



# 三韩刀具

## SANDHOG TOOLS

刀片系列  
INSERT

D

宁波三韩精密刀具制造有限公司  
Ningbo Sandhog Precision Tools Manufacturing Co., Ltd.

[Http://www.sandhogtools.com](http://www.sandhogtools.com)

TOOLS



三韩刀具  
SANDHOG





## 公司简介 Company Profile

宁波三韩精密刀具制造有限公司位于“书藏古今，港通天下”的宁波，毗邻中国最大的深水良港—北仑港，距杭州、上海、苏州各为2小时左右车程，距宁波栎社机场仅40公里，海、陆、空交通都十分便利。

公司前身是宁波市三韩刀具制造有限公司，创立于2004年，经过十多年的发展，现已成为工贸一体，内外销结合，产品集合车削、铣削、钻削刀杆和合金刀片的数控全产业链企业。公司下辖宁波三韩合金材料有限公司、宁波成量工具制造有限公司、宁波丰翼电子科技有限公司、宁波三韩进出口有限公司。

公司现有数控刀杆和刀片研发工程师8人，生产一线职工100余人，直销网点销售服务人员和专业售后工程师人员20余人；在工厂生产设备方面，现有17台加工中心，50余台数控磨床专机；配备精密检验仪器的一流测试中心，产品严格执行全检；运用计算机ERP网络管理系统，实行数字化生产管理模式，刀具生产均采用国内独创的标准化工艺。

目前，三韩刀杆工厂和三韩刀片工厂正在密切合作，联合两边的研发能力，协同开发适合国内机械加工的高品质、高效率数控产品，敬请期待！

Ningbo Sanhan Tools Manufacture co., ltd , which is near the largest seaport-Beilunport in China, two hours' driving from Hangzhou, Shanghai and Suzhou, 16 kms away from the ningbo airport, is located in the coastal city - Ningbo.

Established in 2004, after 6 years' s development, now we aslo have Ningbo Sanhan Tools Imp. & Exp. Co., ltd, Ningbo Sanhan Alloy Material co., ltd, meanwhile, 10 direct points of sale have formed over the whole china(shenyang, qingzhou, suzhou, shanghai, wenlin, ningbo, yuyao, cixi, dongguan), a joint-stock and high-tech company has already formed.

We are now the most professional manufacture for the cutting tools and threading inserts Private Enterprises. The scale of production, quality of products, management system, sales volume and brand awareness, are all in the front ranks; meanwhile, we are also member of the Chinese Machine and Tool Corporation, keeping in close touch with the machine tools field in tech-communicating and cooperation, trying our best to provide chinese manufacturing with as more as excellent cutting tools.

Now we have 7 engineers for reseaching tool holders and inserts, more than 10 after-sales engineers, 70 employees at the front-line for production, and 60 excellent salesmen and related service persons at the direct sale point spreading all over the main cities. Besides this, 9 advanced product lines with precise testing equipments and instruments will give us the most support. The application of PC' s ERP network management system and digital production management enable us to substantially manufacture turning, boring, thread, grooving and etc cutting tools, and drilling, milling and boring CNC cutting tool series.

At the end of 2009, Ningbo Sanhan Alloy Material co., ltd was established, 10 advanced production lines were introduced to specializing manufacturing all types of standardized threading inserts, grooving inserts, AL-Alloy inserts and etc inserts named "SUPERMETALLOYO".

At present, the coopration between Sanhan tools factory and Sanhan Alloy Material factory is under colse working, uniting both sides' research productivity to develop the suitable CNC tools with high-quality and high-efficiency, To be expected!



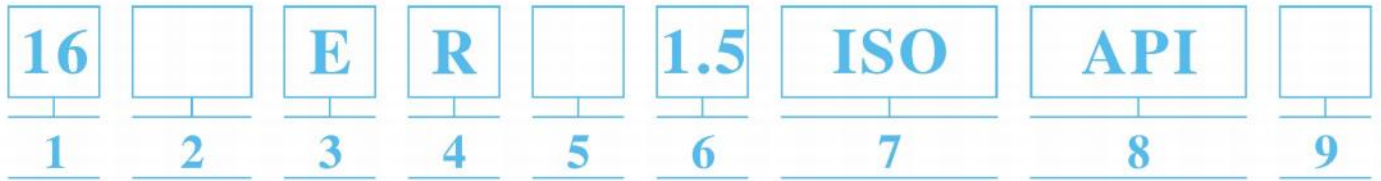
## 目录 DIRECTORY

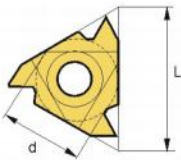
螺纹刀片型号说明 Vardex Ordering Code System	D001–D002
60° 范围牙型 Partialprofile 60°	D003
55° 范围牙型 Partialprofile 55°	D004
ISO 公制螺纹 ISO Metric	D005
ISO 公制螺纹 ISO Metric	D006
美制螺纹 American UN,UNC,UNF,UNEF	D007–D008
惠氏螺纹 Whitworth BSW,BSF,BSP	D009–D010
BSPT英制标准 British Standard pipe Thread 美制60° 锥管螺纹 National Pipe Thread:NPT 美制干密封直管螺纹 National Pipe thread–Dryseal:NPTF	D011
DIN405 圆齿螺纹 Round DIN405 DIN103 梯形螺纹 Trapez DIN103 美式梯形螺纹 ACME American ACME	D012
美制短牙梯形螺纹 STUB ACME 精密圆弧牙顶60° 螺纹UNJ	D013
精密圆弧牙顶60° 螺纹UNJ 美制锯齿螺纹 American Buttress	D014
立式车螺纹刀片 Vertical threading inserts JTGR 立装外切槽用 JTGR Vertical external groove TGF 立装外切槽用 TGF Vertical external groove	D015
螺纹加工常见的问题及解决办法 The threaded processing common problems and solutions	D016–D017
应用材料 Application grade 螺纹车削技术资料 Technical Information For Threading	D018
切槽刀片型号说明 Vardex Ordering Code System	D019
DIN471 标准轴用弹性挡圈槽 DIN471 Retaining Ring Groovers for shafts	D020–D021
立装外切槽刀片 External Grooving Inserts ( V–Style )	D022
平装切槽刀片 Internal grooving inserts ( Standard style )	D023

# 螺纹刀片 D

THREAD INSERT



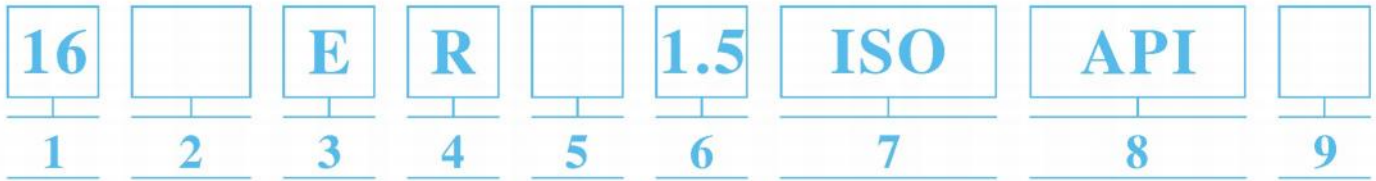

**型号说明**


1 刀片尺寸	2 刀片形状	3 刀片类型
<p>L08:d=4.762mm                  L11:d=6.35mm                  L16:d=9.525mm                  L22:d=12.7mm                  L27:d=15.875mm</p> 	<p>U型 V型</p>	<p>E:外螺纹刀片 I:内螺纹刀片</p>

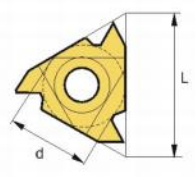
4 刀片方向	5 刀片制作类型	6 螺距																												
<p>R:右手刀片 L:左手刀片</p>	<p>M:压制 普通</p>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="2">全牙型</th> <th colspan="2">范围牙型</th> </tr> <tr> <th>mm</th> <th>TPI</th> <th>mm</th> <th>TPI</th> </tr> </thead> <tbody> <tr> <td>0.35~6.0</td> <td>72-3</td> <td>0.5~1.5</td> <td>48-16</td> </tr> <tr> <td></td> <td></td> <td>0.5~3.0</td> <td>48-8</td> </tr> <tr> <td></td> <td></td> <td>1.75~3.0</td> <td>14-8</td> </tr> <tr> <td></td> <td></td> <td>3.5~5.0</td> <td>7-5</td> </tr> <tr> <td></td> <td></td> <td>5.5~6.0</td> <td>4.5-4</td> </tr> </tbody> </table>	全牙型		范围牙型		mm	TPI	mm	TPI	0.35~6.0	72-3	0.5~1.5	48-16			0.5~3.0	48-8			1.75~3.0	14-8			3.5~5.0	7-5			5.5~6.0	4.5-4
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		5.5~6.0	4.5-4																											

7 螺纹标准	8 API型式	9 牌号
<p>60° 范围牙型螺纹                  55° 范围牙型螺纹                  So公制螺纹(全牙型)                  美制螺纹UN(全牙型) UN,UNC,UNF,UNEF                  惠氏螺纹(全牙型) BSW,BSF,BSP                  英制标准锥管螺纹(全牙型) BSPT                  美制60° 锥管螺纹(全牙型) NPT                  美制干密封直管螺纹(全牙型) NPTF                  DIN405圆齿螺纹                  DIN103梯形螺纹                  美式梯形螺纹ACME                  美制短牙梯形螺纹STUB ACME                  精密圆弧牙顶60° 螺纹UNJ                  美制锯齿螺纹                  英制锯齿螺纹                  公制锯齿螺纹Buttress-Sagengewinde                  API美制石油管螺纹                  API美制石油偏梯形套管螺纹                  API美制石油圆齿管螺纹                  流线型套管螺纹</p>	<p>382 = 2                  383 = 3                  403 = 15                  502 = 75                  503 = 125</p>	<p>SMX30 P类材质                  SMX35 M类材质                  SMM50 通用类材质                  SMK01 K类材质</p>

