va multumeste pentru achizitionarea acestui produs.

Va rugam sa cititi in intregime acest manual inainte de utilizarea masinii, pentru a va familiariza cu modul de operare, intretinerea, si normele de protectie a muncii.

PROLOGUE

Thanking you for your purchase our products sincerely, please reading the manual book before operation, the book introduce some points how to operate, maintenance, and safe. Please keep it carefully for reading in the further; you will be not informed if the file has been revised. Please set sample as standard.

CONTENTS

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 conformed 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, wheneveryou 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, leeper, spreader, feed dog, needle guard, folder, cloth guide etc.
   - 7-3 For repair work,
   - 7-4 When leaving the working place of 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 contactedareas and consult a medicai doctor.

9. Tampering with the live parts and devices. regardless of whether the machine is powered,isprohibited.
10. Repair, remodeling and adjustment works must only be done by appropriately trained technicians or specially skilled personnel. Only spare parts designated by 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 specially 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 specially 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. assumes 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 staft

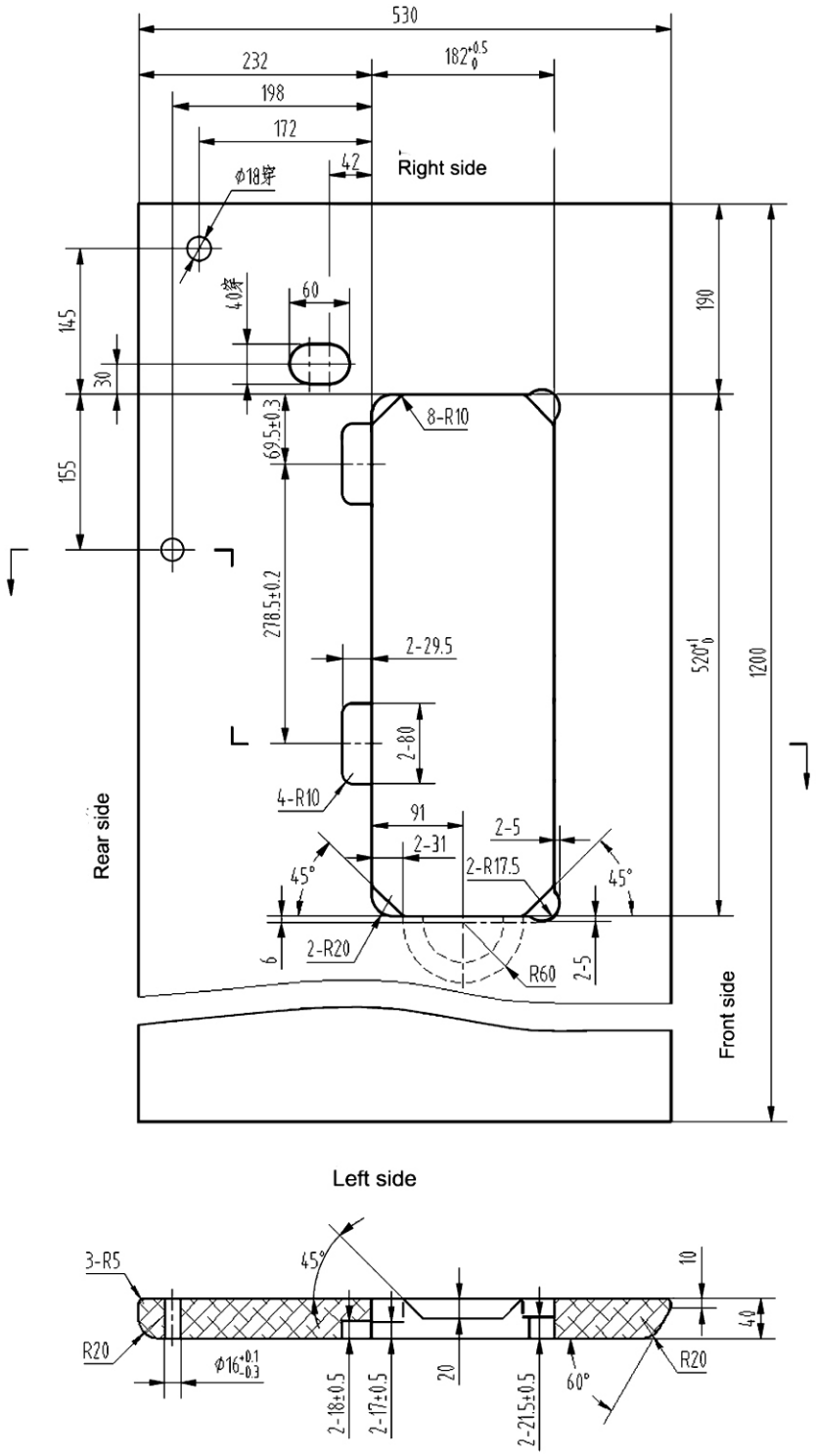
Items requiring special attention

FOR SAFE OPERATION

	**1. To avoid electrical shock hazards, neither open the cover of the elecrtical box norb touch the components mounted inside the electrical box.**
	**1. To avoid personal injury, never operate the machine with any of the finger guard or safety devices removed.** **2. To prevent possible personal injuries caused by being caught in teh machinem, keep you fingers, head and clothes away from the handwheel while the machine is in operation. In operation, place nothing around it.** **3. To avoid personal injury, never put your hand under the needle when you turn"ON" the power switch or operate the machine.** **4. To avoid personal injury, never put your fingers into the thread take-up cover while the machine is in operation.** **5. The hook roates at h 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 bobbon.** **6. To avoid possible personal injuries,be careful not to allw your fingers in the machine when tilting /raising the machine head.** **7. To avoid possble accidents because of abrupt start of the machine,turn OFFthe power to the machine when tilting the machine head or performing replacement of parts, adjustment of the machine,etc.** **8. The motor does not produce noise while the machine is at rest.To avoid possible acccidents due to abrupt start of the machine, be sure to trun OFF the power to the machine.** **9. To avoid eclectrical shock kazards,never operate the sewing machine with the ground wire for the power supply remove.** **10. 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.**

SCHEMATIC DIAGRAM OF THE MACHIEN TABLE

Cut the table referring to the diagram.



FOR SAFE OPERATION

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

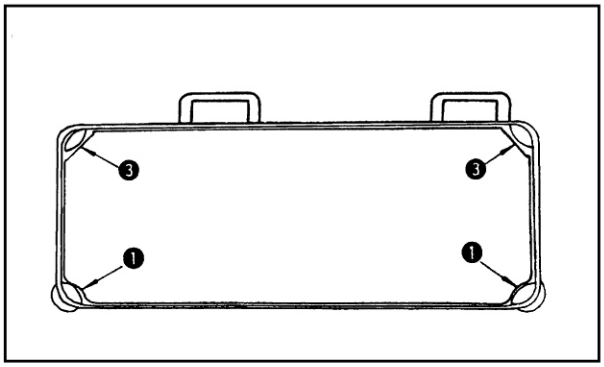
- **Remove air-vent cap (red color) attached to the sewing machine bed.**
- **For SS types, be sure to pour in the oil before using.**
- **Before you put the machine into operation for the first time after the set-up, clean it thoroughly.**
- **Remove all dust gathering during transportation and oil it well.**
- **Confirm that the votlage 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.**
- **Do not tilt the sewing machine head toward this side since oil leakage or parts breakage occurs.**
- **A safety switch is installed so that the sewing machine cannot be operated with the head tilted.When operating the sewing machine, turn ON the power switch after properly setting the head on the table.**

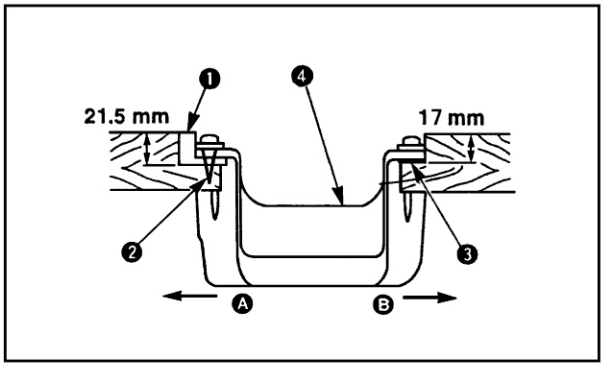
1. SPECIFICATIONS

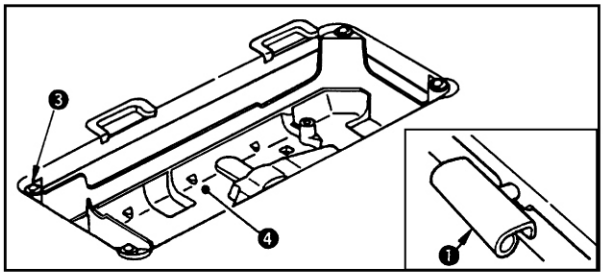
	8990SS	8991SS	8990DS	8991DS
Application	General fabries,light-weight and medium-weight materials		General fabries,light-weight materials	
Sewing speed	Max.5000rpm		Max.4000rpm	
Stitch length	*Max.5mm			
Needle	DBx1#9-#18			
Presser foot life (by knee litter)	10mm(standard)15mm(max)			
Needle bar stoke	30.7mm			
Rotary hook	Lubricated rotary hook		Lubricated-feer rotary hook	
Arm pocket size	300mm			
Arm bed size	517mmX178mm			
Lubricating oil	New Defrix Oil No.1		———	

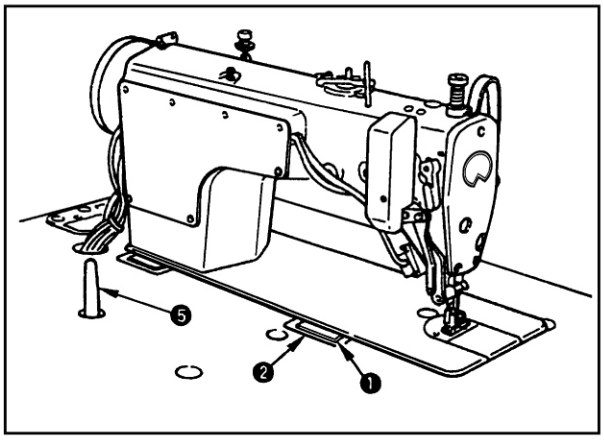
*The maximum sewing speed is 4000rpm when the stitch length is not less than 4 mm.

INSTALLATION







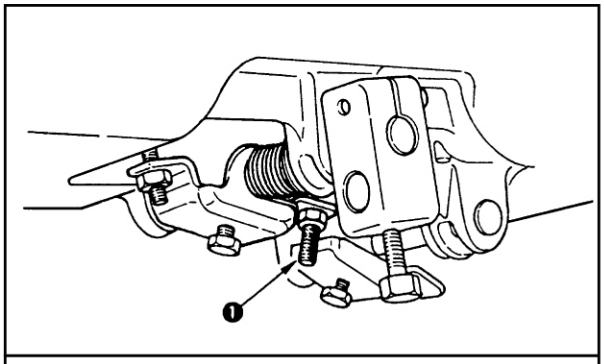


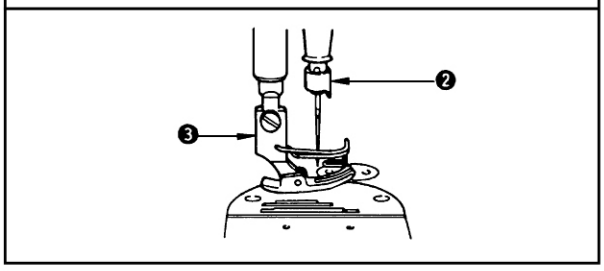
(1) Installing the under cover

1) The under cover should rest on the four corners of the machine table groove.
2) Fix two rubber seats ① on side Ⓐ (operator's side) using nails ②as illustrated above. Fix two cushiong seats ③on side Ⓑ(hinged side) using a rubber-based adhesive. Then place under cover ④ on the fixed seats.
3) Fit hinge ①into the opening in the machine bed, and fit the machine head to table rubber hinge ② before placing the machine head on cushions ③ on the four corners.
4) In case the AK-device is not provided , attach head support rod ⑤ to the machine table.

3. ADJUSTNG THE HEIGHT OF THE KNEE LIFTER

WARNING:
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

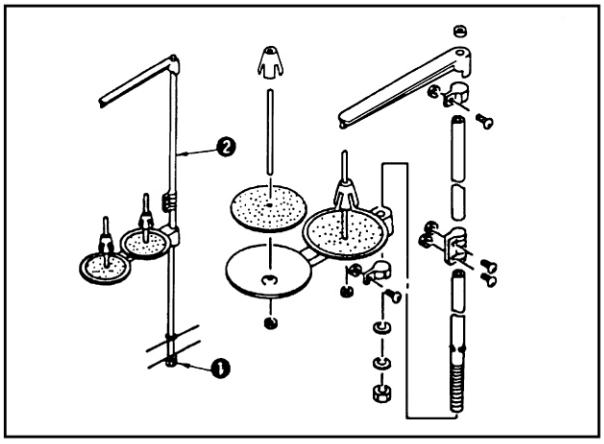




1) The standard height of the presser foot lifted using the knee lifer is 10mm.
2) You can adjust the presser foot lift up to 15mm using knee lifter adjust screw ①.

(Caution) Do not operate the sewing machine in the state that the presser foot ③ is lifted by 10mm or more since the needle bar ② comes in contact with the presser foot ③.

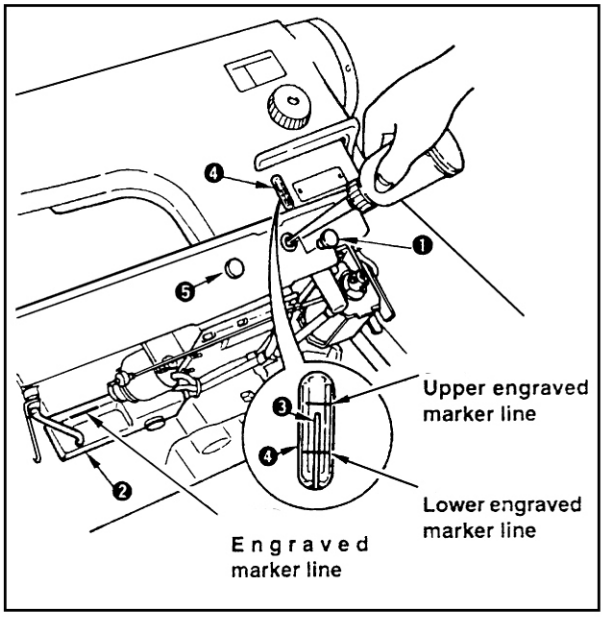
4. INSTALLING THE THREAD STAND



1) Assemble the thread stand unit, and insert it in the hole in the machine table.
2) Tighten locknut ① to fix the thread stand.
3) For ceiling wiring , pass the power cord through spool rest rod ②.

5. (8890SS, 8991SS) / LUBRICATION(8990SS, 8991SS)

WARNING:
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



Fill the oil tank with oil for hook lubrication before operating the sewing machine.

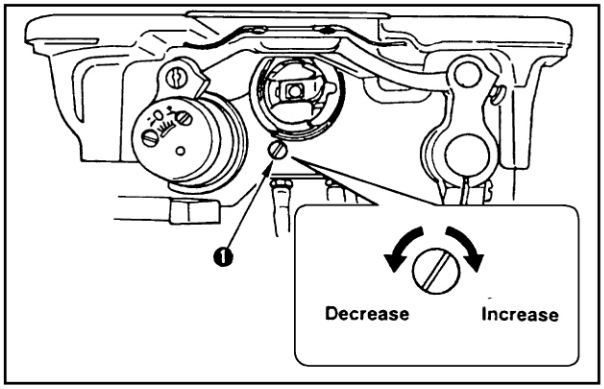
1) Tilt the machine head until it comes in contact with the head support rod.
2) Remove oil hole cap ① and fill the oil tank with New Defrix Oil No.1 using the oiler supplied with the machine.
3) The amount of oil should reach up to the engraved marker line of oil tank ②. If the oil is filled excessively, it will leak from the air vent hole in the oil tank or proper lubrication will be not performed. So, be careful.
4) When you operate the sewing machine, refill oil if the top end of oil amount indicating rod ③ comes down to the lower engraved marker line of oil amount indicating window ④.

(Caution) 1. When you use a new sewing machine or a sewing machine after an extended period of disuse, run your machine at 3000-3500 rpm for the purpose of break-in.

2. Do not remove rubber plug ⑤.

6. (8890SS, 8991SS) /ADJUSTING THE AMOUNT OF OIL IN THE HOOK(8990SS, 8991SS)

WARNING:
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



Adjustment of the amount of oil in the hook is performed with oil amount adjustment screw①.

1) Adjustment procedure

Tighten (turn clockwise) oil amount adjustment screw①to increase the amount of oil in the hook, or loosen (turn counterclockwise) to decrease it.

(Caution) 1. When using RP hook (hook for dry head) for the SS type, be sure to loosen the oil amount adjustment screw up to the minimum so as to reduce the oil amount in the hook.

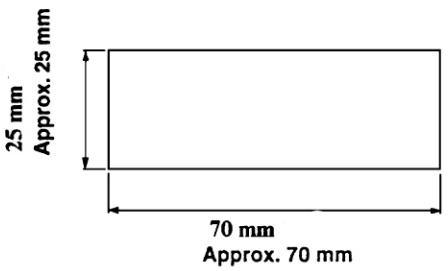
2. Never drain the oil in the oil tank even when RP hook (hook for dry head) is used.

(8990SS, 8991SS) /ADJUSTING THE AMOUNT OF OIL (OIL SPLASHES) IN THE HOOK(8990SS, 8991SS)

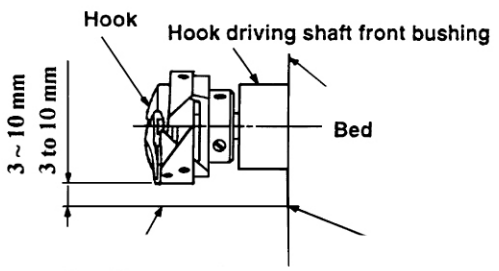
WARNING:
Be extremely careful about the operation of the machine snice the amout of oil has to be checked by turning the hook at a high speed.

(1) How to confirm the amount of oil (oil splashes)

① Amount of oil (oil splashes) confirmation paper



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



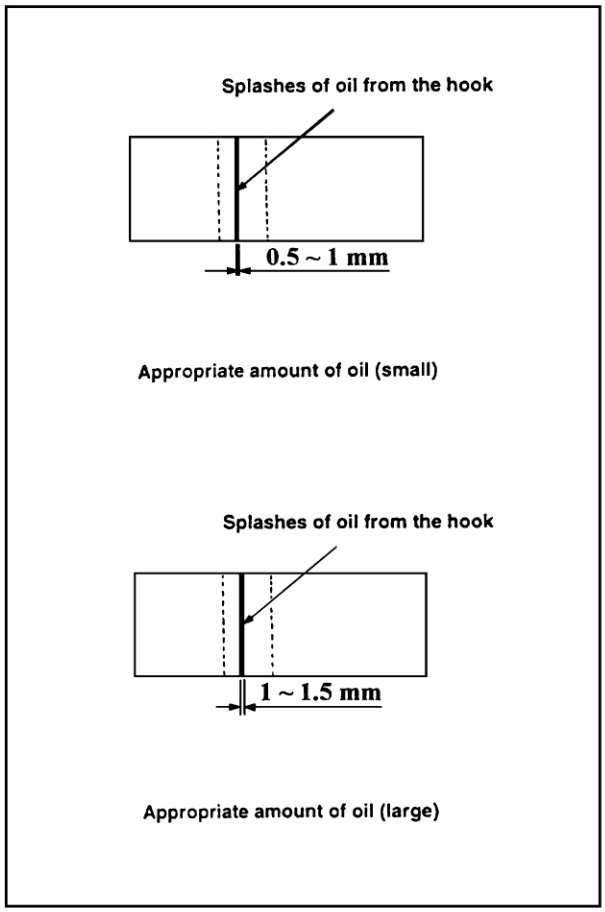
* Use any paper available regardless of the material.

* Place the amount of oil (oil splashes) confirmation paper under the hook.

*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 splashes) confirmation paper under the hook while the sewing machine is in operation.
3) Confirm that oil exists in the oil tank.
4) Confirmation of the amount of oil should be completed in five seconds. (Check the period of time with a watch.)

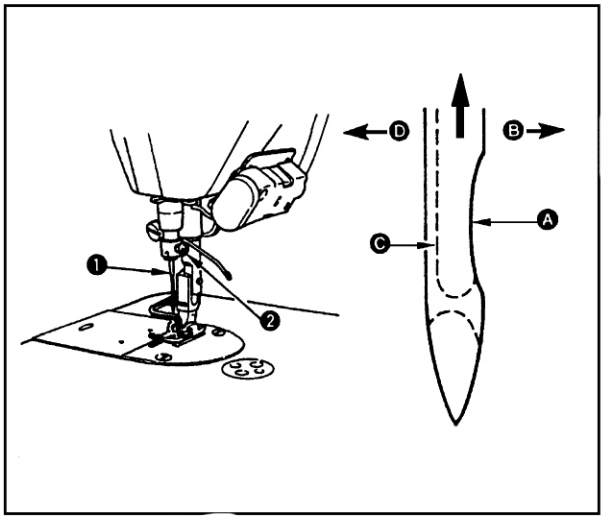
(2) Sample showing the appropriate amount of oil



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 smal, the hook will be seized (the hook will be hot). If the amount of oil is too much, the sewing product maybe 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)

8. ATTACHING THE NEEDLE

WARNING:
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

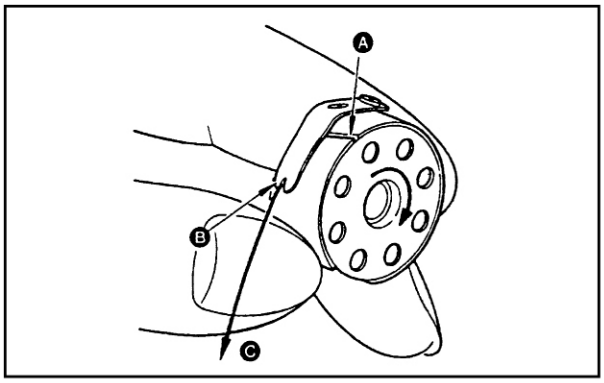


A needle of DBx1 or DPx5 should be used. Select a proper needle size according to the count of thread and the type of material used.

