



THREAD INSERT SYSTEM

# BEIOU TECHNOLOGY



XINXIANG BEIOU TECHNOLOGY CO., LTD

CHINA · HENAN

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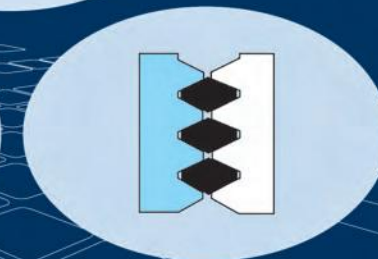
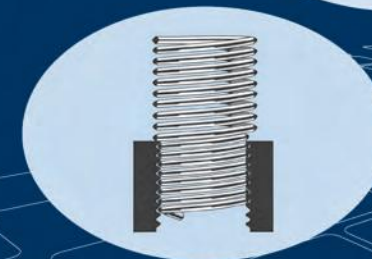
⑦ FILTER: 过滤器



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# THREAD INSERTS







# 钢丝螺套 THREADED INSERT

A thread insert, Another names we called threaded bushing ;Screw Insert ,wire thread insert is a fastener element that is inserted into an object to add a threaded hole. It is made of high strength, precision, corrosion resistant and diamond wire.

The Threaded hole looks like spring, when it is assembled in matrix thread, its internal surface to be the standard thread. If CLcoil is assembled with Screw, it could enhance the connection strength and abrasion resistant, especially in AL, MG, Cast Iron and other low strength materials.

CLCOIL also could improve thread's stress state and to be spring connection, remove the errors of pitch and thread angle, protect the thread avoiding to be broken, and extend working time.

CLCOIL prevents the thread rusting, trip with perfect corrosion, high heat and abrasion resistant in many kinds of environments. CL-coil also could repair the internal thread.

They may be used to repair a stripped threaded hole, provide a durable threaded hole in a soft material, place a thread on a material too thin to accept it, mold or cast threads into a workpiece thereby eliminating a machining operation, or simplify changeover from unified to metric threads or vice versa .

钢丝螺套是一种新型内螺纹紧固件，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，安装在基体特定螺纹孔中，其内表面形成标准螺纹，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，保护了基本螺纹不被损坏，延长使用寿命。钢丝螺套由于优良的抗腐蚀、抗高温、抗磨损，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。

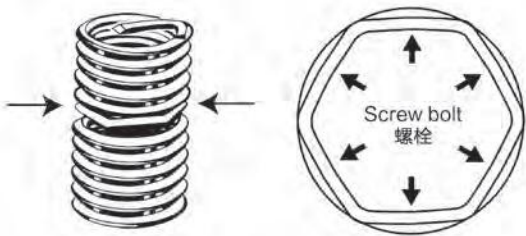
目前，钢丝螺套技术广泛用于航天、航空、船舶、兵器工业、光学仪器、无线电等各类仪器仪表。同时，大型机车、机组、汽车制造、冶金、电力、机械、化纤、化工行业都广泛采用。丝套安装后形成螺孔的公差带取决于丝套型面制造公差和丝套安装孔螺纹的公差带，主要取决于丝套安装孔的螺纹公差，即安装孔的攻丝精度，也就是专用丝锥的精度，通常达 6H 级，精度高时可达 5H、4H 级公差带，使用者可以根据所需公差带选择丝锥和攻丝方法及润滑方式，以达到所需要求。



# 材料及使用条件 MATERIALS AND USE CONDITIONS

## The Clcoil's materials and conditions 钢丝螺套的材料及使用材料 表

| Material               | Grade                    | Tensile Strength Under Room Temperature | Temperature Under Used              | Surface                                                                          |
|------------------------|--------------------------|-----------------------------------------|-------------------------------------|----------------------------------------------------------------------------------|
| Stainless Steel        | 1Cr18Ni9                 | >1400MPa                                | 425°C short time<br>315°C long time | No plating<br>Coat lubricant on the surface<br>Silver plating<br>Cadmium plating |
|                        | 1Cr18Ni9Ti               |                                         |                                     |                                                                                  |
|                        | 00Cr17Ni14Mo2            |                                         |                                     |                                                                                  |
| copper alloy           | QSn6.5-4                 | >1000MPa                                | 300°C short time<br>250°C long time | No plating<br>Cadmium plating                                                    |
| high-temperature alloy | InconelX750<br>Nimonic90 | >1400MPa                                | 750°C short time<br>550°C long time | No plating<br>Silver plating                                                     |
| 材 料                    | 牌 号                      | 温室抗拉强度                                  | 稳定工作温度                              | 表面状态                                                                             |
| 不锈钢                    | 1Cr18Ni9                 | >1400MPa                                | 425° C 短时间<br>315° C 长时间            | 无镀层<br>表面涂抹润滑层<br>镀锡<br>镀银                                                       |
|                        | 1Cr18Ni9Ti               |                                         |                                     |                                                                                  |
|                        | 00Cr17Ni14Mo2            |                                         |                                     |                                                                                  |
| 铜合金                    | QSn6.5-4                 | >1000MPa                                | 300° C 短时间<br>250° C 长时间            | 无镀层<br>镀锡                                                                        |
| 高温合金                   | InconelX750<br>Nimonic90 | >1400MPa                                | 750° C 短时间<br>550° C 长时间            | 无镀层<br>镀银                                                                        |



Schematic diagram of lock bolt  
锁紧型钢丝螺套锁紧螺栓原理示意图



The diagram of moment of force  
力矩示意图





## 材料 THE MATERIAL

### 304 不锈钢 STAINLESS STEEL

- Standard, general-purpose material.
- Ideal for original equipment applications, repair, and overhaul.
- Most Metric, UNC, UNF sizes in the stock.

采用不锈钢材料制成,用于一般情况下和工件组合。  
适用于轻型结构、铝合金结构、增加抗腐蚀性、提高螺纹抗拉强度。



### 合金 INCONEL X-750

- Used in areas exposed to high temperature.
- Typical uses: gas turbine engines, nuclear applications, well drilling.
- Non-magnetic.
- High corrosion resistance.

●适用于高温领域。 ●典型适用于: 气体涡轮发动机核电领域。  
●非磁性。 ●具有高耐腐蚀性。



### 高温合金 NITRONIC 60

- Manufactured from a special corrosion resistant stainless steel material that is.
- provides superb galling resistance as well as wear resistance.
- Compatible with stainless steel screws.
- Ideal for use in vacuum environments.
- Requires no additional coatings or platings, hence making them ideal for environments where contamination is a concern.
- Particle free.
- Non-magnetic.
- Moderate corrosion resistance.

- 特殊的耐腐蚀材料。
- 具有超强的耐磨性和耐腐蚀性。
- 真空环境下的理想选择。
- 不需要额外涂层,适用于任何环境条件下。







## 表面处理 INSERT COATINGS

### 干膜润滑 DRY FILM LUBRICANT (Mollylube)

- Provides additional lubrication in high friction applications.
- High temperature resistance.
- Highly recommended with Screw-Lock Inserts.
- Mildly corrosion resistant.
- Colour : grey.

- 自润滑。
- 耐高温。
- 提高锁紧力度。
- 轻度耐腐蚀。
- 颜色：灰色。



### 镀镉 CADMIUM PLATING

- Provides high corrosion resistance.
- Plating provides lubrication, preventing galling during insert installation.
- Colour : iridescent yellow ;golden yellow.

- 提高耐腐蚀性。
- 安装过程中提供润滑,防止磨损; 颜色: 金黄色。



### 镀镍 NICKEL PLATING

- Provides high corrosion resistance.
- Plating provides lubrication, preventing galling during insert installation.
- Colour : Black.

- 提高耐腐蚀性。
- 安装过程中提供润滑,防止磨损。
- 颜色：黑色。



### 镀银 SILVER PLATING

- Recommended to reduce galling of threads at high temperatures.
- Plating suitable for use in high temperatures.
- Colour : silver.

- 适用于高温环境,耐腐蚀,耐磨损。
- 电镀适用于高温度。
- 颜色：银色。



### 着色 COLOUR







# TYPE 类型

## 普通型 FREE RUNNING

- The most commonly used types.
- It can be green; The stainless steel true colors is most using.
- Most Metric ,UNC,UNF sizes in the stock.
- 最普通的类型,也最常用。
- 可着色,多数为不锈钢本色。
- 公制、美标、英标各规格有现货。



## 锁紧型 SELF-LOCKING

- The screw threads being locked by polygonal deformation of one or more turns of the thread.
- This deformation results in a powerful locking on the sides of the screw thread and counteracts the unscrewing effects of dynamic stresses, vibrations and thermal loads.
- Colour: Red; stainless steel true colors.
- 螺套上有一圈或多圈内六边或无边线圈。大大增强了锁紧力度,防止振动脱落。
- 颜色:一般采用红色用于与普通型的区分。



# 规格参数 THREAD INSERT SPECIFICATIONS

| 公制尺寸和安装参数 METRIC DIMENSIONS AND INSTALLATION PARAMETERS |             |                |   |      |       |                       |      |          |            |
|---------------------------------------------------------|-------------|----------------|---|------|-------|-----------------------|------|----------|------------|
| Nominal diameter                                        | Screw pitch | Nominal length |   |      | Coils | Free outsaid diameter |      | do/Drill | kg/1000pcs |
| 直径                                                      | 螺距          | 长度             |   |      | 线圈    | 外部直径                  |      | 钻头       | 千克/1000pcs |
| 2                                                       | 0.4         | 1              | d | 2    | 3.5   | 2.62                  | 2.76 | 2        | 0.02       |
| 2                                                       | 0.4         | 1.5            | d | 3    | 6     | 2.62                  | 2.76 | 2        | 0.03       |
| 2                                                       | 0.4         | 2              | d | 4    | 8     | 2.62                  | 2.76 | 2        | 0.05       |
| 2.5                                                     | 0.45        | 1              | d | 2.5  | 4     | 3.3                   | 3.5  | 2.6      | 0.04       |
| 2.5                                                     | 0.45        | 1.5            | d | 3.8  | 6.5   | 3.3                   | 3.5  | 2.6      | 0.06       |
| 2.5                                                     | 0.45        | 2              | d | 5    | 9     | 3.3                   | 3.5  | 2.6      | 0.09       |
| 2.5                                                     | 0.45        | 2.5            | d | 6.3  | 10.5  | 3.3                   | 3.5  | 2.6      | 0.11       |
| 2.5                                                     | 0.45        | 3              | d | 7.5  | 12.8  | 3.3                   | 3.5  | 2.6      | 0.13       |
| 3                                                       | 0.5         | 1              | d | 3    | 4.5   | 3.8                   | 4    | 3.1      | 0.07       |
| 3                                                       | 0.5         | 1.5            | d | 4.5  | 7     | 3.8                   | 4    | 3.1      | 0.1        |
| 3                                                       | 0.5         | 2              | d | 6    | 10    | 3.8                   | 4    | 3.1      | 0.14       |
| 3                                                       | 0.5         | 2.5            | d | 7.5  | 12    | 3.8                   | 4    | 3.1      | 0.17       |
| 3                                                       | 0.5         | 3              | d | 9    | 14.6  | 3.8                   | 4    | 3.1      | 0.22       |
| 3.5                                                     | 0.6         | 1              | d | 3.5  | 4     | 4.55                  | 4.75 | 3.7      | 0.28       |
| 3.5                                                     | 0.6         | 1.5            | d | 5.3  | 6.4   | 4.55                  | 4.75 | 3.7      | 0.34       |
| 3.5                                                     | 0.6         | 2              | d | 7    | 8.9   | 4.55                  | 4.75 | 3.7      | 0.17       |
| 3.5                                                     | 0.6         | 2.5            | d | 8.8  | 11.4  | 4.55                  | 4.75 | 3.7      | 0.26       |
| 3.5                                                     | 0.6         | 3              | d | 10.5 | 13.9  | 4.55                  | 4.75 | 3.7      | 0.34       |
| 4                                                       | 0.7         | 1              | d | 4    | 4     | 5.05                  | 5.25 | 4.2      | 0.17       |
| 4                                                       | 0.7         | 1.5            | d | 6    | 7     | 5.05                  | 5.25 | 4.2      | 0.26       |
| 4                                                       | 0.7         | 2              | d | 8    | 9.5   | 5.05                  | 5.25 | 4.2      | 0.34       |
| 4                                                       | 0.7         | 2.5            | d | 10   | 11.7  | 5.05                  | 5.25 | 4.2      | 0.43       |
| 4                                                       | 0.7         | 3              | d | 12   | 14.2  | 5.05                  | 5.25 | 4.2      | 0.51       |
| 5                                                       | 0.8         | 1              | d | 5    | 4.5   | 6.35                  | 6.6  | 5.2      | 0.31       |
| 5                                                       | 0.8         | 1.5            | d | 7.5  | 7.5   | 6.35                  | 6.6  | 5.2      | 0.46       |
| 5                                                       | 0.8         | 2              | d | 10   | 10    | 6.35                  | 6.6  | 5.2      | 0.61       |
| 5                                                       | 0.8         | 2.5            | d | 12.5 | 12.6  | 6.35                  | 6.6  | 5.2      | 0.76       |
| 5                                                       | 0.8         | 3              | d | 15   | 15.3  | 6.35                  | 6.6  | 5.2      | 0.92       |