## Vardex Ordering Code System



### 1 Insert Size      2 Insert Style      3 Type of Insert

<p>L08:d=4.762mm L11:d=6.35mm L16:d=9.525mm L22:d=12.7mm L27:d=15.875mm</p>		<p>U Type V Type</p>
		<p>E:External Thread I:Internal Thread</p>

### 4 Hand of Insert      5 Insert Production type      6 Pitch

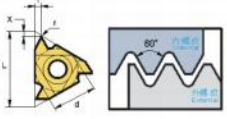
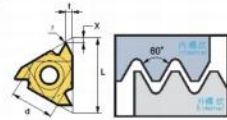
<p>R:Right-hand L:Left-hand</p>	<p>M:Pressing Common</p>	<table border="1"> <thead> <tr> <th colspan="2">Full Profile</th> <th colspan="2">Full Profile</th> </tr> <tr> <th>mm</th> <th>TPI</th> <th>mm</th> <th>TPI</th> </tr> </thead> <tbody> <tr> <td>0.35~6.0</td> <td>72-3</td> <td>0.5~1.5</td> <td>48-16</td> </tr> <tr> <td></td> <td></td> <td>0.5~3.0</td> <td>48-8</td> </tr> <tr> <td></td> <td></td> <td>1.75~3.0</td> <td>14-8</td> </tr> <tr> <td></td> <td></td> <td>3.5~5.0</td> <td>7-5</td> </tr> <tr> <td></td> <td></td> <td>5.5~6.0</td> <td>4.5-4</td> </tr> </tbody> </table>	Full Profile		Full Profile		mm	TPI	mm	TPI	0.35~6.0	72-3	0.5~1.5	48-16			0.5~3.0	48-8			1.75~3.0	14-8			3.5~5.0	7-5			5.5~6.0	4.5-4
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### 7 Thread Standard      8 API Form      9 Trademark

<p>Partial profile 60° Partial profile 55° ISO Metric(Full profile) American UN(Full profile)UN,UNC,UNF,UNEF Whitworth ( Full profile ) BSW,BSF,BSP British Standard Pipe Thread ( Full profile ) BSPT National pipe Thread ( Full profile ) NPT National pipe Threads-Dryseal ( Full profile ) NPTF Round DIN405 Trapez DIN103 American ACME Stub ACME UNJ American Buttress British Buttress Metric Buttress-Sagengewinde API API Buttress Casing API Buttress Casing &amp; Tubing Extreme Line Casing</p>	<p>382 2 383 3 403 15 502 75 503 125</p>	<p>SMX30 P-Steel SMX35 M-Stainless steel SMM50 General SMK01 K-Cst iron</p>
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D 刀片系列  
Insert Series

## 60° 范围牙型 Partialprofile

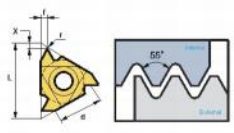
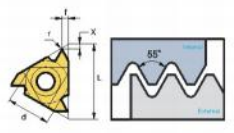
类型 Type	型号 Designation 右手 (right)	SMX30	SMM50	型号 Designation 左手 (left)	SMX30	SMM50	螺距 (mm)	TPI	尺寸 Dimensions(mm)				图片 Picture
									d	l	x	f	
外螺纹 Extrnal	11ER-A60	●	●	11EL-A60			0.5~1.5	48~16	6.35	11	0.8	0.9	
	16ER-A60	●	●	16EL-A60			0.5~1.5	48~16	9.525	16	0.8	0.9	
	16ER-G60	●	●	16EL-G60			1.75~3.0	14~8	9.525	16	1.2	1.5	
	16ER-AG60	●	●	16EL-AG60	●	●	0.5~3.0	48~8	9.525	16	1.2	1.5	
	22ER-N60	●	●	22EL-N60			3.5~5.0	7~5	12.7	22	1.7	2.5	
	27ER-Q60	●	●	27EL-Q60			5.5~6.0	4.5~4	15.875	27	2.3	3.1	
内螺纹 Internla	08IR-A60	●	●	08IL-A60			0.5~1.5	48~16	4.762	08	0.6	0.6	
	11IR-A60	●	●	11IL-A60			0.5~1.5	48~16	6.35	11	0.8	0.9	
	16IR-A60	●	●	16IL-A60			0.5~1.5	48~16	9.525	16	0.8	0.9	
	16IR-G60	●	●	16IL-G60	●	○	1.75~3.0	14~8	9.525	16	1.2	1.5	
	16IR-AG60	●	●	16IL-AG60			0.5~3.0	48~8	9.525	16	1.2	1.5	
	22IR-N60	●	●	22IL-N60			3.5~5.0	7~5	12.7	22	1.7	2.5	
	27IR-Q60	○	○	27IL-Q60			5.5~6.0	4.5~4	15.875	27	2.3	2.7	

类型 Type	型号 Designation 右手 (right)	SMX30	SMM50	型号 Designation 左手 (left)	SMX30	SMM50	螺距 (mm)	TPI	尺寸 Dimensions(mm)				图片 Picture
									d	l	x	f	
外螺纹 Extrnal	16ERM-A60			16ELM-A60			0.5~1.5	48~16	9.525	16	0.9	0.9	
	16ERM-G60			16ELM-G60			1.75~3.0	14~8	9.525	16	1.3	1.5	
	16ERM-AG60	○	○	16ELM-AG60			0.5~3.0	48~8	9.525	16	1.3	1.5	
	22ERM-N60			22ELM-N60			3.5~5.0	7~5	12.7	22	1.8	2.5	
内螺纹 Internla	16IRM-A60			16ILM-A60			0.5~1.5	48~16	9.525	0.08	0.9	0.9	
	16IRM-G60			16ILM-G60			1.75~3.0	14~8	9.525	0.12	1.3	1.5	
	16IRM-AG60	○	○	16ILM-AG60			0.5~3.0	48~8	9.525	0.08	1.3	1.5	
	22IRM-N60			22ILM-N60			3.5~5.0	7~5	12.7	0.30	1.8	2.5	

●: 库存项      ○: 准库存  
●: Stock item      ○: Underpring forstock



## 55° 范围牙型 Partialprofile

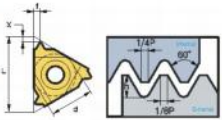
类型 Type	型号 Designation 右手 (right)	SMX30	SMM50	型号 Designation 左手 (left)	SMX30	SMM50	螺距 (mm)	TPI	尺寸 Dimensions (mm)				图片 Picture
									d	l	x	f	
外螺纹 Extrnal	11ER-A55	●	●	11EL-A55			0.5~1.5	48~16	6.35	11	0.8	0.9	
	16ER-A55	●	●	16EL-A55			0.5~1.5	48~16	9.525	16	0.8	0.9	
	16ER-G55	●	●	16EL-G55			1.75~3.0	14~8	9.525	16	1.2	1.5	
	16ER-AG55	●	●	16EL-AG55	●	●	0.5~3.0	48~8	9.525	16	1.2	1.5	
	22ER-N55	●	●	22EL-N55			3.5~5.0	7~5	12.7	27	1.7	2.5	
	27ER-Q55	●	●	27EL-Q55			5.5~6.0	4.5~4	15.875	27	2.0	2.9	
内螺纹 Internla	08IR-A55	●	●	08IL-A55			0.5~1.5	48~16	4.762	08	0.6	0.6	
	11IR-A55	●	●	11IL-A55			0.5~1.5	48~16	6.35	11	0.8	0.9	
	16IR-A55	●	●	16IL-A55			0.5~1.5	48~16	9.525	16	0.8	0.9	
	16IR-G55	●	●	16IL-G55			1.75~3.0	14~8	9.525	16	1.2	1.5	
	16IR-AG55	●	●	16IL-AG55	●	●	0.5~3.0	48~8	9.525	16	1.2	1.5	
	22IR-N55	●	●	22IL-N55			3.5~5.0	7~5	12.7	22	1.7	2.5	
	27IR-Q55	○	○	27IL-Q55			5.5~6.0	4.5~4	15.875	27	2.0	2.9	

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外螺纹 Extrnal	16ERM-A55			16ELM-A55			0.5~1.5	48~16	9.525	16	0.8	0.9	
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	16ERM-AG55			16ELM-AG55			0.5~3.0	48~8	9.525	16	1.3	1.5	
	22ERM-N55			22ELM-N55			3.5~5.0	7~5	12.7	27	1.7	2.5	
内螺纹 Internla	16IRM-A55			16ILM-A55			0.5~1.5	48~16	9.525	16	0.8	0.9	
	16IRM-G55			16ILM-G55			1.75~3.0	14~8	9.525	16	1.3	1.5	
	16IRM-AG55			16ILM-AG55			0.5~3.0	48~8	9.525	16	1.3	1.5	
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● : 库存项      ○ : 准库存  
 ● : Stock item      ○ : Underpring forstock

