

螺 钢
套 丝

正和制造



XIN XIANG CITY ZHENGHE INDUSTRY CO.,LTD



新乡市正和工业有限责任公司

ZHENGHE

XIN XIANG CITY INDUSTRY CO.,LTD

正和工业有限责任公司

地址：河南新乡工业园区工业大道中段

电话：0373-3686718 3686719

传真：0373-3686717

网址：www.zhenghe168.com

电邮：zhenghe@vip.sohu.com



中国 · 新乡

卓越 诚信 团队精神

创新 高效 坚韧不拔



ZHENGHE INDUSTRY CO.,LTD



正和工业有限责任公司

目录 Contents

- | | |
|--------|--------------------------------|
| 公司简介 | 1 Company profile |
| 质量方针目标 | 2 quality policy goal |
| 公司荣誉 | 3 Company honor |
| 厂区图片 | 4 Factory pictures |
| 产品介绍 | 5 product introduction |
| 使用说明书 | 6 operation instruction manual |
| 安装过程 | 7 setting process |

ZHENGHE
INDUSTRY CO.,LTD



公司简介

新乡市正和工业有限责任公司（原印汽公司）位于河南新乡工业园区，主要是以钢丝螺套系列产品的生产、销售、研制、设计为一体的专业化生产企业。

公司以雄厚的技术开发实力、领先的设计水平、一流的生产检测设备、科学规范的经营管理和完善的质量保证体系，在全国同行业中处于领先地位。产品畅销世界各地，在国内同行业中率先研制使用自动化生产线，并采用先进的检测仪器，对产品实行严格检测，使产品质量和经济效益稳步提高。

公司同时还生产汽车零部件、滤芯滤器、康复器械等机械产品。生产管理人员均严格培训后上岗。多年来，技术人员曾多次开发和研制新产品，替代进口；尤其在螺纹连接新工艺上，为制造业做出了应有的贡献。公司率先取得ISO9001国际质量管理体系认证，并于2000年在钢丝螺套的基础上成功研制出具有锁紧功能的自锁螺母，该产品可以防止螺母在各类机械设备振动时的松动，于2001年自行开发研制出55°圆柱管螺纹钢丝螺套，填补国内空白。我公司产品经中国航空标准件检测中心检测，各项指标均符合标准。

公司专注于产品质量与用户的利益，不断向市场推出高品质的产品，坚持以质量为本，信誉至上的思想为指导，靠过硬的质量占领市场，以诚信求合作，靠严格的管理和先进的技术求发展。产品经多家大型企业使用后，质量和信誉均受好评！

公司郑重承诺“真质量。低价格”，为用户提供全方位的服务。

company profile

Xinxiang zhenghe industry co.ltd (the former yinqi company),mainly produces sells,develops and designs a series of wire threaded bush, which lies in xinxiang industrial zone of Henan province.

The company possesses of the leading position among the fellow traders, depending on the strong technical developing power, advanced designing level, first-class checking equipment, scientific management and perfect quality guarantee system.

Our products are popular around the world , the automatic line is developed and applied among fellow traders.

In the meantime, other mechanical products such as automobile parts, recovery devices, technician continuously develop the new products alternative to the import products. Especially, our company devotes into manufacturing industry on the new

technique of the screw flight joint .The company gets the ISO:9001 international quality assurance system and develops the self-locking nut based the thread insert which can prevent the nut loosening with kinds of mechanical facilities librating in2001.We develop the we develop the degree 15 thread insert of cylindrical cast screw which fills the gaps .

Our company focuses on product quality and user interest, and present to high-quality products constantly. Adhering to quality-oriented and the supremacy of credibility as a guide, we are going to occupy the market depending on strongly quality, seek cooperation in good facials and develop through strict management and advanced technology.

质量方针

开拓创新、务实诚信、争创国内第一。

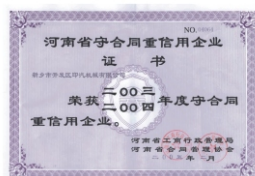
质量目标

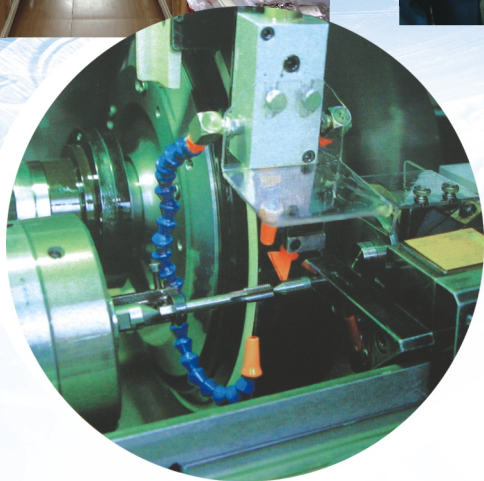
1. 不断改进生产工艺，自行设计并开发钢丝螺套新产品，填补国内空白。
2. 产品出厂检验合格率达到100%。
3. 销售合同履约率100%，顾客满意度不低于90分。

质量承诺

真质量，低价格，为用户提供全方位服务。

公司荣誉





钢丝螺套主要应用

钢丝螺套简称丝套，是一种新型的螺纹紧固件，是由高精度菱形截面的不锈钢丝精确加工而成的一种弹簧状内外螺纹同心体。丝套装入产品后能形成符合国际标准高精度内螺纹，其性能均优于攻丝形成的螺纹。

