



# TYPICAL

# GC20666-D2T3

2-NEEDLE COMPOUND FEED LOCKSTITCH SEWING  
MACHINE WITH AUTO-TRIMMER

OPERATION INSTRUCTION / PARTS MANUAL

TYPICAL SEWING MACHINE WANPING MACHINERY CO., LTD.

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# Operation Instruction

## 1. Brief introduction

This compound feed sewing machine is designed with unique feed mechanisms, which make sewing of uneven and thick materials easily. Smooth, uniform and neat stitches are promised. The machine runs with high speed and low noise thanks for its' vertical-axis rotating hook, sliding lever take-up and synchronized belt driven mechanisms. It is designed for sewing of car seats, sofas, leather bags and tents industry.

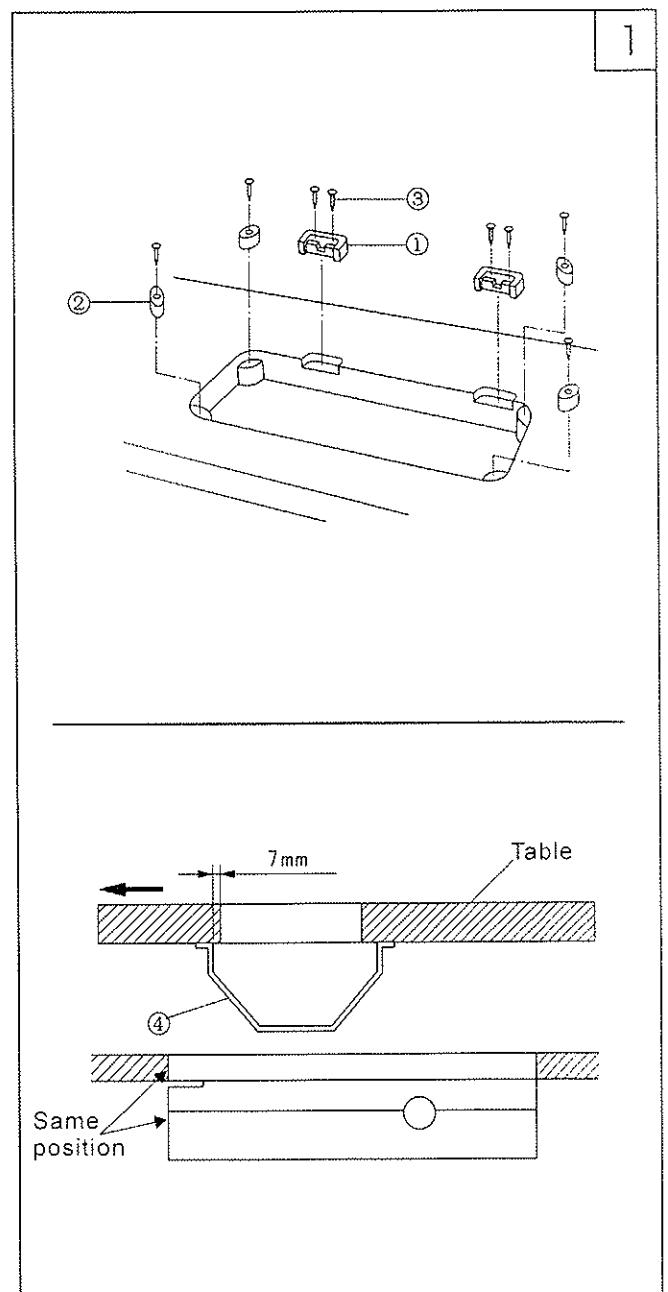
## 2. Main specifications

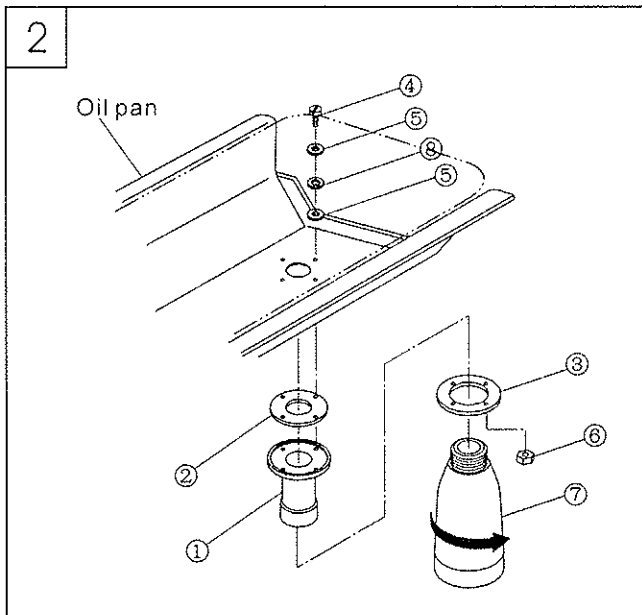
Applications	Medium & heavy weight materials
Max sewing speed	2500 s.p.m
Max stitch length	9mm
Needle bar stroke	36mm
Needle	DPX17(Nm125~Nm180) 23#
Lubrication	Oil wick (Rotating hook self oiled)
Rotating hook	Self-oiled big rotating hook
Presser foot lift height	9mm by hand, 16mm by knee/lifter
Motor power	Servo motor

Gauge size: 3.2, 4, 4.8, 8, 9.5, 12.7, 16, 19, 25.4

## 3. Machine installation (Fig.1)

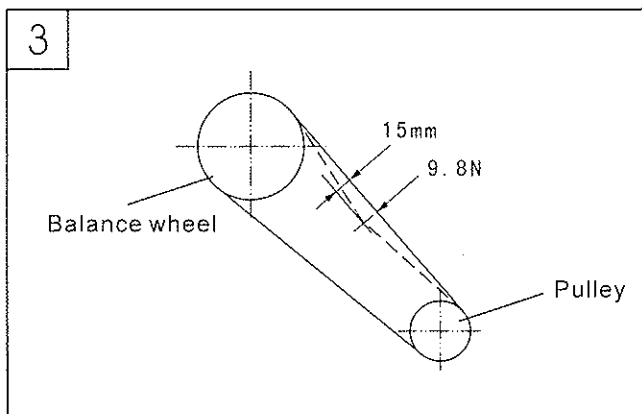
1. Setting of hinges and cushions of machine head  
Fix hinges ① and rubber cushions ② into the working table by nails ③.
2. Setting of oil pan  
Fix oil pan ④ under the working table by 8 wooden screws as per illustration.





