



# Thread Whirling Tools

## 螺纹旋风铣刀



### For Perfect Long Threads on Swiss Type Machines

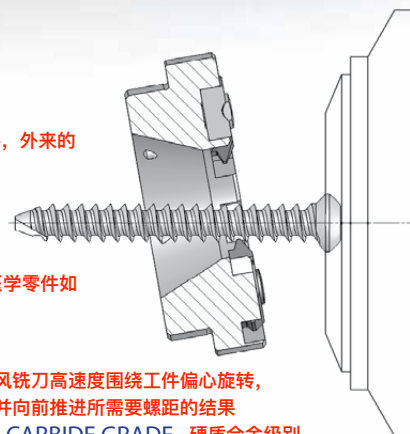
#### 在瑞士机床上加工长螺纹

Thread Whirling is a fast and accurate way to thread long, small diameter parts in exotic materials such as titanium, stainless steel and Inconel. 旋风铣螺纹是一种快速、精确的方法，长螺纹，小直径零件，外来的金属材料如钛合金，不锈钢和镍基合金

Whirling inserts and holders can produce a wide range of medical parts such as dental implants and bone screws, automotive parts and semiconductor small parts. 旋风螺纹铣刀能够广泛的加工医学零件如牙科种植、骨钉，汽车零部件和半导体小零件

Cutting is the result of the whirling ring rotating eccentrically at high speed about the slowly rotating workpiece. The advancement of the workpiece rotationally and the advancement of the tool head longitudinally correspond to the thread pitch required.

Turning direction of the whirling unit



Turning direction of the bar



切削是螺纹旋风铣刀高速度围绕工件偏心旋转，工件缓慢旋转并向前推进所需要螺距的结果

CARBIDE GRADE 硬质合金级别

BMA - PVD TiAlN coated submicrograin for stainless steel, exotic materials.

BMA-PVD-TiAlN涂层亚微颗粒硬质合金用于不锈钢和外来金属

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## Thread Whirling Advantages 螺纹旋风铣刀优点

**Thread Whirling offers several advantages over single point threading:** 螺纹旋风铣刀提供几个单点螺纹的优点

Enabling production of small diameter long threads when used on Swiss type machines, the thread whirling spindle works close to the guide bushing for increased support and rigidity. 在瑞士机床生产小直径长螺纹时，

旋风螺纹铣刀主轴靠近导向衬套增加支撑和刚性

**Increased Productivity:** 提高效率

Thread Whirling is performed in a single pass, resulting in a shorter machining time. 螺纹旋风铣刀是在较短的时间内完成一个螺纹的过程

This eliminates multiple passes required for a single point threading. 这就不需要多次螺纹走刀，而只需要一个螺纹走刀

Thread whirling allows working at high feed rates and consequently short cycle times.

螺纹旋风铣刀允许工作在高进给速率，因此短的周期时间。

**Very high surface quality and accurate geometry:** 非常高的表面质量和精确的几何形状

The use of up to 8 cutting edges, higher concentricity, special cutting edge geometry and ideal chip removal, enable top quality surfaces to be produced without burr. 多达8个切削刃，高同心度、特殊的切削刃的几何形状

和理想的排屑，使得产品表面质量高，无毛刺产生。

**Long tool life:** 长刀具寿命

Whirling inserts have a stronger cutting edge than single point tools, because cutter side clearance is achieved by rotating the whirling spindle, not by relieving material under the cutting edge. 旋风铣刀片有一个强大的单点切削刃，因为

刀具侧间隙是通过旋风铣主轴旋转，而不是通过材料下面的切削刃。

**Faster Setup:** 快速安装

Thread whirling eliminates special support devices and expensive startup development costs.

