SiRUBA

使用說明書與零件圖
INSTRUCTIONS BOOK & PARTS LIST

LZS-20U53D

目　錄

CONTENTS

一、機 器 簡 介

曲線縫縫紉機系列產品是多品種鎖式曲形線跡工業用刺繡機器。

本系列機種用於繡品、服裝、巾被、鞋帽、手套、皮件、箱包等行業，被廣泛應用于薄、中厚料上作直形、曲形縫紉。

本機結構採用連杆挑線，旋梭勾線，針杆擺動，差動齒輪勾線，倒順針機構，並設有膝提機構。具有運轉平衡、操作靈活、縫修方便、線跡美觀整齊等特點。

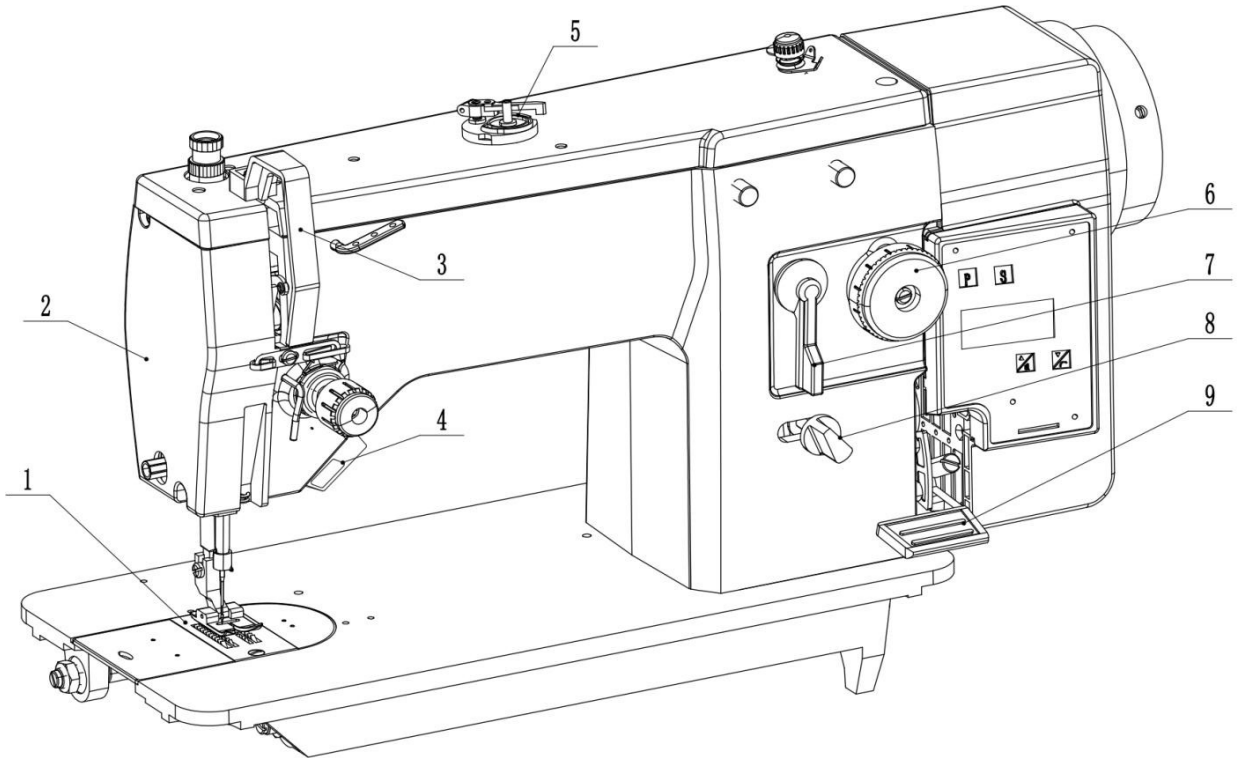
I. BRIEF INTRODUCTION OF THE MACHINE

Series products of Curved-stitching Sewing machine are multi-purposed,locked-type and curved stitching mechanism for industrial embroidery.

This series of machines can be used in the trades of embroidery,garment,bedding, shoes and hats,gloves and leather pieces and suitcases and handbags.It can also be extensively applied to the material with thin or medium thickness for linear and curvilinear sewing.

The machine is designed as a structure which can be expected to stitch-up of prick with connecting-levers,to crochet with shuttles or differential gears,and provided with swaying needle-staff,clockwise can counter-clockwise units and kneeing device.The ma-chine features in smooth running,flexible operation,convenient maintenance as well as neat and beautiful stitches.

1. 各部件名稱 arm bed components



1. 針板　2. 面板　3. 挑線杆防護罩
4. 車燈　5. 繞線器　6. 針距調節旋鈕
7. 擺針扳手　8. 左中右定位扳手　9. 倒縫扳手

1. Need plate　2. Panel　3. Take-up bar guard
5. Lights　5. Winder　6. Pitch adjustment knob
7. Spanner component　8. Left-center-right positioning wrench
9. Spanner of reversal stitch

二、技術規格及用途

II. Main Technical Specifications and Application

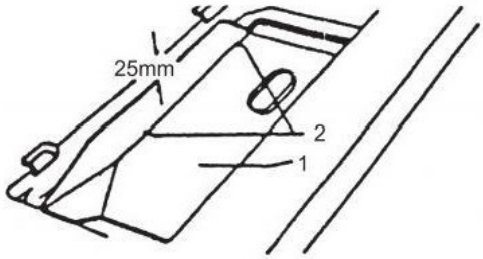
<table>
<tr><td colspan="4">名　　稱 Description</td><td>曲 形 縫
Curved-stitching</td><td>雙 針 曲 形 縫
Double Curved-stitching</td></tr>
<tr><td rowspan="3">最 高
縫 速
Max.
Speed</td><td colspan="3">直　形　縫</td><td colspan="2">2000針1分2000 stitches/min</td></tr>
<tr><td rowspan="2">曲
形
縫
Curvilinear</td><td colspan="2">橫針距1~5毫米
Horizontal needle distance 1~5mm</td><td colspan="2">1700針1分1700 stitches/min</td></tr>
<tr><td colspan="2">橫針距5~12毫米
Horizontal needle distance 5~12mm</td><td colspan="2">1200針/分1200 stitches/min</td></tr>
<tr><td colspan="2" rowspan="4">最大線跡長度
Max. Length of stitches</td><td colspan="2">直形線跡
Linear</td><td colspan="2">5毫米
5mm</td></tr>
<tr><td rowspan="3">曲形線跡
Curvilinear</td><td>左針位 Left-needle Position</td><td rowspan="3">12毫米
12mm</td><td rowspan="3">6毫米(指單針擺動寬度)
6mm(Swaying width of Single needle)</td></tr>
<tr><td>中針位 Central-needle Position</td></tr>
<tr><td>右針位 Right-needle Position</td></tr>
<tr><td colspan="4">雙 針 間 距
Distance. Between double stitches</td><td></td><td>2.5, 3.5, 4.5(可換)
2.5. 3.5, 4.5(Changeable)</td></tr>
<tr><td rowspan="2">壓腳提升高度
Height of Presser foot</td><td colspan="2">手　提
Hand stitch</td><td colspan="2">不低於6毫米
no less than 6mm</td></tr>
<tr><td colspan="2">膝　提
Kneeing stitch</td><td colspan="2">不低於12毫米
12mm</td></tr>
<tr><td colspan="4">最 大 縫 紉 厚 度
Max. Thickness of sewing</td><td colspan="2">不少於8層紗布
No less than 8 layers</td></tr>
<tr><td colspan="4">機 針 規 格
Specification of needle</td><td colspan="2">DPX5(Nm700~130)</td></tr>
<tr><td colspan="4">縫　　線
Thread</td><td colspan="2">No. 40-100滌
棉線或類似絲線
No. 40~100 terylene
and the like</td></tr>
<tr><td colspan="4">機頭體積(長×寬×高)
Dimension of machine head(L×W×H)</td><td colspan="2">450×180×320毫米
450×180×320mm</td></tr>
<tr><td colspan="4">電 動 機 功 率
Motor Power</td><td colspan="2">0.37千瓦　0.37KW</td></tr>
<tr><td colspan="4">用　　途
Application</td><td>粗縫、拼縫、套結縫、裝飾縫及一般Z字形縫
For rough stitching, piece-together stitching, Loop stitching, Z-Shape stitching and decorating stitching</td><td>雙針條狀及曲折裝飾縫
For double stitching and curved-stitches decorations</td></tr>
</table>

三、機器安裝和操作準備

1、機器安裝

⑴ 油盤安裝

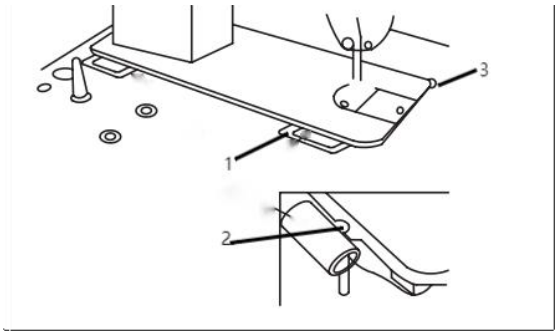
見圖一，用四隻圓釘2將油盤1固定在台板框孔內，並確保油盤至台板面距離為25毫米，油盤右邊緣與台板右框邊平齊。



圖一 Figurel 1

⑵ 機頭安裝：(見圖二)

機頭在安裝時，首先將機頭連續勾座1和機頭座墊2用鐵釘固定在相應位置，安裝四隻橡皮座墊3時，一定要使鐵釘全部埋入橡皮圈內。然後將機頭裝上連接勾放在台板上，並注意轉動要靈活，四角要平穩。



圖二 Figurel 2

2、操作準備

⑴ 擦拭機器：

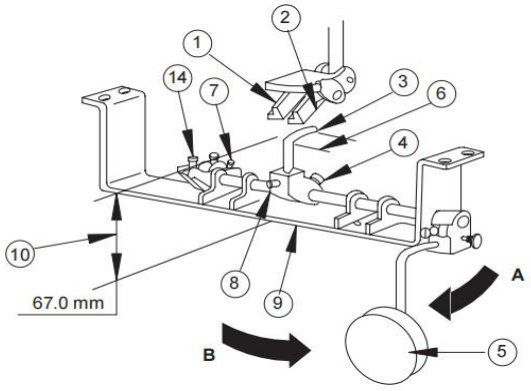
機頭裝箱前為了防止機件生銹，各部分均塗有除鏽油脂，同時機頭裝箱後，還可能在貯藏和長途運輸階段造成油脂硬化和積聚在機器表面的灰塵，所 以必須將表面的油脂和灰塵用汽油和潔淨的軟布擦拭乾淨。

⑶ 膝控部件的安裝：

按圖三進行安裝，並注意轉動要靈活。

①膝碰塊1的位置根據操作者的情況進行調節，以保證操作位置。

②調節件2的位置，當件2控制件3運動時，則膝部可以來控制機針的擺動；當件2控制件4時，則膝部可以控制壓腳的提升。



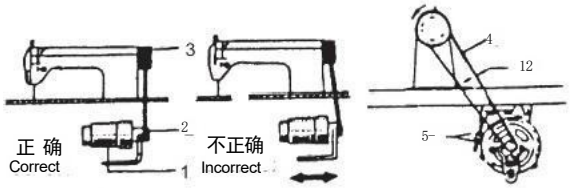
圖三 Figurel 3

⑷ 電動機安裝：(見圖四)

①將電機1左右移動，使縫紉機主動輪件3與電動機皮帶輪件2的位置調整成一直線即可。

②縫紉機運轉方向，從機頭主動輪上側看，應是逆時針方向。電動機的轉向應一致。電動機轉向可用電動機上的電源插頭換轉180°調整轉向。

③0 型皮帶4的張力調整，旋松螺母5, 轉動電動機調節皮帶張力。皮帶張力的大小可用手指將皮帶按下，使皮帶如圖示彎曲成12-20毫米程度即可。



圖四 Figurel 4

⑵ 檢查：

機器出廠後，在長途運輸中有可能受到強烈的振動而使機件鬆動或變形，所以在清洗油污以後，應該作一次周密的檢查，並用手轉動主動輪，看機件之間有無轉動困難，碰撞現象或其它不均勻的阻力，不正常的聲響，如有應作適當的調整，調至機器運轉正常後才可正式試車。

⑶ 潤滑：

機器運轉之前，用軟布擦拭乾淨之後，對所有運轉和滑動部份和圖五中的加油點都應充分加油。

如果機器是連續使用的，應該每天加油數次。

必須使用2號縫紉機白油或HJ-7機械油。

⑷ 試車：

新機器第一次使用和長期擱置未用重新使用時，應先進行空載運轉。此時特別注意：上輪轉向應是逆時針(從上輪的外側面來看)，並將壓腳提升，開始時應低速運轉，如運轉正常，則逐步提高到2000轉/分。數分鐘後再檢查各部分零件磨損情況，直至機器情況正常時才正式使用。

III.INSTALLATION AND PREPARATION FOR OPERATION

1. Installation

(1) Fixing of oil Disk

Fix the oil disk(1)with 4 pins (2)onto the frame openings of the plate.Make sure the distance between the oil disk and the plate surface is equal to 25mm.The right side of the oil disk should be kept in line with the right frame of the plate(see Figure 1).

(2) Installation of machine Head(see Figure 2)

In Installation,the base of connecting hook(1)and the pad (2)should be firstly fastened firmly at a proper place with the metal nails when the 4 rubber pads (3)are being fixed.Make sure the metal nails should be embedded entirely into the rubber washer.Then the machine head can be in- stalled on the plate with connecting hooks.Attention should be attached to flexible movement and the 4 angles being flat and stable.

(3) Installation of knee-control component

The installation of this component should be conducted according to the Figurel3,and much importance be attached to the flexibility of operation.

① The location of the knee-control block 1 ought to be adjusted in accordance with the operator's working condition to ensure convenience in operation.

② How to locate the adjuster 2:When adjuster 2 is aimed to control the movement of part 3 the knee component can be used to control the swaying of the needle.When the adjuster 2 is aimed to control the movement of part 4,the knee component can be used to control the uprais-ing of presser foot.

(4) Installation of motor(see Figure 4)

① Turn the motor 1 from side to side in a bid to ensure the driving wheel of the sewing ma-chine 3 being in line with the pulley of the motor 2.

② How to regulate the running direction:Viewed from the outside of the driving wheel,the running direction should be counter-Clockwise.Make sure that the turning of the motor should be in uniform and regular direction which can be regulated by the power plug on the motor with change of 180°

③How to regulate the tension of O-shaped Belt 4.

Release the Nut 5,and turn the motor so theat the Belt tension can be regulated.If press down the belt with your fingers and bend it over to 12-20 mm as shown in Figure 4,the tension is considered saideal one.

2. Preparation for Operation

(1)Cleaning the machine

Before shipping,every part of the machine head is intended to be coated with antirust grease in a bid to prevent the components from being rusted.After shipping,the applied grease might be hardened during the long-distance transportation or in storage,and particles and dust accumulated on the surface of the machine.And thus all the hardened grease,particles and dust should be wiped clean with gasoline and soft cloth.