1) Turn the handwheel until the needle bar reaches the highest point of its stroke.
2) Loosen screw ②, and hold needle ①with its indented part Ⓐfacing exactly to the right in direction Ⓑ.
3) Insert the needle fully into the hole in the needle bar in the direction of the arrow until the end of hole is reached.
4) Securely tighten screw ②.
5) Check that long groove Ⓒof the needle is facing exactly to the left in direction Ⓓ.

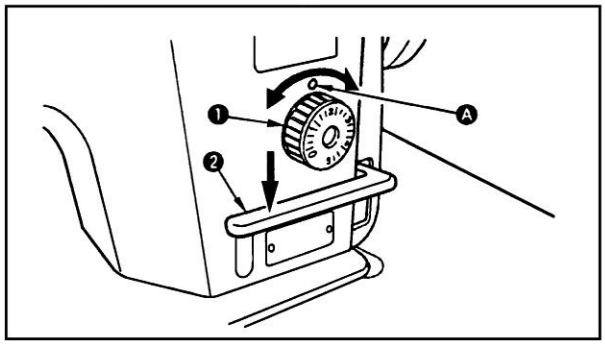
(Caution) When filament thread is used, if the indented part of the needle is tilted toward operator`s side, the loop of thread becomes unstable. As a result, hangnail of thread or thread breakage may occur. For the thread that such phenomenon is likely to occur, it is effective to attach the needle with its indented part slightly slanting on the rear side.

9. SETTING THE BOBBIN INTO THE BOBBIN CASE



1) Install the bobbin in the bobbn case so that the thread wound direction is clockwise.
2) Pass the thread through thread slitⒶ, and pul the thread in directionⒷ. By so doing, the thread will pass under the tension spring and come out from notchⒷ.
3) Check that the bobbin rotates in the direction of the arrow when threadⒸis pulled.

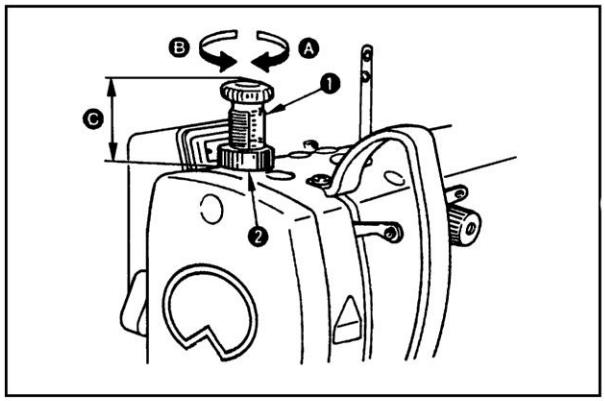
10. ADJUSTING THE STITCH LENGTH



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

11. PRESSER FOOT PRESSURE

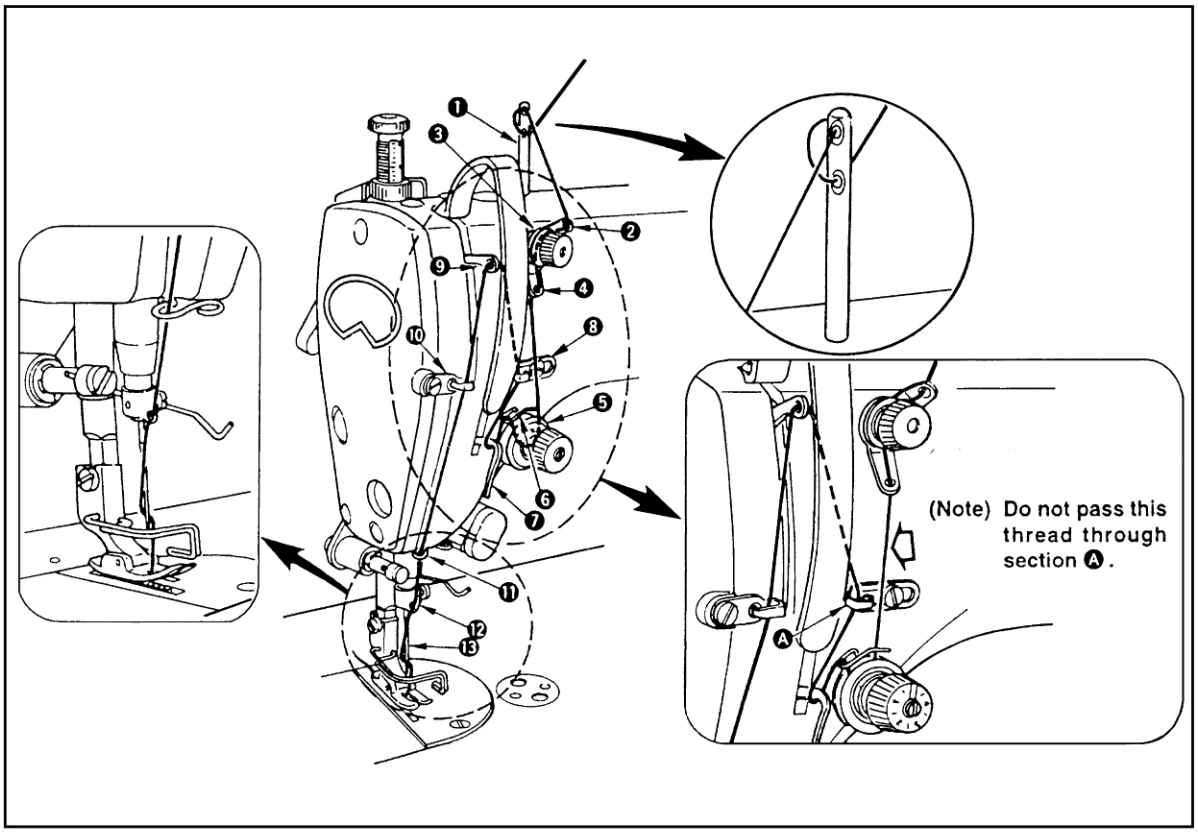
WARNING:
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



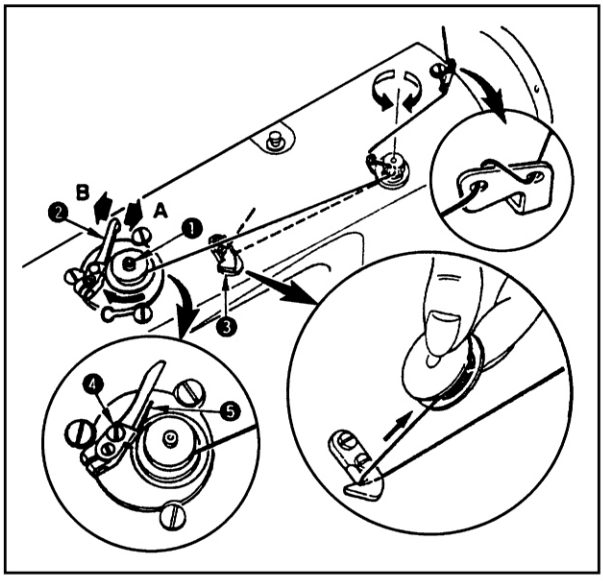
1) Loosen nut ②. As you turn presser spring regulator ① clockwise (in direction Ⓐ), the presser foot pressure will be increased.
2) As you turn the presser spring regulator counter-clockwise (in direction Ⓑ), the pressure will be decreased.
3) After adjustment, tightn nut ②.
4) For general fabrics, the standard height Ⓒ of the presser spring regulator is "2"(about 5kg)
(light-weight: "1" 2.5kg ; heavy-weight: "3" 7.5kg)

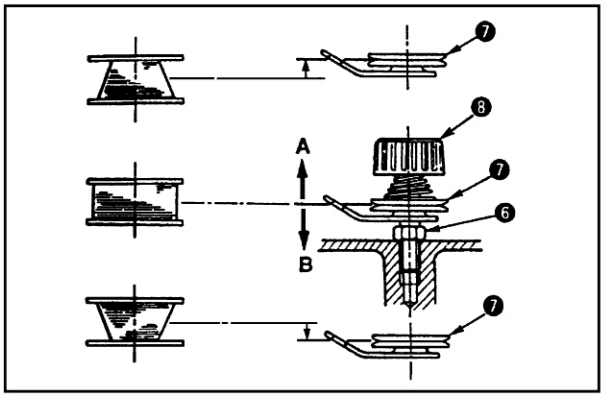
12. THREADING THE MACHINE HEAD

WARNING:
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



13. WINDING THE BOBBIN THREAD





1) Insert the bobbin deep into the bobbin winder spindle ① until it will go no further.
2) Pass the bobbin thread pulled out from the spool rested ont the right side of the thread stand following the order as shown in the figure on the left. Then, wind clockwise the end of the bobbin thread on the bobbin several times. (In case of the aluminum bobbin, after winding clockwise the end of the bobbin thread, wind counterclockwise the thread coming from the bobbin thread tension several times to wind the bobbin thread with ease.)
3) Press the bobbin winder triop latch ② in the direction of A and start the sewing machine. The bobbin roatates in the direction of C and the bobbin thread is wound up. The bobbin winder spindle ① automatically as soon as the winding is finished
4) Remove the bobbin and cut the bobbin thread with the thread cut retainer ③.
5) To adjust the winding amount of the bobbin thread, loosen the setscrew ④ and move the bobbin winder adjusting plate ⑤ to the direction of A or B Then, tighten the setscrew ④.

To the direction of A Decrease

To the direction of B increase

6) In case that the bobbin thread is not wound evenly on the bobbn, loosen the nut ⑥and rurn the bobbin thread tension to adjust the height of the thread tension disk⑦.

It is the standard that the center of the bobbin is as high as the center of the thread tension disk.

Move the position of the thread tension disk ⑦to the direction of A as shown in the figure on the left when the winding amoun of the bobbin thread on the lower part of the bobbin is excessive and to the direction of B as shown in the figure on the left when the winding amount of the bobbin thread on the upper part of the bobbin is excessive.

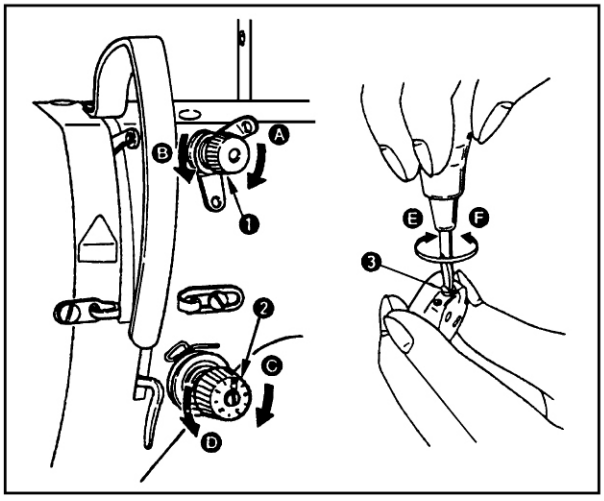
After the adjustment, tighten the nut ⑥.

7) To adjust the tension of the bobbin winder, turn the thread tension nut ⑧.

(CAUTION) 1. When winding the bobbin thread, staart the winding in the state that the thread between the bobbin and thread tension disk⑦is tense.

2. When winding the bobbin thread in the state that sewing is not performed , remove the needle thread from the thread path of thread take-up and remove the bobbin from the hook.

14. THREAD TENSION



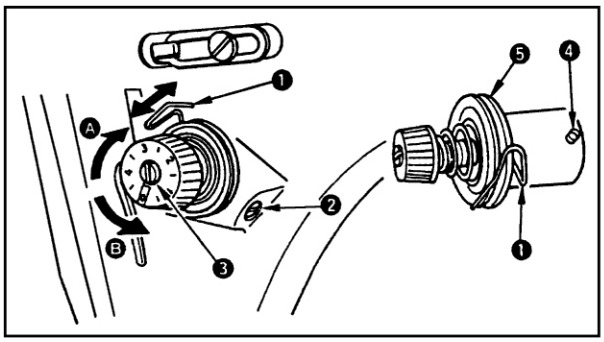
(1) Adjusting the needle thread tension

1) As you turn thread tension No.1 nut ① clockwise (in direction Ⓐ), the thread remaining on the needle after thread trimming will be shorter.
2) As you turn nut ①counterclockwise (in direction Ⓑ), the thread length will be longer.
3) As you turn thread tension nut ② clockwise (in direction Ⓒ), the needle thread tension will be increased
4) As you turn nut ②counterclockwise (in direction Ⓓ), the needle thread tension will be decreased.

(2) Adjusting the bobbin thread tension

1) As you turn tension adjust screw ③clockwise (in direction Ⓕ), the bobbin thread tension will be increased.
2) As you turn screw ③counterclockwise (in direction Ⓕ), the bobbin thread tension will be decreased.

15. THREAD TAKE-UP SPRING



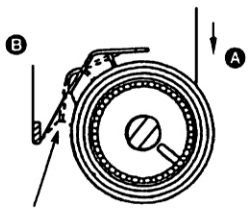
(1) Changing the stroke of thread take-up spring ①.

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

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

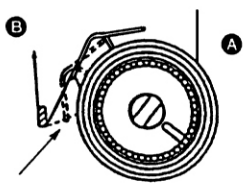
1) Loosen setscrew ②, and trmove thread tension (asm) ⑤.
2) Loosen setscrew ④.
3) As you turn tension post ③ clockwise (in direction Ⓐ), the pressure will be increased.
4) As you turn the post counterclockwise (in direction Ⓑ), the pressure will be decreased.

×



- **When the thread take-up spring moves up to midway, thread is fed out from A since the tension of the thread take-up spring is high.**

○



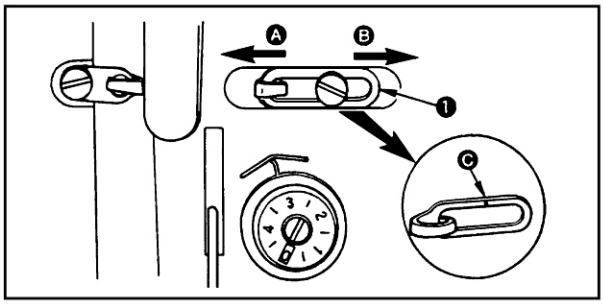
- **The thread take-up spring works up to the last.**

(Caution) For the Models, 8991DS and-DF, the fully-dry hook is adopted, Comparing with the sewing machine using the existing hook, the sewing machine tends to be affacted by the adjustment of the thread take-up spring. If the thread take-up spring does not work sufficiently, thread running increase. As a result, thread breakage, balloon stitching etc. may occur.

To judge the work of he thread take-up spring, confirm whether or not the thread take-up spring works up to the last before needle thread is pulled out from Ⓐwhen pulling out needle thread in the direction of Ⓑafter the pressure of he thread take-up spring has been performed. When it does not work up to the last, decrease the pressure of the thread take-up spring. In addition, the stroke of the thread take-up spring is excessively small, the spring does not work properly. For the general fabrics, a stroke of 10 to 13 mm is proper.

16. ADJUSTING THE THREAD TAKE-UP STROKE

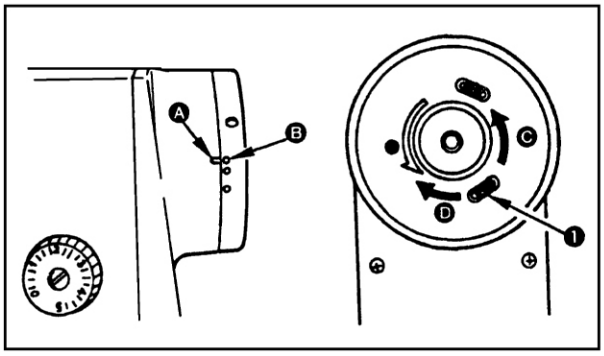
WARNING:
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



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

17. ADJUSTMENT THE NEEDLE STOP POSITION

WARNING:
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



(1) Stop position after thread trimming

1) The standard needle stop position is obtained by aligning marker dot Ⓐon the pulley cover with white marker dot Ⓑon the hanwheel.

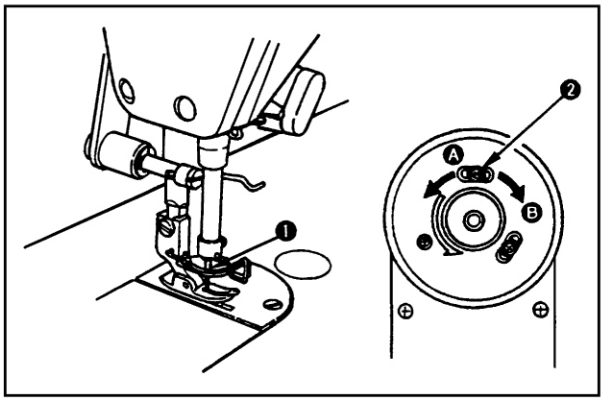
(In case of connecting with EC-10A, adjustment is necessary)

2) Stop the needle in its highest position, loosen screw ①to perform adjustment within the slot of the hole.

A. The needle stop timing is advanced if you move the screw in direction Ⓒ.

B. The needle stop timing is delayed if you move the screw in direction Ⓓ.

(Canution) Do not operate the machine with screw ①loosened. Just loosen the screw, and do not remove it.



(2) Lower stop position

1) The lower needle stop position when the pedal is returned to the neutral position after the front part of the pedal is depressed can be ajusted as follows

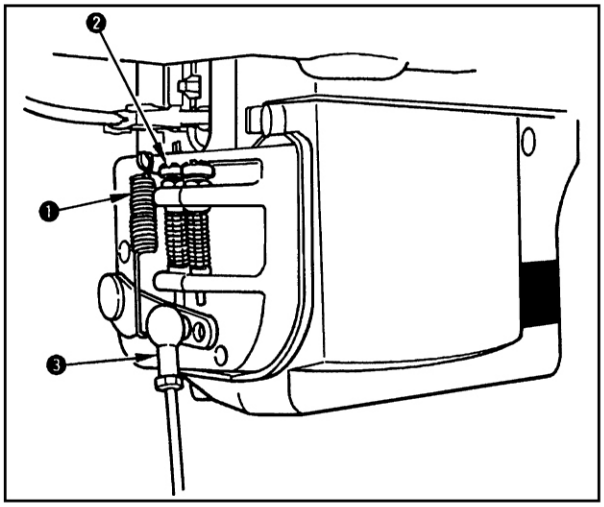
Stop needle ①in its lowest position, lossen screw ②,and make adjustment within the slot of the screw .

Moving the screw in direction Ⓐadvances the needle stop timing Moving the screw in direction Ⓑdelays the timing.

(Canution) Do not operate the machine with screw ①loosened. Just loosen the screw, and do not remove it.

18. PEDAL PRESSURE AND PEDAL STROKE

WARNING:
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



(1) Adjusting the pressure required to depress the front part of the pedal

1) This pressure can be changed by altering the mounting position of pedaling pressure adjust spring ①.

2) The pressure decreases when you hook the spring on the left side.

3) The pressure increases when you hook the spring ont the right side.

(2) Adjusting the pressure required to depress the back part of the pedal

1) This pressure can be adjusted using regulator screw ②.

2) The pressure increases as you turn the regulator screw in.

3) The pressure decreases as you turn the screw out

(3) Adjusting the pedal stroke

The pedal stroke decreases when you insert connecting rod ③into the left hole.

19. ADJUSTMENT OF THE PEDAL

WARNING:
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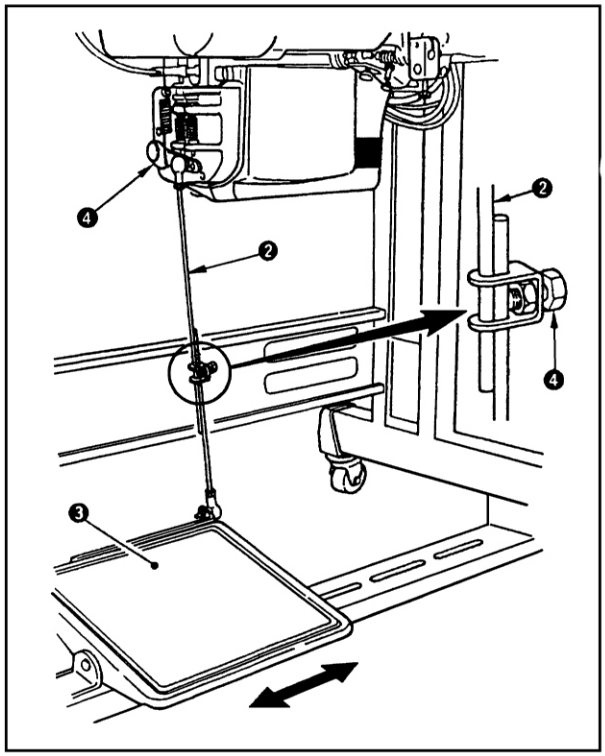


(1) Installing the connecting rod

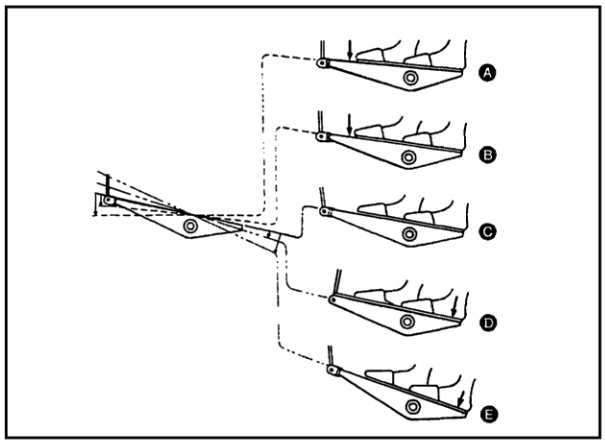
Move pedal ③to the right or left as illustrated by the arrows so that motor control lever ①and connecting rod ②are straightened.

(2) Adjusting the pedal angle

1) The pedal tilt can be freely adjusted by changing the length of thr connecting rod.

2) Loosen adjust screw ④, and adjust the length of connecting rod ②.

20. PEDAL OPERATION



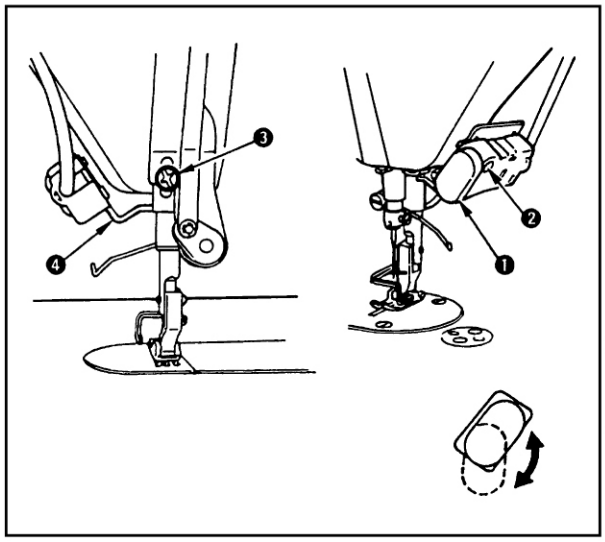
(1) The pedal is operated in the following four steps.