主要应用：

1、装入金属或非金属材料(如铝、镁等轻合金工程材料)的机械零部件上，能形成高强度、耐磨损、高精度的标准内螺纹。

典型应用：高压开关设备、液力机械、焊接设备、烟草机械、微波通讯、汽车零部件、空分设备、煤机、动力机械、纺织化纤机械及家具等。

2、在对螺纹加工错误或已损坏的内螺孔修复时，螺纹丝套(钢丝螺套)可作为修复手段，能得到快速有效地修复。

典型应用：各种零部件螺孔脱扣后修复，如：注塑机模板螺孔的修复、发动机缸体螺孔的修复等。

3、利用丝套进行英制←→公制螺纹孔转换，非常方便、快速。

典型应用：进口设备或机械英制螺纹由于备件供应问题需要改成公制螺纹的。

The main application of the thread insert

The thread insert, named wire bushing briefly, is a kind of new thread fastener, it is a type of concentric body with inside and outside screw flight of spring which is made of the stainless steel wire of high precision diamond section. It can be formed into internal thread of high accuracy according to international standard and its property excels this screw threaded.

the main Applications

1、It is enclosed into the metallic or nonmetallic materials of machinery components and is formed into the standard internal thread of high strength. Wear resistance and precision.

The typical applications; the high voltage switchgear, the hydraulic machinery, the welding equipment, the automobile parts and so on.

2、It can be utilized in repairing these internal thread effectively that are incorrect machined and damaged.

The typical applications: the restoration of kinds of members tap hole tripped.

For example: the tap hole of the shoe of the injection molding machine, the tap hole of the cylinder of the engine.

3、The thread insert is used to the conversion of English and metric tap hole conveniently and fastly.

The typical applications: the English screw need to be changed into the metric screw for the availability of the spare parts.

本公司提供以下产品标准 Company Product Standard

企业标准	Q/YJ001-2002	美国宇航标准	AIA/NAS NASM33537
国家军用标准	GJB119-2001	英国丝贝发动机标准	ADS824
航空工业标准	HB5513-96	德国标准	DIN8140
机械工业部标准	JB/T 7604-94		

普通型钢丝螺套

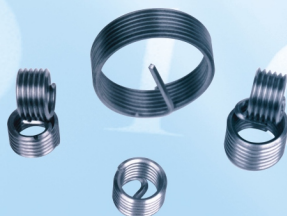
材料：1Cr18Ni9(1Cr18Ni9Ti)

是由菱形多圈螺旋线圈组成，各种材料上使用它都能增强螺纹连接强度，普通型钢丝螺套分为有折断槽和无折断槽两种，有折断槽的丝套用于通孔或盲孔，无折断槽的丝套仅用于盲孔。

the common thread insert

material :1cr18ni9(1Cr18Ni9Ti)

It is composed of the multi-turn helix of rhombic and be capable of enhancing the screw connecting strength .It is divided into two categories ,with gutter of rupture and without gutter of rupture .The former is used for the through hole or the blind hole and the latter is used for the blind hole only.



手动安装扳手

材料：≤M8 LY12 ≥M10 45#钢

用于丝套的安装，其基本原理是使丝套通过扳手前一段引导螺纹，迫使外径收缩，以便顺利装入底孔，使用安装扳手安装，可以提高效率，同时减少报废率。

the manual wrench

Material: ≤M8 LY12 ≥M10 45# steel

It is used for the installment of the thread insert .It is the basic principle that the thread insert is guided firstly to force the outside diameter shrinkage to pack it into the bottom hole smoothly. The efficiently is enhanced and the scrap rate is reduced through using the wrench.



锁紧型钢丝螺套

材料：1Cr18Ni9(1Cr18Ni9Ti)

是由菱形截面的钢丝绕成的多圈螺旋线圈，并有一圈以上多边形锁紧圈，当螺钉拧入螺孔进入锁紧装置时，需用工具加力拧入，其锁紧圈可以锁紧螺钉，防止螺纹连接松动，反复拆卸，锁紧力矩长久保持。

the locking thread insert

material :1cr18ni9(1Cr18Ni9Ti)

It is composed of the multi-turn helix of rhombic and has more than one polygon locking ring . when the nut is screwed ,into the locking devices ,it is locking ring can lock the nut after pressure to prevent the screen joint loosening.



电动安装扳手

使用范围：M3~M12

用于大批量丝套的安装或适用于装配生产线。

the electric wrench

The using range :M3-M12

It is used in the assemblage of the multitudinous thread insert or used in the assembling the production.



专用丝锥

材料：高速钢(6542 9341)

用于加工丝套底孔的专用丝锥，可机用也可手用。又分为：直槽、螺旋槽、挤压丝锥。

the special tap

Material: the high-speed steel (6542 9341).

It is used to work the thread insert's bottom hole which is used mechanically and manually .it is divided into three categories . the straight channel ,the spiral scroll and the squeezing tap.



安装柄冲断器

材料：40Cr

用于去除安装在通孔内的安装柄，将冲断器对准安装柄，用200g左右的榔头猛击一下即可去除，使其形成通孔。

the tail of break-off tool

Material: 40cr

It is used in breaking off the thread insert tail of the through hole .the break-off tool is aligned to the tail and breaks offit with a 200g hammer punching to form it into the throng hole.



