	50	4	4	○
GRALSR4-01502100	1.5	3	10	0.2	15°	60	4	4	○
GRALSR4-01502150	1.5	3	15	0.2	15°	60	4	4	○
GRALSR4-01502200	1.5	3	20	0.2	15°	50	4	4	○
GRALSR4-02001100	2	6	10	0.1	15°	50	4	4	○
GRALSR4-02001150	2	6	15	0.1	15°	60	4	4	○
GRALSR4-02001200	2	6	20	0.1	15°	60	4	4	○
GRALSR4-02001250	2	6	25	0.1	15°	80	4	4	○
GRALSR4-02002100	2	6	10	0.2	15°	50	4	4	○

*本系列產品新追加的尺寸。
*New size added from this series.

*標準庫存品。
*Stocked items.

Next page →

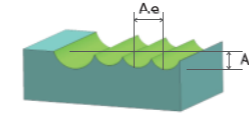
型號 Model Number	刃徑 D Outside Diameter	刃長 L1 Length of Cut	有效長 L2 Effective Length	圓角 Radius	錐度角 Bta Shank Taper Angle	全長 L Overall Length	刃數 T Number of Flutes	柄徑 d Shank Diameter	在庫 In Stock
GRALSR4-02002150	2	6	15	0.2	15°	60	4	4	○
GRALSR4-02002200	2	6	20	0.2	15°	60	4	4	○
GRALSR4-02002250	2	6	25	0.2	15°	80	4	4	○
GRALSR4-02005100	2	6	10	0.5	15°	50	4	4	○
GRALSR4-02005150	2	6	15	0.5	15°	60	4	4	○
GRALSR4-02005200	2	6	20	0.5	15°	60	4	4	○
GRALSR4-02005250	2	6	25	0.5	15°	80	4	4	○
GRALSR4-03001150	3	9	15	0.1	15°	60	4	4	○
GRALSR4-03001200	3	9	20	0.1	15°	60	4	4	○
GRALSR4-03001250	3	9	25	0.1	15°	80	4	4	○
GRALSR4-03001300	3	9	30	0.1	15°	80	4	4	○
GRALSR4-03002150	3	9	15	0.2	15°	60	4	4	○
GRALSR4-03002200	3	9	20	0.2	15°	60	4	4	○
GRALSR4-03002250	3	9	25	0.2	15°	80	4	4	○
GRALSR4-03002300	3	9	30	0.2	15°	80	4	4	○
GRALSR4-03005150	3	9	15	0.5	15°	60	4	4	○
GRALSR4-03005200	3	9	20	0.5	15°	60	4	4	○
GRALSR4-03005250	3	9	25	0.5	15°	80	4	4	○
GRALSR4-03005300	3	9	30	0.5	15°	80	4	4	○

*本系列產品新追加的尺寸。

*New size added from this series.

*標準庫存品。

*Stocked items.



被削材 Work Material		石墨 Graphite							
直徑/R角(mm) Diameter / Radius	有效長(mm) Effective Length	粗加工 Roughing				精加工 Finishing			
		轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm)	Ae (mm)	轉速 (min-1) Speed	進給 (mm/min) Feed	Ap (mm)	Ae (mm)
0.5R0.5	4	24000	800	0.05	0.3	24000	800	0.03	0.1
1R0.05	6	20000	1500	0.1	0.4	20000	1500	0.04	0.12
1R0.05	10	20000	1200	0.1	0.4	20000	1200	0.04	0.12
1R0.05	15	14000	1000	0.08	0.4	14000	1000	0.04	0.12
1R0.05	20	12000	800	0.06	0.4	12000	800	0.02	0.12
1R0.1	6	20000	1500	0.1	0.4	20000	1500	0.04	0.12
1R0.1	10	20000	1200	0.1	0.4	20000	1200	0.04	0.12
1R0.1	15	14000	1000	0.08	0.4	14000	1000	0.04	0.12
1R0.1	20	12000	800	0.06	0.4	12000	800	0.02	0.12
1.5R0.1	10	16000	1500	0.12	0.6	16000	1500	0.06	0.12
1.5R0.1	15	14000	1500	0.12	0.6	14000	1500	0.06	0.12
1.5R0.1	20	14000	1200	0.1	0.6	14000	1200	0.04	0.12
1.5R0.2	10	16000	1500	0.12	0.6	16000	1500	0.06	0.12
1.5R0.2	15	14000	1500	0.12	0.6	14000	1500	0.06	0.12
1.5R0.2	20	14000	1200	0.1	0.6	14000	1200	0.04	0.12
2R0.1	10	16000	2000	0.2	1.2	16000	2000	0.08	0.12
2R0.1	15	14000	1600	0.15	1.2	14000	1600	0.08	0.12
2R0.1	20	10000	1200	0.12	0.8	10000	1200	0.08	0.12
2R0.1	25	10000	1000	0.1	0.8	10000	1000	0.06	0.12
2R0.2	10	16000	2000	0.2	1.2	16000	2000	0.08	0.12
2R0.2	15	14000	1600	0.15	1.2	14000	1600	0.08	0.12
2R0.2	20	10000	1200	0.12	0.8	10000	1200	0.08	0.12
2R0.2	25	10000	1000	0.1	0.8	10000	1000	0.06	0.12
2R0.5	10	16000	2000	0.2	1.2	16000	2000	0.08	0.12
2R0.5	15	14000	1600	0.15	1.2	14000	1600	0.08	0.12
2R0.5	20	10000	1200	0.12	0.8	10000	1200	0.08	0.12
2R0.5	25	10000	1000	0.1	0.8	10000	1000	0.06	0.12
3R0.1	15	16000	3000	0.3	1.8	16000	3000	0.08	0.12
3R0.1	20	12000	2500	0.2	1.8	12000	2500	0.08	0.12
3R0.1	25	12000	2500	0.2	1.2	12000	2500	0.08	0.12
3R0.1	30	10000	2000	0.12	1.2	10000	2000	0.06	0.12
3R0.2	15	16000	3000	0.3	1.8	16000	3000	0.08	0.12
3R0.2	20	12000	2500	0.2	1.8	12000	2500	0.08	0.12
3R0.2	25	12000	2500	0.2	1.2	12000	2500	0.08	0.12
3R0.2	30	10000	2000	0.12	1.2	10000	2000	0.06	0.12
3R0.5	15	16000	3000	0.3	1.8	16000	3000	0.08	0.12
3R0.5	20	12000	2500	0.2	1.8	12000	2500	0.08	0.12
3R0.5	25	12000	2500	0.2	1.2	12000	2500	0.08	0.12
3R0.5	30	10000	2000	0.12	1.2	10000	2000	0.06	0.12

備註:

*設備轉速不夠時,同比例下調進給和切深;

*溝槽加工時,進給降低50%;

*推薦冷卻方式為氣冷。

Remark:

*Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed;

*Decrease feed rate by 50% when slot machining;

*Recommend air blow.

2刃
2 Flutes

4刃
4 Flutes

避空
圓角刀
Long Neck
Radius

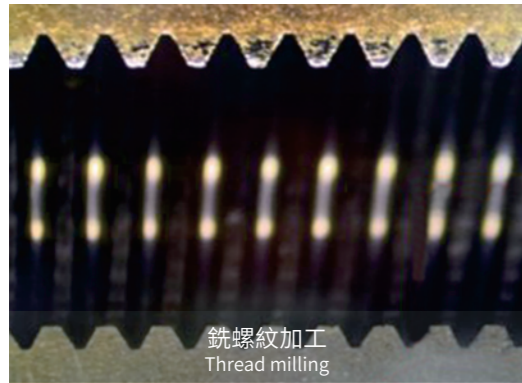
2刃
2 Flutes

4刃
4 Flutes

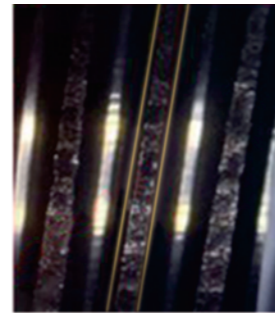
避空
圓角刀
Long Neck
Radius

產品優勢

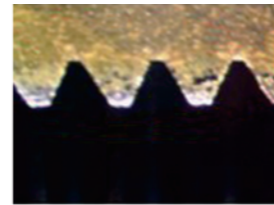
Product Advantages



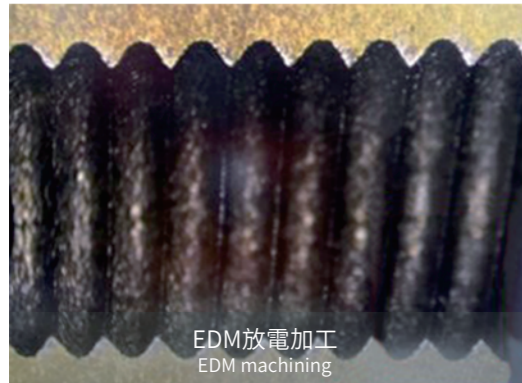
銑螺紋加工
Thread milling



底孔平面特徵保留
Keep the bore flat



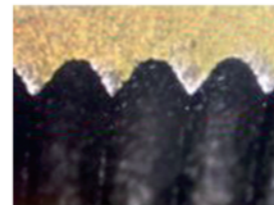
螺牙強度好, 牙形輪廓分明
Good thread strength and clear tooth shape



EDM放電加工
EDM machining



底孔特徵只剩一條線
Only one the is kept in the bore



螺牙強度差, 牙形已變形, 容易滑牙, 工件有報廢可能
Poor thread strength and deformed tooth, would cause loose thread and even scrapped workpiece possibly

案例

Case Studies

★ 分析報告: 材料SKD11 (HRC60-62) Analysis Report: Material SKD11 (HRC60-62)

目的: M4*0.7螺紋壽命測試 Purpose: M4*0.7 thread life test
加工機: 日本牧野(20000rpm) Processing machine: Makino (20000rpm)
冷卻方式: 氣冷 Coolant: Air -16 Cooling
測試時間: 2021-04-16 Test time: 2021-04-16

加工參數 Milling Parameters

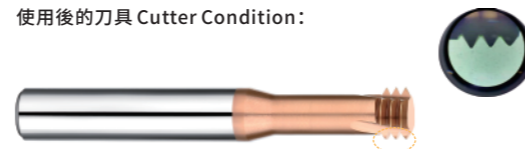
65度三牙銑牙刀M4*0.7 HRC65 Three Teeth Thread Cutter	轉速 Spindle Speed	進給 Feed Rate	Q值 Step	切深 Axial Depth	切寬 Radial Depth	徑向刀路 Radial Toolpath	加工時間 Cycle Time
M4*0.7 (牙深Depth 6mm)	(min-1) 4500	(mm/min) 70	(mm/min)	(ap) mm	(ae) mm	5	1分鐘/穴 1 min/hole

總結: M4螺絲全部很順利擰到6mm深, 加工15個牙後, 還可以繼續使用。
Summary: M4 screw can be turned into 6mm depth smoothly. It can be still used after milling 15 threads..

