

SINGER®

2591 SERIES

HIGH-SPEED LOCKSTITCH SEWING MACHINE

OPERATION MANUAL

IMPORTANT SAFETY INSTRUCTIONS

When using this machine, basic safety precautions should always be followed.

Read all instruction before using the machine.

1. Whenever using the machine, understand the basic safety instructions which are not just limited to the following items.
2. Read all instructions and take care of the instruction book for your reference at any moment.
3. Before operating, confirm the relevant safety specifications and standards of this machine are fit for your country.
4. The machine should not be used without its relevant safety devices.
5. General operation must only be carried out by the appropriately trained person.
6. For your personal safety, it is recommended that suitable safety glasses should be worn when operating the machine
7. In the following situation, switch off the machine or unplug the machine from the electrical outlet.
 - 7.1 Threading the needle and replacing bobbin.
 - 7.2 Replacing the needle, presser foot, throat plate, feed dog and sliding plate, etc..
 - 7.3 During service work.
 - 7.4 When the workplace is left unattended.
8. If lubricating oil comes into contact with the eyes or skin, they should immediately be washed with a generous amount of cold water.

If any lubricating oil is ingested, medical advice should be sought immediately.
9. Whether the machine is running or not, never casually change or fiddle with the parts and the relevant device of the machine.
10. Repairs, conversion and special maintenance work must only be carried out by trained technicians.
11. Normal repairs and maintenance work must only be carried out by persons with special training.
12. Service work on the electrical equipment should always be carried out by qualified electricians or appropriately trained persons. Once an electric element is found to be damaged, the machine must be stopped immediately.

13. Clean the machine periodically.
14. Before commencing full operation of the machine, a trial run should be carried out to ensure that it is capable of performing the task required.
The machine should not be located next to a source of strong noise such as a high frequency welding machine, etc..
15. The machine should only be operated with the appropriate plug and cord with proper earthing.
16. The singer Co. will not bear any responsibility for damage or injury caused by unauthorized modifications to the machine.
17. The machine should only be used for sewing the type of materials and in the manner indicated in the accompanying instructions for operation.

FOR SAFE OPERATION

1. To avoid electrical shock hazards, neither open the cover of the electrical box for the motor nor touch the components mounted inside the electrical box.
2. To avoid personal injury, never operate the machine with any of the belt cover, finger guard or safety devices removed.
3. To prevent possible personal injuries caused by being caught in the machine, keep your fingers, head and clothes away from the handwheel, V belt and the motor while the machine is in operation. In addition, place nothing around them.
4. To avoid personal injury, never put your hand under the needle when you turn "ON" the power switch or operate the machine.
5. To avoid personal injury, never put your fingers into the thread take-up cover while the machine is in operation.
6. The hook rotates at a high speed while the machine is in operation. To prevent possible injury to hands, be sure to keep your hands away from the vicinity of the hook during operation. In addition, be sure to turn OFF the power to the machine when replacing the bobbin.
7. To avoid possible personal injuries, be careful not to allow your fingers in the machine when tilting/raising the machine head.
8. To avoid possible accidents because of abrupt start of the machine, turn OFF the power to the machine when tilting the machine head or removing the belt cover and the V belt.
9. If your machine is equipped with a servo-motor, the motor does not produce noise while the machine is at rest. To avoid possible accidents due to abrupt starting of the machine, be sure to turn OFF the power to the machine.
10. To avoid electrical shock hazards, never operate the sewing machine with the ground wire for the power supply removed.
11. To prevent possible accidents because of electric shock or damaged electrical component(s), turn OFF the power switch in prior to the connection/disconnection of the power plug.

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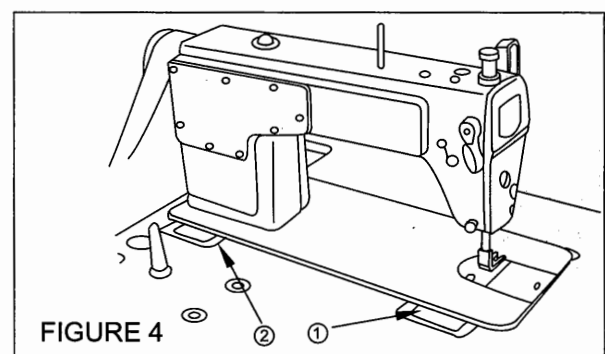
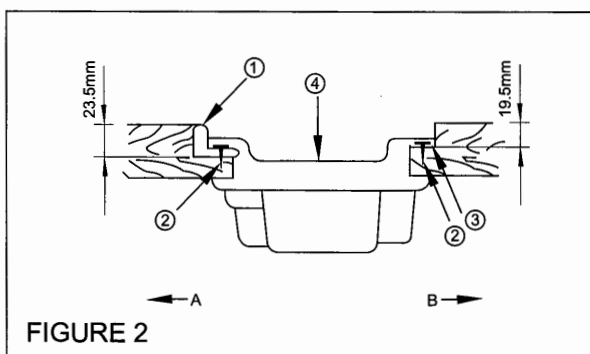
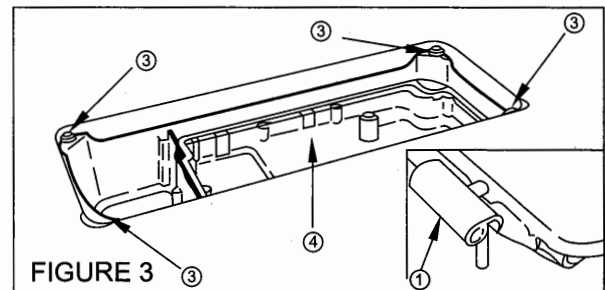
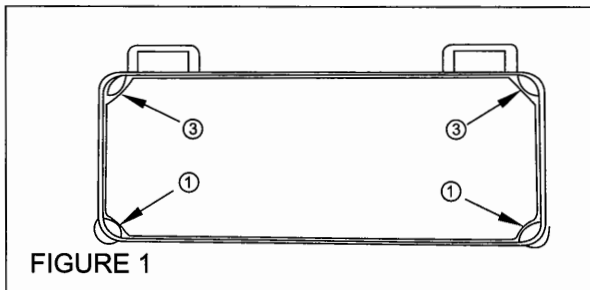
BEFORE OPERATION