卸套器

材料：高速钢

用于取出安装过程中出现问题的丝套，用榔头猛击一下，加力按下手柄，反方向旋转即可取出，再重新安装丝套。

Extractor

Material:the high-speed steel

Enable users to extractor a thread insert fitted with defect. Thanks to it is triangular shape ,the extractor can be locked into the thread insert , by rotating the tool while keeping a vertical thrust ,the thread insert can be unscrewed .



底孔塞规

材料：CrMn

用于检验钢丝螺套安装前的底孔尺寸，对工件精度要求较高或鉴别丝锥是否磨损时使用。

plug gauge

Material:CrMn

It enables users to check the conformity of the tapping before insertion of thread inserts for the work piece fo having high accuracy .



自锁型螺母

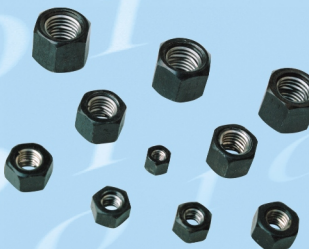
材料：35°钢

将锁紧型钢丝螺套装入螺母中，形成有锁紧功能的螺孔，能有效防止螺母在机器设备振动时松动，还能反复拆装使用。

the self-locking nut

Material:35° steel

It makes the nut impossible to unscrew when the machine is vibrating ,after the locking thread insert is stted into the nut .It is capable of removing and using time after time



维修螺孔工具箱

使用范围：M2-M64

用于无动力的任何场所，是现场维修螺孔的好帮手。

repair tool kit

Range :M2-M64

Repair kits provide all necessary tools to thread tapping or to quickly and economically repair them.



钢丝螺套简介

一、钢丝螺套简介

钢丝螺套简称“丝套”，是一种新型的螺纹连接元件，是由高强度，高精度的耐腐蚀菱形不锈钢丝精制而成。形如弹簧，旋入特定加大的专用螺孔内，其内表面形成新的螺孔，与螺钉(螺栓)配合时，可明显提高连接强度和耐磨性，特别在铝、镁、铸铁、塑料等低强度材料上。同时，改善了螺纹的受力情况，形成了弹性连接，消除了内外螺纹之间的螺距和牙型半角误差，使螺纹上的负荷均匀分布，保护了基体螺纹不被损坏，延长使用寿命。钢丝螺套由于优良的抗腐蚀、抗高温、抗磨损性能使之能在多种环境下确保其适用性，防止了螺纹锈死、卡死、脱扣现象发生。

钢丝螺套还可以作为修复手段，在内螺纹脱扣或乱牙时，使其快速有效地修复到原状，各项性能均优于攻丝形成的螺纹。

目前，国外钢丝螺套技术广泛用于航天、航空、船舶、兵器工业、光学仪器、无线电等各类仪器仪表。同时，大型机车、机组、汽车制造、冶金、电力、机械、化纤、化工等行业都广泛采用。

丝套安装后形成螺孔的公差带取决于丝套型面制造公差和丝套安装孔螺纹的公差带，主要取决于丝套安装孔的螺纹公差，即安装孔的攻丝精度，也就是专用丝锥的精度，通常达6H级，精度高时可达5H，4H级公差带，使用者可以根据所需公差带选择丝锥和攻丝方法及润滑方式等，以达到所要求。

the profile of the thread insert

the profile of the thread insert

The thread insert is a kind of screw connecting component witch consist of diamond-section stainless material with high strength and accuracy and corrosive resistance. Particularly adopted for soft materials such as aluminum, magnesium, cast iron ,plastic ,it improves the connecting strength and wear resistance when it is fit with nut after screwed into tapping .In the meantime ,thanks to its elasticity strains are distributed along the whole thread length ,by smoothing out unevenness in pitch and angle in thread walls.It makes screw load uniformly and prolongs it the life span. The thread insert may repair effectively these internal threads damaged ,its all characteristic excel those tapping holes !

Now, the technique of the outside thread insert is widely used in aerospace aviation ,shipbuilding military automotive metallurgy ,chemical industries and so on .

The tolcrmic rcmg of the take hole formed by the thread insert is decided by the manufacture ,tolerance of the moulding surface of the thread insert and the tolcrance range of the mounting hole ,the latter is central ,which is also the threading forecision of the mounting hole ,which is the accurany of the special tap ,usually to the tolcrance range of the 6H class ,sometimes to 5H or 4H class,with high accurany ,the users may select the tap ,threading means and lubricate manner based on the needed tolerance range.

二、钢丝螺套的优点

(1) 丝套是高精度的内、外螺纹同心体,其自由状态下外径比安装螺孔直径稍大,从而使丝套装好后,可以牢固地固定在螺孔内,不需采取其它固定措施,其各项性能均优于攻丝形成的螺纹。

(2) 丝套使螺钉与安装螺孔之间形成弹性联接,从而消除了内、外螺纹之间的螺矩和牙型误差,使每圈螺纹上的负荷均匀分布,并能减振,从而加强了内螺纹,增强了螺纹联接的承载能力和搞疲劳强度。光弹试验表明,不用丝套时,大部分应力集中在上面少数几扣螺纹上,大约只有三分之一的丝扣承担了大部分载荷。采用了丝套后,由于丝套有一定的柔性,在加载过程中能补偿螺栓导程和角度误差,大大减少靠近断面处螺纹第1-2扣应力,避免螺钉在此断裂及螺孔螺牙剪切磨损掉,从而使载荷向下延伸,均匀地分布到螺纹全长,提高了螺纹强度。