螺纹旋风铣刀不需要特殊的支撑装置和昂贵的开发成本

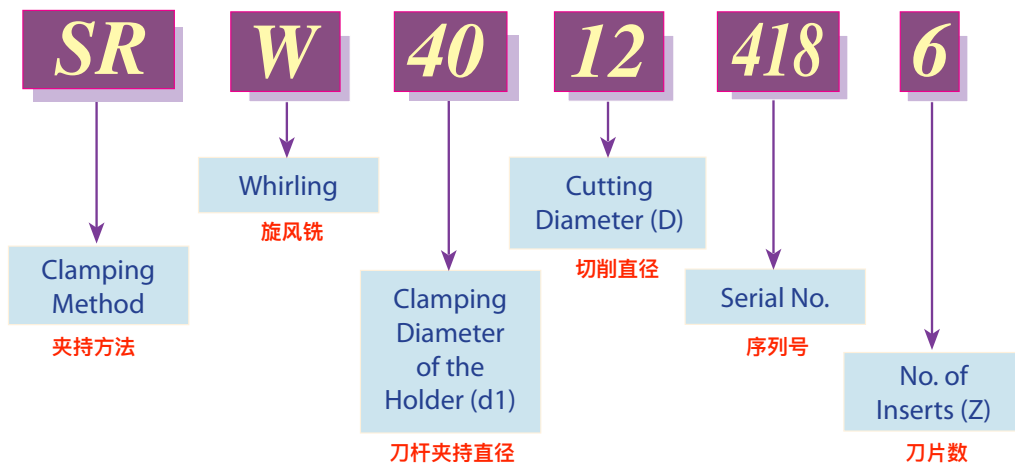
**Compensation of large helix angles:** 大螺旋角补偿

Large helix angles can be compensated by adjusting the whirling unit.

通过调整旋转单元可以补偿大的螺旋角

- One toolholder can be used for various applications.  
一个刀杆可以用于各种操作
- All toolholders are standard stock items.  
全部刀杆有标准库存
- Inserts are made for each application as a special item.  
刀片制造按照每个项目特殊要求制造
- The toolholders are designed according to different machine types and manufacturers.  
这个刀杆设计是根据不同的制造商和不同的机床类型制造的
- Special adaptors for machine heads are available as stock items.  
机床主轴特殊转换器可以作为备用品库存

## Product Identification 产品标识



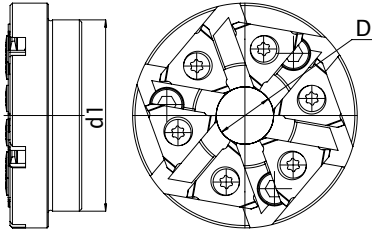


## Thread Whirling Tools



### 螺纹旋风铣刀

### Toolholders 刀杆



机床制造商和型号      驱动单元      旋风头订货编号      齿数      孔径      直径      刀片规格      刀片螺丝      扳手

Machine 机床		Drive Unit 驱动单元	Whirling Head Ordering Code 旋风头订货号	Z	D	d1	Insert Size 刀片规格	Insert Screw 刀片螺丝	Torx Key 扳手
Type 品牌	Model 型号								
Star	SV12 / SV20	Star	SRW4012 418 - 6	6	12	40	16	SW16	KW16
			SRW4012 424 - 8	8			11	SW11	KW11
	SR20 / ECAS20		SRW4012 419 - 6	6	12	40	16	SW16	KW16
			SRW4012 425 - 8	8			11	SW11	KW11
Citizen	M12 / M16	PCM	SRW4512 422 - 6	6	12	45	16	SW16	KW16
			SRW4512 426 - 8	8			11	SW11	KW11
	M20 / M32		SRW4512 423 - 6	6	12	45	16	SW16	KW16
			SRW4512 427 - 8	8			11	SW11	KW11
Tornos	DECO 13 / 20	Tornos	SRW4012 420 - 6	6	12	40	16	SW16	KW16
	Evo Deco 16 / Deco 13	W & F	SRW4012 419 - 6						
Traub	TNL26 / TNK36	Traub	SRW4116 421 - 6	6	16	41	16	SW16	KW16
Hanwha	XD20	Maduala	SRW4012 604 - 6	6	12	40	16	SW16	KW16
Maier	ML20D	PCM	SRW4012 417 - 5	5	12	40	16	SW16	KW16
Nexturn	SA20	PCM	SRW4512 642 - 6	6	12	45	16	SW16	KW16
	SA20	WTO	SRW4212 557 - 6	6	12	45	16	SW16	KW16