WARNING:

To avoid the risk of damage to machine or injury to persons:

- . Before you put the machine into operation for the first time after the set-up, clean it thoroughly.
- . Remove all dust gathered during transportation, and oil it well.
- . Confirm that the voltage has been correctly set.
- . Confirm that the power plug has been properly connected to the power supply.
- . Never use the machine in the state where the voltage type is different from the designated one.
- . Confirm that the direction of rotation of the motor pulley is correct.
- . In the first month's operation, keep the sewing speed of machine to the normal level or below it, jumbo-sized electric belt wheel should not be used.

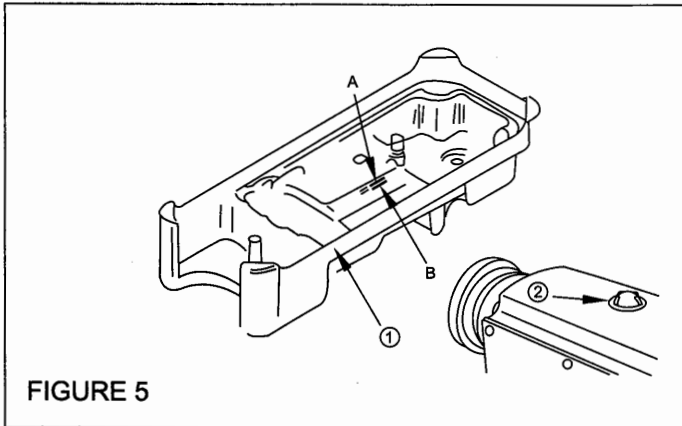
1. INSTALLATION (FIGURE 1,2,3,4)



Installation of oil pan:

- 1) The oil pan should rest on the four corners of the machine table groove.
- 2) Fix two rubber seats ① on side A (operator's side) using nails ② as illustrated above. Fix two cushion seats ③ on side B (hinged side) using nails ②. Then place oil pan ④ on the fixed seats. (Figure 1,2).
- 3) Fix hinges ① into the opening in the machine bed, and fit the machine head to table rubber hinges ② before placing the machine head on cushions ③ on the four corners (figure 3,4).

2. LUBRICATION (FIGURE 5,6)

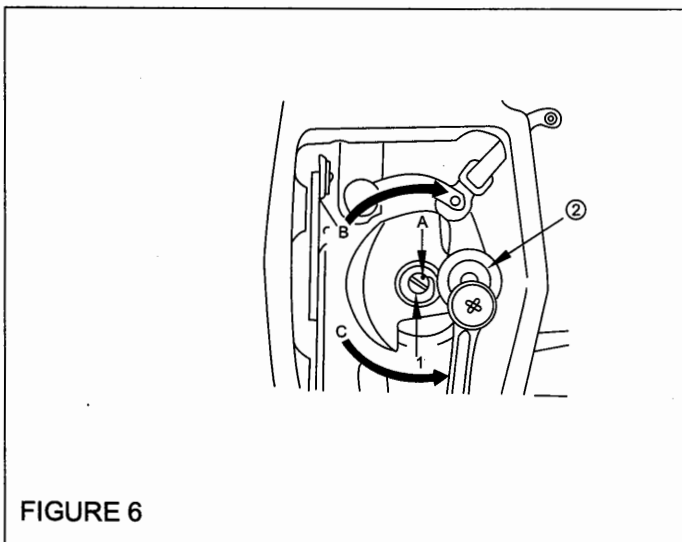


1. Information on lubrication

- 1) Fill oil pan ① with sewing machine oil up to HIGH mark ①.
- 2) When the oil level lowers below LOW mark ②, refill the oil pan with the specified oil.
- 3) When you operate the machine after lubrication, you will see splashing oil through oil sight window ② if the lubrication is adequate.
- 4) Note that the amount of the splashing oil is unrelated to the amount of the lubricating oil.

Precaution

When you first operate your machine after set up or after an extended period of disuse, run your machine at 2000s.p.m to 2500s.p.m for about 10 minutes for the purpose of break-in.



2. Adjusting the amount of oil supplied to the face plate parts

- 1) Adjust the amount of oil supplied to the thread take-up and needle bar crank ② by turning adjusting pin ①.
- 2) The minimum amount of oil is reached when marker dot ① is brought close to needle bar crank ② by turning the adjusting pin in direction B.
- 3) The maximum amount of oil is reached when marker dot A is brought to the position just opposite from the needle bar crank by turning the adjusting pin in direction C.