(3) 由于丝套是由高强度及高表面质量的不锈钢丝制成,表面粗糙度0.4,从而减少了螺钉与其的摩擦及磨损,可使螺钉上由于摩擦而产生的扭力减少90%,所以用最小的旋紧力矩即可得到最大的予紧力矩和螺钉拉力,防止螺钉松脱。

(4) 在与普通内螺纹同样的强度条件下,使用丝套后,可选用尺寸较小,强度较高的螺钉和基体材料,因为丝套使螺孔的强度大大提高,这样就可以节约材料,减少重量及体积。

(5) 在出现螺纹加工错误或修复损坏的内螺孔时,一般的做法是加大螺孔及螺钉,而使用丝套作为修复手段,不但能快速经济地修复到原始状态,且不增加重量和体积,从而可拯救设备中的主要部件,另外,一些设备上英制的螺孔有时因英制螺钉的短缺而不便维修,这时利用钢丝螺套进行公英制转换,非常方便、快速。

(6) 由于丝套的材料为耐热、耐腐蚀的优质不锈钢,从而可以防止螺纹连接的锈死、卡死、擦伤等不良现象的发生。

(7) 锁紧型丝套能把螺钉(螺栓)锁紧在螺纹孔中,在受到振动和冲击时,可使螺钉不致松脱,比其它一些常用的锁紧装置(如锁紧垫圈、弹簧垫圈等)的锁紧性能优越,还可反复拆卸使用。

(8) 丝套能提高接合面的密封性。

(9) 木制品、塑料制品都可以装入丝套,解决这些材料强度不足的弱点,从而节约大量的金属材料。

(10) 与衬套相比,使用丝套后,简化了工艺,解决了衬套精密螺纹加工和装配的难题,结构更加轻巧,而且内外螺纹之间无位移度、垂直度等位置偏差,提高螺孔位置精度。

(11) 高温部位使用丝套还可以减小零件热应力,防止螺纹连接卡死或擦伤。

(12) 在原有设计的规格上,使用丝套后,粗细牙可转换。例如:原粗牙M10X1.5可以改为细牙M10X1.25或M10X1,不需改变其它任何结构,看不出修理痕迹。

(13) 螺矩为1.5mm细牙规格时,直接装入丝套可缩小规格。例如:M14X1.5可变为M12X1.5,再装丝套可变为M10。

The merit of the thread insert

The thread insert is made of the stainless wire of high strength and surface quality .it has roughness of surface :Ra0.4 which reduces the friction and wearing be between thread insert and nut .Since hawing flexibility ,thread insert can compensate for the bolt lead and angle error under loading and prevent the nut rupturing and the screw flight wearing to improve the screw strength while loading extends downstairs to distribute the whole screw flight. Since the material is the stainless material of heat and corrosive resistance ,the thread insert keeps the joint of the screw form rusting ,jamming and abrasion .For the light metal ,it can strengthen the joint strength .It also repairs those tape holes damaged .

中国军用标准GJB5107-2002《锁紧型钢丝螺套通用规范》

单位: N·m

规格	最大锁紧力矩	最小锁紧力矩
3×0.5	0.49	0.07
4×0.7	0.98	0.15
5×0.8	1.96	0.25
6×1	2.94	0.39
7×1	4.90	0.59
8×1	6.86	0.74
8×1.25	6.86	0.78
10×1	9.31	1.27
10×1.25	9.31	1.30
10×1.5	9.31	1.37
12×1.25	14.71	1.80
12×1.5	14.71	1.86
12×1.75	14.71	1.95
14×1.5	22	2.60
16×1.5	33	3.70
16×2	33	4.00
18×1.5	48	5.50
注:力矩值可调整		

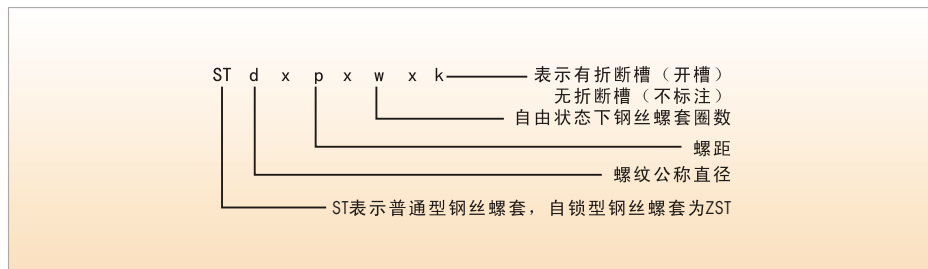
材料	使用温度	室温下最小拉伸应力	适用和应用示例
1cr18Ni9 (1Cr18Ni9Ti)	350℃	1400MPa	通过强度和材料的组合在通常情况下使用
00Cr17Ni14Mo2	350℃	1400MPa	增加抗腐蚀性: 轻型结构低的螺纹磨擦:海水获得成对铬镍螺线。 含氯液体

丝套安装内螺孔材料抗拉强度σ _b (MPa)	螺钉性能等级						
	3.6	5.8	8.8	9.8	10.9	12.9	14.9
80-150	1.5d	2d	2.5d	2.5d	2.5d	2.5d	3d
150-200	1d	1.5d	2d	2d	2d	2.5d	2.5d
200-250	1d	1.5d	1.5d	1.5d	2d	2.5d	2.5d
250-300	1d	1d	1.5d	1.5d	1.5d	2d	2d
300-400	0.5-1d	1d	1d	1.5d	1.5d	1.5d	2d
>400	0.5-1d	0.5-1d	1d	1d	1.5d	1.5d	1.5d