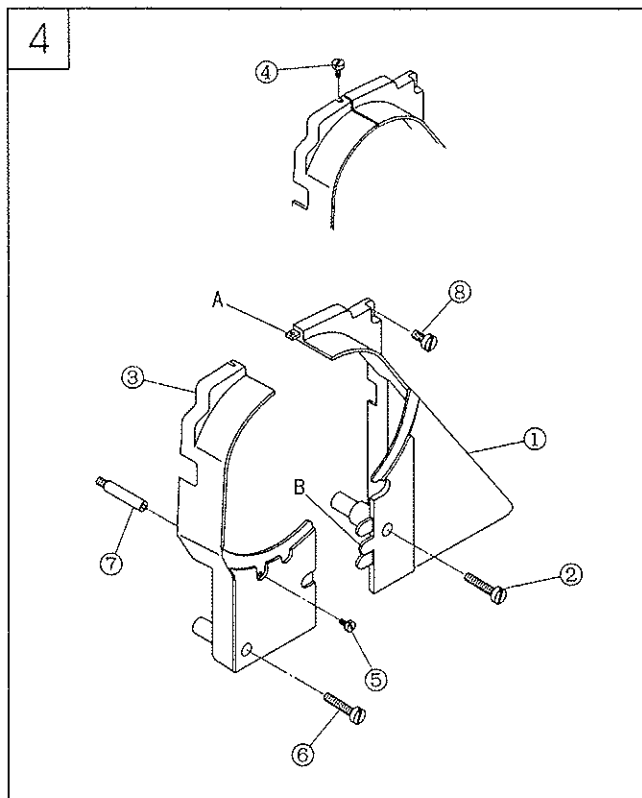
#### 4. Setting the waste oil collector (Fig.2)

1. Install oil bolt ①, oil seal ② and washer ③ to the oil pan. Put spacer ⑤, washer ⑧ onto screw ④ and fix them with screw ⑥.
2. Screw oil pot ⑦ up to the oil bolt ①.



#### 5. Tension of belt (Fig.3)

- Adjust the height of motor to regulate the tension of belt. Press the center of belt with a force of 9.8N, displacement should be 15mm, that means tension is proper.
- Note: Turn off the power and make sure the motor stopped before adjustment.



#### 6. Installing the belt cover (Fig.4)

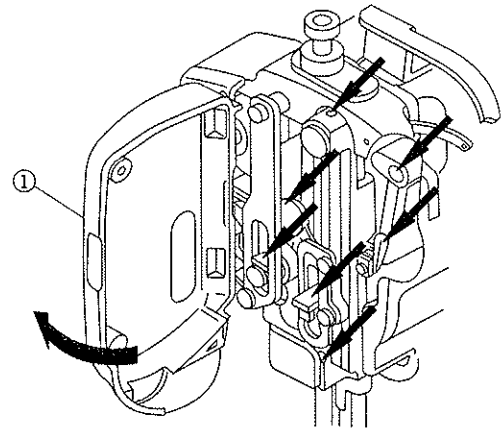
1. Screw the belt cover supporting pole into the screw hole.
2. Install belt cover (R) ① to the machine head by setscrew ② and ⑧.
3. Set belt cover (L) ③ to the pawl A and B of cover ①.
4. Fix belt cover (L) ③ by set screw ④, ⑤ and ⑥.

Note: After installation, make sure the belt cover is not touched with the belt and handwheel.

## 7. Lubrication (Fig.5)

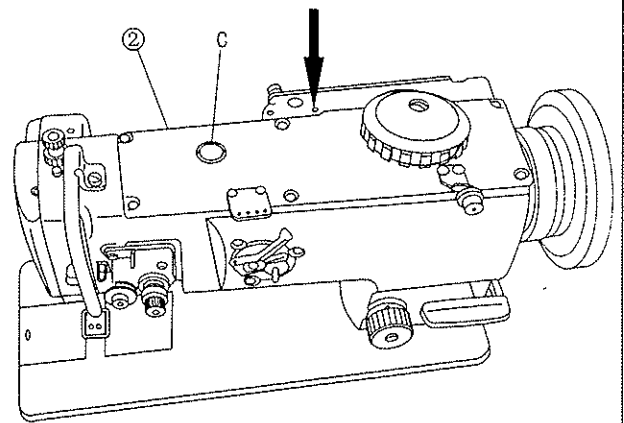
### 1. Lubrication in the face plate

- 1). Remove face plate screw.
- 2). Open face plate ① as per illustration.
- 3). Drip oils to positions signed by arrows.
- 4). Close the face plate.
- 5). Tighten the screw.



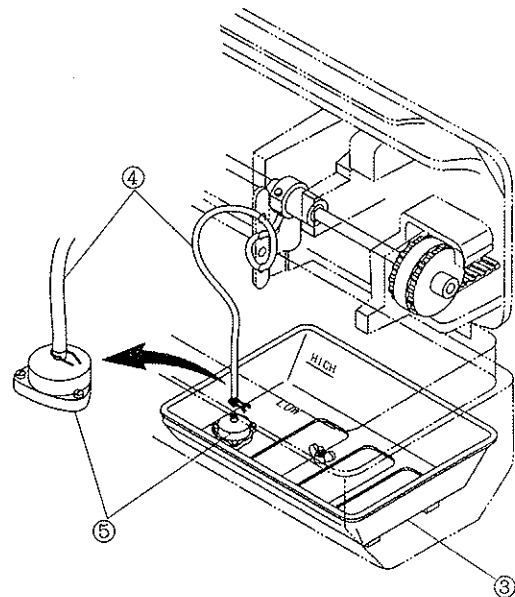
### 2. Lubrication in the arm

- 1). Drip oils to the signed position by arrows everyday.
- 2). Oil the machine before its Initial running or after a long time idle at signed point and, remove top cover ②, drip oils to all felts and wicks inside the arm.