3. ADJUSTING THE AMOUNT OF OIL SUPPLIED TO THE HOOK

1. Before adjustment:

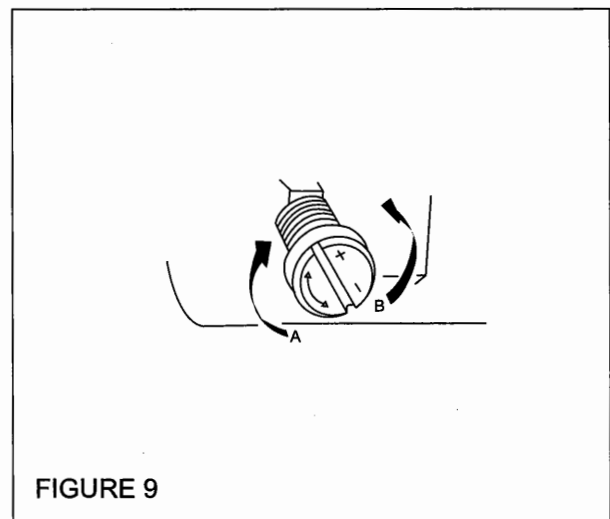
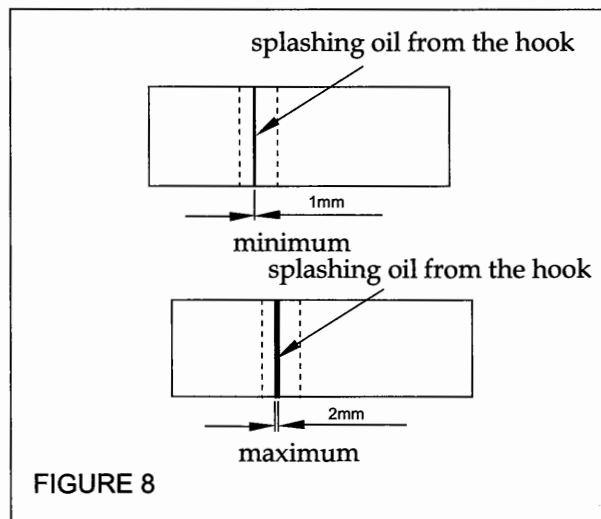
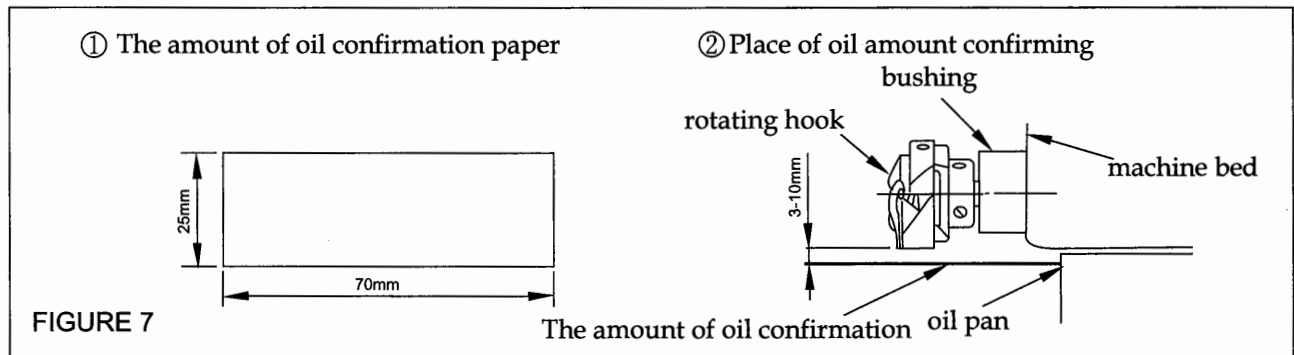
- 1) Unused machine should run idle for 3 minutes. (Moderate intermittent operation).
- 2) The amount of oil confirmation paper must be inserted in the state when the machine is running.
- 3) Make sure the oil in the oil pan is within HIGH and LOW.
- 4) The confirming time of the oil amount is 5 seconds. (Check the period of time with a watch.)

2. Sample showing the appropriate amount of oil:

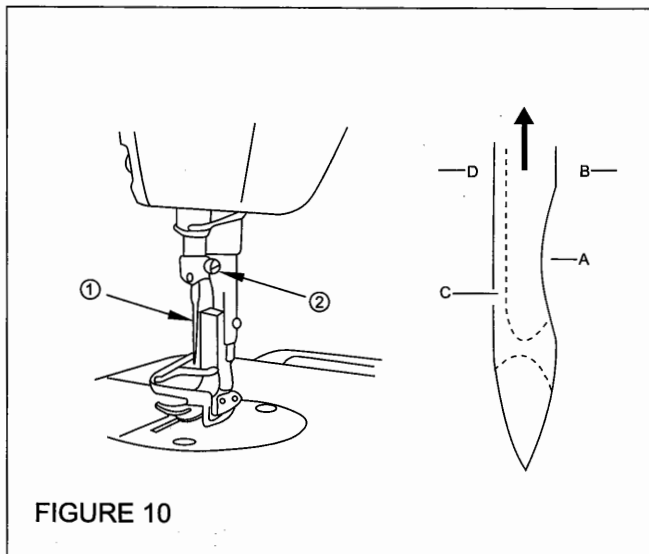
- 1) The amount of oil can be adjusted according to the different sewing process but it must be a suitable amount. Otherwise the hook will generate heat or the sewing material will be contaminated.
- 2) Use the amount of oil confirmation paper for three times to observe the amount of oil. Adjust the screw until the mark on the paper unchanged.

3. Adjusting the amount of oil supplied to the hook:

- 1) Turning the oil adjusting screw of the hook shaft bushing on bed toward + in direction A, the oil amount will be increased, and toward - in direction B, the oil amount will be decreased.
- 2) After adjustment the machine must be idling for thirty seconds. It can be confirmed the state of oil supplied.