加工工件 Cutter Condition:



使用後的刀具 Cutter Condition:



加工方法指引

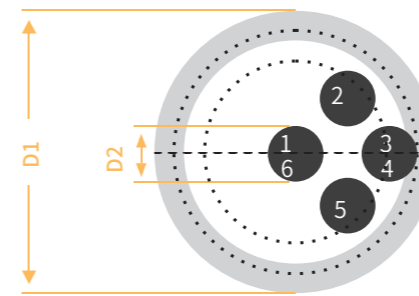
Guidelines on Processing

一、圓弧攻法 (Arc Cut In)

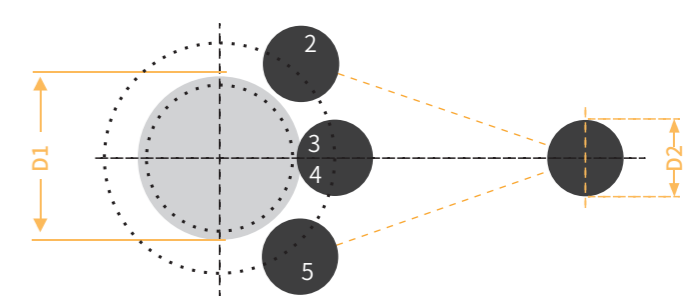
採用該方法刀具切入, 切除平穩, 不留切削痕跡, 不產生振動, 即使是加工硬材料時也是如此, 該方法的程序編制比徑向切入法複雜一些, 建議在加工精密螺紋時推薦使用該方法。

With this method, the cutter can cut the workpiece smoothly, leave no cutting marks and won't cause vibration, even when machining hard materials. The programming is more complicated than that for radial cutting. It's recommended to be used for milling precision threads.

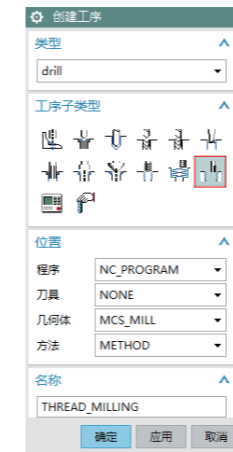
內螺紋 Internal thread



外螺紋 External thread

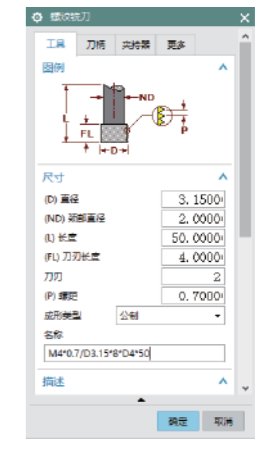


二、UG10.0銑牙加工方法 (Processing method for UG10.0 threadmilling)



**主要參數設置
Cutter Condition:**

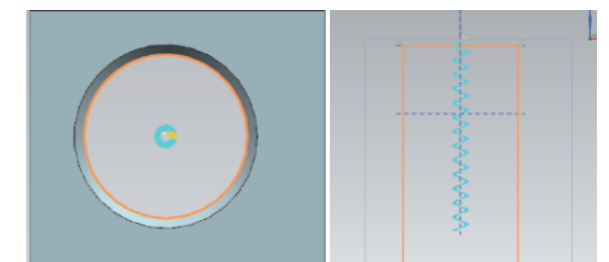
- 指定牙孔
designated thread hole
- 指定牙刀
Designated cutter for
threading knife
- Z軸方向的刀軸圈數
The number of turns of the tool
shaft in the Z-axis direction
- 徑向方向的刀徑路數
Number of toolpaths in radial
direction
- 勾選
Tick



**牙孔的主要參數
Cutter Condition:**

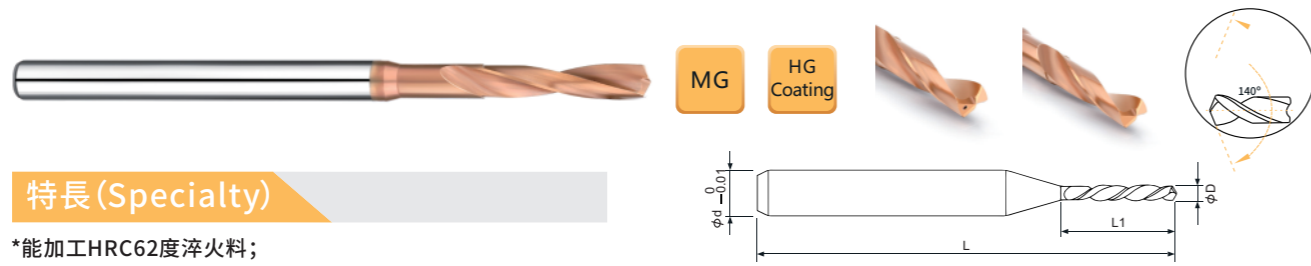
- 螺距的設置, 跟牙刀螺距要一致
The setting of the pitch should
be consistent with the pitch of
the thread cutter
- 控制牙的外徑大小
Adjust the outside diameter of
thread
- 牙底孔, 設置參數大於牙刀
直徑, 小余外徑即可
Bottom hole can be set larger
than the diameter of thread
cutter and smaller than the
outside diameter.
- 加工深度
Processing depth

刀路生產後的樣式 Cutter Condition:



65度超硬鑽頭(3D) (HRC65 Super Hard Drill Bits(3D))

SAMHO



特長 (Specialty)

- *能加工HRC62度淬火料;
- *鑽尖角140度, 鋒利耐磨;
- *有中心出水功能。
- *Can drill HRC62 hardened material;
- *Drill point 140°, sharp and wear-resistant;
- *Have the function of central water outlet.

MG
HG Coating

柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.

65度超硬鑽頭鑽尖140度(3D)

HRC65 Super Hard Drill Bits with Drill Point 140°(3D)

型番 Model Number	刃徑 D Diameter of Drill	槽長 L1 Length of Drill	柄徑 d Shank Diameter	全長 L Overall Length	類型 1 Type 1	在庫 In Stock
65度超硬鑽頭1 (HRC65 Super Hard Drill Bits 1)	1	6	4	50	實心 (solid)	○
65度超硬鑽頭1.05 (HRC65 Super Hard Drill Bits 1.05)	1.05	6	4	50	實心 (solid)	○
65度超硬鑽頭1.1 (HRC65 Super Hard Drill Bits 1.1)	1.1	7	4	50	實心 (solid)	○
65度超硬鑽頭1.15 (HRC65 Super Hard Drill Bits 1.15)	1.15	7	4	50	實心 (solid)	○
65度超硬鑽頭1.2 (HRC65 Super Hard Drill Bits 1.2)	1.2	7	4	50	實心 (solid)	○
65度超硬鑽頭1.25 (HRC65 Super Hard Drill Bits 1.25)	1.25	7	4	50	實心 (solid)	○
65度超硬鑽頭1.3 (HRC65 Super Hard Drill Bits 1.3)	1.3	7	4	50	實心 (solid)	○
65度超硬鑽頭1.35 (HRC65 Super Hard Drill Bits 1.35)	1.35	9	4	50	實心 (solid)	○
65度超硬鑽頭1.4 (HRC65 Super Hard Drill Bits 1.4)	1.4	9	4	50	實心 (solid)	○
65度超硬鑽頭1.45 (HRC65 Super Hard Drill Bits 1.45)	1.45	9	4	50	實心 (solid)	○
65度超硬鑽頭1.5 (HRC65 Super Hard Drill Bits 1.5)	1.5	9	4	50	實心 (solid)	○
65度超硬鑽頭1.55 (HRC65 Super Hard Drill Bits 1.55)	1.55	10	4	50	實心 (solid)	○
65度超硬鑽頭1.6 (HRC65 Super Hard Drill Bits 1.6)	1.6	10	4	50	實心 (solid)	○
65度超硬鑽頭1.65 (HRC65 Super Hard Drill Bits 1.65)	1.65	10	4	50	實心 (solid)	○
65度超硬鑽頭1.7 (HRC65 Super Hard Drill Bits 1.7)	1.7	10	4	50	實心 (solid)	○
65度超硬鑽頭1.75 (HRC65 Super Hard Drill Bits 1.75)	1.75	11	4	50	實心 (solid)	○
65度超硬鑽頭1.8 (HRC65 Super Hard Drill Bits 1.8)	1.8	11	4	50	實心 (solid)	○
65度超硬鑽頭1.85 (HRC65 Super Hard Drill Bits 1.85)	1.85	11	4	50	實心 (solid)	○
65度超硬鑽頭1.9 (HRC65 Super Hard Drill Bits 1.9)	1.9	11	4	50	實心 (solid)	○
65度超硬鑽頭1.95 (HRC65 Super Hard Drill Bits 1.95)	1.95	12	4	50	實心 (solid)	○
65度超硬鑽頭2 (HRC65 Super Hard Drill Bits 2)	2	12	4	50	實心 (solid)	○
65度超硬鑽頭2.05 (HRC65 Super Hard Drill Bits 2.05)	2.05	13	4	50	實心 (solid)	○
65度超硬鑽頭2.1 (HRC65 Super Hard Drill Bits 2.1)	2.1	13	4	50	實心 (solid)	○
65度超硬鑽頭2.15 (HRC65 Super Hard Drill Bits 2.15)	2.15	14	4	50	實心 (solid)	○
65度超硬鑽頭2.2 (HRC65 Super Hard Drill Bits 2.2)	2.2	14	4	50	實心 (solid)	○
65度超硬鑽頭2.25 (HRC65 Super Hard Drill Bits 2.25)	2.25	14	4	50	實心 (solid)	○
65度超硬鑽頭2.3 (HRC65 Super Hard Drill Bits 2.3)	2.3	14	4	50	實心 (solid)	○
65度超硬鑽頭2.35 (HRC65 Super Hard Drill Bits 2.35)	2.35	15	4	50	實心 (solid)	○
65度超硬鑽頭2.4 (HRC65 Super Hard Drill Bits 2.4)	2.4	15	4	50	實心 (solid)	○
65度超硬鑽頭2.45 (HRC65 Super Hard Drill Bits 2.45)	2.45	15	4	50	實心 (solid)	○
65度超硬鑽頭2.5 (HRC65 Super Hard Drill Bits 2.5)	2.5	15	4	50	實心 (solid)	○
65度超硬鑽頭2.55 (HRC65 Super Hard Drill Bits 2.55)	2.55	16	6	55	實心 (solid)	○

SAMHO

65度超硬鑽頭(3D) (HRC65 Super Hard Drill Bits(3D))

65度超硬鑽頭鑽尖140度(3D)

HRC65 Super Hard Drill Bits with Drill Point 140°(3D)