D  
刀片系列  
Insert Series

## ISO 公制螺纹 ISO Metric

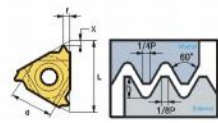
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									d	l	x	f	
外螺纹 Extrnal	11ER-0.4ISO			11EL-0.4ISO			0.4	0.4	6.35	11	0.7	0.4	
	11ER-0.45ISO			11EL-0.45ISO			0.45	0.45	6.35	11	0.7	0.4	
	11ER-0.5ISO			11EL-0.5ISO			0.5	0.5	6.35	11	0.6	0.4	
	11ER-0.6ISO			11EL-0.6ISO			0.6	0.6	6.35	11	0.6	0.6	
	11ER-0.7ISO			11EL-0.7ISO			0.7	0.7	6.35	11	0.6	0.6	
	11ER-0.75ISO			11EL-0.75ISO			0.75	0.75	6.35	11	0.6	0.6	
	11ER-0.8ISO			11EL-0.8ISO			0.8	0.8	6.35	11	0.6	0.6	
	11ER-1.0ISO	●	●	11EL-1.0ISO			1.0	1.0	6.35	11	0.7	0.7	
	11ER-1.25ISO			11EL-1.25ISO			1.25	1.25	6.35	11	0.8	0.9	
	11ER-1.5ISO	●	●	11EL-1.5ISO			1.5	1.5	6.35	11	0.8	1.0	
	11ER-1.75ISO			11EL-1.75ISO			1.75	1.75	6.35	11	0.8	1.1	
	16ER-0.4ISO			16EL-0.4ISO			0.4	0.4	9.525	16	0.7	0.4	
	16ER-0.45ISO			16EL-0.45ISO			0.45	0.45	9.525	16	0.7	0.4	
	16ER-0.5ISO	●	●	16EL-0.5ISO			0.5	0.5	9.525	16	0.6	0.4	
	16ER-0.6ISO			16EL-0.6ISO			0.6	0.6	9.525	16	0.6	0.6	
	16ER-0.7ISO			16EL-0.7ISO			0.7	0.7	9.525	16	0.6	0.6	
	16ER-0.75ISO	●	●	16EL-0.75ISO	○	○	0.75	0.75	9.525	16	0.6	0.6	
	16ER-0.8ISO	●	●	16EL-0.8ISO	○	○	0.8	0.8	9.525	16	0.6	0.6	
	16ER-1.0ISO	●	●	16EL-1.0ISO	●	●	1.0	1.0	9.525	16	0.7	0.7	
	16ER-1.25ISO	●	●	16EL-1.25ISO			1.25	1.25	9.525	16	0.8	0.9	
	16ER-1.5ISO	●	●	16EL-1.5ISO	●	●	1.5	1.5	9.525	16	0.8	1.0	
	16ER-1.75ISO	●	●	16EL-1.75ISO	○	○	1.75	1.75	9.525	16	0.9	1.2	
	16ER-2.0ISO	●	●	16EL-2.0ISO	○	○	2.0	2.0	9.525	16	1.0	1.3	
	16ER-2.5ISO	●	●	16EL-2.5ISO			2.5	2.5	9.525	16	1.1	1.5	
	16ER-3.0ISO	●	●	16EL-3.0ISO			3.0	3.0	9.525	16	1.2	1.6	
	22ER-3.5ISO	●	●	22EL-3.5ISO			3.5	3.5	12.7	22	1.6	2.3	
	22ER-4.0ISO	●	●	22EL-4.0ISO			4.0	4.0	12.7	22	1.6	2.3	
22ER-4.5ISO	○	○	22EL-4.5ISO			4.5	4.5	12.7	22	1.7	2.4		
22ER-5.0ISO	●	●	22EL-5.0ISO			5.0	5.0	12.7	22	1.7	2.5		
27ER-5.5ISO	●	●	27EL-5.5ISO			5.5	5.5	15.875	27	1.9	2.7		
27ER-6.0ISO	●	●	27EL-6.0ISO			6.0	6.0	15.875	27	2.0	2.9		

D  
Insert Series

类型 Type	型号 Designation 右手 (right)	SMX30	SMX50	型号 Designation 左手 (left)	SMX30	SMX50	螺距 (mm)	尺寸 Dimensions(mm)				图片 Picture
								d	l	x	f	
外螺纹 Extrnal	16ERM-1.0ISO	○	○	16ELM-1.0ISO			1.0	9.525	16	0.8	0.7	
	16ERM-1.25ISO	○	○	16ELM-1.25ISO			1.25	9.525	16	0.9	0.9	
	16ERM-1.5ISO	○	○	16ELM-1.5ISO			1.5	9.525	16	0.9	1.0	
	16ERM-1.75ISO	○	○	16ELM-1.75ISO			1.75	9.525	16	1.0	1.2	
	16ERM-2.0ISO	○	○	16ELM-2.0ISO			2.0	9.525	16	1.1	1.3	
	16ERM-2.5ISO	○	○	16ELM-2.5ISO			2.5	9.525	16	1.2	1.5	
	16ERM-3.0ISO	○	○	16ELM-3.0ISO			3.0	9.525	16	1.3	1.6	

● : 库存项      ○ : 准库存  
● : Stock item      ○ : Underpring forstock

## ISO 公制螺纹 ISO Metric

类型 Type	型号 Designation 右手 (right)	SMM30	SMM50	型号 Designation 左手 (left)	SMM30	SMM50	螺距 (mm)	尺寸Dimensions(mm)				图片 Picture
								d	l	x	f	
内螺纹 Internal	11IR-0.4ISO			11IL-0.4ISO			0.4	6.35	11	0.8	0.4	
	11IR-0.45ISO			11IL-0.45ISO			0.45	6.35	11	0.8	0.4	
	11IR-0.5ISO	●	●	11IL-0.5ISO			0.5	6.35	11	0.6	0.4	
	11IR-0.6ISO			11IL-0.6ISO			0.6	6.35	11	0.6	0.6	
	11IR-0.7ISO			11IL-0.7ISO			0.7	6.35	11	0.6	0.6	
	11IR-0.75ISO	●	●	11IL-0.75ISO			0.75	6.35	11	0.6	0.6	
	11IR-0.8ISO			11IL-0.8ISO			0.8	6.35	11	0.6	0.6	
	11IR-1.0ISO	●	●	11IL-1.0ISO			1.0	6.35	11	0.6	0.7	
	11IR-1.25ISO	●	●	11IL-1.25ISO			1.25	6.35	11	0.8	0.9	
	11IR-1.5ISO	●	●	11IL-1.5ISO			1.5	6.35	11	0.8	1.0	
	11IR-1.75ISO	●	●	11IL-1.75ISO			1.75	6.35	11	0.9	1.1	
	11IR-2.0ISO	●	●	11IL-2.0ISO			2.0	6.35	11	0.9	1.1	
	11IR-2.5ISO			11IL-2.5ISO			2.5	6.35	11	0.8	1.1	
	16IR-0.35ISO			16IL-0.35ISO			0.35	9.525	16	0.8	0.3	
	16IR-0.4ISO			16IL-0.4ISO			0.4	9.525	16	0.8	0.4	
	16IR-0.45ISO			16IL-0.45ISO			0.45	9.525	16	0.8	0.4	
	16IR-0.5ISO	●	●	16IL-0.5ISO			0.5	9.525	16	0.6	0.4	
	16IR-0.6ISO			16IL-0.6ISO			0.6	9.525	16	0.6	0.6	
	16IR-0.7ISO			16IL-0.7ISO			0.7	9.525	16	0.6	0.6	
	16IR-0.75ISO	●	●	16IL-0.75ISO			0.75	9.525	16	0.6	0.6	
	16IR-0.8ISO	○	○	16IL-0.8ISO			0.8	9.525	16	0.6	0.6	
	16IR-1.0ISO	●	●	16IL-1.0ISO			1.0	9.525	16	0.6	0.7	
	16IR-1.25ISO	●	●	16IL-1.25ISO			1.25	9.525	16	0.8	0.9	
	16IR-1.5ISO	●	●	16IL-1.5ISO			1.5	9.525	16	0.8	1.0	
	16IR-1.75ISO	●	●	16IL-1.75ISO			1.75	9.525	16	0.9	1.2	
	16IR-2.0ISO	●	●	16IL-2.0ISO			2.0	9.525	16	1.0	1.3	
	16IR-2.5ISO	●	●	16IL-2.5ISO			2.5	9.525	16	1.1	1.5	
	16IR-3.0ISO	●	●	16IL-3.0ISO			3.0	9.525	16	1.1	1.5	
	22IR-3.5ISO	●	●	22IL-3.5ISO			3.5	12.7	22	1.6	2.3	
	22IR-4.0ISO	●	●	22IL-4.0ISO			4.0	12.7	22	1.6	2.3	
22IR-4.5ISO	○	○	22IL-4.5ISO			4.5	12.7	22	1.6	2.4		
22IR-5.0ISO	●	●	22IL-5.0ISO			5.0	12.7	22	1.6	2.3		
27IR-5.5ISO	○	○	27IL-5.5ISO			5.5	15.875	27	1.6	2.3		
27IR-6.0ISO	●	●	27IL-6.0ISO			6.0	15.875	27	1.8	2.5		

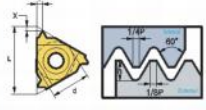
类型 Type	型号 Designation 右手 (right)	SMM30	SMM50	型号 Designation 左手 (left)	SMM30	SMM50	螺距 (mm)	尺寸Dimensions(mm)				图片 Picture
								d	l	x	f	
内螺纹 Internal	16IRM-1.0ISO	○	○	16ILM-1.0ISO			1.0	9.525	16	0.7	0.7	
	16IRM-1.25ISO	○	○	16ILM-1.25ISO			1.25	9.525	16	0.9	0.9	
	16IRM-1.5ISO	○	○	16ILM-1.5ISO			1.5	9.525	16	0.9	1.0	
	16IRM-1.75ISO	○	○	16ILM-1.75ISO			1.75	9.525	16	1.0	1.2	
	16IRM-2.0ISO	○	○	16ILM-2.0ISO			2.0	9.525	16	1.1	1.3	
	16IRM-2.5ISO	○	○	16ILM-2.5ISO			2.5	9.525	16	1.2	1.5	
	16IRM-3.0ISO	○	○	16ILM-3.0ISO			3.0	9.525	16	1.3	1.5	