| 公制尺寸和安装参数 METRIC DIMENSIONS AND INSTALLATION PARAMETERS |             |                |   |      |       |                       |      |          |            |
|---------------------------------------------------------|-------------|----------------|---|------|-------|-----------------------|------|----------|------------|
| Nominal diameter                                        | Screw pitch | Nominal length |   |      | Coils | Free outsaid diameter |      | do/Drill | kg/1000pcs |
| 直径                                                      | 螺距          | 长度             |   |      | 线圈    | 外部直径                  |      | 钻头       | 千克/1000pcs |
| 6                                                       | 1           | 1              | d | 6    | 4.5   | 7.6                   | 7.85 | 6.3      | 0.55       |
| 6                                                       | 1           | 1.5            | d | 9    | 7     | 7.6                   | 7.85 | 6.3      | 0.83       |
| 6                                                       | 1           | 2              | d | 12   | 10    | 7.6                   | 7.85 | 6.3      | 1.1        |
| 6                                                       | 1           | 2.5            | d | 15   | 12.2  | 7.6                   | 7.85 | 6.3      | 1.38       |
| 6                                                       | 1           | 3              | d | 18   | 14.9  | 7.6                   | 7.85 | 6.3      | 1.65       |
| 7                                                       | 1           | 1              | d | 7    | 5.2   | 8.65                  | 8.9  | 7.3      | 0.75       |
| 7                                                       | 1           | 1.5            | d | 10.5 | 8.3   | 8.65                  | 8.9  | 7.3      | 1.12       |
| 7                                                       | 1           | 2              | d | 14   | 11.5  | 8.65                  | 8.9  | 7.3      | 1.5        |
| 7                                                       | 1           | 2.5            | d | 17.5 | 14.6  | 8.65                  | 8.9  | 7.3      | 1.87       |
| 8                                                       | 1           | 1              | d | 8    | 6     | 9.85                  | 10.1 | 8.3      | 0.98       |
| 8                                                       | 1           | 1.5            | d | 12   | 9.6   | 9.85                  | 10.1 | 8.3      | 1.47       |
| 8                                                       | 1           | 2              | d | 16   | 13.1  | 9.85                  | 10.1 | 8.3      | 1.96       |
| 8                                                       | 1           | 2.5            | d | 20   | 16.7  | 9.85                  | 10.1 | 8.3      | 2.45       |
| 8                                                       | 1.25        | 1              | d | 8    | 5     | 9.85                  | 10.1 | 8.3      | 1.22       |
| 8                                                       | 1.25        | 1.5            | d | 12   | 7.5   | 9.85                  | 10.1 | 8.3      | 1.83       |
| 8                                                       | 1.25        | 2              | d | 16   | 10.5  | 9.85                  | 10.1 | 8.3      | 2.45       |
| 8                                                       | 1.25        | 2.5            | d | 20   | 13.5  | 9.85                  | 10.1 | 8.3      | 3.06       |
| 8                                                       | 1.25        | 3              | d | 24   | 16.5  | 9.85                  | 10.1 | 8.3      | 3.67       |
| 9                                                       | 1.25        | 1              | d | 9    | 5.5   | 10.85                 | 11.1 | 9.3      | 1.55       |
| 9                                                       | 1.25        | 1.5            | d | 13.5 | 8.9   | 10.85                 | 11.1 | 9.3      | 2.32       |
| 9                                                       | 1.25        | 2              | d | 18   | 12.2  | 10.85                 | 11.1 | 9.3      | 3.1        |
| 9                                                       | 1.25        | 2.5            | d | 22.5 | 15.5  | 10.85                 | 11.1 | 9.3      | 3.87       |
| 9                                                       | 1.25        | 3              | d | 27   | 18.8  | 10.85                 | 11.1 | 9.3      | 4.64       |
| 10                                                      | 1.5         | 1              | d | 10   | 5     | 12.1                  | 12.5 | 10.4     | 2.29       |
| 10                                                      | 1.5         | 1.5            | d | 15   | 8     | 12.1                  | 12.5 | 10.4     | 3.44       |
| 10                                                      | 1.5         | 2              | d | 20   | 11    | 12.1                  | 12.5 | 10.4     | 4.59       |
| 10                                                      | 1.5         | 2.5            | d | 25   | 14.2  | 12.1                  | 12.5 | 10.4     | 5.73       |
| 10                                                      | 1.5         | 3              | d | 30   | 17.3  | 12.1                  | 12.5 | 10.4     | 6.88       |
| 10                                                      | 1.25        | 1              | d | 10   | 6.1   | 12.1                  | 12.5 | 10.3     | 1.91       |
| 10                                                      | 1.25        | 1.5            | d | 15   | 9.7   | 12.1                  | 12.5 | 10.3     | 2.87       |

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|---------------------------------------------------------|-------------|----------------|---|------|-------|-----------------------|------|----------|------------|
| Nominal diameter                                        | Screw pitch | Nominal length |   |      | Coils | Free outsaid diameter |      | do/Drill | kg/1000pcs |
| 直径                                                      | 螺距          | 长度             |   |      | 线圈    | 外部直径                  |      | 钻头       | 千克/1000pcs |
| 10                                                      | 1.25        | 2              | d | 20   | 13.3  | 12.1                  | 12.5 | 10.3     | 3.82       |
| 10                                                      | 1.25        | 2.5            | d | 25   | 16.9  | 12.1                  | 12.5 | 10.3     | 4.78       |
| 10                                                      | 1           | 1              | d | 10   | 7.7   | 12.1                  | 12.5 | 10.3     | 1.53       |
| 10                                                      | 1           | 1.5            | d | 15   | 12.1  | 12.1                  | 12.5 | 10.3     | 2.29       |
| 10                                                      | 1           | 2              | d | 20   | 16.5  | 12.1                  | 12.5 | 10.3     | 3.06       |
| 10                                                      | 1           | 2.5            | d | 25   | 20.8  | 12.1                  | 12.5 | 10.3     | 3.82       |
| 11                                                      | 1.5         | 1              | d | 11   | 5.7   | 13.1                  | 13.5 | 11.4     | 2.78       |
| 11                                                      | 1.5         | 1.5            | d | 16.5 | 9.1   | 13.1                  | 13.5 | 11.4     | 4.16       |
| 11                                                      | 1.5         | 2              | d | 22   | 12.5  | 13.1                  | 13.5 | 11.4     | 5.55       |
| 11                                                      | 1.5         | 2.5            | d | 27.5 | 15.9  | 13.1                  | 13.5 | 11.4     | 6.94       |
| 12                                                      | 1.75        | 1              | d | 12   | 5     | 14.4                  | 14.8 | 12.4     | 3.85       |
| 12                                                      | 1.75        | 1.5            | d | 18   | 8.5   | 14.4                  | 14.8 | 12.4     | 5.78       |
| 12                                                      | 1.75        | 2              | d | 24   | 11.75 | 14.4                  | 14.8 | 12.4     | 7.71       |
| 12                                                      | 1.75        | 2.5            | d | 30   | 14.8  | 14.4                  | 14.8 | 12.4     | 9.63       |
| 12                                                      | 1.75        | 3              | d | 36   | 18    | 14.4                  | 14.8 | 12.4     | 11.56      |
| 12                                                      | 1.5         | 1              | d | 12   | 6.2   | 14.4                  | 14.8 | 12.4     | 3.3        |
| 12                                                      | 1.5         | 1.5            | d | 18   | 9.8   | 14.4                  | 14.8 | 12.4     | 4.95       |
| 12                                                      | 1.5         | 2              | d | 24   | 13.5  | 14.4                  | 14.8 | 12.4     | 6.61       |
| 12                                                      | 1.5         | 2.5            | d | 30   | 17.1  | 14.4                  | 14.8 | 12.4     | 8.26       |
| 12                                                      | 1.25        | 1              | d | 12   | 7.5   | 14.4                  | 14.8 | 12.3     | 2.75       |
| 12                                                      | 1.25        | 1.5            | d | 18   | 11.8  | 14.4                  | 14.8 | 12.3     | 4.13       |
| 12                                                      | 1.25        | 2              | d | 24   | 16.1  | 14.4                  | 14.8 | 12.3     | 5.5        |
| 12                                                      | 1.25        | 2.5            | d | 30   | 20.3  | 14.4                  | 14.8 | 12.3     | 6.88       |
| 12                                                      | 1           | 1              | d | 12   | 9.4   | 14.4                  | 14.8 | 12.3     | 2.2        |
| 12                                                      | 1           | 1.5            | d | 18   | 14.7  | 14.4                  | 14.8 | 12.3     | 3.3        |
| 12                                                      | 1           | 2              | d | 24   | 19.9  | 14.4                  | 14.8 | 12.3     | 4.4        |
| 13                                                      | 1.25        | 1              | d | 13   | 8     | 15.8                  | 16.3 | 13.3     | 3.23       |
| 13                                                      | 1.25        | 1.5            | d | 19.5 | 12.5  | 15.8                  | 16.3 | 13.3     | 4.85       |
| 13                                                      | 1.25        | 2              | d | 26   | 17    | 15.8                  | 16.3 | 13.3     | 6.46       |
| 14                                                      | 2           | 1              | d | 14   | 5.5   | 16.8                  | 17.2 | 14.5     | 5.99       |





| 公制尺寸和安装参数 METRIC DIMENSIONS AND INSTALLATION PARAMETERS |             |                |   |      |       |                       |       |          |            |
|---------------------------------------------------------|-------------|----------------|---|------|-------|-----------------------|-------|----------|------------|
| Nominal diameter                                        | Screw pitch | Nominal length |   |      | Coils | Free outsaid diameter |       | do/Drill | kg/1000pcs |
| 直径                                                      | 螺距          | 长度             |   |      | 线圈    | 外部直径                  |       | 钻头       | 千克/1000pcs |
| 14                                                      | 2           | 1.5            | d | 21   | 9     | 16.8                  | 17.2  | 14.5     | 8.99       |
| 14                                                      | 2           | 2              | d | 28   | 13.5  | 16.8                  | 17.2  | 14.5     | 11.99      |
| 14                                                      | 2           | 2.5            | d | 35   | 15.2  | 16.8                  | 17.2  | 14.5     | 14.98      |
| 14                                                      | 2           | 3              | d | 42   | 18.4  | 16.8                  | 17.2  | 14.5     | 17.98      |
| 14                                                      | 1.5         | 0.75           | d | 10.5 | 5.2   | 16.8                  | 17.2  | 14.4     | 3.37       |
| 14                                                      | 1.5         | 1              | d | 14   | 7.3   | 16.8                  | 17.2  | 14.4     | 4.5        |
| 14                                                      | 1.5         | 1.5            | d | 21   | 11.5  | 16.8                  | 17.2  | 14.4     | 6.74       |
| 14                                                      | 1.5         | 2              | d | 28   | 15.7  | 16.8                  | 17.2  | 14.4     | 8.99       |
| 14                                                      | 1.5         | 2.5            | d | 35   | 19.9  | 16.8                  | 17.2  | 14.4     | 11.24      |
| 14                                                      | 1.25        | 1              | d | 14   | 8.8   | 16.8                  | 17.2  | 14.3     | 3.75       |
| 14                                                      | 1.25        | 1.5            | d | 21   | 13.8  | 16.8                  | 17.2  | 14.3     | 5.62       |
|                                                         |             |                |   |      |       |                       |       |          |            |
| 16                                                      | 2           | 1              | d | 16   | 6.5   | 19                    | 19.4  | 16.5     | 7.83       |
| 16                                                      | 2           | 1.5            | d | 24   | 10    | 19                    | 19.4  | 16.5     | 11.74      |
| 16                                                      | 2           | 2              | d | 32   | 13.5  | 19                    | 19.4  | 16.5     | 15.66      |
| 16                                                      | 2           | 2.5            | d | 40   | 17.2  | 19                    | 19.4  | 16.5     | 19.57      |
| 16                                                      | 2           | 3              | d | 48   | 21.2  | 19                    | 19.4  | 16.5     | 23.49      |
| 16                                                      | 1.5         | 0.75           | d | 12   | 6.1   | 19                    | 19.4  | 16.4     | 4.4        |
| 16                                                      | 1.5         | 1              | d | 16   | 8.5   | 19                    | 19.4  | 16.4     | 5.87       |
| 16                                                      | 1.5         | 1.5            | d | 24   | 13.3  | 19                    | 19.4  | 16.4     | 8.81       |
| 16                                                      | 1.5         | 2              | d | 32   | 18.1  | 19                    | 19.4  | 16.4     | 11.74      |
|                                                         |             |                |   |      |       |                       |       |          |            |
| 18                                                      | 2.5         | 1              | d | 18   | 5.5   | 21.5                  | 22    | 18.6     | 12.39      |
| 18                                                      | 2.5         | 1.5            | d | 27   | 9     | 21.5                  | 22    | 18.6     | 18.58      |
| 18                                                      | 2.5         | 2              | d | 36   | 12    | 21.5                  | 22    | 18.6     | 24.77      |
| 18                                                      | 2.5         | 2.5            | d | 45   | 15.7  | 21.5                  | 22    | 18.6     | 30.96      |
| 18                                                      | 2.5         | 3              | d | 54   | 19    | 21.5                  | 22    | 18.6     | 37.16      |
| 18                                                      | 2           | 0.75           | d | 13.5 | 5     | 21.5                  | 22    | 18.5     | 7.43       |
| 18                                                      | 2           | 1              | d | 18   | 7.1   | 21.5                  | 22    | 18.5     | 9.91       |
| 18                                                      | 2           | 1.5            | d | 27   | 11.2  | 21.5                  | 22    | 18.5     | 14.86      |
| 18                                                      | 2           | 2              | d | 36   | 15.2  | 21.5                  | 22    | 18.5     | 19.82      |
| 18                                                      | 1.5         | 0.75           | d | 13.5 | 7.1   | 21.48                 | 21.82 | 18.4     | 5.57       |
| 18                                                      | 1.5         | 1              | d | 18   | 9.8   | 21.48                 | 21.82 | 18.4     | 7.43       |
| 18                                                      | 1.5         | 1.5            | d | 27   | 15    | 21.48                 | 21.82 | 18.4     | 11.15      |

