

车 槽

切 断

铣 槽

插 削

仿 形 铣 削

铰 削



新产品

NEW

Supermini® 105 型

适用于极小零件

Supermini® type 105

for extremely small parts

HORN-卓越于技术
HORN - EXCELLENCE IN TECHNOLOGY



GROOVING PARTING OFF GROOVE MILLING BROACHING PROFILE MILLING REAMING

Supermini® 105 型

HORN 生产的 Supermini® 105 型刀具系统配有远超 1500 种的切削刀片，可胜任孔直径介于 0.2 mm 和 6 mm (0.0079" 和 0.2362") 之间的各种严苛任务。

此系统适用于各种应用，如钻孔、切槽、倒角、螺纹、轴向切槽、精镗、端面车削、插削，可适用于非常小直径。

现在，其针对加工钢、铸铁、有色金属、特殊材料和最高 66HRc 的硬质材料的现有操作范围已经过扩展，可对极小的零件进行镗孔和开槽操作。

针对低切削速度和低进给速率的特殊刀刃设计（用于精密加工极小零件）已添加到 Supermini® 系列，从而能够形成内径不低于 0.2 mm (0.0079") 的光滑表面。

用于镗孔的型号可不带圆角半径，或带 0.03 mm (0.0012") 的圆角半径，而圆角半径为 0.05 mm (0.0020") 的刀刃用于自由车削。

可以实现最小 $w = 0.5 \text{ mm}$ (0.0020") 的内槽。

刀刃还具有带硬边缘带的匹配涂层。

与所有 HORN 的 Supermini® 产品一样，夹紧刀具轻而易举 - 只需一个标准刀杆即可夹紧所有刀片型号系列。

这些刀杆可带或不带内孔冷却功能，并配有各种左手和右手机器接口。

Supermini® type 105

The Supermini® type 105 tool system from HORN successfully gets to grips with demanding tasks involving hole diameters between 0.2 mm and 6 mm (0.0079" and 0.2362"), with well over 1500 cutting insert versions.

Where it shines is its ability to be used in a whole range of applications for boring out, grooving, chamfering, threading, axial grooving, finish-boring, face turning, and broaching down to the very smallest diameters. Now, its existing scope for machining steel, cast iron, non-ferrous metals, exotic materials and hard materials up to 66HRc is being extended to include boring-out and grooving operations for extremely small parts.

A special cutting edge design for low feed rates at low cutting speeds, intended for micro-machining parts on this scale, has been added to the Supermini® range, making it possible to create glossy surfaces with internal diameters from 0.2 mm (0.0079"). Versions for boring out can be obtained either without a corner radius or with one measuring 0.03 mm (0.0012"), while cutting edges with a corner radius of 0.05 mm (0.0020") are available for free-turning. Internal grooves from $w = 0.5 \text{ mm}$ (0.0020") can be achieved. The cutting edges also feature a matching coating with a hard rim zone.

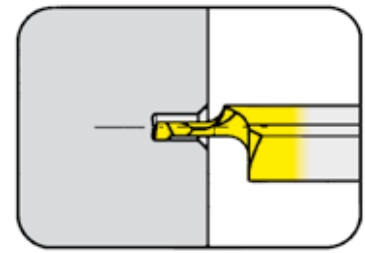
Following in the footsteps of all HORN's Superminis®, clamping the tools is a breeze - only one standard tool holder is required for clamping all inserts of a model series. These holders are available with or without internal cooling and with various left and right machine interfaces.