●: 库存项      ○: 准库存  
●: Stock item      ○: Underpring forstock

D  
刀片系列  
Insert Series



### 美制螺纹 American: UN,UNC,UNF,UNEF

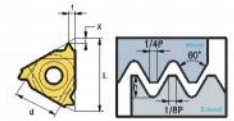
类型 Type	型号 Designation 右手 (right)	SMM30	SMM50	型号 Designation 左手 (left)	SMM30	SMM50	TPI	尺寸 Dimensions(mm)				图片 Picture
								d	l	x	f	
外螺纹 Extrnal	11ER-64UN			11EL-64UN			64	6.35	11	0.8	0.4	
	11ER-56UN			11EL-56UN			56	6.35	11	0.7	0.4	
	11ER-48UN			11EL-48UN			48	6.35	11	0.6	0.6	
	11ER-44UN			11EL-44UN			44	6.35	11	0.6	0.6	
	11ER-40UN			11EL-40UN			40	6.35	11	0.6	0.6	
	11ER-36UN			11EL-36UN			36	6.35	11	0.6	0.6	
	11ER-32UN			11EL-32UN			32	6.35	11	0.6	0.6	
	11ER-28UN			11EL-28UN			28	6.35	11	0.6	0.7	
	11ER-27UN			11EL-27UN			27	6.35	11	0.7	0.8	
	11ER-24UN			11EL-24UN			24	6.35	11	0.7	0.8	
	11ER-20UN			11EL-20UN			20	6.35	11	0.8	0.9	
	11ER-18UN			11EL-18UN			18	6.35	11	0.8	1.0	
	11ER-16UN			11EL-16UN			16	6.35	11	0.9	1.1	
	11ER-14UN			11EL-14UN			14	6.35	11	0.9	1.1	
	16ER-64UN			16EL-64UN			64	9.525	16	0.8	0.4	
	16ER-56UN			16EL-56UN			56	9.525	16	0.7	0.4	
	16ER-48UN			16EL-48UN			48	9.525	16	0.6	0.6	
	16ER-44UN			16EL-44UN			44	9.525	16	0.6	0.6	
	16ER-40UN			16EL-40UN			40	9.525	16	0.6	0.6	
	16ER-36UN			16EL-36UN			36	9.525	16	0.6	0.6	
	16ER-32UN	● ●		16EL-32UN			32	9.525	16	0.6	0.6	
	16ER-28UN	● ●		16EL-28UN			28	9.525	16	0.6	0.7	
	16ER-27UN	○ ○		16EL-27UN			27	9.525	16	0.7	0.8	
	16ER-24UN	● ●		16EL-24UN			24	9.525	16	0.7	0.8	
	16ER-20UN	● ●		16EL-20UN			20	9.525	16	0.8	0.9	
	16ER-18UN	● ●		16EL-18UN			18	9.525	16	0.8	1.0	
	16ER-16UN	● ●		16EL-16UN			16	9.525	16	0.9	1.1	
	16ER-14UN	● ●		16EL-14UN			14	9.525	16	1.0	1.2	
	16ER-13UN	● ●		16EL-13UN			13	9.525	16	1.0	1.3	
	16ER-12UN	● ●		16EL-12UN			12	9.525	16	1.1	1.4	
	16ER-11.5UN	○ ○		16EL-11.5UN			11.5	9.525	16	1.1	1.5	
	16ER-11UN	● ●		16EL-11UN			11	9.525	16	1.1	1.5	
	16ER-10UN	● ●		16EL-10UN			10	9.525	16	1.1	1.5	
16ER-9UN	● ●		16EL-9UN			9	9.525	16	1.2	1.7		
16ER-8UN	● ●		16EL-8UN			8	9.525	16	1.2	1.6		
22ER-7UN			22EL-7UN			7	12.7	22	1.6	2.3		
22ER-6UN			22EL-6UN			6	12.7	22	1.6	2.3		
22ER-5UN			22EL-5UN			5	12.7	22	1.7	2.5		
27ER-4.5UN			27EL-4.5UN			4.5	15.875	27	1.9	2.7		
27ER-4UN			27EL-4UN			4	15.875	27	2.1	3.0		

● : 库存项      ○ : 准库存  
 ● : Stock item      ○ : Underpring forstock

D  
刀片系列  
Insert Series

## 美制螺纹 American: UN,UNC,UNF,UNEF

类型 Type	型号 Designation 右手 (right)	SMX30	SMM50	型号 Designation 左手 (left)	SMX30	SMM50	TPI	尺寸Dimensions(mm)				图片 Picture
								d	l	x	f	
	11IR-64UN			11IL-64UN			64	6.35	11	0.8	0.4	
	11IR-56UN			11IL-56UN			56	6.35	11	0.7	0.4	
	11IR-48UN			11IL-48UN			48	6.35	11	0.6	0.6	
	11IR-44UN			11IL-44UN			44	6.35	11	0.6	0.6	
	11IR-40UN			11IL-40UN			40	6.35	11	0.6	0.6	
	11IR-36UN			11IL-36UN			36	6.35	11	0.6	0.6	
	11IR-32UN			11IL-32UN			32	6.35	11	0.6	0.6	
	11IR-28UN			11IL-28UN			28	6.35	11	0.6	0.7	
	11IR-27UN			11IL-27UN			27	6.35	11	0.7	0.8	
	11IR-24UN	○	○	11IL-24UN			24	6.35	11	0.7	0.8	
	11IR-20UN	○	○	11IL-20UN			20	6.35	11	0.8	0.9	
	11IR-18UN			11IL-18UN			18	6.35	11	0.8	1.0	
	11IR-16UN			11IL-16UN			16	6.35	11	0.9	1.1	
	11IR-14UN			11IL-14UN			14	6.35	11	0.9	1.1	
	11IR-12UN			11IL-12UN			12	6.35	11	0.8	1.1	
	11IR-11UN			11IL-11UN			11	6.35	11	0.8	1.1	
	16IR-64UN			16IL-64UN			64	9.525	16	0.8	0.4	
	16IR-56UN			16IL-56UN			56	9.525	16	0.7	0.4	
	16IR-48UN			16IL-48UN			48	9.525	16	0.6	0.6	
	16IR-44UN			16IL-44UN			44	9.525	16	0.6	0.6	
内螺纹 Internal	16IR-40UN			16IL-40UN			40	9.525	16	0.6	0.6	
	16IR-36UN			16IL-36UN			36	9.525	16	0.6	0.6	
	16IR-32UN			16IL-32UN			32	9.525	16	0.6	0.6	
	16IR-28UN	○	○	16IL-28UN			28	9.525	16	0.6	0.7	
	16IR-27UN	○	○	16IL-27UN			27	9.525	16	0.7	0.8	
	16IR-24UN	○	○	16IL-24UN			24	9.525	16	0.7	0.8	
	16IR-20UN	●	●	16IL-20UN			20	9.525	16	0.8	0.9	
	16IR-18UN	●	●	16IL-18UN			18	9.525	16	0.8	1.0	
	16IR-16UN	●	●	16IL-16UN			16	9.525	16	0.9	1.1	
	16IR-14UN	●	●	16IL-14UN			14	9.525	16	0.9	1.2	
	16IR-13UN	●	●	16IL-13UN			13	9.525	16	1.0	1.3	
	16IR-12UN	●	●	16IL-12UN			12	9.525	16	1.1	1.4	
	16IR-11.5UN	○	○	16IL-11.5UN			11.5	9.525	16	1.1	1.5	
	16IR-11UN	●	●	16IL-11UN			11	9.525	16	1.1	1.5	
	16IR-10UN	●	●	16IL-10UN			10	9.525	16	1.1	1.5	
	16IR-9UN	○	○	16IL-9UN			9	9.525	16	1.2	1.7	
	16IR-8UN	●	●	16IL-8UN			8	9.525	16	1.2	1.5	
		22IR-7UN			22IL-7UN			7	12.7	22	1.6	2.3
	22IR-6UN			22IL-6UN			6	12.7	22	1.6	2.3	
	22IR-5UN			22IL-5UN			5	12.7	22	1.7	2.3	
	27IR-4.5UN			IL27-4.5UN			4.5	15.875	27	1.9	2.4	
	27IR-4UN			IL27-4UN			4	15.875	27	2.1	2.7	