### 3. Small oil pan

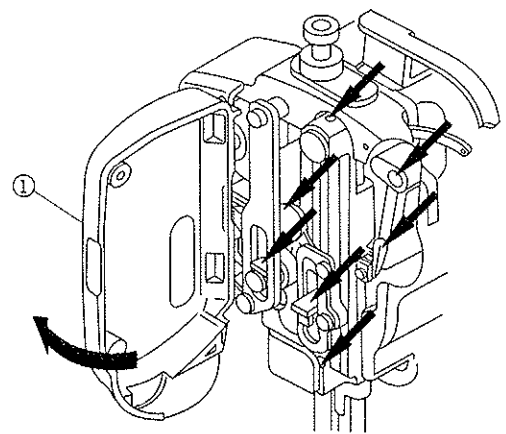
- 1). Insert small oil pan ③ into the oil pan, with the projecting position into the waste oil hole.
- 2). Insert oil tube ④ into filter ⑤ in the small oil pan and fasten by clip.
- 3). Fill oil into small oil pan to the mark of HIGH.
- 4). Replenish oil in time when oil level is below LOW mark.
- 5). Run the sewing machine after oil filled, oil movement should be viewed from the oil window C. ( Speed should be over 1500rpm)



## 7. Lubrication (Fig.5)

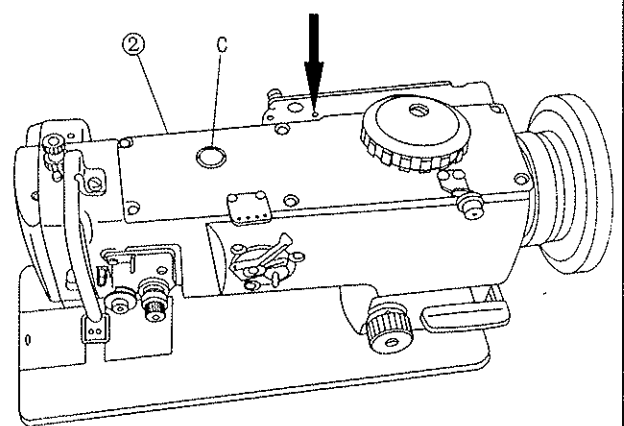
### 1. Lubrication in the face plate

- 1). Remove face plate screw.
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- 3). Drip oils to positions signed by arrows.
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- 5). Tighten the screw.



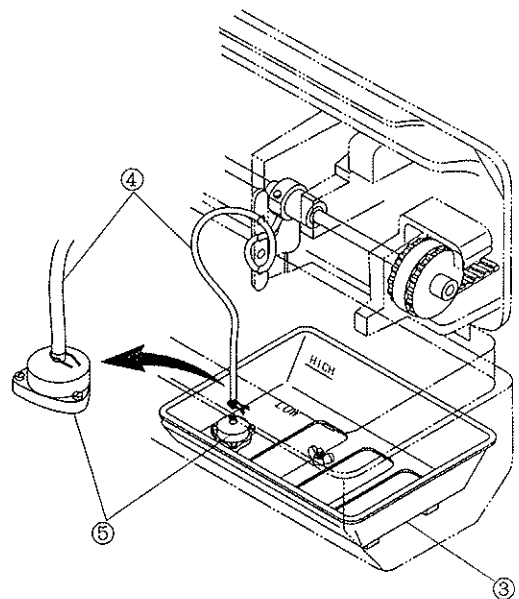
### 2. Lubrication in the arm

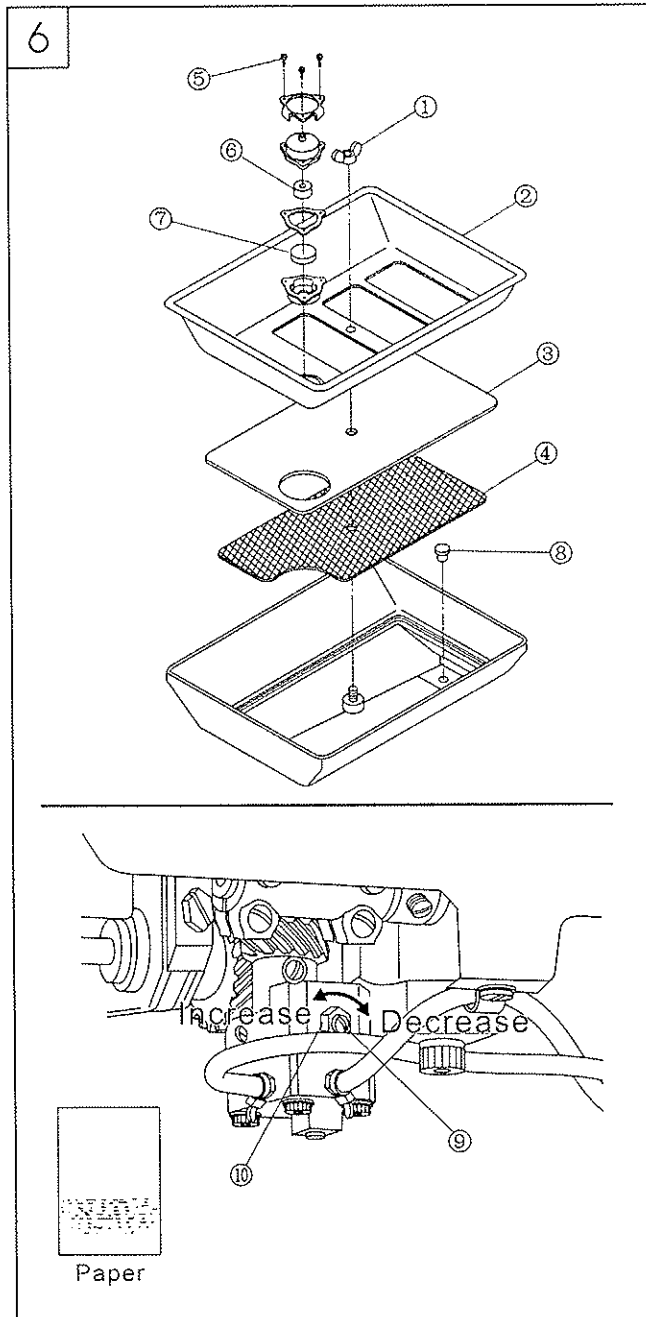
- 1). Drip oils to the signed position by arrows everyday.
- 2). Oil the machine before its Initial running or after a long time idle at signed point and, remove top cover ②, drip oils to all felts and wicks inside the arm.