# 各种瑞士机床/各种走心机



**Tornos**



**HanWha**



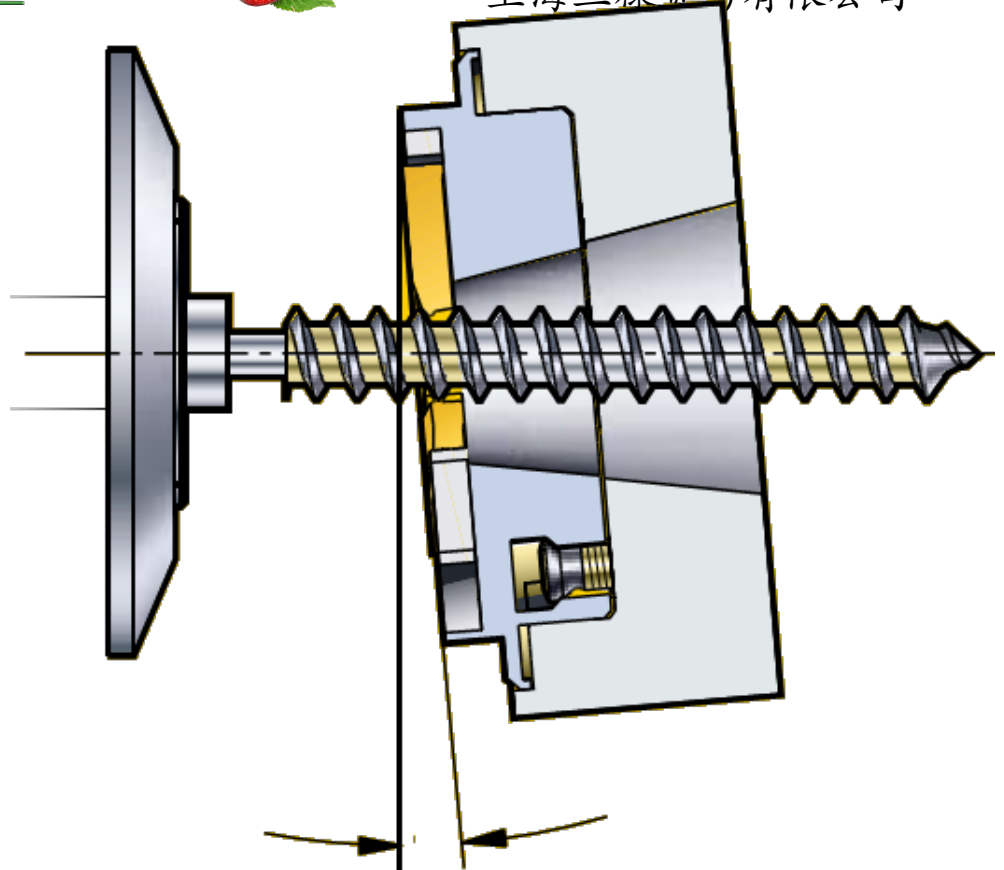
**Tornos**



**CiTizen**



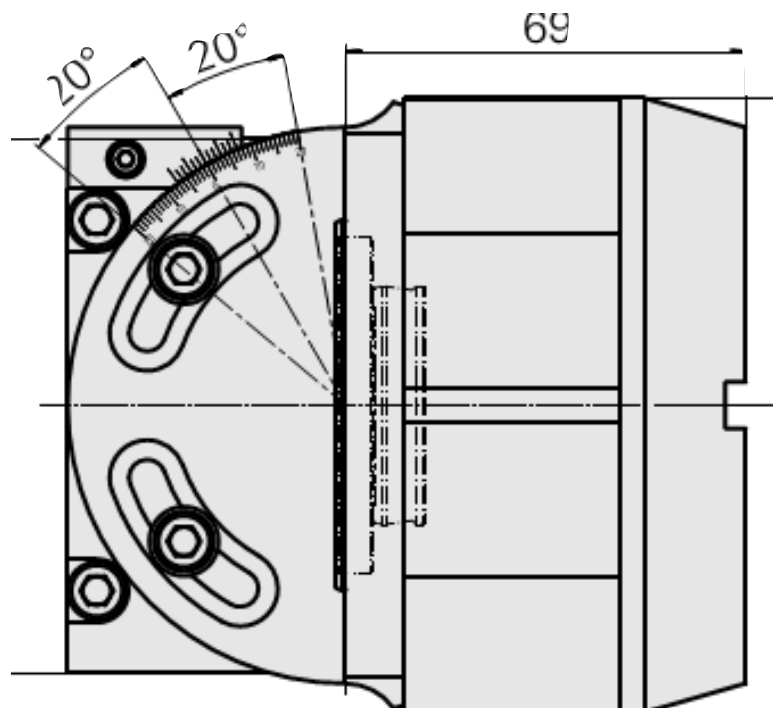
**螺纹旋风  
 铣刀安装在动力刀  
 座上**



**螺旋升角计算与调整**

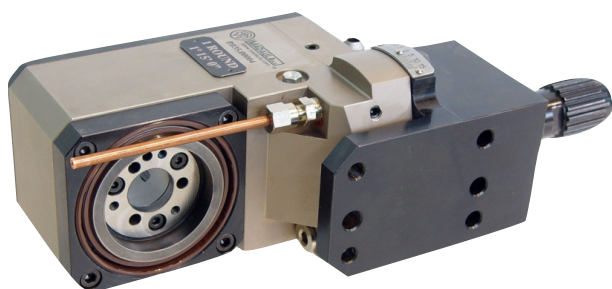
$$\tan \beta = \frac{P}{\pi \times D}$$

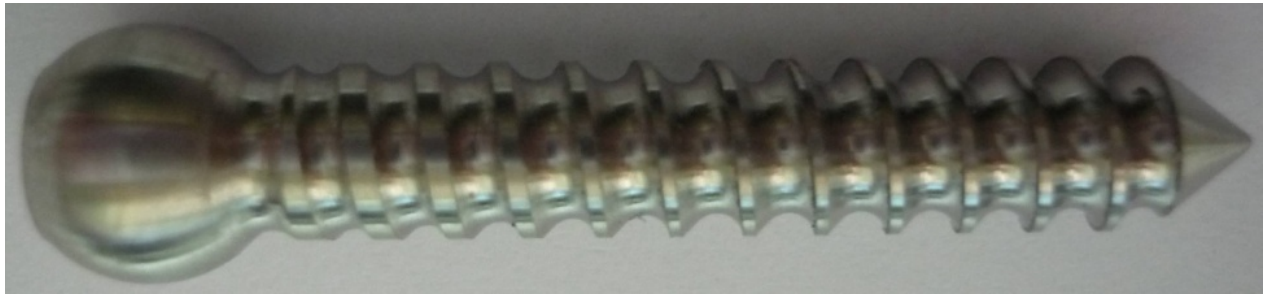
$$\beta = \frac{20 \times P}{D}$$