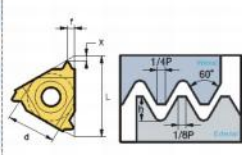


D  
刀片系列  
Insert Series

●: 库存项      ○: 准库存  
●: Stock item      ○: Underpring forstock

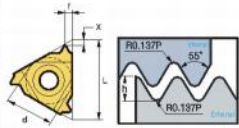


## 惠氏螺纹 Whitworth: BSW,BSF,BSP

类型 Type	型号 Designation 右手 (right)	SMX30	SMX50	型号 Designation 左手 (left)	SMX30	SMX50	TPI	尺寸 Dimensions(mm)				图片 Picture
								d	l	x	f	
外螺纹 Extrnal	11ER-60W			11EL-60W			60	6.35	11	0.7	0.4	
	11ER-56W			11EL-56W			56	6.35	11	0.7	0.4	
	11ER-48W			11EL-48W			48	6.35	11	0.6	0.6	
	11ER-40W			11EL-40W			40	6.35	11	0.6	0.6	
	11ER-36W			11EL-36W			36	6.35	11	0.6	0.6	
	11ER-32W			11EL-32W			32	6.35	11	0.6	0.6	
	11ER-28W			11EL-28W			28	6.35	11	0.6	0.7	
	11ER-26W			11EL-26W			26	6.35	11	0.7	0.8	
	11ER-24W			11EL-24W			24	6.35	11	0.7	0.8	
	11ER-22W			11EL-22W			22	6.35	11	0.8	0.9	
	11ER-20W			11EL-20W			20	6.35	11	0.8	0.9	
	11ER-19W			11EL-19W			19	6.35	11	0.8	1.0	
	11ER-18W			11EL-18W			18	6.35	11	0.8	1.0	
	11ER-16W			11EL-16W			16	6.35	11	0.9	1.1	
	11ER-14W			11EL-14W			14	6.35	11	1.0	1.2	
	16ER-60W			16EL-60W			60	9.525	16	0.7	0.4	
	16ER-56W			16EL-56W			56	9.525	16	0.7	0.4	
	16ER-48W			16EL-48W			48	9.525	16	0.6	0.6	
	16ER-40W			16EL-40W			40	9.525	16	0.6	0.6	
	16ER-36W			16EL-36W			36	9.525	16	0.6	0.6	
	16ER-32W	●	●	16EL-32W			32	9.525	16	0.6	0.6	
	16ER-30W			16EL-30W			30	9.525	16	0.6	0.7	
	16ER-28W	●	●	16EL-28W			28	9.525	16	0.6	0.7	
	16ER-26W			16EL-26W			26	9.525	16	0.7	0.8	
	16ER-24W	●	●	16EL-24W			24	9.525	16	0.7	0.8	
	16ER-22W			16EL-22W			22	9.525	16	0.8	0.9	
	16ER-20W	●	●	16EL-20W			20	9.525	16	0.8	0.9	
	16ER-19W	●	●	16EL-19W			19	9.525	16	0.8	1.0	
	16ER-18W	●	●	16EL-18W			18	9.525	16	0.8	1.0	
	16ER-16W	●	●	16EL-16W			16	9.525	16	0.9	1.1	
	16ER-14W	●	●	16EL-14W			14	9.525	16	1.0	1.2	
	16ER-12W	●	●	16EL-12W			12	9.525	16	1.1	1.4	
	16ER-11W	●	●	16EL-11W			11	9.525	16	1.1	1.5	
	16ER-10W			16EL-10W			10	9.525	16	1.1	1.5	
	16ER-9W			16EL-9W			9	9.525	16	1.2	1.7	
	16ER-8W	●	●	16EL-8W			8	9.525	16	1.2	1.5	
22ER-7W			22EL-7W			7	12.7	22	1.6	2.3		
22ER-6W			22EL-6W			6	12.7	22	1.6	2.3		
22ER-5W			22EL-5W			5	12.7	22	1.7	2.4		
27ER-4.5W			27EL-4.5W			4.5	15.875	27	1.8	2.6		
27ER-4W			27EL-4W			4	15.875	27	2.0	2.9		

● : 库存项      ○ : 准库存  
 ● : Stock item      ○ : Underpring forstock

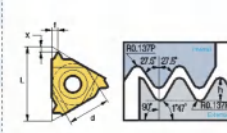
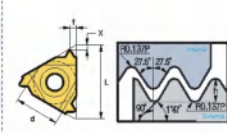
## 惠氏螺纹 Whitworth: BSW,BSF,BSP

类型 Type	型号 Designation 右手 (right)	SMM30 SMM50	型号 Designation 左手 (left)	SMM30 SMM50	TPI	尺寸 Dimensions(mm)				图片 Picture
						d	l	x	f	
内螺纹 Internal	111R-60W		111L-60W		60	6.35	11	0.7	0.4	
	111R-56W		111L-56W		56	6.35	11	0.7	0.4	
	111R-48W		111L-48W		48	6.35	11	0.6	0.6	
	111R-40W		111L-40W		40	6.35	11	0.6	0.6	
	111R-36W		111L-36W		36	6.35	11	0.6	0.6	
	111R-32W		111L-32W		32	6.35	11	0.6	0.6	
	111R-28W		111L-28W		28	6.35	11	0.6	0.7	
	111R-26W		111L-26W		26	6.35	11	0.7	0.8	
	111R-24W		111L-24W		24	6.35	11	0.7	0.8	
	111R-22W		111L-22W		22	6.35	11	0.8	0.9	
	111R-20W		111L-20W		20	6.35	11	0.8	0.9	
	111R-19W		111L-19W		19	6.35	11	0.8	1.0	
	111R-18W		111L-18W		18	6.35	11	0.8	1.0	
	111R-16W		111L-16W		16	6.35	11	0.9	1.1	
	111R-14W		111L-14W		14	6.35	11	0.9	1.1	
	111R-12W		111L-12W		12	6.35	11	0.9	1.2	
	161R-60W		161L-60W		60	9.525	16	0.7	0.4	
	161R-56W		161L-56W		56	9.525	16	0.7	0.4	
	161R-48W		161L-48W		48	9.525	16	0.6	0.6	
	161R-40W		161L-40W		40	9.525	16	0.6	0.6	
	161R-36W		161L-36W		36	9.525	16	0.6	0.6	
	161R-32W		161L-32W		32	9.525	16	0.6	0.6	
	161R-30W		161L-30W		30	9.525	16	0.6	0.7	
	161R-28W		161L-28W		28	9.525	16	0.6	0.7	
	161R-26W		161L-26W		26	9.525	16	0.7	0.8	
	161R-24W		161L-24W		24	9.525	16	0.7	0.8	
	161R-22W		161L-22W		22	9.525	16	0.8	0.9	
	161R-20W	○ ○	161L-20W		20	9.525	16	0.8	0.9	
	161R-19W	● ●	161L-19W		19	9.525	16	0.8	1.0	
	161R-18W	● ●	161L-18W		18	9.525	16	0.8	1.0	
	161R-16W	○ ○	161L-16W		16	9.525	16	0.9	1.1	
	161R-14W	● ●	161L-14W		14	9.525	16	1.0	1.2	
	161R-12W	● ●	161L-12W		12	9.525	16	1.1	1.4	
	161R-11W	● ●	161L-11W		11	9.525	16	1.1	1.5	
161R-10W	● ●	161L-10W		10	9.525	16	1.1	1.5		
161R-9W		161L-9W		9	9.525	16	1.2	1.7		
161R-8W	● ●	161L-8W		8	9.525	16	1.2	1.5		
221R-7W		221L-7W		7	12.7	22	1.6	2.3		
221R-6W		221L-6W		6	12.7	22	1.6	2.3		
221R-5W		221L-5W		5	12.7	22	1.7	2.4		
271R-4.5W		271L-4.5W		4.5	15.875	27	1.8	2.6		
271R-4W		271L-4W		4	15.875	27	2.0	2.9		

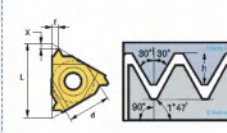
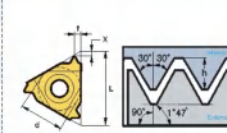
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●: Stock item      ○: Underpring forstock



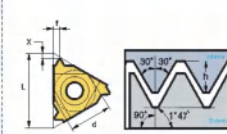
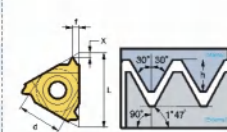
## BSPT英制标准 British Standard pipe Thread

类型 Type	型号 Designation 右手 (right)	SMM30	SMM50	型号 Designation 左手 (left)	SMM30	SMM50	TPI	尺寸 Dimensions(mm)				图片 Picture
								d	l	x	f	
外螺纹 Extrnal	11ER-28BSPT			11EL-28BSPT			28	6.35	11	0.6	0.6	
	11ER-19BSPT			11EL-19BSPT			19	6.35	11	0.8	0.9	
	11ER-14BSPT			11EL-14BSPT			14	6.35	11	0.9	1.0	
	16ER-28BSPT	●	●	16EL-28BSPT			28	9.525	16	0.6	0.6	
	16ER-19BSPT	●	●	16EL-19BSPT			19	9.525	16	0.8	0.9	
	16ER-14BSPT	●	●	16EL-14BSPT			14	9.525	16	1.0	1.2	
	16ER-11BSPT	●	●	16EL-11BSPT			11	9.525	16	1.1	1.5	
内螺纹 Internla	11IR-28BSPT			11IL-28BSPT			28	6.35	11	0.6	0.6	
	11IR-19BSPT	●	●	11IL-19BSPT			19	6.35	11	0.8	0.9	
	11IR-14BSPT	●	●	11IL-14BSPT			14	6.35	11	0.9	1.0	
	16IR-28BSPT	○	○	16IL-28BSPT			28	9.525	16	0.6	0.6	
	16IR-19BSPT	●	●	16IL-19BSPT			19	9.525	16	0.8	0.9	
	16IR-14BSPT	●	●	16IL-14BSPT			14	9.525	16	1.0	1.2	
	16IR-11BSPT	●	●	16IL-11BSPT			11	9.525	16	1.1	1.5	

## 美制60° 锥管螺纹 National Pipe Thread:NPT

类型 Type	型号 Designation 右手 (right)	SMM30	SMM50	型号 Designation 左手 (left)	SMM30	SMM50	TPI	尺寸 Dimensions(mm)				图片 Picture
								d	l	x	f	
外螺纹 Extrnal	11ER-27NPT			11EL-27NPT			27	6.35	11	0.7	0.8	
	11ER-18NPT			11EL-18NPT			18	6.35	11	0.8	1.0	
	11ER-14NPT			11EL-14NPT			14	6.35	11	0.8	1.0	
	16ER-27NPT	○	○	16EL-27NPT			27	9.525	16	0.7	0.8	
	16ER-18NPT	●	●	16EL-18NPT			18	9.525	16	0.8	1.0	
	16ER-14NPT	●	●	16EL-14NPT			14	9.525	16	0.9	1.2	
	16ER-11.5NPT	●	●	16EL-11.5NPT			11.5	9.525	16	1.1	1.5	
16ER-8NPT	●	●	16EL-8NPT			8	9.525	16	1.3	1.8		
内螺纹 Internla	11IR-27NPT			11IL-27NPT			27	6.35	11	0.7	0.8	
	11IR-18NPT	●	●	11IL-18NPT			18	6.35	11	0.8	1.0	
	11IR-14NPT	●	●	11IL-14NPT			14	6.35	11	0.8	1.0	
	16IR-27NPT	○	○	16IL-27NPT			27	9.525	16	0.7	0.8	
	16IR-18NPT	●	●	16IL-18NPT			18	9.525	16	0.8	1.0	
	16IR-14NPT	●	●	16IL-14NPT			14	9.525	16	0.9	1.2	
	16IR-11.5NPT	●	●	16IL-11.5NPT			11.5	9.525	16	1.1	1.5	
16IR-8NPT	●	●	16IL-8NPT			8	9.525	16	1.3	1.8		