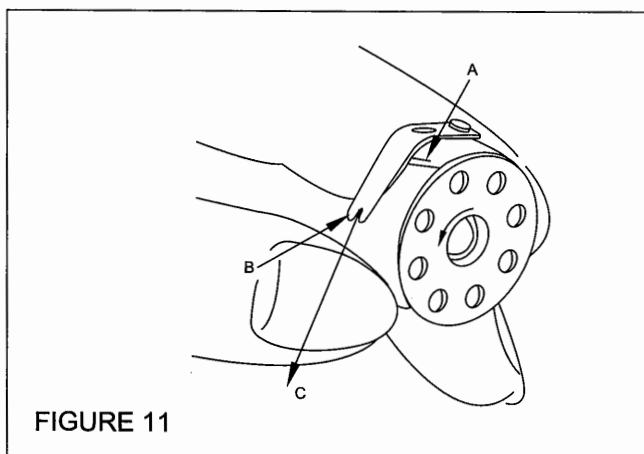
4. ATTACHING THE NEEDLE (FIGURE 10)



Choose a proper needle size according to the count of thread and the type of sewing material used.

- 1) The power supply should be cut off before attaching the needle.
- 2) Turn the hand wheel until the needle bar reaches the highest point of its stroke.
- 3) Loosen screw ②, and hold needle ① with its indented part A facing exactly to the right in direction B.
- 4) Insert the needle in the direction of the arrow until it will go no further.
- 5) Tighten the screw ②.
- 6) Make sure the long groove C of the needle is facing exactly to the left in direction D.

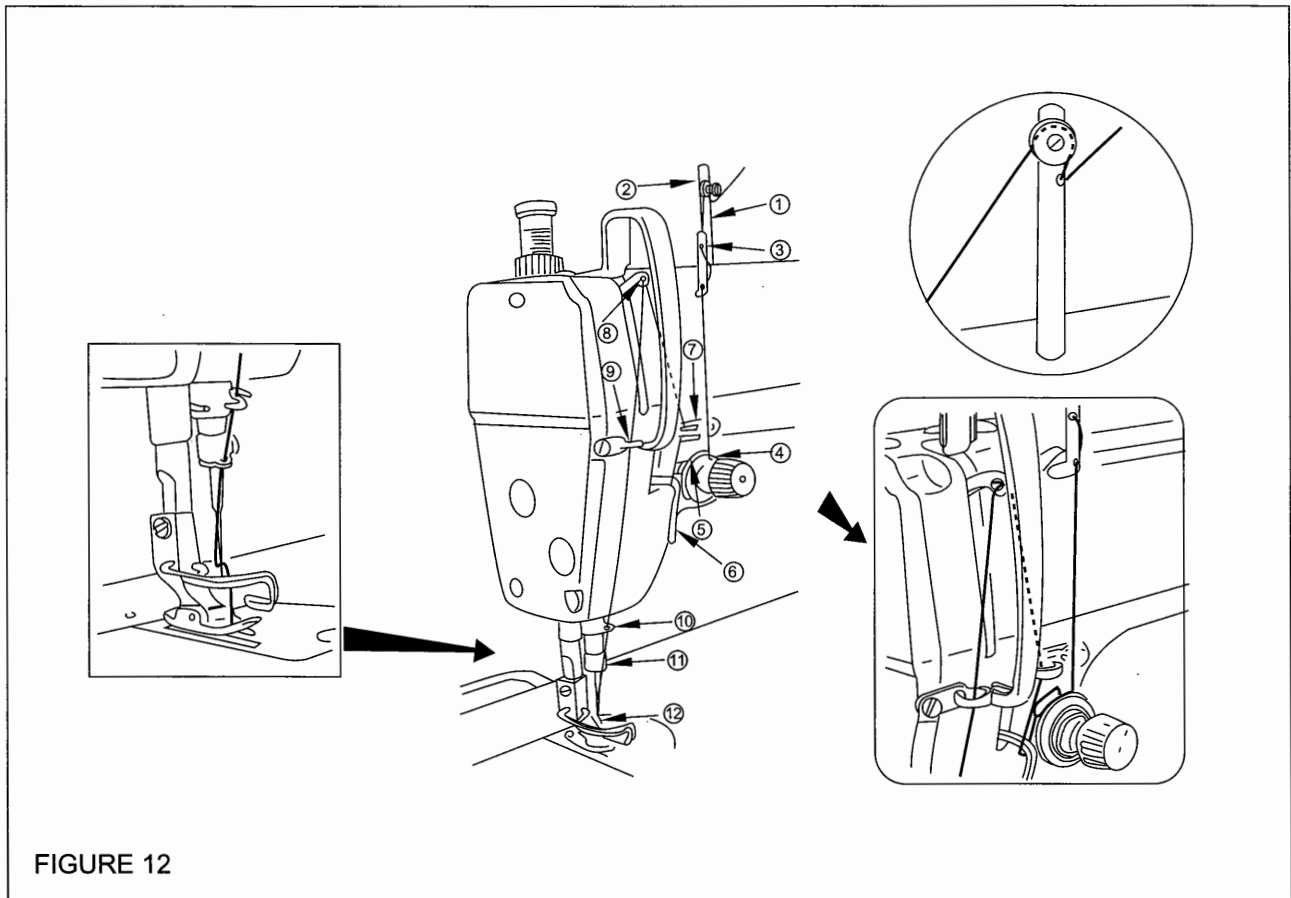
5. SETTING THE BOBBIN INTO THE BOBBIN CASE (FIGURE 11)



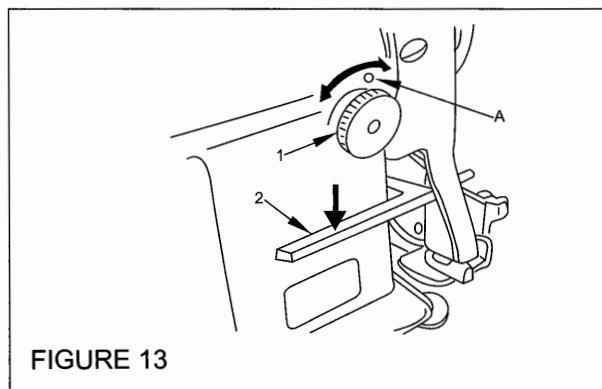
- 1) Fix the bobbin into bobbin case with that the thread open end is directed to the left as observed from you.
- 2) Pass the thread through thread slit A, and pull it in direction B. By doing so, the thread will pass under the tension spring and come out from notch B.
- 3) When pulling the thread C, the bobbin should rotate in the direction of the arrow.

