

**DÜRKOPP
ADLER**

251 - 140040

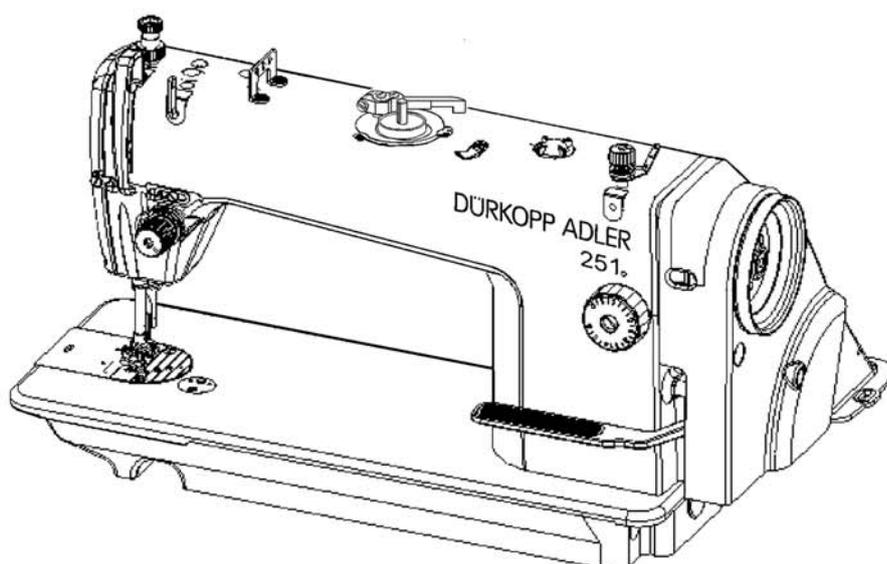
Special sewing machine

Manual , complete

使用说明书

GB

CN



DÜRKOPP ADLER

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Notice for setting-up the machines 251-140040 缝纫机安装注意事项

1. Proper tension adjustment of V-Belt is required.

Adjust V-Belt bended down around 15-20mm by pushing the center of the belt at 9.8N (1kgf).

● 皮带张力的调整

皮带应调整到在皮带中部以 1 kg 的力度（手指稍用力）下压时，皮带下凹 15-20mm。张力过大时，上轴负荷增大发热，有可能造成机器损坏，务请充分注意。

2. After the machine set-up, the first machine running for 5 minutes above 1000-2000rpm

● 安装完成后，请以 1000-2000spm 的以上转速试运转 5 分钟（以使各轴承部润滑良好）。

3. Use the V-Belt of excellent quality that has no big joint, no cracks and so on.

● 应使用质量极好的 V 型皮带，皮带接触面不应有大的结点、无破损。

4. Keep horizontal level when installing the sewing table

● 台板在安装过程中应保持水平。

5. Never operate the machine unless its oil pan has been filled with oil.

● 油槽中没有加缝纫机油时，绝对不要运转缝纫机。

6. Don't use a motor pulley of a larger outside diameter than the standard outside diameter for the first one month.

● 最初开始使用的 1 个月中，请不要换大马达皮带轮。



WARNING :

To avoid malfunction and damage of the machine, confirm the following.

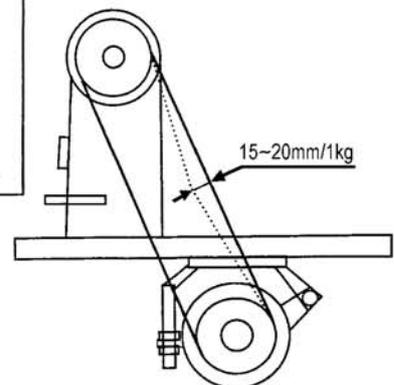
- Clean the sewing machine thoroughly before using it for the first time.
- Remove all dust collected on the sewing machine during the transportation.
- Confirm that the voltage and phase are correct.
- Confirm that the power plug is properly connected.
- Never use the sewing machine in the state where the voltage type is different from the designated one.
- The direction of rotation of the sewing machine is counterclockwise as observed from the handwheel side. Be careful not to rotate it in reverse direction.



注意

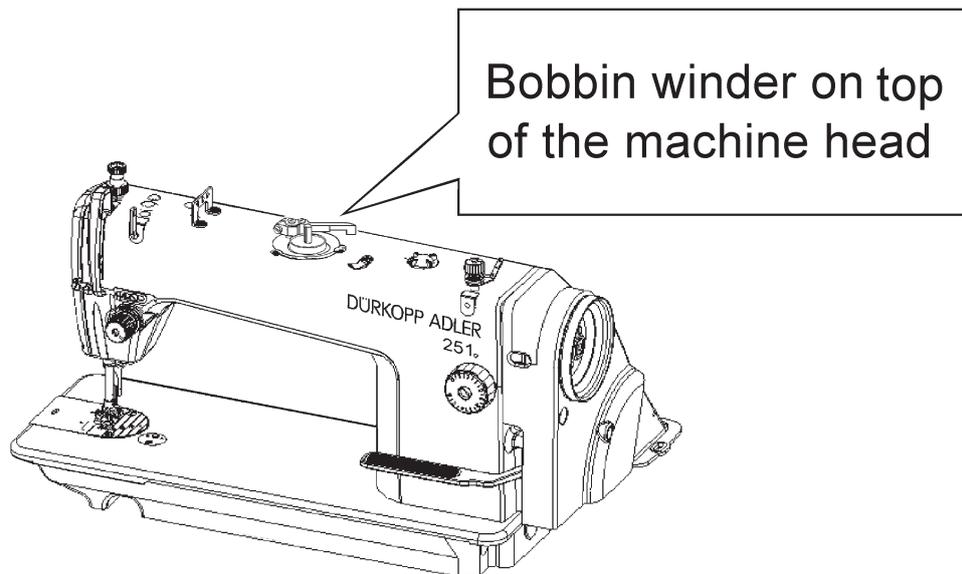
为了避免机械的错误动作或损伤，请确认如下项目内容。

- 第一次使用缝纫机之前，请把缝纫机打扫干净。
- 请把运送中积的灰尘打扫干净。
- 请确认设定的电压是否正确。
- 请确认电源插头是否正确的插好。
- 电源规格不同的情况时，请绝对不要使用缝纫机。
- 缝纫机的转动方向是，站在飞轮侧看为逆时针方向。请注意不要让缝纫机反向转动。



251-140040 MODEL

High Speed Single Needle Lockstitch
Industrial Sewing Machine





251-140040

Manual, complete

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IMPORTANT SAFETY INSTRUCTIONS

Putting sewing systems into operation is prohibited until it has been ascertained that the sewing systems in which these sewing machines will be built into, have confirmed with the safety regulations in your country. Technical service for those sewing systems is also prohibited.