(2) Installation

After leaving factory,the machine is possibly subject to violent vibration during the longdistance transportation so that the components could be loosened or deformed.A close and comprehensive inspection is needed when all the oily stain has been wiped clean.Turn the driving wheel manually to see if there is any difficulty in turning of the components ,any bump or obstruction,or any abnormal sounds.If any,the affected components should be adjusted until the machine is capable of running regularly.

(3) Lubrication

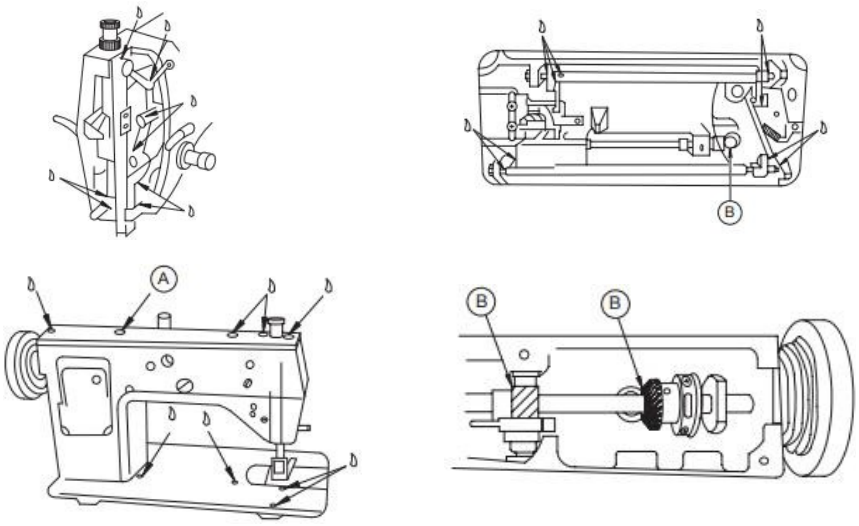
After the machine being wiped clean with soft cloth but before operating,all,the turning and movable parts and the oil holes in Figure 5 should be fully lubricated.

When the machine is needed to run continuously,lubrication should be made several time each day.

No 2 white lubricant of HJ-7 mechanical oil is preferentially used.

(4) Test run

When a new machine is operated at the first time or a machine is newly used after a long time of laying off,the machine should be made idle-running,What is more important at the moment is that the running direction of upper wheel should be counter-clockwise (viewed from the outside of the upper wheel)and the presser foot raised.At the beginning,the running should be at low speed,and could be gradually increased to 2000r/m when it comes to normal state.A few Minutes later,it is necessary to reexamine any sign of wear and tear about the components until the machine can be operated normally.



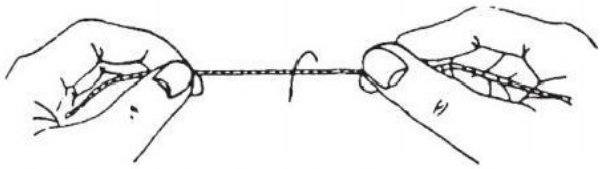
圖五 Figure 5

四、機 器 的 操 作

1、縫線的選擇

面線應採用左旋線。底線則左、右旋線均可使用。

縫線旋向的鑒別，可按圖六所示把縫線握住，以右手按圖箭頭方向搓轉縫線。若線股越搓越緊，則是左旋線。反之即為右旋線。



圖六Figure 6

2、機針、縫線和縫料的配合

請使用DP×5 機針，機針號數根據使用的縫料、縫線參考下表進行選擇。

機針號碼 Needle Namber	縫線的種類及號碼 Number, Kind of thread			縫 料 種 類 Kind of material
DPX5	棉線 Cotton	絲線 Silk	尼龍 Nylon	
65~75(9#~11#)	80~150	240~30	3~56	喬其紗、薄麻布、手帕、綢緞繡花 Georgette, gunny, napkin, embroidered-Satin
75~90(11#~14#)	60~80			服裝卡其、薄呢絨、繡字、繡花 Khaki, woolen fabric embroidery
90~100(14#~16#)	40~60	16~18		絨布、全毛嗶嘰呢、綢緞上繡花、手套上繡花 Cottonflannel, woolen serge, embroidered satin and gloves
100~130(16#~22#)	30~40	21~60	10~40	人造革、鞋、帽、拎包、皮件上繡花 Artificial leather, shoes and hats, suit-case embroidered leather-biece

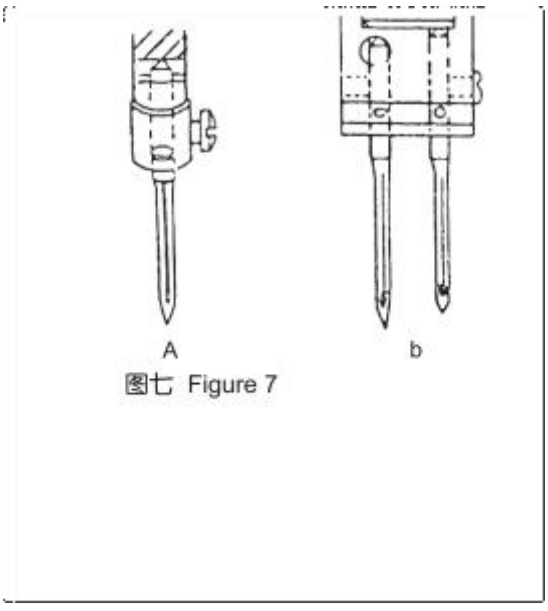
參考上表按所縫布料選擇合適的機針。

*如使用特殊縫線如金銀絲，請使用大號的機針(14#-16#)以縫出滿意的針跡。

*if specific thread (gold-or-silver thread)is used,large size needles(14#-16#)are needed for satisfying stitches.

3、機針安裝

見圖七，機針安裝時一定要使針孔及機針長槽面向操作者，機針尾部一定要插到孔底，然後擰緊支頭螺釘。



图七 Figure 7

4、繞梭心線：(見圖八)

⑴ 左手抓住上輪，右手將離合螺釘A 朝自己方向轉動，鬆開；

⑵ 將梭心置於繞線器芯軸B, 盡可能地按下；

⑶ 如圖， 將線通過上過線板二孔C1 、C2 和夾線板D, 然後把線頭在梭心上繞上幾圈，將線量調節壓板E壓向梭芯，開機；

⑷ 梭心線繞滿後會自動零止繞線。

調節梭心繞線量，可用螺絲刀固定線量調節軸G, 鬆開螺釘F, 轉動壓板E, 可調整梭心的繞線量。把壓板E調離自己方向，可多繞線；反之則少繞線。一般調整到繞線量小於梭心外徑0. 5~1mm, 再緊固螺釘F。

梭心線應排列整齊而緊密。如松浮不緊，可旋轉夾線螺母調節夾線板的壓力；如排列不齊，可鬆開螺釘H, 上下調節上過線板組件I, 使之排列整齊後再緊固螺釘H。

5、穿面線和引底線

穿面線時針杆應在最高位置，然後從線架上引出線頭，曲折縫按 圖九所示將線頭依次穿過1-11, 最後穿過機針孔12, 並引出100毫米左右的線備用。 雙針曲折縫按圖九穿面線。

引底線時，先將面線線頭捏住轉動主動輪，使針杆向下運動，再回升到最高位置，然後拉起捏住的面線線頭，底線即被牽引上來，最後把底、面二根線頭一起置於壓腳下前方。

6、裝梭心(見圖十)

⑴ 梭心裝入梭心套，將線從長槽①及壓線簧②下拉出。

⑵ 將線拉出壓線簧末端的孔③。

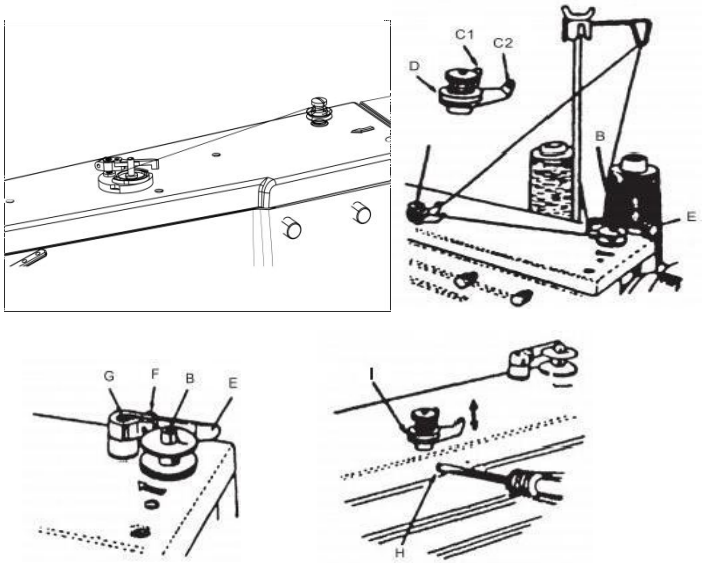
⑶ 把線穿過過線孔④留出60毫米長的線頭。

注意：牽拉線5時，梭心順時針方向轉動是正確的；若是逆時針方向轉動，應把梭心翻個面重裝。

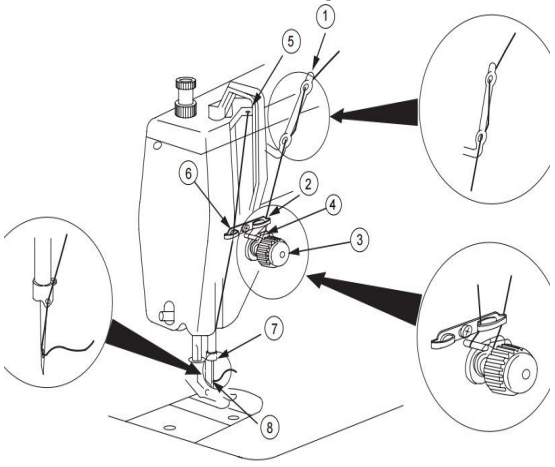
7、裝卸梭心套(見圖十一)

裝梭心套的時候，機針應該在最高位置。先拉開梭門蓋1之後把梭心套3照圖十一所示放入旋梭2中。放入時請注意梭心套與旋梭芯軸上的定位槽相扣合。

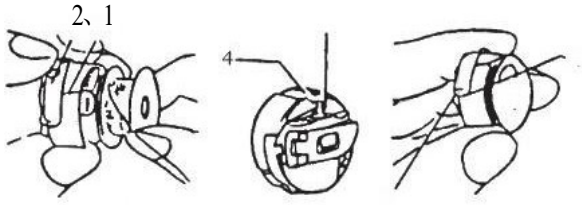
卸梭心套時，必須將梭門蓋向上板開並且扳足，之後捏著扳開的梭門蓋徐徐地取下梭心套，如此才能使梭心套鉤住梭心，不讓梭心脫落。



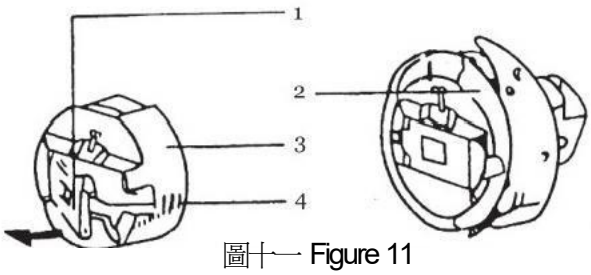
圖八 Figure8



圖九Figure9



圖十Figure 10



圖十一 Figure 11

8、直針距及倒順送料的調節(見圖十二)

直針距的調節：

⑴ 按順時針方向旋轉針距旋鈕B, 可使直針距變小。

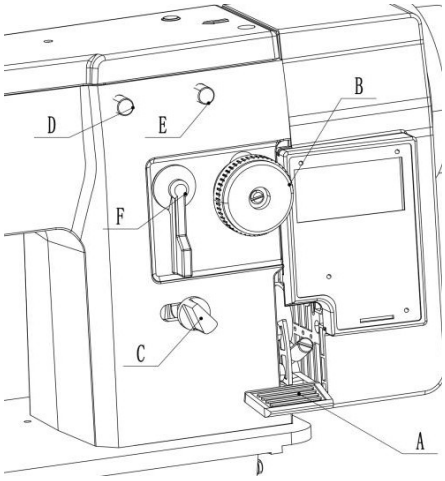
⑵ 按逆時針方向旋轉針距旋鈕B, 可使直針距變大。

針距旋鈕B上的刻度只是參考值，並非精確值。

倒順送料的調節：

⑴ 當倒順把手A處於自由狀態時，機器處於順進料狀態。

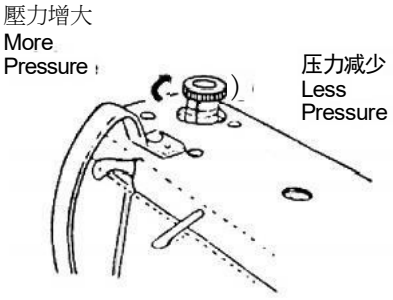
⑵ 當按下倒順把手A到最低位置時，機器處於倒送狀態。



圖十二Figure 12

9、壓腳壓力的調節：

壓腳的壓力，在保證順利送料的前提下壓力越小越好。一般厚料壓力要大，薄料壓力要小些。如圖十三，順時針旋轉調壓螺母，壓力增大；逆時針旋轉調壓螺母，壓力減小。



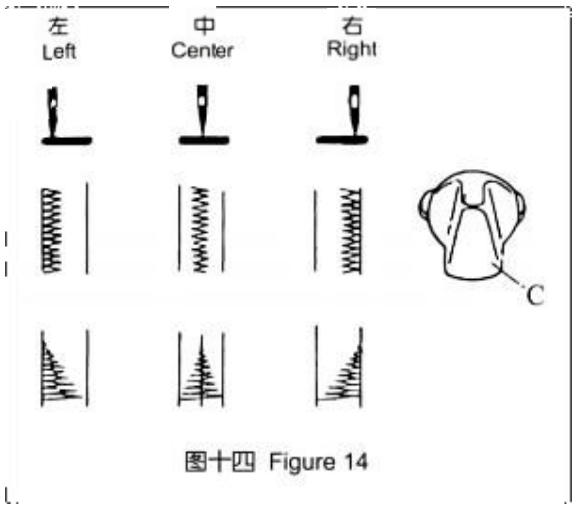
圖十三 Figure 13

10、針位的選擇：

左、中、右針位對直縫與曲折縫都適用。

機針位於中間位置適合於一般縫紉，只有在縫紉位置有特殊要求時，才能將機針置於左或右針位。

如圖十二，只要將左、中、右手柄C移到預想的位置，就會縫出相應的針跡，如圖十四。



图十四 Figure 14

11、橫針距的調節(見圖十二)

⑴ 當需採用曲形線跡0~12㎜ 之間任一固定值時，可按如下調節：

a、鬆開橫針定位螺釘D、E;

b、順時針轉動橫針板手F至所需的位置；

c、鎖緊橫針定位螺釘D、E 即可。

⑵ 當需採用曲形線跡0~12㎜之間任何一固定區間的變動進行縫紉時，例固定區間為, 2~8㎜ 可按如下調節：

a 、鬆開橫針定位螺釘D(控制窄曲形)、F(控制寬曲形);

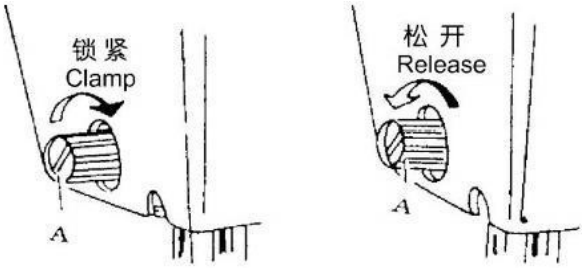
b、把橫針板手調至2㎜ 位置，鎖緊螺釘D;

C、把橫針板手調至8㎜ 位置，鎖緊螺釘E。

這樣橫針距就可在指定的窄曲形2㎜至寬曲形8㎜之間任意變動。

12、直縫鎖緊裝置：(見圖十五)

當橫針距調節至0進行直縫時，順時針旋轉直縫鎖緊偏心套A, 鎖緊針杆擺動架，則直縫效果會更佳。當進行曲折縫紉時，則要逆時針旋轉偏心套A, 使之鎖緊在機殼上，鬆開針杆擺動架。



圖十五 Figure 15

IV. HOW TO OPERATE

1. Selection of stitches

Left-handed rotation stitches can only be applied to the surface,while either left-handed or right-handed rotation stitches can be appiled to the bootom.