| 公制尺寸和安装参数 METRIC DIMENSIONS AND INSTALLATION PARAMETERS |             |                |   |      |       |                       |       |          |            |
|---------------------------------------------------------|-------------|----------------|---|------|-------|-----------------------|-------|----------|------------|
| Nominal diameter                                        | Screw pitch | Nominal length |   |      | Coils | Free outsaid diameter |       | do/Drill | kg/1000pcs |
| 直径                                                      | 螺距          | 长度             |   |      | 线圈    | 外部直径                  |       | 钻头       | 千克/1000pcs |
| 18                                                      | 1.5         | 2              | d | 36   | 20.3  | 21.48                 | 21.82 | 18.4     | 14.86      |
|                                                         |             |                |   |      |       |                       |       |          |            |
| 20                                                      | 2.5         | 1              | d | 20   | 6     | 23.7                  | 24.2  | 20.6     | 15.29      |
| 20                                                      | 2.5         | 1.5            | d | 30   | 10    | 23.7                  | 24.2  | 20.6     | 22.94      |
| 20                                                      | 2.5         | 2              | d | 40   | 13.5  | 23.7                  | 24.2  | 20.6     | 30.58      |
| 20                                                      | 2.5         | 2.5            | d | 50   | 17.5  | 23.7                  | 24.2  | 20.6     | 38.23      |
| 20                                                      | 2.5         | 3              | d | 60   | 21.2  | 23.7                  | 24.2  | 20.6     | 45.87      |
| 20                                                      | 2           | 0.75           | d | 15   | 5.7   | 23.7                  | 24.2  | 20.5     | 9.17       |
| 20                                                      | 2           | 1              | d | 20   | 8     | 23.7                  | 24.2  | 20.5     | 12.23      |
| 20                                                      | 2           | 1.5            | d | 30   | 12.5  | 23.7                  | 24.2  | 20.5     | 18.35      |
| 20                                                      | 2           | 2              | d | 40   | 17.1  | 23.7                  | 24.2  | 20.5     | 24.46      |
| 20                                                      | 1.5         | 0.5            | d | 10   | 4.8   | 23.7                  | 24.2  | 20.4     | 4.59       |
| 20                                                      | 1.5         | 0.75           | d | 15   | 7.8   | 23.7                  | 24.2  | 20.4     | 6.88       |
| 20                                                      | 1.5         | 1              | d | 20   | 10.7  | 23.7                  | 24.2  | 20.4     | 9.17       |
| 20                                                      | 1.5         | 1.5            | d | 30   | 16.7  | 23.7                  | 24.2  | 20.4     | 13.76      |
|                                                         |             |                |   |      |       |                       |       |          |            |
| 22                                                      | 2.5         | 1              | d | 22   | 7     | 26.3                  | 26.8  | 22.6     | 18.5       |
| 22                                                      | 2.5         | 1.5            | d | 33   | 11    | 26.3                  | 26.8  | 22.6     | 27.75      |
| 22                                                      | 2.5         | 2              | d | 44   | 15    | 26.3                  | 26.8  | 22.6     | 37         |
| 22                                                      | 2.5         | 2.5            | d | 55   | 19    | 26.3                  | 26.8  | 22.6     | 46.25      |
| 22                                                      | 2.5         | 3              | d | 66   | 23    | 26.3                  | 26.8  | 22.6     | 55.5       |
| 22                                                      | 2           | 0.75           | d | 16.5 | 6.3   | 26.3                  | 26.8  | 22.5     | 11.1       |
| 22                                                      | 2           | 1              | d | 22   | 8.8   | 26.3                  | 26.8  | 22.5     | 14.8       |
| 22                                                      | 2           | 1.5            | d | 33   | 13.7  | 26.3                  | 26.8  | 22.5     | 22.2       |
| 22                                                      | 2           | 2              | d | 44   | 18.6  | 26.3                  | 26.8  | 22.5     | 29.6       |
| 22                                                      | 1.5         | 0.5            | d | 11   | 5.4   | 26                    | 26.52 | 22.4     | 55.5       |
| 22                                                      | 1.5         | 0.75           | d | 16.5 | 8.7   | 26                    | 26.52 | 22.4     | 8.33       |
| 22                                                      | 1.5         | 1              | d | 22   | 11.9  | 26                    | 26.52 | 22.4     | 11.1       |
| 22                                                      | 1.5         | 1.5            | d | 33   | 18.4  | 26                    | 26.52 | 22.4     | 16.65      |
|                                                         |             |                |   |      |       |                       |       |          |            |
| 24                                                      | 3           | 1              | d | 24   | 6.5   | 28.6                  | 29.1  | 24.8     | 26.42      |
| 24                                                      | 3           | 1.5            | d | 36   | 10    | 28.6                  | 29.1  | 24.8     | 39.63      |
| 24                                                      | 3           | 2              | d | 48   | 13    | 28.6                  | 29.1  | 24.8     | 52.84      |
| 24                                                      | 3           | 2.5            | d | 60   | 17.5  | 28.6                  | 29.1  | 24.8     | 66.05      |





| 公制尺寸和安装参数 METRIC DIMENSIONS AND INSTALLATION PARAMETERS |             |                |   |      |       |                       |       |          |            |
|---------------------------------------------------------|-------------|----------------|---|------|-------|-----------------------|-------|----------|------------|
| Nominal diameter                                        | Screw pitch | Nominal length |   |      | Coils | Free outsaid diameter |       | do/Drill | kg/1000pcs |
| 直径                                                      | 螺距          | 长度             |   |      | 线圈    | 外部直径                  |       | 钻头       | 千克/1000pcs |
| 24                                                      | 3           | 3              | d | 72   | 21.2  | 28.6                  | 29.1  | 24.8     | 79.26      |
| 24                                                      | 2           | 0.75           | d | 18   | 7     | 28.6                  | 29.1  | 24.5     | 13.21      |
| 24                                                      | 2           | 1              | d | 24   | 9.6   | 28.6                  | 29.1  | 24.5     | 17.61      |
| 24                                                      | 2           | 1.5            | d | 36   | 15    | 28.6                  | 29.1  | 24.5     | 26.42      |
| 24                                                      | 2           | 2              | d | 48   | 20.3  | 28.6                  | 29.1  | 24.5     | 35.23      |
| 24                                                      | 1.5         | 0.5            | d | 12   | 6     | 28.4                  | 28.92 | 24.4     | 6.61       |
| 24                                                      | 1.5         | 0.75           | d | 18   | 9.5   | 28.4                  | 28.92 | 24.4     | 9.91       |
| 24                                                      | 1.5         | 1              | d | 24   | 13    | 28.4                  | 28.92 | 24.4     | 13.21      |
| 24                                                      | 1.5         | 1.5            | d | 36   | 20    | 28.4                  | 28.92 | 24.4     | 19.82      |
| 26                                                      | 1.5         | 0.5            | d | 13   | 6.5   | 30                    | 31.5  | 26.4     | 7.75       |
| 26                                                      | 1.5         | 0.75           | d | 19.5 | 10.3  | 30                    | 31.5  | 26.4     | 11.63      |
| 26                                                      | 1.5         | 1              | d | 26   | 14    | 30                    | 31.5  | 26.4     | 15.5       |
| 27                                                      | 3           | 1              | d | 27   | 7     | 32.2                  | 32.7  | 27.8     | 33.44      |
| 27                                                      | 3           | 1.5            | d | 40.5 | 11.5  | 32.2                  | 32.7  | 27.8     | 50.16      |
| 27                                                      | 3           | 2              | d | 54   | 15    | 32.2                  | 32.7  | 27.8     | 66.88      |
| 27                                                      | 3           | 2.5            | d | 67.5 | 19.5  | 32.2                  | 32.7  | 27.8     | 83.6       |
| 27                                                      | 2           | 0.75           | d | 20.3 | 7.9   | 31.94                 | 32.56 | 27.5     | 16.72      |
| 27                                                      | 2           | 1              | d | 27   | 10.9  | 31.94                 | 32.56 | 27.5     | 22.29      |
| 27                                                      | 2           | 1.5            | d | 40.5 | 16.9  | 31.94                 | 32.56 | 27.5     | 33.44      |
| 27                                                      | 1.5         | 0.5            | d | 13.5 | 6.9   | 31.44                 | 32.14 | 27.4     | 8.36       |
| 27                                                      | 1.5         | 0.75           | d | 20.3 | 10.9  | 31.44                 | 32.14 | 27.4     | 12.54      |
| 27                                                      | 1.5         | 1              | d | 27   | 14.9  | 31.44                 | 32.14 | 27.4     | 16.72      |
| 27                                                      | 1.5         | 1.5            | d | 40.5 | 22.8  | 31.44                 | 32.14 | 27.4     | 25.08      |
| 28                                                      | 1.5         | 0.5            | d | 14   | 7.1   | 33.1                  | 33.6  | 28.4     | 8.99       |
| 28                                                      | 1.5         | 0.75           | d | 21   | 11.2  | 33.1                  | 33.6  | 28.4     | 13.49      |
| 28                                                      | 1.5         | 1              | d | 28   | 15.3  | 33.1                  | 33.6  | 28.4     | 17.98      |
| 28                                                      | 1.5         | 1.5            | d | 42   | 23.5  | 33.1                  | 33.6  | 28.4     | 26.97      |
| 30                                                      | 3.5         | 1              | d | 30   | 7     | 35.2                  | 35.7  | 30.9     | 48.16      |
| 30                                                      | 3.5         | 1.5            | d | 45   | 11    | 35.2                  | 35.7  | 30.9     | 72.25      |
| 30                                                      | 3.5         | 2              | d | 60   | 14    | 35.2                  | 35.7  | 30.9     | 96.3       |

| 公制尺寸和安装参数 METRIC DIMENSIONS AND INSTALLATION PARAMETERS |             |                |   |      |       |                       |       |          |            |
|---------------------------------------------------------|-------------|----------------|---|------|-------|-----------------------|-------|----------|------------|
| Nominal diameter                                        | Screw pitch | Nominal length |   |      | Coils | Free outsaid diameter |       | do/Drill | kg/1000pcs |
| 直径                                                      | 螺距          | 长度             |   |      | 线圈    | 外部直径                  |       | 钻头       | 千克/1000pcs |
| 30                                                      | 3.5         | 2.5            | d | 75   | 19    | 35.2                  | 35.7  | 30.9     | 120.41     |
| 30                                                      | 3.5         | 3              | d | 90   | 23    | 35.2                  | 35.7  | 30.9     | 144.49     |
| 30                                                      | 2           | 0.5            | d | 15   | 5.6   | 34.94                 | 35.74 | 30.5     | 13.76      |
| 30                                                      | 2           | 0.75           | d | 22.5 | 9     | 34.94                 | 35.74 | 30.5     | 20.64      |
| 30                                                      | 2           | 1              | d | 30   | 12.3  | 34.94                 | 35.74 | 30.5     | 27.52      |
| 30                                                      | 2           | 1.5            | d | 45   | 19    | 34.94                 | 35.74 | 30.5     | 41.28      |
| 30                                                      | 1.5         | 0.5            | d | 15   | 7.8   | 34.64                 | 35.44 | 30.4     | 10.32      |
| 30                                                      | 1.5         | 0.75           | d | 22.5 | 12.2  | 34.64                 | 35.44 | 30.4     | 15.48      |
| 30                                                      | 1.5         | 1              | d | 30   | 16.7  | 34.64                 | 35.44 | 30.4     | 20.64      |
| 30                                                      | 1.5         | 1.5            | d | 45   | 25.5  | 34.64                 | 35.44 | 30.4     | 30.96      |
| 33                                                      | 3.5         | 1              | d | 33   | 7.8   | 38.3                  | 38.8  | 33.9     | 58.28      |
| 33                                                      | 3.5         | 1.5            | d | 49.5 | 12.2  | 38.3                  | 38.8  | 33.9     | 87.42      |
| 33                                                      | 3.5         | 2              | d | 66   | 16.6  | 38.3                  | 38.8  | 33.9     | 116.56     |
| 33                                                      | 3.5         | 2.5            | d | 82.5 | 21.1  | 38.3                  | 38.8  | 33.9     | 145.7      |
| 33                                                      | 3.5         | 3              | d | 99   | 25.5  | 38.3                  | 38.8  | 33.9     | 174.84     |
| 33                                                      | 2           | 0.5            | d | 16.5 | 6.4   | 38.3                  | 38.8  | 33.5     | 16.65      |
| 33                                                      | 2           | 0.75           | d | 24.8 | 10.1  | 38.3                  | 38.8  | 33.5     | 24.98      |
| 33                                                      | 2           | 1              | d | 33   | 13.8  | 38.3                  | 38.8  | 33.5     | 33.3       |
| 33                                                      | 2           | 1.5            | d | 49.5 | 21.2  | 38.3                  | 38.8  | 33.5     | 49.95      |
| 33                                                      | 1.5         | 0.5            | d | 16.5 | 8.7   | 38.3                  | 38.8  | 33.4     | 12.49      |
| 33                                                      | 1.5         | 0.75           | d | 24.8 | 13.6  | 38.3                  | 38.8  | 33.4     | 18.73      |
| 33                                                      | 1.5         | 1              | d | 33   | 18.5  | 38.3                  | 38.8  | 33.4     | 24.98      |
| 36                                                      | 4           | 0.75           | d | 27   | 5.2   | 42.1                  | 42.6  | 37       | 59.45      |
| 36                                                      | 4           | 1              | d | 36   | 7.3   | 42.1                  | 42.6  | 37       | 79.26      |
| 36                                                      | 4           | 1.5            | d | 54   | 11.6  | 42.1                  | 42.6  | 37       | 118.9      |
| 36                                                      | 4           | 2              | d | 72   | 15.8  | 42.1                  | 42.6  | 37       | 158.53     |
| 36                                                      | 3           | 0.5            | d | 18   | 4.4   | 42.1                  | 42.6  | 36.8     | 29.72      |
| 36                                                      | 3           | 0.75           | d | 27   | 7.1   | 42.1                  | 42.6  | 36.8     | 44.59      |
| 36                                                      | 3           | 1              | d | 36   | 9.9   | 42.1                  | 42.6  | 36.8     | 59.45      |
| 36                                                      | 3           | 1.5            | d | 54   | 15.4  | 42.1                  | 42.6  | 36.8     | 89.17      |
| 36                                                      | 2           | 0.5            | d | 18   | 6.9   | 42.1                  | 42.6  | 36.5     | 19.82      |
| 36                                                      | 2           | 0.75           | d | 27   | 11    | 42.1                  | 42.6  | 36.5     | 29.72      |