1. Observe the basic safety measures, including, but not limited to the following ones, whenever you use the machine.
2. Read all the instructions, including, but not limited to this Instruction Manual before you use the machine. In addition, keep this Instruction Manual so that you may read it at anytime when necessary.
3. Use the machine after it has been ascertained that it conforms with safety rules/standards valid in your country,
4. All safety devices must be in position when the machine is ready for work or in operation. The operation without the specified safety devices is not allowed.
5. This machine shall be operated by appropriately-trained operators.
6. For your personal protection, we recommend that you wear safety glasses.
7. For the following, turn off the power switch or disconnect the power plug of the machine from the receptacle.
 - 7-1 For threading needle(s), looper, spreader etc. and replacing bobbin.
 - 7-2 For replacing part(s) of needle, presser foot, throat plate, looper, spreader, feed dog, needle guard, folder, cloth guide etc.
 - 7-3 For repair work.
 - 7-4 When leaving the working place or when the working place is unattended.
 - 7-5 When using clutch motors without applying brake, it has to be waited until the motor stopped totally.
8. If you should allow oil, grease, etc. used with the machine and devices to come in contact with your eyes or skin or swallow any of such liquid by mistake, immediately wash the contacted areas and consult a medical doctor.

9. Tampering with the live parts and devices, regardless of whether the machine is powered, is prohibited.
10. Repair, remodeling and adjustment works must only be done by appropriately trained technicians or specially killed personnel. Only spare parts designated by Dürkopp Adler Manufacturing (Shanghai) Co.,Ltd.can be used for repairs.
11. General maintenance and inspection works have to be done by appropriately trained personnel.
12. Repair and maintenance works of electrical components shall be conducted by qualified electric technicians or under the audit and guidance of special skilled personnel. Whenever you find a failure of any of electrical components, immediately stop the machine.
13. Before making repair and maintenance works on the machine equipped with pneumatic parts such as an air cylinder, the air compressor has to be detached from the machine and the compressed air supply has to be cut off. Existing residual air pressure after disconnecting the air compressor from the machine has to be expelled. Exceptions to this are only adjustments and performance checks done by appropriately trained technicians or special skilled personnel.
14. Periodically clean the machine throughout the period of use.

15. Grounding the machine is always necessary for the normal operation of the machine. The machine has to be operated in an environment that is free from strong noise sources such as high-frequency welder.
16. An appropriate power plug has to be attached to the machine by electric technicians. Power plug has to be connected to a grounded receptacle.

17. The machine is only allowed to be used for the purpose intended. Other used are not allowed.
18. Remodel or modify the machine in accordance with the safety rules/standards while taking all the effective safety measures. We assume no responsibility for damage caused by remodeling or modification of the machine.

19. Warning hints are marked with the two shown symbols



Danger of injury to operator or service staff



Items requiring special attention

FOR SAFE OPERATION



1. Don't put your hand under the needle when you turn "on" the power switch or operate the machine.
2. Don't put your hand into the thread take-up cover while the machine is running.
3. Turn **OFF** the power switch before tilting the machine head or removing the belt cover and the V belt.
4. Never bring your fingers, hair or clothing close to, or place anything on the handwheel, V-belt, bobbin winder wheel or motor during operation.
5. If your machine is provided with a belt cover, finger guard and safety plate, never operate your machine with any of them removed.
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. When tilting the machine head, exercise care not to allow your fingers etc. to be caught under the machine head.
8. Do not wipe the surface of the machine head with lacquer thinner.
9. Never operate the machine unless its oil pan has been filled with oil.
10. Don't use a motor pulley of a larger outside diameter than the standard outside diameter for the first onemonth.
11. Confirm that the voltage and phase (single- or 3-phase) are correct by checking them against the ratings shown on the motor nameplate.
12. In case of maintenance, inspection, or repair, be sure to turn **OFF** the power switch and confirm that the sewing machine and the motor have completely stopped before starting the work. (In case of the clutch motor, it continues rotating for a while by the inertia even after turning **OFF** the power switch. So, be careful.)

CAUTION BEFORE OPERATION



WARNING:

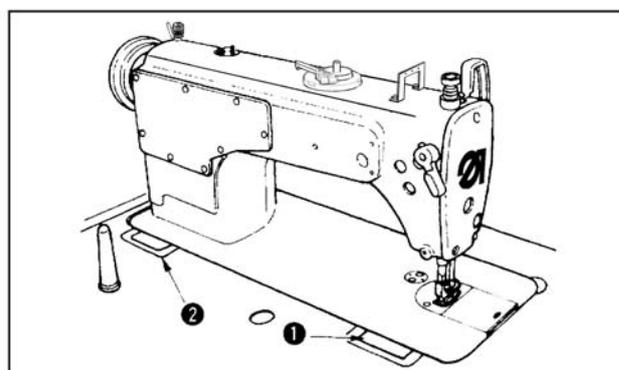
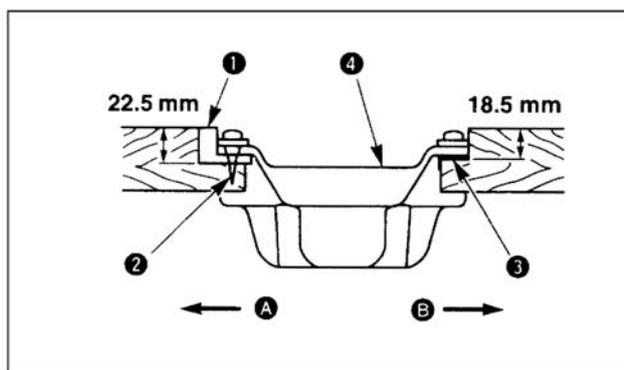
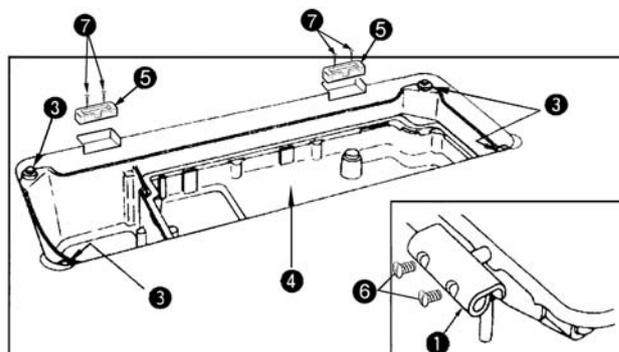
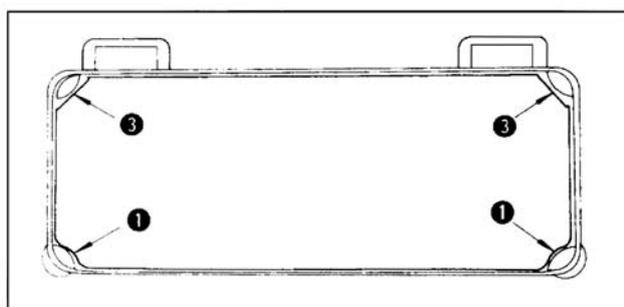
To avoid malfunction and damage of the machine, confirm the following.