The rotational direction of stitches can be identified according to the indication shown in Figure 6.Hold the stitch with both hands and then twist it by the right hand and in the direction as the arrow shows.If the more it twists,the tighter it becomes,undoubtedly it should be left-handed rotation stitch.Otherwise it is right-handed one.

2. Coordination of Needle.Thread and material

DPX5 needle is chosen in prefrerence.The number of needle can be selected in line with the material and thread used.(See the following Table)

Decent needles can be selected in accordance with the material listed in the above Table.

3.Assemblage of Needle(see Figure 7)

When assembling,make sure that the needle hole and its long slot should face the operator with the rear part of needle inserted deep into the hole bottom,Then tighten firmly the set screw.

4. Winding thread around the shuttle core (see Figure 8)

(1) Get the shuttle core onto the axis of the winder B,and clamp it down to the full;

(2) Shown as the Figure,Let the thread run through the two holes C1,C2 on the upper thread-running plate and the thread-holding plate D;then the end of the thread is made to go around the shuttle core for several circles.In the case the thread-volume-adjusting plate E is clamped toward the shuttle core,operate the machine immediately;

(3) If the full thread around the shuttle core is found,it can be expected to stop winding automatically.

To regulate the winding volume of the shuttle core,a screwdriver can be used to secure the volume-regulating shaft G,and then loosen the screw F and turn the pressing plate E,If more winding volume is needed,the pressing plate is made to go against the operator and vice versa. In general,the volume can be set to less than 0.5~1mm of the external diameter of the shuttle core,then secure the screw F.

The thread around the shuttle core should be arranged neat and compact,If too Loose or relax,the pressure of thread-holding plate should be strengthened by turning the nut;If being in uneven arrangement,release the set screw H,and adjust the compenent of the upper thread-running plate 1 until the thread arrangement is satisfactory,and then fix it.

5. Threading surface and Bottom stitches

When threading the surface stitches,the needle staff should be at the top position.The end is led from the t6hread rack,curved stitchings are made to run through 1-13 as shown in Figure 9a and then througn the needle hole 12,meanwhile a length of 100mm should be drawn out for spare

Thread.The threading surface stitches of double curvea stitches should be made as shown in Figure 9b.

When threading the bottom stitches,firstly hold the end of surface stitch,then turn the driving wheel to make the needle staff run downward and immediately back to the top position.Pull up the end of surface stitch,resulting in drawing the bottom stitch upward.Finally,both ends of the surface stitch and the bottom stitch are set to the front of presser foot altogether.

6. Mounting of shuttle core (see Fingure 10)

(1) Mount the shuttle core onto the case and pull out the thread from the long slot ①and thread-pressing spring ②.

(2) Pull the thread out of the end-hole 3 of the thread pressing spring;

(3) Run the thread through the thread-conveying hole 4 and leave aside the end about 60mm.

Note:When drawing the thread end,it s normal for the shutle core to turn clockwise;If not in this case (or counter clockwise)the shuttle core should be remounted after turning over its side.

7. Mounting and Dismounting of the case (of the shuttle core)(see Figure 11)

When mounting the case,the needle should be at the top position.Pull apart the front cover 1 of the shuttle and set the case 3 into the rotation shuttle according to the indication shown in Figure 11,but it should be noted that the case and the locating groove of the shuttle shaft could be engaged in a good state.

When dismounting,pull the cover outward till to the full stop,then it firmly and gradually take down the case so that the case could be expected to hook up the core which won t be disengaged.

8. Adjustment of material-feeding

Adjustment of vertical needle distance (see Figure 12)

(1) The vertical needle distance can be reduced by turning the knob B clockwise.

(2) The distance can be increased by turning the knob B counter-clockwise.

The scale on the knob B is designed only for reference,which is not an exact value.

Adjustrment of material-feeding

(1) When the handle A is found in a free state,the material-feeding can be considered in a direct motion.

(2) But when the Handle A is pressed down to the lowest position,the material-feeding can be consideredin reverse motion.

9. Adjustment of the pressure of presser foot

On t he condition that the material-feeding can be conducted directly and regularly,the pressure of the presser foot should be a moderate one father than a big one.In general,the pressure should be increased on sewing the thick material.If on sewing the thin material,the pressure reduced.Shown as the Figure 13,turn the nut for adjusting pressure clockwise and the pressure tends to go up,while turn the nut counter-clockwise,and the pressure down.

10. Selection of needle position

The three positions,left,central and right,are suitable for both the linear stitching and the curvilinear one.

The central position can be expected to suit for conventional sewing.Only when a particular sewing is needed,can the needle be set to the left or right position.

Seen in the Figure 12,if the single-sided curved handle C is set to the predicted position,the proper stitchings can be effected (also see Figure 14)

11. Adjustment of horizontal needle distance(see Figure 12)

(1) If any one fixed value between 0~12mm of curvilinear stitchings is needed,the adjustnencan be made as follows;

a. Release the horl zontal needle set screws D,E;

b. Turn the spanner F clockwise to a position needed;

c. Lock the screws D,E;

(2) On sewing when a variation of any one fixed area between 0~12mm of curvilinear stitchings is needed (For example 2~8mm),the adjustment car be made as follows:

a. Loosen the set screw D (for control of the narrow curvilinear one)and F(for control of the wide curvilinear one);

b. Set the spanner to the position of 2mm and lock the screw E.

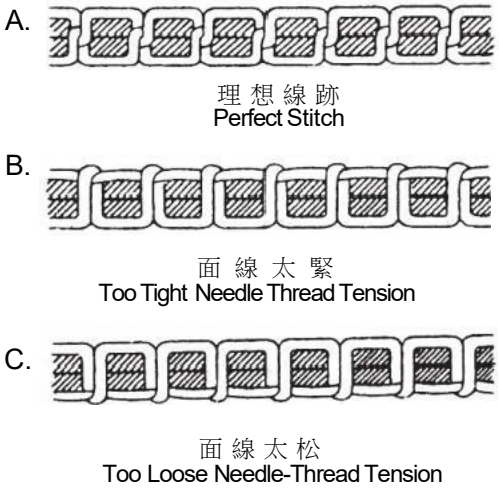
In this way,the horiaontal needle distance can be changed from 2mm (the narrow one)and 8mm (the wide one)randomly.

12. Locking unit for linear stictching (see Figure 15)

When the horizontal needle distance is set to position for Linear stitching,turn the linear and Locking eccentric sleeve A clockwise,secure the needle-bar swaying rack and then the effect of the linear stitching will be better When the curvilinear stitchings are made,the eccentric sieeve A should be turned couter-clockwise and locked securely onto the machine housing,then release the swaying rack of the needle bar.

五、縫 線 的 張 力

調整面線張力與底線張力到最佳位置，如圖十六，使面線與底線鎖在兩層縫料的中間而上、下線跡不能太松太緊，縫料不能起案。



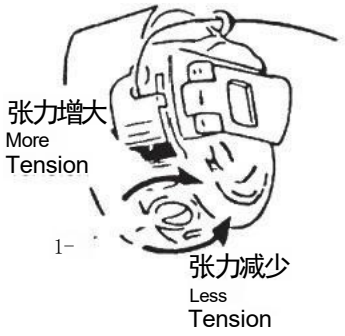
圖十六 Figure 16

2、面線張力的調節(見圖十八)

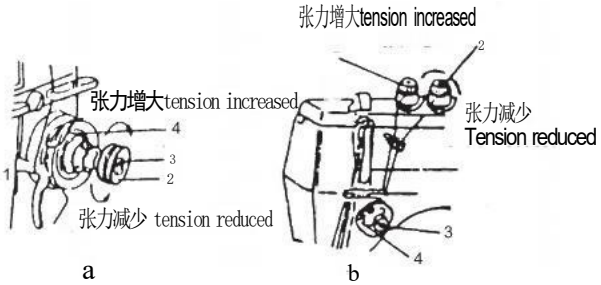
放下壓腳，旋動畫線張力螺母2調節面線張力，或旋松夾線器緊定螺釘，旋動螺釘3來調節挑線簧4的位置來調節面線張力。使縫紉的線跡達到理想的線跡。

1、底線張力的調節

如圖十七，旋動底線張力螺釘1調節底線張力。手持線頭，懸起梭心套，梭心套能以自身重量從線上徐徐滑下。此時度線張力為適宜。



圖十七Figure 17



圖十八 Figure 18

V.TENSION OF STITCHES

Adjust the tension of surface stitches and of the bottom stitches to the best extent (see Figure 16)so theat the coil of surface stitches and of the bottom stitches could be locked between the two layers of material,and all the stitchings should not be too tight nor too loose with the material to be sewn uncreased.

1.Adjustment of Bottom stitch Tension

In the light of indication shown in Figure 17,turn the screw 1 for adjusting the tension of bottom stitches.Hold the end in your hand and suspend the case of shuttle core upward.Then the case will slide down on its own weight,which shows that the tension of bottom stitches has reached thebest extent.

2.Adjustment of the surface stitch Tension

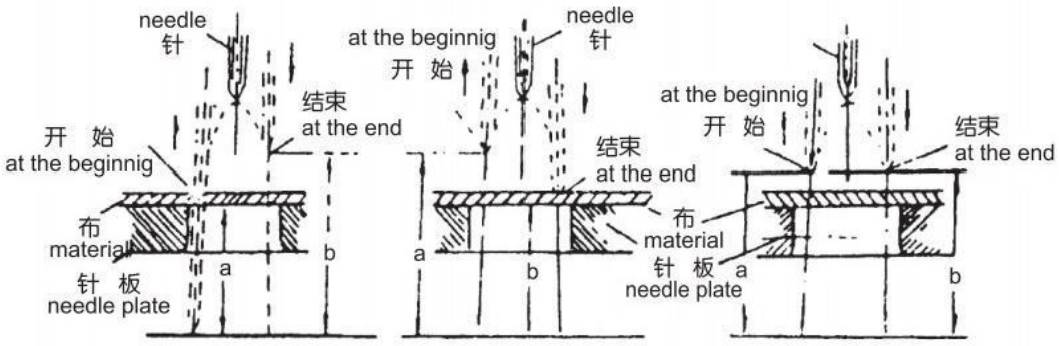
In the light of indication shown in Figure 18,turn the nuts for adjusting the tension of the surface stitches.Alternatively,release the set screw 2 on the thread-holder,then turn screw 3 for adjusting the positon of stitch spring 4,aiming at regulating the tension of surface stitches.As a result,the width of bottom stitches could be maintained perfect.

六、機器的定位與調整

1、機針左右對稱高度的調節

如圖十九所示，當機針行程在動作的開始和動作的結束時，如果針行程左右運動的高度不相等，就會出現跳針現象，同時，針也會將布扯破，這樣就不會繡出好產品。

要想獲得正確協調的運動位置，應拆除上蓋，鬆開上軸上的螺旋齒輪支頭螺釘，輕輕的拔動齒輪，注視針跡，將機針的運動調至協商位置，擰緊支頭螺釘。



不正確
incorrect

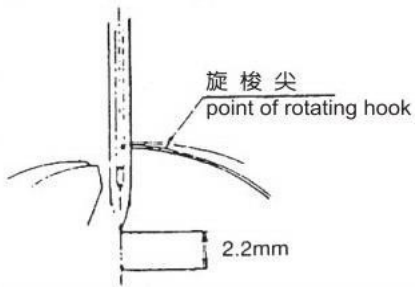
不正確
incorrect

正 確
correct

圖十九Figure 19

2、旋梭定位

①將擺針寬度固定在零位上， 用手朝自己 方向轉動帶輪，使機針(雙針曲折縫指右邊的機 針， 下同) 從下極限上升2.2 毫米 ， 此時旋梭尖 應在機針中心線上(圖二十) 。



圖二十 Figure 20

②如需調整，可旋松旋固定螺釘，將旋梭 尖對至機針中心線上，此時機針小缺口和旋梭之間隙約為0.05-0.1毫米(圖二十一)。

3、針杆高度

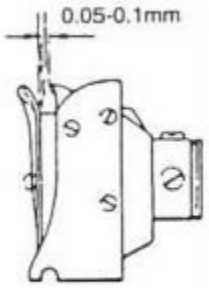
①調節擺針寬度到最大，用手朝自己方向轉動帶輪，使機針位於左面位置，旋梭尖在機針中心，此時機針孔上沿至旋梭尖尺寸應為0-0.5毫米。(圖二十二)

②如針杆高度位置不對，則拆去面板，旋松針杆連接軸螺釘，提高或放低針杆達到高度要求再旋緊螺釘。

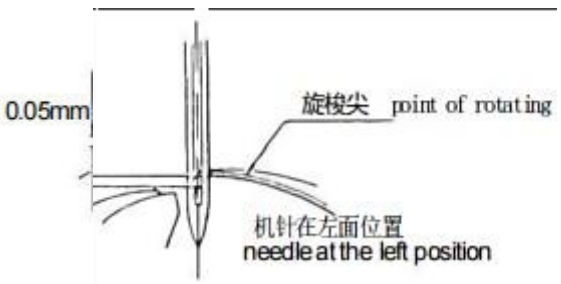
4、旋梭的裝卸(見圖二十三)

取下旋梭之前，先將針杆升到最高位置，再卸下針板，機針和梭心套，然後旋下旋梭定位鉤螺釘1, 卸去旋梭定位鉤3;而後鬆開旋梭的三隻螺釘2, 使旋梭在它的傳動軸上能夠自同轉動，接著用手轉動上輪，使送料牙架走向高處。到此，可以用手去旋轉旋梭，使它讓過將和送料牙架相碰位置，而後取出。

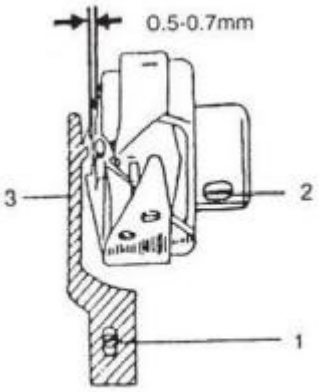
裝卸梭過程是依次先拆後裝的回復。



图二十一 Figure 21



图二十二 Figure 22



图二十三 Figure 23

VI. LOCATION AND REGULATION OF THE MACHINE

1. Regulation of symmetrical position of horizontal stitches

As shown in Figure 19.When the height of the left and right movement during the needle trav - elling is not the same,either at the beginning or in the end,skipping will be found and the embroi- dery material might tear by the needle.In this way no good embroidery could be pro- duced.