镗孔和仿形加工 $\geq \varnothing 0.2 \text{ mm}$ BORING and PROFILING



刀片 型号
INSERT Type

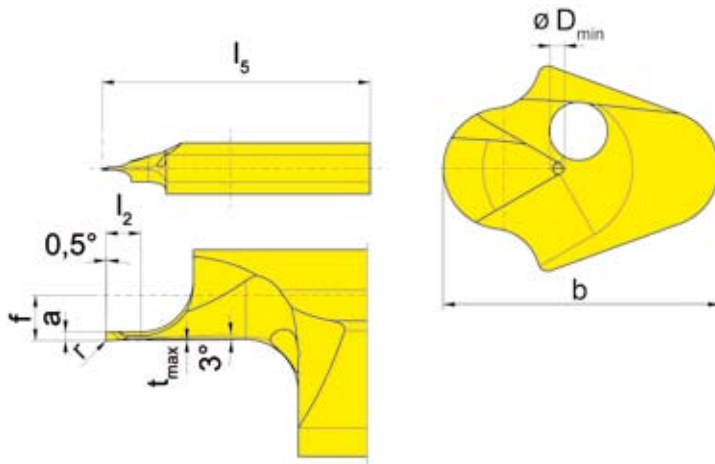
105



孔径 $\varnothing$ 自 Bore $\varnothing$ from 0.2 mm

配合 刀杆
for use with Toolholder

型号 B105
Type BKT105
H105
HC105
VDI



R=右手型-如图
R = right hand version shown

产品型号 Part number	f	a	l_2	l_5	$t_{\max}$	$D_{\min}$	r	MG12	AN25
R105.9013.000.0.02	1.3	0.17	1	23	0.015	0.2	-		▲
R105.9013.000.0.03	1.3	0.25	1	23	0.015	0.3	-		▲
R105.9013.000.0.05	1.3	0.40	2	23	0.020	0.5	-	▲	▲
R105.9013.000.0.07	1.3	0.60	2	23	0.020	0.7	-		▲

- ▲ 库存 / on stock Δ 4周 / 4 weeks
- 主要应用 / main recommendation
- 可选推荐 / alternative recommendation
- 无涂层牌号 / uncoated grades
- 涂层牌号 / coated grades
- 钎焊/金属陶瓷 / brazed/Cermet