### 公制尺寸和安装参数 METRIC DIMENSIONS AND INSTALLATION PARAMETERS

| Nominal diameter<br>直径 | Screw pitch<br>螺距 | Nominal length<br>长度 |   |      | Coils<br>线圈 | Free outsaid diameter<br>外部直径 |      | do/Drill<br>钻头 | kg/1000pcs<br>千克/1000pcs |
|------------------------|-------------------|----------------------|---|------|-------------|-------------------------------|------|----------------|--------------------------|
| 36                     | 2                 | 1                    | d | 36   | 15          | 42.1                          | 42.6 | 36.5           | 39.63                    |
| 36                     | 2                 | 1.5                  | d | 54   | 23          | 42.1                          | 42.6 | 36.5           | 59.45                    |
| 36                     | 1.5               | 0.5                  | d | 18   | 9.5         | 42.1                          | 42.6 | 36.4           | 14.86                    |
| 36                     | 1.5               | 0.75                 | d | 27   | 14.8        | 42.1                          | 42.6 | 36.4           | 22.29                    |
| 36                     | 1.5               | 1                    | d | 36   | 20          | 42.1                          | 42.6 | 36.4           | 29.72                    |
| 39                     | 2                 | 0.5                  | d | 19.5 | 7.7         | 45.1                          | 45.6 | 39.5           | 23.26                    |
| 39                     | 2                 | 0.75                 | d | 29.3 | 12.1        | 45.1                          | 45.6 | 39.5           | 34.88                    |
| 39                     | 2                 | 1                    | d | 39   | 16.4        | 45.1                          | 45.6 | 39.5           | 46.51                    |
| 48                     | 3                 | 0.5                  | d | 24   | 6.2         | 55                            | 55.5 | 48.8           | 52.84                    |
| 48                     | 3                 | 0.75                 | d | 36   | 9.9         | 55                            | 55.5 | 48.8           | 79.26                    |
| 48                     | 3                 | 1                    | d | 48   | 13.6        | 55                            | 55.5 | 48.8           | 105.69                   |
| 56                     | 4                 | 0.5                  | d | 28   | 5.4         | 64                            | 65   | 57             | 95.9                     |
| 56                     | 4                 | 0.75                 | d | 42   | 8.6         | 64                            | 65   | 57             | 143.85                   |
| 56                     | 4                 | 1                    | d | 56   | 11.8        | 64                            | 65   | 57             | 191.8                    |
| 60                     | 3                 | 0.5                  | d | 30   | 7.9         | 69                            | 70   | 60.8           | 82.57                    |
| 60                     | 3                 | 0.75                 | d | 45   | 12.4        | 69                            | 70   | 60.8           | 123.85                   |
| 60                     | 3                 | 1                    | d | 60   | 16.9        | 69                            | 70   | 60.8           | 165.13                   |
| 60                     | 3                 | 1.5                  | d | 90   | 25.4        | 69                            | 70   | 60.8           | 165.9                    |
| 60                     | 4                 | 0.5                  | d | 30   | 5.8         | 69                            | 70   | 61             | 110.09                   |
| 60                     | 4                 | 0.75                 | d | 45   | 9.2         | 69                            | 70   | 61             | 165.13                   |
| 60                     | 4                 | 1                    | d | 60   | 12.6        | 69                            | 70   | 61             | 220.18                   |
| 60                     | 4                 | 1.5                  | d | 90   | 19.5        | 69                            | 70   | 61             | 330.27                   |

### 特殊包装 SPECIAL PACKING



### RETAIL



### UNC、UNF尺寸和安装参数 UNC/UNF SIZES AND INSTALLATION PARAMETERS

| Size<br>d × p | k × d            | t2(mm)               | do(mm) | Dz(mm)      | N(≈)                |
|---------------|------------------|----------------------|--------|-------------|---------------------|
| 4-40          | 1d<br>1.5d<br>2d | 2.9<br>4.3<br>5.8    | 3      | 3.66~4.04   | 3.2<br>5.1<br>7.2   |
| 5-40          | 1d<br>1.5d<br>2d | 3.2<br>4.8<br>6.4    | 3.4    | 4.01~4.39   | 3.7<br>5.9<br>8.2   |
| 6-32          | 1d<br>1.5d<br>2d | 3.5<br>5.3<br>7.0    | 3.7    | 4.52~4.90   | 2.8<br>4.8<br>6.8   |
| 8-32          | 1d<br>1.5d<br>2d | 4.2<br>6.25<br>8.3   | 4.4    | 5.20~5.56   | 4.0<br>6.0<br>8.7   |
| 10-24         | 1d<br>1.5d<br>2d | 4.8<br>7.2<br>9.6    | 5.1    | 6.19~6.58   | 3.3<br>5.4<br>7.5   |
| 12-24         | 1d<br>1.5d<br>2d | 5.5<br>8.2<br>11.0   | 5.8    | 6.86~7.24   | 4.0<br>6.3<br>8.8   |
| 1/4"-20       | 1d<br>1.5d<br>2d | 6.4<br>9.5<br>12.7   | 6.7    | 7.86~8.38   | 3.9<br>6.2<br>8.6   |
| 8-36          | 1d<br>1.5d<br>2d | 4.2<br>6.3<br>8.3    | 4.3    | 5.18~5.68   | 4.5<br>7.2<br>9.7   |
| 10-32         | 1d<br>1.5d<br>2d | 4.83<br>7.24<br>9.6  | 5.0    | 5.99~6.50   | 4.1<br>6.9<br>10    |
| 1/4"-28       | 1d<br>1.5d<br>2d | 6.35<br>9.5<br>12.7  | 6.6    | 7.77~8.28   | 5.0<br>8.6<br>11.8  |
| 5/16"-24      | 1d<br>1.5d<br>2d | 7.9<br>11.9<br>15.9  | 8.2    | 9.65~10.16  | 5.9<br>9.4<br>12.8  |
| 3/8"-24       | 1d<br>1.5d<br>2d | 9.5<br>14.3<br>19.1  | 9.8    | 11.37~11.18 | 7.3<br>11.5<br>15.6 |
| 7/16"-20      | 1d<br>1.5d<br>2d | 11.1<br>16.7<br>22.2 | 11.4   | 13.3~13.7   | 7.0<br>11.1<br>15.0 |
| 1/2"-20       | 1d<br>1.5d<br>2d | 12.7<br>19.1<br>25.4 | 13.0   | 15.03~15.67 | 7.9<br>12.8<br>17.3 |



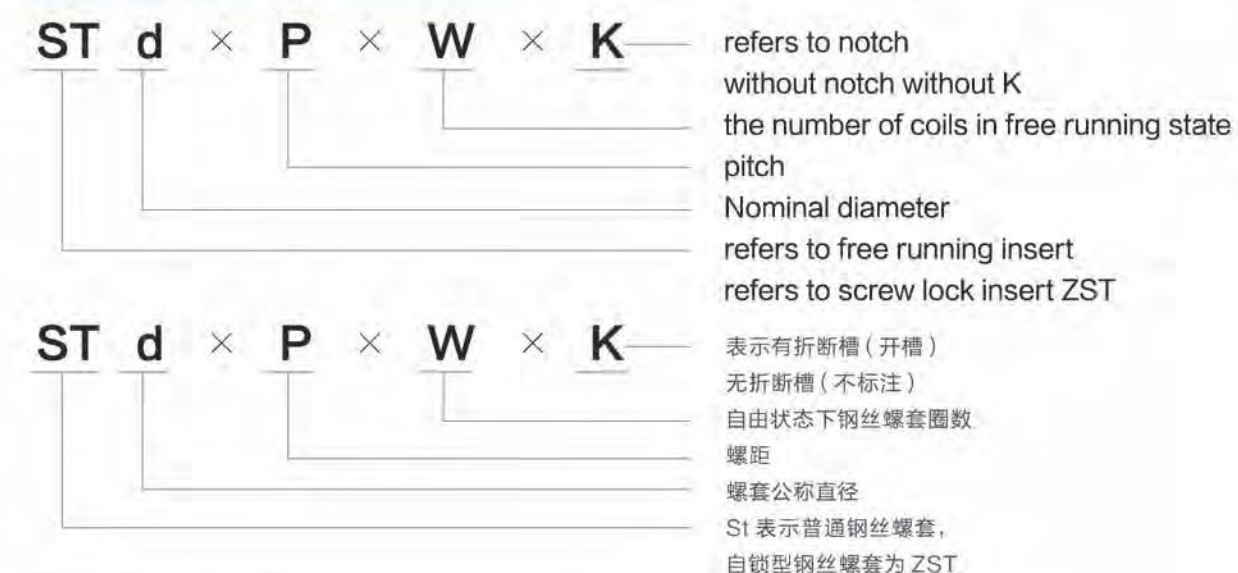


| UNC、UNF尺寸和安装参数 UNC/UNF SIZES AND INSTALLATION PARAMETERS |                  |                      |        |             |                     |
|----------------------------------------------------------|------------------|----------------------|--------|-------------|---------------------|
| Size<br>d×p                                              | k×d              | t2(mm)               | do(mm) | Dz(mm)      | N(≈)                |
| 3/8"-16                                                  | 1d<br>1.5d<br>2d | 9.5<br>14.3<br>19.1  | 9.9    | 11.48~11.99 | 4.8<br>7.7<br>10.6  |
| 7/16"-14                                                 | 1d<br>1.5d<br>2d | 11.1<br>16.7<br>22.2 | 11.6   | 13.36~13.99 | 4.9<br>7.9<br>10.7  |
| 1/2"-13                                                  | 1d<br>1.5d<br>2d | 12.7<br>19.1<br>25.4 | 13.1   | 15.16~15.8  | 5.2<br>8.3<br>11.4  |
| 5/8"-11                                                  | 1d<br>1.5d<br>2d | 15.9<br>23.8<br>31.8 | 16.4   | 18.84~19.48 | 5.7<br>9.0<br>12.3  |
| 3/4"-10                                                  | 1d<br>1.5d<br>2d | 19.1<br>28.6<br>38.1 | 19.6   | 22.36~23.00 | 6.3<br>9.9<br>13.5  |
| 1"-8                                                     | 1d<br>1.5d<br>2d | 25.4<br>38.1<br>50.8 | 26.1   | 29.62~30.38 | 6.8<br>10.6<br>15.4 |

| UNC、UNF尺寸和安装参数 UNC/UNF SIZES AND INSTALLATION PARAMETERS |                  |                      |        |             |                      |
|----------------------------------------------------------|------------------|----------------------|--------|-------------|----------------------|
| Size<br>d×p                                              | k×d              | t2(mm)               | do(mm) | Dz(mm)      | N(≈)                 |
| 9/16"-18                                                 | 1d<br>1.5d<br>2d | 14.3<br>21.5<br>28.6 | 14.6   | 16.91~17.55 | 7.9<br>12.0<br>16.0  |
| 5/8"-18                                                  | 1d<br>1.5d<br>2d | 15.9<br>23.8<br>31.8 | 16.2   | 18.61~19.25 | 9.4<br>14.5<br>19.7  |
| 3/4"-16                                                  | 1d<br>1.5d<br>2d | 19.1<br>28.6<br>31.8 | 19.4   | 22.25~2.88  | 10.1<br>15.6<br>21.0 |
| 7/8"-14                                                  | 1d<br>1.5d<br>2d | 22.2<br>33.3<br>44.5 | 22.6   | 25.93~26.96 | 10.3<br>15.9<br>21.6 |
| 1"-14                                                    | 1d<br>1.5d<br>2d | 25.4<br>38.1<br>50.8 | 25.9   | 29.69~30.45 | 11.8<br>18.1<br>24.5 |
| 1"-12                                                    | 1d<br>1.5d       | 25.4<br>38.1         | 30.0   | 29.69~30.45 | 10.0<br>15.6         |

## 标记方法 THE MARK

### ●AS THE COILS ●按丝套圈数标记



标记示例 Example:

ST8\*1\*16k refers to thread inserts apply to M8\*1 nuts, with notch, six coils in free running state.