钢丝螺套标记方法 marking mehodcs

丝套的标记方法主要有以下两种：

1、按丝套圈数



标记示例；ST8×1×6k表示普通型有折断槽，用于安装M8×1螺钉的钢丝螺套，自由状态下为6圈。

2、按螺纹公称直径d的倍数。STd×p-0.5d.1d.1.5d.2d.2.5d.3d

钢丝螺套安装参数

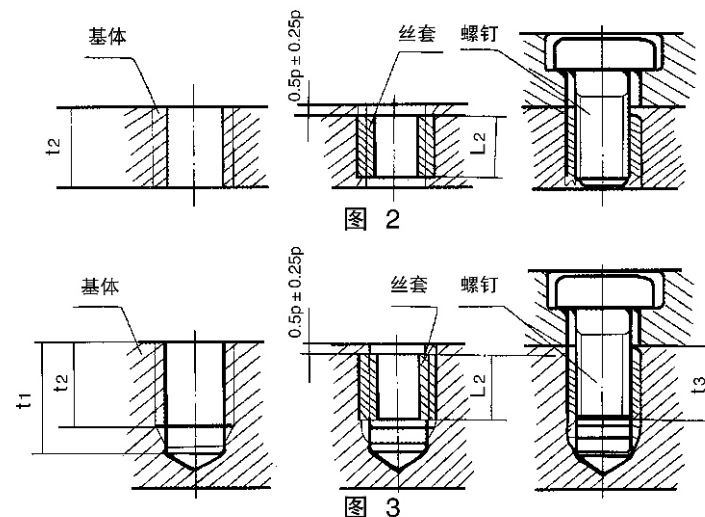
1.参数符号说明

- d 公称直径（螺钉）
- P 螺矩
- d0 丝套底孔小径
- dz 丝套自由状态下外径
- W 丝套自由状态下的圈数
- t1 盲孔深度
- t2 螺孔有效螺纹深度
- t3 不去除安装柄时，螺钉最大拧入深度
- L2 丝套安装后实际螺纹有效长度

marking mehodcs

- d nominal diameter nut
- P pitch
- d0 the minor diameter of the thread insert is bottom hole.
- dz the outside diameter of the thread insert' s bottom hole
- W the cylinder number of the
- t1 the depth of the blind hole.
- t2 the efficient depth of thread of tapping
- t3 the screw - in depth of the nut with nail
- L2 the efficient depth of the screw after setting the thread insert.

丝套安装螺孔及装配参数见图2（通孔）、图3（盲孔）



米制丝套圈数(w)近似计算尺寸表

螺距P Pitch	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2.5	3	3.5	4
系数(≈)	1.8	1.65	1.54	1.09	0.97	0.78	0.64	0.53	0.46	0.41	0.33	0.3	0.24	0.21