尺寸单位 : mm
Dimensions in mm

按需提供更多尺寸
Further sizes upon request

P	○	●
M	●	○
K	●	●
N	●	●
S	●	○
H		

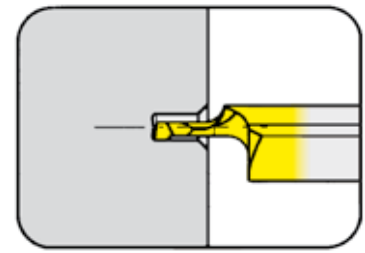
硬质合金牌号
Carbide grades

镗孔和仿形加工 $\geq \varnothing 1.0 \text{ mm}$ BORING and PROFILING



刀片 型号
INSERT Type

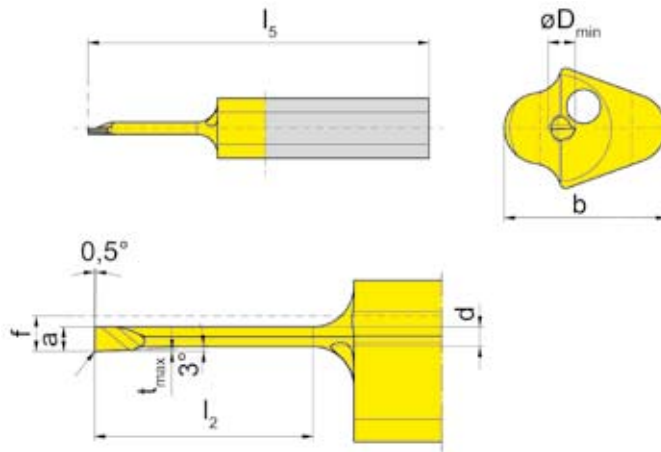
105



孔径 $\varnothing$ 自 Bore $\varnothing$ from 1.0 mm

配合 刀杆
for use with Toolholder

型号 B105
Type BKT105
H105
HC105
VDI



R=右手型-如图
R = right hand version shown

产品型号 Part number	f	a	d	l ₂	l ₅	t _{max}	D _{min}	r		AN25	
R105.9013.000.0.1	1.3	0.9	0.72	4	25	0.05	1.0	-		▲	
R105.9013.000.2.1				8				-	▲		
R105.9013.003.0.1				4				0.03	▲		
R105.9013.003.2.1				8				0.03	▲		
R105.9013.000.0.15	1.3	1.4	1.15	6	25	0.10	1.5	-		▲	
R105.9013.000.1.15				9				-	▲		
R105.9013.003.0.15				6				0.03	▲		
R105.9013.003.1.15				9				0.03	▲		
▲ 库存 / on stock Δ 4周 / 4 weeks										P	●
● 主要应用 / main recommendation										M	○
○ 可选推荐 / alternative recommendation										K	●
■ 无涂层牌号 / uncoated grades										N	●
■ 涂层牌号 / coated grades										S	○
■ 钎焊/金属陶瓷 / brazed/Cermet										H	

尺寸单位 : mm
Dimensions in mm

按需提供更多尺寸
Further sizes upon request

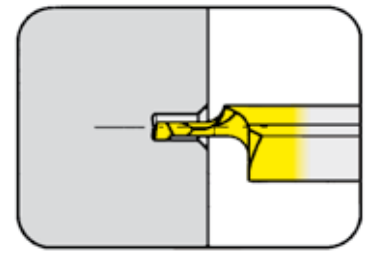
硬质合金牌号
Carbide grades

镗孔和仿形加工 $\geq \varnothing 2.0 \text{ mm}$ BORING and PROFILING

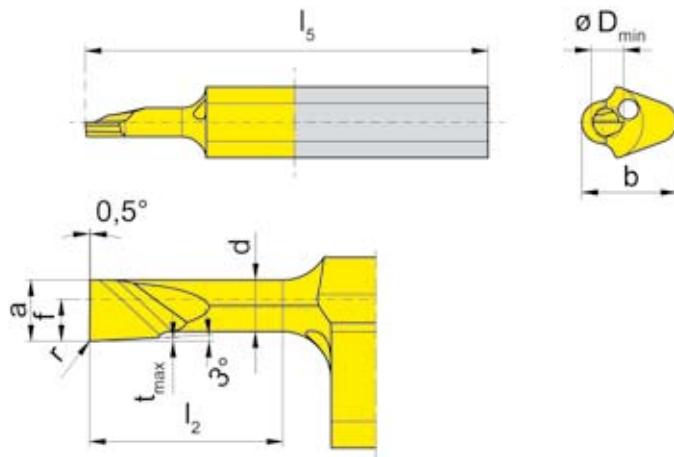


刀片 型号
INSERT Type

105



孔径 $\varnothing$ 自 Bore $\varnothing$ from 2.0 mm



配合 刀杆
for use with Toolholder

型号 B105
Type BKT105
H105
HC105
VDI

R=右手型-如图
R = right hand version shown

产品型号 Part number	f	a	d	l ₂	l ₅	t _{max}	D _{min}	r		MG12	AN25	
R105.9013.000.0.2	1.3	1.9	1.6	6	25	0.1	2.0	-			▲	
R105.9013.000.2.2				12	30			-		▲		
R105.9013.003.0.2				6	25			0.03		▲		
R105.9013.003.2.2				12	30			0.03		▲		
R105.9013.000.0.25	1.3	2.3	2.0	6	25	0.1	2.5	-			▲	
R105.9013.000.2.25				12	30			-	▲	▲		
R105.9013.000.3.25				16	35			-		▲		
R105.9013.003.0.25				6	25			0.03		▲		
R105.9013.003.2.25				12	30			0.03	▲	▲		
R105.9013.003.3.25				16	35			0.03	▲	▲		
▲ 库存 / on stock Δ 4周 / 4 weeks										P	○	●
● 主要应用 / main recommendation										M	●	○
○ 可选推荐 / alternative recommendation										K	●	●
■ 无涂层牌号 / uncoated grades										N	●	●
■ 涂层牌号 / coated grades										S	●	○
■ 钎焊/金属陶瓷 / brazed/Cermet										H		