- Clean the sewing machine thoroughly before using it for the first time.
- Remove all dust collected on the sewing machine during the transportation.
- Confirm that the voltage and phase are correct.
- Confirm that the power plug is properly connected.
- Never use the sewing machine in the state where the voltage type is different from the designated one.
- The direction of rotation of the sewing machine is counterclockwise as observed from the handwheel side. Be careful not to rotate it in reverse direction.

1. SPECIFICATIONS

	251-140040	251-140040 A	251-140040 H
Application	For medium-weight materials	For light-weight materials	For heavy-weight materials
Sewing speed	Max. 5,000 rpm	Max. 4,000 rpm	Max. 4,000 rpm
Stitch length	Max. 5 mm	Max. 4 mm	Max. 5 mm </td
Needle	DBx1#9to#18(134#65to#110)	DBx1#9to#11(134#65to#75)	DBx1#20to#23(134#125to#160)
Presser foot lift (by knee lifter)	10 mm (Standard)13 mm (Max.)	9 mm (Max.)	10 mm (Standard) 13 mm (Max.)
Lubricating oil	10 White Oil		
Noise	Workplace-related noise at sewing speed $n=5000\text{min}^{-1}$: $L_{pa} \leq 83\text{dB(A)}$ Noise measurement according to DIN 45635-48-A-1.		

2. INSTALLATION



WARNING:

To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.

(1) Installing the oil pan

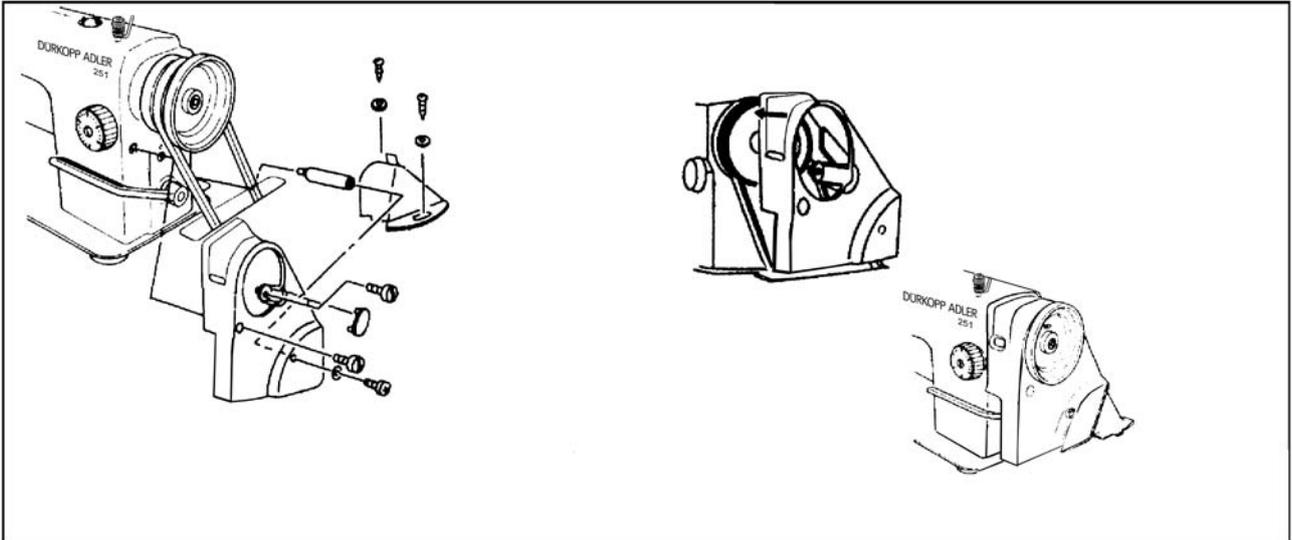
- 1) The under cover should rest on the four corners of the machine table groove.
- 2) Fix the hinge ① by screw ⑥ on the base plate. Fix the ② rubber seats ① of the front side A to the protruded side of the table by round nail ②, then using round nail ② to fix ② rubber seats ③ of the hinge B side and fix the hinge holder ⑤ in the table slet by screw ⑦, then place the oil pan ④.
- 3) Put the machine head on the rubber seat ③.
- 4) Keep horizontal level when installing the machine head.