## 配套动力刀座 (驱动单元) 厂家





Application: 工件: 骨钉: Bone screw

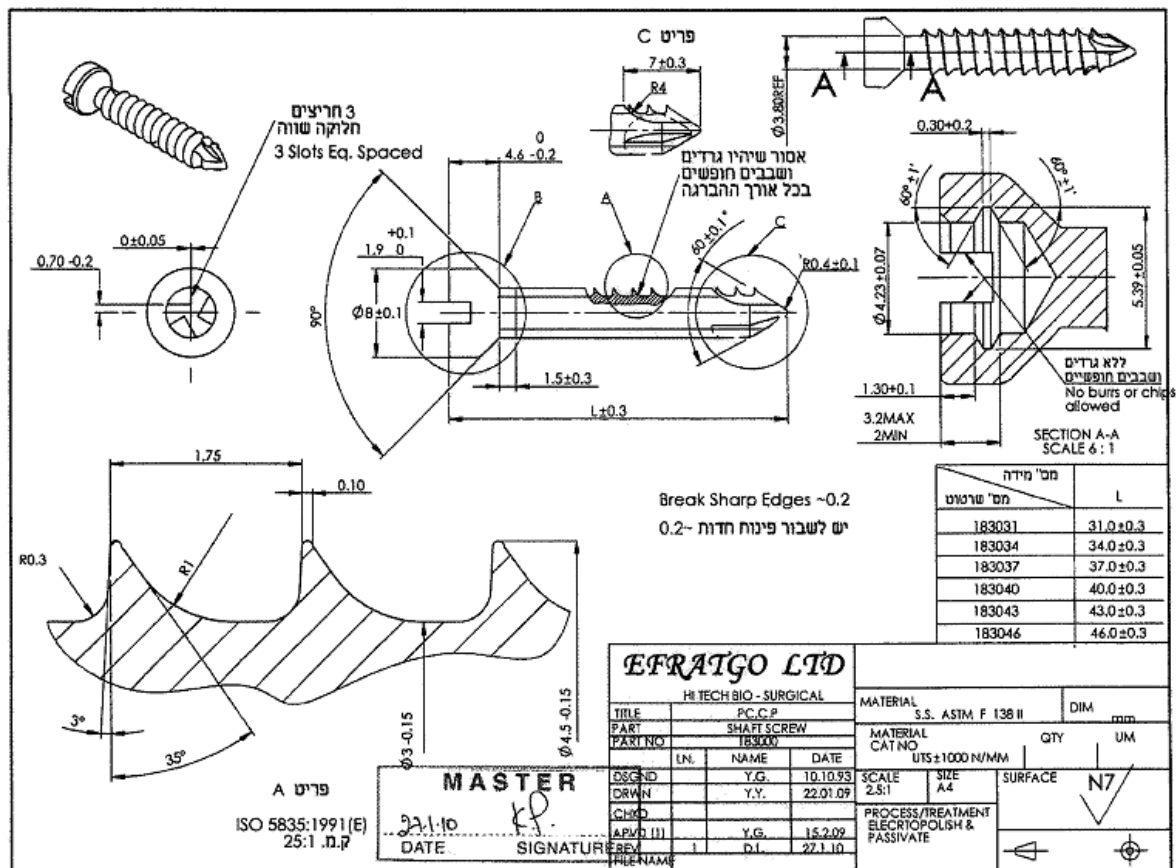
Machine: 机床: Hanwha

Model: 型号: XD20

Raw Material: 原料: 医用: Medical 316

Cutting Speed – Vc: 切削速度: 英尺: 330 ft/min

.Result: 结果: 件: 345 pcs





## 适用于种植牙钉、骨钉生产

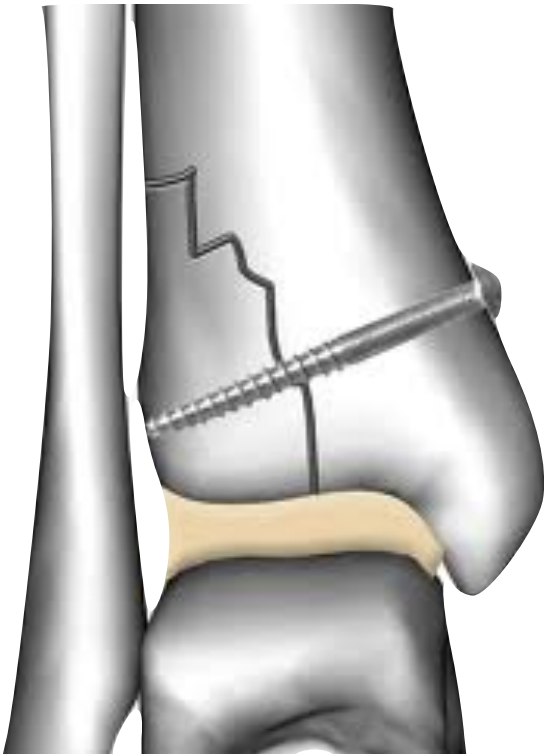


三 禄 切 削 刀 具  
**SUNROXM**



上海三禄贸易有限公司