尺寸单位 : mm
Dimensions in mm

按需提供更多尺寸
Further sizes upon request

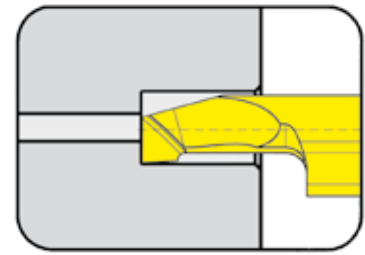
硬质合金牌号
Carbide grades

镗孔和仿形加工 $\geq \varnothing 3.0 \text{ mm}$ BORING and PROFILING

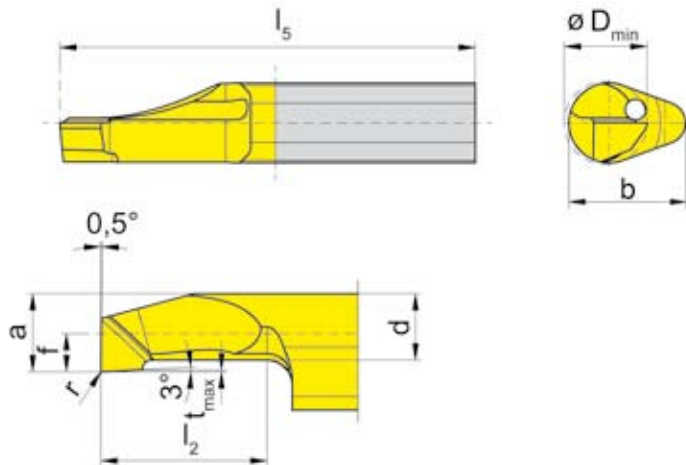


刀片 型号
INSERT Type

105



孔径 $\varnothing$ 自 Bore $\varnothing$ from 3.0 mm



配合 刀杆
for use with Toolholder

型号 B105
Type BKT105
H105
HC105
VDI

R=右手型-如图
R = right hand version shown

产品型号 Part number	f	a	d	l_2	l_5	$t_{\max}$	$D_{\min}$	r	AN25
R105.9013.000.1.3	1.3	2.6	2.3	10	25	0.1	3	-	▲
R105.9013.000.3.3				20	35			-	▲
R105.9013.003.1.3				10	25			0.03	▲
R105.9013.003.3.3				20	35			0.03	▲
R105.9019.000.1.4	1.9	3.7	3.2	10	25	0.1	4	-	▲
R105.9019.003.1.4				10	25			0.03	▲
R105.9019.003.3.4				20	35			0.03	▲

- ▲ 库存 / on stock Δ 4周 / 4 weeks
- 主要应用 / main recommendation
- 可选推荐 / alternative recommendation
- 无涂层牌号 / uncoated grades
- 涂层牌号 / coated grades
- 钎焊/金属陶瓷 / brazed/Cermet