型番 Model Number	刃徑 D Diameter of Drill	槽長 L1 Length of Drill	柄徑 d Shank Diameter	全長 L Overall Length	類型 1 Type 1	類型 2 Type 2	在庫 In Stock
65度超硬鑽頭2.6 (HRC65 Super Hard Drill Bits 2.6)	2.6	16	4	55	實心 (solid)		○
65度超硬鑽頭2.65 (HRC65 Super Hard Drill Bits 2.65)	2.65	16	4	55	實心 (solid)		○
65度超硬鑽頭2.7 (HRC65 Super Hard Drill Bits 2.7)	2.7	17	4	55	實心 (solid)		○
65度超硬鑽頭2.75 (HRC65 Super Hard Drill Bits 2.75)	2.75	17	4	55	實心 (solid)		○
65度超硬鑽頭2.8 (HRC65 Super Hard Drill Bits 2.8)	2.8	17	4	55	實心 (solid)		○
65度超硬鑽頭2.85 (HRC65 Super Hard Drill Bits 2.85)	2.85	18	4	55	實心 (solid)		○
65度超硬鑽頭2.9 (HRC65 Super Hard Drill Bits 2.9)	2.9	18	4	55	實心 (solid)		○
65度超硬鑽頭2.95 (HRC65 Super Hard Drill Bits 2.95)	2.95	18	4	55	實心 (solid)		○
65度超硬鑽頭3 (HRC65 Super Hard Drill Bits 3)	3	20	4	62	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭3.05 (HRC65 Super Hard Drill Bits 3.05)	3.05	20	4	62	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭3.1 (HRC65 Super Hard Drill Bits 3.1)	3.1	20	4	62	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭3.15 (HRC65 Super Hard Drill Bits 3.15)	3.15	20	4	62	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭3.2 (HRC65 Super Hard Drill Bits 3.2)	3.2	20	4	62	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭3.25 (HRC65 Super Hard Drill Bits 3.25)	3.25	20	4	62	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭3.3 (HRC65 Super Hard Drill Bits 3.3)	3.3	20	4	62	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭3.35 (HRC65 Super Hard Drill Bits 3.35)	3.35	20	4	62	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭3.4 (HRC65 Super Hard Drill Bits 3.4)	3.4	20	4	62	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭3.45 (HRC65 Super Hard Drill Bits 3.45)	3.45	20	4	62	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭3.5 (HRC65 Super Hard Drill Bits 3.5)	3.5	20	4	62	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭3.55 (HRC65 Super Hard Drill Bits 3.55)	3.55	20	4	62	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭3.6 (HRC65 Super Hard Drill Bits 3.6)	3.6	20	4	62	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭3.65 (HRC65 Super Hard Drill Bits 3.65)	3.65	20	4	62	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭3.7 (HRC65 Super Hard Drill Bits 3.7)	3.7	20	4	62	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭3.75 (HRC65 Super Hard Drill Bits 3.75)	3.75	24	4	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭3.8 (HRC65 Super Hard Drill Bits 3.8)	3.8	24	4	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭3.85 (HRC65 Super Hard Drill Bits 3.85)	3.85	24	4	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭3.9 (HRC65 Super Hard Drill Bits 3.9)	3.9	24	4	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭3.95 (HRC65 Super Hard Drill Bits 3.95)	3.95	24	4	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭4 (HRC65 Super Hard Drill Bits 4)	4	24	4	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭4.05 (HRC65 Super Hard Drill Bits 4.05)	4.05	24	6	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭4.1 (HRC65 Super Hard Drill Bits 4.1)	4.1	24	6	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭4.15 (HRC65 Super Hard Drill Bits 4.15)	4.15	24	6	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭4.2 (HRC65 Super Hard Drill Bits 4.2)	4.2	24	6	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭4.25 (HRC65 Super Hard Drill Bits 4.25)	4.25	24	6	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭4.3 (HRC65 Super Hard Drill Bits 4.3)	4.3	24	6	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭4.35 (HRC65 Super Hard Drill Bits 4.35)	4.35	24	6	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭4.4 (HRC65 Super Hard Drill Bits 4.4)	4.4	24	6	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭4.45 (HRC65 Super Hard Drill Bits 4.45)	4.45	24	6	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭4.5 (HRC65 Super Hard Drill Bits 4.5)	4.5	24	6	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭4.55 (HRC65 Super Hard Drill Bits 4.55)	4.55	24	6	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭4.6 (HRC65 Super Hard Drill Bits 4.6)	4.6	24	6	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭4.65 (HRC65 Super Hard Drill Bits 4.65)	4.65	24	6	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭4.7 (HRC65 Super Hard Drill Bits 4.7)	4.7	24	6	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭4.75 (HRC65 Super Hard Drill Bits 4.75)	4.75	28	6	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭4.8 (HRC65 Super Hard Drill Bits 4.8)	4.8	28	6	66	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭4.85 (HRC65 Super Hard Drill Bits 4.85)	4.85	28	6	66	實心 (solid)	內冷 (Internal Cooling)	○

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65度超硬鑽頭(3D) (HRC65 Super Hard Drill Bits(3D))



65度超硬鑽頭鑽尖140度(3D)

HRC65 Super Hard Drill Bits with Drill Point 140°(3D)

型番 Model Number	刃徑 D Diameter of Drill	槽長 L1 Length of Drill	柄徑 d Shank Diameter	全長 L Overall Length	類型 1 Type 1	類型 2 Type 2	在庫 In Stock
65度超硬鑽頭9.5 (HRC65 Super Hard Drill Bits 9.5)	9.5	47	10	89	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭9.55 (HRC65 Super Hard Drill Bits 9.55)	9.55	47	10	89	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭9.6 (HRC65 Super Hard Drill Bits 9.6)	9.6	47	10	89	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭9.65 (HRC65 Super Hard Drill Bits 9.65)	9.65	47	10	89	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭9.7 (HRC65 Super Hard Drill Bits 9.7)	9.7	47	10	89	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭9.75 (HRC65 Super Hard Drill Bits 9.75)	9.75	47	10	89	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭9.8 (HRC65 Super Hard Drill Bits 9.8)	9.8	47	10	89	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭9.85 (HRC65 Super Hard Drill Bits 9.85)	9.85	47	10	89	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭9.9 (HRC65 Super Hard Drill Bits 9.9)	9.9	47	10	89	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭9.95 (HRC65 Super Hard Drill Bits 9.95)	9.95	47	10	89	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭10 (HRC65 Super Hard Drill Bits 10)	10	47	10	89	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭10.1 (HRC65 Super Hard Drill Bits 10.1)	10.1	55	12	102	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭10.2 (HRC65 Super Hard Drill Bits 10.2)	10.2	55	12	102	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭10.3 (HRC65 Super Hard Drill Bits 10.3)	10.3	55	12	102	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭10.4 (HRC65 Super Hard Drill Bits 10.4)	10.4	55	12	102	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭10.5 (HRC65 Super Hard Drill Bits 10.5)	10.5	55	12	102	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭10.6 (HRC65 Super Hard Drill Bits 10.6)	10.6	55	12	102	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭10.7 (HRC65 Super Hard Drill Bits 10.7)	10.7	55	12	102	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭10.8 (HRC65 Super Hard Drill Bits 10.8)	10.8	55	12	102	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭10.9 (HRC65 Super Hard Drill Bits 10.9)	10.9	55	12	102	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭11 (HRC65 Super Hard Drill Bits 11)	11	55	12	102	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭11.1 (HRC65 Super Hard Drill Bits 11.1)	11.1	55	12	102	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭11.2 (HRC65 Super Hard Drill Bits 11.2)	11.2	55	12	102	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭11.3 (HRC65 Super Hard Drill Bits 11.3)	11.3	55	12	102	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭11.4 (HRC65 Super Hard Drill Bits 11.4)	11.4	55	12	102	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭11.5 (HRC65 Super Hard Drill Bits 11.5)	11.5	55	12	102	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭11.6 (HRC65 Super Hard Drill Bits 11.6)	11.6	55	12	102	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭11.7 (HRC65 Super Hard Drill Bits 11.7)	11.7	55	12	102	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭11.8 (HRC65 Super Hard Drill Bits 11.8)	11.8	55	12	102	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭11.9 (HRC65 Super Hard Drill Bits 11.9)	11.9	55	12	102	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭12 (HRC65 Super Hard Drill Bits 12)	12	55	12	102	實心 (solid)	內冷 (Internal Cooling)	○

標準在庫
Standard in stock

*聯繫客服確認後下單
*Contact customer service to confirm and place an order

65度超硬鑽頭(5D) (HRC65 Super Hard Drill Bits(5D))



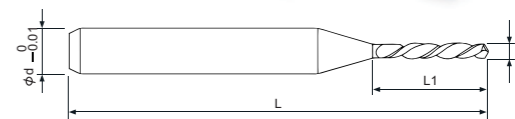
MG

HG
Coating



特長 (Specialty)

- *能加工HRC62度淬火料;
- *鑽尖角140度, 鋒利耐磨;
- *有中心出水功能。
- *Can drill HRC62 hardened material;
- *Drill point 140°, sharp and wear-resistant;
- *Have the function of central water outlet.



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.

65度超硬鑽頭鑽尖140度(5D)

HRC65 Super Hard Drill Bits with Drill Point 140°(5D)

型番 Model Number	刃徑 D Diameter of Drill	槽長 L1 Length of Drill	柄徑 d Shank Diameter	全長 L Overall Length	類型 1 Type 1	類型 2 Type 2	在庫 In Stock
65度超硬鑽頭1 (HRC65 Super Hard Drill Bits 1)	1	9	4	50	實心 (solid)		○
65度超硬鑽頭1.05 (HRC65 Super Hard Drill Bits 1.05)	1.05	10	4	50	實心 (solid)		○
65度超硬鑽頭1.1 (HRC65 Super Hard Drill Bits 1.1)	1.1	10	4	50	實心 (solid)		○
65度超硬鑽頭1.15 (HRC65 Super Hard Drill Bits 1.15)	1.15	10	4	50	實心 (solid)		○
65度超硬鑽頭1.2 (HRC65 Super Hard Drill Bits 1.2)	1.2	10	4	50	實心 (solid)		○
65度超硬鑽頭1.25 (HRC65 Super Hard Drill Bits 1.25)	1.25	11	4	50	實心 (solid)		○
65度超硬鑽頭1.3 (HRC65 Super Hard Drill Bits 1.3)	1.3	11	4	50	實心 (solid)		○
65度超硬鑽頭1.35 (HRC65 Super Hard Drill Bits 1.35)	1.35	12	4	50	實心 (solid)		○
65度超硬鑽頭1.4 (HRC65 Super Hard Drill Bits 1.4)	1.4	12	4	50	實心 (solid)		○
65度超硬鑽頭1.45 (HRC65 Super Hard Drill Bits 1.45)	1.45	13	4	50	實心 (solid)		○
65度超硬鑽頭1.5 (HRC65 Super Hard Drill Bits 1.5)	1.5	13	4	50	實心 (solid)		○
65度超硬鑽頭1.55 (HRC65 Super Hard Drill Bits 1.55)	1.55	14	4	50	實心 (solid)		○
65度超硬鑽頭1.6 (HRC65 Super Hard Drill Bits 1.6)	1.6	14	4	50	實心 (solid)		○
65度超硬鑽頭1.65 (HRC65 Super Hard Drill Bits 1.65)	1.65	14	4	50	實心 (solid)		○
65度超硬鑽頭1.7 (HRC65 Super Hard Drill Bits 1.7)	1.7	14	4	50	實心 (solid)		○
65度超硬鑽頭1.75 (HRC65 Super Hard Drill Bits 1.75)	1.75	15	4	50	實心 (solid)		○
65度超硬鑽頭1.8 (HRC65 Super Hard Drill Bits 1.8)	1.8	15	4	50	實心 (solid)		○
65度超硬鑽頭1.85 (HRC65 Super Hard Drill Bits 1.85)	1.85	16	4	55	實心 (solid)		○
65度超硬鑽頭1.9 (HRC65 Super Hard Drill Bits 1.9)	1.9	16	4	55	實心 (solid)		○
65度超硬鑽頭1.95 (HRC65 Super Hard Drill Bits 1.95)	1.95	17	4	55	實心 (solid)		○
65度超硬鑽頭2 (HRC65 Super Hard Drill Bits 2)	2	17	4	55	實心 (solid)		○
65度超硬鑽頭2.05 (HRC65 Super Hard Drill Bits 2.05)	2.05	18	4	55	實心 (solid)		○
65度超硬鑽頭2.1 (HRC65 Super Hard Drill Bits 2.1)	2.1	18	4	55	實心 (solid)		○
65度超硬鑽頭2.15 (HRC65 Super Hard Drill Bits 2.15)	2.15	19	4	55	實心 (solid)		○
65度超硬鑽頭2.2 (HRC65 Super Hard Drill Bits 2.2)	2.2	19	4	55	實心 (solid)		○
65度超硬鑽頭2.25 (HRC65 Super Hard Drill Bits 2.25)	2.25	20	4	55	實心 (solid)		○
65度超硬鑽頭2.3 (HRC65 Super Hard Drill Bits 2.3)	2.3	20	4	55	實心 (solid)		○
65度超硬鑽頭2.35 (HRC65 Super Hard Drill Bits 2.35)	2.35	20	4	55	實心 (solid)		○
65度超硬鑽頭2.4 (HRC65 Super Hard Drill Bits 2.4)	2.4	20	4	55	實心 (solid)		○
65度超硬鑽頭2.45 (HRC65 Super Hard Drill Bits 2.45)	2.45	21	4	55	實心 (solid)		○
65度超硬鑽頭2.5 (HRC65 Super Hard Drill Bits 2.5)	2.5	21	4	55	實心 (solid)		○
65度超硬鑽頭2.55 (HRC65 Super Hard Drill Bits 2.55)	2.55	22	6	62	實心 (solid)		○