1) The machine runs at low sewing speed when you lighly depress the front part of the pedal Ⓑ.

2) The machine runs at high sewing speed when you further depress the front pat of the pedal Ⓐ.(If the automation reverse feed stitching has been preset , the machine runs at high speed after it completes reverse feed stitching.)
3) The machine stops (with its needle up or down) when you reset the pedal toits original position Ⓒ.
4) The machine trims threads when you fully depress the back part of the pedal Ⓔ.
* If your machine is provided with the Auto-lifter, an addition step is fiven between the machine stop and thread trimming step . The presser foot goes up when you lightly depress the back part of the pedal Ⓓ, and if you further depress the back part, the thread trimmer is actuated.

- While machine in automatic back sewing , if the pedal put to the neutral place , machine will stop after back sewing.
- The machine will perform normal thread trimming even if you depress the back part of the pedal immediately following high or low speed sewing.
- The machine will completely perform thread trimming even if you reset the pedal to its neutral position immediately after the machine started thread trimming action.
- When the machine stops with its needle down, and if you want to bring the needle up, deprss the back part of the pedal once.

21. ONE-TOUCH TYPE REVERSE FEED STITCHING MECHANISM



(1) How to operate

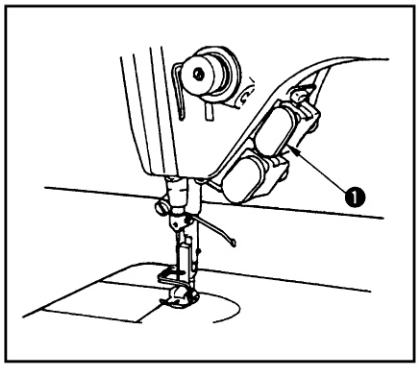
1) The moment switch lever ① is pressed, the machine performs reverse feed stitching.
2) The machine performs reverse feed stitching as long as the switch lever is held depressed
3) The machine resumes normal feed stitching the momeng the switch lever is released.

(1) Height of the switch

WARNING:
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

1) Loosen setscrew ②and move the switch itself up and down to adjust the height.
2) Switch ①can be used in two positions by turning it.
3) In addition, when you desire to lower the position of switch ①, loosen setscrew ③located in the bcak of the machine head and lower switch base ④.

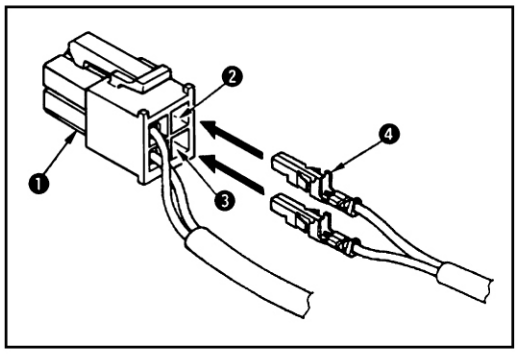
■ Optional switch (separately-available)



The following functions can be performed by one-touch operation using optional switch (23632656) ①.
(1) Needle up/down compensating stitching... Every time the switch is pressed, needle up / down compensating stitching is performed.
(2) Back compensating stitching... Every time the switch is pressed , reverse feed stitching is performed at low speed (This is effective only when the constant-dimension stitching pattern is selected on the CP-160D panel.)
(3) Function to cancel once reverse feed stitching at the end of sewing ... When the switch is pressed , the next automatic reverse feed stitching at the end of sewing only can be canceled once.
(4) Thread trimming function... When the switch is pressed, thread trimming is performed.
(5) Presser lifting function... When the switch is pressed, automatic presser lifting can be executed.
(6) One stitch compensating stitching.... Every time the switch is pressed , one stitch compensating stitching is performed.

■ Connection of the optiornal switch

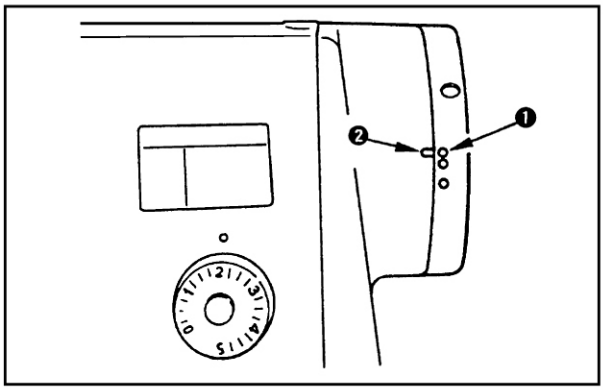
WARNING:
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

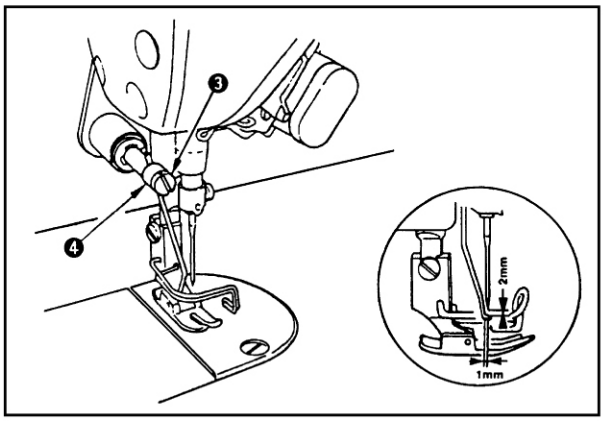


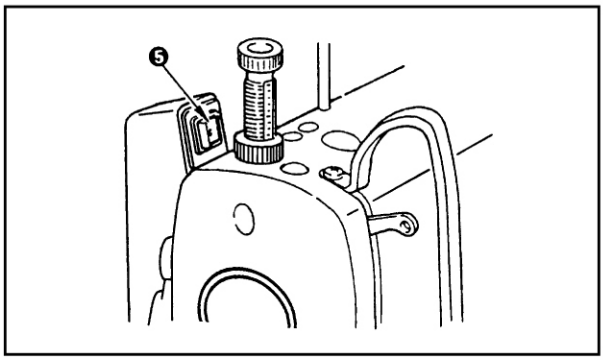
Insert the cord of the optional switch mto ②and ③of 4P connector ① coming from the machine head (There is no polarity)
The pin is provided with the inserting direction Insert it with protruding portion upward.

22. WIPER

WARNING:
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.







(1) Positioning the wiper

Adjust the position of the wiper according to the thickness of the material sewn. The adjustment procedure is as follows.

1) Turn the handwheel in the normal direction of rotation to align white marker dot ① on the hanwheel with marker dot ②on the machine arm.
2) Adjust the distance between the flat part of the wiper and the center of the needle to 1mm. Tighten wiper adjust screw ③so that the wiper is pressed and fixed by wiper collar ④ .
3) When the wiper is unnecessary, turn wiper switch⑤ OFF.

23. NEEDLE-TO-HOOK RELATIONSHIP

WARNING:
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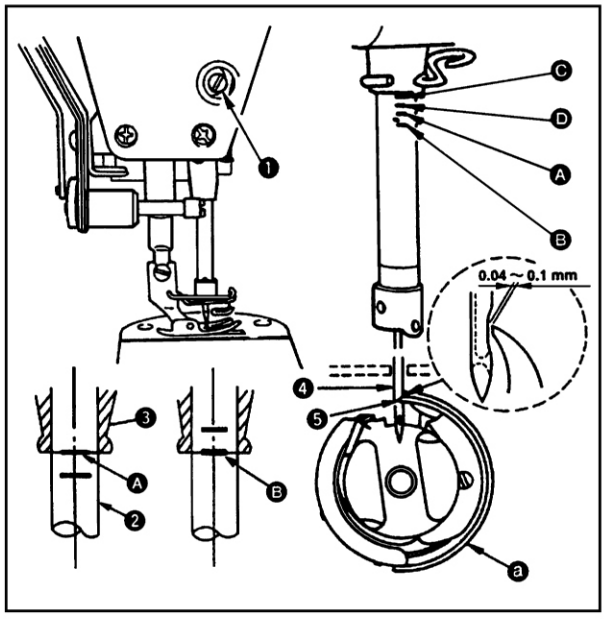


(1) Adjust the timing between the needle and the book as follows:

1) Turn the handwheel to bright 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 Ⓐon needle bar ②with the bottom end of needle bar lower bushing ③, then righten setscrew ①.

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

(Adjusting position of the hook ⓐ)

3) **(For a DB needle)** Loosen the three hook setscrews, turn the handwheel and align marker line Ⓑon ascending needle bar ②with the bottom end of needle bar lower bushing ③.

(For a DA needle) Loosen the three hook setscrews, turn the handwheel and align marker line Ⓓon ascending needle bar ②with the bottom end of needle bar lower bushing ③.

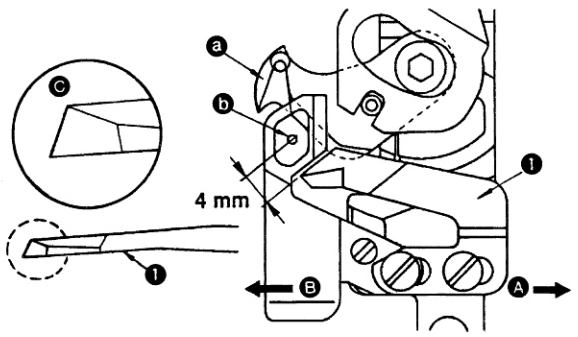
4) After making the adjustments mentioned in the above steps, align hook blade point ⑤with the center of needle ④provide a clearance of 0.04mm to 0.1mm (reference value) between the needle and the hook, then securely tighten setscrews in the hook.

(Caution) 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.

• The following hooks are used for 8990DS and 8991DS. When replacing the hook , use the hook of Part No. corresponding to your destination since the usual hook cannot be used.
Type as follows 11418001

24. COUNTER KNIFE

WARNING:
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



ⓐ Moving knife ⓑ Center of needle

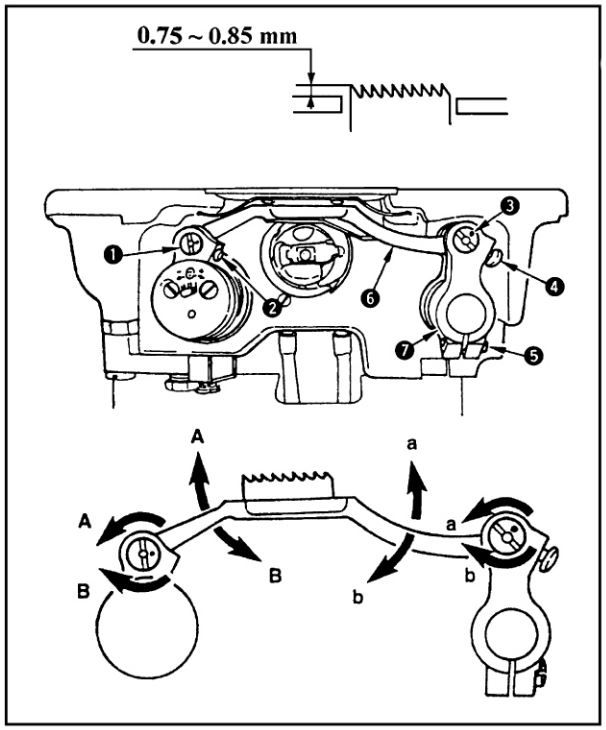
When the knife sharpness has deterorated , resharpen counter knife① as illustrated in Ⓒ, and properly reinstall it.

1) If the mounting position of the counter knife is moved in direction Ⓐ from the standard mounting position, the thread length after thread timming will be increased accordingly.
2) If the mounting position is moved in direction Ⓑ , the thread length will be decreased accordingly.

(Caution) When re-sharpening the knife blade, extra special care must be taken on the handling of the knife.

25. HEIGHT AND TILT OF THE FEED DOG

WARNING:
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



Height of the feed dog is adjusted so that the feed dog protrudes from the throat plate surface by 0.75 to 0.85mm Adjust the height in accordance with the material to be used.

(1) Adjusting the height and tilt of the feed dog

1) Loosen setscrew ②in feed bar driving shaft ①and setscrew ④in feed bar rocker shaft ③.
2) Height and tilt of the feed dog will change by turning both shafts ① and ③with a screwdriver.
3) For the relation between the rotaing direction of each shaft and tilt of feed bar ⑥, reger to the frgure on the left.
4) After the adjusment, securely tighten the setscrews. (Tighten setscres ②and④in the state that shafts ①and③ pushed against the handwheel side.)

(Caution)

(1) If the tilt of the feed dog is ajusted with one shaft only , the height of the feed dog changes. Be sure to adjust it with both shafts.

(2) Movement position of the feed dog may be shifted depending ont he ajusting position of the shaft . At this time, loosen setscrew ⑤ in feed rocker shaft arm ⑦ and adjust the movement position.

26. ADJUSTING THE FEED TIMING

WARNING:
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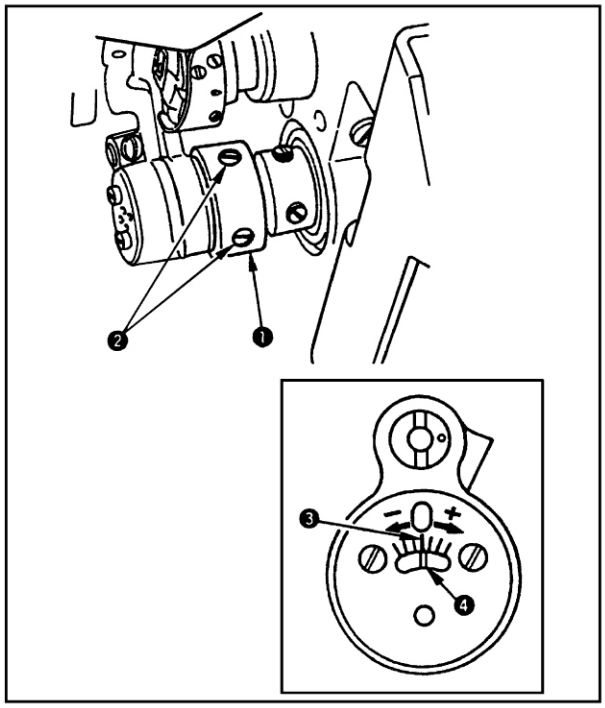


The feed timing can be changed by changing the stop position of feed eccentric cam ①.

How to adjust the feed timing

1) Tilt the sewing machine head and loosen two setscrews ②, in feed eccentric cam ①.

2) Turn feed eccentric cam ①to change the feed timing.

Align graduation ③on the feed bar driving arm with engraved marker line ④on the feed driving shaft.

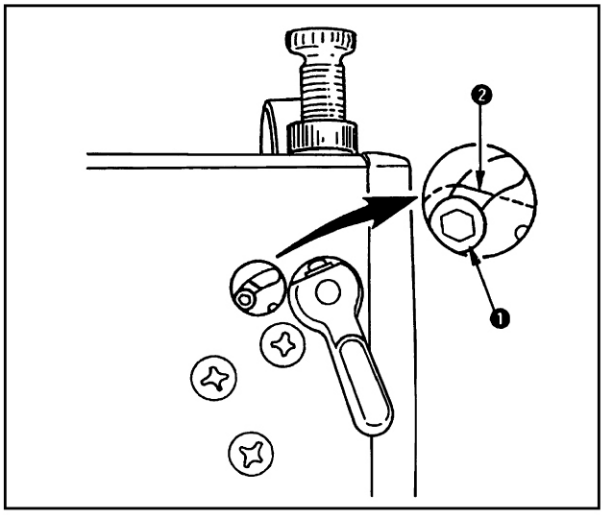
Turn feed eccentric cam ①in the direction of (+)⟶ Increases the feed timing.

Turn feed eccentric cam ①in the direction of (−)⟶ Decreases the feed timing.

(Caution) For general use, use the machine in the state that center of graduation ③ is aligned with the engraved marker line.

27. THREAD TENSION RELEASE RELEASING MECHANISM

WARNING:
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



By means of the thread tension release releasing mechanism , sewing can be prerformed without slackening the needle thread tension even when the presser foot is lifted during sewing.
(Even when the presser foot is slightly lifted at the thick overlapped section by the knee lifter . this mechanism can prevent the thread tension from being changed.

(1) How to release

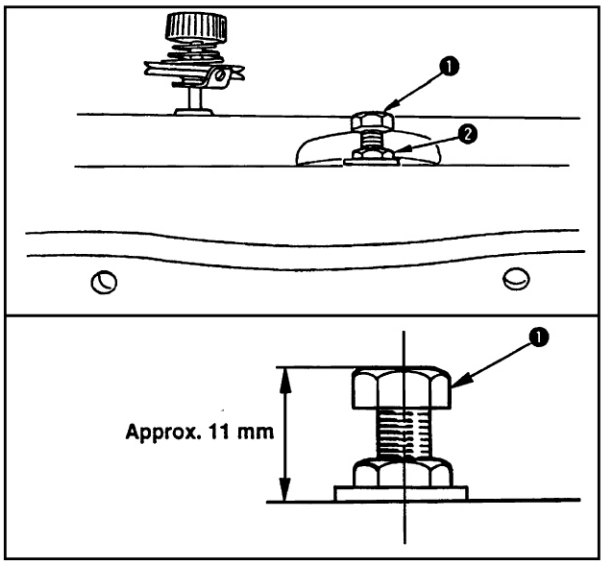
1) Remove the cap in the machine head and loosen thread tension release changeover screw ①using a hexagon wrench.
2) Fix screw ①on the top of thread tension release changover plate ②. The thread tension disk does not rise even when the presser foot it lifted, and the needle thread tension is not loosend. (The thread tension disk rises only when thread trimming is performed.)

(Caution) Do not use screw ① at any position other than the top or bottom position of the thread tension release changeover plate.

*** The screw has been factory-set to the bottom posititon at the time of delivery.**

28. MICRO-LIFTING MECHANIS OF THE PRESSE FOOT

WARNING:
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



When sewing velvet or the like which is fluffy , slippage of material or damage of material is reduced by using screw ①for presser foot micro-lifting

Gradually tighten screw ①for presser foot micro-lifting in the state that nut ② is loosened , adjust the presser foot to the position where it is finely lifted until it matches the material, and fix it with nut ②.

(Caution) When the presser foot micro-lifting mechanism is not used, adjust the height of screw ①so that it is higher by approximately 11mm than the sewing machine. If the sewing machine is operated in the state that the micro-lifting mechanism is working, sufficient feed force cannot be obtained.

29. ADJUSTING THE HEIGHT OF THE PRESSER FOOT

WARNING:
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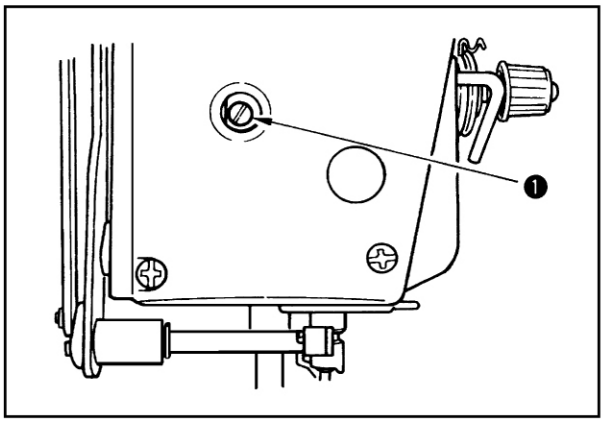

1) Loosen clamping screw ①in the presser bar guide bracket, and adjust the presser foot height and the angle of the presser foot.
2) After the adjustment, securely tighten the clamping screw ① .

30. ADJUSTING STITCH WIDTH

WARNING:
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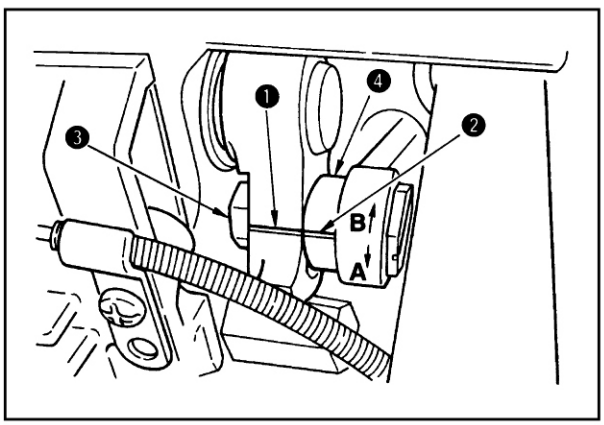
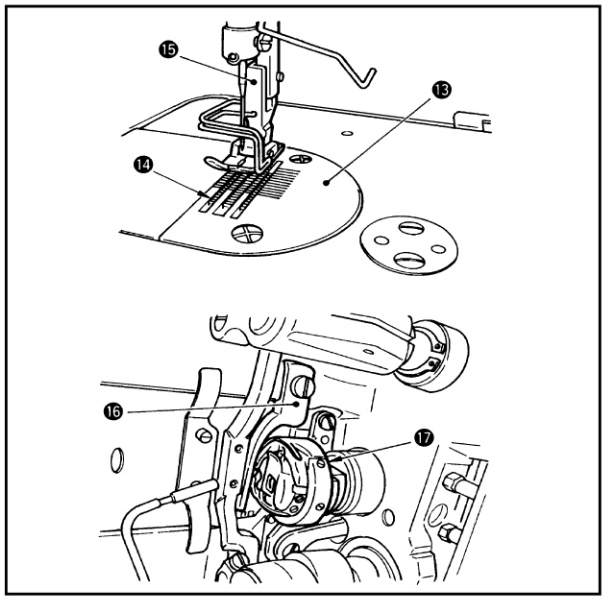


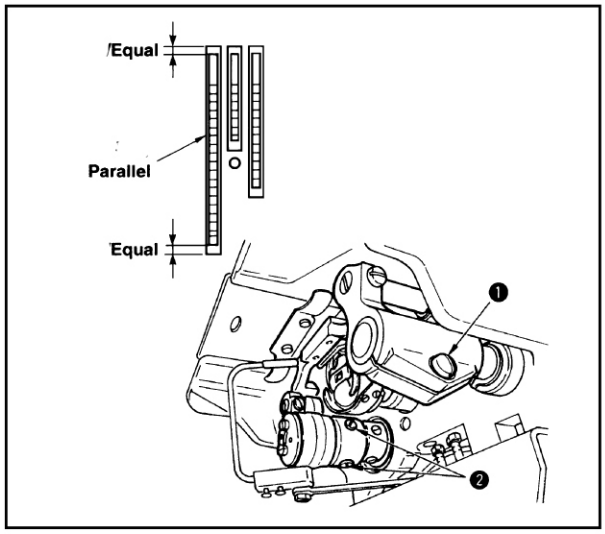
1) The standard stitch width is obtained when marker line①of the needle feed driving crank aligns with marker line ②of the needle feed regulator block.
2) When it is required to make the needle feed amount larger than the feed dog amount, loosen locknut ③, move needle feed regulator block④to the direction Ⓐ, and tighten locknut ③ .
3) On the contrary, when moving needle feed regulator block ④to the direction Ⓑ , the needle feed amount will be smaller than the feed dog amount.