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

### ●NOTATION ●标记法

d(diameter)\*p(pitch)\*N(coils in free running state)

d(直径)×P(螺距)×N(自由状态下钢丝螺套圈数)

注: 此为 GJB 和 HB 的标记方法, 不是所有的标准都用此标注方法, 准确方法请看相应标准。

### ●SPECIFICATION NOTE ●规格法

①FR( free running state)MD( diameter)\*P(pitch)-nd

②SL(screw locking insert) MD (diameter)\*p(pitch)-nd

①FR (普通型) Md (直径)×P (螺距)-nd

②SL (锁紧型) Md (直径)×P (螺距)-nd

| 圈数 (W) 近似计算尺寸表 COILS CALCULATE TABLE |     |      |      |      |      |      |      |      |      |      |      |     |      |
|--------------------------------------|-----|------|------|------|------|------|------|------|------|------|------|-----|------|
| Pitch<br>P<br>螺距                     | 0.4 | 0.45 | 0.5  | 0.7  | 0.8  | 1    | 1.25 | 1.5  | 1.75 | 2    | 2.5  | 3   | 3.5  |
| Coefficient<br>(≈)<br>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 |

W=coefficient \*depth of thread 圈数(W)≈系数×有效螺纹深度





## 工具 TOOLINGS

### 简易扳手 SIMPLE INSTALLATION TOOL

- Features the simple Clcoil repair kit installation tool for general maintenance use.
- 使用简单,一般适用于维修套装。



### 螺杆式安装工具

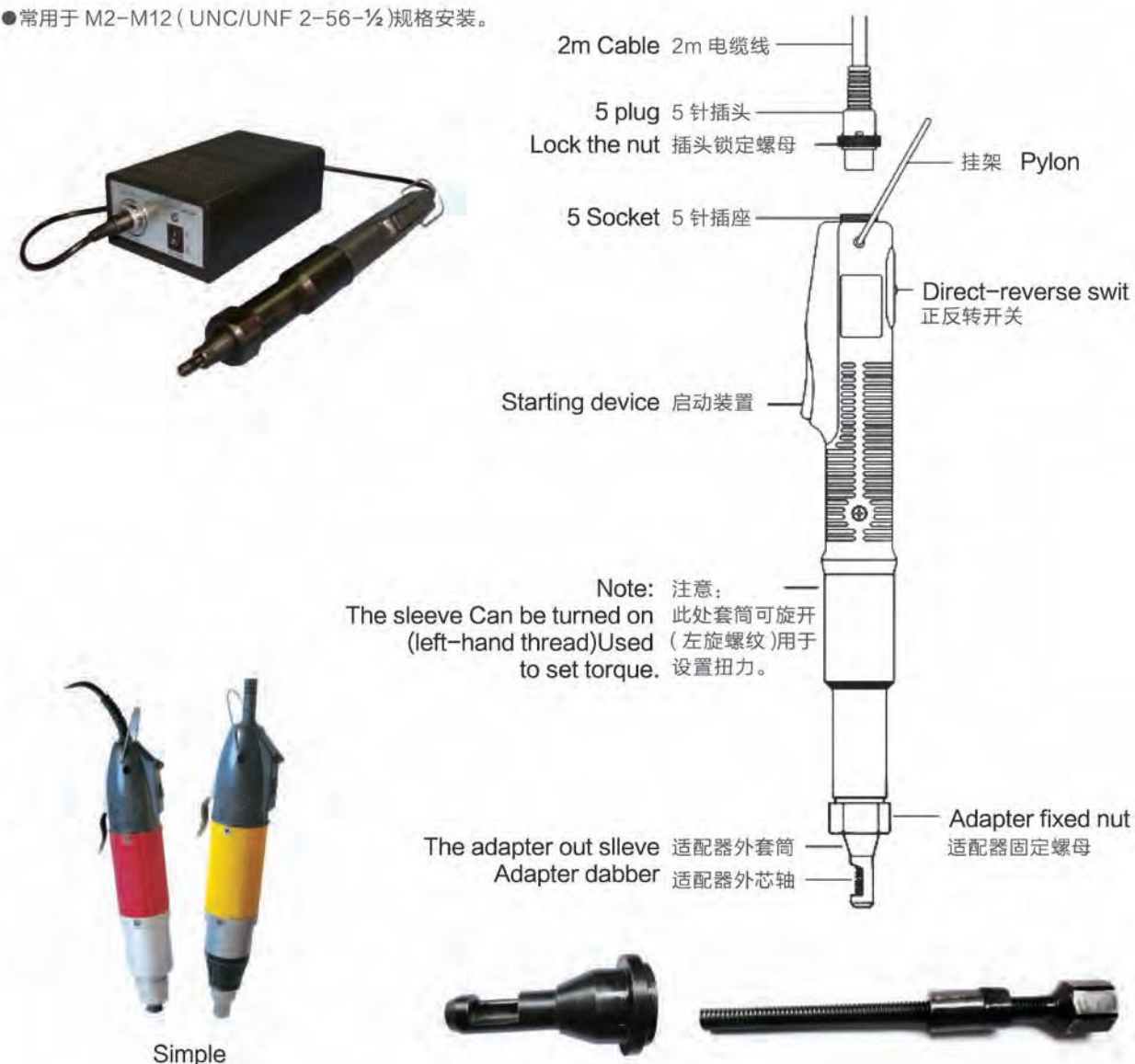
### SCREW TYPE INSTALLATION TOOL

- Recommended for Installing small sizes and Fine thread screw
- 建议使用用于小规格和细牙规格。



### 自动安装工具 ELECTRIC POWER TOOL

- It can speed up installation
- Eliminates waste, and permits an accurate count of Clcoil inserts
- It can Install of both standard free running and screw-lock inserts.
- It is very great in metric sizes from M2 to M12 and in UNC and UNF sizes (2-56 to 1/2")
- 提高安装效率。
- 安装深度准确定位。
- 适用于普通型和锁紧型。
- 常用于 M2-M12 ( UNC/UNF 2-56-1/2)规格安装。





## 专用丝锥 HAND TAPS/GUN TAPS

- The most popular style of tap, made from select high-speed steel for extending wear life.
- Use by hand or when tapping under power – for general machine tapping or with CNC machines.
- Available in three chamfer lengths for through-hole or blind-hole tapping.
- Available in a variety of coatings to achieve increased tap life, tapping speed, and wear resistance.
- Wide range for the following threads: M,MF,G,BSW,UNC,UNF.
- Available individually and as a set.
- Most sizes in the stock.

- 普通直槽丝锥, 高速钢耐磨耐用。
- 多用于手工。
- 一般为三槽或四槽, 适用于通孔或盲孔
- 使用多种材料, 具有很高的使用性和耐磨性。
- 多种规格型号可供选择。



## SPIRAL-FLUTED TAPS

- Manufactured from vadium high-speed steel with a necked design.
- Faster spiral flutes improve chip-lifting action and span wider spaces in the hole while tapping.
- Achieve excellent results in deep blind holes.
- Plug chamfer taps have 3 to 5 pitches; bottoming chamfer taps have 1 to 2 pitches.
- wide range for the following threads: M, MF, G, BSW, UNC, UNF.

- 一般采用高速钢材料, 一体丝锥。
- 利于排屑, 提高加工效率, 多用于机工。



## SPARK PLUG TAPS

- Another Name : Piloted Reamer Taps, for use in spark plug applications.
- It has a pilot thread at the front, to pull the tap into the hole, followed by the reamer section which removes the damaged threads and then by a larger tap section which cuts the proper threads for the thread insert to be installed.
- No prior drilling of worn out threads is needed with spark plug taps.
- Spark plugs that haven't been changed for a long time can become one with the cylinder head. Fortunately, it's possible to repair damaged threads instead of scrapping the head.
- There are on-hand merchandises of common specification.( M14\*1.25 )
- 又名: 火花塞丝锥, 使用于火花塞系统。
- 可修复受损的气缸, 节约成本, 提高螺纹使用寿命。





## 冲断器 TANG BREAK OFF TOOL

- This tool is included in thread repair kits and is extremely simple to use.
- After installation of the insert, place the manual tang breaker squarely on the tang and give a sharp strike with a hammer.

冲断器：利用瞬间冲击力折断钢丝螺套安装柄。



- More high efficiency, stable, simple
- 提高冲断效率,使冲断效果更佳。

## 卸套器 EXTRACTION TOOL

- It need to be removed, the use of the Insert extraction tool is recommended.
- It may be removed manually with little effort using the Clcoil Extracting Tool.
- Removal is done by applying the extraction tool to the insert, giving the head of the tool a light blow with a hammer, and turning it counterclockwise, maintaining steady downward pressure.
- Extraction tools are simple and easy to use and leave no trace on the application material.
- It can used for Free inserts and Locking Inserts.

卸套器：用于取出装入底孔中的钢丝螺套

使用方法：用锤子敲打使其扎紧螺套内孔壁,反方向旋转使螺套取出。  
使用简单不易伤及壳体本身。(同样适用于锁紧型)



## 塞规 PLUG GAUGES

- Cocil Thread Plug Gauges are used to gage threaded holes prior to insertion of screw thread inserts.
  - Thread plug gages check the size of internal threads to ensure the threads are within its designed tolerance limits.
  - Precision hand lapped to provide superior accuracy , optimum finish and maximum wearability
  - Screw thread inserts are used to repair a damaged thread or to provide stronger thread assembly.
  - GO and/or NO GO thread plug members; Class 6H of fit for metric thread plug Class 6H of fit for metric thread plug.
  - Clcoil STI thread plug gages are manufactured of oil hardened tool steel ; Most Metric sizes in the stock.
- 用于螺套底孔与螺套检测。  
● 确保安装效果,是检测底孔螺纹和螺套最重要的检具。



## 环规 RING GAGE

- Clcoil Ring Gage inspects the external dimensions of manufactured thread Inserts.
- Gages are ring lapped to size and hand polished to provide superior accuracy and wearability.
- Gagemakers tolerance will be applied minus on the GO and plus on the NO GO.
- The precision Of Thread Insert is 6H;5H ; Most Metric sizes in the stock.



底孔塞规、环规

研磨而成。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,是最标准的底孔,是螺套检测时的重要依据。



## 装配过程 INSTALLATION

**1.** Drill out the damaged threads using the drill size specified in the catalog . Drill to a enough depth to accommodate the thread insert length and the bolt or screw being used.

**2.** Tap the hole using the clcoil insert tap. Tap the hole to enough depth to accommodate the insert length and the bolt or screw being used.

### 1、钻孔

用表中  $d_0$  的尺寸钻孔，钻孔深度大于或等于  $L$ ；注意不要将孔钻成锥形，不易选用磨损严重的钻头，切屑不要掉入可能会引起损坏的地方。钻孔后允许去刺性质的铤孔，铤孔不应超过  $0.4P$  深度，铤孔过大不利于丝套的安装。

### 2、攻丝

用相应规格的丝套专用丝锥攻丝，攻丝的长度必须超过丝套长度，对于通孔要全部攻丝，攻丝的精度决定最终标准内螺纹孔的公差带，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，以防止丝锥折断。

攻丝后应清理螺纹孔，可用压缩空气喷枪吹，盲孔还应使用带径向孔的长喷枪自下而上清理，也可以用清洗的方法清理。



Base hole 基孔



Drilling 钻孔



Tapping 攻丝

**3.** Put the Clcoil insert onto the mandrel of the installation tool(Or electric power tool),Put the installation tool over the hole and wind the insert into the hole until the top coil is  $1/4$  to  $1/2$  turn below the top surface. After installation, the helical thread insert will have nearly the same structural integrity as the original threads.

### 3、安装

钢丝螺套放入安装扳手内，使安装柄嵌入芯轴槽内转动安装扳手手柄使钢丝螺套通过安装扳手上的引导螺纹旋入螺纹底孔，并使其距基体表面留有  $1-1.5P$  的空螺纹。

钢丝螺套装配过程中持续扭力过大易造成安装困难，将套筒（扳手芯轴不动）穿插逆时针转动即得以解决。

**4.** After Installation, The Clcoil thread insert will have nearly the same structural integrity as the original threads.