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65度超硬鑽頭 (5D) (HRC65 Super Hard Drill Bits(5D))

SAMHO

65度超硬鑽頭鑽尖140度 (5D)

HRC65 Super Hard Drill Bits with Drill Point 140° (5D)

型番 Model Number	刃徑 D Diameter of Drill	槽長 L1 Length of Drill	柄徑 d Shank Diameter	全長 L Overall Length	類型 1 Type 1	類型 2 Type 2	在庫 In Stock
65度超硬鑽頭11.1 (HRC65 Super Hard Drill Bits 11.1)	11.1	71	12	118	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭11.2 (HRC65 Super Hard Drill Bits 11.2)	11.2	71	12	118	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭11.3 (HRC65 Super Hard Drill Bits 11.3)	11.3	71	12	118	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭11.4 (HRC65 Super Hard Drill Bits 11.4)	11.4	71	12	118	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭11.5 (HRC65 Super Hard Drill Bits 11.5)	11.5	71	12	118	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭11.6 (HRC65 Super Hard Drill Bits 11.6)	11.6	71	12	118	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭11.7 (HRC65 Super Hard Drill Bits 11.7)	11.7	71	12	118	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭11.8 (HRC65 Super Hard Drill Bits 11.8)	11.8	71	12	118	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭11.9 (HRC65 Super Hard Drill Bits 11.9)	11.9	71	12	118	實心 (solid)	內冷 (Internal Cooling)	○
65度超硬鑽頭12 (HRC65 Super Hard Drill Bits 12)	12	71	12	118	實心 (solid)	內冷 (Internal Cooling)	○

標準在庫
Standard in stock

○ 聯繫客服確認後下單
○ Contact customer service to confirm and place an order

SAMHO

70度三牙銑牙刀 (公制) (HRC70 Three-teeth Thread Milling Cutter (Metric))

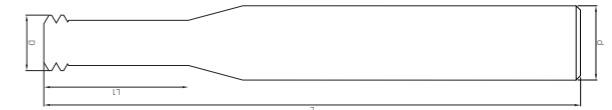
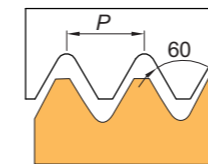


MG
HG
Coating

3 4

特長 (Specialty)

- * 新型設計, 精細研磨;
- * 優選棒材, 優異性能。
- * New design, fine grinding;
- * Optimal bar material, excellent performance.



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.

公制粗牙

Metric Coarse Thread

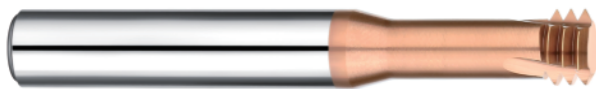
型番 Model Number	牙距 P Tooth Pitch	刃徑 D Diameter of Cut	有效長 L1 Effective Length	柄徑 d Shank Diameter	全長 L Overall Length	刃數 T Number Of Flutes	類型 Type	在庫 In Stock
70度超硬銑牙刀 M1.6*0.35 HRC70 Three-teeth Thread Milling Cutter M1.6*0.35	0.35	D1.2	3.2	6	50	3	2牙 2 Tooth	○
70度超硬銑牙刀 M2.0*0.4 HRC70 Three-teeth Thread Milling Cutter M2.0*0.4	0.4	D1.55	4	6	50	4	2牙 2 Tooth	○
70度超硬銑牙刀 M2.5*0.45 HRC70 Three-teeth Thread Milling Cutter M2.5*0.45	0.45	D1.96	5	6	50	4	2牙 2 Tooth	○
70度超硬銑牙刀 M3*0.5 HRC70 Three-teeth Thread Milling Cutter M3*0.5	0.5	D2.4	6	6	50	4	2牙 2 Tooth	○
70度超硬銑牙刀 M4*0.7 HRC70 Three-teeth Thread Milling Cutter M4*0.7	0.7	D3.15	8	6	50	4	2牙 2 Tooth	○
70度超硬銑牙刀 M5*0.8 HRC70 Three-teeth Thread Milling Cutter M5*0.8	0.8	D4.05	10	6	50	4	2牙 2 Tooth	○
70度超硬銑牙刀 M6*1.0 HRC70 Three-teeth Thread Milling Cutter M6*1.0	1	D4.8	12	6	50	5	2牙 2 Tooth	○
70度超硬銑牙刀 M8*1.25 HRC70 Three-teeth Thread Milling Cutter M8*1.25	1.25	D6.5	16	8	60	6	2牙 2 Tooth	○
70度超硬銑牙刀 M10*1.5 HRC70 Three-teeth Thread Milling Cutter M10*1.5	1.5	D8.2	20	10	75	6	2牙 2 Tooth	○
70度超硬銑牙刀 M12*1.75 HRC70 Three-teeth Thread Milling Cutter M12*1.75	1.75	D9.9	24	10	75	6	2牙 2 Tooth	○

○ 標準在庫
○ Standard in stock

○ 聯繫客服確認後下單
○ Contact customer service to confirm and place an order

65度三牙銑牙刀(公制) (HRC65 Three-teeth Thread Cutter(Metric))

SAMHO

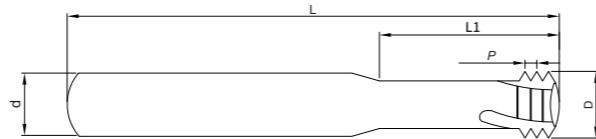
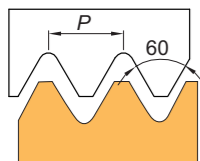


MG HG Coating

3

特長 (Specialty)

- *能加工HRC62度淬火料的钻头;
- *最新高硬, 耐高温塗層。
- *Can mill HRC62 hardened material;
- *The latest high-hardness, high-temperature resistant coating.



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.

65度三牙銑牙刀(公制)

HRC65 three-teeth thread milling cutter (metric)

型番 Model Number	牙距 P Tooth Pitch	刃徑 D Diameter of Cut	有效長 L1 Effective Length	柄徑 d Shank Diameter	全長 L Overall Length	刃數 T Number Of Flutes	類型 Type	在庫 In Stock
65度三牙銑牙刀 M1.2*0.25 HRC65 Three-teeth Thread Cutter M1.2*0.25	0.25	D0.92	2.4	4	50	3	3牙 3 Teeth	○
65度三牙銑牙刀 M1.4*0.3 HRC65 Three-teeth Thread Cutter M1.4*0.3	0.3	D1.05	3	4	50	3	3牙 3 Teeth	○
65度三牙銑牙刀 M1.6*0.35 HRC65 Three-teeth Thread Cutter M1.6*0.35	0.35	D1.22	3.2	4	50	3	3牙 3 Teeth	○
65度三牙銑牙刀 M2.0*0.4 HRC65 Three-teeth Thread Cutter M2.0*0.4	0.4	D1.55	4	4	50	3	3牙 3 Teeth	○
65度三牙銑牙刀 M2.5*0.45 HRC65 Three-teeth Thread Cutter M2.5*0.45	0.45	D1.96	5.5	4	50	3	3牙 3 Teeth	○
65度三牙銑牙刀 M3*0.5 HRC65 Three-teeth Thread Cutter M3*0.5	0.5	D2.4	6	4	50	3	3牙 3 Teeth	○
65度三牙銑牙刀 M4*0.7 HRC65 Three-teeth Thread Cutter M4*0.7	0.7	D3.15	8	4	50	3	3牙 3 Teeth	○
65度三牙銑牙刀 M4.5*0.75 HRC65 Three-teeth Thread Cutter M4.5*0.75	0.75	D3.5	11	4	50	3	3牙 3 Teeth	○
65度三牙銑牙刀 M5*0.8 HRC65 Three-teeth Thread Cutter M5*0.8	0.8	D3.95	10	4	50	3	3牙 3 Teeth	○
65度三牙銑牙刀 M6*1.0 HRC65 Three-teeth Thread Cutter M6*1.0	1	D4.8	13	6	50	3	3牙 3 Teeth	○
65度三牙銑牙刀 M8*1.25 HRC65 Three-teeth Thread Cutter M8*1.25	1.25	D6.5	16	8	60	3	3牙 3 Teeth	○
65度三牙銑牙刀 M10*1.5 HRC65 Three-teeth Thread Cutter M10*1.5	1.5	D7.9	20	8	60	3	3牙 3 Teeth	○

○ 標準在庫
○ Standard in stock

*聯繫客服確認後下單
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SAMHO

65度全牙銑牙刀(公制) (HRC65 Full Tooth Thread Cutter(Metric))

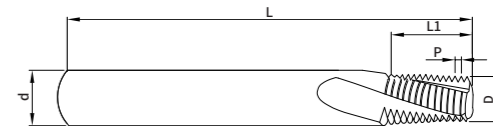
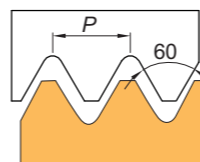


MG HG Coating

3 4

特長 (Specialty)

- *新型設計, 精細研磨;
- *優選棒材, 優異性能。
- *New design, fine grinding;
- *Optimal bar material, excellent performance.



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.