31. ALTERNATE CHANGING OVER PROCEDURE BETWEEN THE NEEDLE FEED AND THE BOTTOM FEED

WARNING:
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



1) Remove throat plate ⑬ , feed dog ⑭ and presser foot ⑮ for the needle feed.
2) Remove bobbin case positioning finger ⑯ and hook ⑰ .

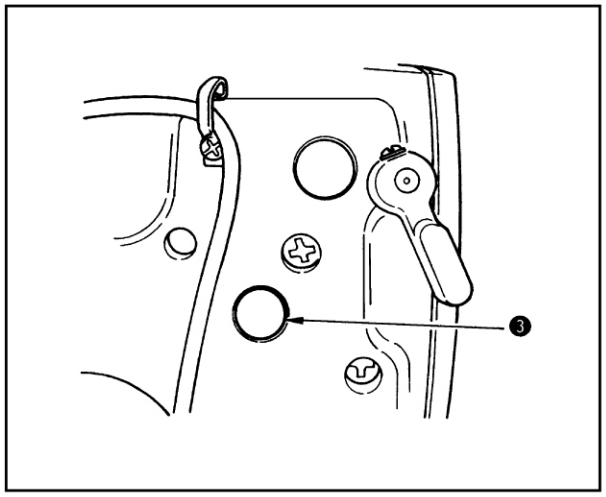


3) Install the throat plate, feed dog and presser foot for the bottom feed, and adjust the lateral and longitudinal positions of the feed dog in regard to the feed dog slot of throat plate

* Install the feed dog parallel to the dog slot of the throat plate.
* Adjust the lateral position of the feed dog by loosening clamping screw ① in the feed rocker base arm and setscrew ② in the feed driving cam, and moving the feed base to the right or left when the lateral position cannot be adjusted with the looseness of the setscrew hole of the feed dog.
* Adjust the longitudinal position of the feed dog by loosening clamping screw ① in the feed rocker base arm

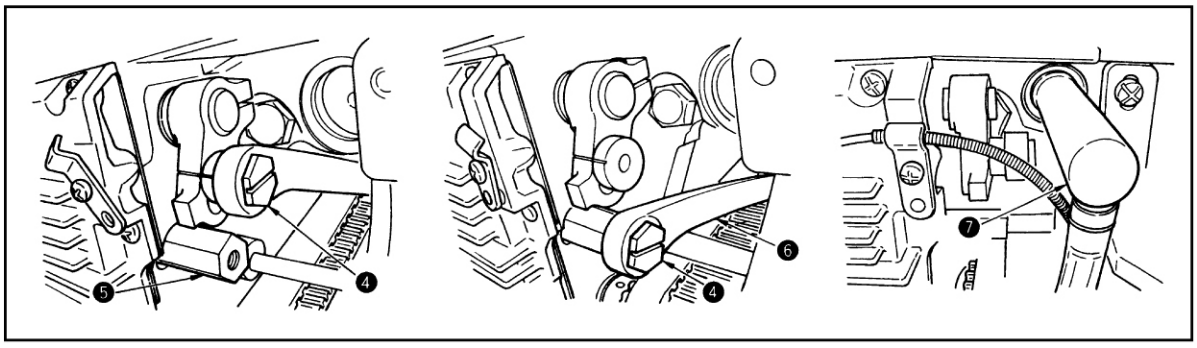
so that the feed dog does not come in contact with the throat plate (the front and rear clearances should be almost equal.) at the position where the feed dog moves to the extreme front or to the extreme rear when the scale of feed dial is set to the maximum.

* When the feed driving cam is loosened, be careful that the longitudinal position between the feed driving cam and the feed rocker base arm is not slipped. (Be careful that the feed driving cam is not excessively pressed.)



4) Remove cap ③ in the back of machine arm and loosen the clamping screw in the needle feed shaft arm (front) located in the hole, At this time, adjust so that the needle tip is above the throat plate so as not to damage the needle and the throat plate.

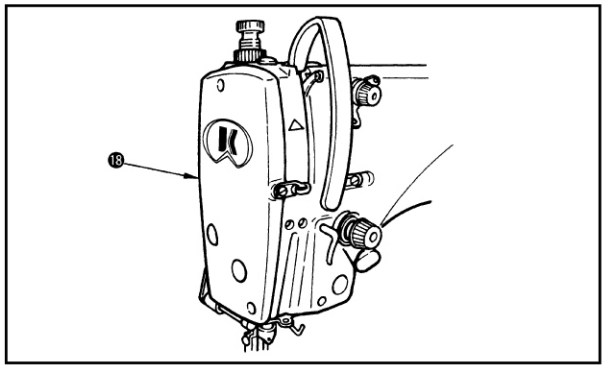
* For the models with wiper, remove the wiper and remove cap ③ .

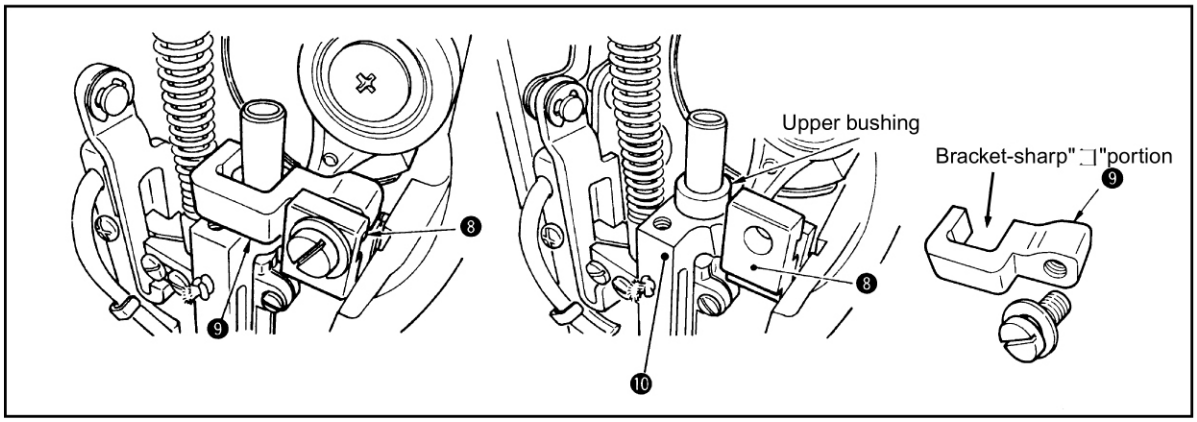


5) Tilt the machine head, remove hinge screw ④ in the needle feed connecting rod in the machine bed and fix needle feed connecting rod ⑥ to strut ⑤ .

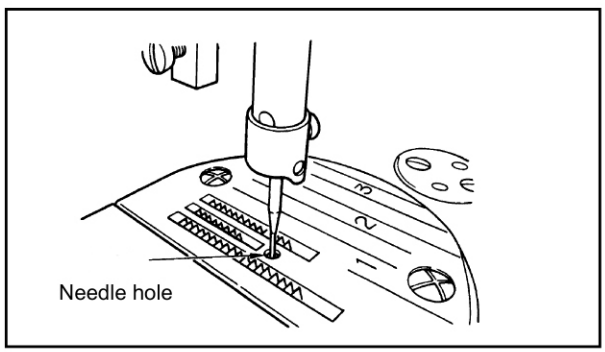
* If it is difficult to remove hinge screw ④ , remove float case ⑦ .

* After replacing hinge screw ④ , securely insert the float case until it will go no further.
(Insert the top end of float in the float case into the hole in the machine bed.)



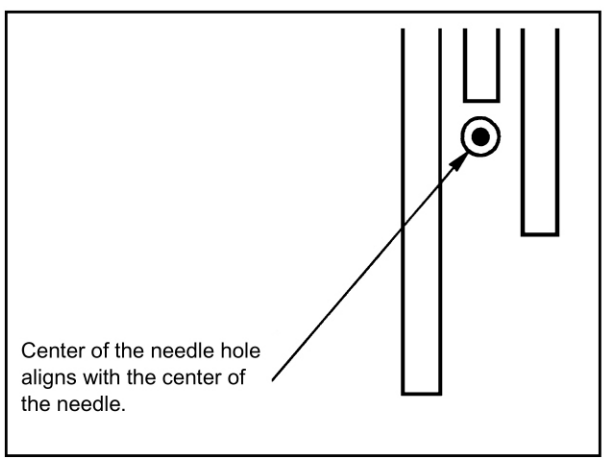


7) Temporarily tighten needle bar frame positioning block ⑨ supplied as accessory to needle bar frame guide ⑧ (temporarily tighten to such an extent that needle bar frame positioning block ⑨ can move). At this time, fit the bracket-sharp" ㄱ " portion of needle bar frame positioning block ⑨ to the upper bushing portion of needle bar frame ⑩.



8) Lower the needle until it enters the needle hole in the throat plate.

* Be careful that the needle tip does not come in contact with the throat plate.

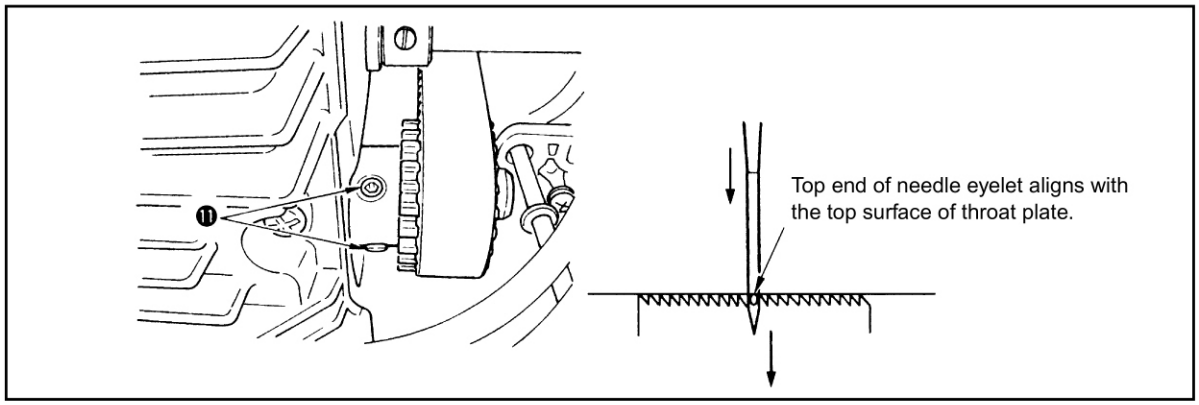


9) Move needle bar frame positioning block ⑨ in the direction of cloth feeding and securely fix the needle bar frame positioning block at the position where the center of the needle hole in the throat plate for the bottom feed aligns with the center of the needle.

* Do not loosen the setscrew in the needle bar frame guide.

10) Tighten the clamping screw in the needle feed shaft arm (front) which has heen loosened in stop 4) and install cap ③ on the hole in the machine arm.

* For the models with wiper,install the wiper.

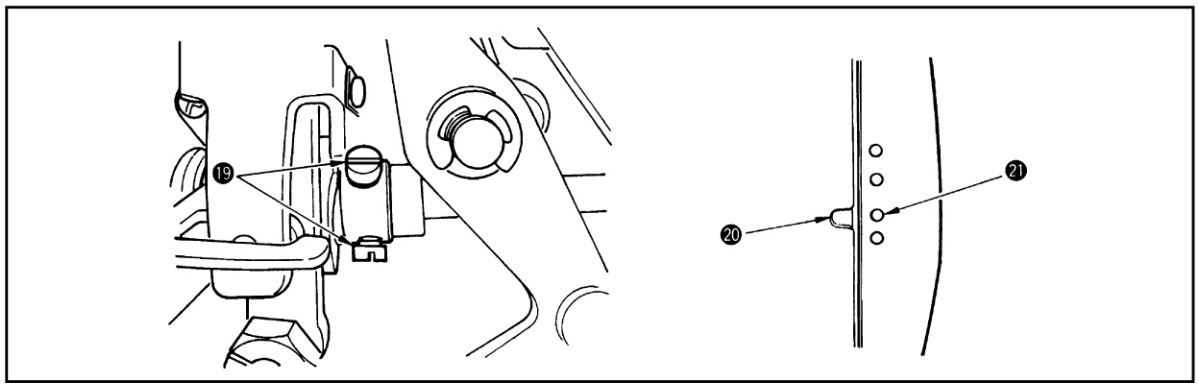


11) Loosen setscrews ⑪ in the lower sprocket inside in the machine bed and adjust the timing between the needle and the feed dog for the bottom feed.

* Fix the feed driving cam so that it does not turn, and turn the handwheel to change the timing.
The timing between the needle and the feed dog for the needle feed is approxmately 180° different from that for the bottom feed.

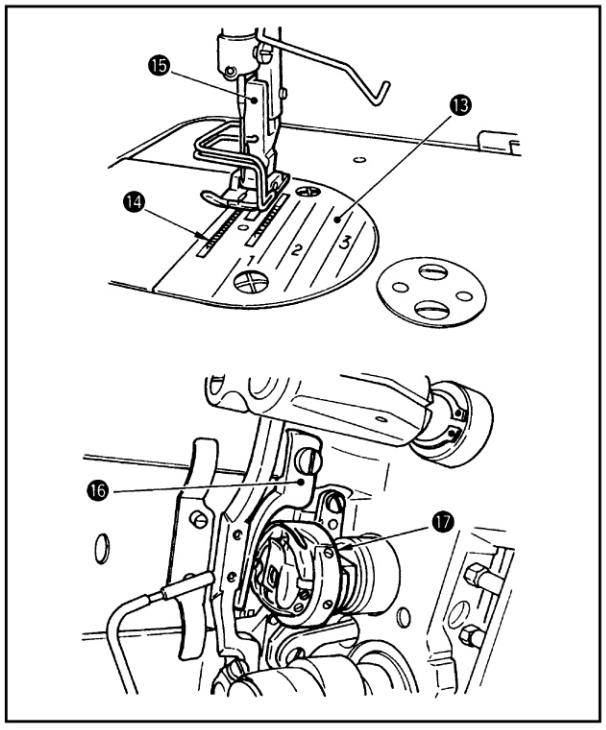
* in case of the bottom feed, normally, adjust the timing so that the top end of needle eyelet aligns with the top surface of throat plate in the descending direction of the needle when the top surface of feed dog aligns with the top surface of throat plate in the descending direction of the feed dog.

12) After the completion of adjusting the feed timing, securely tighten two setscrews ⑪ in the lower sprocket.

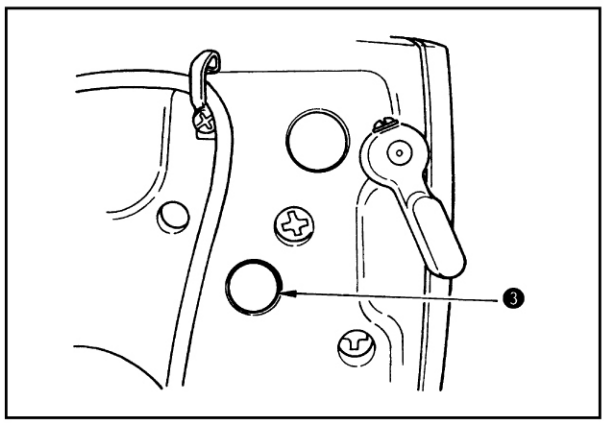


13) Loosen setscrews ⑲ in the thread trimmer cam and adjust the thread trimmer carm again at the timing when marker dot ⑳ on the pulley cover aligns with red marker dot ㉑ on the handwheel.
14) Install the hook and the bobbin case positioning finger.
15) Install the face plate.
16) Finally, check that the throat plate does not come in contact with the feed dog when the scale of feed dial is set to the maximum.

[Changing over procedure from the bottom feed to the needle feed]

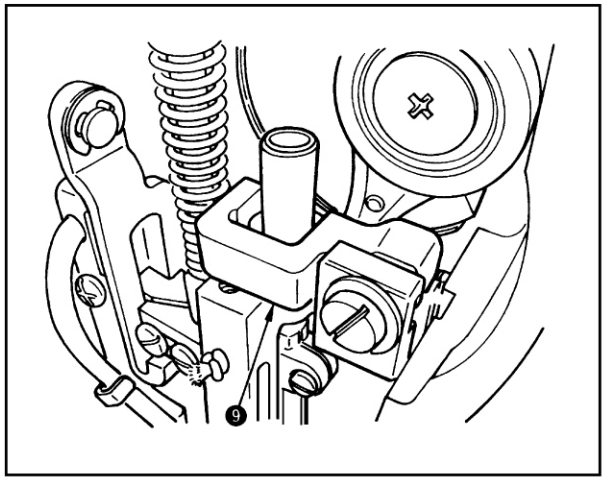


1) Remove the throat plate ⑬, feed dog ⑭ and presser foot ⑮ for the bottom feed.
2) Remove bobbin case positioning finger ⑯ and hook ⑰.

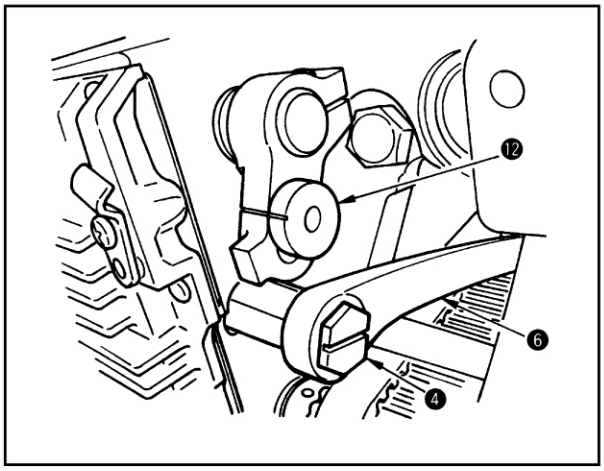


3) Remove cap ③in the back of the machine arm and loosen the clamping screw in the needle feed shaft arm (front) located in the hole. At this time, adjust so that the needle tip is above the throat plate so as not to damage the needle and the throat plate.

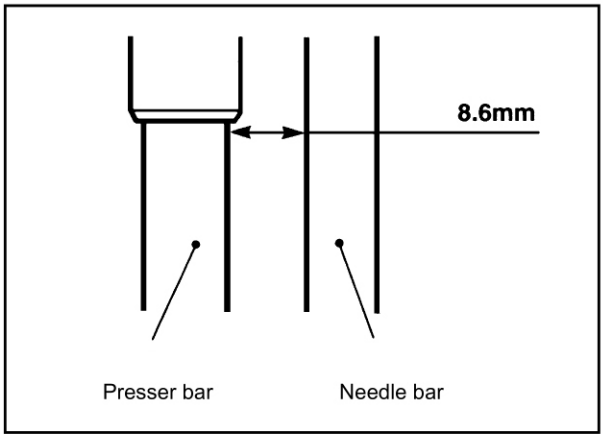
* For the models with wiper, remove the wiper and remove cap ③.



4) Remove face plate ⑱ and remove needle bar frame positioning block ⑨.

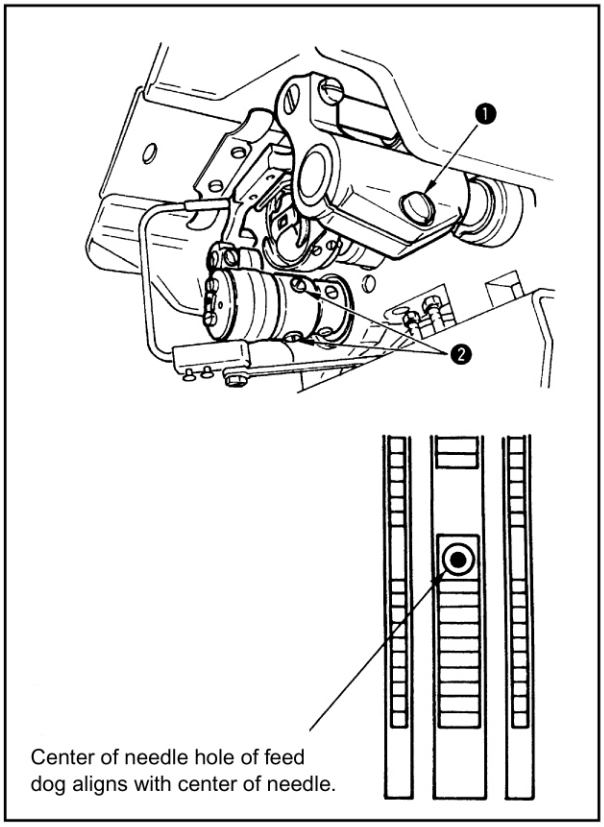


5) Tilt the machine head and remove hinge screw ④ in the needle feed connecting rod in the machine bed. Then fix needle feed connecting rod ⑥ to needle feed regulator block ⑫ .