6. THREADING THE MACHINE HEAD (FIGURE 12)

When threading the machine head, the needle bar should be at the highest point of its stroke. Then pull a thread end from the thread holder and thread it as follows.

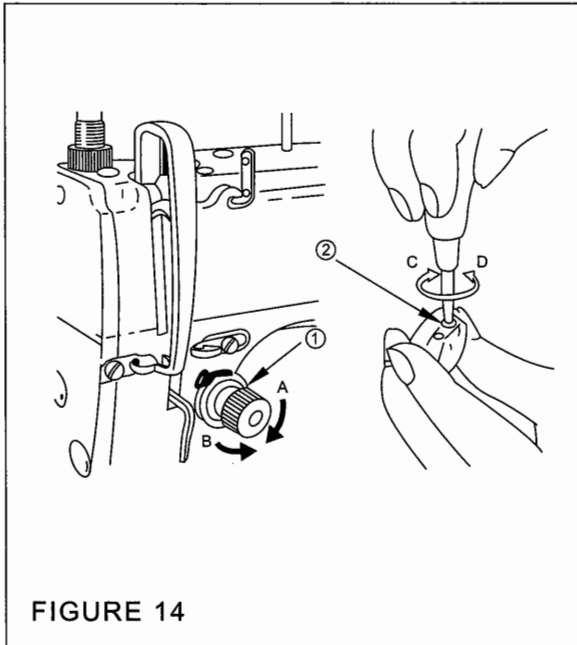


7. ADJUSTING THE STITCH LENGTH (FIGURE 13)



- 1) Turn stitch length dial ① in the direction of the arrow, and align the desired number to marker dot A on the machine arm.
- 2) The dial calibration is in millimeters.
- 3) When you want to decrease the stitch length, turn stitch length dial ① while pressing feed lever ② in the direction of the arrow.

8. THREAD TENSION (FIGURE 14)



1. Adjusting needle thread tension:
 - 1) Adjust the tension of needle thread using tension adjusting nut ① according to different sewing conditions.
 - 2) Turn the nut ① clockwise (in direction A), the tension will increase.
 - 3) Turn the nut ① anti-clockwise (in direction B), the tension will decrease.
2. Adjusting the bobbin thread tension:
 - 1) Turn the tension adjusting screw ② clockwise (in direction C), the bobbin thread tension will increase.
 - 2) Turn the screw ② counter-clockwise (in direction D), the bobbin thread tension will decrease.

9. THREAD TAKE-UP SPRING (FIGURE 15)

The stroke degree of the thread take-up spring is 8~10mm. When sewing light material the tension of the thread take-up spring should be decreased by increasing the stroke. It's just the opposite to the heavy cloth.

1. The adjustment of the stroke of the thread take-up spring
 - 1) Loosen setting screw ②.
 - 2) Turn the thread tension post ③ clockwise (in direction A), the stroke of the thread take-up spring will be increased.
 - 3) Turn the thread tension post ③ counter-clockwise (in direction B), the stroke of the thread take-up spring will be decreased.
2. Adjusting the pressure of the thread take-up spring.
 - 1) Loosen setting screw ② and take out thread tension asm. ⑤.
 - 2) Loosen setting screw ④ and turn the tension post ③.
 - 3) Turn the tension post ③ clockwise (in direction A), the pressure of the spring will be increased.
 - 4) Turn the tension post ③ counter clockwise (in direction B), the pressure will be decreased.

Usually, the thread take-up spring has been properly adjusted before leaving the factory. Only when sewing special cloth or using special thread, is readjustment necessary.

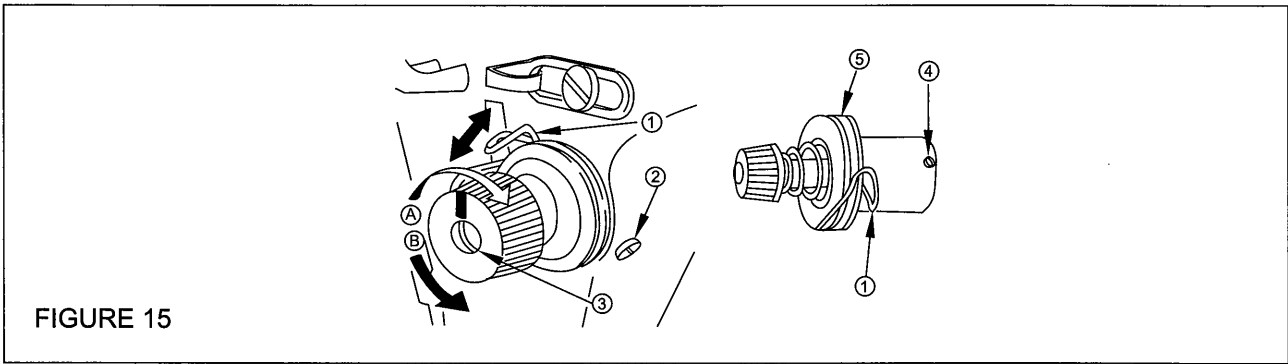


FIGURE 15

10. PRESSER FOOT LIFTER (FIGURE 16)

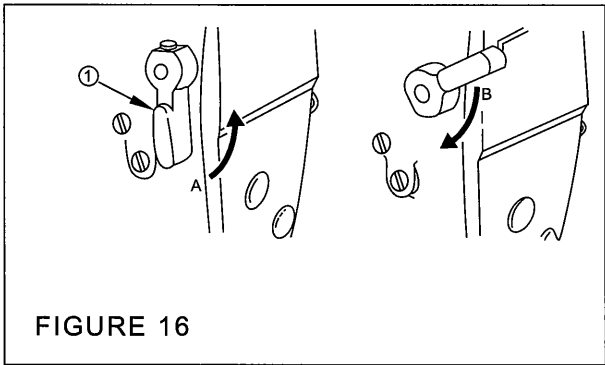


FIGURE 16

- 1) Turn the presser foot lifter ① in direction A to lift the presser foot.
- 2) The presser foot will go up about 5.5mm and stop.
- 3) The presser foot will go back to its original position when the lifter is turned down in direction B.
- 4) Using knee lifter, the lifting distance of the presser foot is about 10mm and maximum lifting is 13mm.