### 3. Small oil pan

- 1). Insert small oil pan ③ into the oil pan, with the projecting position into the waste oil hole.
- 2). Insert oil tube ④ into filter ⑤ in the small oil pan and fasten by clip.
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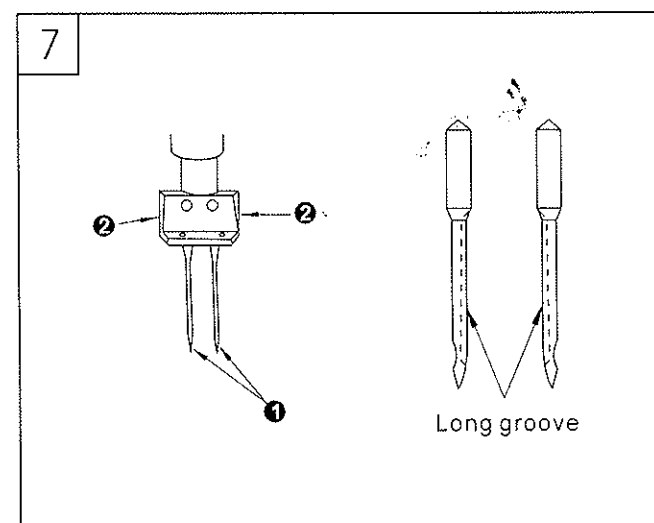




### 8. Cleaning the small oil pan (Fig.6)

- 1.Remove oil tube off the small oil pan.
- 2.Take off wing nut ①, tray ②, filter ③ and supporter ④, clean the small oil pan.
- 3.Remove screw ⑤, clean filter element ⑥ and magnet ⑦.
- 4.Take off plug ⑧ from small oil pan to drain waste oil and insert the plug ⑧ after drained. (Note: Oil should be drained first before taking out the small oil pan.)
- 5.Put filter element ⑥ and magnet ⑦ into the case and fix on the tray ② with screw ⑤.
- 6.Then put supporter ④, filter ③ and tray ② in reverse sequence, fix them with swing nut ① on the small oil pan.
- 7.Insert oil tube into the filter and fix with clip.

- 8.Loosen nut ⑩, to regulate oil of rotating hook by turning screw ⑨. Turn clockwise to reduce oil amount, turn counterclockwise to increase oil amount.
- 9.Hold a paper strip close to the rotating hook for 5 seconds, if oil sprays as in the illustration show the proper oil amount is acquired.



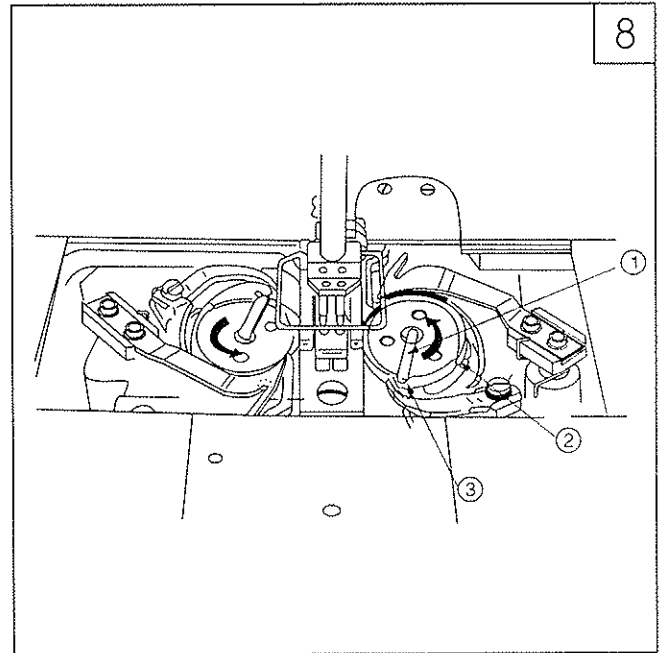
### 9. Setting the needle (Fig.7)

- 1.Turn the handwheel to raise the needle bar to its highest point.
- 2.Loosen needle set screw ② and have the long groove of the needle ③ face leftward.
- 3.Insert needle fully.
- 4.Tighten the set screw ②.



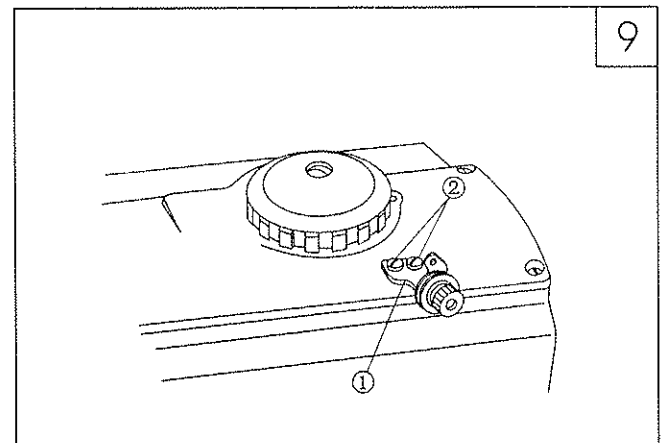
### 10. Threading the bobbin (Fig.8)

1. Lift the latch ① and take out the bobbin.
2. Insert bobbin correctly and close the latch.
3. Draw bobbin thread through slot ②, tension spring and hole ③.
4. Bobbin should turn in the direction shown by the arrow when draw the bobbin thread.