W≈系数×有效螺纹深度

2. 米制粗牙钢丝螺套尺寸及安装参数见表1。

米制细牙钢丝螺套尺寸及安装参数见表2。

3. 统一螺纹粗牙UNC钢丝螺套尺寸及安装参数见表3。

统一螺纹细牙UNF钢丝螺套尺寸及安装参数见表4。

4. 55° 圆柱管螺纹（G）钢丝螺套尺寸及安装参数见表5。

米制（M、MJ）系列粗牙钢丝螺套部分规格参数表

Metric Coarse Thread Series 表1

螺纹规格 d×p	L×d	t ₂ (mm)	d ₀ (mm)	t ₁ (mm)	L ₂ (mm)	t ₃ (mm)	d _z (mm)	W (≈)
2×0.4	1d	2	+0.09	4	1.6	1.6	2.62~2.76	2.9
	1.5d	3	2.09	5	2.6	2.6		5.5
	2d	4	0	6	3.6	3.6		7.5
2.5×0.45	1d	2.5	+0.10	4.3	2.1	2.1	3.22~3.40	3.5
	1.5d	3.25	2.6	5.6	3.3	3.3		5.9
	2d	5	0	6.8	4.6	4.6		8.1
3×0.5	1d	3	+0.112 3.11 0	5.8	2.5	2.5	3.82~4.00	4
	1.5d	4.5		7.3	4	4		6
	2d	6		8.8	5.5	5.5		8.7
4×0.7	1d	4	+0.14 4.15 0	7.8	3.3	3.3	5.12~5.30	4
	1.5d	6		9.8	5.3	5.3		6
	2d	8		11.8	7.3	7.3		8.4
5×0.8	1d	5	+0.16 5.17 0	9.2	4.2	4.2	6.32~6.54	4.3
	1.5d	7.5		11.7	6.7	6.7		7.0
	2d	10		14.2	9.2	9.2		9.7
6×1	1d	6	+0.19 6.22 0	11.1	5	5	7.62~7.84	4.2
	1.5d	9		14.1	8	8		7
	2d	12		17.1	11	11		9.6
8×1.25	1d	8	+0.212 8.27 0	14.2	6.8	6.8	9.85~10.1	4.7
	1.5d	12		18.2	10.8	10.8		7.4
	2d	16		22.2	14.8	14.8		10.6
10×1.5	1d	10	+0.236 10.32 0	17.3	8.5	8.5	12.1~12.5	5.0
	1.5d	15		22.3	13.5	13.5		8.0
	2d	20		27.3	18.5	18.5		11.2
12×1.75	1d	12	+0.265 12.38 0	20.3	10.3	10.3	14.4~14.8	5.2
	1.5d	18		28.3	16.3	16.3		8.4
	2d	24		32.3	22.3	22.3		11.7
16×2	1d	16	+0.30 16.43 0	25.3	14	14	18.85~19.5	6.0
	1.5d	24		33.3	22	22		9.7
	2d	32		41.3	30	30		13.3
20×2.5	1d	20	+0.355 20.54 0	31.2	17.5	17.5	23.2~24.2	6.3
	1.5d	30		41.2	27.5	27.5		10
	2d	40		51.2	37.5	37.5		13.7
24×3	1d	24	+0.40 24.65 0	37.1	21	21	27.95~29.1	6.3
	1.5d	36		49.1	33	33		10.0
	2d	48		61.1	45	45		14.0
30×3.5	1d	30	+0.45 30.76 0	45.2	26.5	26.5	34.65~35.7	7
	1.5d	45		60.2	41.5	41.5		11
	2d	60		75.2	56.5	56.5		14.9
36×4	1d	36	+0.475 36.87 0	52	32	32	41.50~43.26	7.1
	1.5d	54		70	50	50		11.4
	2d	72		88	68	68		15.6
42×4.5	1d	42	+0.53 42.98 0	60	37.5	37.5	48.5~50.5	7.3
	1.5d	63		81	58.5	58.5		12
48×5	1d	48	+0.56 49.08 0	68	43	43	55.6~57.6	7.5
	1.5d	72		92	67	67		12.5

米制（M、MJ）系列细牙钢丝螺套部分规格参数表

Metric Fine Thread Series 表2

螺纹规格 d×p	L×d	t ₂ (mm)	d ₀ (mm)	t ₁ (mm)	L ₂ (mm)	t ₃ (mm)	d _z (mm)	W (≈)
8×1	1d	8	+0.19	13	7	7	9.85~10.1	6
	1.5d	12	8.22	17	11	11		9.5
	2d	16	0	21	15	15		13
10×1	1d	10	+0.19	15	9	9	12.1~12.5	7.6
	1.5d	15	10.22	20	14	14		12
	2d	20	0	25	19	19		16.3
12×1.25	1d	12	+0.212	18	10.8	10.8	14.4~14.8	7.4
	1.5d	18	12.27	24	16.8	16.8		11.6
	2d	24	0	30	22.8	22.8		16
12×1.5	1d	12	+0.236	19.3	10.5	10.5	14.4~14.8	6.2
	1.5d	18	12.32	25.3	16.5	16.5		9.8
	2d	24	0	31.3	22.5	22.5		13.5
14×1.5	1d	14	+0.236	21.3	12.5	12.5	16.62~17.2	7
	1.5d	21	14.32	28.3	19.5	19.5		11.2
	2d	28	0	35.3	26.5	26.5		15.3
16×1.5	1d	16	+0.236	23.3	14.5	14.5	18.9~19.52	8.3
	1.5d	24	16.32	31.3	22.5	22.5		13
	2d	32	0	39.3	30.5	30.5		17.7
18×1.5	0.75d	13.5	+0.236	20.8	12	12	21.0~21.82	7.0
	1d	18	18.32	25.3	16.5	16.5		9.5
	1.5d	27	0	34.3	25.5	25.5		15
20×1.5	0.75d	15	+0.236	22.3	13.5	13.55	23.5~24.2	8
	1d	20	20.32	27.3	18.5	18.5		10.7
	1.5d	30	0	37.3	28.5	28.5		16.7
22×1.5	0.75d	16.5	+0.236	23.8	15	15	25.60~26.52	8.6
	1d	22	22.32	29.3	20.5	20.5		11.7
	1.5d	33	0	40.3	31.5	31.5		18
24×1.5	0.5d	12	+0.236	19.3	10.5	10.5	28.00~28.92	6.0
	0.75d	18	24.32	25.3	16.5	16.5		9.5
	1d	24	0	31.3	22.5	22.5		13
27×1.5	0.5d	13.5	+0.236	20.8	12	12	31.6~32.7	6.7
	0.75d	20.3	27.32	27.6	18.8	18.8		10.7
	1d	27	0	34.3	25.5	25.5		14.6
27×2	0.5d	13.5	+0.30	22.8	11.5	11.5	31.44~32.7	6
	0.75d	20.3	27.43	29.6	18.3	18.3		8
	1d	27	0	36.3	25	25		10.8
30×1.5	0.5d	15	+0.236	22.3	13.5	13.5	35.2~36.36	7.8
	0.75d	22.5	30.32	29.8	21.0	21.0		12.2
	1d	30	0	37.3	28.5	28.5		16.5
33×2	0.5d	16.5	+0.30	25.8	14.5	14.5	38.6~39.74	6.4
	0.75d	24.5	33.43	34.1	22.8	22.8		10
	1d	33	0	42.3	31.0	31.0		13.7
36×3	0.5d	19.5	+0.40	58.8	47.5	47.5	41.30~42.84	21.2
	1d	36	36.65	48	33	33		9.75
	1.5d	54	0	66	51	51		15.25
48×5	1d	48	+0.40	66	33	33	41.30~42.84	9.75
	1.5d	72	36.65	84	51	51		15.25
	2d	96	0	108	69	69		20.88