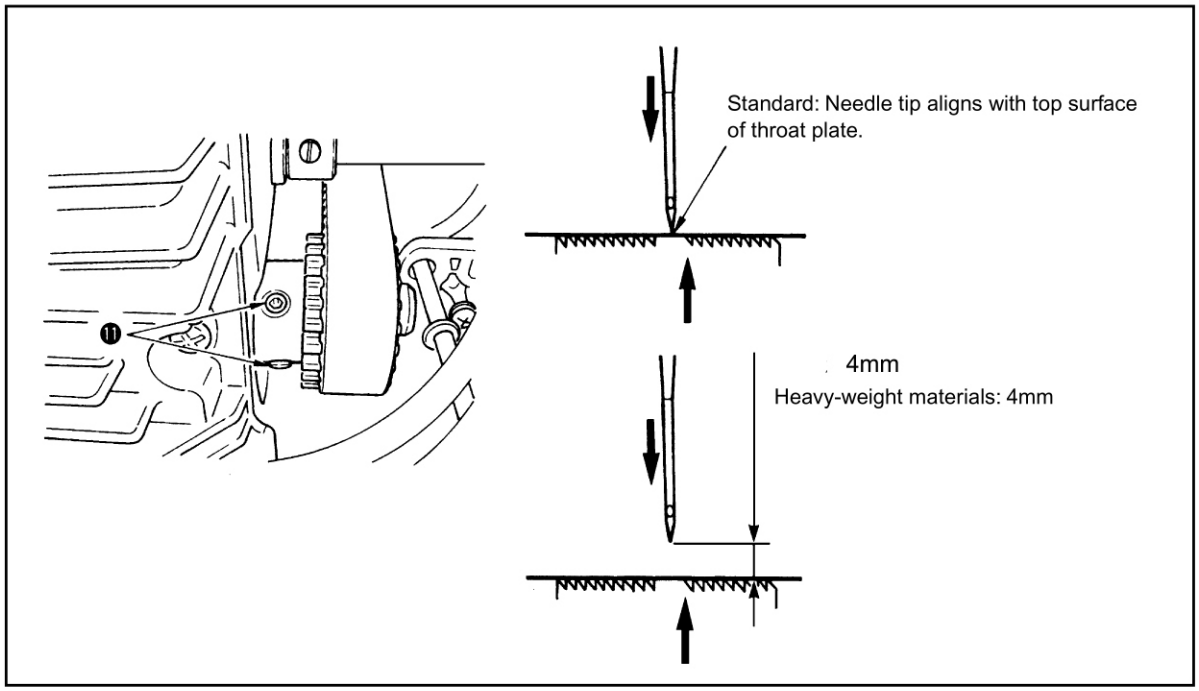
6) Tighten the clamping screw in the arm which has been loosened in step 3) so that the distance between the needle bar and the presser bar becomes 8.6mm when the scale of feed dial is set to 0 (zero) and the needle bar is in the lowest dead point.

* Precisely adjust the distane between the needle bar and the presser bar so that the distance between the needle bar and the bottom end of presser bar bushing becomes 8.6mm.



7) Install throat plate ⑬ , feed dog ⑭ and presser foot ⑮ for the needle feed, and adjust the lateral and longitudinal positions of the feed dog.

* Install the feed dog parallel to the feed dog slot of the throat plate.
* Adjust the lateral position of the feed dog by loosening clamping screw ① in the feed rocker base arm and setscrew ② in the feed driving carm, and moving the feed base to the right or left when the lateral position cannot be adjusted with the looseness of the setscrew hole of the feed dog.
* Adjust the longitudinal position of the feed dog by loosening the feed rocker base arm at the position where the center of the needle hole of feed dog almost aligns with the center of needle when the scale of feed dial is set to 0 (zero) and the needle bar is in the lowest dead point.
* After the adjustment, check that the feed dog and the feed dog slot of the throat plae do not come in contact with each other.
* When the feed driving cam is loosened, be careful that the longitudinal position between the feed driving cam and the feed rocker base arm is not slipped. (Be careful that the feed driving cam is not excessively pressed.)



8) Loosen setscrew ⑪ in the lower sprocket inside the machine bed and adjust the timing between the needle and the feed dog for the needle feed.

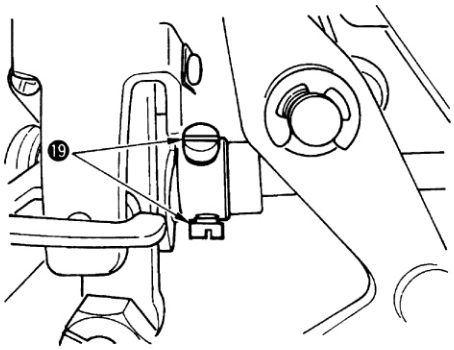
* Fix the feed driving cam so that it does not turn, and turn the handwheel to change the timing.
* The timing between the needle and the feed dog for the needle feed is approximately 180° different form that for the bottom feed.

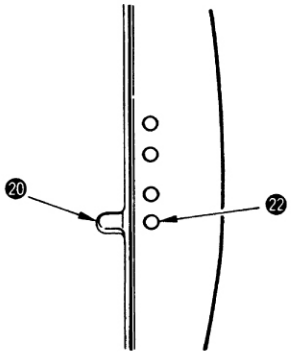
* In case of the needle feed, normally, adjust the timing so that the needle tip aligns with the top surface of throat plate in the descending direction of the needle when the top surface of feed dog aligns with the top surface of throat plate in the ascending direction of the feed dog.
  Howeverm,in case of the machine for heavy-weight materials, adjust the needle tip to approximately 4 mm from the top surface of throat plate.

9) After completion of adjusting the feed timing, securely tighten two setscrews ⑪ in the lower sprocket.

10) After the feed timing adjustment, check again the slip between the needle hole of feed dog and the needle.

* If there is a slip between them, loosen thefeed rocker base arm and readjust the longitudinal position of the feed dog.





11) Loosen setscrews ⑲ in the thread trimmer cam and adjust the thread trimmer cam again at the timing when marker dot ⑳ on the pulley cover aligns with colorless marker dot ㉒ on the handwheel.

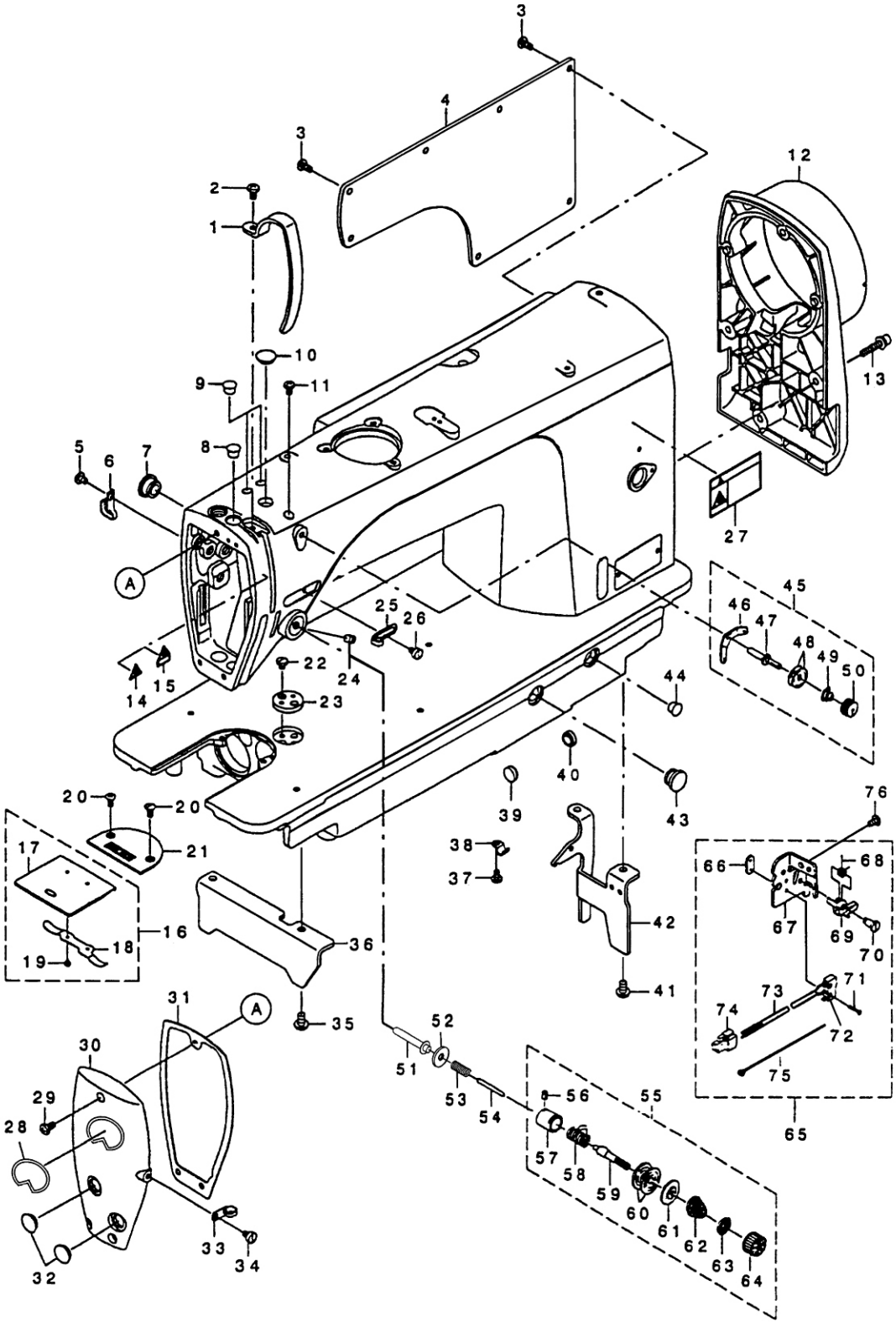
12) Install the hook and the bobbin case positioning finger.

13) Install the face plate.

14) Finally, check that the throat plate does not come in contact with the feed dog, and the feed dog does not come in contact with the needle when the scale of feed dial is set to the maximum.

PARTS BOOK

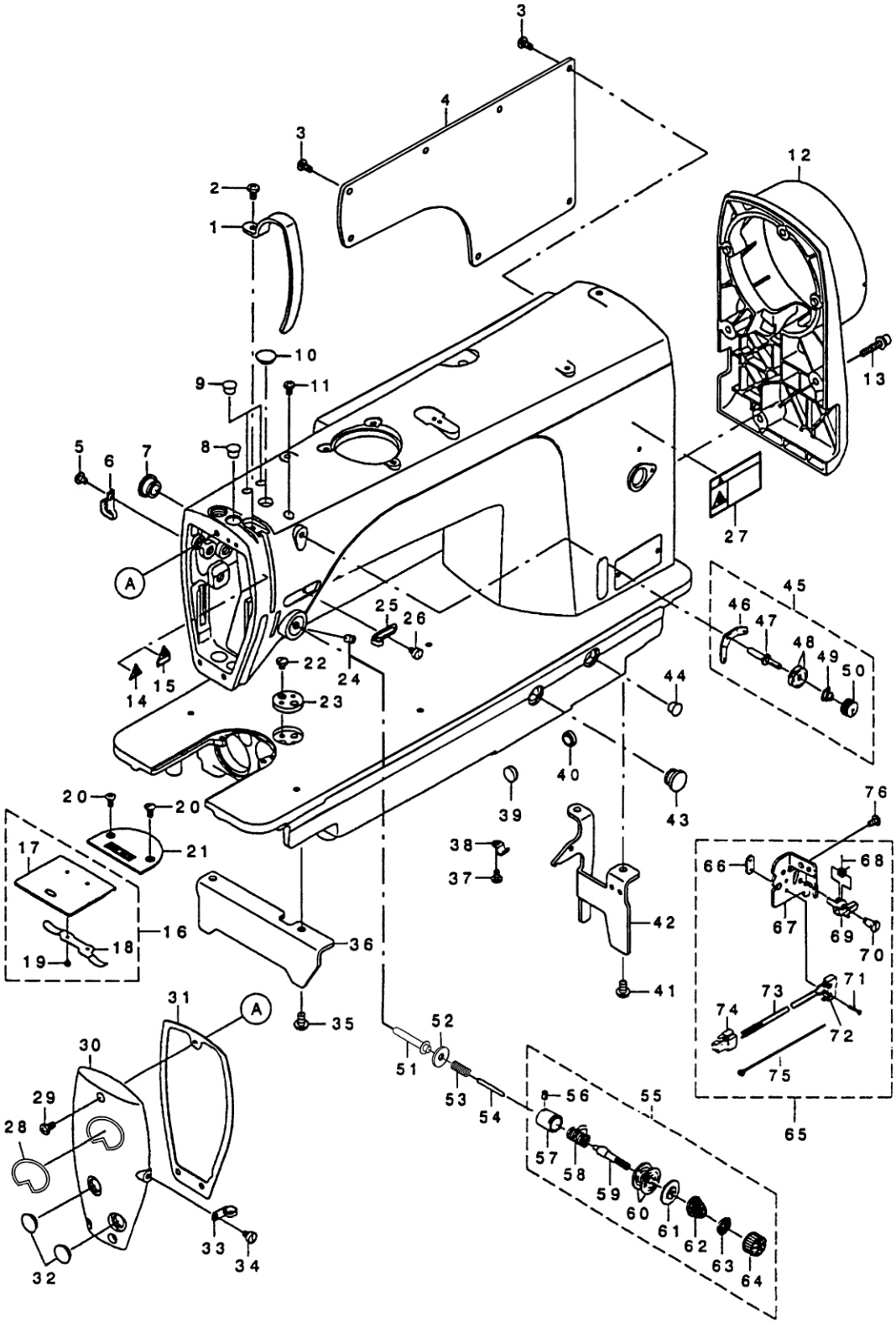
Machine frame & Miscellaneous cover components



Machine frame & Miscellaneous cover components

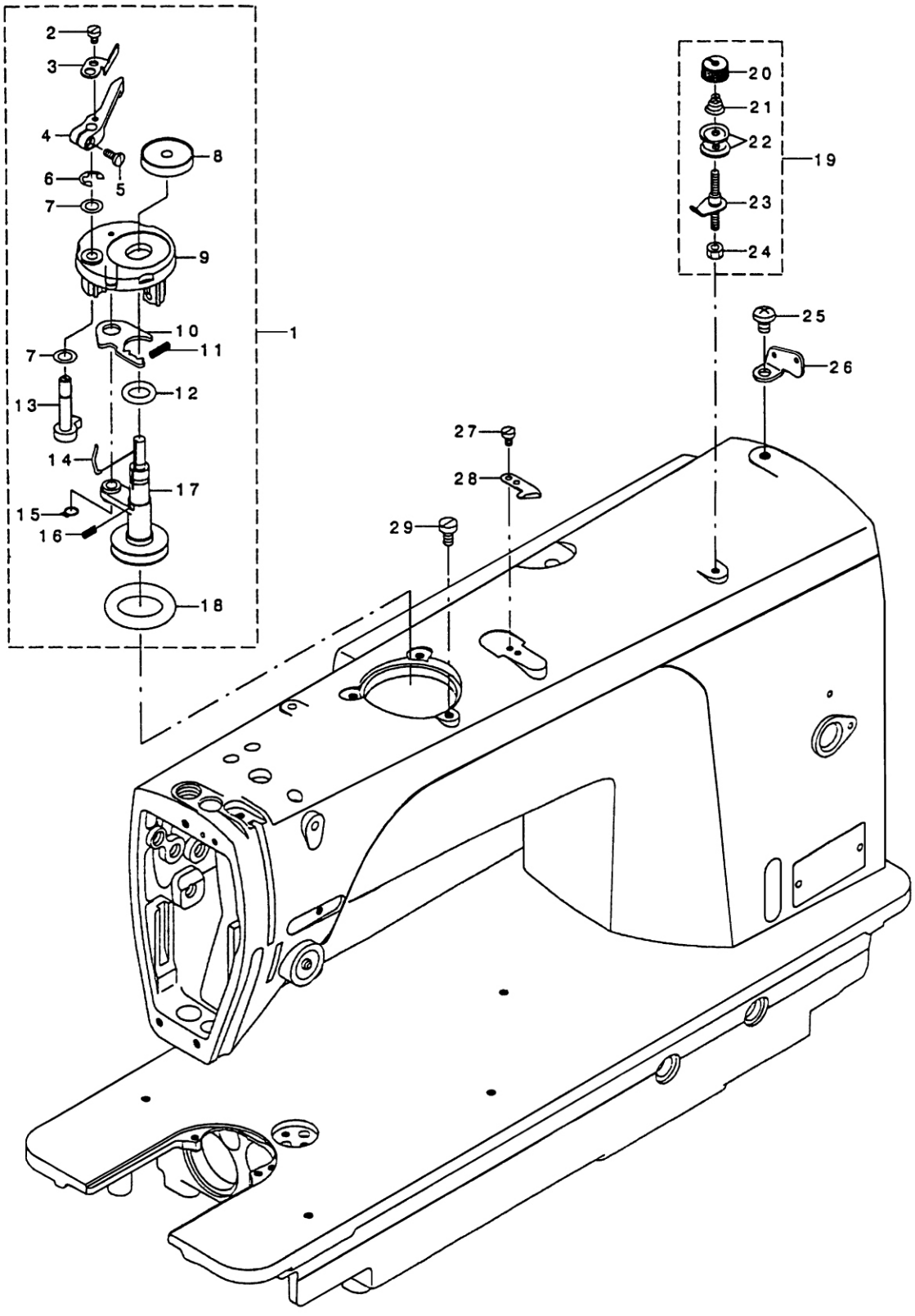
Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
1	300249	236-00505	Thread tade-up lever cover	1
2	101S11001	SS-4120915-SP	Screw SM3/16"×40 L=9	1
3	101S11001	SS-4120915-SP	Screw SM3/16"×28 L=9	7
4	300247	236-00208	Side plate	1
5	101S11001	SS-4120915-SP	Screw SM3/16"×28 L=9	1
6	11412051	135-30001	Upper shaft front metal oil wi	1
7	11422003	TA-1470704 - R0	Rubber plug	1
8	10122011	B1405-012-000	Rubber plug	1
9	10122005	TA-0850604-R0	Rubber plug	2
10	10122004	TA-1250705-R0	Rubber plug	1
11	101S11001	SS-4120915-SP	Screw SM3/16"×28 L=9	1
12	300250	236-00604	Pulley cover	1
13	114S30001	SL-6052592-TN	Bolt	4
14	11437002	CM-3002000-01	Attention seal	1
15	11437003		Label(16)	1
16	1011500200	229-01250	Slide plate asm.	1
17	10115002	229-01201	Slide plate	1
18	10127009	229-01300	Slide plate spring	1
19	101S11019	SS-6060210-SP	Screw SM2/32"×56 L=1.9	2
20	104S17002	SS-2110920- TP	Screw SM11/64"×40 L=8.5	2
21	10115001	B1109-012-I0B	Throat plate	1
22	114S11006	SS-7110540-SP	Screw	2
23	11412040	229-02605	Ruler stop seat	1
24	101S15006	SS-8150710-TP	Screw SM5/64"×28 L=7	1
25	11413001	236-26104	Arm thread guide A	1
26	101S11007	SS-6110610 - TP	Screw SM11/64"×40 L=6	1
27	11237001	CM-3002001-01	Safety laber	1
28	10137004		Plate	1
29	101S11001	SS-4120915-SP	Screw SM3/16"×28 L=9	3
30	300871	236-00307	Face plate	1
31	11422001	236-00406	Face plate packing	1
32	10122003	TA-1250406 - R0	Rubber plug	2
33	10113005	229-20607	Arm thread guide B	1
34	101S11007	SS-6110610 - TP	Screw SM11/64"×40 L=6	1
35	101S11026	SS-4120915-SP	Screw SM15/64"×28 L=9	2
36	11412004	236-00703	Bed stud A	1

Machine frame & Miscellaneous cover components (continuation)



Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
37	101S11001	SS-4120915-SP	Screw SM3/16"×28 L=9	1
38	11412006	B3538-112-000	Oil return tube holder	1
39	11422050		Rubber plug(small)	1
40	11422002	TA-1270502-R0	Rubber plug	1
41	101S11026	SS-4150915-SP	Screw SM15/64"×28 L=9	2
42	11412005	236-00802	Bed stud B	1
43	11422051	TA-1250705-R0	Rubber plug	1
44	10122005	TA-0850604-R0	Rubber plug	1
44	10122004	TA-1250705-R0	Rubber plug	1
45	1121300100	229-45455	Thread tension asm,No.1	1
46	11212003	229-45604	Thread tension guide	1
47	112S30001	229-45406	Thread tension post	1
48	11212004	229-45802	Thread tension disk	2
49	11227001	229-45505	Thread tension spring	1
50	112S16001	229-45703	Thread tension nut	1
51	10126003	110-18306	Tension release supporting pin	1
52	10128001	110-19007	washer plate	1
53	10127003	110-18405	Tension release pin spring	1
54	10126002	B3118-552-F00	Thread release pin	1
55	1121300200	236-26054	Thread tension asm.	1
56	101S15005	SS-8090670-SP	Screw SM9/64"×40 L=5.5	1
57	10403009	229-45307	Thread tension post base	1
58	10127001	229-21605	Takeup spring	1
59	101S30002	229-21209	Thread tension post	1
60	10112005	229-21506	Thread tension disk	2
61	10112006	229-21803	Disk stopper	1
62	10127002	229-21704	Tension spring	1
63	10112007	229-21407	Tension disc stopper	1
64	112S16002	236-26005	Tension nut	1
65	1143002300	236-38059	Safety swith asm.	1
66	11412008	236-38406	Safety swith plate	1
67	11412007	236-38000	Safety swith base	1
68	11427002	236-38208	Safety swith spring	1
69	11427001	236-38109	Safety swith asm.	1
70	114S20001	236-38307	Screw	1
71	S01067	SM-4021201-SC	Screw M2×12	2
72	11430023		Safety swith	1
73	11230008	236-38554	Safety swith cord asm.	1
74	11436001	HK-0346100-40	Housing	1
75	11211005	EA-9500 B01-00	Cable band	1
76	101S11025	SS-4110715-SP	Screw SM11/64"×40 L=7	2