尺寸单位 : mm
Dimensions in mm

按需提供更多尺寸
Further sizes upon request

P	●
M	○
K	●
N	●
S	○
H	

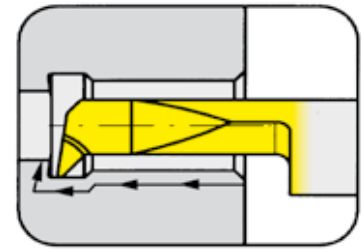
硬质合金牌号
Carbide grades

镗孔和仿形加工 $\geq \varnothing 2.0 \text{ mm}$ BORING and PROFILING

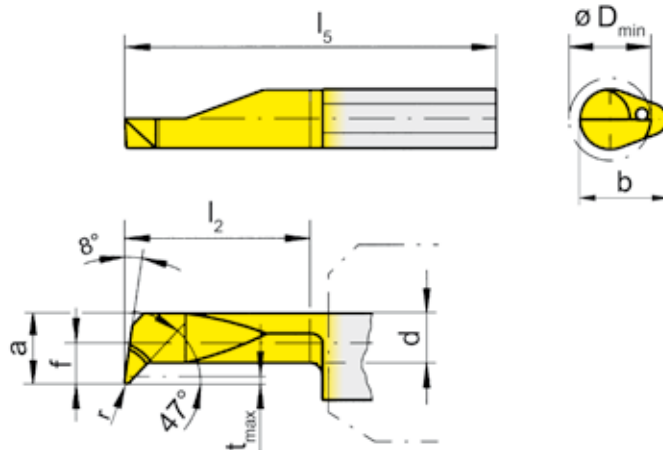


刀片 型号
INSERT Type

105



孔径 Bore $\varnothing$ 2.0 - 3.0 mm



配合 刀杆
for use with Toolholder

型号 B105
Type BKT105
H105
HC105
VDI

R=右手型-如图
R = right hand version shown

产品型号 Part number	f	a	d	l_2	l_5	$t_{\max}$	$D_{\min}$	r		MG12	AN25
R105.4715.005.1.2 R105.4715.005.2.2	1.5	1.9	1.45	9 12	25 30	0.3	2	0.05			▲
R105.4713.005.1.3 R105.4713.005.2.3	1.3	2.6	2.00	10 15	25 30	0.4	3	0.05		▲	▲
▲ 库存 / on stock Δ 4周 / 4 weeks									P	○	●
● 主要应用 / main recommendation									M	●	○
○ 可选推荐 / alternative recommendation									K	●	●
■ 无涂层牌号 / uncoated grades									N	●	●
■ 涂层牌号 / coated grades									S	●	○
■ 钎焊/金属陶瓷 / brazed/Cermet									H		
尺寸单位 : mm Dimensions in mm									硬质合金牌号 Carbide grades		

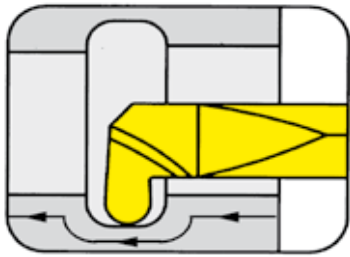
切槽 (内圆) $\geq \varnothing 3.0 \text{ mm}$ GROOVING (internal)



刀片 型号

INSERT Type

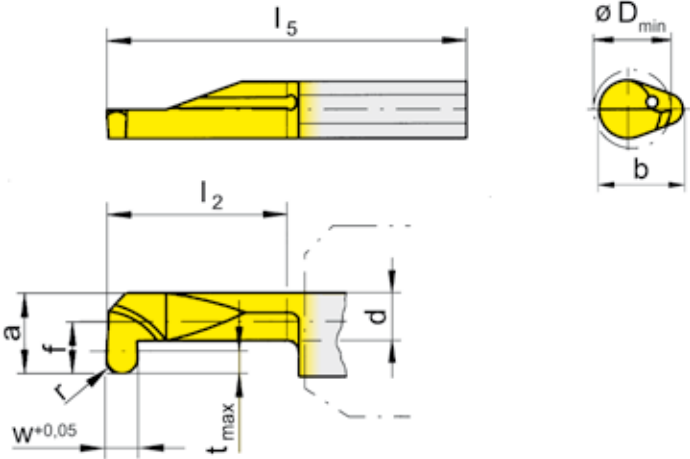
105



孔径
圆头

Bore $\varnothing$
Full radius

3.00 mm
r 0.25 mm



配合 刀杆
for use with Toolholder

型号 B105
Type BKT105
H105
HC105
VDI

圆头

Full radius

R=右手型-如图
R = right hand version shown

产品型号 Part number	w	f	a	d	l_2	l_5	$t_{\max}$	$D_{\min}$	r	AN25
R105.0025.2.3	0.5	1.4	2.7	1.9	15	30	0.6	3	0.25	▲
R105.0025.3.5	0.5	2.3	4.7	3.9	20	35	0.6	5	0.25	▲
▲ 库存 / on stock Δ 4周 / 4 weeks ● 主要应用 / main recommendation ○ 可选推荐 / alternative recommendation ■ 无涂层牌号 / uncoated grades ■ 涂层牌号 / coated grades ■ 钎焊/金属陶瓷 / brazed/Cermet										P ● M ○ K ● N ● S ○ H