## 美制干密封直管螺纹 National Pipe thread-Dryseal:NPTF

类型 Type	型号 Designation 右手 (right)	SMM30	SMM50	型号 Designation 左手 (left)	SMM30	SMM50	TPI	尺寸 Dimensions(mm)				图片 Picture
								d	l	x	f	
外螺纹 Extrnal	11ER-27NPTF			11EL-27NPTF			27	6.35	11	0.7	0.8	
	11ER-18NPTF			11EL-18NPTF			18	6.35	11	0.8	1.0	
	11ER-14NPTF			11EL-14NPTF			14	6.35	11	0.8	1.0	
	16ER-27NPTF	○	○	16EL-27NPTF			27	9.525	16	0.7	0.8	
	16ER-18NPTF	○	○	16EL-18NPTF			18	9.525	16	0.8	1.0	
	16ER-14NPTF	●	●	16EL-14NPTF			14	9.525	16	0.9	1.2	
	16ER-11.5NPTF	●	●	16EL-11.5NPTF			11.5	9.525	16	1.1	1.5	
16ER-8NPTF	●	●	16EL-8NPTF			8	9.525	16	1.3	1.8		
内螺纹 Internla	11IR-27NPTF			11IL-27NPTF			27	6.35	11	0.7	0.8	
	11IR-18NPTF	○	○	11IL-18NPTF			18	6.35	11	0.8	1.0	
	11IR-14NPTF	○	○	11IL-14NPTF			14	6.35	11	0.8	1.0	
	16IR-27NPTF			16IL-27NPTF			27	9.525	16	0.7	0.8	
	16IR-18NPTF			16IL-18NPTF			18	9.525	16	0.8	1.0	
	16IR-14NPTF	●	●	16IL-14NPTF			14	9.525	16	0.9	1.2	
	16IR-11.5NPTF	●	●	16IL-11.5NPTF			11.5	9.525	16	1.1	1.5	
16IR-8NPTF	○	○	16IL-8NPTF			8	9.525	16	1.3	1.8		

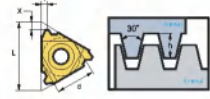




## DIN405 圆齿螺纹 Round DIN405

类型 Type	型号 Designation 右手 (right)	SMX30	SMM50	型号 Designation 左手 (left)	SMX30	SMM50	TPI	尺寸 Dimensions(mm)				图片 Picture
								d	l	x	f	
外螺纹 Extrnal	16ER-10RD	●	●	16EL-10RD			10	9.525	16	1.1	1.2	
	16ER-8RD	●	●	16EL-8RD			8	9.525	16	1.4	1.3	
	16ER-6RD	○	○	16EL-6RD			6	9.525	16	1.5	1.7	
	22ER-6RD			22EL-6RD			6	12.7	22	1.5	1.7	
	22ER-4RD			22EL-4RD			4	12.7	22	2.2	2.3	
	27ER-4RD			27EL-4RD			4	15.875	27	2.2	2.3	
内螺纹 Internla	16IR-10RD	●	●	16IL-10RD			10	9.525	16	1.1	1.2	
	16IR-8RD	○	○	16IL-8RD			8	9.525	16	1.4	1.4	
	16IR-6RD	○	○	16IL-6RD			6	9.525	16	1.4	1.5	
	22IR-6RD			22IL-6RD			6	12.7	22	1.5	1.7	
	22IR-4RD			22IL-4RD			4	12.7	22	2.2	2.3	
	27IR-4RD			27IL-4RD			4	15.875	27	2.2	2.3	

## DIN103 梯形螺纹 Trapez DIN103

类型 Type	型号 Designation 右手 (right)	SMX30	SMM50	型号 Designation 左手 (left)	SMX30	SMM50	螺距 (mm)	尺寸 Dimensions(mm)				图片 Picture
								d	l	x	f	
外螺纹 Extrnal	11ER-1.5TR	○	○	11EL-1.5TR			1.5	6.35	11	0.8	0.9	
	16ER-1.5TR	●	●	16EL-1.5TR			1.5	9.525	16	1.0	1.1	
	16ER-2.0TR	●	●	16EL-2.0TR			2.0	9.525	16	1.1	1.3	
	16ER-3.0TR	●	●	16EL-3.0TR			3.0	9.525	16	1.3	1.5	
	22ER-4.0TR	●	●	22EL-4.0TR			4.0	12.7	22	1.7	1.9	
	22ER-5.0TR	●	●	22EL-5.0TR			5.0	12.7	22	2.1	2.5	
内螺纹 Internla	11IR-1.5TR	●	●	11IL-1.5TR			1.5	6.35	11	0.8	0.9	
	16IR-1.5TR	●	●	16IL-1.5TR			1.5	9.525	16	1.0	1.1	
	16IR-2.0TR	○	○	16IL-2.0TR			2.0	9.525	16	1.1	1.3	
	16IR-2.5TR	●	●	16IL-2.5TR			2.5	9.525	16	1.2	1.4	
	16IR-3.0TR	●	●	16IL-3.0TR			3.0	9.525	16	1.3	1.5	
	22IR-4.0TR	●	●	22IL-4.0TR			4.0	12.7	22	1.7	1.9	
	22IR-5.0TR	●	●	22IL-5.0TR			5.0	12.7	22	2.1	2.5	
	27IR-6.0TR	●	●	27IL-6.0TR			6.0	15.875	27	2.3	2.7	

## 美式梯形螺纹 ACME American ACME

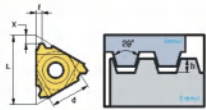
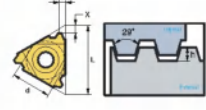
类型 Type	型号 Designation 右手 (right)	SMX30	SMM50	型号 Designation 左手 (left)	SMX30	SMM50	TPI	尺寸 Dimensions(mm)				图片 Picture
								d	l	x	f	
外螺纹 Extrnal	11ER-16ACME			11EL-16ACME			16	6.35	11	1.0	1.1	
	16ER-16ACME			16EL-16ACME			16	9.525	16	1.0	1.1	
	16ER-14ACME			16EL-14ACME			14	9.525	16	1.0	1.2	
	16ER-12ACME	●	●	16EL-12ACME			12	9.525	16	1.1	1.2	
	16ER-10ACME	●	●	16EL-10ACME			10	9.525	16	1.3	1.4	
	16ER-8ACME	●	●	16EL-8ACME			8	9.525	16	1.4	1.5	
	16ER-6ACME	○	○	16EL-6ACME			6	9.525	16	1.7	1.9	
	22ER-6ACME	○	○	22EL-6ACME			6	12.7	22	1.8	2.1	
	22ER-5ACME			22EL-5ACME			5	12.7	22	2.0	2.3	
27ER-4ACME			27EL-4ACME			4	15.875	27	2.4	2.7		
内螺纹 Internla	11IR-16ACME			11IL-16ACME			16	6.35	11	0.9	0.9	
	16IR-16ACME			16IL-16ACME			16	9.525	16	1.0	1.1	
	16IR-14ACME			16IL-14ACME			14	9.525	16	1.1	1.2	
	16IR-12ACME	●	●	16IL-12ACME			12	9.525	16	1.2	1.3	
	16IR-10ACME	●	●	16IL-10ACME			10	9.525	16	1.2	1.3	
	16IR-8ACME	●	●	16IL-8ACME			8	9.525	16	1.4	1.5	
	16IR-6ACME	○	○	16IL-6ACME			6	9.525	16	1.7	1.9	
	22IR-6ACME	○	○	22IL-6ACME			6	12.7	22	1.8	2.1	
	22IR-5ACME			22IL-5ACME			5	12.7	22	2.0	2.3	
27IR-4ACME			27IL-4ACME			4	15.875	27	2.3	2.6		

●: 库存项    ○: 准库存  
●: Stock item    ○: Underpring forstock

Http://http://www.sandhogtools.com /D012/

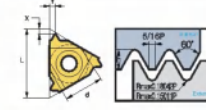


## 美制短牙梯形螺纹 STUB ACME

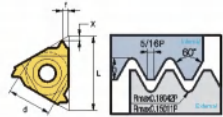
类型 Type	型号 Designation 右手 (right)	SMX30	SMM50	型号 Designation 左手 (left)	SMX30	SMM50	TPI	尺寸 Dimensions(mm)				图片 Picture
								d	l	x	f	
外螺纹 Extrnal	11ER-16STACME			11EL-16STACME			16	6.35	11	1.0	1.0	
	16ER-16STACME			16EL-16STACME			16	9.525	16	1.0	1.0	
	16ER-14STACME			16EL-14STACME			14	9.525	16	1.1	1.1	
	16ER-12STACME			16EL-12STACME			12	9.525	16	1.2	1.2	
	16ER-10STACME			16EL-10STACME			10	9.525	16	1.2	1.3	
	16ER-8STACME			16EL-8STACME			8	9.525	16	1.4	1.5	
	16ER-6STACME			16EL-6STACME			6	9.525	16	1.7	1.8	
	22ER-6STACME			22EL-6STACME			6	12.7	22	1.7	1.8	
	22ER-5STACME			22EL-5STACME			5	12.7	22	2.1	2.3	
	27ER-4STACME			27EL-4STACME			4	15.875	27	2.3	2.4	
	27ER-3STACME			27EL-3STACME			3	15.875	27	2.9	2.9	
内螺纹 Internla	11IR-16STACME			11IL-16STACME			16	6.35	11	1.0	1.0	
	16IR-16STACME			16IL-16STACME			16	9.525	16	1.0	1.0	
	16IR-14STACME			16IL-14STACME			14	9.525	16	1.1	1.1	
	16IR-12STACME			16IL-12STACME			12	9.525	16	1.1	1.2	
	16IR-10STACME			16IL-10STACME			10	9.525	16	1.2	1.3	
	16IR-8STACME			16IL-8STACME			8	9.525	16	1.4	1.5	
	16IR-6STACME			16IL-6STACME			6	9.525	16	1.7	1.8	
	22IR-6STACME			22IL-6STACME			6	12.7	22	1.7	1.8	
	22IR-5STACME			22IL-5STACME			5	12.7	22	2.1	2.3	
	27IR-4STACME			27IL-4STACME			4	15.875	27	2.3	2.4	
	27IR-3STACME			27IL-3STACME			3	15.875	27	2.9	2.9	