公制粗牙

Metric Coarse Thread

型番 Model Number	牙距 P Tooth Pitch	刃徑 D Diameter of Cut	有效長 L1 Effective Length	柄徑 d Shank Diameter	全長 L Overall Length	刃數 T Number Of Flutes	類型 Type	在庫 In Stock
65度全牙銑牙刀 M3*0.5 HRC65 Full Tooth Thread Cutter M3*0.5	0.5	2.3	6	4	50	3	全牙 Full Tooth	○
65度全牙銑牙刀 M3.5*0.6 HRC65 Full Tooth Thread Cutter M3.5*0.6	0.6	2.7	7	4	50	3	全牙 Full Tooth	○
65度全牙銑牙刀 M4*0.7 HRC65 Full Tooth Thread Cutter M4*0.7	0.7	3	8	4	50	3	全牙 Full Tooth	○
65度全牙銑牙刀 M4.5*0.75 HRC65 Full Tooth Thread Cutter M4.5*0.75	0.75	3.4	9	4	50	3	全牙 Full Tooth	○
65度全牙銑牙刀 M5*0.8 HRC65 Full Tooth Thread Cutter M5*0.8	0.8	4	10	4	50	3	全牙 Full Tooth	○
65度全牙銑牙刀 M6*1.0 HRC65 Full Tooth Thread Cutter M6*1.0	1	4.8	12	6	60	3	全牙 Full Tooth	○
65度全牙銑牙刀 M8*1.25 HRC65 Full Tooth Thread Cutter M8*1.25	1.25	6	16	6	60	3	全牙 Full Tooth	○
65度全牙銑牙刀 M10*1.5 HRC65 Full Tooth Thread Cutter M10*1.5	1.5	8	20	8	60	3	全牙 Full Tooth	○
65度全牙銑牙刀 M12*1.75 HRC65 Full Tooth Thread Cutter M12*1.75	1.75	9.8	30	10	75	4	全牙 Full Tooth	○
65度全牙銑牙刀 M14*2.0 HRC65 Full Tooth Thread Cutter M14*2.0	2	10	30	10	75	4	全牙 Full Tooth	○
65度全牙銑牙刀 M16*2.0 HRC65 Full Tooth Thread Cutter	2	12	30	12	75	4	全牙 Full Tooth	○
65度全牙銑牙刀 M18*2.5 HRC65 Full Tooth Thread Cutter M18*2.5	2.5	14	36	14	80	4	全牙 Full Tooth	○

○ 標準在庫
○ Standard in stock

*聯繫客服確認後下單
*Contact customer service to confirm and place an order

公制細牙

Metric Fine Thread

型番 Model Number	牙距 P Tooth Pitch	刃徑 D Diameter of Cut	有效長 L1 Effective Length	柄徑 d Shank Diameter	全長 L Overall Length	刃數 T Number Of Flutes	類型 Type	在庫 In Stock
65度全牙銑牙刀M6*0.5 HRC65 Full Tooth Thread Cutter M6*0.5	0.5	4	10	4	50	3	全牙Full Tooth	○
65度全牙銑牙刀M8*0.5 HRC65 Full Tooth Thread Cutter M8*0.5	0.5	6	13	6	60	3	全牙Full Tooth	○
65度全牙銑牙刀M6*0.75 HRC65 Full Tooth Thread Cutter M6*0.75	0.75	4.8	12	6	60	3	全牙Full Tooth	○
65度全牙銑牙刀M10*0.75 HRC65 Full Tooth Thread Cutter M10*0.75	0.75	8	20	8	60	3	全牙Full Tooth	○
65度全牙銑牙刀M8*1.0 HRC65 Full Tooth Thread Cutter M8*1.0	1	6	16	6	55	3	全牙Full Tooth	○
65度全牙銑牙刀M10*1.0 HRC65 Full Tooth Thread Cutter M10*1.0	1	8	20	8	60	3	全牙Full Tooth	○
65度全牙銑牙刀M12*1.0 HRC65 Full Tooth Thread Cutter M12*1.0	1	10	22	10	75	4	全牙Full Tooth	○
65度全牙銑牙刀M16*1.0 HRC65 Full Tooth Thread Cutter M16*1.0	1	12	22	12	75	4	全牙Full Tooth	○
65度全牙銑牙刀M20*1.0 HRC65 Full Tooth Thread Cutter M20*1.0	1	16	30	16	90	4	全牙Full Tooth	○
65度全牙銑牙刀M10*1.25 HRC65 Full Tooth Thread Cutter M10*1.25	1.25	8	20	8	60	3	全牙Full Tooth	○
65度全牙銑牙刀M12*1.25 HRC65 Full Tooth Thread Cutter M12*1.25	1.25	10	25	10	75	4	全牙Full Tooth	○
65度全牙銑牙刀M12*1.5 HRC65 Full Tooth Thread Cutter M12*1.5	1.5	10	28	10	75	4	全牙Full Tooth	○
65度全牙銑牙刀M14*1.5 HRC65 Full Tooth Thread Cutter M14*1.5	1.5	12	28	12	75	4	全牙Full Tooth	○
65度全牙銑牙刀M20*1.5 HRC65 Full Tooth Thread Cutter M20*1.5	1.5	16	30	16	90	4	全牙Full Tooth	○

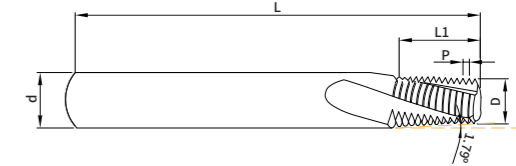
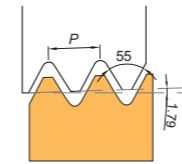
○ 標準在庫
○ Standard in stock

*聯繫客服確認後下單
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特長 (Specialty)

- *新型設計, 精細研磨;
- *延長壽命, 降低成本。
- *New design, fine grinding;
- *Extend life and reduce costs.



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.

英制圓錐管螺紋PT BSPT (RC)

Inch Taper Pipe Thread PT BSPT (RC)

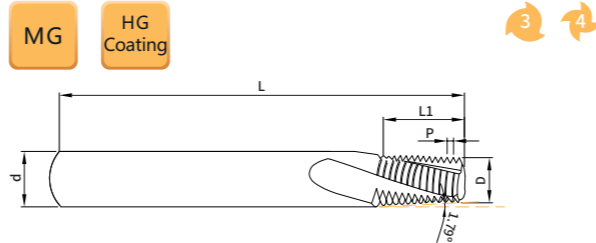
型番 Model Number	牙距 P Tooth Pitch	刃徑 d1 Length of cut	刃徑 D Diameter of Cut	有效長 L1 Effective Length	柄徑 d Shank Diameter	全長 L Overall Length	刃數 T Number Of Blades	類型 Type	在庫 In Stock
65度全牙銑牙刀RC1/16,1/8-28 HRC65 Full Tooth Thread Cutter RC1/16,1/8-28	0.907	5.25	6	12	6	60	3	全牙 Full Tooth	○
65度全牙銑牙刀RC1/8-28 HRC65 Full Tooth Thread Cutter RC1/8-28	0.907	7.25	8	12	8	60	3	全牙 Full Tooth	○
65度全牙銑牙刀RC1/4, 3/8-19 HRC65 Full Tooth Thread Cutter RC1/4, 3/8-19	1.337	8.88	10	18	10	75	4	全牙 Full Tooth	○
65度全牙銑牙刀RC3/8-19 HRC65 Full Tooth Thread Cutter RC3/8-19	1.337	10.75	12	20	12	75	4	全牙 Full Tooth	○
65度全牙銑牙刀RC1/2-14 HRC65 Full Tooth Thread Cutter RC1/2-14	1.814	14.5	16	24	16	90	4	全牙 Full Tooth	○

○ 標準在庫
○ Standard in stock

*聯繫客服確認後下單
*Contact customer service to confirm and place an order

65度全牙銑牙刀 (NPT) (HRC65 Full Tooth Thread Cutter (NPT))

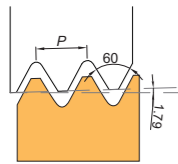
SAMHO



特長 (Specialty)

- *適用材料廣泛;
- *延長壽命, 降低成本。
- *Wide range of applicable materials;
- *Extend life and reduce costs.

柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.



美製圓錐管螺紋NPT NPTF

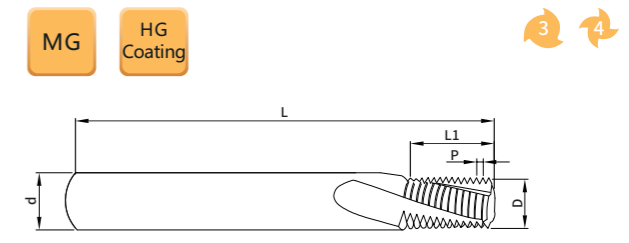
American Tapered Pipe Thread NPT NPTF

型番 Model Number	牙距P Tooth Pitch	刃徑 d1 Diameter of Cut	刃徑 D Blade Diameter	有效長L1 Effective Length	柄徑 d Shank Diameter	全長 L Overall Length	刃數 T Number Of Blades	類型 Type	在庫 In Stock
65度全牙銑牙刀NPT1/16, 1/8-27 HRC65 Full Tooth Thread Cutter NPT1/16, 1/8-27	0.941	5.250	6	12	6	60	3	全牙 Full Tooth	○
65度全牙銑牙刀NPT1/8-27 HRC65 Full Tooth Thread Cutter NPT1/8-27	0.941	7.250	8	12	8	60	3	全牙 Full Tooth	○
65度全牙銑牙刀NPT1/4, 3/8-18 HRC65 Full Tooth Thread Cutter NPT1/8-27	1.411	8.750	10	20	10	75	4	全牙 Full Tooth	○
65度全牙銑牙刀NPT3/8-18 HRC65 Full Tooth Thread Cutter NPT3/8-18	1.411	10.630	12	22	12	75	4	全牙 Full Tooth	○
65度全牙銑牙刀NPT1/2, 3/4-14 HRC65 Full Tooth Thread Cutter NPT1/2, 3/4-14	1.814	14.440	16	25	16	90	4	全牙 Full Tooth	○

○ 標準在庫
○ Standard in stock

*聯繫客服確認後下單
*Contact customer service to confirm and place an order

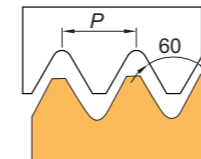
SAMHO 65度全牙銑牙刀 (UNC.UNF.UNEF) (HRC65 Full Tooth Thread Cutter(UNC,UNF,UNEF))



特長 (Specialty)

- *新型設計, 精細研磨;
- *延長壽命, 降低成本。
- *New design, fine grinding;
- *Extend life and reduce costs.

柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.