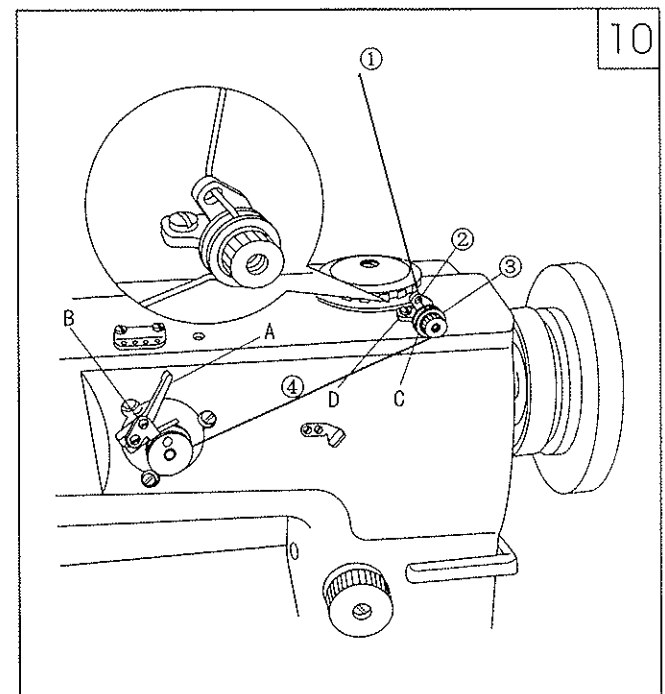
### 11. Installing the thread tension for bobbin thread winder (Fig.9)

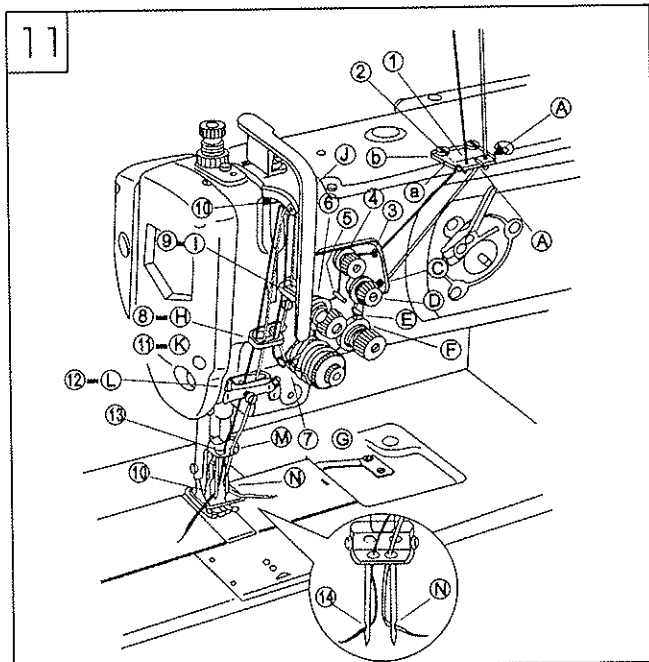
Mount thread tension ① onto the top cover with set screw ②.



### 12. Winding bobbin thread (Fig.10)

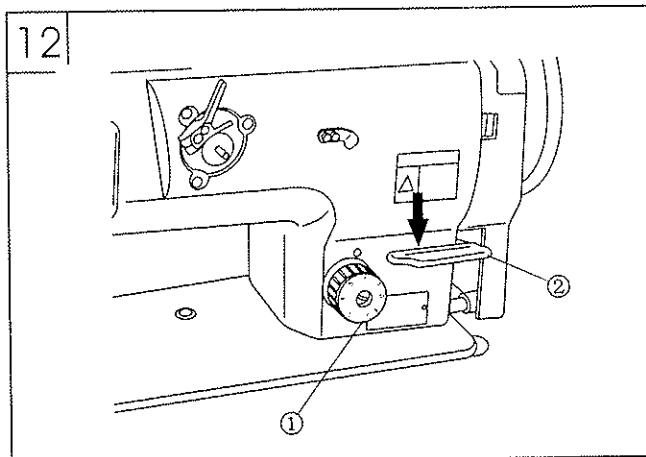
1. Thread in sequence ① ~④, then wind thread around the bobbin several circles
2. Press latch A.
3. Loosen screw B to adjust the latch to get the proper thread amount of 80% of the bobbin capacity.
4. If thread wound unevenly, move guide C to regulate and fasten with screw D.
5. If the proper thread amount acquired, the latch will disengage automatically.





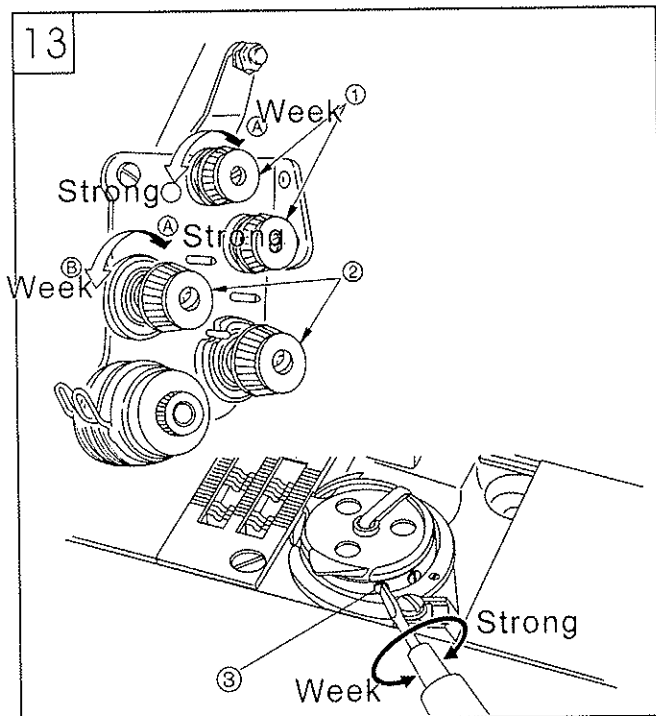
### 13. Threading the needle thread(Fig.11)

Thread in sequence as shown in the illustration



### 14. Stitch length (Fig.12)

Turn the stitch dial ① leftward or rightward to get your required stitch length.  
Press the reverse lever ② to start reverse sewing. Press it loose to restore normal sewing.