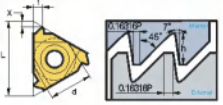
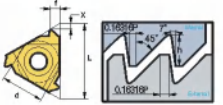
## 精密圆弧牙顶60° 螺纹UNJ

类型 Type	型号 Designation 右手 (right)	SMX30	SMM50	型号 Designation 左手 (left)	SMX30	SMM50	TPI	尺寸 Dimensions(mm)				图片 Picture
								d	l	x	f	
外螺纹 Extrnal	11ER-48UNJ			11EL-48UNJ			48	6.35	11	0.6	0.5	
	11ER-44UNJ			11EL-44UNJ			44	6.35	11	0.6	0.6	
	11ER-40UNJ			11EL-40UNJ			40	6.35	11	0.6	0.6	
	11ER-36UNJ			11EL-36UNJ			36	6.35	11	0.6	0.6	
	11ER-32UNJ			11EL-32UNJ			32	6.35	11	0.6	0.7	
	11ER-28UNJ			11EL-28UNJ			28	6.35	11	0.7	0.7	
	11ER-24UNJ			11EL-24UNJ			24	6.35	11	0.7	0.8	
	11ER-20UNJ			11EL-20UNJ			20	6.35	11	0.8	0.9	
	11ER-18UNJ			11EL-18UNJ			18	6.35	11	0.8	1.0	
	11ER-16UNJ			11EL-16UNJ			16	6.35	11	0.9	1.1	
	11ER-14UNJ			11EL-14UNJ			14	6.35	11	1.0	1.2	
	16ER-48UNJ			16EL-48UNJ			48	9.525	16	0.6	0.5	
	16ER-44UNJ			16EL-44UNJ			44	9.525	16	0.6	0.6	
	16ER-40UNJ			16EL-40UNJ			40	9.525	16	0.6	0.6	
	16ER-36UNJ			16EL-36UNJ			36	9.525	16	0.6	0.6	
	16ER-32UNJ			16EL-32UNJ			32	9.525	16	0.6	0.7	
	16ER-28UNJ			16EL-28UNJ			28	9.525	16	0.7	0.7	
	16ER-24UNJ			16EL-24UNJ			24	9.525	16	0.7	0.8	
	16ER-20UNJ			16EL-20UNJ			20	9.525	16	0.8	0.9	
	16ER-18UNJ			16EL-18UNJ			18	9.525	16	0.8	1.0	
	16ER-16UNJ			16EL-16UNJ			16	9.525	16	0.9	1.1	
	16ER-14UNJ			16EL-14UNJ			14	9.525	16	1.0	1.2	
	16ER-13UNJ			16EL-13UNJ			13	9.525	16	1.0	1.3	
	16ER-12UNJ			16EL-12UNJ			12	9.525	16	1.1	1.3	
	16ER-11UNJ			16EL-11UNJ			11	9.525	16	1.2	1.5	
	16ER-10UNJ			16EL-10UNJ			10	9.525	16	1.2	1.5	
	16ER-9UNJ			16EL-9UNJ			9	9.525	16	1.3	1.7	
	16ER-8UNJ			16EL-8UNJ			8	9.525	16	1.2	1.6	
	22ER-7UNJ			22EL-7UNJ			7	12.7	22	1.7	2.3	
	22ER-6UNJ			22EL-6UNJ			6	12.7	22	1.7	2.3	
	22ER-5UNJ			22EL-5UNJ			5	12.7	22	1.8	2.5	
	27ER-4.5UNJ			27EL-4.5UNJ			4.5	15.875	27	2.0	2.7	
	27ER-4UNJ			27EL-4UNJ			4	15.875	27	2.2	3.0	

## 精密圆弧牙顶60° 螺纹UNJ

类型 Type	型号 Designation 右手 (right)	SMX30	SMX50	型号 Designation 左手 (left)	SMX30	SMX50	TPI	尺寸 Dimensions(mm)				图片 Picture
								d	l	x	f	
内螺纹 Internal	11IR-48UNJ			11IL-48UNJ			48	6.35	11	0.6	0.5	
	11IR-44UNJ			11IL-44UNJ			44	6.35	11	0.6	0.6	
	11IR-40UNJ			11IL-40UNJ			40	6.35	11	0.6	0.6	
	11IR-36UNJ			11IL-36UNJ			36	6.35	11	0.6	0.6	
	11IR-32UNJ			11IL-32UNJ			32	6.35	11	0.6	0.7	
	11IR-28UNJ			11IL-28UNJ			28	6.35	11	0.7	0.7	
	11IR-24UNJ			11IL-24UNJ			24	6.35	11	0.7	0.8	
	11IR-20UNJ			11IL-20UNJ			20	6.35	11	0.8	0.9	
	11IR-18UNJ			11IL-18UNJ			18	6.35	11	0.8	1.0	
	11IR-16UNJ			11IL-16UNJ			16	6.35	11	0.9	1.1	
	11IR-14UNJ			11IL-14UNJ			14	9.525	11	1.0	1.2	
	16IR-48UNJ			16IL-48UNJ			48	9.525	16	0.6	0.5	
	16IR-44UNJ			16IL-44UNJ			44	9.525	16	0.6	0.6	
	16IR-40UNJ			16IL-40UNJ			40	9.525	16	0.6	0.6	
	16IR-36UNJ			16IL-36UNJ			36	9.525	16	0.6	0.6	
	16IR-32UNJ			16IL-32UNJ			32	9.525	16	0.6	0.7	
	16IR-28UNJ			16IL-28UNJ			28	9.525	16	0.7	0.7	
	16IR-24UNJ			16IL-24UNJ			24	9.525	16	0.7	0.8	
	16IR-20UNJ			16IL-20UNJ			20	9.525	16	0.8	0.9	
	16IR-18UNJ			16IL-18UNJ			18	9.555	16	0.8	1.0	
	16IR-16UNJ			16IL-16UNJ			16	9.525	16	0.9	1.1	
	16IR-14UNJ			16IL-14UNJ			14	9.525	16	1.0	1.2	
	16IR-13UNJ			16IL-13UNJ			13	9.525	16	1.0	1.3	
	16IR-12UNJ			16IL-12UNJ			12	9.525	16	1.1	1.3	
	16IR-11UNJ			16IL-11UNJ			11	9.525	16	1.2	1.5	
	16IR-10UNJ			16IL-10UNJ			10	9.525	16	1.2	1.5	
	16IR-9UNJ			16IL-9UNJ			9	9.525	16	1.3	1.7	
	16IR-8UNJ			16IL-8UNJ			8	9.525	16	1.2	1.6	
	22IR-7UNJ			22IL-7UNJ			7	12.7	22	1.7	2.3	
	22IR-6UNJ			22IL-6UNJ			6	12.7	22	1.7	2.3	
22IR-5UNJ			22IL-5UNJ			5	12.7	22	1.8	2.5		
27IR-4.5UNJ			27IL-4.5UNJ			4.5	15.875	27	2.0	2.7		
27IR-4UNJ			27IL-4UNJ			4	15.875	27	2.2	3.0		

## 美制锯齿螺纹 American Buttress

类型 Type	型号 Designation 右手 (right)	SMX30	SMX50	型号 Designation 左手 (left)	SMX30	SMX50	TPI	尺寸 Dimensions(mm)				图片 Picture
								d	l	x	f	
外螺纹 Extrnal	11ER-20ABUT			11EL-20ABUT			20	6.35	11	1.0	1.4	
	11ER-16ABUT			11EL-16ABUT			16	6.35	11	1.3	1.9	
	16ER-20ABUT			16EL-20ABUT			20	9.525	16	1.0	1.4	
	16ER-16ABUT			16EL-16ABUT			16	9.525	16	1.3	1.9	
	16ER-12ABUT			16EL-12ABUT			12	9.525	16	1.4	2.0	
	16ER-10ABUT			16EL-10ABUT			10	9.525	16	1.5	2.3	
	22ER-8ABUT			22EL-8ABUT			8	12.7	22	2.0	3.2	
	22ER-6ABUT			22EL-6ABUT			6	12.7	22	2.2	3.5	
内螺纹 Internal	11IR-20ABUT			11IL-20ABUT			20	6.35	11	1.0	1.4	
	11IR-16ABUT			11IL-16ABUT			16	6.35	11	1.3	1.9	
	16IR-20ABUT			16IL-20ABUT			20	9.525	16	1.0	1.4	
	16IR-16ABUT			16IL-16ABUT			16	9.525	16	1.3	1.9	
	16IR-12ABUT			16IL-12ABUT			12	9.525	16	1.4	2.0	
	16IR-10ABUT			16IL-10ABUT			10	9.525	16	1.5	2.3	
	22IR-8ABUT			22IL-8ABUT			8	12.7	22	2.0	3.2	
	22IR-6ABUT			22IL-6ABUT			6	12.7	22	2.2	3.5	