尺寸单位 : mm
Dimensions in mm
按需提供更多尺寸
Further sizes upon request

硬质合金牌号
Carbide grades

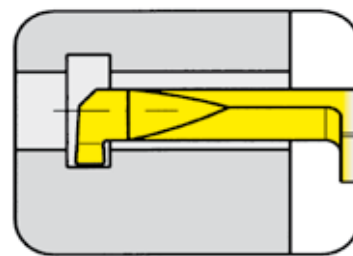
切槽 (内圆) $\geq \varnothing 3.0 \text{ mm}$ GROOVING (internal)



刀片 型号

INSERT Type

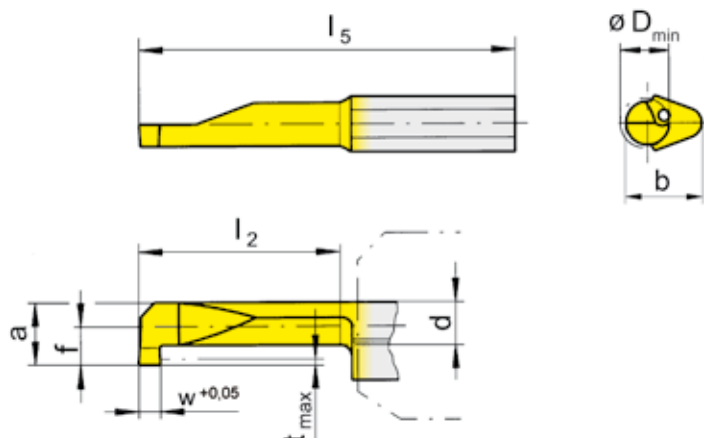
105



孔径
槽深可达

Bore $\varnothing$
Depth of groove up to

3.0 mm
0.5 mm



配合 刀杆
for use with Toolholder

型号
Type

B105
BKT105
H105
HC105
VDI

R=右手型-如图

R = right hand version shown

产品型号 Part number	w	f	a	d	l_2	l_5	$t_{\max}$	$D_{\min}$		MG12	AN25
R105.0050.1.3					8	25					▲
R105.0050.2.3	0.5	1.4	2.7	2	12	30	0.5	3			▲
R105.0050.3.3					16	35					▲
▲ 库存 / on stock Δ 4周 / 4 weeks										P	●
● 主要应用 / main recommendation										M	○
○ 可选推荐 / alternative recommendation										K	●
■ 无涂层牌号 / uncoated grades										N	●
■ 涂层牌号 / coated grades										S	○
■ 钎焊/金属陶瓷 / brazed/Cermet										H	

尺寸单位 : mm

Dimensions in mm

按需提供更多尺寸

Further sizes upon request

硬质合金牌号

Carbide grades

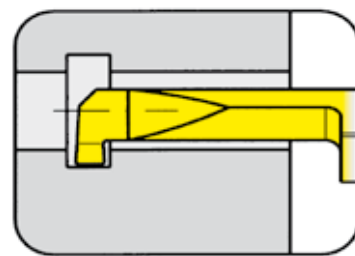
切槽 (内圆) $\geq \varnothing 4.0 \text{ mm}$ GROOVING (internal)