In order that the correct and coordinate position of movement could be achieved,the following steps should be taken;remove the upper cover,release the set screw on the gear of upper shaft and then slightly turn the gear to observe the stitches and adjust the movement of the needle up- til to the coordinated position,at length tighten the set screw.

2. location of rotating shut

(1) Manually so to raise the needle (In case of double curvilinear stitches,the needle is referred to the one on the right side,The same below)by 2.2mm from fht lower limit,when the point of ro- tating shuttle would be at the central line of the needle.(See Figure 20)

(2) If necessary,loosen the set screw on the rotating shuttle,the point of which should be aligned with the central line of the needle.At the moment,the space between the notch of needle and the rotating shuttle is about 0.05-0.1mm (see Figure 21).

3. Height of the needls stasff

(1) Set the width of swaying needle to the maximum and turn the belt pulley toward the oper- ator manually to make the needle stand at the left position and the shuttle point at the centre of the needle.At the moment the length from the needle hole till the shuttle point should be 0~0.5mm (see Figure 22)

(2) If the height of needle staff is not in the correct position,it is necessary to remove the panel,release the connecting screw on the needle staff,and then raise or lower the staff to the standard height.After that,re-tighten the screw.

4. Mounting and Dismounting of Rotating shuttle (see Figure 23)

To start with,raise the needle staff to the maximum before removing the rotating shuttle,then remove needle plate,needle and the case of shuttle core,meanwhile take down the screw 1 on the locating hook for the rotating shuttle and the locating hook 3 itself;release the three screws 2 on the shuttle,which is capable of rotating freely along the driving spinde,Turn the upper wheel manually to make the feeding rack go upward.Af this point,turn the rotating shuttle manually to allow the feeding rack passing by the position to be touched and then remove it.

The mounting or shuttle is done in an inverted order with the process of dismounting

七、一般故障及其處理方法
VII. FAULTS LOCATING AND HOW TO TREAT

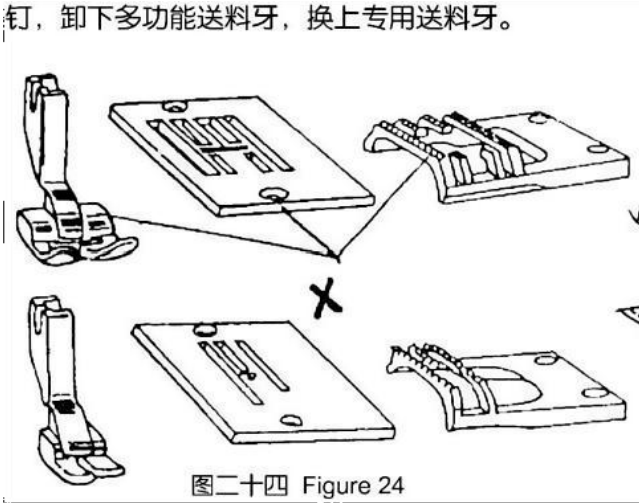
故障类型 Type	产 品 原 因 Cause of Fault	处 理 方 法 How to treat
断　针 Needle is broken	1、机针太细或机针弯曲 2、机针装法错误 3、缝纫时用手推拉缝料 4、缝料过于紧固 1、needle is too fine or bent 2、installation of needle not correct 3、to pull-push manually during sewing 4、material too solid or toothick	调换机针 参看图七 稍许加以扶持，不可推位 请按技术规格规定使用 replace the needle see Figure 7. Sightly adjust,don't pull-push manually material selected in line with specification
跳　针 Skipping	1、机针弯曲或者机针粗细和缝料厚薄不相称 2、机针装法错误 1、needle is bent or it's thickness is not matched with the material 2、installation of needle not correct	调换机针 参看图七 replace the needle see Figure 7.
断面线 Needle thread broken	1、穿线错误 2、面线太紧 3、线的质量差 4、机针太细，面线太粗 1、threading is incorrect 2、needle thread too tight 3、poor quality of thread 4、needle too fine or needle thread too rough	参看图九 参看图十八减少面线张力 调换缝线 调换机针 see Figure 9 tension of needle thread should be reduced (see Figure 18) replace the thread replace the needle
断底线 Bobbin thread broken	1、底线太紧 2、梭心绕线松乱，不匀 3、针板孔毛糙或磨损 1、The needle thread too tight 2、the thread-winding looes or uneven 3、hole of needle plate rough or worn out	减少底线张力 重新绕线 更换针板或用“0”砂布砂光 tension of bobbin thread reduced re-winding the thread replace needle plate or to smooth the hole with emery cloth
针迹松浮 Stitches are loosened	1、底面线没有调好 2、挑线簧过松 1、Thension of bobbin thread and needle thread not well-adjusted 2、Thread take-up spring tooloosened	调整底、面线参考图十八调节挑线簧张力 bobbin thread and needle thread should be welladjusted (see Figure 18) to adjust the tension of stitch-spring
缝料起皱 Material gets Creased	1、缝料过簿而针距太长 2、底、面线张力过紧 3、压脚压力过强 1、material too thin and needle distance too big 2、Tension of bobbin thread and needle thread too high 3、pressure of presser foot too high	适当调整 调节夹线螺母，挑线簧和梭皮螺钉 放松调压螺钉，减轻压脚的压力 well-adjusted Thread-holding nut,Thread take-up spring and screw should be regulated release pressure-adjusting screw and reduce the pressure of presser foot

八、幾種縫紉方法和附件的使用

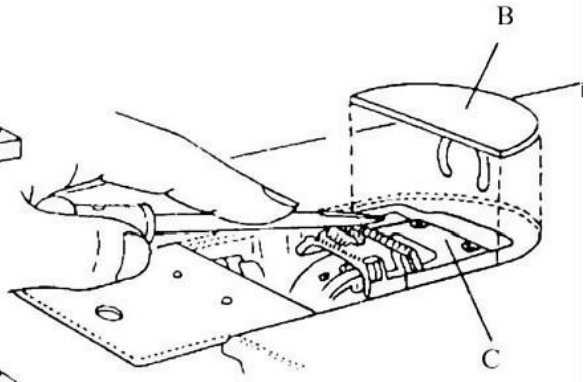
1、直縫：

採用專用的直縫壓腳、針板與送料牙(圖二十四)比採用多功能的壓腳、針板與送料牙進行直縫，效果會更佳，適用範圍會更廣。

進行直縫時，橫針距必須調至0,採用直縫鎖緊裝置鎖緊針杆擺動架，並換上專用壓腳、針板、送料牙。更換送料牙時(圖二十五),先卸下針板和針板內蓋板，把推板往外拉，鬆開二隻螺钉，卸下多功能送料牙，换上专用送料牙。



图二十四 Figure 24



图二十五 Figure 25

2、刺繡：

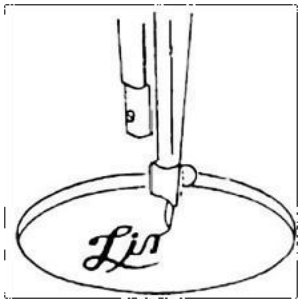
刺繡前的準備工作：

①必需使横针距在0~12㎜ 之間任意調節，把直針距調至0位，並調整膝控部件(見圖三),使件2控制3運動，則膝部可以控制機針的擺動。

②卸下壓腳、針板、針板內蓋板、推板和送料牙，換上繡花板；

③用左手捏緊面線線頭，用手朝自己方向轉動帶輪，使底線從針板孔中拉出；

④確保內外繃格將縫料繃緊，否則引起跳針，斷線及縫料零縮(如圖二十六)。



圖二十六Figure26

3、拉鍊縫：

這種縫法採用拉鍊壓腳(圖二十七),便於針跡接近突出的邊，並旋松螺釘B, 調節壓腳，使機針位於壓腳的左、右邊槽A,可適用於圖二十八中幾種情況等。

4、卷邊縫

卷邊縫採用卷邊壓腳(圖二十九)

拆掉多功能壓腳，換上卷邊壓腳，採用直縫法，針位選擇中間，就可以進行如圖三十的卷邊縫。

5、包梗縫：

進行包梗縫時，更換上專用的包梗壓腳、針板、送米牙(圖三十一),針位選擇中間，橫針距調節至3㎜ 之內，把一條較粗的線穿過包梗壓腳的小槽A,就可以進行包梗縫。(圖三十二)

6、裝飾縫：

只要變換左、中、右的針位，及熟練控制橫針距，就可以縫出如圖三十三的圖案。

7、其它一些實用縫法(見圖三十四)。

VIII.MODES OF SEWING AND APPLICATION OF ACCESSORIES

1. Linear Sewing

In case of linear sewing,the best effect and wider scope of application will be achieved if by aboption of the special linear presser foot,needle plate and material-feeding tooth(see Figure 24) rather than the multi-functional ones.

During linear sewing,the horizontal needle distance should be set to O position,and the linear locking unit with swaying rack of Icoking needle shaft can be used in combination with special presser foot,needle plate and material-feeding tooth.To replace material-feeding tooth,firstly remove needle plate and its inner cover,then push the thrust plate outward,release two screws, and replace the multi-functional material-feeding tooth with the special one.

2. Embroidery

Preparation before embroidering

(1) It should be noted that and free regulation can be made at the horizontal needle distance between 0~12mm.Set the vertical needle distance to O position and will adjust the knee-control parts (see Figure 3)to make the component 2 control the movement of the component 3.As a result,the "knee"can be predicted to control the swaying of the needle;

(2) Remove the presser foot,needle plate,inner cover,thrust plate and material-feeding tooth. After that,the embroidering plate is put into use;

(3) Hold firmly the end of the surface stitches with your lefthand,turn the belt pulley manually toward the operator,and then makes the bottom stitches pull out from the holes of the needle plate;

(4) Make sure to stretch tightly the material between the internal and external embroidering framse.Otherwise,skipping,stitches-breaking or material creased might be found (see Figure 26).

3. Zippered Sewing

This mode is preferable to make use of zippered presser foot (see Figure 27)in a bid to make the stitches more accessible to the projecting stitches,Then release the screw B,regulate the presser foot and set the needle to the presser foot and set the needle to the left and right grooves A of the presser foot.This mode is expected to suit for the sewings,seen in the Figure 28.

4. Hem-wrapping mode

In this mode,the hem-wrapping presser foot can be used as we wish (see Figure 29).Remove the multi-functional presser foot and replace it with the hem-wrapping one.This is also a mode of linear sewing with the needle set to the central position,shown as in the Figure 30,the hem-wrapping operation can be effected

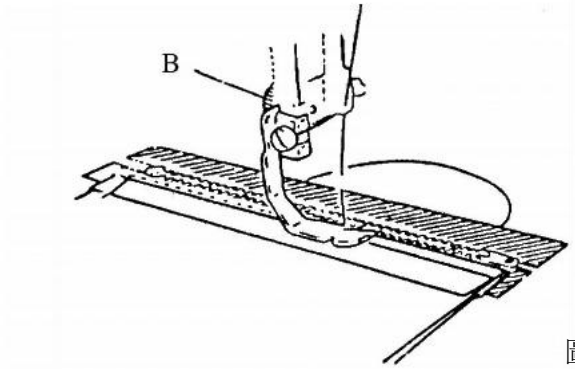
5. Stem-wrapping mode

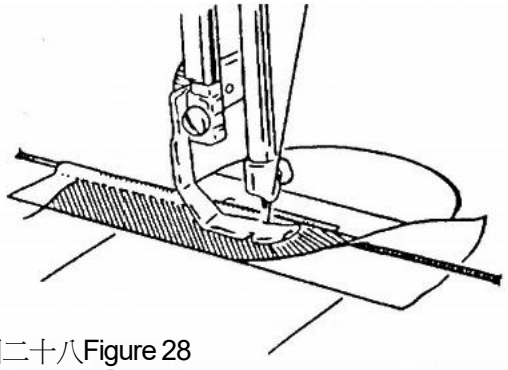
During the sewing with the stem-wrapping mode,the special stem-wrapping presser foot,needie plate and material-feeding tooth (see Figure 31)should be put into use.The needle is set to the central positon and the horizontal needle distance set to 3mm,and then run the rougher thread through the small groove A on the stem-wrapping presser foot so that the sewing of this mode will be smoothly conducted (see Figure 32).

6. Decoration Sewing

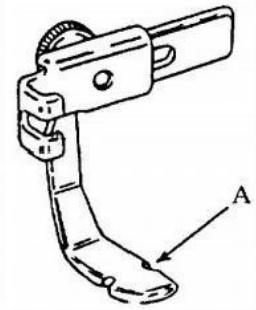
If the left,central and right needle positions can be freely changeable and the horizontal needle distance skillfully controlled,the patterns of the decoration sewing will be well achieved as seen in the Figure 33.