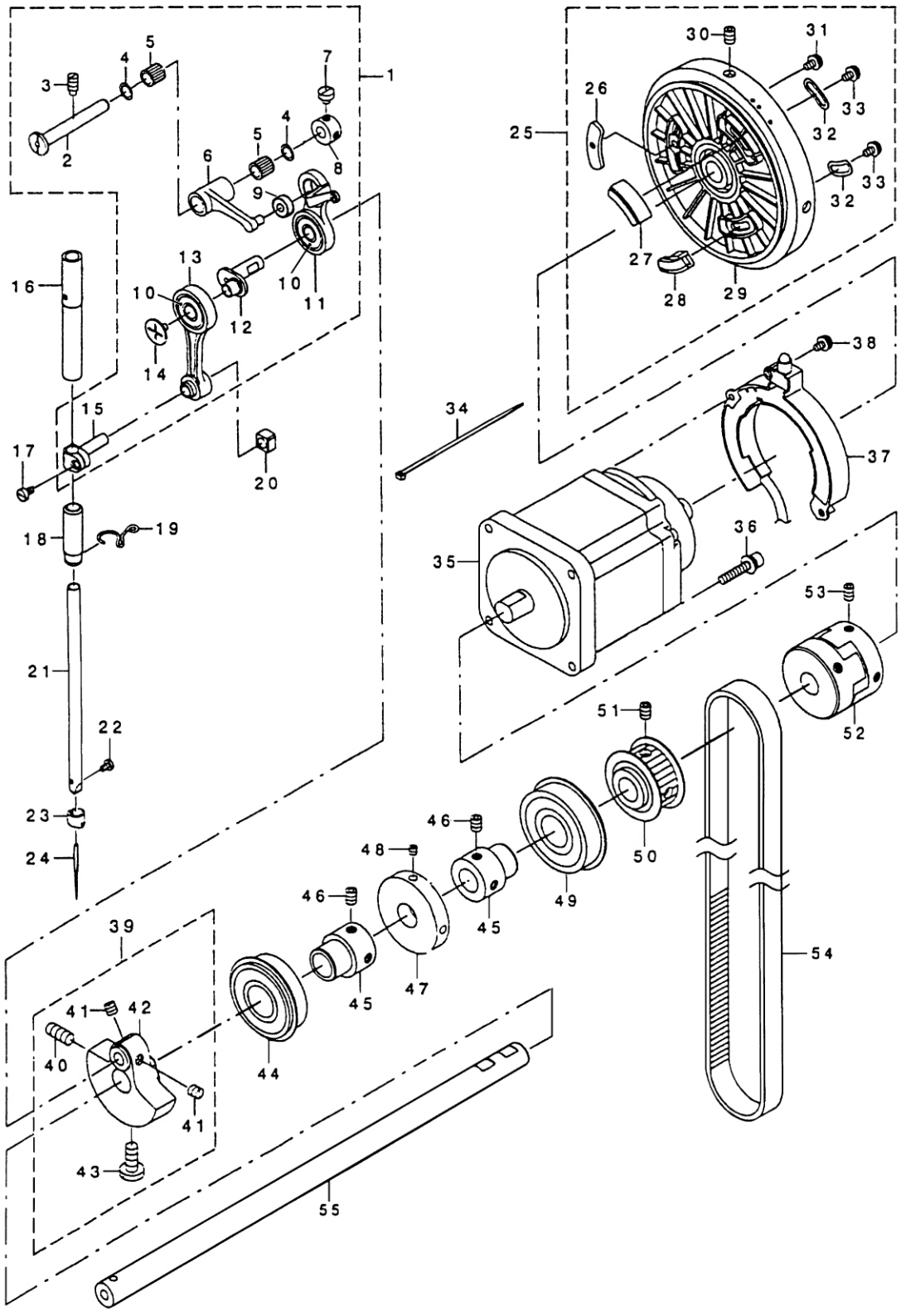
Bobbin winder components



Bobbin winder components

Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
1	1143100100	236-36061	Bobbin winder asm.	1
2	114S11001	SS-6090520-SP	Screw SM9/64"×40 L=5	1
3	11412009	236-36509	Bobbin winnder adjust plate	1
4	11404001	236-36202	Bobbin lever	1
5	114S11002	SS-7091410-SP	Screw SM9/64"×40 L=13.5	1
6	H05006	RE-0500000-K0	E-ring	1
7	11411002	106-18304	Vertical roller washer	2
8	11411003	236-36707	Bobbin cushion	1
9	11431002	225-37658	Bobbin fitting basis compl.	1
10	11412010	225-38409	Adjusting plate	1
11	11427004	229-12109	Spring	1
12	O01034	RO-0922702-00	Rubber ring	1
13	1141000100	225-38151	Bobbin cam shaft compl.	1
14	11427005	B3212-761-000	Latch spring	1
15	H01008	RC-0560711-KP	Retaining ring	1
16	11427003	B1529-890-00C-A	Pressur foot spring	1
17	1140200100	236-36053	Bobbin winder shaft compl.	1
18	O01033	236-36301	Ring25.5×6.8	1
19	1141300200	236-36657	Bobbin thread tension asm.	1
20	11411004	110-72402	Thread tension nut	1
21	11427006	D7133-555-B00	Connecting rod spring	1
22	11413003	B3126-012-000	Thread tension disk	2
23	1143100300	141-13450	Bobbin thread tension rod asm.	1
24	114S16001	NS-6110530-SP	Nut SM11/64"×40	1
25	101S11026	SS-4150915-SP	Screw SM9/64"×40 L=9	1
26	11412011	137-06700	Thread guide plate	1
27	101S11005	SS-6090620-TP	Screw SM9/64"×40 L=6	2
28	11419001	105-02300	Thread cutter	1
29	114S11003	SS-6121030-SN	Screw SM3/16"×28 L=10	3

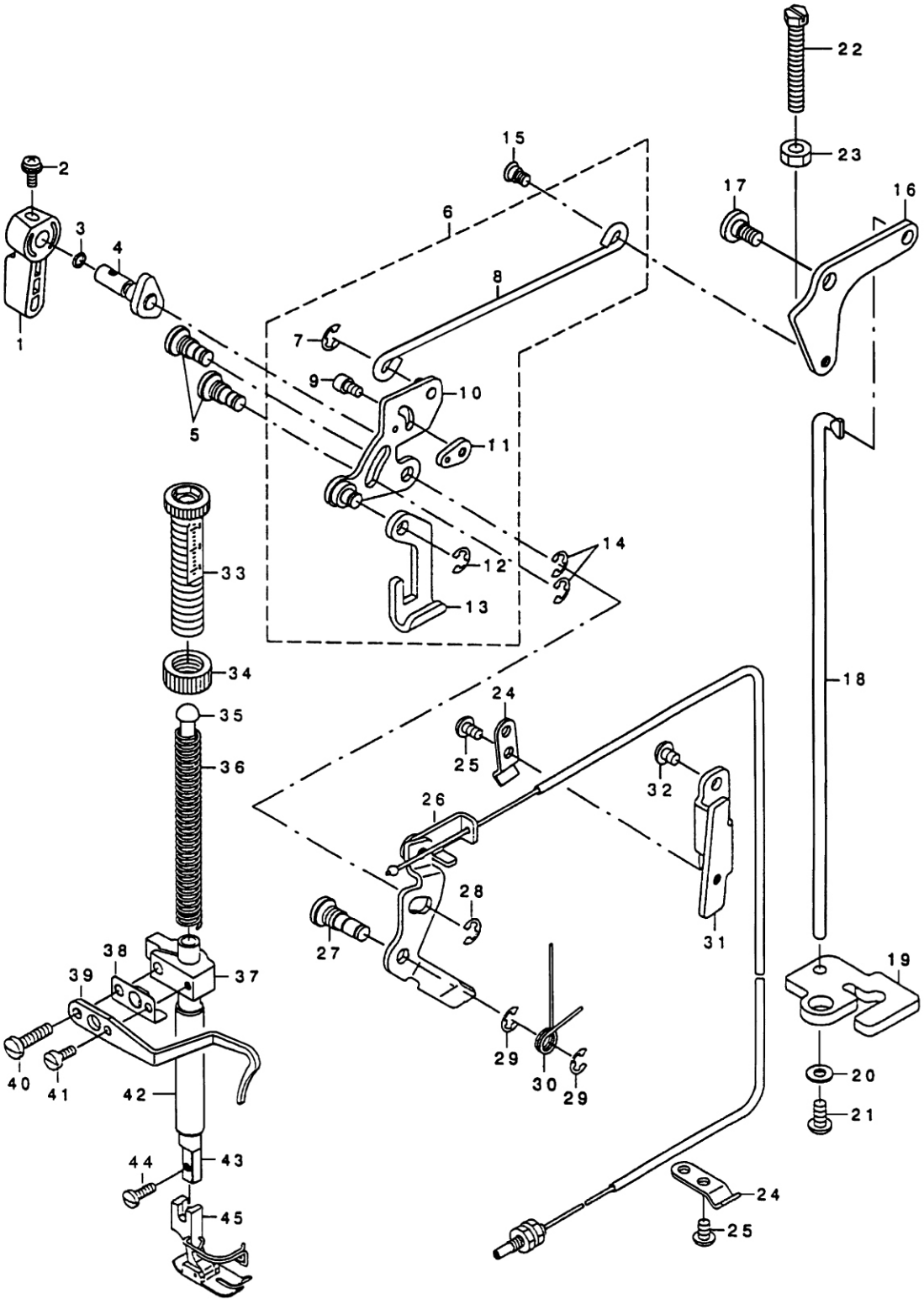
Main shaft & Needle bar components



Main shaft & Needle bar components

Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
1	1143800100		Thread take-up asm.	1
2	11426001	236-22400	Thread take-up crank shaft	1
3	101S15010	SS-6151920-TP	Screw SM15/64"×28 L=10.5	1
4	11411005	228-91204	Bearing support	2
5	B08003	SB-3070002-00	Bearing	2
6	11438004		Thread take-up lever crand rod	1
7	114S11008		Screw	2
8	11408002		Thrust collar asm.	1
9	B01013		Bearing605	1
10	B01014		Bearing608	2
11	11438003		Thread take-up lever	1
12	11402007		Needle bar crand	1
13	1143800200		Needle bar crand rod asm.	1
14	114S30004		Screw(left twist)	1
15	11404005	229-06408	Needle rod holder	1
16	11403006	236-08003	Needle bar metal,upper	1
17	101S11005	SS-6090620-TP	Screw SM9/64"×40 L=6	1
18	11403007	236-08102	Needle bar metal,lower	1
19	11413004	236-26203	Needle bar metal,lower thread guide	1
20	11409001	B1414-555-000	Slide block	1
21	11402005	110-35003	Needle bar	1
22	104S11006	SS-7080510-TP	Screw SM1/8"×44 L=4.5	1
23	10113002	110-05303	Needle bar thread guide	1
24	10117001	MDB-100B1400	Needle DB×1 #14	1
25	1143500200		Hand wheel asm.	1
26	300712		Hand wheel	1
27	11430024		photosensitive glass A	1
28	11428007		Shim	1
29	11430024		photosensitive glass B	1
30	11428007		Shim	1
31	11428007		Shim	1
32	H03005		Ring 18	1
33	S05044	SM-8060812-TP	Screw M6×8	2
34	11211005	EA-9500B01-00	Cable band	2
35	700061	M6001-471-AA0	Motor A asm.	1
36	114S30001	SL-6052592-TN	Bolt	4
37	11433002	M6801-471-0A0	Sync asm.	1
38	S01010	SL-4040881-SC	Screw M4×8	2
39	1140400200	236-04168	Cornter weight asm.	1
40	101S15004	SS-8681650-TP	Screw	1
41	101S15007	SS-8660810-TP	Screw SM1/4"×40 L=6	2
42	11404003	236-04119	Cornter weight	1
43	101S11003	SS-7681650-TP	Screw	1
44	B10001	SB-1200009-00	Bearing	1
45	11403002	236-04200	Bearing support	2
46	S05044	SM-8060812-TP	Screw M6×8	4
47	11435008	236-36400	Bobbin winder driveng wheel	1
48	113S14002	SS-7110551-SP	Screw SM11/64"×40 L=4	2
49	B01003	SB-1200008-00	Bearing	1
50	1143500400	236-07054	Sprocket,upper	1
51	S05044	SM-8060812-TP	Screw M6×8	4
52	11403003	236-04309	Coupling	2
53	S05044	SM-8060812-TP	Screw M6×8	2
54	11435007	236-07302	Timing belt	1
55	11402004	236-04002	Main shaft	1

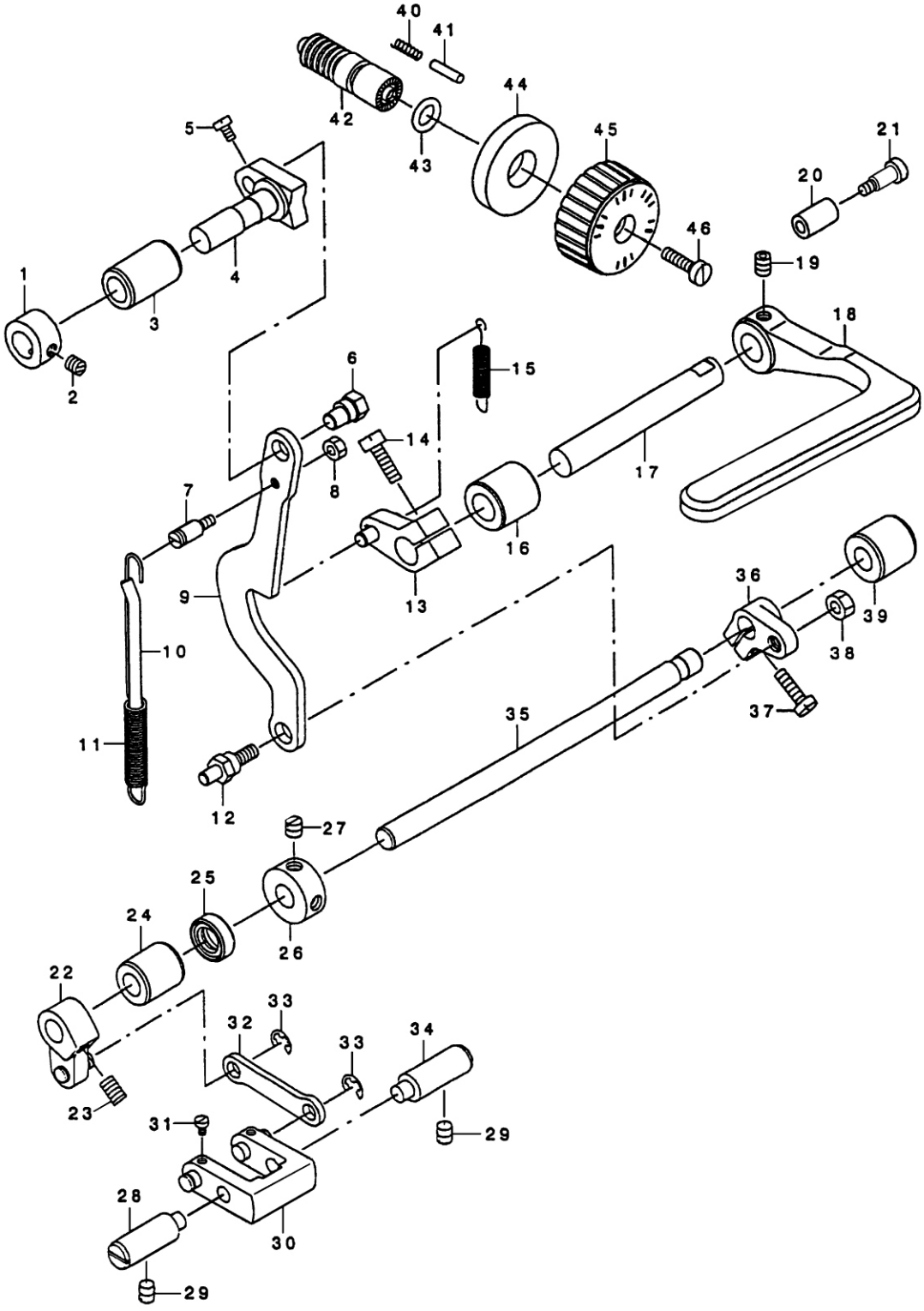
Hand lifter & Tension release components



Hand lifter & Tension release components

Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
1	10111001	110-71800	Hand lifter	1
2	101S11010	B1521-555-000	screw	1
3	O01004	R0-0371801-00	Rubber ring	1
4	1041000200	229-08552	Hand lifter cam asm.	1
5	101S20001	110-06509	Link shaft	2
6	1140500300	236-09357	Lifting ever connect rod asm.	1
7	H05006	RE-0500000-K0	E-ring	1
8	11405004	236-09308	Lifing ever connect rod	1
9	S05011	SM-6040602-TP	Screw M4×6	1
10	1140500500	236-09456	Lifting lind compl	1
11	11412014	236-09605	Plate	1
12	H05006	RE-0500000-K0	E-ring	1
13	11412017	229-08008	Lifting plate	1
14	H05006	RE-0500000-K0	E-ring	2
15	101S20004	110-07101	Hinge screw	1
16	11405006	236-09704	Lifting lever link	1
17	101S20003	SD-0720331-SP	Hinge screw	1
18	11405007	236-09803	Connecting rod	1
19	11411007	236-09902	Connecting rod guide	1
20	W01009	WP-0501016-SD	Washer	1
21	101S11001	SS-4120915-SP	Screw SM3/16"×28 L=9	1
22	114S12001	236-10801	Screw	1
23	114S16005	NS-6150310-SP	Nut SM15/64"×28	1
24	11412020	110-45408	Wire holder a	2
25	101S11025	SS-4110715-SP	Screw SM11/64"×40 L=7	2
26	11412019	236-26351	Thread tension release wire	1
27	101S20002	110-18108	Tensiod release shaft	1
28	H05006	RE-0500000-K0	E-Ring	3
29	H05006	RE-0500000-K0	E-Ring	2
30	11427009	236-26807	Tension release return spring	1
31	11413006	236-26906	Wire holder bra cket	1
32	101S11001	SS-4120915-SP	Screw SM3/16"×28 L=9	2
33	114S30005	236-09209	Presser spring regulator	1
34	114S16002	110-71701	Nut	1
35	11405008	236-10306	Presser guide bar	1
36	11427007	B1505-227-000-A	Presser spring	1
37	11404006	236-10108	Presser bar guide bracket	1
38	11412018	236-10405	Guide bracket plate	1
39	11413005	236-09100	Presser bar thread guide	1
40	114S11004	SS-7111810-TP	Screw SM11/64"×40 L=18	1
41	101S11005	SS-6090620-TP	Screw SM9/64"×40 L=9	1
42	11403008	236-09001	Bushing	1
43	11402009	236-10207	Presser bar	1
44	101S11009	SS-7091110-TP	Screw SM9/64"×40 L=10.5	1
45	1011600100	B1524-012-0BA	Presser foot asm.	1

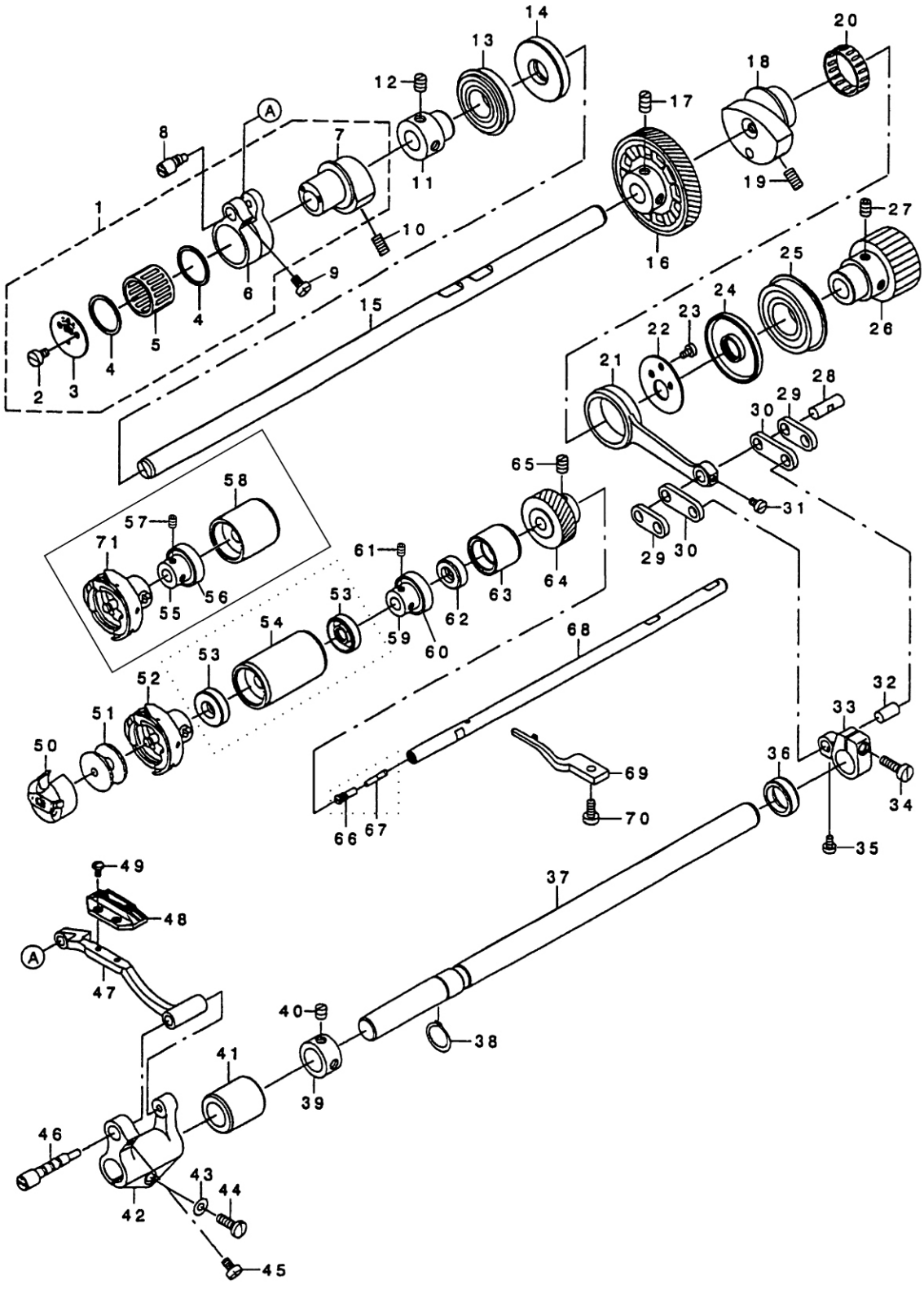
Feed adjust mechanism components



Feed adjust mechanism components

Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
1	11408007	CS-111101E-SH	Collar asm.	1
2	114S15001	SS-8660330-SP	Screw	2
3	11403009	236-13508	Adjusting base shaft metal	1
4	11402011	236-13300	Feed adjusting base	1
5	101S11005	SS-6090620-TP	Screw SM9/64"×40 L=6	2
6	11402012	236-13409	Feed adjusting pin	1
7	114S30007	101-20004	Screw	1
8	114S16004	NS-6110310-SP	Nut	1
9	11404013	236-13201	Feed adjusting rod	1
10	11436002	236-3007	Tube	1
11	11427011	236-14001	Feed adjusting spring	1
12	11426007	236-13102	Feed changing shaft arm B pin	1
13	1140401400	236-13953	Feed lever arm asm.	1
14	101S11016	SS-6121410-SP	Screw	1
15	11427012	236-14308	Feed lever spring	1
16	11403010	236-13805	Feed lever shaft metal	1
17	11402013	236-13706	Feed lever shaft	1
18	300251	236-13607	Feed lever	1
19	S05044	SM-8060812-TP	Screw M6×8	2
20	11203001	111-00500	Reverse feed lever stopper	1
21	112S11002	SS-6121840-SP	Screw	1
22	1140400900	236-12450-00	Feed changing shaft arm asm.	1
23	101S15007	SS-8660810-TP	Screw	1
24	11408005	236-12807	Metal.A	1
25	11422005	236-12609	Feed changing shaft oil seal	1
26	11408004	236-12708	Thrust collar	1
27	101S15007	SS-8660810-TP	Screw	2
28	10126010	110-08802	Adjusting link fulcrum shaft A	1
29	101S15010	SS-8151150-TP	Screw	2
30	1140400700	236-12054-00	Adjusting link asm.	1
31	101S11005	SS-6090620-TP	Screw SM9/64"×40 L=6	2
32	11405009	236-12104	Adjusting link connecting link	1
33	H05006	RE-0500000-K0	E-Ring	2
34	11426005	236-12302	Adjusting link fulcrum shaft B	1
35	11402010	236-12500	Feed changing shaft	1
36	11404012	236-13003	Feed changing shaft arm,B	1
37	101S11016	SS-6121410-SP	Screw	1
38	114S16005	NS-6150310-SP	Nut	1
39	11408006	236-12906	Metal.B	1
40	10127010	B1148-555-000	Spring	1
41	10126015	110-52701	Pin	1
42	10426006	229-11804	Feed regulator screw	1
43	10122016	R0-0922702-00	Rubber ring	1
44	11422007	D2468-555-B00	Rubber plunger	1
45	10111002	110-71909	Feed dial	1
46	101S11022	SS-6121860-SP	Screw SM3/16"×28 L=18	1