刀片 型号

INSERT Type

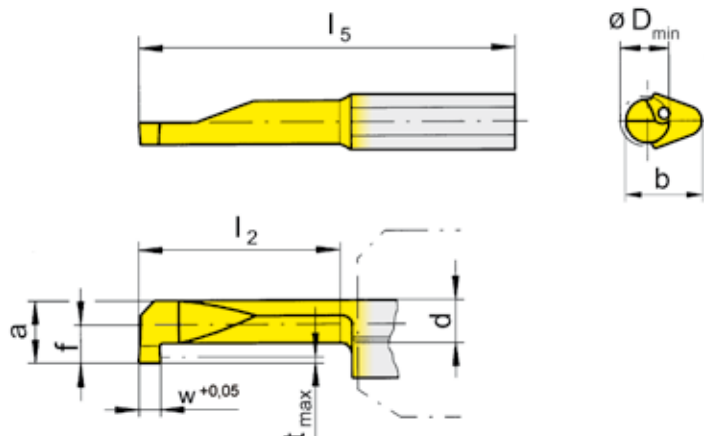
105



孔径
槽深可达

Bore $\varnothing$
Depth of groove up to

4.0 mm
0.6 mm



配合 刀杆
for use with Toolholder

型号 B105
Type BKT105
H105
HC105
VDI

R=右手型-如图

R = right hand version shown

产品型号 Part number	w	f	a	d	l_2	l_5	$t_{\max}$	$D_{\min}$	AN25
R105.0050.1.4	0.5	1.9	3.7	2.9	10	25	0.6	4	▲
R105.0050.2.4					15	30			▲
R105.0050.3.4					20	35			▲
▲ 库存 / on stock Δ 4周 / 4 weeks									P ●
● 主要应用 / main recommendation									M ○
○ 可选推荐 / alternative recommendation									K ●
■ 无涂层牌号 / uncoated grades									N ●
■ 涂层牌号 / coated grades									S ○
■ 钎焊/金属陶瓷 / brazed/Cermet									H

尺寸单位 : mm

Dimensions in mm

按需提供更多尺寸

Further sizes upon request

硬质合金牌号

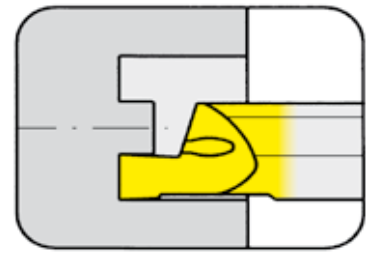
Carbide grades

端面切槽 FACE GROOVING



刀片 型号
INSERT Type

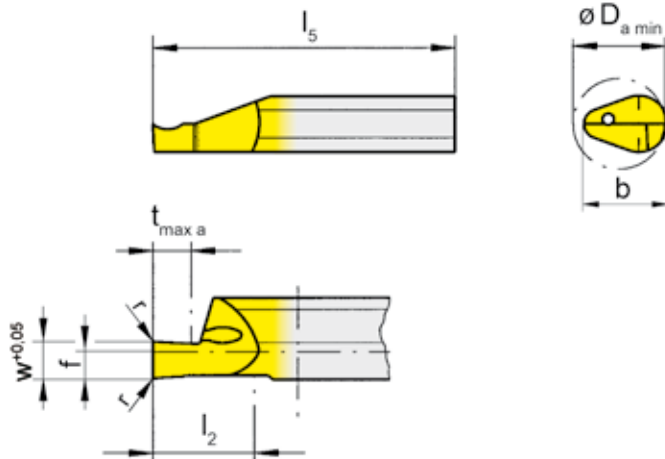
105



槽外径 $\varnothing$	Outer groove $\varnothing$	5.0 mm
槽深可达	Depth of groove up to	2.0 mm
槽宽	Width of groove	0.5 mm