7. Other modes of practical sewing (see Figure 34)

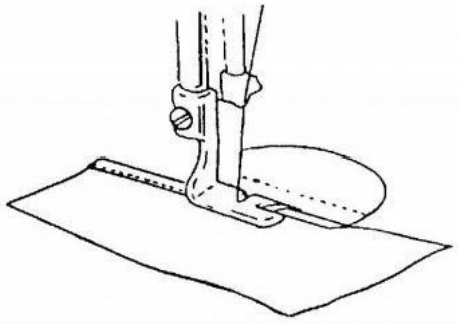




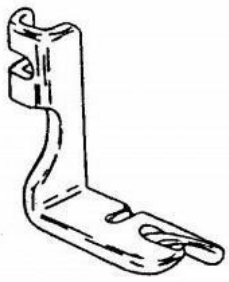
圖二十八Figure 28



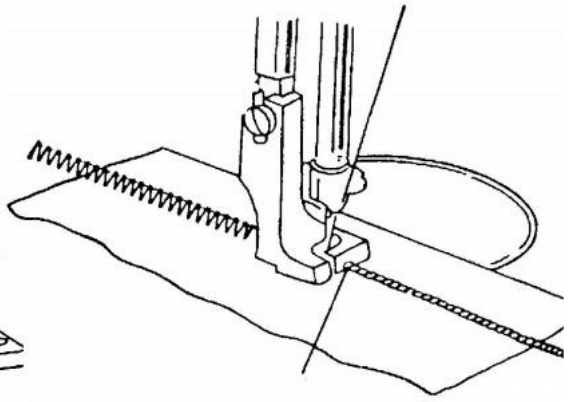
圖二十七Figure 27



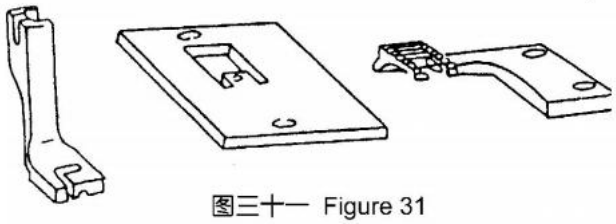
圖三十Figure 30



圖二十九Figure 29



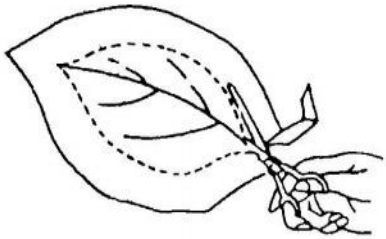
圖三十二Figure 32



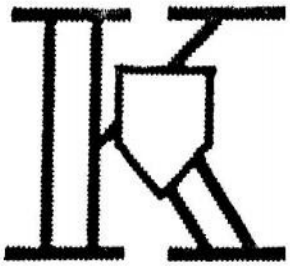
图三十一 Figure 31

圖三十三Figure 33

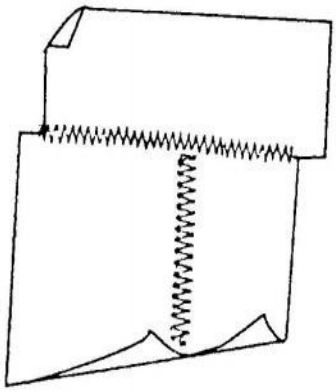
锁钮眼
Button hole



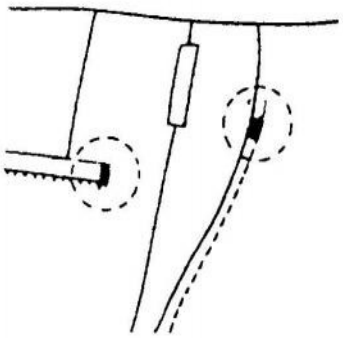
荷叶绣
Lolus-leaves Embroidery



绣　字
Word-Embroidery



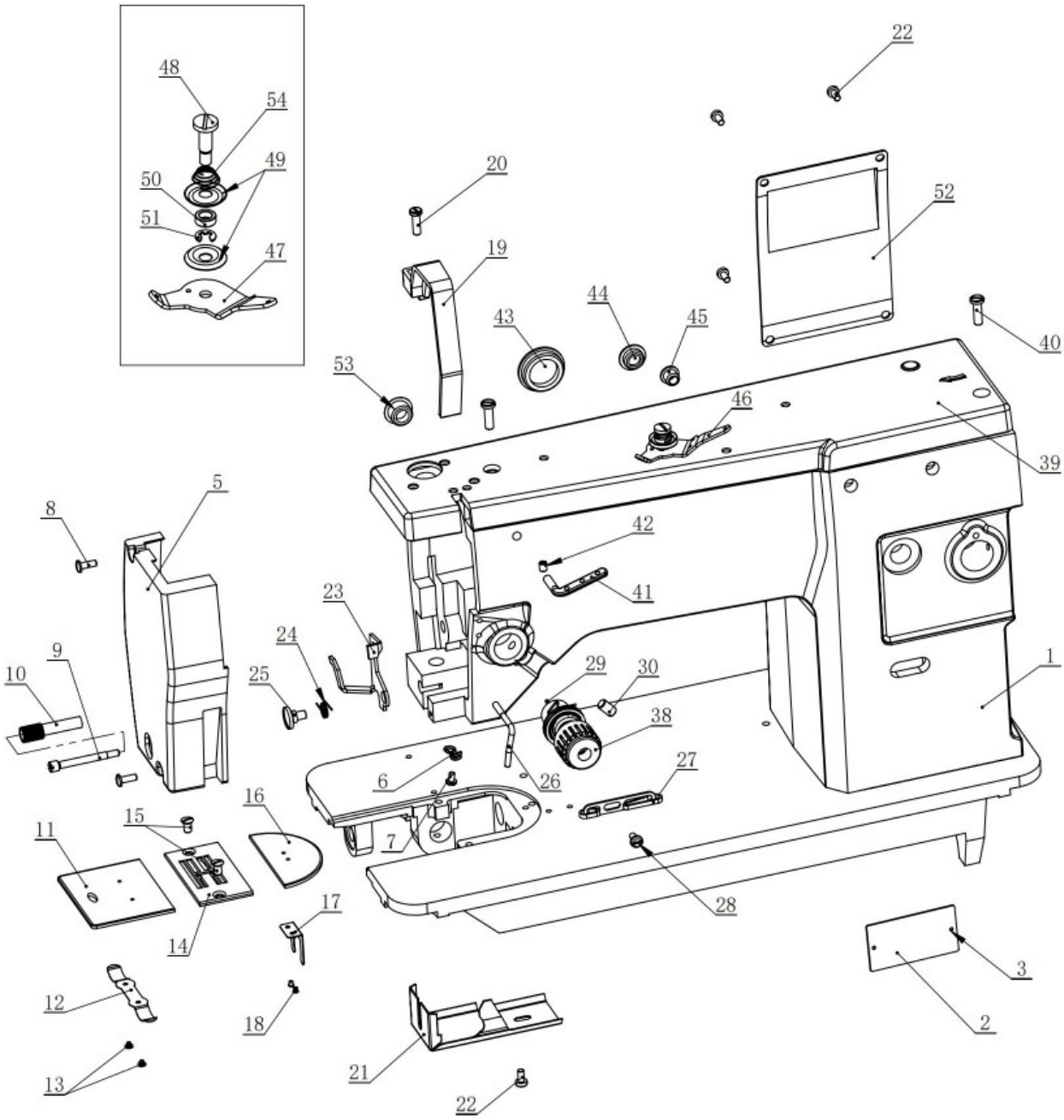
拼　缝
Piecing-together Sewing

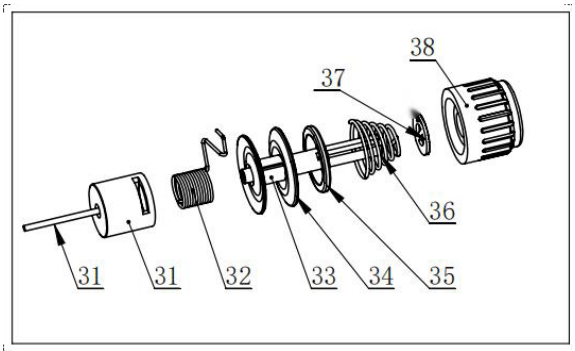


套结缝
Looping Sewing

IX.COMPONENT EXAMPLE

1、Components of housing

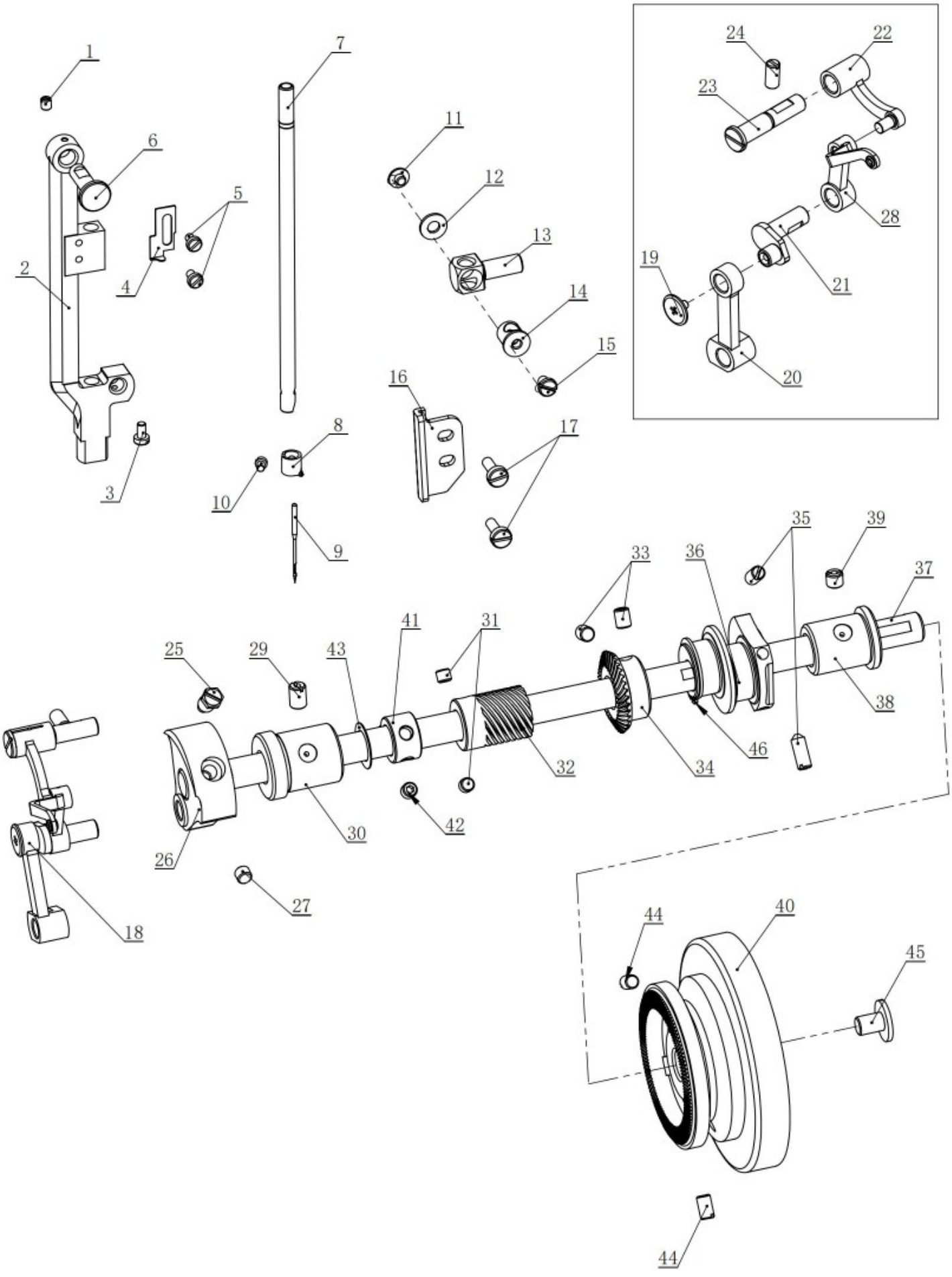




NO.	Code No.	Description	Qty
1	U53T1-0	Housing (機殼)	1
2	U53T1-1-3	Model-plate (型號牌)	1
3	U43T1-1-7	Model-plate river (型號牌鉚釘)	2
4	U53T1-1-8	Model-plate (型號牌)	1
5	U53T1-2-1	Face plate (面板)	1
6	U93T1-4	Face plate thread guide (面板導線架)	1
7	U93T1-5	thread guide screw (導線架螺釘)	1
8	U43T1-3	thread guide nut (導線架螺母)	2
9	U43T1-4	Linear lock eccentric screw (直線鎖緊偏心螺釘)	1
10	U43T1-5	Linear lock eccentric (直線鎖緊偏心件)	1
11	U43T1-6-1	Thrust plate (推板)	1
12	U43T1-6-2	Thrust plate spring (推板彈簧)	1
13	U43T1-6-3	Thrust plate spring screw (推板彈簧螺釘)	2
14	U33T1-7	Needle plate (針板)	1
15	U43T1-8	Needle plate screw (針板螺釘)	2
16	U43T1-9-1	Inner cover plate (內蓋板)	1
17	U43T1-9-2	Cover plate spring (蓋板彈簧)	1
18	U43T1-9-3	Cover plate spring Screw (蓋板彈簧螺釘)	2
19	U53T1-10	Thread take up lever shield (挑線桿護罩)	1
20	U93T1-2	Shield screw (護罩螺釘)	1
21	U43T1-13	Rotating hook shield (旋梭護罩)	1
22	U43T1-14	Rotating hook shield screw (旋梭護罩螺釘)	5
23	U43T1-15	Thread-releasing lever (放線桿)	1
24	U43T1-16	Thread-releasing lever spring (放線桿彈簧)	1
25	U43T1-17	Thread-releasing lever screw (放線桿螺釘)	1
26	U43T1-18	Lower thread-running pin (下導線銷)	1
27	U43T1-19	Double thread-running rack (雙導線架)	1
28	U43T1-20	Thread-running rack screw (導線架螺釘)	1
29	U53T1-21	Thread-releasing pin (放線銷)	1
30	U43T1-22	Fixing screw (固定螺釘)	1
31	U53T1-23-1	Thread Tension regulator bushing (線張力調節器襯套)	1
32	U53T1-23-3	Thread take-up spring (挑線彈簧)	1

NO.	Code No.	Description	Qty
33	U53T1-23-4	Thread tension stud (線張力軸)	1
34	U53T1-23-5	Thread tension disc (線張力盤)	2
35	U53T1-23-6	Thread tension-releasing disc (線張力釋放盤)	1
36	U53T1-23-7	Thread tension spring (線張力彈簧)	1
37	U53T1-23-8	Thumb nut revolution stopper (蝶形螺母止轉件)	1
38	U53T1-23-9	Thumb nut (蝶形螺母)	1
39	U53T1-24	Upper cover (上蓋)	1
40	U43T1-25	Upper cover back screw (上蓋後螺釘)	2
41	U43T1-26	3-eyelet hole thread guide (三眼導線器)	1
42	U43T1-27	3-eyelet hole thread guide screw (三眼導線器螺釘)	1
43	U43T1-28	Rubber plug(big) (橡膠塞(大))	1
44	U43T1-29	Rubber plug(medium) (橡膠塞(中))	1
45	U43T1-30	Rubber plug(small) (橡膠塞(小))	1
46	U43T1-33-0	Upper cover set screw (上蓋固定螺釘)	1
47	U43T1-33-1	Thread-guide (導線器)	1
48	U43T1-33-2	Thread-tension stud (線張力軸)	1
49	U43T1-33-3	Upper thread-tension disc (上線張力盤)	2
50	U43T1-33-4	Upper thread-tension spring (上線張力彈簧)	1
51	U43T1-33-5	Top clamp wire washer (上夾線鋼絲墊圈)	1
52	U43T1-34	Back cover (後蓋)	1
53	U43T1-54	Rubber plug (橡膠塞)	1
54	U43T1-60	Upper thread-tension spring (上線張力彈簧)	1