3. INSTALLING THE BELT COVER



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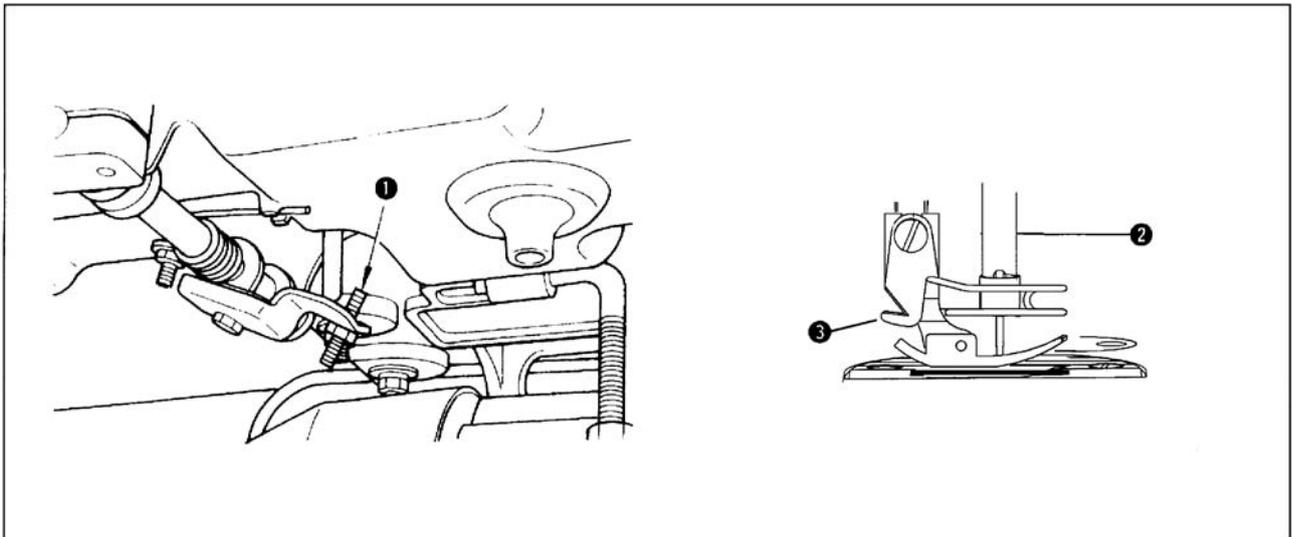


4. ADJUSTING THE HEIGHT OF THE KNEE LIFTER



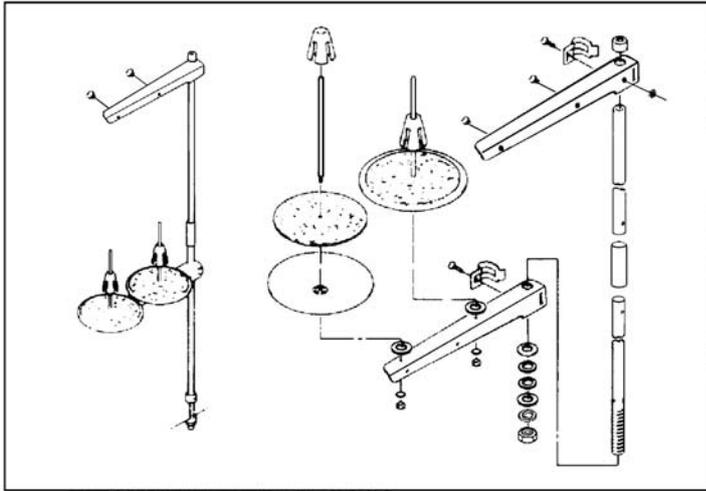
WARNING:

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- 1) The standard height of the presser foot lifted using the knee lifter is 10 mm.
- 2) You can adjust the presser foot lift up to 13 mm using knee lifter adjust screw **1**. (Max. 9 mm for A type)
- 3) When you have adjusted the presser foot lift to over 10 mm, be sure that the bottom end of needle bar **2** in its lowest position does not hit presser foot **3**.

5. INSTALLING THE THREAD STAND

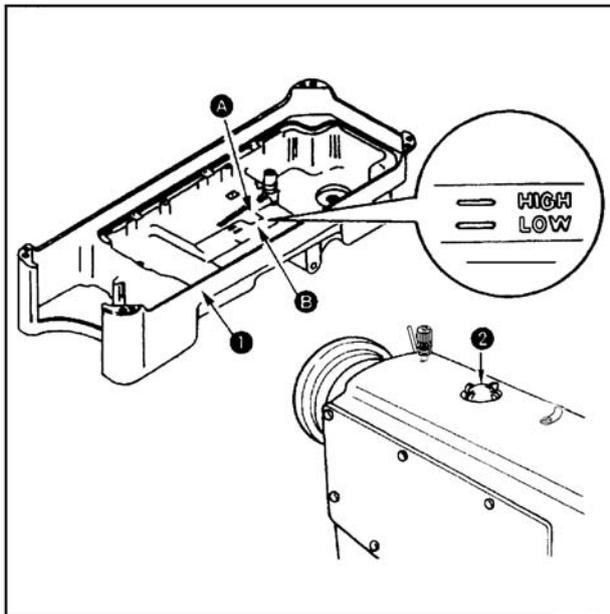


6. LUBRICATION



WARNING:

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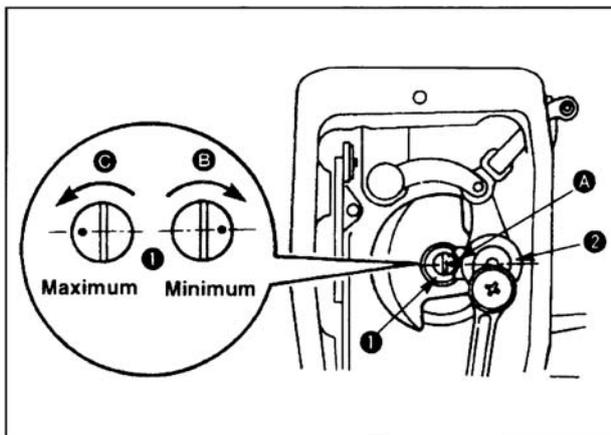
(1) Information on lubrication

- 1) Fill oil pan ① with 10 white Oil up to HIGH mark ④.
- 2) When the oil level lowers below LOW mark ⑤, 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.



When you first operate your machine after setup or after an extended period of disuse, run your machine at 3,000 to 3,500 rpm. 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 adjust pin ①.
- 2) The minimum amount of oil is reached when marker dot ④ is brought close to needle bar crank ② by turning the adjust pin in direction ⑤.
- 3) The maximum amount of oil is reached when marker dot ④ is brought to the position just opposite from the needle bar crank by turning the adjust pin in direction ⑥.