11. ADJUSTING THE PRESSURE OF THE PRESSER FOOT (FIGURE 17)

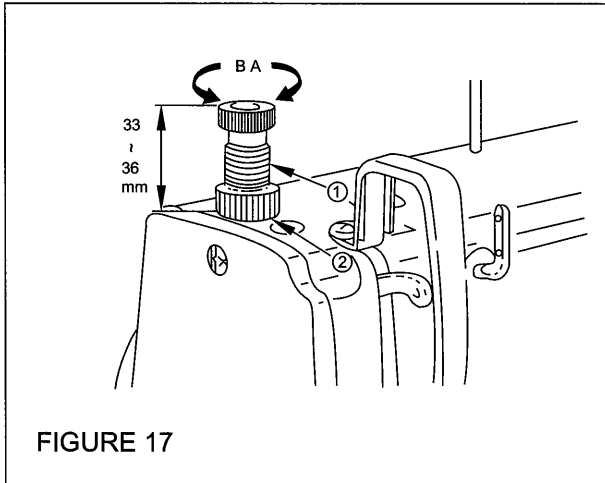
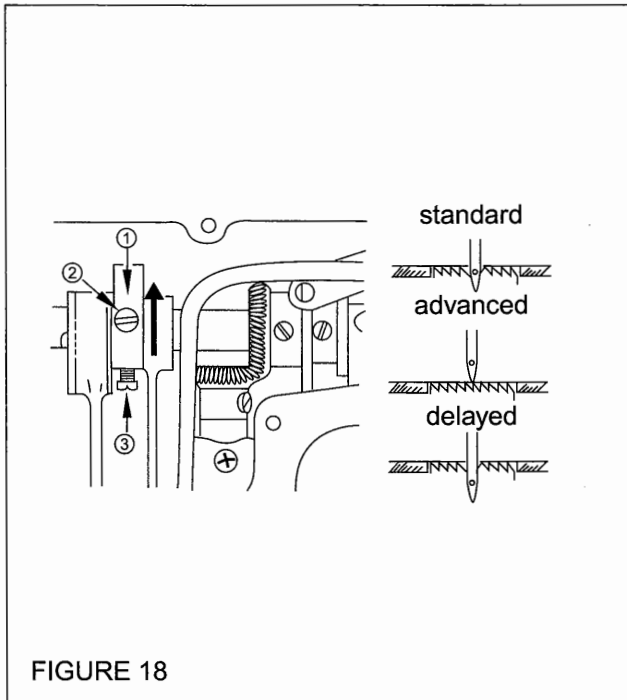


FIGURE 17

- 1) Loosen the nut ② and turn the presser spring regulator ① clockwise (in direction A), the pressure of the presser foot will be increased.
- 2) Turn the regulator counter clockwise (in direction B), the pressure of the presser foot will be decreased.
- 3) Tighten nut ②.
- 4) For general fabrics, the standard height of the presser spring regulator is around 33~36mm (5kg).

12. ADJUSTING THE FEED TIMING (FIGURE 18)

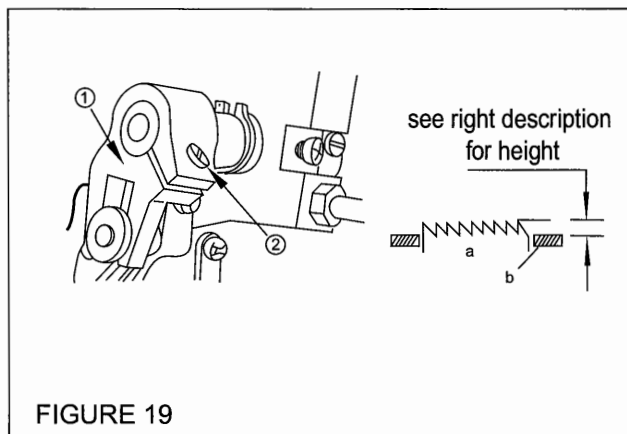


- 1) Loosen screws ② and ③ in feed eccentric cam ①, move the feed eccentric cam in the direction of the arrow or opposite direction of the arrow, and firmly tighten the screws ② and ③.
- 2) For the standard adjustment, adjust so that the top surface of feed dog and the top end of needle eyelet are flush with top surface of throat plate when the feed dog descends below the throat plate.
- 3) To advance the feed timing in order to prevent uneven material feed, move the feed eccentric cam in the direction of the arrow.
- 4) To delay the feed timing in order to increase stitch tightness, move the feed eccentric cam in the direction from the arrow.

Notice:

If the feed eccentric cam is moved too far, the needle will be broken.

13. HEIGHT OF THE FEED DOG (FIGURE 19)



- 1) The feed dog ① should be adjusted to jut out from the throat plate surface 1.15~1.25mm when sewing heavy material, 0.8~0.9mm when sewing medium material and 0.7~0.8mm when sewing light weight material.
- 2) If the feed dog juts out too much, puckering may result when sewing light weight materials.