### 15. Thread tension (Fig.13)

#### 1. Tension of needle thread

Turn the tension nut ① clockwise to shorten the thread remains after cut, turn counterclockwise to lengthen the thread remains.  
Turn the tension nut ② clockwise to increase needle thread tension, turn counterclockwise to reduce the tension.

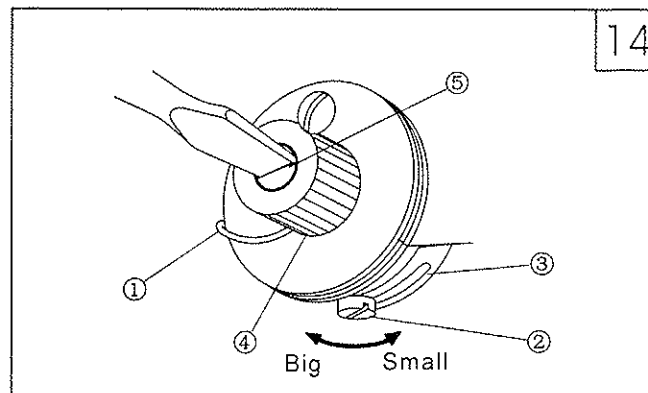
#### 2. Tension of bobbin thread

Turn the tension nut ③ clockwise to increase bobbin thread tension, turn counterclockwise to reduce the tension.

### 16. Adjusting thread take-up spring (Fig.14)

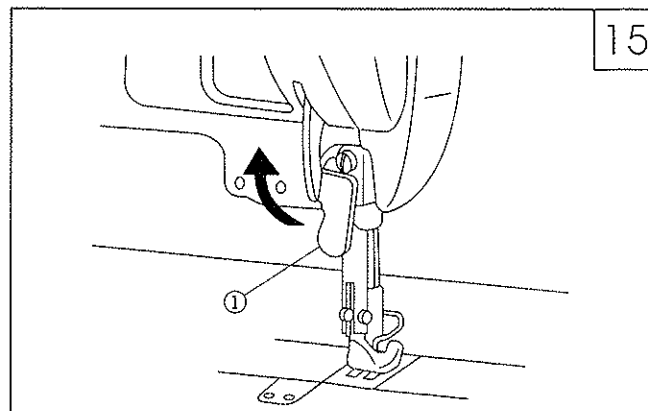
1.To change the take-up spring swing range  
a.Loosen set screw ② and move plate ③ to adjust the take-up spring ①.  
b.Move plate ③ rightward to increase take-up spring swing range, move leftward to reduce swing range.

2.To change the tension of take-up spring  
Loosen nut ④, turn shaft ⑤ counterclockwise to increase tension, turn clockwise to reduce the tension.



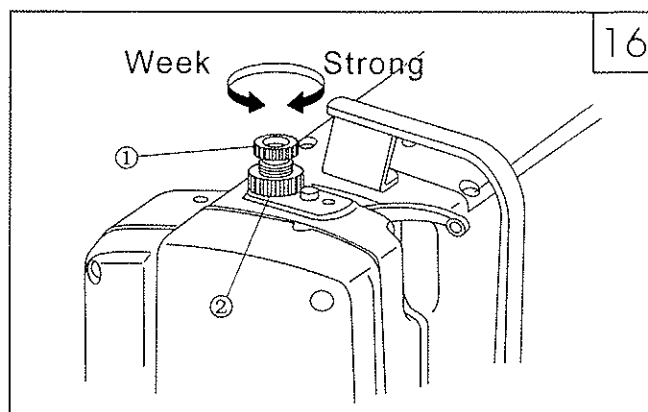
### 17. Presser foot lift (Fig.15)

1.When the presser foot on the lower resting position, raise the foot lift lever ① as illustration. The presser foot rises 9mm then stop.  
2.Lower the lift lever ① to restore the presser foot.



### 18. Pressure of presser foot (Fig.16)

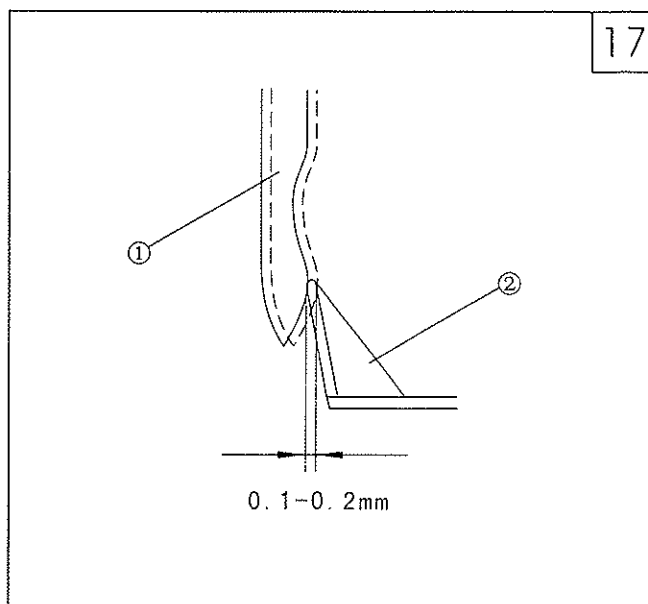
Turn the regulating bolt ① rightward to increase the pressure, turn counterclockwise to reduce the pressure. Tighten nut ② after adjustment.

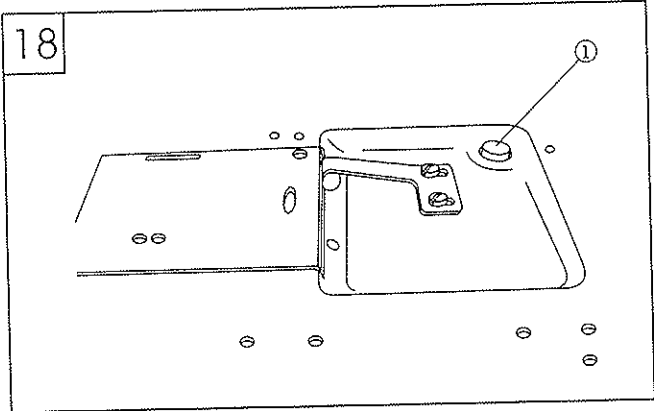


### 19. Adjusting needle guard plate (Fig.17)

Check the position of needle guard plate after change the rotating hook. The standard position of the guard plate ② is 0.1~0.2mm against needle ①. If the clearance is not right, bend the guard plate to adjust.