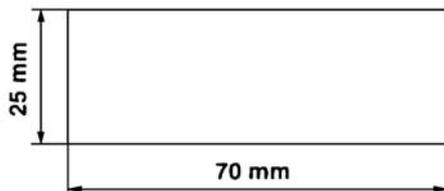
7. ADJUSTING THE AMOUNT OF OIL (OIL SPLASHES) IN THE HOOK



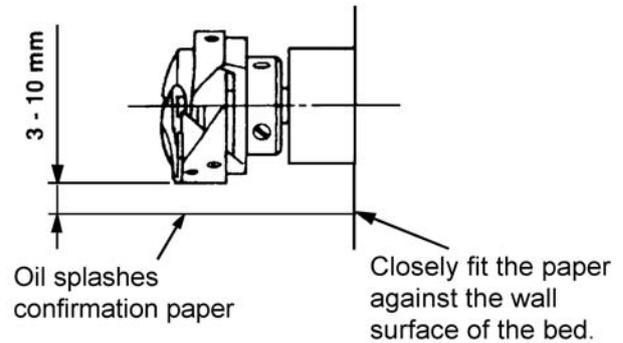
WARNING:

Be extremely careful about the operation of the machine since the amount of oil has to be checked by turning the hook at a high speed.

① Amount of oil (oil splashes) confirmation paper



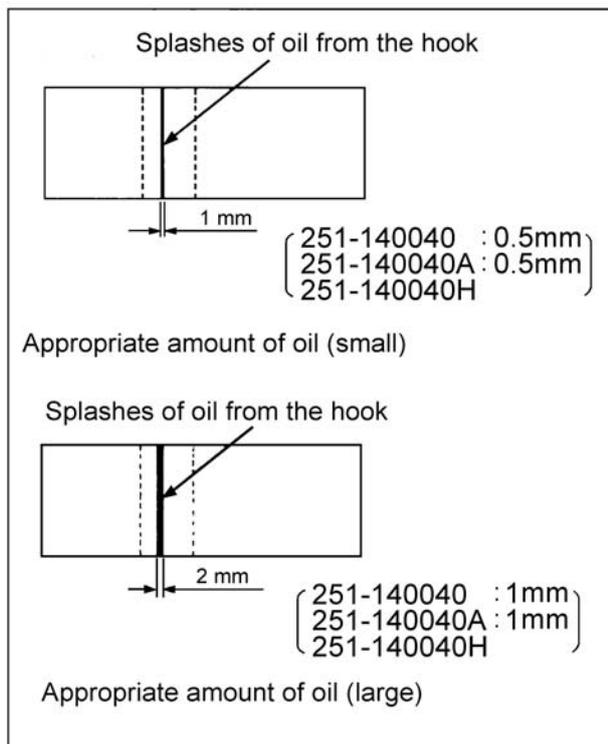
② Position to confirm the amount of oil (oil splashes)



* When carrying out the procedure described below in 2, remove the slide plate and take extreme caution not to allow your fingers to come in contact with the hook.

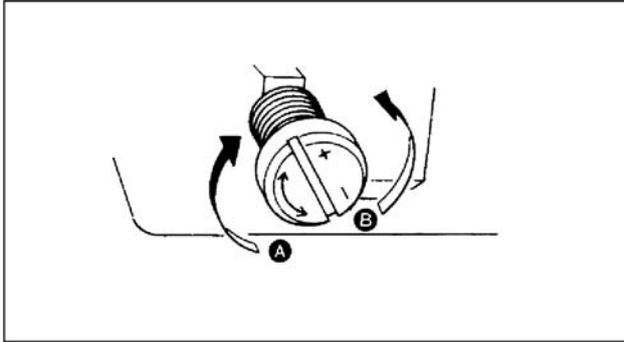
- 1) If the machine has not been sufficiently warmed up for operation, make the machine run idle for approximately three minutes. (Moderate intermittent operation)
- 2) Place the amount of oil (oil spots) confirmation paper under the hook while the sewing machine is in operation.
- 3) Confirm the height of the oil surface in the oil reservoir is within the range between "HIGH" and "LOW".
- 4) Confirmation of the amount of oil should be completed in five seconds. (Check the period of time with a watch)

• Sample showing the appropriate amount of oil



- 1) The amount of oil shown in the samples on the left should be finely adjusted in accordance with sewing processes. Be careful not to excessively increase / decrease the amount of oil in the hook. (If the amount of oil is too small, the hook will be seized (the hook will be hot). If the amount of oil is too much, the sewing product may be stained with oil.)
- 2) Adjust the amount of oil in the hook so that the oil amount (oil splashes) should not change while checking the oil amount three times (on the three sheets of paper).

• **Adjusting the amount of oil (oil spots) in the hook**



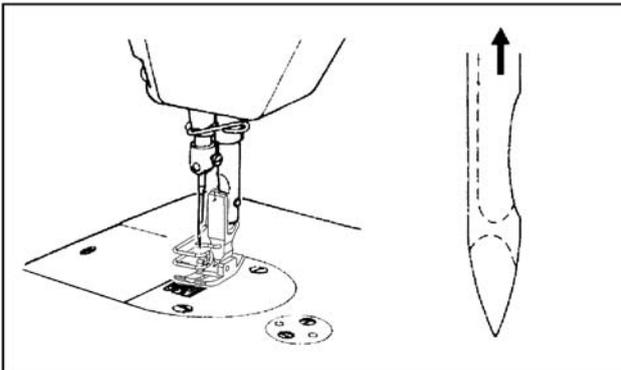
- 1) Turning the oil amount adjustment screw attached on the hook driving shaft front bushing in the "+" direction (in direction **A**) will increase the amount of oil (oil spots) in the hook, or in the "-" direction (in direction **B**) will decrease it.
- 2) After the amount of oil in the hook has been properly adjusted with the oil amount adjustment screw, make the sewing machine run idle for approximately 30 seconds to check the amount of oil in the hook.

8. ATTACHING THE NEEDLE

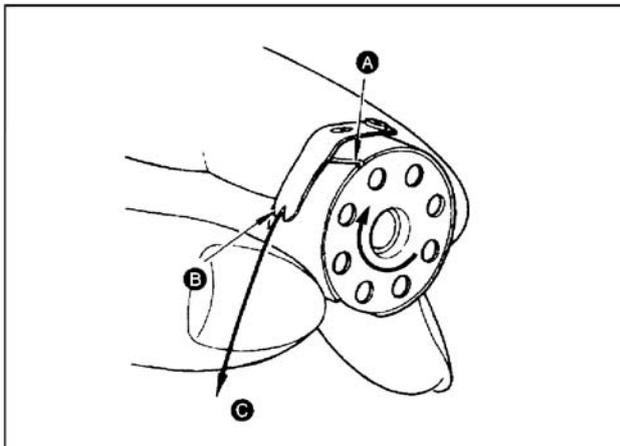


WARNING:

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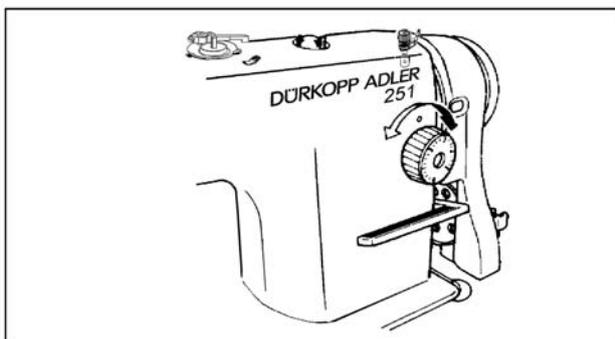


9. SETTING THE BOBBIN INTO THE BOBBIN CASE

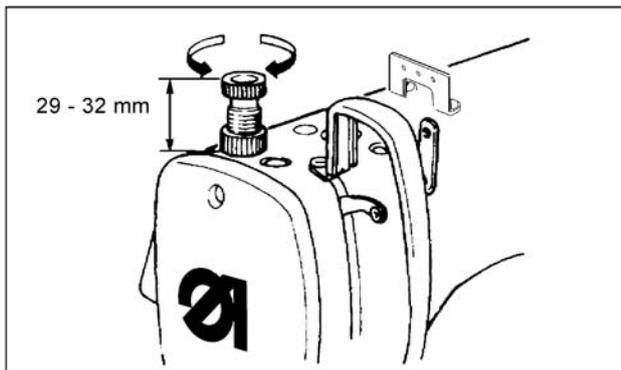


- 1) Pass the thread through thread slit **A**, and pull the thread in direction **B**.
By so doing, the thread will pass under the tension spring and come out from notch **B**.
- 2) Check that the bobbin rotates in the out direction from the arrow when thread **C** is pulled.

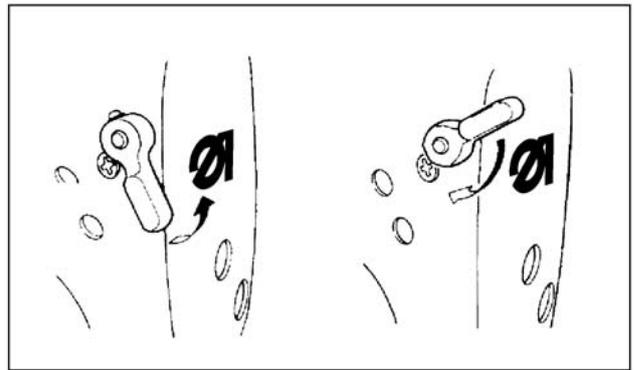
10. ADJUSTING THE STITCH LENGTH



11. Presser foot pressure



12. HAND LIFTER

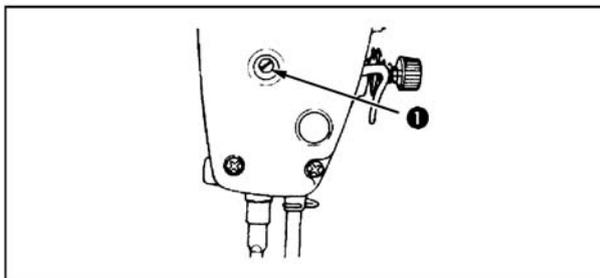


13. ADJUSTING THE HEIGHT OF THE PRESSER BAR



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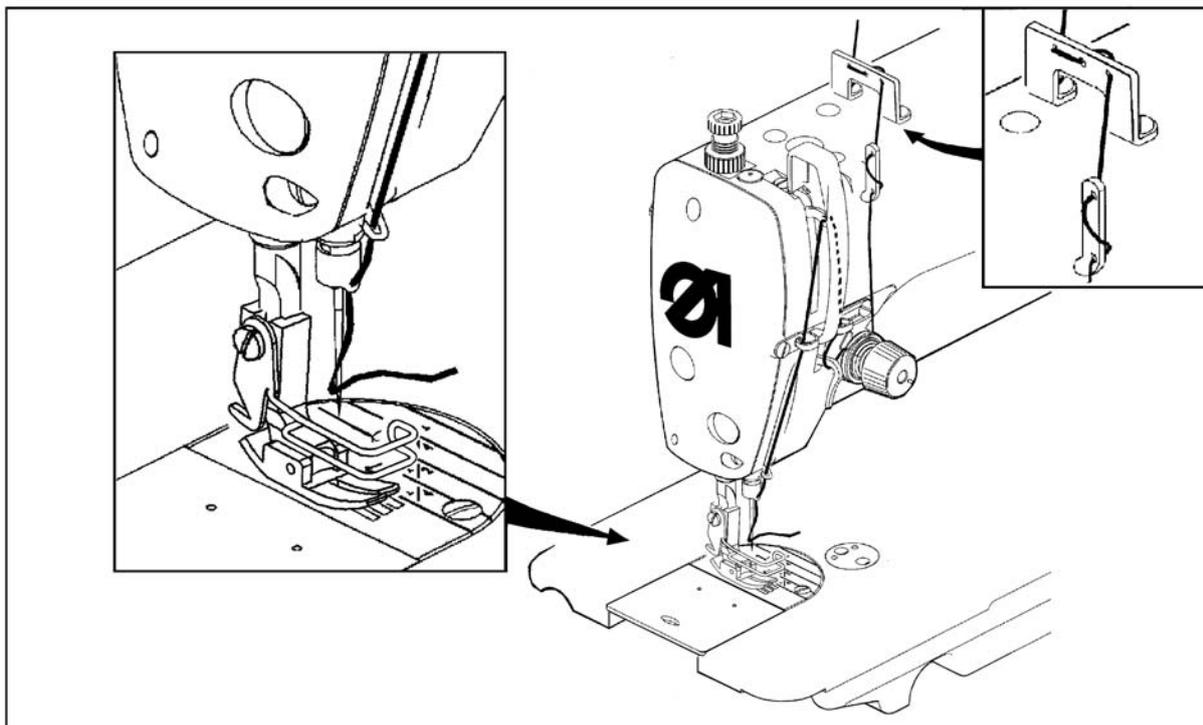
- 1) Loosen setscrew ①, and adjust the presser bar height or the angle of the presser foot.
- 2) After adjustment, securely tighten the setscrew ①.