- : 库存项      ○: 准库存
- : Stock item      ○: Underpring forstock



## 立式车螺纹刀片 Vertical threading inserts

类型 Type	型号 Designation 右手 (right)	SMX30 SMM50	型号 Designation 左手 (left)	SMX30 SMM50	螺距 (mm)	TPI	尺寸 Dimensions(mm)			图片 Picture
							d	l	x	
不完全修光刃 60°	16VER-A60	○ ○	16VEL-A60		0.5~1.5	48~16	9.525	16	0.9	
	16VER-G60	● ●	16VEL-G60		1.75~3.0	14~8	9.525	16	1.7	
	16VER-AG60	● ●	16VEL-AG60		0.5~3.0	48~8	9.525	16	1.7	
	22VER-G60	○ ○	22VEL-G60		1.75~3.0	14~8	12.7	22	2.5	
	22VER-N60	● ●	22VEL-N60		3.5~5.0	7~5	12.7	22	2.5	
不完全修光刃 55°	16VER-A55	○ ○	16VEL-A55		0.5~1.5	48~16	9.525	16	0.9	
	16VER-G55	● ●	16VEL-G55		1.75~3.0	14~8	9.525	16	1.7	
	16VER-AG55	● ●	16VEL-AG55		0.5~3.0	48~8	9.525	16	1.7	
	22VER-G55	○ ○	22VEL-G55		1.75~3.0	14~8	12.7	22	2.5	
	22VER-N55	● ●	22VEL-N55		3.5~5.0	7~5	12.7	22	2.5	



## JTGR 立装外切槽用 JTGR Vertical external groove

图片 Picture	刀片型号	尺寸 Dimensions(mm)			SMX30		SMM50	
		W=0.1mm	φd	S	R	L	R	L
	JTGR/L3100	1.00	9.525	3.97	●		●	
	JTGR/L3115	1.15			○		○	
	JTGR/L3120	1.20			●		●	
	JTGR/L3135	1.35			○		○	
	JTGR/L3150	1.50			●		●	
	JTGR/L3165	1.65			●		●	
	JTGR/L3175	1.75			●		●	
	JTGR/L3195	1.95			○		○	
	JTGR/L3200	2.00			●		●	
	JTGR/L3220	2.20			●		●	
	JTGR/L3250	2.50			●		●	
	JTGR/L3265	2.65			●		●	
	JTGR/L3300	3.00			●		●	

●: 库存项      ○: 准库存  
●: Stock item      ○: Underpring forstock



## TGF 立装外切槽用 TGF Vertical external groove

图片 Picture	刀片型号	尺寸 Dimensions(mm)			SMM30		SMM50	
		W=0.1mm	φd	S	R	L	R	L
	TGF32R050	0.50	9.525	3.18	●		●	
	TGF32R075	0.75			●		●	
	TGF32R090	0.90			●		●	
	TGF32R100	1.00			●		●	
	TGF32R125	1.25			●		●	
	TGF32R140	1.40			●		●	
	TGF32R150	1.50			●		●	
	TGF32R175	1.75			●		●	
	TGF32R190	1.90			●		●	
	TGF32R200	2.00			●		●	
	TGF32R240	2.40			●		●	
	TGF32R250	2.50			●		●	

●: 库存项      ○: 准库存  
●: Stock item      ○: Underpring forstock

## 螺纹加工常见的问题及解决办法

问题	原因	措施
后刀面磨损过大	切削速度太高	降低切削速度
	进刀太浅，发生摩擦磨损	减少进刀次数，减小切削刃摩擦次数
	刀片位于中心线以上	采用正确的中心高
左，右切削刃磨损不均	刀片刃倾角与螺纹螺旋角不一致	更换合适的刀垫已获得正确的刀刃倾角
	侧向进刀方式不正确	改变侧向进刀方式
崩刃，破损	切削速度过慢	提高切削速度
	切削力过大	增加进刀数，减少最大的进刀量
	在不稳定夹紧状态下切削	检查工件是否有震动 缩小刀具悬伸量 确认工件刀具的夹紧状态
	缠屑	增加冷却液供应
塑性变形	切削速度快，切削区域温度过高	提高切削速度 增加进刀次数，减小最大进给深度。
	切削液供给不充分	增加冷却液供应
螺纹表面质量不高	切削速度太低 刀片位于中心高上 切屑不受控制	提高切削速度 调整中心高 变更刀具的进行方式，稳妥处理刀屑
螺纹牙形不正确	中心高不正确	调整中心高
	机床上的螺距不正确	矫正机床
浅牙形	切削深度设定不确定	修改切削深度
表面损伤	发生切屑卷入或接触	改为齿侧面横切，控制到屑排出方向。
产生积屑瘤	切削温度太低。 常常发生在加工不锈钢和低碳钢时	提高切削速度和切削液压力与浓度 选择有良好韧性的刀片
表面出现挤裂	切削力过大	降低每步切削深度
震动	工件或刀具的夹紧不正确	确认工件与刀具的夹紧状态 最小化刀具悬深
	切削参数不正确	提高切削速度或大幅度降低切削速度
	刀具装夹不正确	调整中心高度



## The threaded processing common problems and solutions

Problem	Possible Cause	Solution
Excessive flank wear	Cutting speed too high	Reduce cutting speed
	Too small depth of cut cause frictional wear	Reduce the number of passes and cutting friction on the cutting edge
	Insert is over the center line	Use the right center height
Uneven wear in the left and right flank faces	Incorrect relief angles for the thread's lead angle	Select a proper shim to get a correct cutting edge inclination
	Flank infeed method is not appropriate	Change to alternative flank infeed
Edge breakage	Too low cutting speed	Increase the cutting speed
	Too large cutting force	Increase the number of passes, Decrease the depth of cut
	Cutting in unstable holding of the workpiece and the tool	Check stability of the workReduce the cutter overhang Check the holding of the workpiece and the tool
	winding crumbs	Supply sufficient coolant to the cutting point
Distinct Plastic deformation	Too high cutting speed excess temperature in the cutting area	Increase the cutting speed Increase the feeding times, reduce the maximal depth of cut
	Insufficient coolant supply	Supply sufficient coolant to the cutting point
Poor surface finish	cutting speed too slow Inserts is over the center height Uncontrolled cutting chip	Increase the cutting speed Adjust the center high Change the tool path mode, dispose the chip properly
Inaccurate thread form	Incorrect center height	Adjust the machine tool
	Inaccurate tool setting	Adjust the depth of cut
Shallow thread form	Incorrect depth of cut	Adjust the depth of cut
Surface damage	Chip involved or touched	Instead of tooth flank crosscut Regulate the direction of the chip expelled
Build-up edge	Too low cutting edge temperature Occured in processing stainless steel and low carbon steel	Increase the cutting speed Increase the pressure and concentration of cutting fluid Select inserts with good toughness
Insert cracking	the cutting force is too large	Reduce the depth of cut per pass
Shake	Incorrect holding of the workpiece and the tool	Check the holding of workpiece and tool Minimize the cutter overhang
	Incorrect cutting parameters	Increase the cutting speed or reduce cutting speed substantially
	Incorrect tool clamping systems	Adjust the center height

## 应用材料 Application grade

材质 Grade	应用 Appication	图例 Sample
SMX30	TiN PVD 涂层，适合于钢和不锈钢的低速切削。 TiN PVD coating for lowing cutting speed, works well with wide range of steel and stainless steel.	
SMX35	TiALN PVD 涂层，优良的耐断裂韧性和耐磨性适合于钢和不锈钢的中高速切削。 Multi layer PVD coated sub-Micrograin Grade provides good fracture toughness and excellent wearresistance, it is good for stainless steels and sxotic materials at high cutting speeds.	

### 螺纹车削技术资料 Technical Information For Threading

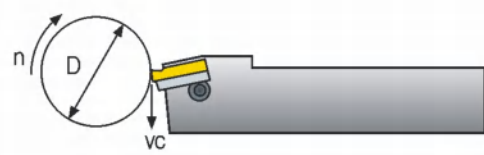
#### 根据不同被加工件推荐切削速度 ( VC ) Thread tuning speed selection

材质 Grade		ISOvc ( M/M/IN )	
		SMX30	SMM50
P	中&低碳钢 Low & Medium Carbon Steels	20-100	90-240
	高碳钢 High Carbon Steels	30-80	80-170
	合金钢、调质钢 Alloy Steels & Treated Steels	40-90	90-130
	铸钢 Cast Steels	40-90	120-180
M	不锈钢 Stain less Steels	30-90	70-180
K	铸铁 Cast Iron	40-90	70-160
N	非铁合金 Non Ferrous & Aluminium	20-120	140-290

#### 转速N计算 Calculation of N ( PRM )

$$VC = \frac{\pi \times D \times N}{1000}$$

$$N = \frac{vc \times 1000}{\pi \times D}$$



N-每分钟转速 Revolution per Minute ( min-1 )  
VC-切削速度 Cutting Speed ( m/min )  
D-被加工件直径 Workpiece Diameter ( mm )

#### 注意:

- 中高数值适合大多数情况。
- 越硬的材料可以选择越多的走到次数。
- 较多的走刀次数，比较快的切削速度更利于加工。
- 每次进给都应确保机床的负荷程度。

#### 进刀次数 Number of passes

螺距 Pitch	mm	0.50	0.75	1.00	1.25	1.50	1.75	2.00
	TPI	48	32	24	20	16	14	12
进刀次数 NO .of passes		4-6	4-7	4-8	5-9	6-10	7-12	7-12
螺距 Pitch	mm	2.50	3.00	3.50	4.00	5.00	5.50	6.00
	TPI	10	8	17	6	5.5	4.5	4
进刀次数 NO .of passes		8-14	9-16	10-18	11-18	11-19	12-20	12-20
螺距 Pitch	mm	8.00						
	TPI	3						
进刀次数 NO .of passes		15-24						

#### NOTES:

- For most stand ard applications, the middle of the range is a good starting point.
- For most materials, the tougher the material, the higher the number of cutting passes you should select.
- As a general rule of thumb , less passes are better that more speed.
- Infeed per pass should ensure an even machine load.

三韩生产基地



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