1.To bend the guard plate inward, insert a screwdriver outside.  
2.To bend the guard plate outward, insert a screwdriver inside of the plate.

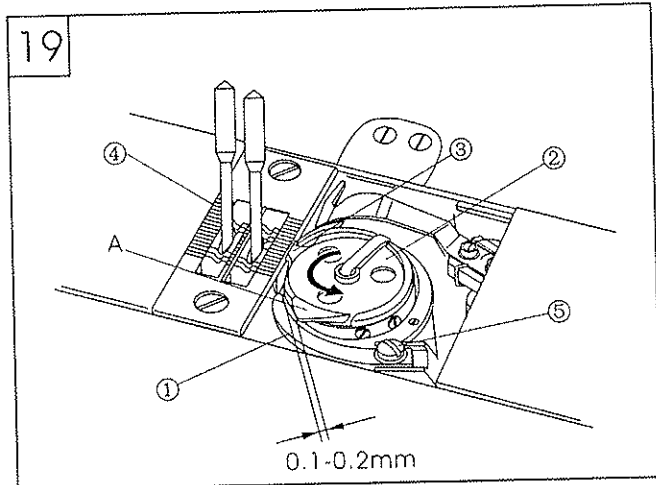




### 20. Reset of safety clutch (Fig.18)

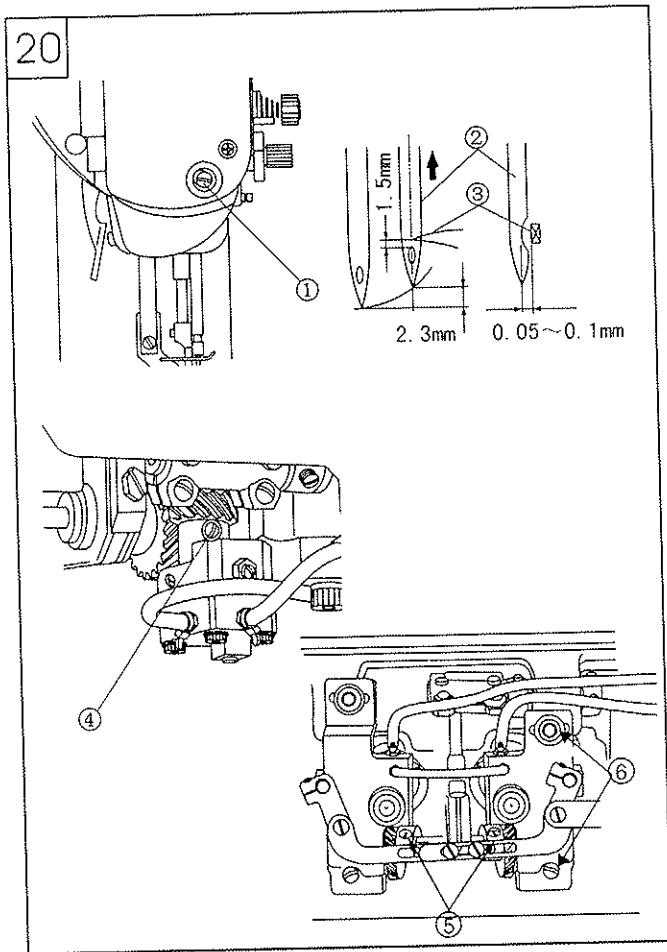
In case the rotating hook is applied with a over strong force during operation, the safety clutch stop turn even the handwheel is still turning. Check the machine and solve the problem, then reset the safety clutch.

1. Press button ① down on the bed, Firmly turn the handwheel reversely at the same time.
2. When a "click" sound is heard, the safety clutch is reset successfully.



### 21. Adjusting hook thread opener (Fig.19)

1. Turn the handwheel in normal direction to move the thread opener ① to its ultimate position.
2. Turn the bobbin body ② in direction showed by arrow, to make stopper ③ (the projection part) against the notch under the bottom of the needle plate ④.
3. Adjust the clearance between horn A and the opener to 0.1~0.2mm, tighten the set screw ⑤.

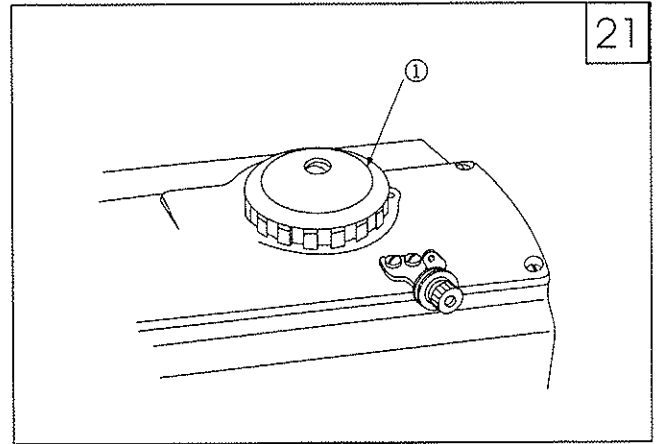


### 22. Timing between needle and rotating hook (Fig.20)

1. Turn the stitch dial to 0.
2. Turn the handwheel to raise needle bar by 2.3mm from its lowest point. Loosen needle bar joint screw ①, adjust the clearance between top of the needle hole and hoop tip to 1.5mm. Tighten screw ①.
3. Turn the handwheel to raise needle bar by 2.3mm from its lowest point. Adjust the hook tip ③ align with the center of the needle ② axis. Tighten the gear (small) two set screws ④, make sure that the first V-screw of two set screws align with the V-notch on the hook shaft.
4. When hook tip ③ aligned with the center of the needle ② axis, loosen the set screw ⑥ and move the hook saddle leftward or rightward to make the clearance between hook tip and needle to 0.05~0.1mm. Tighten screw ⑥.
5. Loosen the gear (big) two set screws ⑤, move gear (big) leftward or rightward to make the hook tip ③ align with the center of the needle ② axis. Tighten set screws ⑤, make sure that the first screw of two set screws aligns with the flat notch of the lower shaft.