14. THREADING THE MACHINE HEAD

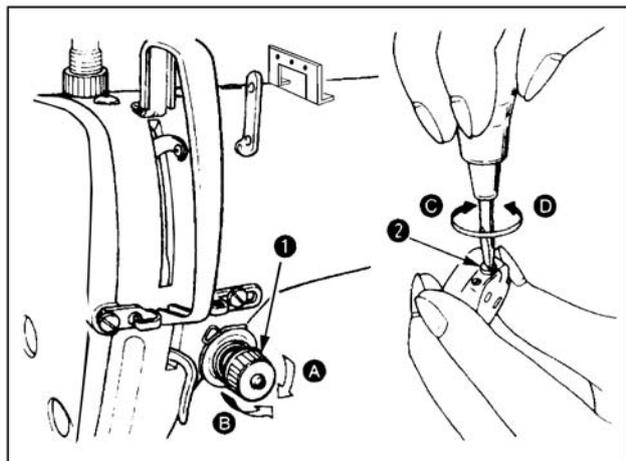


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15. THREAD TENSION



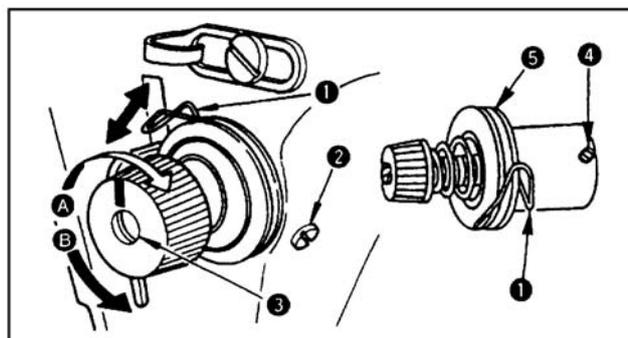
(1) Adjusting the needle thread tension

- 1) As you turn thread tension nut ① clockwise (in direction A), the needle thread tension will be increased.
- 2) As you turn nut ① counterclockwise (in direction B), the needle thread tension will be decreased.

(2) Adjusting the bobbin thread tension

- 1) As you turn tension adjust screw ② clockwise (in direction C), the bobbin thread tension will be increased.
- 2) As you turn screw ② counterclockwise (in direction D), the bobbin thread tension will be decreased.

16. THREAD TAKE-UP SPRING



(1) Changing the stroke of thread take-up spring ①

- 1) Loosen set screw ②.
- 2) As you turn tension post ③ clockwise (in direction A), the stroke of the thread take-up spring will be increased.
- 3) As you turn the knob counterclockwise (in direction B), the stroke will be decreased.

(2) Changing the pressure of thread take-up spring ①

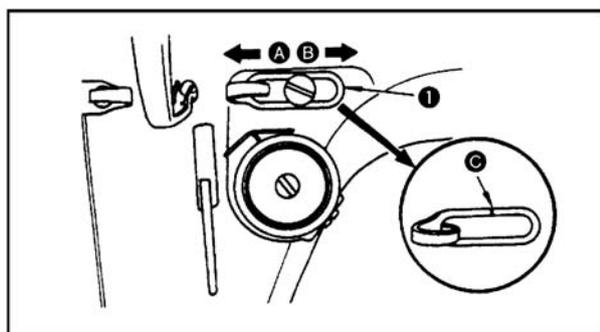
- 1) Loosen setscrew ②, and remove tension post ⑤.
- 2) Loosen setscrew ④.
- 3) As you turn tension post ③ clockwise (in direction A), the pressure will be increased.
- 4) As you turn the tension post ③ counterclockwise (in direction B), the pressure will be decreased.

17. ADJUSTING THE THREAD TAKE-UP STROKE



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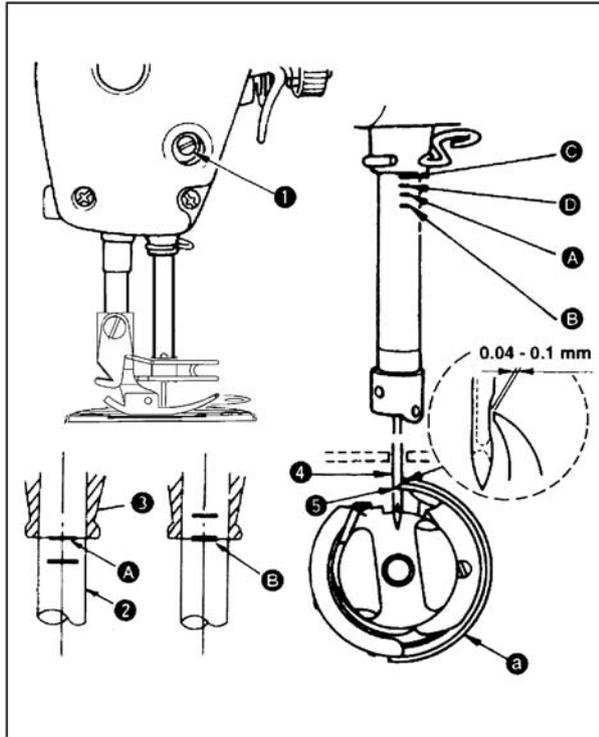
- 1) When sewing heavy-weight materials, move thread guide ① to the left (in direction A) to increase the length of thread pulled out by the thread take-up.
- 2) When sewing light-weight materials, move thread guide ① to the right (in direction B) to decrease the length of thread pulled out by the thread take-up.
- 3) Normally, thread guide ① is positioned in a way that marker line C is aligned with the center of the screw.

18. NEEDLE-TO-HOOK RELATIONSHIP



WARNING:

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(1) Adjust the timing between the needle and the hook as follows :

- 1) Turn the handwheel to bring the needle bar down to the lowest point of its stroke, and loosen setscrew **1**.

(Adjusting the needle bar height)

- 2) (For a DB needle) Align marker line **A** on needle bar **2** with the bottom end of needle bar lower bushing **3**, then tighten setscrew **1**.
(For a DA needle) Align marker line **C** on needle bar **2** with the bottom end of needle bar lower bushing **3**, then tighten setscrew **1**.