美製直管螺紋粗牙UNC

American Straight Pipe Thread Coarse Thread UNC

型番 Model Number	牙距P Tooth Pitch	刃徑 D Diameter of Cut	有效長L1 Effective Length	柄徑 d Shank Diameter	全長 L Overall Length	刃數 T Number Of Flutes	類型 Type	在庫 In Stock
65度全牙銑牙刀UNCNO.10-24 HRC65 Full Tooth Thread Cutter UNCNO.10-24	1.058	3.2	10.6	4	50	3	全牙Full Tooth	○
65度全牙銑牙刀UNCNO.12-24 HRC65 Full Tooth Thread Cutter UNCNO.12-24	1.058	4	11.6	4	50	3	全牙Full Tooth	○
65度全牙銑牙刀UNC1/4-20 HRC65 Full Tooth Thread Cutter UNC1/4-20	1.270	4	12.7	4	50	3	全牙Full Tooth	○
65度全牙銑牙刀UNC5/16-18 HRC65 Full Tooth Thread Cutter UNC5/16-18	1.411	5.8	16.9	6	55	3	全牙Full Tooth	○
65度全牙銑牙刀UNC3/8-16 HRC65 Full Tooth Thread Cutter UNC3/8-16	1.588	7.6	19.1	8	60	3	全牙Full Tooth	○
65度全牙銑牙刀UNC7/16-14 HRC65 Full Tooth Thread Cutter UNC7/16-14	1.814	8	20	8	60	3	全牙Full Tooth	○
65度全牙銑牙刀UNC1/2-13 HRC65 Full Tooth Thread Cutter UNC1/2-13	1.954	8	20	8	60	3	全牙Full Tooth	○
65度全牙銑牙刀UNC9/16-12 HRC65 Full Tooth Thread Cutter UNC9/16-12	2.117	10	28	10	75	4	全牙Full Tooth	○
65度全牙銑牙刀UNC5/8-11 HRC65 Full Tooth Thread Cutter UNC5/8-11	2.309	12	30	12	75	4	全牙Full Tooth	○
65度全牙銑牙刀UNC3/4-10 HRC65 Full Tooth Thread Cutter UNC3/4-10	2.540	12	30	12	75	4	全牙Full Tooth	○
65度全牙銑牙刀UNC7/8-9 HRC65 Full Tooth Thread Cutter UNC7/8-9	2.822	16	38	16	90	4	全牙Full Tooth	○
65度全牙銑牙刀UNC1-8 HRC65 Full Tooth Thread Cutter UNC1-8	3.175	16	40	16	90	4	全牙Full Tooth	○

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美製直管螺紋細牙UNF

American Straight Pipe Thread Fine Thread UNF

型番 Model Number	牙距 P Tooth Pitch	刃徑 D Diameter of Cut	有效長 L1 Effective Length	柄徑 d Shank Diameter	全長 L Overall Length	刃數 T Number Of Flutes	類型 Type	在庫 In Stock
65度全牙銑牙刀UNFN0.8-36 HRC65 Full Tooth Thread Cutter UNFN0.8-36	0.706	3	8.5	4	50	3	全牙Full Tooth	○
65度全牙銑牙刀UNFN0.10-32 HRC65 Full Tooth Thread Cutter UNFN0.8-36	0.794	3.5	11.1	4	50	3	全牙Full Tooth	○
65度全牙銑牙刀UNFN0.12-28,1/4-28 HRC65 Full Tooth Thread Cutter UNFN0.12-28,1/4-28	0.907	4	11.8	4	50	3	全牙Full Tooth	○
65度全牙銑牙刀UNF1/4-28 HRC65 Full Tooth Thread Cutter UNF1/4-28	0.907	5	12.7	6	55	3	全牙Full Tooth	○
65度全牙銑牙刀UNF5/16,3/8-24 HRC65 Full Tooth Thread Cutter UNF5/16,3/8-24	1.058	4	11.6	4	50	3	全牙Full Tooth	○
65度全牙銑牙刀UNF3/8-24 HRC65 Full Tooth Thread Cutter UNF3/8-24	1.058	7.8	19.1	8	60	3	全牙Full Tooth	○
65度全牙銑牙刀UNF7/16,1/2-20 HRC65 Full Tooth Thread Cutter UNF7/16,1/2-20	1.27	4	12.7	4	50	4	全牙Full Tooth	○
65度全牙銑牙刀UNF1/2-20 HRC65 Full Tooth Thread Cutter UNF1/2-20	1.27	10	25.4	10	75	4	全牙Full Tooth	○
65度全牙銑牙刀UNF9/16-18 HRC65 Full Tooth Thread Cutter UNF9/16-18	1.41	5.8	16.9	6	55	3	全牙Full Tooth	○
65度全牙銑牙刀UNF9/16,5/8-18 HRC65 Full Tooth Thread Cutter UNF9/16,5/8-18	1.41	10	29.6	10	75	4	全牙Full Tooth	○
65度全牙銑牙刀UNF3/4-16 HRC65 Full Tooth Thread Cutter UNF3/4-16	1.59	7.6	19.1	8	60	3	全牙Full Tooth	○
65度全牙銑牙刀UNF3/4-16L HRC65 Full Tooth Thread Cutter UNF3/4-16L	1.59	12	28	12	75	4	全牙Full Tooth	○
65度全牙銑牙刀UNF7/8-14 HRC65 Full Tooth Thread Cutter UNF7/8-14	1.81	8	20	8	60	3	全牙Full Tooth	○
65度全牙銑牙刀UNF7/8-14L HRC65 Full Tooth Thread Cutter UNF7/8-14L	1.81	16	39.9	16	90	4	全牙Full Tooth	○
65度全牙銑牙刀UNF1-12 HRC65 Full Tooth Thread Cutter UNF1-12	2.12	10	28	10	75	4	全牙Full Tooth	○
65度全牙銑牙刀UNF1-12L HRC65 Full Tooth Thread Cutter UNF1-12L	2.12	16	40	16	90	4	全牙Full Tooth	○

○ 標準在庫
○ Standard in stock

*聯繫客服確認後下單
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美製螺紋超細牙UNEF

American Straight Pipe Thread Fine Thread UNEF

型番 Model Number	牙距 P Tooth Pitch	刃徑 D Diameter of Cut	有效長 L1 Effective Length	柄徑 d Shank Diameter	全長 L Overall Length	刃數 T Number Of Flutes	類型 Type	在庫 In Stock
65度全牙銑牙刀UNEFNO.12,3/8-32 HRC65 Full Tooth Thread Cutter UNEFNO.12,3/8-32	0.794	3.5	11.1	4	50	3	全牙Full Tooth	○
65度全牙銑牙刀UNEF7/16,1/2-28 HRC65 Full Tooth Thread Cutter UNEF7/16,1/2-28	0.907	4	11.8	4	50	3	全牙Full Tooth	○
65度全牙銑牙刀UNEF7/16,1/2-28L HRC65 Full Tooth Thread Cutter UNEF7/16,1/2-28L	0.907	9.2	22.7	10	75	4	全牙Full Tooth	○
65度全牙銑牙刀UNEF9/16,11/16-24 HRC65 Full Tooth Thread Cutter UNEF9/16,11/16-24	1.058	4	11.6	4	50	3	全牙Full Tooth	○
65度全牙銑牙刀UNEF9/16,11/16-24L HRC65 Full Tooth Thread Cutter UNEF9/16,11/16-24L	1.058	7.8	19.1	8	60	3	全牙Full Tooth	○
65度全牙銑牙刀UNEF3/4,1-20 HRC65 Full Tooth Thread Cutter UNEF3/4,1-20	1.27	4	12.7	4	50	3	全牙Full Tooth	○
65度全牙銑牙刀UNEF3/4,1-20L HRC65 Full Tooth Thread Cutter UNEF3/4,1-20L	1.27	10	25.4	10	75	4	全牙Full Tooth	○
65度全牙銑牙刀UNEF11/16-18 HRC65 Full Tooth Thread Cutter UNEF11/16-18	1.41	5.8	16.9	6	55	3	全牙Full Tooth	○
65度全牙銑牙刀UNEF11/16-18L HRC65 Full Tooth Thread Cutter UNEF11/16-18L	1.41	10	29.6	10	75	4	全牙Full Tooth	○

○ 標準在庫
○ Standard in stock

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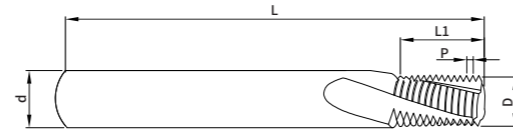


MG HG Coating

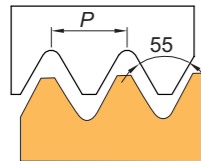
3 4

特長 (Specialty)

- *新型設計, 精細研磨;
- *優選棒材, 優異性能。
- *New design, fine grinding;
- *Optimal bar material, excellent performance.



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
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英制直管螺紋G(PF)55度

British Straight Pipe Thread G (PF) 55°

型番 Model Number	牙距 P Tooth Pitch	刃徑 D Diameter of Cut	有效長 L1 Effective Length	柄徑 d Shank Diameter	全長 L Overall Length	刃數 T Number Of Flutes	類型 Type	在庫 In Stock
65度全牙銑牙刀G1/16,1/8-28 HRC65 Full Tooth Thread Milling Cutter G1/16,1/8-28	0.907	6	12	6	60	3	全牙 Full Tooth	○
65度全牙銑牙刀G1/8-28 HRC65 Full Tooth Thread Milling Cutter G1/8-28	0.907	8	12	8	60	3	全牙 Full Tooth	○
65度全牙銑牙刀G1/4,3/8-19 HRC65 Full Tooth Thread Milling Cutter G1/4,3/8-19	1.337	10	15	10	75	4	全牙 Full Tooth	○
65度全牙銑牙刀G3/8-19 HRC65 Full Tooth Thread Milling Cutter G3/8-19	1.337	12	22	12	75	4	全牙 Full Tooth	○
65度全牙銑牙刀G1/2-14 HRC65 Full Tooth Thread Milling Cutter G1/2-14	1.814	16	30	16	90	4	全牙 Full Tooth	○
65度全牙銑牙刀G1-11 HRC65 Full Tooth Thread Milling Cutter G1-11	2.309	16	34	16	90	4	全牙 Full Tooth	○

○ 標準在庫
○ Standard in stock

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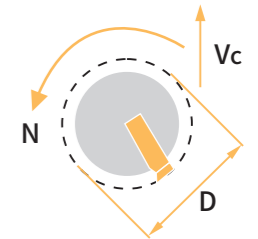
計算刀具的進給速度和進給量

Calculation Example of Thread Milling Conditions

$$n = \frac{1000 \cdot V_c}{\pi \cdot D} \quad n = V_f / f_z \cdot n \cdot Z$$

Vc=切削線速度 (m/min)
n=刀具轉速 (RPM)
D=刀具切削直徑 (mm)
Vf=刀具切削刃進給速度 (mm)
Z=刀具切削刃數量
fz=每轉每齒進給量 (mm/r)

Vc=Velocity(m/min)
n=Spindle Speed(RPM)
D=Outside Diameter(mm)
Vf=Feed Rate(mm)
Z=Number of Flutes
fz=Feed per tooth per revolution(mm/r)



- 1-2: 快速定位
- 2-3: 360°整圓做螺紋插補運動, 軸向移動一個導程
- 3-4: 徑向退回

- 1-2: Quick positioning
- 2-3: 360° full circle for thread interpolation movement, onelead of axial movement
- 3-4: radial retraction