**23. Alternating lift amount of presser feet (Fig.21)**

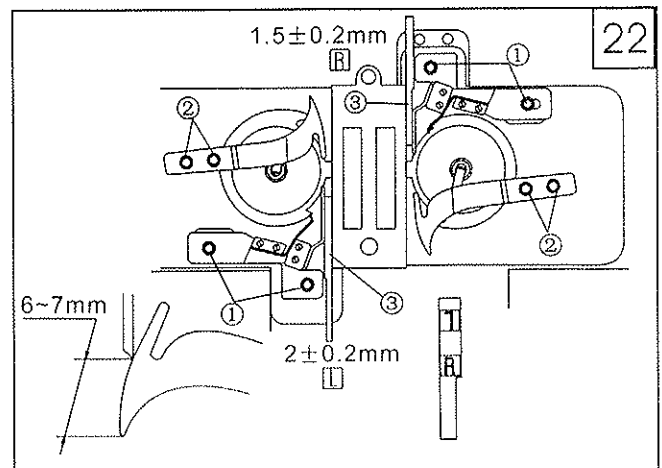
Turn the dial ① to adjust the lifting amount of presser foot, turn clockwise to increase the lifting amount, and turn counterclockwise to decrease the lifting amount.



**24. Adjusting the cutter**

Adjust the position of fixed knife  
Loosen the screw ①, the correct position is: the clearance of left knife between the front point of fixed knife and needle plate should be  $1.5 \pm 0.2\text{mm}$ , and clearance of right knife should be  $2 \pm 0.2\text{mm}$ , and the point should reach the project part of hook saddle, tighten the screw ①. Please use attached fixed knife gauge ③ to adjust the clearance. For right clearance, to use "R" side, for left clearance, to use "L" side

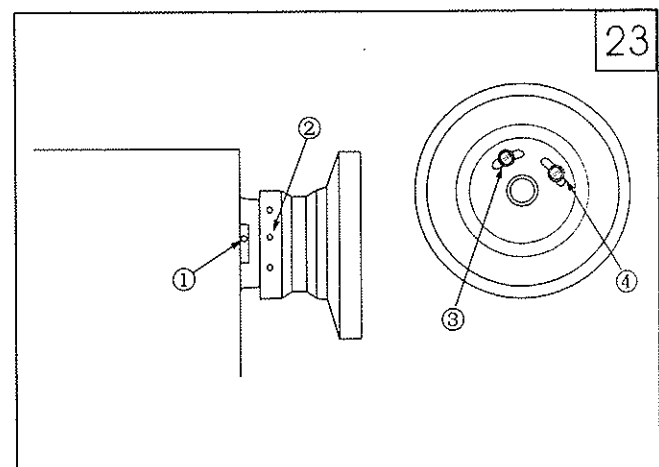
Adjust the pressure of movable knife  
Loosen the screw ②, turn the handwheel, when the clearance of front point between movable knife and fixed knife is 6-7mm, the pressure of movable knife is standard.



**25. Stop position**

1. Align the mark ① on the casting with the mark ② on the handwheel, the meaning of every stop position, please refer to below table.  
2. To adjust the needle up position by screw ③, to adjust the needle down position by screw ④.

Mark on the handwheel	
White-white	Needle up
Yellow	Needle down
Red	For adjusting the cutting driven cam
No color	For lifting needle by reverse turn



## 26. Settings for different speeds

Alternating lift amount	Stitch length < 6mm	6mm < Stitch length < 9mm
Less than 2.5mm	2,500rpm	1,800rpm
2.5~4mm	2,200rpm	1,800rpm
4~4.75mm	1,800rpm	1,800rpm
4.75~6.5mm	1,600rpm	1,600rpm

## 27. Troubleshooting

Trouble	Possible cause	Solution
1. Thread breaking (2~3mm thread left on the cloth)	<ol style="list-style-type: none"> <li>1. Damage on the rotating hook slots, needle point, hook tip and needle plate</li> <li>2. Needle thread too tight</li> <li>3. Collision between needle and rotating hook</li> <li>4. Rotating hook oiled insufficiently</li> <li>5. Needle thread too loose</li> <li>6. Thread take-up spring too rigid</li> <li>7. Too fast or slow timing of rotating hook and needle</li> </ol>	<ol style="list-style-type: none"> <li>1. Polish the damaged position, thorns with sand paper or rasp</li> <li>2. Weaken the needle thread tension</li> <li>3. Refer to 22. Timing between needle and rotating hook</li> <li>4. Adjust oil amount (7. Lubrication)</li> <li>5. Increase the needle thread tension</li> <li>6. Reduce the rigidity of take-up spring</li> <li>7. Refer to 22. Timing between needle and rotating hook</li> </ol>
2. Skipped stitch	<ol style="list-style-type: none"> <li>1. Too fast or slow timing of rotating hook and needle</li> <li>2. Presser foot pressure too weak</li> <li>3. Clearance between the top of needle hole and the rotating hook tip not proper</li> <li>4. Wrong needle</li> </ol>	<ol style="list-style-type: none"> <li>1. Refer to 22. Timing between needle and rotating hook</li> <li>2. Tighten the pressure adjusting bolt</li> <li>3. Refer to 22. Timing between needle and rotating hook</li> <li>4. Replace the needle with correct one</li> </ol>
3. Loose stitch	<ol style="list-style-type: none"> <li>1. Bobbin thread doesn't pass under the tension spring of the bobbin case</li> <li>2. Roughness on the rotating hook</li> <li>3. Bobbin stop rotating</li> <li>4. Bobbin thread too loose</li> <li>5. Bobbin thread too tight</li> <li>6. Damage of the needle point</li> </ol>	<ol style="list-style-type: none"> <li>1. Refer to 10. Threading the bobbin</li> <li>2. Polish with sand paper or rasp</li> <li>3. Replace bobbin or rotating hook</li> <li>4. Increase the bobbin thread tension</li> <li>5. Reduce the bobbin thread tension</li> <li>6. Replace the needle</li> </ol>