**5.** Place the tang break-off tool squarely on the tang of the insert and then give it a sharp blow with a hammer ;After installation, the Clcoil thread insert will have nearly the same structural integrity as the original threads.

### 4、折断安装柄

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  $18 \times 2.5$  以上的粗牙丝套和  $14 \times 1.25$  以上的细牙丝套，用尖嘴钳上下弯曲安装柄就可去除。

### 5、取出钢丝螺套

在安装过程中出现问题或由于丝套使用时间过久需要取出，应当使用卸套器，将卸套器放入丝套内孔，对准手柄用榔头猛击一下，用手向下加力按住手柄反螺纹旋转即可取出丝套。



Place insert on tools 装套



Install 安装



Break off the tang 拆柄



Take out the insert 取出钢丝螺套



# THREAD REPAIR KITS





## 螺纹修理包 THREAD REPAIR KITS

Delisert Thread Repair Kits contain a quality HSS tap, Installation tool, precision stainless steel inserts (standard length is 1.5 x diameter) and instructions, in a sturdy reusable container. delisert has a full range of problem solving repair kits, available in single or multiple size format.

The Single set is from M5 to M14 (Metric Size ) ;1/4-1/2 (UNC;UNF) ;The 88PCS and 131PCS is the most popular in the maintenance !

- A quantity of Clcoil inserts, the appropriate size drill, high speed steel tap, installation tool, and a tang break tool in the Kit.
- Clcoil thread repair kits help prevent costly machine downtime Range Kits, a multiple size kit format, are widely used in maintenance workshops.
- Commonly used in automotive machine shops for spark plug and general thread repairs.



## 特征 THREAD REPAIR KIT FEATUREFEATURES

1. Lengthen the life of service
2. Increase the intensity of connecting
3. Increase the strength of receiving
4. Improve the condition of connecting and increase the carrying capacity and anti-exhausted intention
5. Antirust and form and Anti detonation
6. Decrease wear- resisting and heat-resisting and canker-resisting





| ALL KITS ARE WITH STANDARD WIRE THREAD INSERTS-1.5D                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Art NO.                                                                                  | HSS Helical Tap                                                                   | HSS Drill Size                                                                    | Insertion Tool                                                                    | Break-off Tang                                                                     | Inserts                                                                             |
|                                                                                          |  |  |  |  |  |
| K131M                                                                                    | M5*0.8                                                                            | 5.2mm                                                                             | NO.5                                                                              | NO.5                                                                               | 25                                                                                  |
|                                                                                          | M6*1                                                                              | 6.2mm                                                                             | NO.6                                                                              | NO.6                                                                               | 25                                                                                  |
|                                                                                          | M8*1.25                                                                           | 8.3mm                                                                             | NO.8                                                                              | NO.8                                                                               | 25                                                                                  |
|                                                                                          | M10*1.5                                                                           | 10.3mm                                                                            | NO.10                                                                             | NO.10                                                                              | 25                                                                                  |
|                                                                                          | M12*1.75                                                                          | 12.4mm                                                                            | NO.12                                                                             | NO.12                                                                              | 10                                                                                  |
| K131C                                                                                    | 1/4-20UNC                                                                         | 6.7mm                                                                             | NO.9                                                                              | NO.9                                                                               | 25                                                                                  |
|                                                                                          | 5/16-18UNC                                                                        | 8.3mm                                                                             | NO.10                                                                             | NO.10                                                                              | 25                                                                                  |
|                                                                                          | 3/8-16UNC                                                                         | 9.9mm                                                                             | NO.12                                                                             | NO.12                                                                              | 25                                                                                  |
|                                                                                          | 7/16-14UNC                                                                        | 11.6mm                                                                            | NO.14                                                                             | NO.14                                                                              | 10                                                                                  |
|                                                                                          | 1/2-13UNC                                                                         | 13.0mm                                                                            | NO.15                                                                             | NO.15                                                                              | 10                                                                                  |
| K131F                                                                                    | 1/4-28UNC                                                                         | 6.7mm                                                                             | NO.9                                                                              | NO.9                                                                               | 25                                                                                  |
|                                                                                          | 5/16-24UNC                                                                        | 8.3mm                                                                             | NO.11                                                                             | NO.11                                                                              | 25                                                                                  |
|                                                                                          | 3/8-24UNC                                                                         | 9.8mm                                                                             | NO.13                                                                             | NO.13                                                                              | 25                                                                                  |
|                                                                                          | 7/16-20UNC                                                                        | 11.5mm                                                                            | NO.14                                                                             | NO.14                                                                              | 10                                                                                  |
|                                                                                          | 1/2-20UNC                                                                         | 13.0mm                                                                            | NO.15                                                                             | NO.15                                                                              | 10                                                                                  |
| The kit colors: (R)Red; (B)Blue; (DB)Dark Blue; (D)Dark.<br>Also can Choose by yourself! |                                                                                   |                                                                                   |                                                                                   |                                                                                    | <b>131 PCS</b> KITS                                                                 |

1: 5PCS HSS Tap 2: 110pcs(MM)/95PCS(UNC/UNF )Wire thread inserts 3: 5PCS HSS Twist Drill  
 4: 5PCS Tang Puncher (Material: Carbon Steel with Heat Treatment, Electro-Coating)  
 5: 5PCS Simple installation tool Spanner 6: 1PCS Small hexagon spanner

| ALL KITS ARE WITH STANDARD WIRE THREAD INSERTS-1.5D               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Art NO.                                                           | HSS Helical Tap                                                                     | HSS Drill Size                                                                      | Insertion Tool                                                                      | Break-off Tang                                                                      | Inserts                                                                             |
|                                                                   |  |  |  |  |  |
| K88M1                                                             | M5*0.8                                                                              | 5.2mm                                                                               | NO.5                                                                                | NO.5                                                                                | 25                                                                                  |
|                                                                   | M6*1                                                                                | 6.2mm                                                                               | NO.6                                                                                | NO.6                                                                                | 25                                                                                  |
|                                                                   | M8*1.25                                                                             | 8.3mm                                                                               | NO.8                                                                                | NO.8                                                                                | 25                                                                                  |
| K88M2                                                             | M6*1                                                                                | 6.2mm                                                                               | NO.6                                                                                | NO.6                                                                                | 25                                                                                  |
|                                                                   | M8*1.25                                                                             | 8.3mm                                                                               | NO.8                                                                                | NO.8                                                                                | 25                                                                                  |
|                                                                   | M10*1.5                                                                             | 10.3mm                                                                              | NO.10                                                                               | NO.10                                                                               | 25                                                                                  |
| K88C1                                                             | 1/4-20UNC                                                                           | 6.7mm                                                                               | NO.9                                                                                | NO.9                                                                                | 25                                                                                  |
|                                                                   | 5/16-18UNC                                                                          | 8.3mm                                                                               | NO.10                                                                               | NO.10                                                                               | 25                                                                                  |
|                                                                   | 3/8-16UNC                                                                           | 9.9mm                                                                               | NO.12                                                                               | NO.12                                                                               | 25                                                                                  |
| K88C2                                                             | 5/16-18UNC                                                                          | 8.3mm                                                                               | NO.10                                                                               | NO.10                                                                               | 25                                                                                  |
|                                                                   | 3/8-16UNC                                                                           | 9.9mm                                                                               | NO.12                                                                               | NO.12                                                                               | 25                                                                                  |
|                                                                   | 7/16-14UNC                                                                          | 11.6mm                                                                              | NO.14                                                                               | NO.14                                                                               | 25                                                                                  |
| K88F1                                                             | 1/4-28UNC                                                                           | 6.7mm                                                                               | NO.9                                                                                | NO.9                                                                                | 25                                                                                  |
|                                                                   | 5/16-24UNC                                                                          | 8.3mm                                                                               | NO.11                                                                               | NO.11                                                                               | 25                                                                                  |
|                                                                   | 3/8-24UNC                                                                           | 9.8mm                                                                               | NO.13                                                                               | NO.13                                                                               | 25                                                                                  |
| K88F2                                                             | 3/8-24UNC                                                                           | 9.8mm                                                                               | NO.13                                                                               | NO.13                                                                               | 25                                                                                  |
|                                                                   | 7/16-20UNC                                                                          | 11.5mm                                                                              | NO.14                                                                               | NO.14                                                                               | 25                                                                                  |
|                                                                   | 1/2-20UNC                                                                           | 13.0mm                                                                              | NO.15                                                                               | NO.15                                                                               | 25                                                                                  |
| Note: The kit colors:<br>(R)Red; (B)Blue; (DB)Dark Blue; (D)Dark. |                                                                                     |                                                                                     |                                                                                     |                                                                                     | <b>88 PCS</b> KITS                                                                  |

1: 75PCS wire thread inserts 2: 3PCS HSS Tap 3: 3PCS HSS Twist Drill  
 4: 3PCS Tang Puncher (Material: Carbon Steel with Heat Treatment, Electro-Coating)  
 5: 3PCS Simple installation tool spanner 6: 1PCS Small hexagon spanner



| ALL KITS ARE WITH STANDARD WIRE THREAD INSERTS-1.5D         |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Art NO.                                                     | HSS Helical Tap                                                                   | HSS Drill Size                                                                    | Insertion Tool                                                                    | Break-off Tang                                                                     | Inserts                                                                             |
|                                                             |  |  |  |  |  |
| KS005M                                                      | M5*0.8                                                                            | 5.2mm                                                                             | NO.5                                                                              | NO.5                                                                               | 25                                                                                  |
| KS006M                                                      | M6*1                                                                              | 6.2mm                                                                             | NO.6                                                                              | NO.6                                                                               | 25                                                                                  |
| KS008M                                                      | M8*1.25                                                                           | 8.3mm                                                                             | NO.8                                                                              | NO.8                                                                               | 25                                                                                  |
| KS010M                                                      | M10*1.5                                                                           | 10.3mm                                                                            | NO.10                                                                             | NO.10                                                                              | 25                                                                                  |
| KS012M                                                      | M12*1.75                                                                          | 12.4mm                                                                            | NO.12                                                                             | NO.12                                                                              | 10                                                                                  |
| KS014M                                                      | M14*2.0                                                                           | 14.4mm                                                                            | NO.14                                                                             | NO.14                                                                              | 10                                                                                  |
| KS014M1                                                     | M14*1.25                                                                          | 14.4mm                                                                            | NO.14                                                                             | NO.14                                                                              | 10                                                                                  |
| KS014M2                                                     | M14*1.5                                                                           | 14.4mm                                                                            | NO.14                                                                             | NO.14                                                                              | 10                                                                                  |
| KS1024C                                                     | 10-24UNC                                                                          | 5.1mm                                                                             | NO.8                                                                              | NO.8                                                                               | 25                                                                                  |
| KSD1224C                                                    | 12-24UNC                                                                          | 5.8mm                                                                             | NO.8                                                                              | NO.8                                                                               | 25                                                                                  |
| KS1420C                                                     | 1/4-20UNC                                                                         | 6.7mm                                                                             | NO.9                                                                              | NO.9                                                                               | 25                                                                                  |
| KS51618C                                                    | 5/16-18UNC                                                                        | 8.3mm                                                                             | NO.10                                                                             | NO.10                                                                              | 25                                                                                  |
| KS3816C                                                     | 3/8-16UNC                                                                         | 9.9mm                                                                             | NO.12                                                                             | NO.12                                                                              | 15                                                                                  |
| KS71614C                                                    | 7/16-14UNC                                                                        | 11.6mm                                                                            | NO.14                                                                             | NO.14                                                                              | 10                                                                                  |
| KS1213C                                                     | 1/2-13UNC                                                                         | 13.0mm                                                                            | NO.15                                                                             | NO.15                                                                              | 10                                                                                  |
| KS1032F                                                     | 10-32UNF                                                                          | 5.1mm                                                                             | NO.8                                                                              | NO.8                                                                               | 25                                                                                  |
| KS1428F                                                     | 1/4-28UNF                                                                         | 6.7mm                                                                             | NO.9                                                                              | NO.9                                                                               | 25                                                                                  |
| KS51624F                                                    | 5/16-24UNF                                                                        | 8.3mm                                                                             | NO.11                                                                             | NO.11                                                                              | 25                                                                                  |
| KS3814F                                                     | 3/8-24UNF                                                                         | 9.8mm                                                                             | NO.13                                                                             | NO.13                                                                              | 15                                                                                  |
| KS71620F                                                    | 7/16-20UNF                                                                        | 11.5mm                                                                            | NO.14                                                                             | NO.14                                                                              | 10                                                                                  |
| KS1220F                                                     | 1/2-20UNF                                                                         | 13.0mm                                                                            | NO.15                                                                             | NO.15                                                                              | 10                                                                                  |
| The kit colors:<br>(R)Red; (B)Blue; (DB)Dark Blue; (D)Dark. |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |