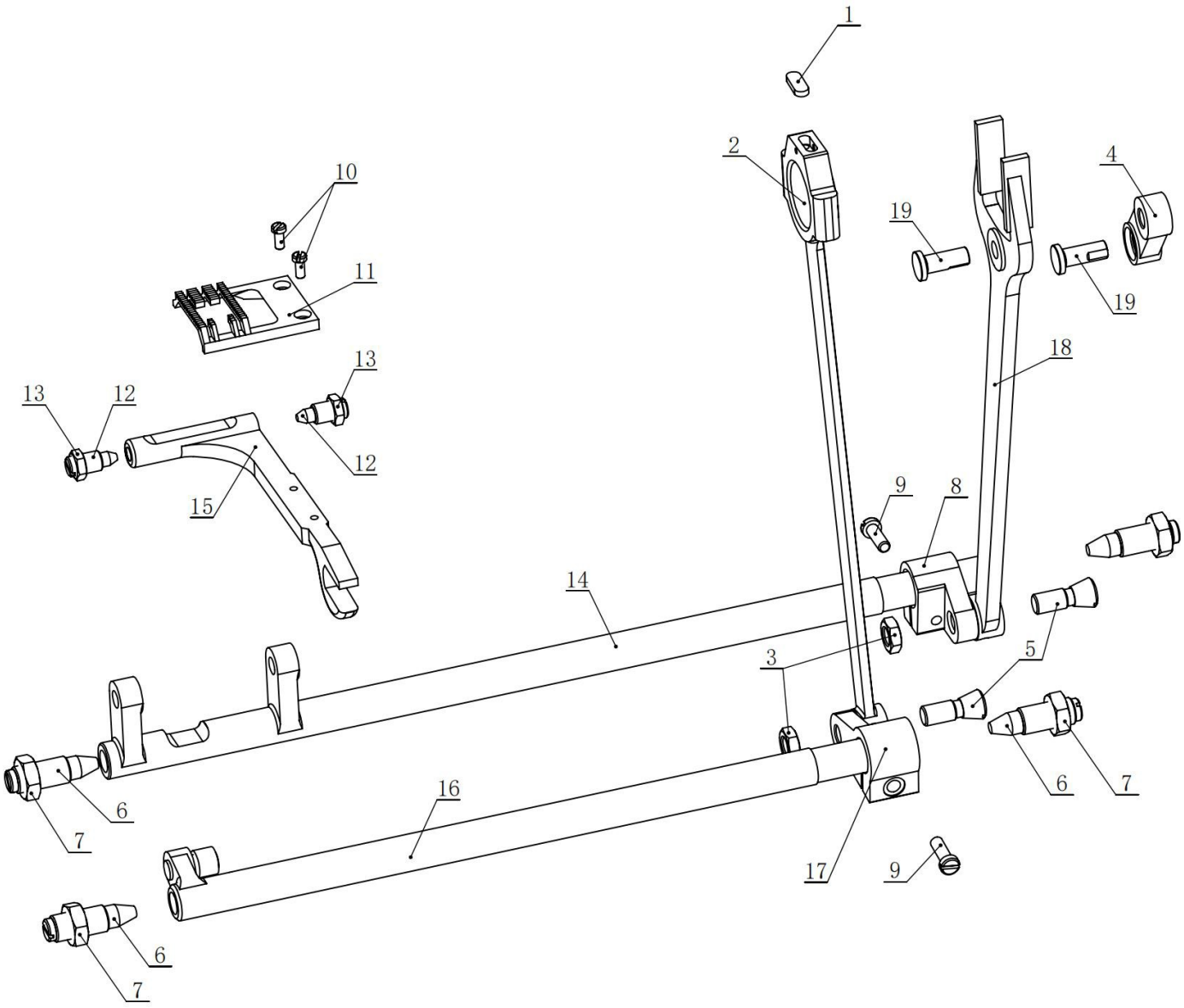
2. Thread take-up and needle bar components



NO.	Code No.	Description	Qty
1	U43T2-2	Pin screw(swaying rack of needle staff) (針杆擺架銷釘螺釘)	1
2	U43T2-3	Swaying rack of needle bar (針杆擺架)	1
3	U43T2-4	Eccentric pin screw of needle bar (針杆偏心銷螺釘)	1
4	U43T2-5	Locating plate of needle bar (針杆定位板)	1
5	U43T2-6	Screw of locating plate (定位板螺釘)	2
6	U43T2-7	Ping of swaying rack(needle bar) (針杆擺架銷)	1
7	U43T2-8	Needle bar (針杆)	1
8	U43T2-9	Thread-guide of needle bar (針杆導線器)	1
9	U43T2-10	Needle (機針)	1
10	U43T2-11	Locking screw of needle (機針鎖緊螺釘)	1
11	U43T2-12	Pin-screw of connecting shaft (連桿銷螺釘)	1
12	U43T2-13	Pin-washer of connecting shaft (連桿銷墊圈)	1
13	U43T2-14	Connecting shaft (連桿)	1
14	U43T2-15	Pin of connecting shaft (連桿銷)	1
15	U43T2-16	Pin-locking screw of connecting shaft (連桿銷鎖緊螺釘)	1
16	U43T2-17	Guide of small connecting staff (小連杆導板)	1
17	U43T2-18	Screw of guide (導板螺釘)	2
18	U43T2-20-0	Thread take-up lever component (挑線杆組件)	1
19	U43T2-20-1	Left-spiral screw (左旋螺釘)	1
20	U43T2-20-2	Small connecting staff (小連杆)	1
21	U43T2-20-3	Crank of needle bar (針杆曲柄)	1
22	U43T2-20-5	Stitch-swaying staff (線跡擺動杆)	1
23	U43T2-20-6	Pin of swaying staff (擺動杆銷)	1
24	U43T2-20-7	Pin screw of swaying staff (擺動杆銷螺釘)	1
25	U43T2-20-8	Screw of crank (曲柄螺釘)	1
26	U43T2-20-9	Pick line crank (挑線曲柄)	1
27	U43T2-20-10	Crank fastening screw (曲柄緊固螺釘)	2
28	U43T2-20-11	Thread take-up lever (挑線杆)	1
29	U43T2-21	Fastening screw(of front sleeve) (前套筒緊固螺釘)	1
30	U43T2-22	Front sleeve of upper shat (上軸前套筒)	1
31	U43T2-23	Screw of spiral gear (螺旋齒輪螺釘)	2
32	U43T2-24	Spiral gear of upper shaft (上軸螺旋齒輪)	1

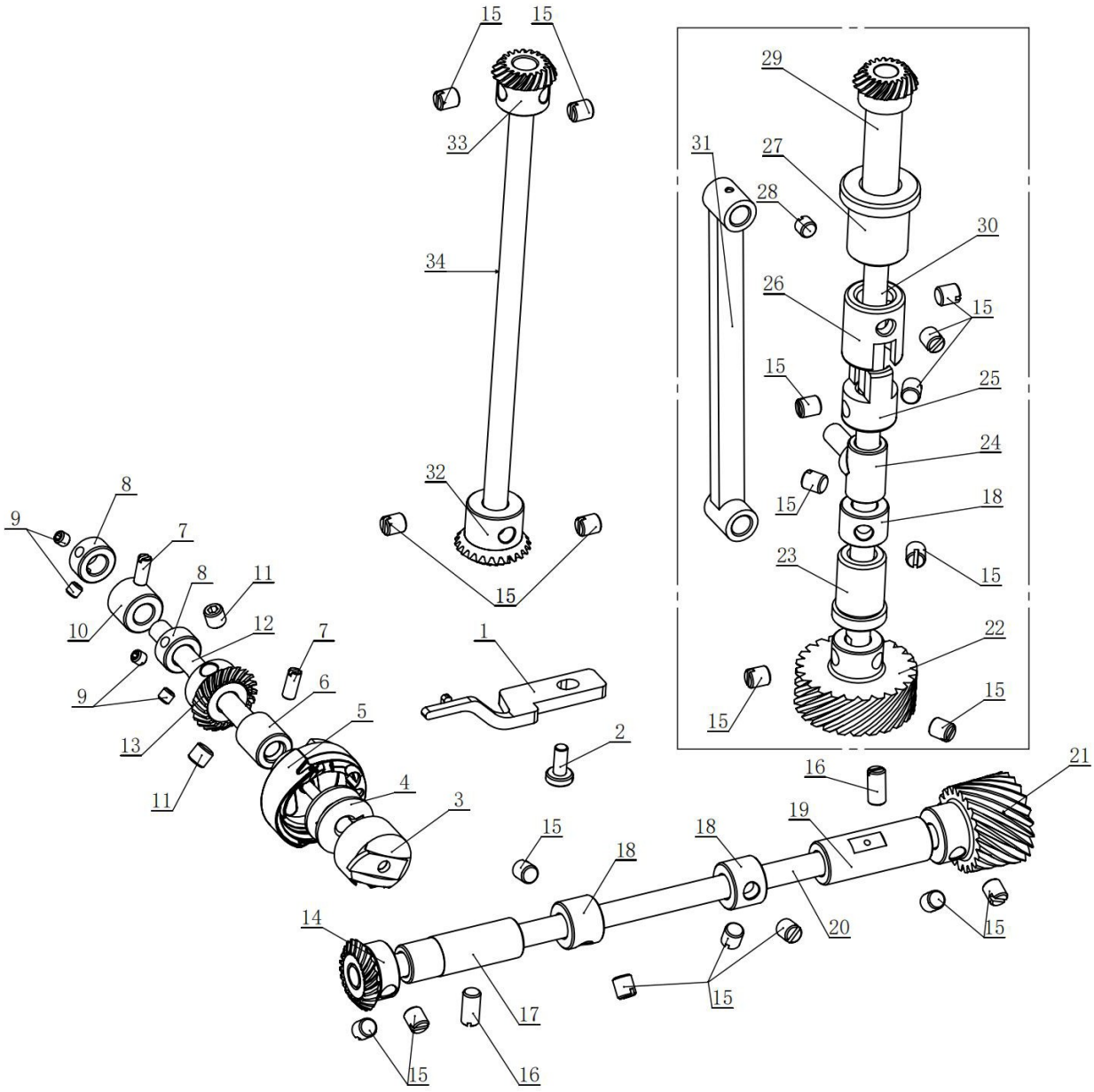
NO.	Code No.	Description	Qty
33	U43T2-25	Screw of arc-cone gear (弧錐齒輪螺釘)	2
34	U43T2-26	Arc-cone gear(upper shaft) (弧錐齒輪(上軸))	1
35	U43T2-27	Screw of feed cam (送布凸輪螺釘)	2
36	U43T2-28	Feed cam (送布凸輪)	1
37	U43T2-29	Upper shaft (上軸)	1
38	U43T2-30	Back sleeve of upper shaft (上軸後套筒)	1
39	U43T2-31	Fastening screw of back sleeve (後套筒緊固螺釘)	1
40	U43T2-34	Balance wheel (手輪)	1
41	U43T2-54	Upper shaft retaining ring (上軸擋圈)	1
42	U43T2-55	Upper shaft retaining ring screw (上軸擋圈螺釘)	2
43	U43T2-56	Upper shaft retaining ring washer (上軸擋圈墊圈)	1
44	U43T2-57	Upper wheel fastening screw (上輪緊固螺釘)	2
45	U43T2-58	Upper wheel screw (上輪螺釘)	1
46	U43T2-68	CAM retaining ring (凸輪擋圈)	1

3. Feeding mechanism



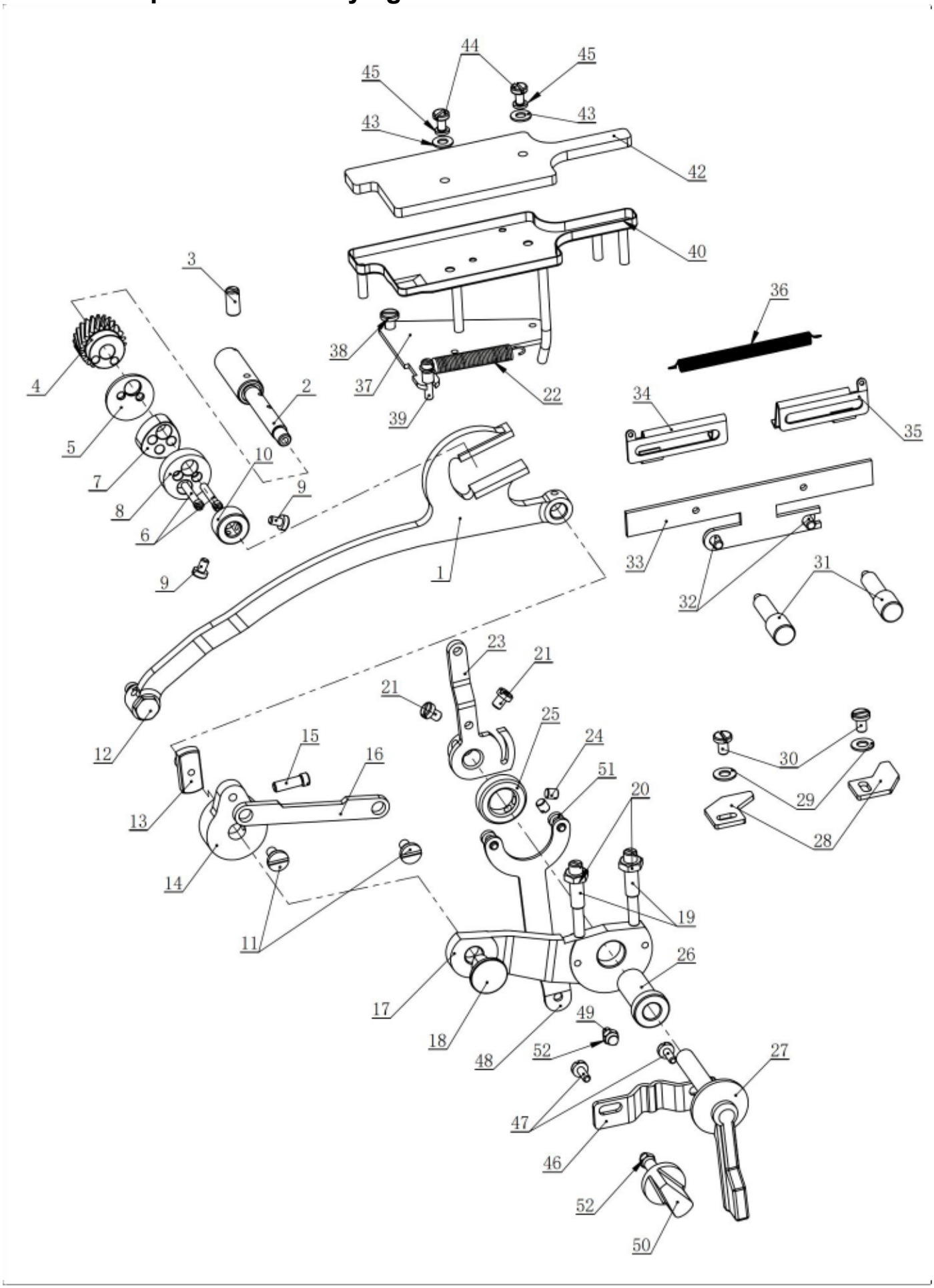
NO.	Code No.	Description	Qty
1	U43T3-1	Oil felt (油氈)	1
2	U43T3-2	Lift feed connecting bar (抬送連杆)	1
3	U43T3-3	Small come nut (小錐螺母)	2
4	U43T3-5	Connecting bar of needle distance base (針距座連杆)	1
5	U43T3-6	Small cone screw (小錐螺釘)	2
6	U43T3-7	Pointed screw (尖端螺釘)	4
7	U43T3-8	Pointed nut (尖端螺母)	4
8	U43T3-9	Feed crank (送布曲柄)	1
9	U43T3-10	Feed crank screw (送布曲柄螺釘)	2
10	U43T3-11	Feed crank screw (送布曲柄螺釘)	2
11	U53T3-12	Feed dog (送布牙)	1
12	U43T3-13	Pointed screw of tooth rack (齒條尖端螺釘)	2
13	U43T3-14	Point nut (尖端螺母)	2
14	U43T3-15	Feed rock (送布搖架)	1
15	U43T3-16	Tooth rack (齒條)	1
16	U43T3-17	Feed lifting rock shat component (抬送搖架軸組件)	1
17	U43T3-19	Feed lifting rock crank screw (抬送搖架曲柄螺釘)	1
18	U43T3-20	Feed lifting rock crank (抬送搖架曲柄)	1
19	U43T3-21	Feed fork connecting rod (送布叉連杆)	2