螺紋銑削數據計算實例

Thread milling data calculation example

1. 主軸轉速 (n) 計算 Spindle speed (n) calculation

應用公式 $V_c = (\pi \cdot D \cdot n) / 1000$ Application formula $V_c = (\pi \cdot D \cdot n) / 1000$
 Vc: 線速度 (m/min) Vc: Velocity (m/min)
 π: 圓周率 3.14159 π: Pi 3.14159
 D: 刀具直徑 (mm) D: Outside Diameter (mm)
 n: 轉速 (rpm) n: Spindle Speed (rpm)

示例: 使用直徑 25mm 的螺紋銑刀, 推薦速度為 100m/min

Example: Using a thread milling cutter with a diameter of 25mm, the recommended speed is 100m/min

$$V_c = \pi d n / 1000 \quad V_c = \pi d n / 1000$$

Vc: 線速度 (m/min) Vc: Velocity (m/min)
 n: $1000 \cdot 100 / \pi \cdot 25 = 1280 \text{rpm}$ n: $1000 \cdot 100 / \pi \cdot 25 = 1280 \text{rpm}$

2. 進給量 F 計算 $V_f = f \cdot n \cdot z$ (Feed amount F calculation $V_f = f \cdot n \cdot z$)

Feed amount F calculation $V_f = f \cdot n \cdot z$ (Feed amount F calculation $V_f = f \cdot n \cdot z$)

Vf: 進給量 (mm/min) Vf: Feed Rate (mm/min)
 n: 轉速 (rpm) n: Spindle Speed (rpm)
 Z: 刃數 Z: Number of Flutes
 fz: 每刃進給 fz: feed per tooth

示例: 單刃螺紋銑刀以轉速 1500rpm 切削工件, 求進給量 (F 值) 為多少? (f 推薦值 0.05mm)

Example: A single flute thread milling cutter is cutting a workpiece at a speed of 1500rpm. What is the feed rate (F value)? f recommended value 0.05mm

$$V_f = f \cdot n \cdot Z$$

$V_f = 0.05 \cdot 1500 \cdot 1 = 75 \text{mm/min}$

大多數CNC機床,在編程時要求採用刀具中心進給編程,刀具的進給速度是由刀具中心進給速度的大小決定的,而刀具中心的進給速度沒有直接給出,但可由刀具進給速度與刀具中心進給速度的關係方程式計算得出。

Most CNC machines require programming by using the tool center feed. The feed rate of the tool is determined by the feed rate of the tool center. And the feed rate of the tool center is not directly given, but can be calculated by the relational formula between feed rate and center feed rate.

Vfm=中心進給速度(mm/min)

Vf=進給量(mm/min)

D=螺紋公稱直徑(mm)

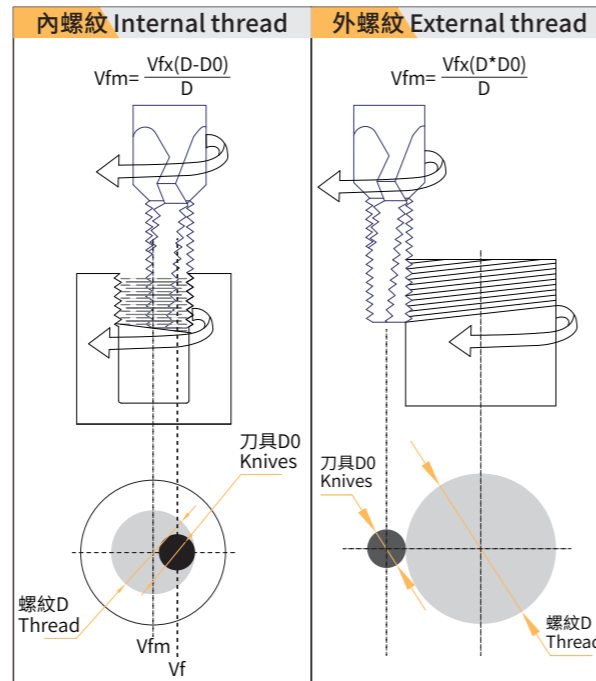
D0=螺紋銼刀直徑(mm)

Vfm=Center Feed Rate (mm/min)

Vf= Feed Amount (mm/min)

D=Nominal Diameter Of Thread (mm)

D0=Thread Milling Cutter Diameter (mm)



用于CNC程序的"G"代码 (ISO)

"G" code (ISO) for CNC programs

代碼Code	功能Features	代碼Code	功能Features
..	識別代碼 (ISO或者EIA), 磁帶結束 Identification code (ISO or EIA), end of tape	H	刀具長度補償號 Tool length compensation number
000	快速識別指令 Quickly identify instructions	D	刀具半徑補償號 Tool radius compensation number
001	直線插補指令 Linear interpolation command	X	X軸坐標 X axis coordinate
002	順時針圓弧/螺旋插補指令 Clockwise arc/helical interpolation command	Y	Y軸坐標 Y axis coordinate
003	逆時針圓弧/螺旋插補指令 Counterclockwise arc/helical interpolation command	Z	X軸坐標 X axis coordinate
040	刀具半徑補償指令 Tool radius compensation command	R	圓弧插補半徑 Circular interpolation radius
041	左偏刀具半徑補償指令 Left offset tool radius compensation command	M3	主軸正轉 Spindle forward
042	右偏刀具半徑補償指令 Right deviation tool radius compensation command	M5	主軸停止 Spindle stop
043	刀具和長度補償指令 Tool and length compensation commands	M30	主程序結束/復位 Main program end/reset
049	刀具長度補償側銷指令 Tool length compensation side pin command	O	程序號 Program number
G57	工作坐標系統選擇 Work coordinate system selection	N	程序段號 Block number
G90	絕對坐標-相對於工件坐標系的原點給出 Absolute coordinates-given relative to the origin of the workpiece coordinate system	I	圓弧起點相對圓心的X軸的增量尺寸 The incremental size of the X axis of the arc starting point relative to the center of the arc
G91	增量坐標-相對於刀具位置給出 Incremental coordinates-given relative to the tool position	J	圓弧起點相對圓心的Y軸的增量尺寸 The incremental size of the Y axis of the arc starting point relative to the center of the arc
F	進給量Feed rate (mm/min)	(註釋開始 Comment start
S	主軸轉速Spindle speed (RPM))	註釋結束 End of comment

案例

Case Studies

★ 分析報告:材料 鎢鋼(HRA91.5) Analysis Report: Material Tungsten Steel(HRA91.5)

目的:磨頭M8*1.25 壽命測試
加工機:台灣永進(15000rpm)
冷卻方式:氣冷
測試時間:2021-3-2

Purpose: grinding head M8*1.25 life test
Processing machine: Taiwan YCM (15000rpm)
Cooling method: Air Cooling
Test time: 2021-3-2

加工參數 Milling Parameters

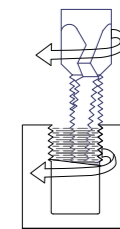
使用工具 Tool	轉速 Spindle Speed	進給 Feed Rate	Q值 Step	切深 Axial Depth	切寬 Radial Depth	加工時間 Cycle Time
DIAGM8*1.25 (D6.15*24*D6*60) M8*1.25螺紋深8mm (M8*1.25 thread depth 8mm)	(min-1) 11000	(mm/min) 150	--	(ap) mm --	(ae) mm 0.01	min 48分鐘(6分/穴) 48 minutes (6minutes/hole)

總結:1. 效率很高,6分鐘/穴; 2. 加工的螺紋緊固效果好,鬆或緊可以調整; 3. 加工完的磨頭磨損輕微,還可以繼續加工。
Summary: 1. High efficiency, 6 minutes per hole; 2. The processed thread has good fastening effect, and the tightness can be adjusted; 3. The grinding head is slight worn after test and can be continued for milling.

工件(8穴) Workpiece (8 holes)

使用後的磨頭 Grinding head after use:

加工方式 (Processing methods)



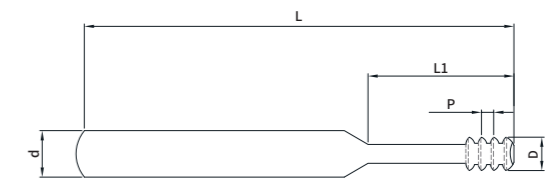
金剛砂螺紋磨頭150#

Emery thread grinding head 150#



特長 (Specialty)

- *高效率,5-10分鐘/穴;
- *加工的螺紋緊固效果好,鬆或緊可以調整;
- *高速鋼棒料+150#進口金剛砂,壽命長,成本低。
- *High efficiency, 5-10 minutes/hole;
- *The processed thread has good fastening effect, and the tightness can be adjusted;
- *High-speed steel bar material +150# imported emery, long life and low cost.



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.

金剛砂螺紋磨頭150#

Emery thread grinding head 150#

型番 Model Number	刃徑 D Diameter of Drill	有效長 L1 Effective Length	柄徑 d Shank Diameter	全長 L Overall Length	類型 Type	在庫 In Stock
DIAGM3*0.5	2.4	8	4	40	4牙(Teeth)	○
DIAGM4*0.7	2.95	10	4	45	4牙(Teeth)	○
DIAGM5*0.8	3.85	18	6	50	4牙(Teeth)	○

型番 Model Number	刃徑 D Diameter of Drill	有效長 L1 Effective Length	柄徑 d Shank Diameter	全長 L Overall Length	類型 Type	在庫 In Stock
DIAGM6*1.0	4.8	20	6	60	4牙(Teeth)	○
DIAGM8*1.25	6.6	25	8	65	8牙(Teeth)	○
DIAGM10*1.5	8.2	24	10	70	8牙(Teeth)	○

○ 標準在庫
○ Standard in stock

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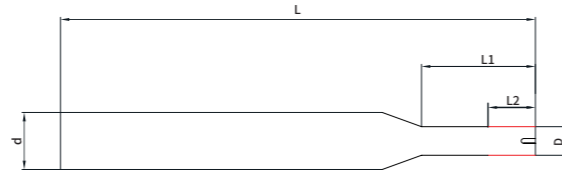
Emery Scrub Head 150#



金剛砂磨頭150#

特長 (Specialty)

- *採用最先進的電鍍工藝，精加工高速鋼刀柄。
- *特別適用於鎢鋼，陶瓷，玻璃等硬脆材料的粗加工。
- *Adopt the most advanced electroplating process, high speed steel shank with high precision.
- *Especially suitable for rough machining for tungsten steel, ceramics, glass and other hard and brittle materials.



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.