统一螺纹粗牙（UNC）系列 Coarse Thread Series 表3

螺纹规格 d×p	L×d	t ₂ (mm)	d ₀ (mm)	t ₁ (mm)	L ₂ (mm)	t ₃ (mm)	d _z (mm)	W (≈)
4-40 0.112-40	1d 1.5d 2d	2.9 4.3 5.8	3	5.7 7.1 8.6	2.5 3.9 5.4	2.2 3.6 5.1	3.66~4.04	3.2 5.1 7.2
5-40 0.125-40	1d 1.5d 2d	3.2 4.8 6.4	3.4	6 7.6 9.2	2.8 4.3 6	2.5 4.1 5.7	4.01~4.39	3.7 5.9 8.2
6-32 0.138-32	1d 1.5d 2d	3.5 5.3 7.0	3.7	7.1 8.8 10.6	3.1 4.9 6.6	2.7 4.5 6.2	4.52~4.90	2.8 4.8 6.8
8-32 0.164-32	1d 1.5d 2d	4.2 6.25 8.3	4.4	7.7 9.8 11.9	3.8 5.9 8	3.4 5.5 7.5	5.20~5.56	4.0 6.0 8.7
10-24 0.190-24	1d 1.5d 2d	4.8 7.2 9.6	5.1	9.6 12 14.4	4.3 6.7 9.1	3.8 6.2 8.6	6.19~6.58	3.3 5.4 7.5
12-24 0.216-24	1d 1.5d 2d	5.5 8.2 11.0	5.8	10.3 13 15.7	5 7.7 10.5	4.4 7.1 9.9	6.86~7.24	4.0 6.3 8.8
1/4" -20	1d 1.5d 2d	6.4 9.5 12.7	6.7	12.1 15.2 18.4	5.8 8.9 12.1	5.7 8.2 11.4	7.86~8.38	3.9 6.2 8.6
3/8" -16	1d 1.5d 2d	9.5 14.3 19.1	9.9	16.7 21.4 26.2	8.7 13.5 18.3	7.9 12.7 17.5	11.48~11.99	4.8 7.7 10.6
7/16" -14	1d 1.5d 2d	11.1 16.7 22.2	11.6	19.3 24.8 30.4	10.2 15.8 21.3	9.3 14.9 20.4	13.36~13.99	4.9 7.9 10.7
1/2" -13	1d 1.5d 2d	12.7 19.1 25.4	13.1	21.5 27.8 34.2	11.7 18.1 24.4	10.7 17.1 23.4	15.16~15.80	5.2 8.3 11.4
5/8" -11	1d 1.5d 2d	15.9 23.8 31.8	16.4	26.3 34.2 42.1	14.7 22.6 30.6	13.6 21.5 29.4	18.84~19.48	5.7 9.0 12.3
3/4" -10	1d 1.5d 2d	19.1 28.6 38.1	19.6	30.5 40 49.5	17.8 27.3 36.8	16.5 26 35.5	22.36~23.00	6.3 9.9 13.5
1" -8	1d 1.5d 2d	25.4 38.1 50.8	26.1	39.7 52.4 65.1	23.8 36.5 49.2	22.2 34.9 47.6	29.62~30.38	6.8 10.6 14.5

统一螺纹细牙（UNF）系列 Fine Thread Serie 表4

螺纹规格 d×p	L×d	t ₂ (mm)	d ₀ (mm)	t ₁ (mm)	L ₂ (mm)	t ₃ (mm)	d _z (mm)	W (≈)
8-36 0.164-36	1d 1.5d 2d	4.2 6.3 8.3	4.3	7.3 9.4 11.5	3.8 5.9 7.9	3.4 5.5 7.6	5.18~5.68	4.5 7.2 9.7
10-32 0.19-32	1d 1.5d 2d	4.83 7.24 9.6	5.0	8.4 10.8 13.2	4.4 6.8 9.2	4 6.5 8.9	5.99~6.50	4.1 6.9 10
1/4" -28	1d 1.5d 2d	6.35 9.5 12.7	6.6	10.4 13.6 16.8	5.9 9 12.2	5.5 8.6 11.8	7.77~8.28	5.0 8.6 11.8
5/16" -24	1d 1.5d 2d	7.9 11.9 15.9	8.2	12.7 16.7 20.6	7.4 11.4 15.4	6.9 10.9 14.9	9.65~10.16	5.9 9.4 12.8
3/8" -24	1d 1.5d 2d	9.5 14.3 19.1	9.8	14.3 19.1 23.8	9 13.8 18.6	8.4 13.2 18	11.37~11.88	7.3 11.5 15.6
7/16" -20	1d 1.5d 2d	11.1 16.7 22.2	11.4	16.8 22.4 27.9	10.5 16.1 21.6	9.8 15.4 20.9	13.3~13.7	7.0 11.1 15.0
1/2" -20	1d 1.5d 2d	12.7 19.1 25.4	13.0	18.4 24.8 31.1	12.1 18.5 24.8	11.4 17.8 24.1	15.03~15.67	7.9 12.8 17.3
9/16" -18	1d 1.5d 2d	14.3 21.5 28.6	14.6	20.6 27.8 34.9	13.6 20.8 27.9	12.9 20.1 27.2	16.91~17.55	7.9 12.0 16.0
5/8" -18	1d 1.5d 2d	15.9 23.8 31.8	16.2	22.2 30.2 38.1	15.2 23.1 31.1	14.5 22.4 30.4	18.61~19.25	9.4 14.5 19.7
3/4" -16	1d 1.5d 2d	19.1 28.6 38.1	19.4	26.2 35.7 45.2	18.3 27.8 37.3	17.5 27 36.5	22.25~22.88	10.1 15.6 21.0
7/8" -14	1d 1.5d 2d	22.2 33.3 44.5	22.6	30.4 41.5 52.6	21.3 32.4 43.6	20.4 31.5 42.7	25.93~26.69	10.3 15.9 21.6
1" -12	1d 1.5d 2d	25.4 38.1	25.9	34.9 47.6	24.3 37	23.3 36	29.69~30.45	10.0 15.6