Caution:

If the clamping pressure is insufficient, the fork crank will be worn out.

14. THE RELATIONSHIP BETWEEN NEEDLE AND ROTATING HOOK (FIGURE 20)

- 1) Turn the hand wheel to bring the needle bar to the lowest point of its stroke, then loosen the setting screw ①.
Adjusting the height of the needle bar .
- 2) Align the marker line A on needle bar ② with the bottom end of the needle bar lower bushing ③, then, tighten the setting screw ① Adjust the position of the rotating hook.
- 3) Loosen two rotating hook setting screws and turn the hand wheel. Align marker line B on needle bar ② with the bottom end of needle bar lower bushing ③ .
- 4) After making the adjustments mentioned in above steps, align hook blade point ⑤ with the center of needle ④ provide a clearance of 0.04mm to 0.1mm between the needle and the hook setting screws.

Caution:

- a. If the clearance is too small, the tip of the hook will be abraded. if it is too big, it will lead to stitch skip.
- b. When replacing the hook, the type of the hook to be substituted for should be the same as the original assembled hook.

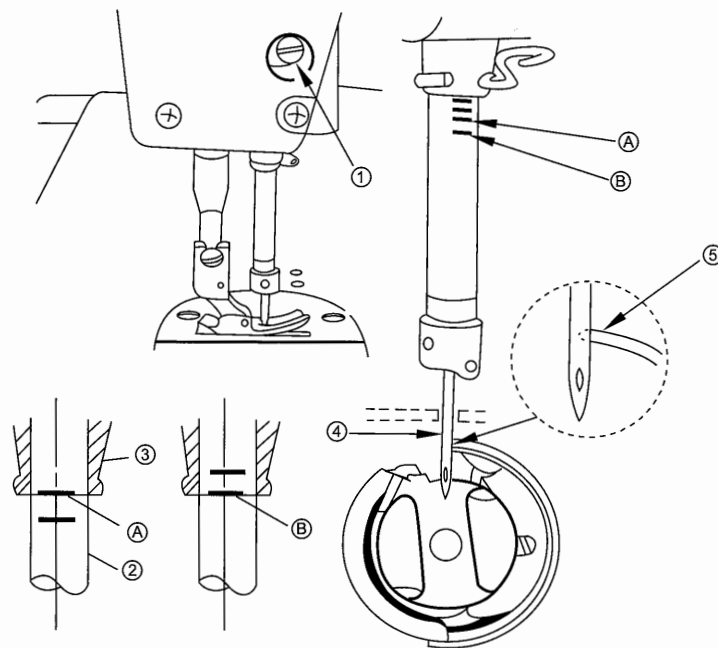


FIGURE 20

15. ADJUSTING THE HELGHT OF THE PRESSER BAR (FIGURE 21)

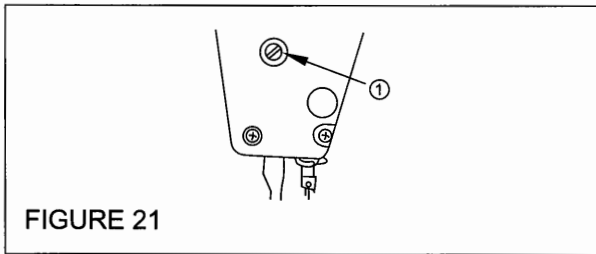


FIGURE 21

- 1) Loosen screw ① and adjust the height of the presser bar (When presser foot raises to the highest, the distance between the throat plate and the presser foot is 5.5mm).
- 2) Tighten the screw after adjustment.

16. ADJUSTING THE THREAD TAKE-UP STROKE (FIGURE 22)

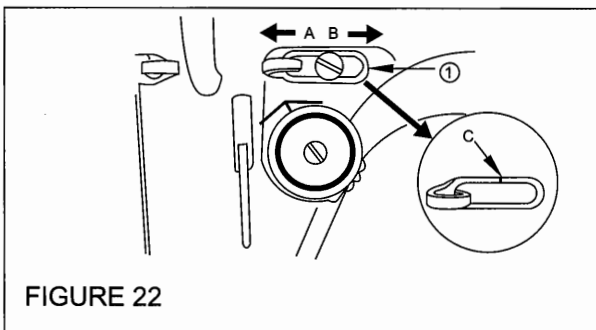


FIGURE 22

- 1) When sewing heavy material, move the thread guide ① to the left in direction A to increase the length of thread pulled out by the thread take-up.
- 2) When sewing light-weight material, move the thread guide ① to the right B in direction to decrease the length of thread pulled out by the thread take-up.
- 3) When marker line C on the thread guide ① is aligned with the center of the screw, the adjustment is neutral.