- 1: 1PCS HSS tap 2: 25PCS /15pcs/10pcs Wire thread inserts (Material: 304 stainless steel)  
 3: 1PCS HSS drill 4: 1PCS Tang Puncher(Material: Carbon Steel with Heat Treatment, Electro-Coating)  
 5: 1PCS Simple installation tool

| THREAD REPAIR KIT 吊卡规格表                                                             |            |                 |                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------|------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NAME                                                                                | SIZE       | HSS TWIST DRILL | REMARK                                                                                                                                                                                                                                                                                                             |
|  | M5*0.8     | 5.2mm           | <b>1. Main Tool:</b><br>Material: Steel with Heat Treatment, Electro-Coating<br><br><b>2. Screw-Coil:</b><br>Material: Stainless Steel SUS304<br>Finish with Heat Treatment<br>Standard Length: L=1.5D<br><br><b>3.TAP:</b><br>Material :HSS<br>Finish with Heat Treatment<br><br><b>4.DIRLL:</b><br>Material :HSS |
|                                                                                     | 10-24UNC   | 5.2mm           |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | 12-24UNC   | 5.8mm           |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | 10-32UNF   | 5.1mm           |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | M6*1       | 6.2mm           |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | 1/4-20UNC  | 6.7mm           |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | 1/4-28UNF  | 6.7mm           |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | M8*1.25    | 8.3mm           |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | M8*1       | 8.3mm           |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | 5/16-18UNC | 8.3mm           |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | 5/16-24UNF | 8.3mm           |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | M10*1.0    | 10.3mm          | <br><br><br><br>Design the card as your Logo                                                                                             |
|                                                                                     | M10*1.25   | 10.3mm          |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | M10*1.5    | 10.3mm          |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | 3/8-16UNC  | 9.9mm           |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | 3/8-24UNF  | 9.8mm           |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | M12*1.25   | 12.4mm          |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | M12*1.5    | 12.4mm          |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | M12*1.75   | 12.4mm          |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | 7/16-14UNC | 11.5mm          |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | 7/16-20UNF | 11.5mm          |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | M14*1.25   | 14.4mm          |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | M14*1.5    | 14.4mm          |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | M14*2.0    | 14.4mm          |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | 1/2-13UNC  | 13.0mm          |                                                                                                                                                                                                                                                                                                                    |
|                                                                                     | 1/2-20UNF  | 13.0mm          |                                                                                                                                                                                                                                                                                                                    |



# SELF TAPPING INSERTS





## 自攻螺套 SELF TAPPING INSERTS

Self tapping insert is a new type of strengthening the strength of the thread fasteners. It has teeth inside and outside lines, embedded plastic, aluminum alloy cast iron, copper and other soft materials, high strength of internal thread hole can be formed, self tapping insert also can repair damaged internal thread.

自攻螺套也叫自攻牙套，是一种新型的加强螺纹强度的紧固件，自攻螺套内外都有牙纹，嵌入塑料、铝合铸铁、铜等较软材料内，可以形成较高强度的内螺纹孔，自攻螺套（自攻牙套）亦可对已坏的内螺纹进行修复。



## FEATURES 特点

1. Self tapping
2. no pre-tapping required
3. Very high pull-out resistance
4. Highly resistant to vibration, can withstand vibration without loosening
5. Produces high quality, permanent, wear-resistant threads
6. Unlimited thread re-usability
7. Protects expensive components from damage
8. Easy to install, standard taps can be used
9. Wide variety of styles to fit almost every application

- ◆ 自攻螺套衬套具自行攻螺纹能力，母材不必预先攻牙，节省成本支出。
- ◆ 和成品接触面大，承受拉力强，产品设计时可使用较低强度之材料或较小规格螺丝亦可使用。
- ◆ 对于已磨损或溃牙之母螺纹具有修护作用，使用自攻螺套衬套可继续使用相同的螺丝。
- ◆ 对振动抵抗力强，可防止松动。
- ◆ 与母材无余隙，母材若含气泡时亦有良好的气密性。
- ◆ 自攻螺套安装简便，迅速，只须一种装配工具，成本低，几乎无不良率。



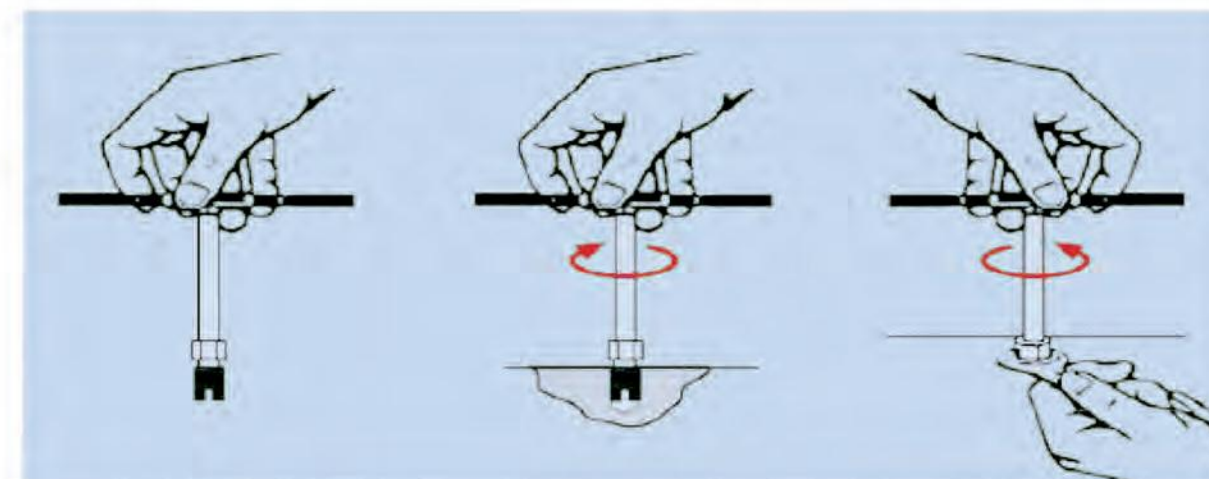
## MATERIALS 材质

Stainless steel / aluminum / brass / iron / zinc / alloy

- ◆ 碳钢：镀彩锌，适合用于铝合金，铜合金，塑料等为工程强度较低的基材上。
- ◆ 不锈钢：适用于铸铁等强度较高的产品上。



## HOW TO USE 使用





# TYPE

302 /307/308 SELF TAPPING WITH CUTTING SLOT.

302 type is recommended used in most applications. In some materials,it provides perfect specific a screw thread lock effect. If not yet, suggest use 307/308 type. 307/308 type made a major breakthrough in the field of material removal difficult.It not only has a thick wall, there are three circular hole with cutting ability scattered in the wall. 307/308 suitable for the material thickness is not very comfortable.

其中开槽型自攻螺套被推荐应用于大多数应用领域。在某些材料上，这种螺套提供完美的特定螺纹锁功效。如果还不行，一般推荐使用 307/308 型，307/308 型在材料切割困难方面做出了重大的突破。这种产品不但有很厚的壁，还有三个具有切削能力的圆孔分散于壁上，307/308 产品特别适用于材料厚度不太宽裕的情况下。

## 302

| 302 SELF TAPPING INSERT            |             |                 |                             |                 |                    |                             |
|------------------------------------|-------------|-----------------|-----------------------------|-----------------|--------------------|-----------------------------|
| 302 self-tapping with cutting slot | Length (mm) | External thread | The reference hole diameter |                 |                    | Minimum borehole depth (mm) |
|                                    |             |                 | Plastics                    | Aluminium alloy | Cast iron products |                             |
| M2.5-0.45                          | 6           | M4.5-0.5        | 4.0-4.1                     | 4.1-4.2         | 4.2-4.3            | 8                           |
| M3-0.5                             | 6           | M5-0.5          | 4.5-4.6                     | 4.6-4.7         | 4.7-4.8            | 8                           |
| M3.5-0.6                           | 8           | M6-0.75         | 5.3-5.4                     | 5.5-5.6         | 5.6-5.7            | 10                          |
| M4-0.7                             | 8           | M6.5-0.75       | 5.8-5.9                     | 6.0-6.1         | 6.1-6.2            | 10                          |
| M5-0.8                             | 10          | M8-1.0          | 7.1-7.2                     | 7.3-7.5         | 7.5-7.6            | 13                          |
| M6-1.0                             | 12          | M9-1.0          | 8.1-8.2                     | 8.3-8.5         | 8.5-8.6            | 15                          |
| M6-1.0                             | 14          | M10-1.5         | 9.0-9.2                     | 9.2-9.3         | 9.3-9.4            | 17                          |
| M8-1.25                            | 15          | M12-1.5         | 10.6-10.8                   | 11-11.2         | 11.2-11.4          | 18                          |
| M10-1.5                            | 18          | M14-1.5         | 12.6-12.8                   | 13.0-13.3       | 13.2-13.4          | 22                          |
| M12-1.75                           | 22          | M16-1.5         | 14.6-14.8                   | 15.0-15.3       | 15.2-15.4          | 26                          |
| M14-2.0                            | 24          | M18-1.5         | 16.6-16.8                   | 17.0-17.3       | 17.2-17.5          | 28                          |
| M16-2.0                            | 22          | M20-1.5         | 18.6-18.8                   | 19.0-19.3       | 19.2-19.5          | 27                          |

## 307

| 307 SELF TAPPING INSERT |             |                 |                             |                    |                             |
|-------------------------|-------------|-----------------|-----------------------------|--------------------|-----------------------------|
| 307 Self-tapping        | Length (mm) | External thread | The reference hole diameter |                    | Minimum borehole depth (mm) |
|                         |             |                 | Aluminium alloy             | Cast iron products |                             |
| M3-0.5                  | 4           | M5-0.6          | 4.6-4.7                     | 4.7-4.8            | 8                           |
| M4-0.7                  | 6           | M6.5-0.8        | 6.0-6.1                     | 6.1-6.2            | 10                          |
| M5-0.8                  | 7           | M8-1.0          | 7.4-7.5                     | 7.6-7.7            | 13                          |
| M6-1.0                  | 8           | M10-1.25        | 9.3-9.4                     | 9.5-9.6            | 15                          |
| M8-1.25                 | 9           | M12-1.5         | 11.1-11.3                   | 11.3-11.5          | 18                          |
| M10-1.5                 | 10          | M14-1.5         | 13.1-13.3                   | 13.3-13.5          | 22                          |
| M12-1.75                | 12          | M16-1.75        | 15.0-15.3                   | 15.3-15.5          | 26                          |
| M14-2.0                 | 14          | M18-2.0         | 17.0-17.2                   | 17.3-17.5          | 28                          |
| M16-2.0                 | 14          | M20-2.0         | 19.0-19.2                   | 19.3-19.5          | 27                          |

## 308

| 308 SELF TAPPING INSERT |             |                 |                             |                    |                             |
|-------------------------|-------------|-----------------|-----------------------------|--------------------|-----------------------------|
| 308 Self-tapping        | Length (mm) | External thread | The reference hole diameter |                    | Minimum borehole depth (mm) |
|                         |             |                 | Aluminium alloy             | Cast iron products |                             |
| M3-0.5                  | 6           | M5-0.6          | 4.6-4.7                     | 4.7-4.8            | 8                           |
| M4-0.7                  | 8           | M6.5-0.8        | 6.0-6.1                     | 6.1-6.2            | 10                          |
| M5-0.8                  | 10          | M8-1.0          | 7.4-7.5                     | 7.6-7.7            | 13                          |
| M6-1.0                  | 12          | M10-1.25        | 9.3-9.4                     | 9.5-9.6            | 15                          |
| M8-1.25                 | 14          | M12-1.5         | 11.1-11.3                   | 11.3-11.5          | 18                          |
| M10-1.5                 | 18          | M14-1.5         | 13.1-13.3                   | 13.3-13.5          | 22                          |
| M12-1.75                | 22          | M16-1.75        | 15.0-15.3                   | 15.3-15.5          | 26                          |
| M14-2.0                 | 24          | M18-2.0         | 17.0-17.2                   | 17.3-17.5          | 28                          |
| M16-2.0                 | 24          | M20-2.0         | 19.0-19.2                   | 19.3-19.5          | 27                          |



# KEYSERT







## 插销螺套 KEYSERT

Keenserts (are also known as key sert, keyserts) provide high strength and are designed to provide high resistance to rotation and pullout loads. After installation into the tapped hole, the locking keys on each Keensert/Keysert are driven down through the threads of the parent material, locking the insert firmly and permanently in place.

Available in inch and metric thread sizes, the stainless steel solid bushing configuration of the Keensert Insert guarantees the quality of the internal thread before installation. No special tools are required for installation and standard taps and drills are used for hole preparation. The pre-assembled self-broaching keys set the insert to depth and ensure positive resistance against rotation.