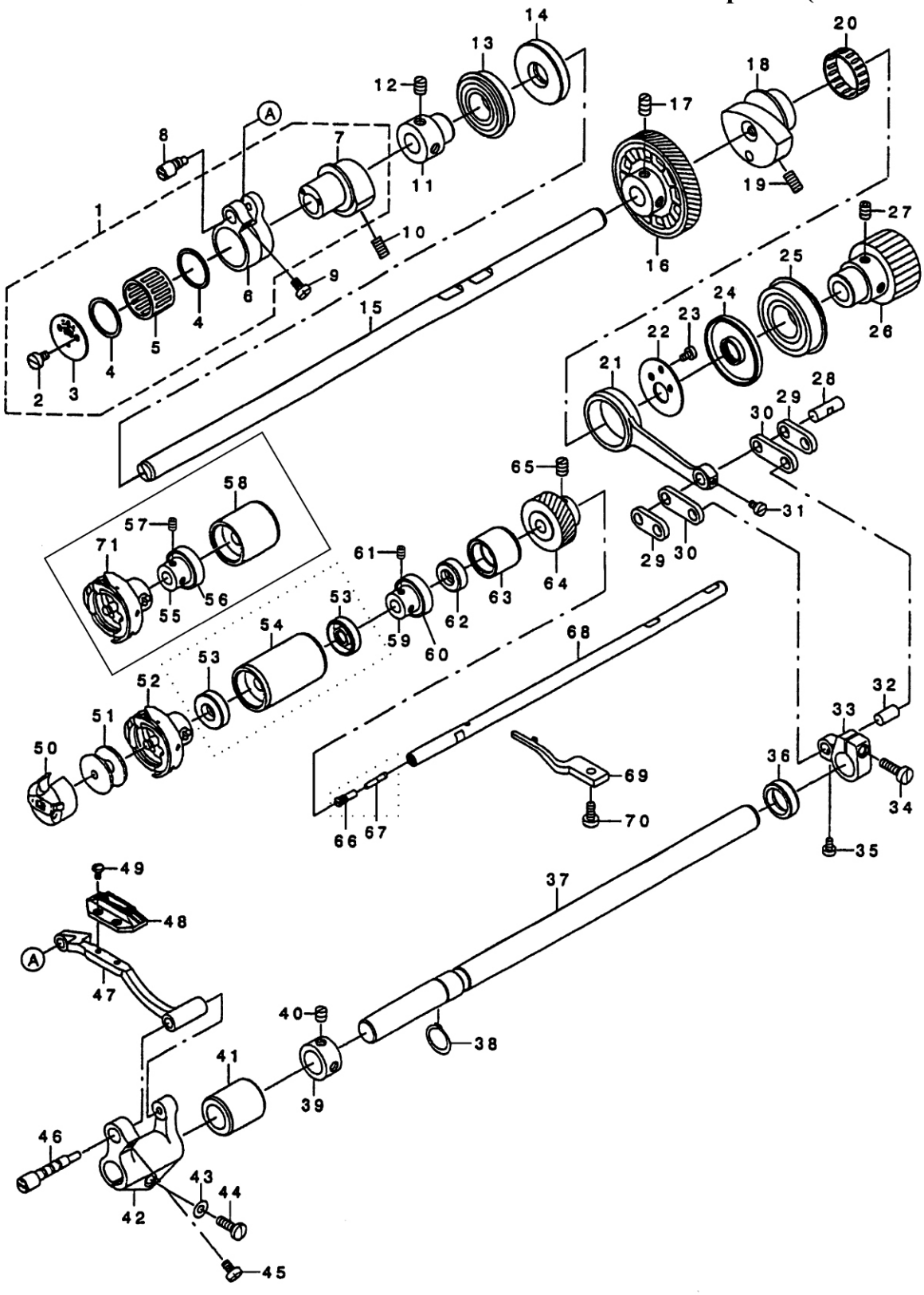
Machine frame & Miscellaneous cover components



Machine frame & Miscellaneous cover components

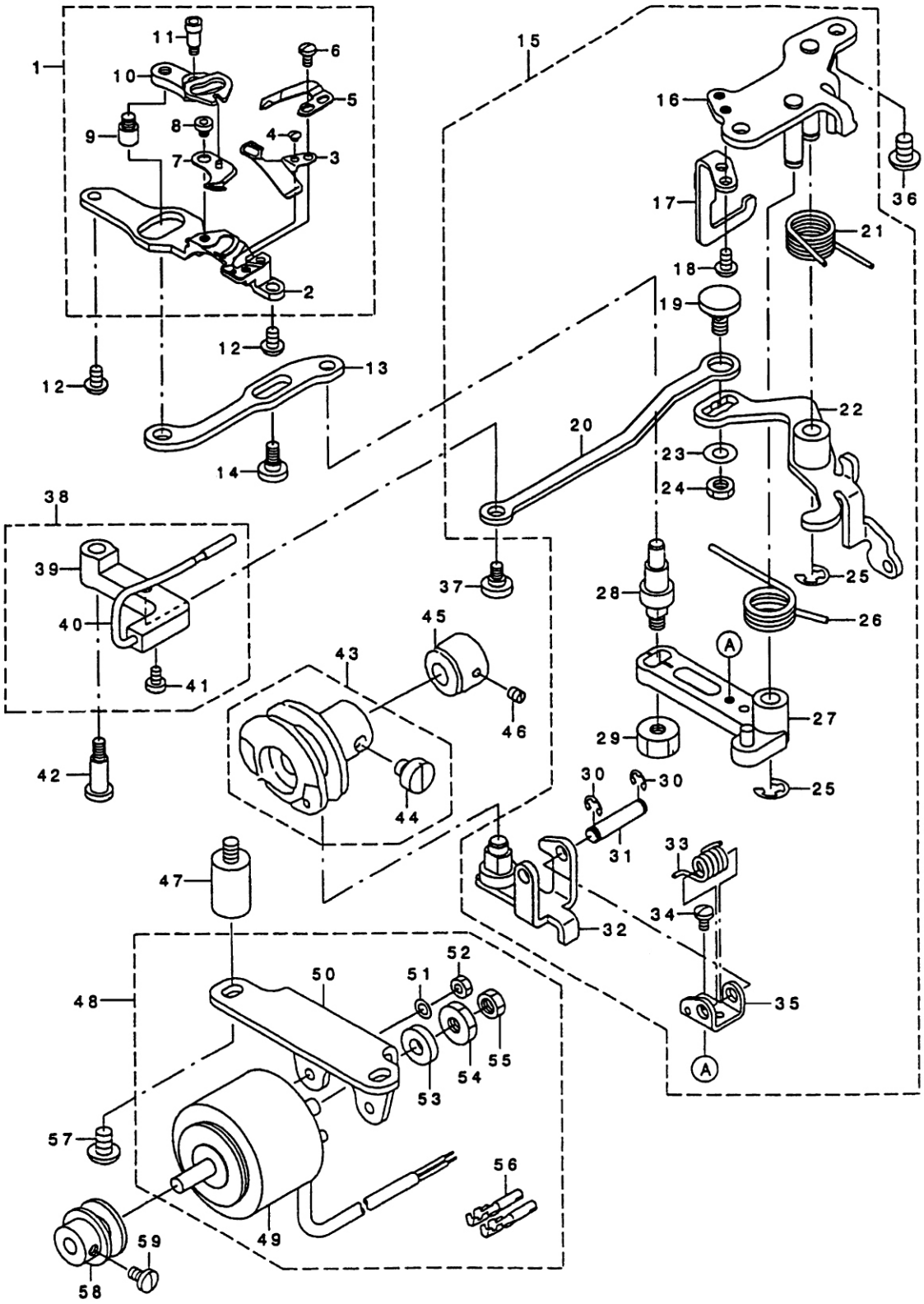
Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
1	1141000500		Feed driving cam asm.	1
2	101S11005	SS-6090620-TP	Screw SM9/64"×28 L=6	2
3	11412024	236-18309	Feed reiving cam plate	1
4	11403012	236-18101	Feed driving cam thrust bush	2
5	B08005	SB-3200006-0A	Bearing	1
6	11404018	236-18200	feed friving base arm	1
7	11410006	236-18002	Feed driving cam	1
8	11402016	236-18408	Feed driving base shaft	1
9	101S11025	SS-7110740-TP	Screw SM11/64"×40 L=7	1
10	101S15010	SS-8151150-TP	Screw	2
11	11403013	236-18606	Bearing support	1
12	101S15007	SS-8660810-TP	Screw	2
13	B01010	SB-1170004-00	Bearing	1
14	1142201000	236-18705	Oil seal	1
15	11402017	236-18507	Feed driving shaft	1
16	1142500100	236-20503	Gear,large asm.	1
17	101S15007	SS-8660810-TP	Screw SM1/4"×40 L=8	2
18	11410004	236-16006	Feed rocker cam	1
19	101S15010	SS-8151150-TP	Screw	2
20	B08004	B4123-522-00A	Needle rollar	1
21	11405010	236-16105	Feed rocker rod	1
22	11412021	236-16204	Feed rocker cam plate	1
23	101S11005	SS-6090620-TP	Screw SM9/64"×40 L=6	2
24	1142201200	236-18804	Oil seal	1
25	B10003	SB-1200010-00	Bearing	1
26	11435009	236-07203	Lower sprocket	1
27	S05044	SS-8660810-TP	Screw M6×8	2
28	11426010	110-09206	Walking foot pin	1
29	11412022	236-16303	Connecting link,A	2
30	11412023	236-16402	Connecting link,B	2
31	101S11005	SS-6090620-TP	Screw SM9/64"×40 L=6	1
32	11426009	110-09107	Walking foot pin	1
33	11404017	236-16501	Feed rocker arm asm.	1
34	101S11016	SS-6121610-SP	Screw	1
35	101S11005	SS-6090620-TP	Screw SM9/64"×40 L=6	1
36	1142200800	228-88002	Oil seal asm.	1
37	11402014	236-16600	Feed rocker shaft	1
38	H03001	RC-0150001-KP	Retaining ring	1

Machine frame & Miscellaneous cover components (continuation)



Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
39	10108003	229-04106	Main shaft thrust collar	1
40	101S15007	SS-8660810-TP	Screw	2
41	11403011	236-16709	Feed rocker shaft metal	1
	11503001		Feed rocker shaft metal(for 8990)	1
42	11407002	236-16808	Feed rocker bade arm	1
43	10128003	WP-0480856-SP	Washer	1
44	101S11016	SS-7121410-TP	Screw	1
45	101S11025	SS-7110740-TP	Screw SM11/64"×40 L=7	1
46	11402015	236-16907	Feed rocker base shaft	1
47	11407003	236-17004	feed base	1
48	11214001	B1613-012-I00	Feed dog	1
49	104S11018	SS-4080620-TP	Screw	2
50	10118002	110-38759	Bobbin case asm.	1
51	10118003	B9117-552-A00	Bobbin	1
52	11218001	111-41355	Hook asm.	1
53	1142201400	236-20206	Oil seal	2
54	11403014	236-20156	Hook driving shaft metal compl.	1
55	11403016	228-89851	Bearing support	1
56	11424001		Bearing	1
57	113S14002		Screw	1
58	11403015		Hook driving shaft metal compl.	1
59	11403016	236-20354	Bearing support	1
60	11424001		Bearing	1
61	113S14002	SS-7110551-SP	Screw SM11/64"×40 L=4.5	2
62	1142201600	228-90008	Oil seal asm.	1
63	11403018	236-20404	Hook shaft rear metal	1
64	11425002	236-20701	Gear,small	1
65	101S15007	SS-8660810-TP	Screw SM1/4"×40 L=8	2
66	101S30005	B1808-552-000	Oil seal screw	1
67	10123003	110-15906	Oil wick	1
68	11402019	236-20008	Hook driving shaft	1
69	10112016	110-38809	Bobbin case holder	1
70	101S11011	SS-6111010-TP	Screw	1
71	11418001	228-90404	Hook asm.	1

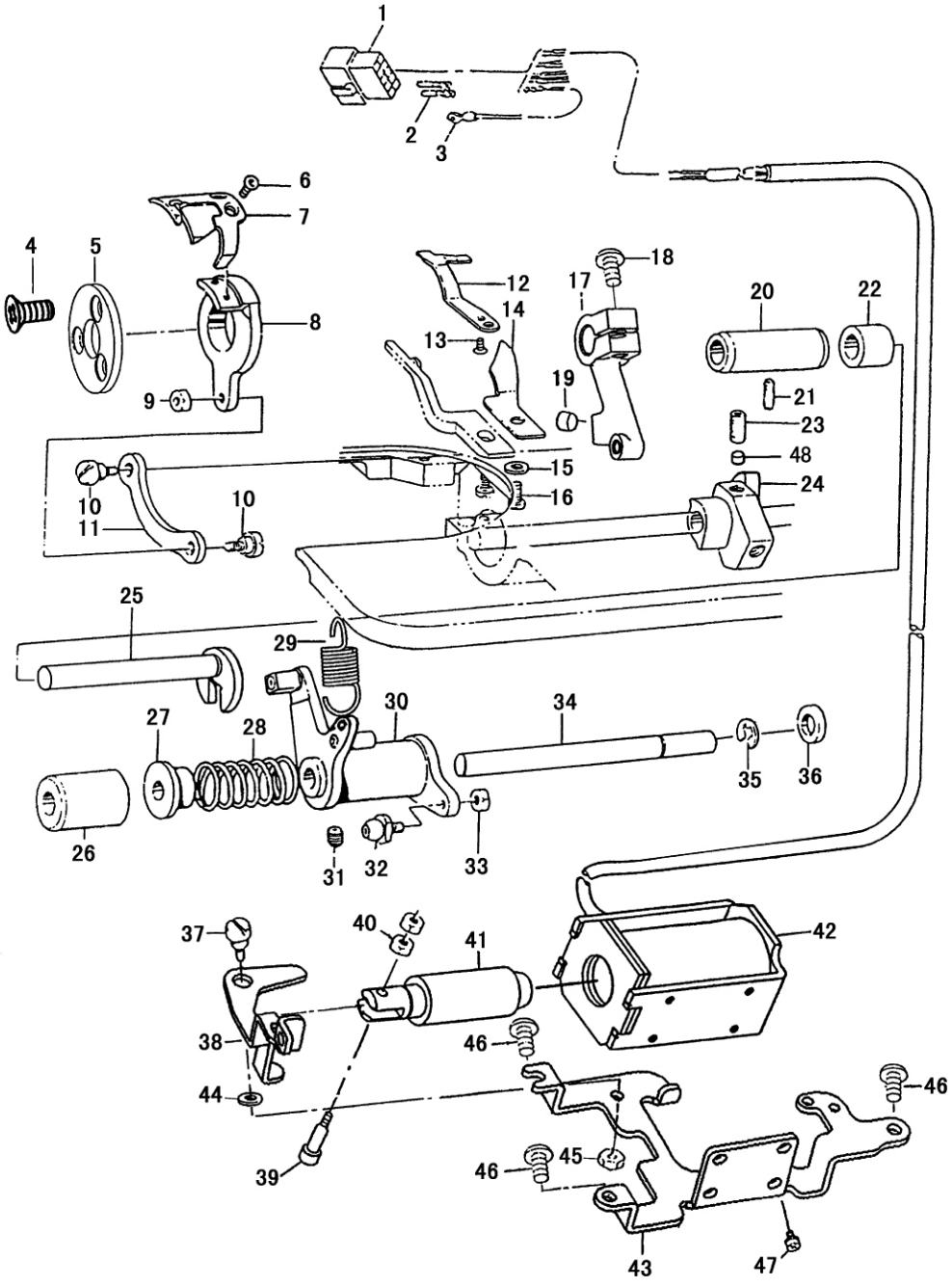
Thread trimmer components(8990)



Thread trimmer components(8991)

Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
1	1141900200	236-23051	Knife unit	1
2	11419003	236-23002	Knife installing base	1
3	11419004	113-13103	Thread guide for knife	1
4	112S11005	SS-2060210-SP	Screw SM3/32"×56 L=2.3	1
5	11219003	D2406-555-D0H	Cornter knife	1
6	112S11006	SS-4080620-TP	Screw SM1/8"×44 L=6	2
7	11219002	110-40052	Moring knife asm.	1
8	112S13001	110-40508	Moring knife hinge screw	1
9	11426014	110-40409	Pin	1
10	11204001	236-23903	Forked base for knife	1
11	112S20001	SD-0460703-TP	Hinge screw D=4.6 L=7	1
12	101S11011	SS-6111010-TP	Screw	2
13	11433006	236-24000	Moving knife link	1
14	114S20002	SD-0600321-SP	Screw	1
15	1141900500	236-23168	Thread trimmer driving unit	1
16	1141202700	236-23556	Base plate asm.	1
17	11412029	236-23804	Driving arm stopper	1
18	101S11025	SS-7110740-TP	Screw SM11/64"×40 L=7	2
19	112S30003	110-42306	Screw	1
20	11405011	236-23705	Picker link	1
21	11427020	110-41704	Clutch spring	1
22	1141202500	236-23358	Clutch plate asm.	1
23	W01003	WP-0621016-SH	Wadher6	1
24	112S16004	NS-6150310-SP	Nut SM15/64"×28	1
25	H05009	RE-0600000-K0	E-ring	2
26	11427019	110-43700	Roller return spring,B	1
27	1140401900	236-23150	Knife driving arm asm.	1
28	11430005	236-23200	Moving knife link pin	1
29	112S16004	NS-6150810-SP	Nut SM15/64"×28	1
30	H05013	RE-0400000-K0	E-ring	2
31	11426013	110-41407	roller fulcrum shaft	1
32	11212021	110-40953	Roller arm asm.	1
33	11427018	110-41506	Roller return spring	1
34	112S11009	SS-7090610-SP	Screw SM9/64"×40 L=6	1
35	11412030	110-41308	Roller arm asm.	1
36	101S11026	SS-4150915-SP	Screw SM15/64"×28 L=9	2
37	114S20003	SD-0630275-SP	Screw	1
38	1140100300	236-24158	Picker arm asm.	1
39	11401004	236-24109	Picker arm	1
40	11412031	236-24257	Thread take-up picker asm.	1
41	101S11005	SS-6090620-TP	Screw	2
42	114S20004	SD-0641452-TP	Screw	1
43	11210001	110-42850	Thread trimmer cam asm.	1
44	112S30002	SS-6660610-TP	Screw SM1/4"×40 L=6	2
45	11208001	110-42959	Cam collar asm.	1
46	112S15001	SS-8110520-TP	Screw SM11/64"×40 L=4.5	1
47	114S30008	D8233-241-E00	Belt cover support	2
48	1123000600	236-24356	Solenoid asm.	1
49	11430007	236-24307	Solenoid	1
50	11412032	236-24406	Solenoid base	1
51	11428005	WP-0450000-SD	Wadher4.5×8×0.5	2
52	N01001	NH-604000-SN	Nut M4	2
53	11222005	110-43304	Solenoid rubber	1
54	114S16006	NS-6660410-SH	Nut	1
55	114S16007	NS-6660430-SP	Nut SM1/4"×40	1
56	11230005	HK-0346400-0B	Pim contact	2
57	101S11026	SS-4150915-SP	Screw SM15/64"×28 L=9	2
58	11408009	236-24505	Driving block	1
59	101S11025	SS-7110740-TP	Screw	1

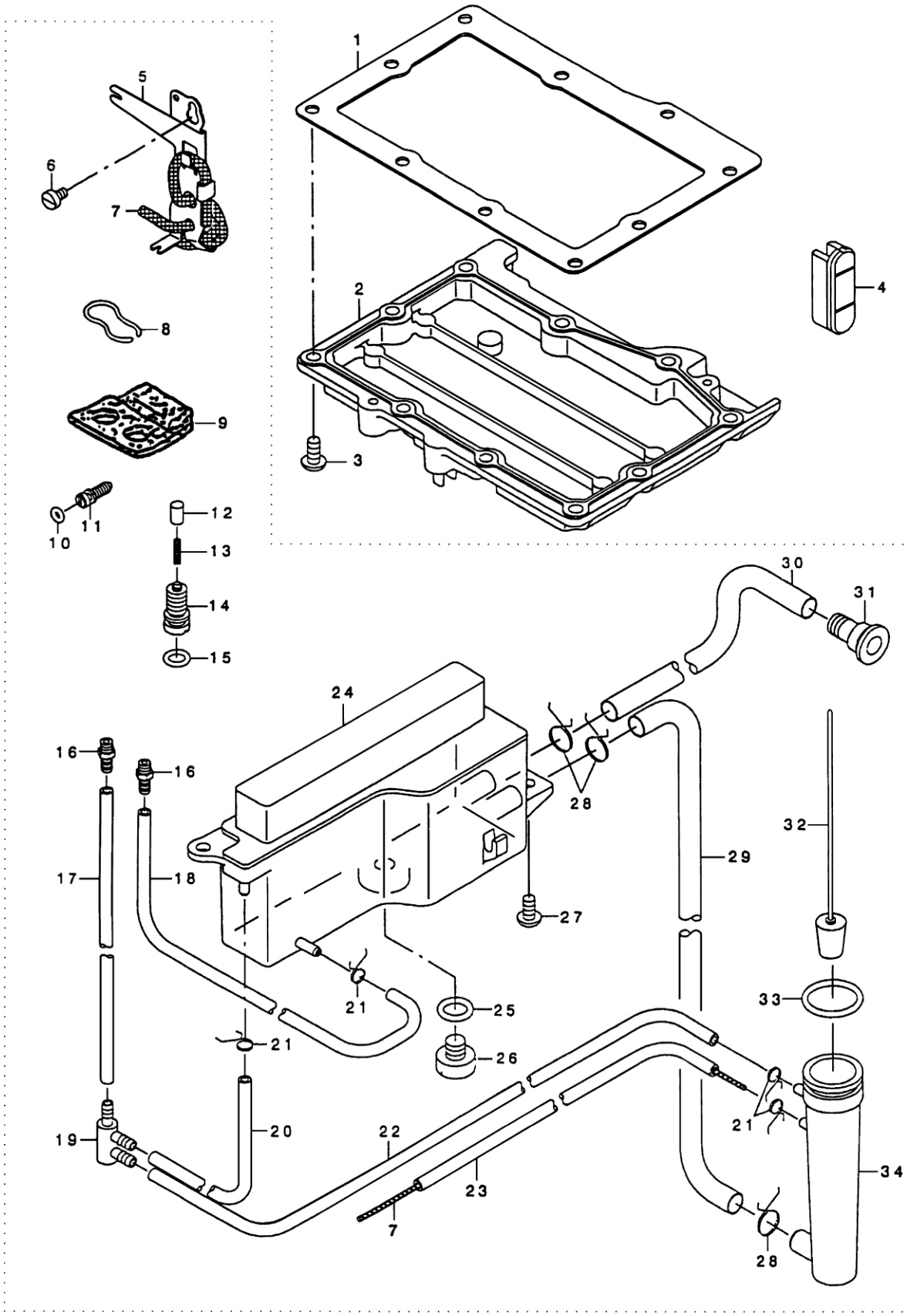
Thread trimmer components(8991)