4. Thread-hooking Components



NO.	Code No.	Description	Qty	remark
1	U43T4-1	Locating plate of rotating hook (旋梭定位板)	1	
2	U43T4-2	Screw of locating plate (定位板螺釘)	1	
3	U43T4-3	Bobbin case (梭殼)	1	
4	U43T4-4	Bobbin (梭芯)	1	
5	U43T4-5	Rotating hook (旋梭)	1	
6	U43T4-6	Front sleeve of rotating hook shaft (旋梭軸前套筒)	1	
7	U43T4-11	Front sleeve screw (前套筒螺釘)	2	
8	U43T4-8	Retainer of rotating hook shaft (旋梭軸擋圈)	2	
9	U43T4-9	Retainer screw (擋圈螺釘)	4	
10	U43T4-10	Back sleeve of rotating hook shaft (旋梭軸後套筒)	1	
11	U43T4-13	Screw of back sleeve (後套筒螺釘)	2	
12	U43T4-12	Rotating hook shaft (旋梭軸)	1	
13	U43T4-14	Arc-cone gear of rotating hook shaft (旋梭軸弧錐齒輪)	1	
14	U43T4-15	Arc-cone gear of lower shaft (下軸弧錐齒輪)	1	
15	U43T4-30	Lower clutch sleeve screws (下離合套螺釘)	16	
16	U43T4-17	Lower shaft sleeve screws (下軸套筒螺釘)	2	
17	U43T4-18	Front sleeve of lower shaft (下軸前套筒)	1	
18	U43T4-19	Lower shaft retainer (下軸擋圈)	3	
19	U43T4-21	Back sleeve of lower shaft (下軸後套筒)	1	
20	U43T4-22	Lower shaft (下軸)	1	
21	U43T4-24	Differential gear (差動齒輪)	1	
22	U43T4-26	Differential gear(vertical shaft) (差動齒輪(立軸))	1	
23	U43T4-27	Lower sleeve of vertical shaft (立軸下套筒)	1	
24	U43T4-28	Differential shaft sliding-sleeve (差動軸滑動套)	1	
25	U43T4-31	Upper sleeve of vertical shaft (立軸上套筒)	1	
26	U43T4-29	Lower clutch sleeve (下離合套)	1	
27	U43T4-33	Upper sleeve of vertical shaft (立軸上套筒)	1	
28	U43T4-34	Screw of upper sleeve (上套筒螺釘)	1	
29	U43T4-35	Arc-cone gear (弧錐齒輪)	1	
30	U43T4-37	Vertical shaft (立軸)	1	
31	U43T4-36	Differential connecting bar (差動連杆)	1	
32	U33T4-26	Arc-cone gear (弧錐齒輪)	1	33.53series
33	U33T4-35	Arc-cone gear (弧錐齒輪)	1	33.53series
34	U33T4-37	Vertical shaft (立軸)	1	33.53series

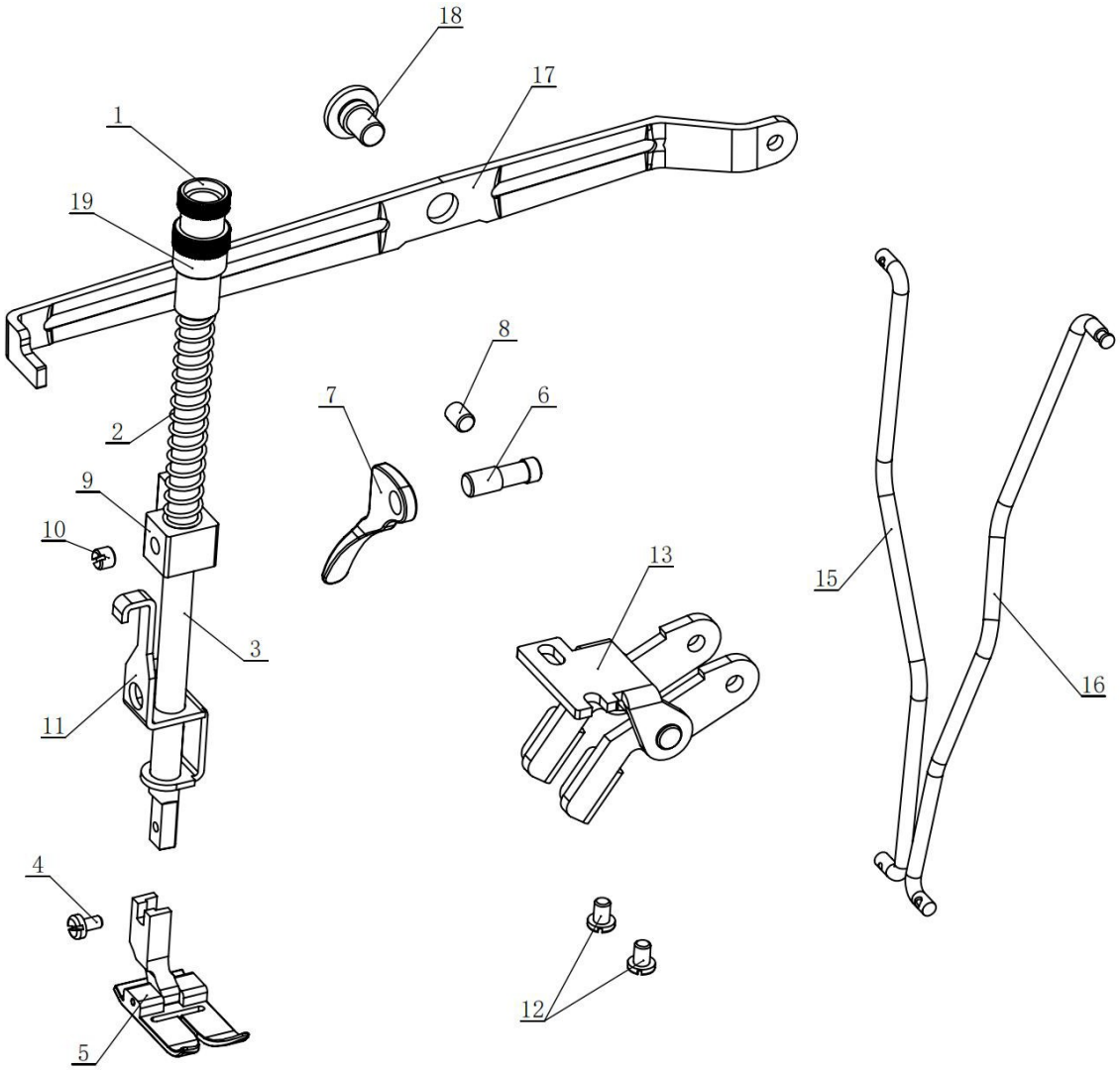
5. Components of Swaying needle



NO	Code No.	Description	Qty
1	U33T5-1	Horizontal needle fork (水平針叉)	1
2	U43T5-2	Shaft of swaying needle (擺針軸)	1
3	U43T5-3	Zigzag triangular cam shaft set screw (曲折三角凸輪軸固定螺釘)	1
4	U43T5-4	Zigzag triangular cam p shaft oil comp (曲折三角凸輪軸油壓組件)	1
5	U33T5-5	Zigzag triangular cam shaft collar comp (曲折三角凸輪軸套環組件)	1
6	U43T5-6	Connecting screw (連接螺釘)	2
7	U33T5-7	Zigzag triangular cam shaft comp (曲折三角凸輪軸組件)	1
8	U33T5-8	Zigzag triangular cam shaft comp (曲折三角凸輪軸組件)	1
9	U43T5-9	Retainer screw (擋圈螺釘)	2
10	U43T5-10	Retainer shaft (擋圈軸)	1
11	U43T5-18	Connecting screw of differential connecting bar (差動連杆連接螺釘)	2
12	U43T5-13	Zigzag stitch regulator fork eccentric connection pin (曲折線跡調節叉偏心連接銷)	1
13	U43T5-14	Bight amplitude slide block (幅寬滑塊)	1
14	U33T5-15	Guide base of swaying needle (擺針導座)	1
15	U43T5-16	Screw of guide base (導座螺釘)	1
16	U43T5-17	Adjustable connecting bar (可調連杆)	1
17	U43T5-19	Locating block of swaying needle (擺針定位塊)	1
18	U43T5-20	Connecting pin of guide (導板連接銷)	1
19	U43T5-21	Adjusting screw of locating block (定位塊調節螺釘)	2
20	U43T5-22	Fastening nut of locating crank (定位曲柄緊固螺母)	2
21	U43T5-23	Screw for adjusting crank sleeve (調節曲柄套筒螺釘)	2
22	U43T5-24	Bight amplitude slide block crank spring (幅寬滑塊曲柄彈簧)	1
23	U43T5-25	Bight amplitude slide block crank and guide comp (幅寬滑塊曲柄及導板組件)	1
24	U43T5-26	Bight amplitude slide block crank shaft bushing collar set screw (幅寬滑塊曲柄軸襯套環固定螺釘)	2
25	U43T5-28	Bight amplitude slide block crank shaft bushing collar comp (幅寬滑塊曲柄軸襯套環組件)	1
26	U53T5-29	Bight amplitude slide block crank shaft bushing (幅寬滑塊曲柄軸襯套)	1
27	U53T5-30	Bight amplitude slide block crank shaft knob comp (幅寬滑塊曲柄軸旋鈕組件)	1
28	U43T5-34	Bight amplitude slide block crank link (幅寬滑塊曲柄連杆)	2
29	U43T5-36	Bight amplitude slide block crank washer (幅寬滑塊曲柄墊圈)	2
30	U43T5-37	Bight amplitude regulating plate holder set screw (幅寬調節板座固定螺釘)	2

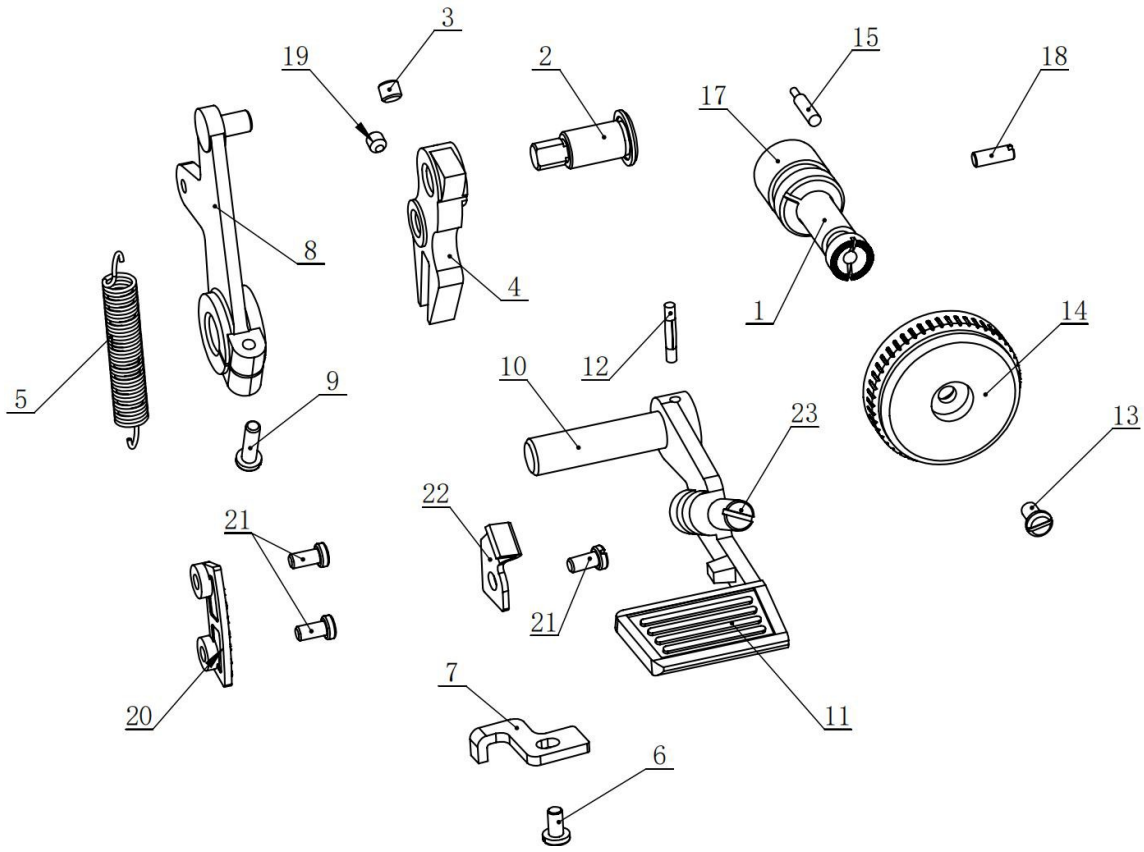
31	U43T5-38	Bight amplitude regulating plate thumb screw (幅寬調節板蝶形螺釘)	2
32	U43T5-39	Bight amplitude regulating plate holder set screw (幅寬調節板座固定螺釘)	2
33	U43T5-40	Bight amplitude regulating plate holder (幅寬調節板座)	1
34	U43T5-42	Bight amplitude regulating plate (right) (幅寬調節板(右))	1
35	U43T5-41	Bight amplitude regulating plate (left) (幅寬調節板(左))	1
36	U43T5-43	Bight amplitude regulating plate holder set screw (幅寬調節板座固定螺釘)	1
37	U53T5-44	Small oil pan mounting plate (小油盤安裝板)	1
38	U43T5-51	Oil reservoir plate setscrew(back) (儲油板固定螺釘(後))	1
39	U43T5-68	Oil reservoir plate set screw(front) (儲油板固定螺釘(前))	1
40	U43T5-54	Oil tray (油盤)	1
41	U43T5-55	Oiled gauze tape (浸油紗帶)	1
42	U43T5-56	Wheel of oil tray (油盤輪)	1
43	U43T5-57	Flat washer (平墊圈)	2
44	U93T4-8	Oil tray screw (油盤螺釘)	2
45	U43T5-59	Flat washer (平墊圈)	2
46	U43T5-61	Bight amplitude L-C-R positing block (幅寬左-中-右定位塊)	1
47	U43T5-64	Bight amplitude L-C-R positing block set screw (幅寬左-中-右定位塊固定螺釘)	2
48	U43T5-61	Bight amplitude L-C-R positing lever comp (幅寬左-中-右定位桿組件)	1
49	U43T5-64	Bight amplitude L-C-R positing lever screw pin (幅寬左-中-右定位桿螺釘銷)	1
50	U43T5-65	Bight amplitude L-C-R positing lever work driving arm (幅寬左-中-右定位桿工作驅動臂)	1
51	U43T5-66	Bight amplitude L-C-R positing screw (幅寬左-中-右定位螺釘)	2
52	U43T1-18-2	Screw pin nut (螺釘銷螺母)	2