Keysert 插销螺套是一种坚固的一体式键锁 (key-locking) 螺套，常用来修复损坏的螺纹或者在一些设备中作为初始装备使用。

Keysert 的插销键可以提供一个强力的机械锁以阻止工件因振动或扭力而发生旋转。

Keysert 产品材质上分碳钢和不锈钢两种，规格上同时具备英制和公制尺寸系列。

## FEATURES 特点

1. Easy install, high strength, high cycle life
2. Positive mechanical lock eliminates wind out in service
3. Significantly increases torque-down and load capability in weaker materials
4. No special taps required
5. No tangs to break off and remove

1. 安装方便, 强度高, 寿命高
2. 使用标准钻头 (drills) 和丝攻 (taps) 进行安装
3. 显著增加转矩和负载能力较弱的材料
4. 可用于许多材质: 铝 (aluminum), 镁 (magnesium), 冷轧钢 (cold rolled steel)
5. 便于拆卸



## TYPES 类型

1. Thinwall
2. Heavy Duty
3. Extra Heavy Duty
4. Solid Insert

Keysert 有薄壁型, 重型, 特重型, 实心型等几种, 各自都有一个系列规格。







## THE KEYSERTS SIZES ( METRIC SIZE )

| LIGHT WEIGHT    |                 |        |
|-----------------|-----------------|--------|
| Internal thread | External Thread | Length |
| M5*0.8          | M8*1.25         | 8MM    |
| M6*1            | M10*1.25        | 10MM   |
| M8*1.25         | M12*1.25        | 12MM   |
| M8*1            | M12*1.25        | 12MM   |
| M10*1.5         | M14*1.5         | 14MM   |
| M10*1.25        | M14*1.5         | 14MM   |
| M12*1.75        | M16*1.5         | 16MM   |

| HEAVY WEIGHT    |                 |        |
|-----------------|-----------------|--------|
| Internal thread | External Thread | Length |
| M4*0.7          | M8*1.25         | 8MM    |
| M5*0.8          | M10*1.25        | 10MM   |
| M6*1            | M12*1.25        | 12MM   |
| M8*1.25         | M14*1.5         | 14MM   |
| M8*1            | M14*1.5         | 14MM   |
| M10*1.5         | M16*1.5         | 16MM   |
| M10*1.25        | M16*1.5         | 16MM   |
| M12*1.75        | M18*1.5         | 18MM   |
| M12*1.25        | M18*1.5         | 18MM   |
| M14*2           | M20*1.5         | 20MM   |
| M14*1.5         | M20*1.5         | 20MM   |
| M16*2           | M22*1.5         | 22MM   |
| M16*1.5         | M22*1.5         | 22MM   |
| M18*1.5         | M24*1.5         | 24MM   |
| M20*2.5         | M30*2           | 30MM   |
| M20*1.5         | M30*2           | 30MM   |
| M24*3           | M33*2           | 33MM   |
| M24*2           | M33*2           | 33MM   |
| M22*1.5         | M32*2           | 32MM   |

| INSERT              |                 |        | INSTALLATION   |                                 | REMOVAL       |            |        |       |
|---------------------|-----------------|--------|----------------|---------------------------------|---------------|------------|--------|-------|
| Internal thread     | External thread | Length | TAP Drill size | c'sink Diameter<br>+.010/- .000 | Thread tap    |            | Drill  |       |
|                     |                 |        |                |                                 | Size Class 2B | Min. Depth | Size   | Depth |
| 8-32                | 5/16-18         | 0.31   | I              | 0.32                            | 5/16-18       | 0.37       | 7-32   | 1/8   |
| 10-24<br>10-32      | 3/8-16          | 0.31   | Q              | 0.38                            | 3/8-16        | 0.37       | 9/32   | 1/8   |
| 1/4-20<br>1/4-28    | 7/16-14         | 0.37   | X              | 0.44                            | 7/16-14       | 0.43       | 11/32  | 3/16  |
| 5/16-18<br>5/16-24  | 1/2-13          | 0.43   | 29/64          | 0.51                            | 1/2-13        | 0.53       | 13/32  | 3/16  |
| 3/8-16<br>3/8-24    | 9/16-12         | 0.50   | 33/64          | 0.57                            | 9/16-12       | 0.56       | 15/32  | 3/16  |
| 7/16-14<br>7/16-20  | 5/8-11          | 0.62   | 37/64          | 0.63                            | 5/8-11        | 0.68       | 17/32  | 3/16  |
| 1/2-13<br>1/2-20    | 3/4-16          | 0.62   | 45/64          | 0.76                            | 3/4-16        | 0.68       | 21/32  | 3/16  |
| 9/16-12<br>9/16-18  | 3/4-16          | 0.81   | 45/64          | 0.76                            | 3/4-16        | 0.94       | 21/32  | 3/16  |
| 5/8-11<br>5/8-18    | 7/8-14          | 0.87   | 53/64          | 0.88                            | 7/8-14        | 1.00       | 25/32  | 5/16  |
| 3/4-10<br>3/4-16    | 11/8-12         | 1.12   | 11/16          | 1.14                            | 11/8-12       | 1.31       | 31/32  | 5/16  |
| 7/8-9<br>7/8-14     | 11/4-12         | 1.25   | 13/16          | 1.27                            | 11/4-12       | 1.44       | 13/32  | 5/16  |
| 1-8<br>1-12<br>1-14 | 13/8-12         | 1.37   | 15/16          | 1.39                            | 13/8-12       | 1.56       | 17/32  | 5/16  |
| 11/8-7<br>11/8-12   | 11/2-12         | 1.62   | 17/16          | 1.52                            | 11/2-12       | 1.84       | 111/32 | 5/16  |
| 11/4-7<br>11/4-12   | 15/8-12         | 1.81   | 19/16          | 1.64                            | 15/8-12       | 2.06       | 115/32 | 5/16  |
| 11/2-6<br>11/2-12   | 17/8-12         | 2.00   | 113/16         | 1.89                            | 17/8-12       | 2.28       | 123/32 | 5/16  |

Keensert Inserts give high strength joints in low strength materials. Typical applications are transmission housings, electronic equipment and suspension units. Miniature Inserts For use in electronic and aerospace applications where size and strength are critical. These inserts may be installed in thinner sheet material providing protrusion of insert is not objectionable. Pullout strength exceeds the tensile strength of most Military standard screws. Lightweight, Heavy Duty and Extra Heavy Duty inserts, offered in a wide choice of thread diameters, metric and unified to suit virtually any performance requirement. Each is available with or without internal locking features.



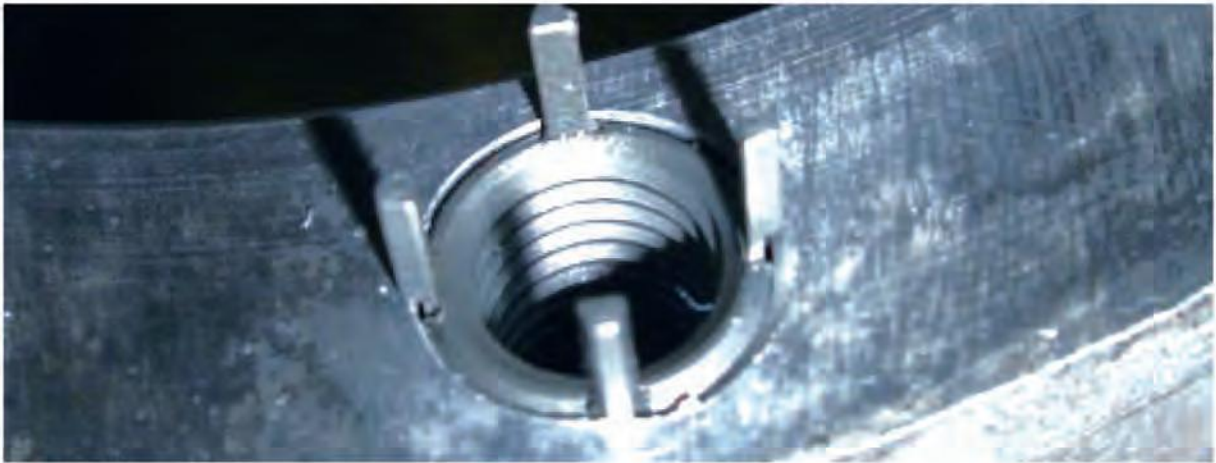
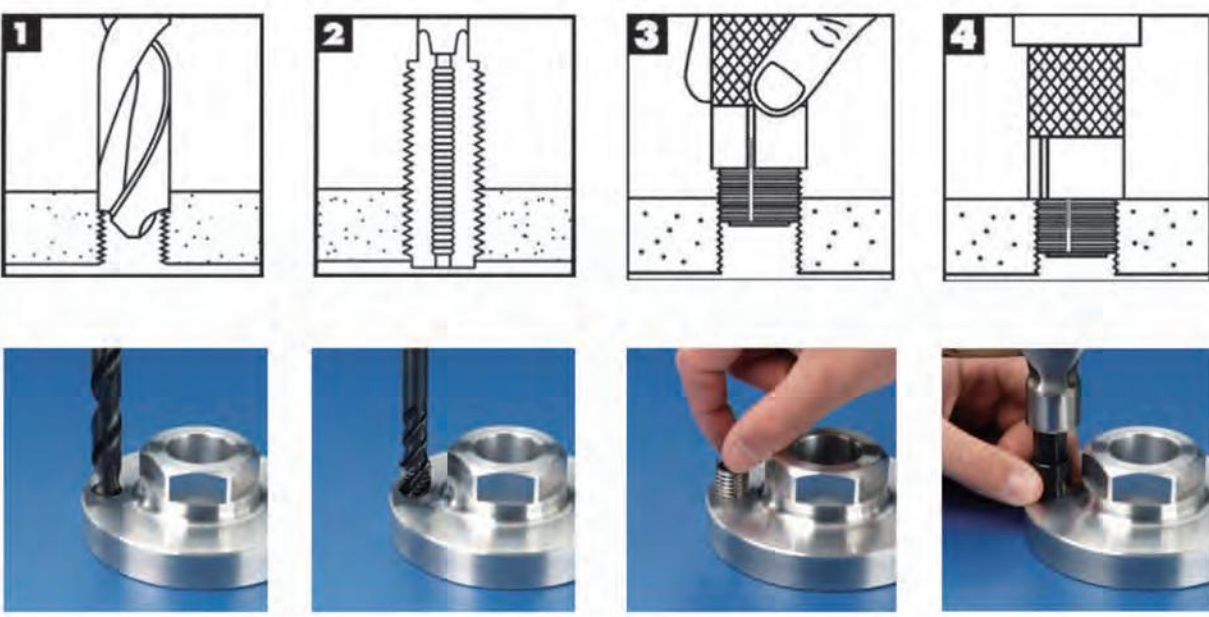


# HOW TO USE INSTALLATION

- 1. Drill out old threads with a standard drill.
- Note: Drill is oversize – see charts for proper dimensions.**
- Chamfer the hole with a standard countersink
- 2. Tap new threads with a standard. See charts for proper size and depth.
- 3. Screw in the insert until slightly below surface.
- 4. Drive keys down with several hammer taps on the proper installation tool.

## 插销螺套的安装

- 1. 钻孔，钻孔深度应大于插销螺套长度。
- 2. 攻螺纹，所攻螺纹与插销螺套外螺纹对应。
- 3. 安装插销螺套，并使其低于工件表面。
- 4. 将插销螺套的插销键压入底孔。

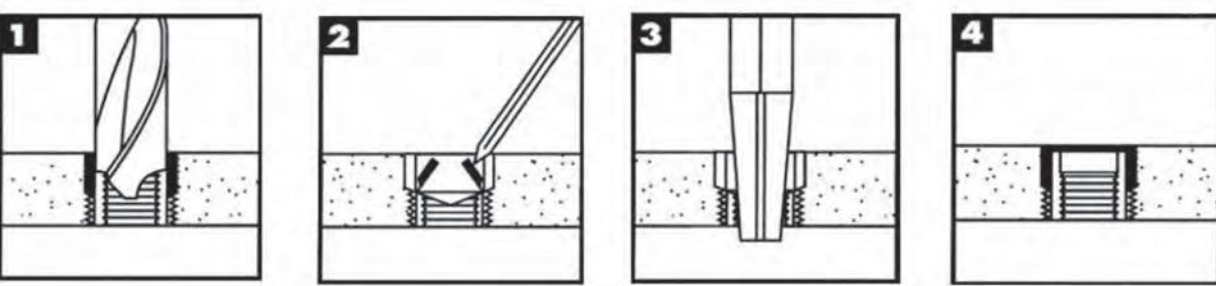


# REMOVAL

- 1. Drill out material between keys and internal thread with standard drill to specified depth (refer to charts for proper dimensions )
- 2. Deflect keys inward and break off.
- 3. Remove insert using a drill-out E-Z Out ,or similar type tool
- 4. Same size replacement insert may be installed in the original hole

## 插销螺套的拆卸

- 1、将螺套钻掉一部分到一定的深度。
- 2、将插销螺套里的插销键向内折弯并折断。
- 3、用易卸工具或类似工具将插销螺套取出。
- 4、取出过插销螺套的螺纹孔可继续安装同样尺寸的螺套。





## 产品服务 PRODUCT SERVICE

### 发于心 安于信

Development With The Whole Heart And Credit

We must take all customers in the world into consideration and do good rather than evil on however humble a scale. We should listen to every little voice of the customer carefully and make feedbacks timely on the information about product improvement to meet the customers' needs continuously. As long as customers demand, we will take their demands as our responsibility and give our helps, regardless of boundaries. We keep on learning, experiencing, and improving ourselves to move ourselves and the customers.

心怀天下客户，勿以恶小而为之，勿以善小而不为。悉心感悟客户每一个细小心声，及时反馈产品改进信息，不断满足客户的需要。只要客户有需求，我们就当作自身的职责，不分界限，实施帮助。不断学习，不断历练，不断提升。感动自己，感动客户。永远把最好的产品和服务提供给客户。



## CREATION

we are ready to cooperate with our friends  
both at home and abroad to seek joint development and create  
a beautiful future

我们愿与国内外同仁携手合作、共创发展、创造美好未来