55° 圆柱管螺纹 (G) 系列 New Product series 表5

尺寸代号	L×d	t ₂ (mm)	d ₀ (mm)	t ₁ (mm)	L ₂ (mm)	t ₃ (mm)	d ₁ (mm)	W (≈)
1/8-28	1d	9.73	9.9	14.27	8.8	8.8	10.95 ~ 11.71	8.9
	1.5d	14.60		19.13	13.7	13.7		13.4
	2d	19.46		23.99	18.6	18.6		17.9
1/4-19	1d	13.16	13.4	19.85	11.8	11.8	14.93 ~ 15.69	8.4
	1.5d	19.74		26.43	18.4	18.4		12.6
	2d	26.32		33.01	24.9	24.9		16.8
3/8-19	1d	16.67	16.9	23.36	15.3	15.3	18.44 ~ 19.20	10.7
	1.5d	25.00		31.69	33.4	33.4		16
	2d	33.34		40.03	32.0	32.0		21.3
1/2-14	1d	20.96	21.3	30.03	19.1	19.1	23.50 ~ 24.10	10.27
	1.5d	31.44		40.51	29.6	29.6		15.4
	2d	41.92		50.99	40.1	40.1		20.5
5/8-14	1d	22.91	23.2	31.98	21.1	21.1	25.30 ~ 26.06	11.2
	1.5d	34.37		43.44	32.6	32.6		16.8
	2d	45.82		54.89	44.0	44.0		22.4
3/4-14	1d	26.44	26.8	35.51	24.6	24.6	28.83 ~ 29.59	12.9
	1.5d	39.66		48.73	37.8	37.8		19.4
	2d	52.88		61.95	51.1	51.1		25.9
7/8-14	1d	30.20	30.5	39.27	28.4	28.4	32.59 ~ 33.35	14.8
	1.5d	45.30		54.37	43.5	43.5		22.2
	2d	60.40		69.47	58.6	58.6		29.6
1-11	1d	33.25	33.65	42.49	30.9	30.9	36.30 ~ 37.06	13.3
	1.5d	49.88		59.12	47.6	47.6		19.9
	2d	66.50		75.74	64.2	64.2		26.6

钢丝螺套的装配过程

由钻孔、攻丝、安装丝套、冲断安装柄四个主要步骤组成，见下图：

1.钻孔 按表中d0的尺寸选用合适钻头，刃磨准确，钻孔后孔口倒角不易超过0.4P深度，倒角过大不利于丝套的安装，最好为120°倒角。

2.攻丝 用相应规格的丝套专用丝锥攻丝，用户可根据所需内螺孔的精度，适当选择攻丝方法和润滑方式，盲孔攻丝时要用力适当，防止丝锥折断，攻丝后应清理干净螺纹孔，防止螺孔与丝套间有杂物。

3.安装丝套 在一般情况下应用手动安装扳手安装丝套，将丝套放入套筒槽口内，丝套安装柄朝下，芯轴穿过丝套卡住安装柄，拧入导套处，对准基体螺孔，顺时针转动芯轴。应注意不要在丝套安装柄上施加较大的轴向力，以防跳扣或安装柄折断。

4.冲断安装柄 通孔时，要将丝套安装柄冲断，一般用冲断器对准安装柄，用200g左右的榔头猛击一下即可去除，对于18×2.5以上的粗牙丝套和14×1.25以上的细牙丝套，用尖嘴钳上下弯曲安装柄就可去除。

the assembly instructions of the thread insert

it consists of drilling、tapping、installation of thread insert and break-off tool ,mainly ,the four assembly instructions follows:

1、drilling:

The taper is should be selected suitably from the dimension of d0 in the table and be sharpened accurately The chamfer is inappropriate to exceed the depth of 0.4p after tapping .the best chamfer is 120° which makes against setting of thread insert if it is too big.

2、tapping:

The special screw tap corresponding to the thread insert is selected to use (using lubricant oil or grease for this operation) when the through hole is tapped ,the force should be appropriate to prevent taper rupturing .After tapping the tape hole should be clear.

3、Installation of thread insert :

Insert the tool in the dilled holelower than the thread insert into the tapping pressure

4、Break-off tool:

Break the tail off using the break-off tool in order to use the whole length of the tapping.



- ① 钻孔
- ② 攻丝
- ③ 安装丝套
- ④ 冲断安装柄

- ① drilling
- ② tapping
- ③ Installation of thread insert
- ④ Break-off tool