配合 刀杆
for use with Toolholder

型号 B105
Type BKT105
H105
HC105
VDI



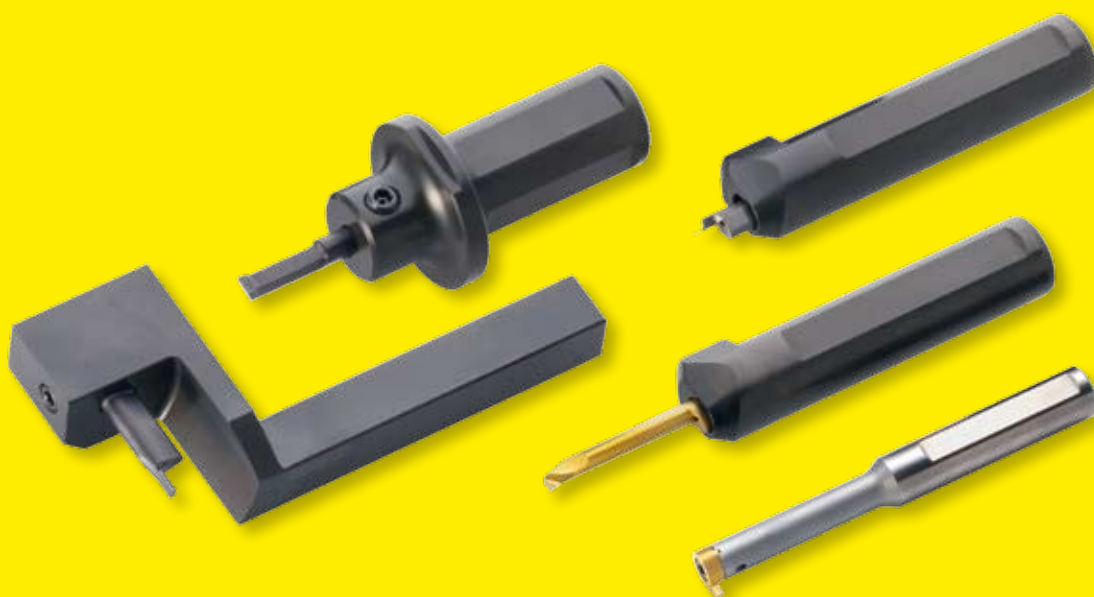
R=右手型-如图
R = right hand version shown

产品型号 Part number	w	r	f	l_2	l_5	$t_{\max a}$	$D_{a \min}$	AN25
R105.0505.1.8	0.5	-	2	10	25	2	5	▲
▲ 库存 / on stock Δ 4周 / 4 weeks ● 主要应用 / main recommendation ○ 可选推荐 / alternative recommendation ■ 无涂层牌号 / uncoated grades ■ 涂层牌号 / coated grades ■ 钎焊/金属陶瓷 / brazed/Cermet								
P ● M ○ K ● N ● S ○ H								

尺寸单位 : mm
Dimensions in mm

按需提供更多尺寸
Further sizes upon request

硬质合金牌号
Carbide grades

**Hartmetall Werkzeugfabrik****Paul HORN GmbH**

Unter dem Holz 33-35, D-72072 Tübingen
Tel +49 (0)7071/70040, Fax +49 (0)7071/72893
E-Mail info@phorn.de, www.phorn.de

HORN USA, Inc.

320 Premier Court, Suite 205, Franklin,
TN 37067
Tel +1 (888)818-HORN, Fax +1(615)771-4101
E-Mail sales@hornusa.com, www.hornusa.com

HORN CUTTING TOOLS Ltd.

32 New Street, Ringwood, Hampshire,
BH24 3AD, Tel +44 (0)1425/481 800
Fax +44 (0)1425/481 888
E-Mail info@phorn.co.uk, www.phorn.co.uk

HORN Magyarország Kft.

H-9027 Győr, Gesztenyefa u. 4
Tel +36 96 55 05 31, Fax +36 96 55 05 32
E-Mail technik@phorn.hu, www.phorn.hu

HORN S.A.S

665, av. Blaise Pascal, Zone Industrielle,
77127 Lieusaint
Tel +33 (0)1648859-58, Fax +33 (0)1648860-49
E-Mail infos@horn.fr, www.horn.fr

HORN (Shanghai) Trading Co. Ltd.

Room 905, No. 518 Anyuan Road, P.R. of China
Putuo District, Shanghai 200060
上海市安远路518号905室 邮编：200060
Tel：+86 21 52833505；52833205
Fax：+86 21 52832562
E-Mail: info@phorn.cn, www.phorn.cn



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Sustainability Initiative

HORN-卓越于技术
HORN - EXCELLENCE IN TECHNOLOGY