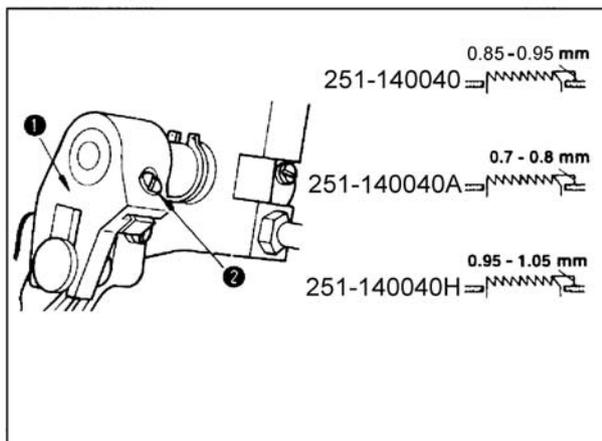
(Adjusting position of the hook **a**)

- 3) (For a DB needle) Loosen the three hook setscrews, turn the handwheel and align marker line **B** on ascending needle bar **2** with the bottom end of needle bar lower bushing **3**.
(For a DA needle) Loosen the three hook set screws, turn the handwheel and align marker line **D** on ascending needle bar **2** with the bottom end of needle bar lower bushing **3**.
- 4) After making the adjustments mentioned in the above steps, align hook blade point **5** with the center of needle **4**. Provide a clearance of 0.04 mm to 0.1 mm (251-140040H : 0.06 to 0.17 mm) (reference value) between the needle and the hook, then securely tighten setscrews in the hook.



If the clearance between the blade point of hook and the needle is smaller than the specified value, the blade point of hook will be damaged. If the clearance is larger, stitch skipping will result.

19. HEIGHT OF THE FEED DOG



To adjust the height of the feed dog:

- 1 Loosen screw **2** of crank **1**.
- 2 Move the feed bar up or down to make adjustment.
- 3 Securely tighten screw **2**.



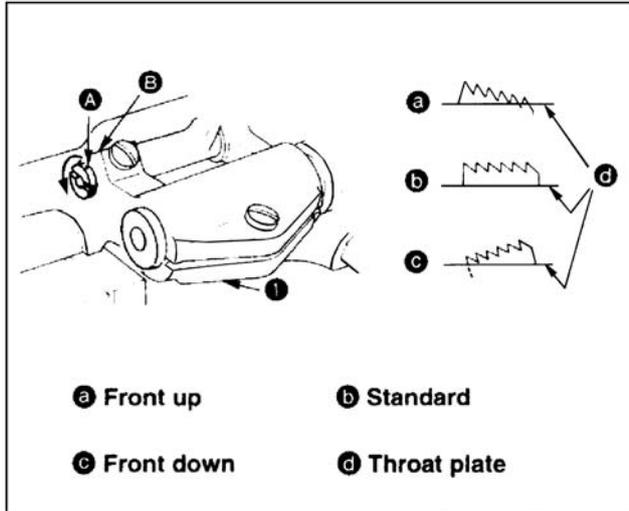
If the clamping pressure is insufficient, the motion of the forked portion becomes heavy.

20. TILT OF THE FEED DOG



WARNING:

To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



- 1) The standard tilt (horizontal) of the feed dog is obtained when marker dot **A** on the feed bar shaft is aligned with marker dot **B** on feed rocker **1**. (251-140040H, the marker dot **B** inclines forward the feed rocker shaft by 90°, as standard).
- 2) To tilt the feed dog with its front up in order to prevent puckering, loosen the setscrew, and turn the feed bar shaft 90° in the direction of the arrow, using a screwdriver.
- 3) To tilt the feed dog with its front down in order to prevent uneven material feed, turn the feed bar shaft 90° in the opposite direction from the arrow. (The standard tilt for 251-140040H.)



NOTE

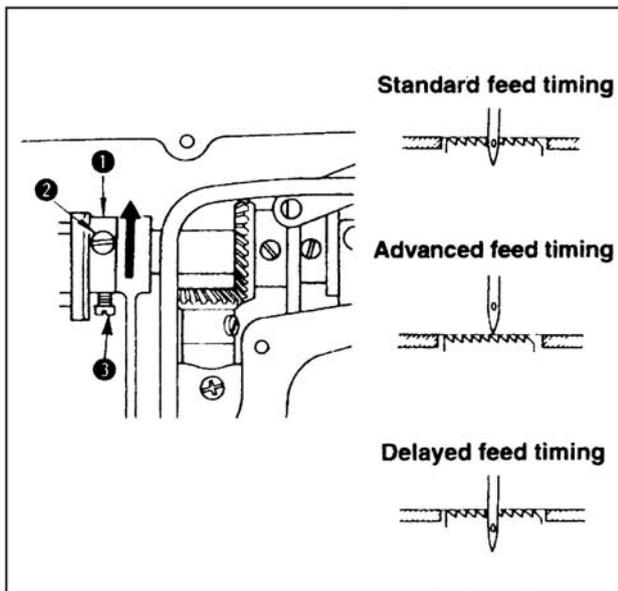
Whenever the feed dog tilt is adjusted, the feed dog height will be changed. So, it is necessary to check the height after tilt adjustment.

21. ADJUSTING THE FEED TIMING



WARNING:

To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



- 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) For the standard adjustment, adjust so that the top surface of feed dog and the top end of needle eyelet are flush with the 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 opposite direction from the arrow.



NOTE

Be careful not to move the feed eccentric cam too far, or else Needle breakage may result

22. MOTOR PULLEYS AND BELTS

- 1) A clutch motor with 400W output (1/2 HP) is used as the standard motor
- 2) An M-type V belt should be used.
- 3) The relationship between the motor pulleys, belt lengths and sewing speeds is shown in the following table:

Motor pulley O.D. (mm)	Motor pulley part No.	Sewing speed (rpm)		Belt length	Belt part No.
		50 Hz	60 Hz		
125	GE1007	5,060		1118 mm (44")	GE1003
120	GE1008	4,850		1092 mm (43")	GE1004
115	GE1009	4,630			
110	GE10010	4,440			
105	GE10011	4,250	5,040	1067 mm (42")	GE1005
100	GE10012	4,000	4,780		
95	GE10013	3,820	4,540		
90	GE10014	3,610	4,320		
85	GE10015	3,390	4,000	1041 mm (41")	GE1006
80	GE10016	3,160	3,790		
75	GE10017	2,950	3,520		
70	GE10018	2,740	3,260		

* The effective diameter of a motor pulley is equivalent to the outside diameter minus 5 mm.

* The motor should rotate counterclockwise as observed from the handwheel side.

Be careful not to allow the motor to rotate in reverse direction.