17. INSTALLING THE BELT COVER AND BOBBIN WINDER (FIGURE 23,24,25)

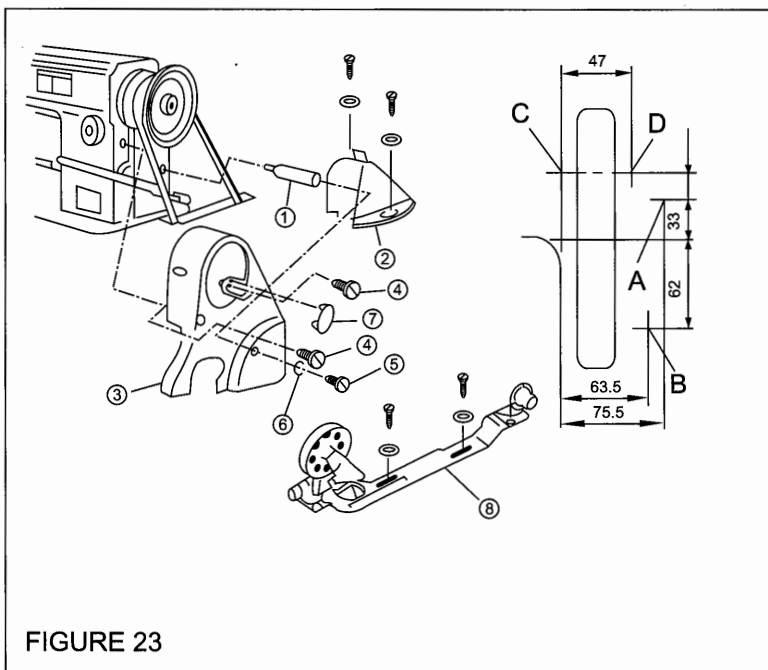


FIGURE 23

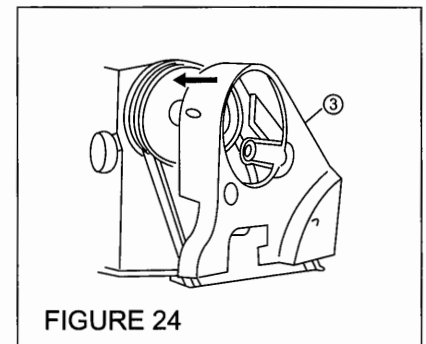


FIGURE 24

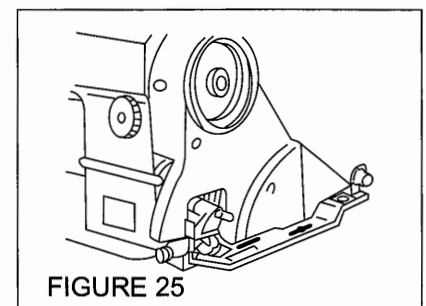


FIGURE 25

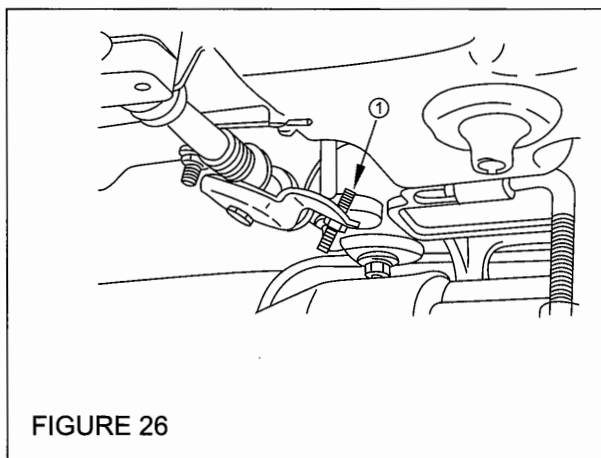
Installation Procedure:

- 1) Drill four holes A,B,C,D, in the machine table for screws .
- 2) Insert support ① in the threaded hole in the housing.
- 3) Install the front belt cover ③ and get the hand wheel in the middle of the cover hole.
- 4) Install the back belt cover ② at holes C,D .
- 5) Fix the front belt cover ③ on the support with screws ④ .⑤ and washers ⑥. The tightening torque for the screw ④ is about 30kgf. cm and for the screw ⑤ is about 25 kgf.cm.
- 6) Fix the cover ⑦ .
- 7) Move the back belt cover ② backward, until its rubber touches the front belt cover③, move it again for 0.5-1mm and fix it with screws and washers.
- 8) Fix bobbin winder ⑧ at hole A,B with screws and washers.

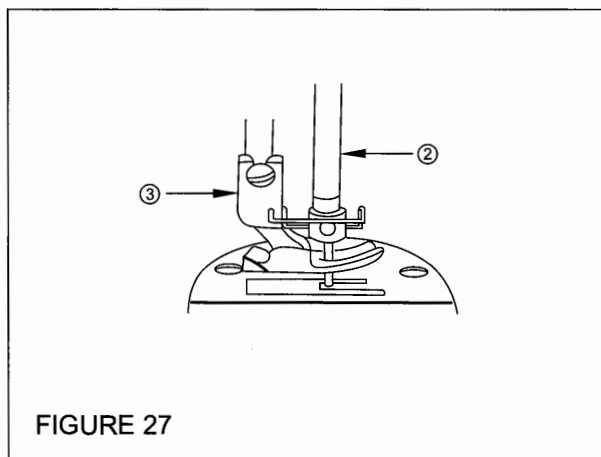
Caution: 1) For safety, belt cover should be installed.

- 2) The left and right parts of the bobbin winder should be parallel to the plate belt slot on the machine table.

18. ADJUSTING THE HEIGHT OF THE KNEE LIFTER (FIGURE 26 ,27)



- 1) When using the knee lifter, the standard height of presser foot is 10mm.
- 2) You can adjust the presser foot lift up to 13mm by turning the knee lifter adjusting screw ①.
- 3) When the presser foot lifts to over 10mm, be sure that the bottom end of needle bar ② in its lowest position does not hit the presser foot ③.



19. MAIN SPECIFICATIONS

Model	2591D200A	2591D300A	2591D308A 2591D508A
Application	For light and medium-weight materials	For medium-weight and heavy materials	For heavy material
Sewing speed	Max 5500 s.p.m.	Max 5500 s.p.m.	Max 3500 s.p.m.
Stitch length	Max .5mm	Max .5mm	Max .8mm
Lifting height (Hand Lifter) of presser foot(Knee Lifter)	6mm (Max) 13mm(Max)	6mm (Max) 13mm(Max)	8mm (Max) 13mm(Max)
needle	1955-01 size10~24		
Lubrication oil	Singer Special sewing machine oil		
Motor power	200W,250W or 400W depending on application		

Illustration:

When sewing light-weight material, the presser foot, throat plate and feed dog should be altered and adjusted.