# 适用于骨钉、种植牙钉生产



电话：86-21-58428888

传真：86-21-58423636

上海浦东新区杨新东路248号



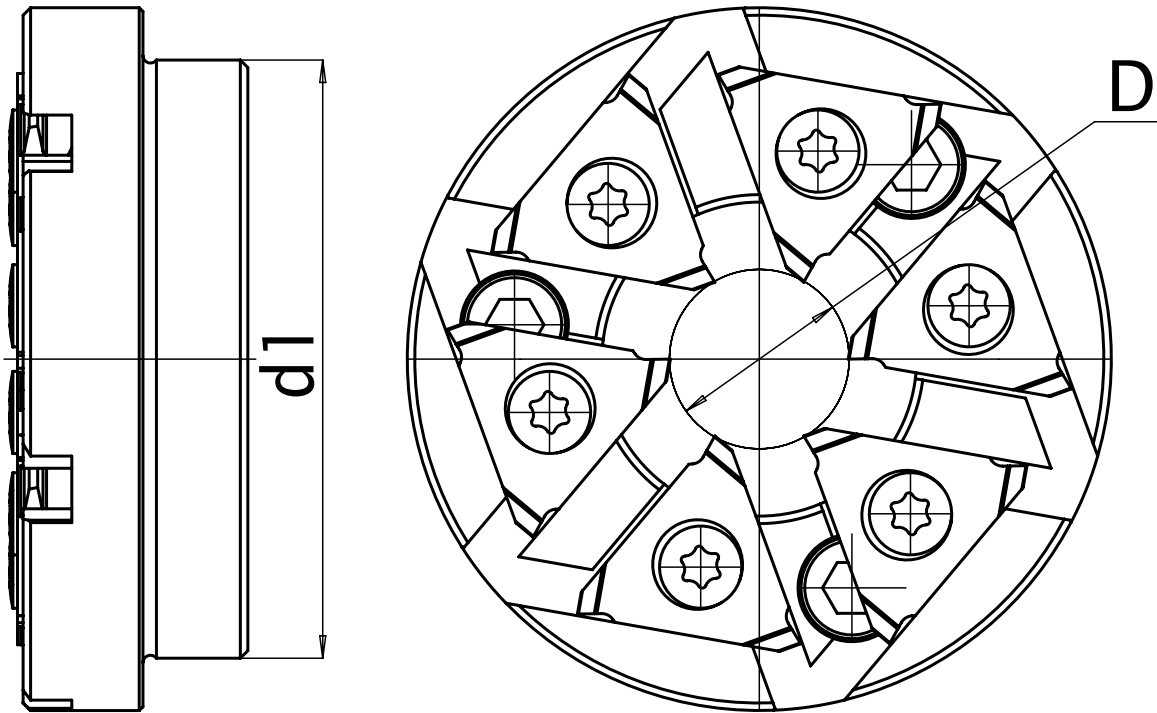
# Specials Are our specialty

## 越是专业的越是我们的特长





# *Toolholders* 刀杆



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**SUNROXM**



上海三禄贸易有限公司

**Marubeni Citizen-Cincom Inc.**





## 案例

### Case Study

Machine: <b>机床</b>	Nexturn SA-20
Drive unit: <b>驱动单元</b>	WTO
Application: <b>用途</b>	Bone screw <b>骨钉</b>
Material: <b>材料</b>	Ti-6Al-4V ELI <b>钛合金</b>
Carmex holder: <b>Carmex刀杆</b>	SRW4212 557-6
Vc [m/min]: <b>线速度</b>	38 <b>m/min</b>
Tooth load [mm/tooth]:	0.04 <b>mm/tooth</b>
No. of parts: <b>每齿进给</b>	806 <b>加工零件数</b>

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*Carmex*  
*Precision Tools Ltd.*