6. Components of presser foot



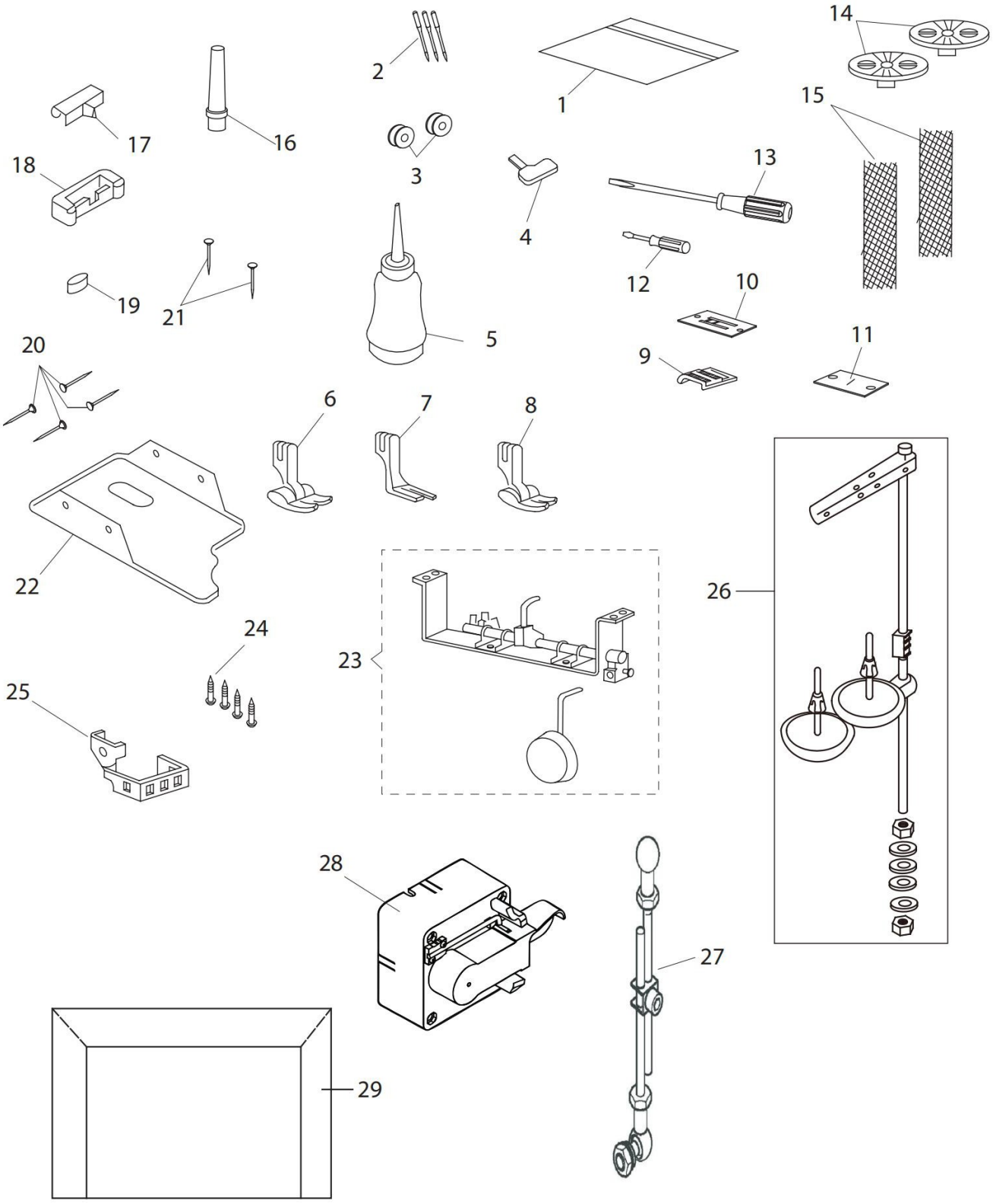
NO.	Code No.	Description	Qty
1	U43T6-1	Screw for pressures-adjusting (壓力調節螺釘)	1
2	U43T6-2	Pressing bar spring (壓杆彈簧)	1
3	U43T6-3	Presser bar (壓腳杆)	1
4	U43T6-4	Screw of presser foot (壓腳螺釘)	1
5	U33T6-5	Presser foot component (壓腳組件)	1
6	U43T6-6	Spanner pin (扳手銷)	1
7	U43T6-7	Spanner (扳手)	1
8	U43T6-8	Spanner pin screw (扳手銷螺釘)	1
9	U43T6-9	Presser bar bracket (壓腳杆托架)	1
10	U43T6-10	Screw of bracket (托架螺釘)	1
11	U43T6-11	Locating base (定位座)	1
12	U43T6-12	Screw of lever base (操縱杆座螺釘)	2
13	U43T6-13-1	Component of locating base (定位座組件)	1
14	U43T6-14	Open-pin (開口銷)	3
15	U43T6-15	Presser foot rod (壓腳拉杆)	1
16	U43T6-16	Rod of horizontal needle (水平針杆)	1
17	U43T6-17	Presser foot lever (壓腳操縱杆)	1
18	U43T6-18	Lever screw (操縱杆螺釘)	1
19	U43T6-19	pressure adjusting nut (壓力調節螺母)	1

7、Components of Needle Distance of Reversal stitch



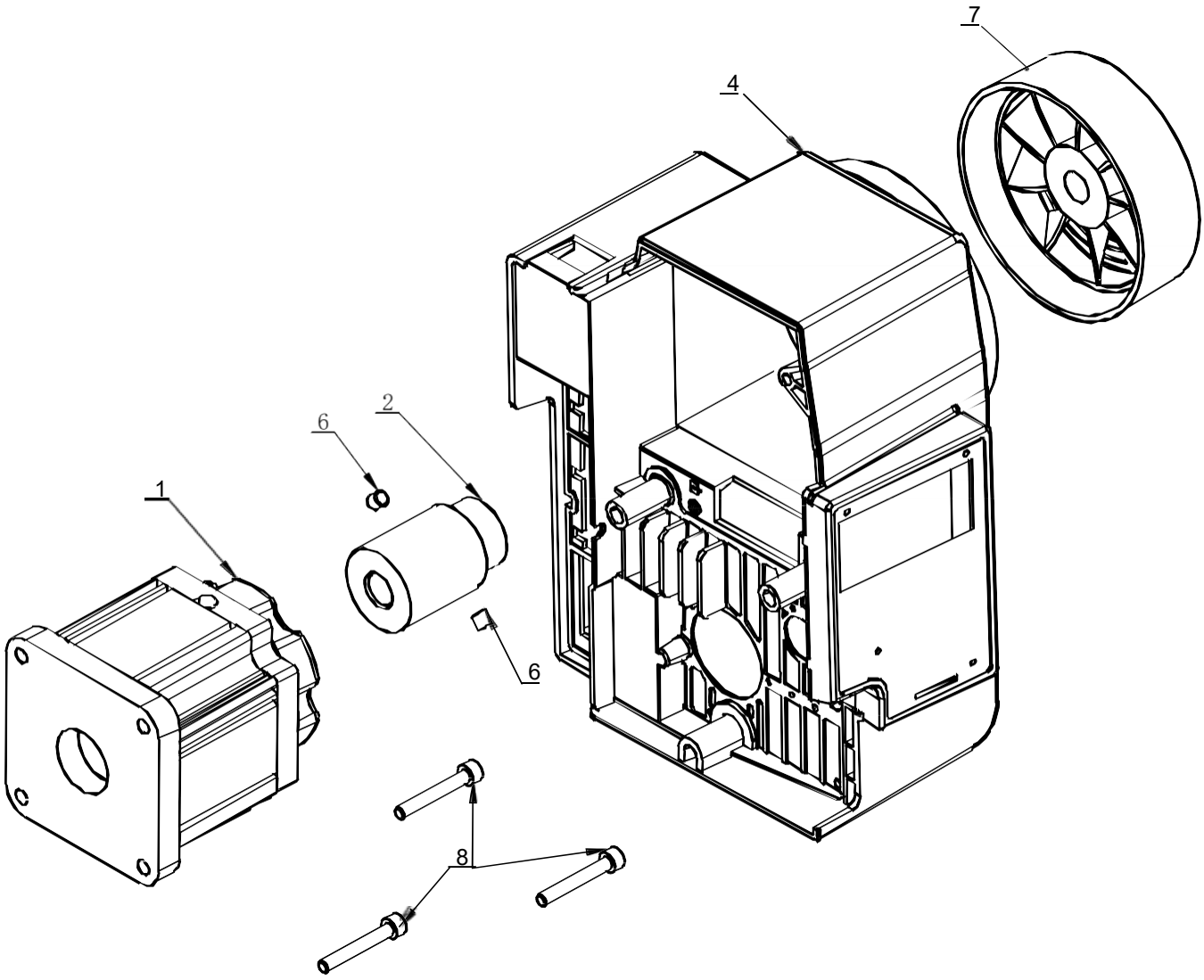
NO.	Code No.	Description	Qty
1	U53T7-1	Feed adjusting screw (送布調節螺釘)	1
2	U43T7-2	Pin (銷釘)	1
3	U43T7-3	Set screw (固定螺釘)	1
4	U43T7-4	Feed regulator (送布調節器)	1
5	U43T7-5	Restoring extension spring of reversal stitch (倒縫恢復拉簧)	1
6	U43T7-6	screw of extension spring hook (拉簧掛鉤螺釘)	1
7	U43T7-7	Restoring extension spring hook (恢復拉簧掛鉤)	1
8	U43T7-8	Crank of reversal stitch (倒縫曲柄)	1
9	U43T7-10	Crank screw (曲柄螺釘)	1
10	U53T7-11	Spanner shaft (扳手軸)	1
11	U93T7-12	Spanner of reversal stitch (倒縫扳手)	1
12	U53T7-13	Inverted pin wrench shaft (倒銷扳手軸)	1
13	U43T7-14	Spanner screw (扳手螺釘)	1
14	U53T7-16	Knob (旋鈕)	1
15	U43T7-17	Locating Pin (定位銷)	1
16	U43T7-18	Pressing spring of locating pin (定位銷壓簧)	1
17	U43T7-19	Toothed nut (齒形螺母)	1
18	U43T7-20	Screw of toothed nut (齒形螺母螺釘)	1
19	U43T7-22	Set screws (固定螺釘)	1
20	U93T8-25	Indication plate for needle distance (針距標示板)	1
21	U93T8-28	Reverse needle adjusting baffle screw (倒針調節擋板螺釘)	3
22	U93T8-27	Reverse pin adjustment gear (倒銷調節齒輪)	1
23	U93T7-13	Inverted wrench screw (倒扳手螺釘)	1

8. Accessories and Attachment

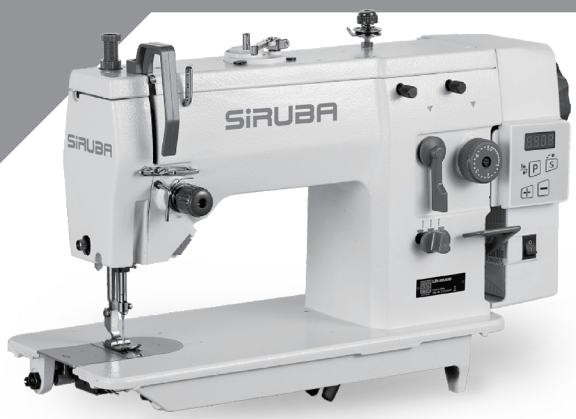


NO.	Code NO.	Description	Qty
1	U53T11-1	Accessory bag (附件袋)	1
2	U53T11-2	Needle size (機針規格)	1
3	U53T11-3	Bobbin (梭芯)	2
4	U53T11-8	Screw driver （for throat plate） (螺絲刀(用於針板))	1
5	U53T11-4	Oil er (注油器)	1
6	U53T11-39	Presser foot for button holing (鎖眼壓腳)	1
7	U53T11-40	Presser foot for hem (捲邊壓腳)	1
8	U53T11-41	Presser foot for straight stitch (直線縫壓腳)	1
9	U53T11-42	Feed dog for straight stitch (直線縫送布牙)	1
10	U53T11-43	Throat plate for straight stitch (直線縫針板)	1
11	U53T11-44	Throat plate for embroidery (繡花針板)	1
12	U53T11-7	Screw driver (small) (螺絲刀(小))	1
13	U53T11-6	Screw driver (large) (螺絲刀(大))	1
14	U53T11-45	Thread unwinder spool cap (退線線軸蓋)	2
15	U53T11-47	Thread unwinder spool net (退線線軸網)	2
16	U53T11-48	Machine rest pin (機座銷)	1
17	U53T11-14	Machine hinge (機鉸)	2
18	U53T11-15	Machine hinge cushion (機鉸墊)	2
19	U53T11-49	Machine cushion (機墊)	4
20	U53T11-50	Oil pan nail (油盤釘)	4
21	U53T11-51	Oil pan seat nail (油盤座釘)	6
22	U53T11-52	Oil pan (油盤)	1
23	U53T11-53	Knee lifter bracket assembly (抬膝器托架組件)	1
24	U53T11-54	Knee lifter bracket set screw (抬膝器托架固定螺釘)	4
25	U53T11-55	Finger guard (護指板)	1
26	U53T11-11	Thread stand (two spools) (線架(雙線))	1
27	U53T11-57	Pitman rod (踏板連杆)	1
28	U53T11-17	Foot pedal controller (腳踏控制器)	1
29	U53T11-58	Dust cover (防塵罩)	1

9. Electronic control



NO.	Code No.	Description	Qty
1	20U	QIXING electrical (七星電機)	1
2	20U	QIXING rotor (七星轉子)	1
4	20U	QIXING electric control case (七星電控盒)	1
6	20U	Rotor screw (轉子螺釘)	2
7	20U	QIXING hand wheel (七星手輪)	1
8	20U	QINGXING electric control screw M5X35 (七星電控螺釘 M5X35)	3



高林股份有限公司
KAULIN MFG. CO., LTD.

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The specification and/or appearances of the equipment described in this instruction book & parts list are subject to change because of modification which will without previous notice.

LZS-20U53D.OCT.2025