金剛砂磨頭150#

Emery Scrub Head 150#

型番 Model Number	刃徑 D1 Diameter of Drill	砂長 L2 Sand length	有效長 L1 Effective Length	柄徑 d Shank Diameter	全長 L Overall Length	類型 Type	在庫 In Stock
GRID1-506-D4	1	5	6	4	50	實心(Solid)	○
GRID1.5-506-D4	1.5	5	6	4	50	實心(Solid)	○
GRID2-508-D4	2	5	8	4	50	實心(Solid)	○
GRID3-510-D6	3	10	/	6	50	排屑槽(Chip Flute)	○
GRID4-100-D6	4	10	/	6	50	排屑槽(Chip Flute)	○
GRID5-100-D6	5	10	20	6	75	排屑槽(Chip Flute)	○
GRID6-100-D6	6	10	20	6	75	排屑槽(Chip Flute)	○
GRID8-100-D8	8	10	25	8	75	排屑槽(Chip Flute)	○
GRID10-100-D10	10	10	25	10	75	排屑槽(Chip Flute)	○
GRID12-100-D12	12	10	25	12	75	排屑槽(Chip Flute)	○

○ 標準在庫
○ Standard in stock

*聯繫客服確認後下單
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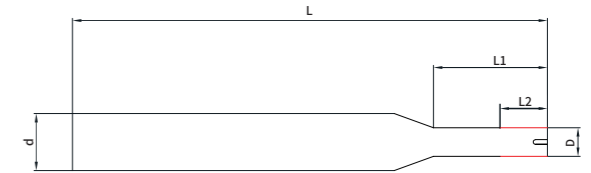
燒結磨頭#

Sintered grinding head#



特長 (Specialty)

- *整個磨頭皆由金剛砂燒結而成，非電鍍而成！
- *加上前端排屑槽型設計和鎢鋼刀柄設計比之電鍍工藝製造的磨頭，耐用度出色數倍！
- *The whole grinding head is made by sintering with emery, instead of electroplating!
- *The groove design for chip removal on the front and tungsten steel shank offer longer tool life!



柄錐角度僅供參考。如果擔心會干涉工件的話請進行實測予以確認。請注意刀具柄部不要接觸工件。
The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the workpiece.

燒結磨頭#

Sintered grinding head #

型番 Model Number	刃徑 D Diameter of Drill	砂長 L2 Sand length	有效長 L1 Effective Length	柄徑 d Shank Diameter	全長 L Overall Length	類型 Type	在庫 In Stock
GRI0.3-020-4	0.3	0.6	2	4	50	400#砂鎢鋼柄 (400# sand tungsten steel shank)	○
GRI0.5-030-4	0.5	0.8	3	4	50	300#砂鎢鋼柄 (300# sand tungsten steel shank)	○
GRI0.6-030-4	0.6	1	3	4	50	300#砂鎢鋼柄 (300# sand tungsten steel shank)	○
GRI0.8-040-4	0.8	1	4	4	50	250#砂鎢鋼柄 (250# sand tungsten steel shank)	○
GRI1-040-6	1	1.5	4	6	50	150#砂鎢鋼柄 (150# sand tungsten steel shank)	○
GRI1.5-040-6	1.5	2	4	6	50	150#砂鎢鋼柄 (150# sand tungsten steel shank)	○
GRI2-060-6	2	2.5	6	6	50	150#砂鎢鋼柄 (150# sand tungsten steel shank)	○
GRI3-100-6	3	3	10	6	50	150#砂鎢鋼柄 (150# sand tungsten steel shank)	○
GRI4-120-6	4	4	12	6	50	150#砂鎢鋼柄 (150# sand tungsten steel shank)	○
GRI5-165-6	5	6	16.5	6	50	100#砂 (100# Sand)	○
GRI6-165-6	6	6	16.5	6	50	100#砂 (100# Sand)	○
GRI8-165-8	8	6	16.5	8	50	100#砂 (100# Sand)	○
GRI10-215-10	10	10	21.5	10	50	100#砂 (100# Sand)	○
GRI12-100-12	12	10	/	12	50	100#砂 (100# Sand)	○

○ 標準在庫
○ Standard in stock

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切削条件的计算公式

①. 切削速度 (線速度) : V_c (m/min)

$$V_c = \frac{\pi \times D \times n}{1000}$$

$\pi = 3.14$ (圓周率)
 $D =$ 刀具直径 (mm)
 $n =$ 转速 (min^{-1})

②. 轉速: n (m/min)

$$n = \frac{1000 \times V_c}{\pi \times D}$$

$V_c =$ 切削速度 (m/min)
 $\pi = 3.14$ (圓周率)
 $D =$ 刀具直径 (mm)

③. 進給: V_f (mm/min)

$$V_f = n \times z \times f_z$$

$n =$ 转速 (min^{-1})
 $z =$ 刃數
 $f_z =$ 每一刃的供給量 (mm/t)

④. 每一刃的供給量: f_z (mm/t)

$$f_z = \frac{V_f}{n \times z}$$

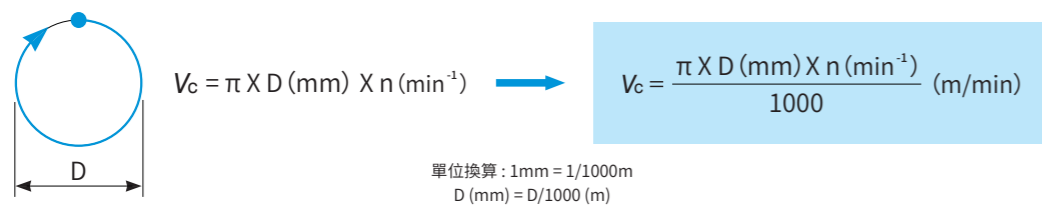
$V_f =$ 進給 (mm/min)
 $n =$ 转速 (min^{-1})
 $z =$ 刃數

切削條件用到的項目說明

①. 切削速度 V_c 【單位m/min】: 圓周上的一點在單位時間(1分鐘)的移動距離

關係值	直徑 ϕD (mm)	從迴轉中心的距離(半徑)的2倍
	π	圓周率 = 3.14 (圓周率(單位無))
	$n =$ 轉速 (min^{-1})	每一分鐘的迴轉數【迴轉數/min(1分)】 【 min^{-1} 】 = 【rpm ; revolutions per minute】

*圓周的長度 = 直徑 X 圓周率: πD (mm)
 *切削速度 V_c : 每分鐘的移動距離 = 圓周的長度 X 轉速

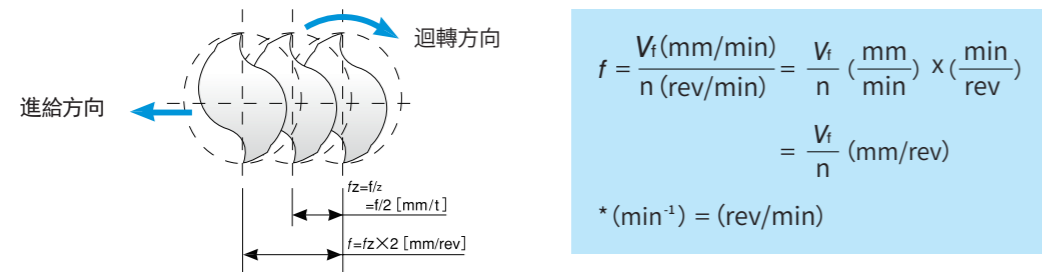


②. 每一刃的進給量 f_z 【單位mm/t】

關係值	直徑 ϕD (mm)	每分鐘的橫向進給量(機械軸移動量)
	轉速 n (min^{-1})	每一分鐘的迴轉數【迴轉數/min(1分)】 【 min^{-1} 】 = 【rpm ; revolutions per minute】
	刃數 z (枚)	刃數

*進給量 f 【mm/rev】【每轉1圈的橫向進給量】是多少?【注: rev = revolution】

*2個刃的情況



*每1刃的進給量 f_z (mm/t) 是多少?
 *每轉1圈的橫向進給量除以每轉1圓的切削刃數而得的數值。

$$f_z = \frac{f (\text{mm/rev})}{z} = \frac{V_f}{n \times z} (\text{mm/t})$$

Calculation of milling condition

①. Velocity : V_c (m/min)

$$V_c = \frac{\pi \times D \times n}{1000}$$

$\pi = 3.14$ (Circular constant)
 $D =$ Outside diameter (mm)
 $n =$ Spindle speed (min^{-1})

②. Spindle speed : n (min^{-1})

$$n = \frac{1000 \times V_c}{\pi \times D}$$

$V_c =$ Velocity (m/min)
 $\pi = 3.14$ (Circular constant)
 $D =$ Outside diameter (mm)

③. Feed rate : V_f (mm/min)

$$V_f = n \times z \times f_z$$

$n =$ Spindle speed (min^{-1})
 $z =$ Number of flutes
 $f_z =$ Feed per tooth (mm/t)

④. Feed per tooth: f_z (mm/t)

$$f_z = \frac{V_f}{n \times z}$$

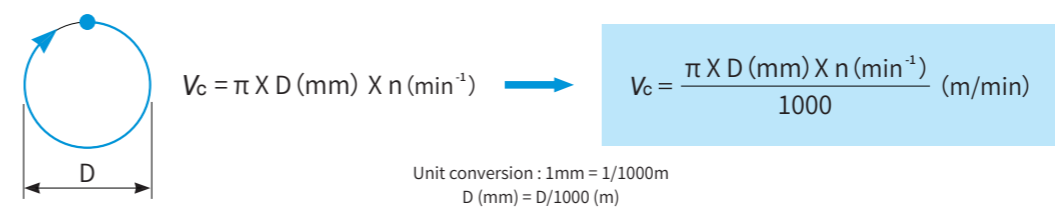
$V_f =$ Feed rate (mm/min)
 $n =$ Spindle speed (min^{-1})
 $z =$ Number of flutes

Explanation of terms used in parameters

①. Velocity V_c 【unit: m/min】: the milling distance of an optional point on the circumference per unit (1 minute)

Related value	Diameter ϕD (mm)	Twice the distance from the center of a circle (radius)
	π	Circular constant = 3.14 (unit: no)
	$n =$ Spindle Speed (min^{-1})	Revolutions per minute【min(1Minute)】 【 min^{-1} 】 = 【rpm ; revolutions per minute】

*Length of circumference = diameter X Circular Constant: πD (mm)
 *Velocity V_c : Milling length per minute = Length of circumference X Spindle rotation speed

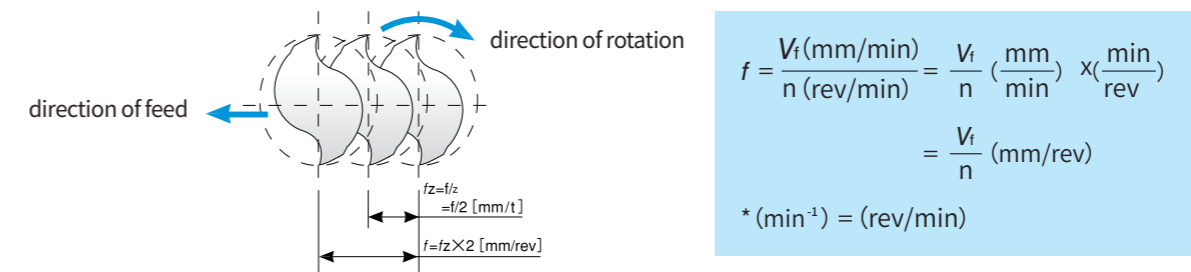


②. Feed per tooth f_z 【Unit mm/t】

Related Value	Feed rate V_f (mm/min)	Amount of feed per minute
	Spindle speed n (min^{-1})	Revolutions per minute (min^{-1}) 【 min^{-1} 】 = 【rpm ; revolutions per minute】
	Number of flutes Z	Number of flutes

*The amount of feed per rotation is described below 【rev = revolution】

*In case of 2 flutes



*The amount of feed per flute is calculated by using the feed rate divided by the number of flutes

$$f_z = \frac{f (\text{mm/rev})}{z} = \frac{V_f}{n \times z} (\text{mm/t})$$