Thread trimmer components(8991)

Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
1	11230004		Housing 14P	1
2	11230005		Pin contact	1
3	11212025		Ground wire asm.	1
4	114S17001		Screw	2
5	11512001		Partiality shank asm.	1
6	113S17002		Screw	2
7	11319002		Motorial knife	1
8	11307001		Knife bracket	1
9	113S16001		Nut	1
10	115S20001		Screw	2
11	11505001		Knife shaft connecting rod	1
12	11319001		Secant knife	1
13	113S17001		Screw	1
14	11312003		Protect needle patch	1
15	W02004		Washer	1
16	114S11009		Screw	1
17	11504001		Thread shear rock arm	1
18	113S11002		Screw	2
19	11511001		Positioning block	1
20	11303003		Thread shear cam rock arm assy	1
21	113S14001		Screw	1
22	11503005		Short bush	1
23	116S14005		screw	1
24	11310001		Thread shear cam	1
25	11304002		Thread shear rock arm shaft	1
26	11503004		Thread shear rock arm	1
27	11322002		Spring cover	1
28	11327002		Spring	1
29	11527001		Spring	1
30	1150400200		Thread shear rock arm shaft	1
31	116S14003		Screw	1
32	11324001		Rool shaft assy	1
33	113S16001		Nut	1
34	11302002		Thread shear shaft	1
35	H03006		Retaining ring	1
36	11322003		Magnetic plug cushion mat	1
37	115S20003		Hinge screw	1
38	11512003		Driving plate	1
39	115S20002		Plunger arm pin	1
40	114S16008		Nut	2
41	11530002		Reverse feed solenoid plunger	1
42	1153000200		Magnetic plug	1
43	11512002		Magnetic plug cushion mat	1
44	11528002		Wisher	1
45	115S16001		Nut	1
46	101S11026		Screw	1
47	S04008		Screw	4
48	11309030		pole	1

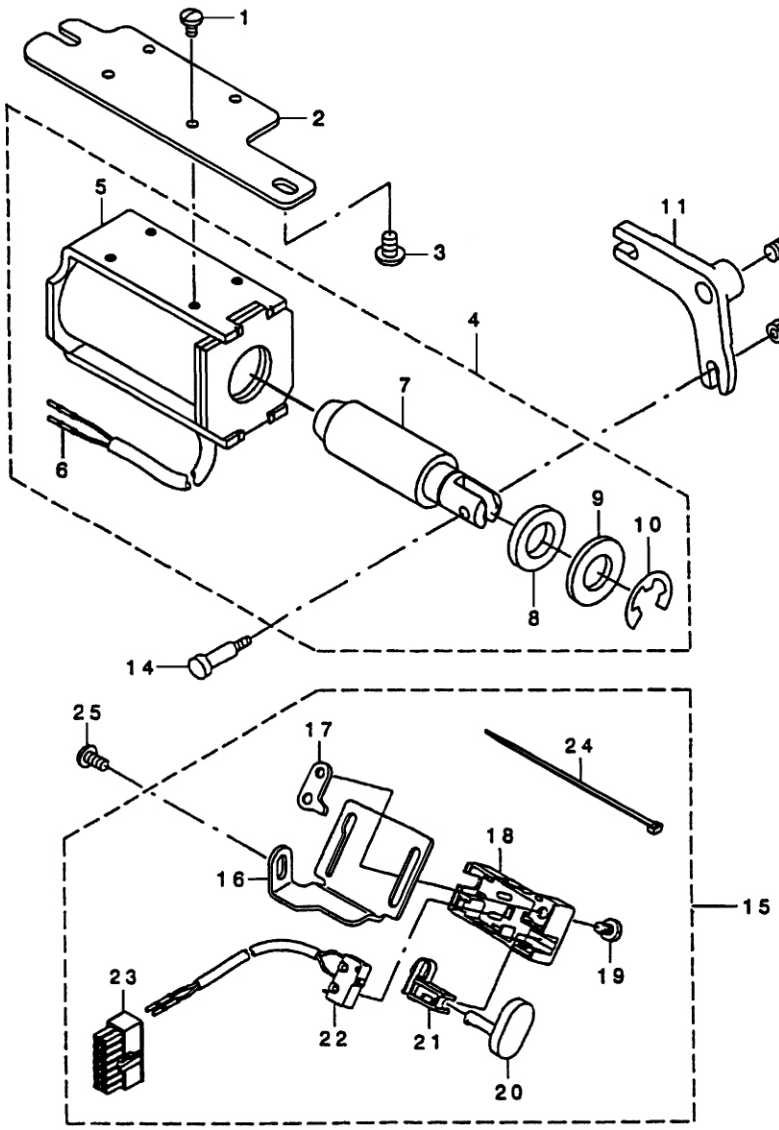
Oil lublication components



Oil lublication components

Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
1	11422018	236-28100	Gear box packing	1
2	11401005	236-28001	Gear box cover	1
3	101S11016	SS-6121410-SP	Screw SM3/16"×28 L=10	10
4	11411015	236-29108	Oil sight window	1
5	11412034	236-29207	Oil wick support	1
6	101S11005	SS-6090620-TP	Screw SM9/64"×40 L=6	1
7	20523003	CQ-2000000-01	Oil wick	1
8	11429002	B3529-226-000	Oil felt presser	1
9	10423002	B3528-552-000	Oil return felt	1
10	O01038		Rubber ring	1
11	114S30015		Oil adjusting screw	1
12	10526003	236-28803	Plunger	1
13	11427021	236-28902	Plunger spring	1
14	114S30010	236-29009	Screw	1
15	O01036	R0-0681901-00	Rubber ring	1
16	114S30009	236-29801	Lubrication connector	2
17	11421002	236-30007	Tube	1
18	11421002	236-30007	Tube	1
19	11436005	236-29504	Distributor	1
20	11421002	236-30007	Tube	1
21	11436003	236-29306	Pipe stopper A	4
22	11421002	236-30007	Tube	1
23	11421002	236-30007	Tube	1
24	1141101100	236-28555	Oil tank asm.	1
25	10128016		Washer	1
26	114S11007	SS-6700710-SH	Screw SM5/16"×24 L=7	1
27	101S11001	SS-4120915-SP	Screw SM3/16"×28 L=9	1
28	11436004	236-29405	Pipe stopper B	3
29	11421001	BP-8000000-00	Tube	1
30	11421001	BP-8000000-00	Tube	1
31	11436006	236-29603	Oil inlet	1
32	11431005		Floater asm.	1
33	10122019	R0-1952401-00	Rubber ring	1
34	11411014	236-28704	Floater case	1

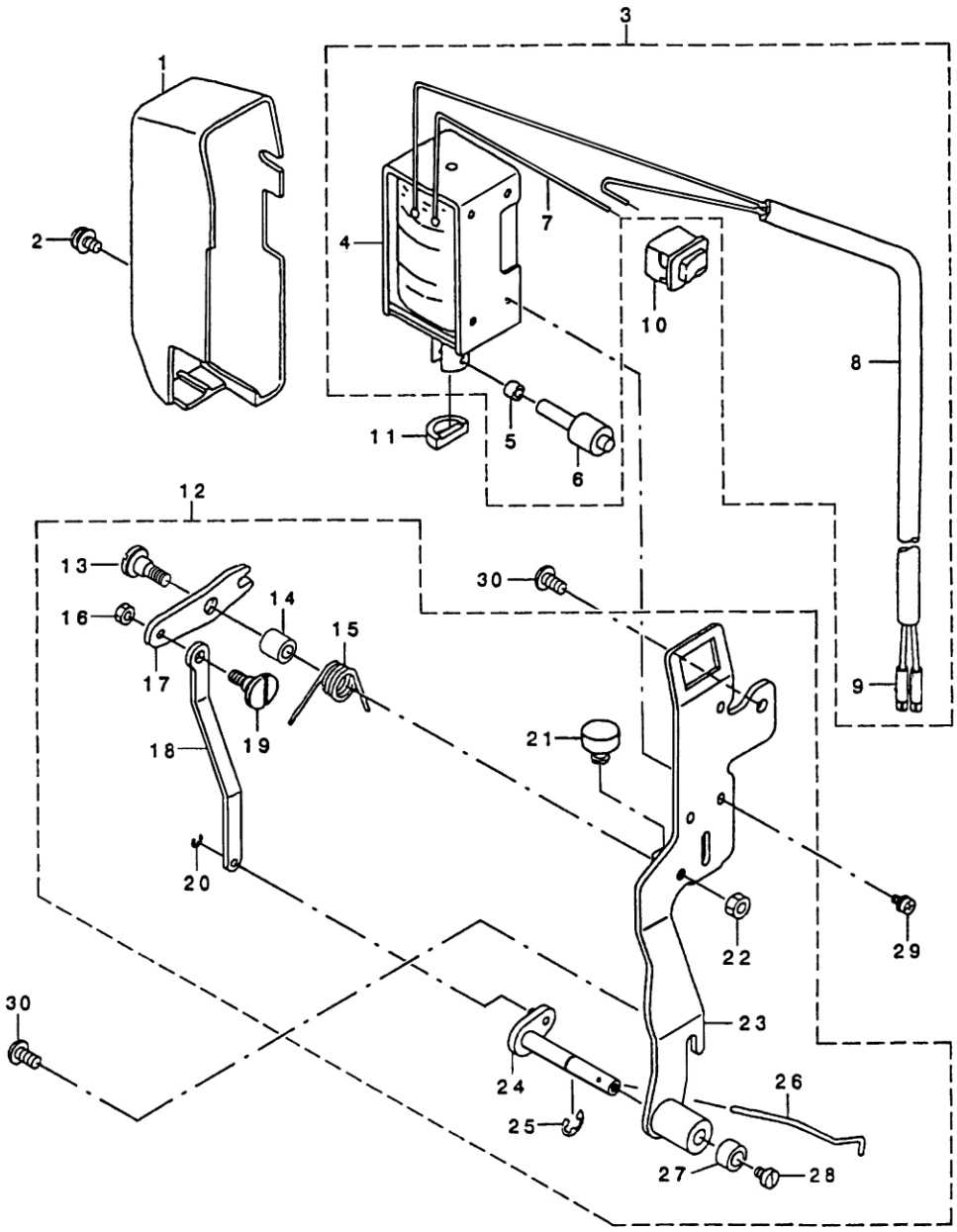
Automatic reverse feed components



Automatic reverse feed components

Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
1	114S11009		Screw SM11/64"×40 L=7	4
2	11412035	236-31203	Reverse feed solenoid base	1
3	101S11026	SS-4150915-SP	Screw SM15/64"×28 L=9	2
4	1143000800		Reverse feed solenoid base asm.	1
5	11430009	236-31005	Reverse feed solenoid	1
6	11430011	HK-0346400-0B	Pim contact	2
7	11430022	236-31104	Reverse feed solenoid plunger	1
8	11222006	D2468-555-B00	Rubber plunger	1
9	W01014	WP-1703001-SC	Washer	1
10	H05014	RE-1200000-K0	E-ring	1
11	11404021	236-31302	Reverse feed arm	1
12	114S20006	SD-0951501-SP	Screw	1
13	114S16008	NS-6110350-SP	Nut	2
14	114S20005	113-14408	Plunger arm pin	1
15	1143001200	236-31757	Reverse feed switch asm.	1
16	11412036	236-32003	Reverse feed switch base	1
17	11412037	236-32102	Reverse feed switch base guide	1
18	11411016	236-31708	Reverse feed switch cover	1
19	101S11025	SS-7110740-TP	Screw SM11/64"×40 L=7	1
20	11411017	236-31807	Reverse feed switch shaft	1
21	11411018	236-31906	Reverse feed switch support	1
22	11430013	236-32250	Reverse feed cord asm.	1
23	11430014	HK-03464101-40	Housing 14p	1
24	11211005	EA-9500B01-00	Cable band	1
25	101S11001	SS-4120915-SP	Screw SM3/16"×28 L=9	1

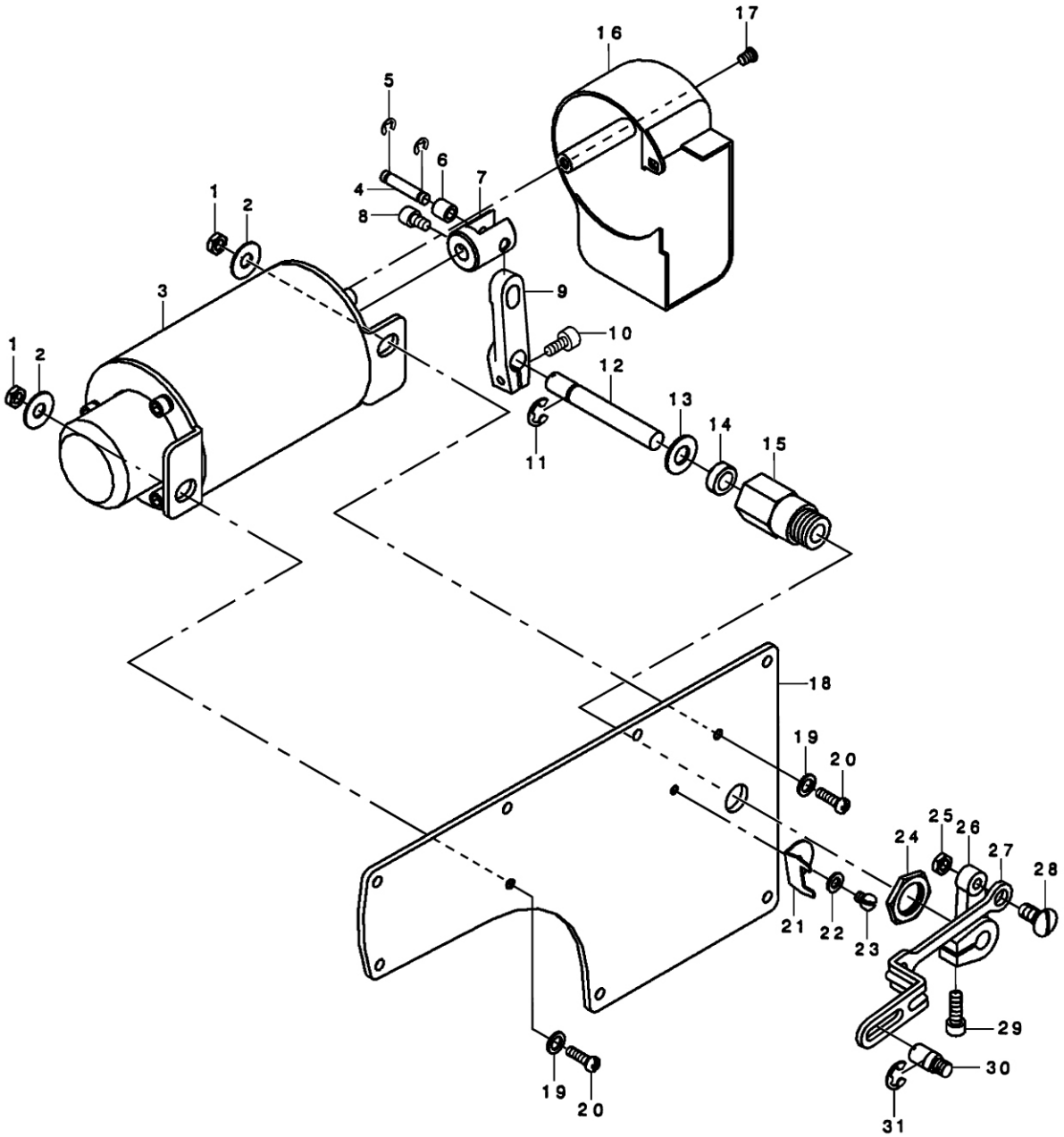
Automatic wiper components



Automatic wiper components

Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
1	11211003	110-72709	Wiper cover	1
2	S04008	SL-4030621-SS	Screw M×6	1
3	1123001000		Wiper solenoid asm.	1
4	11230010	111-10301	Wiper solenoid	1
5	11408012	111-11804	Wiper link collar	1
6	11426015	111-12000	Wiper solenoid pin	1
7	11430019	HW-2003900-00	Electric wire	1
8	11430020	HW-5000700-00	Electric wire	1
9	11430018	HK-0346400-0B	Pim contadt	2
10	11230011	HA-0005900-00	Power switch	1
11	11222008	111-10509	Wiper rubber B	1
12	1141203500		Wiper base asm.	1
13	114S20008	SD-0650321-TP	Screw D=6.5 H=3.2	1
14	11408010	111-10707	Wiper hinge screw collar	1
15	11427022	111-10806	Wiper spring	1
16	114S16009	NS-6090310-SP	Nut SM9/64"×40	1
17	11412036	111-10608	Wiper link A	1
18	11405012	236-33209	Wiper link B	1
19	114S20007	111-11507	Wiper link B,hinge dcrew	1
20	H05019	RE-0250000-K0	E-ring	1
21	11230010	111-10400	Wiper rubber A	1
22	114S16010	NS-6110310-SP	Nut SM11/64"×40	1
23	11412036	236-33159	Wiper base	1
24	1140402200	236-33357	wiper shaft asm.	1
25	H05006	RE-0500000-K0	E-ring	1
26	11413008	111-11606	Wiper	1
27	11408011	111-11309	Bradket installing collar	1
28	114S11005	SS-6090540-SP	Screw SM9/64"×40 L=5	1
29	S04008	SL-4030641-SE	Screw M3×6	3
30	114S30011	SS-4120915-SP	Screw SM3/16"×28 L=9	2

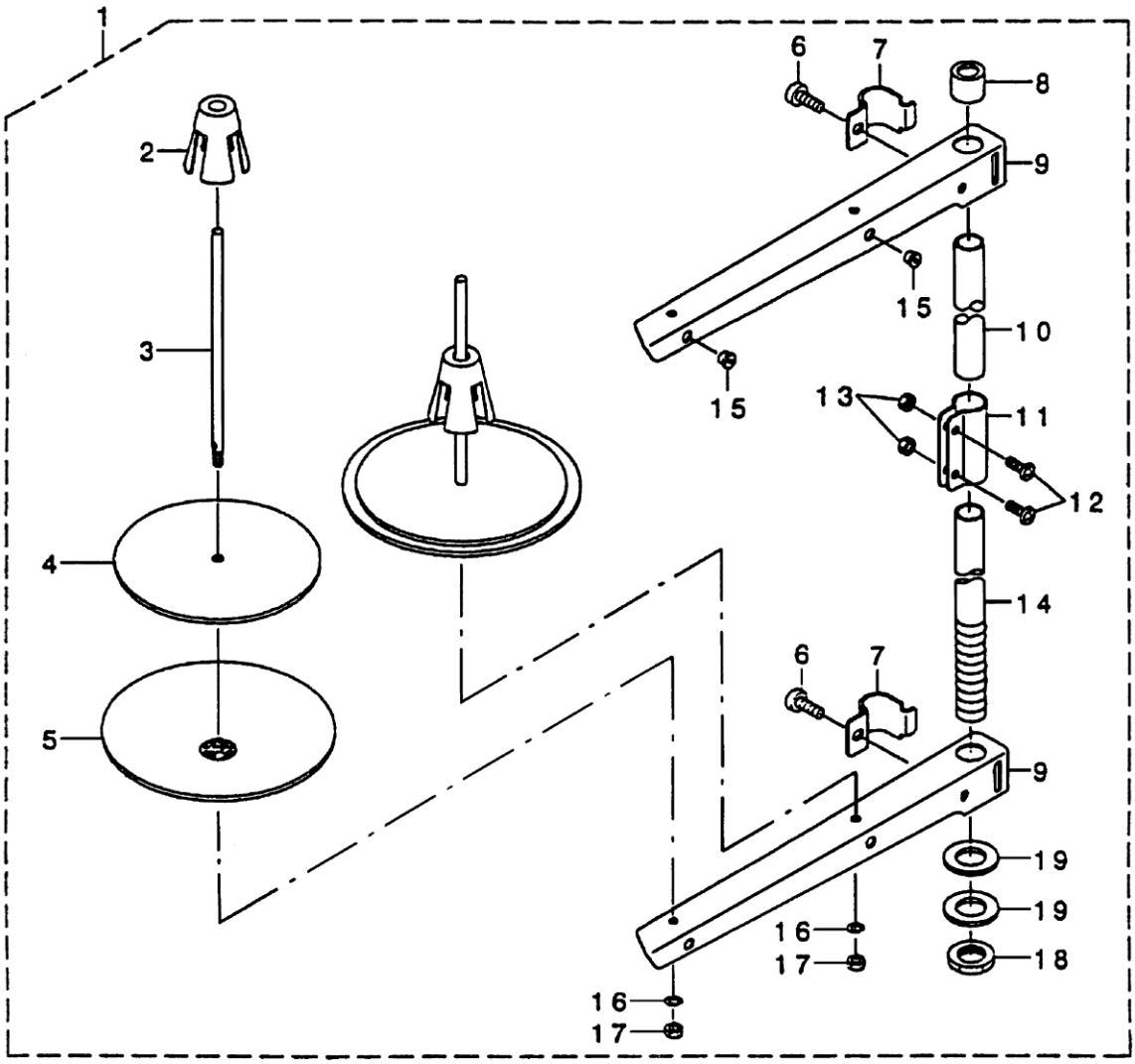
Auto lifter components



Auto lifter components

Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
1	112S16012		Nut	2
2	11428007		Washer	2
3	11230013		Magnetic plug asm	1
4	11226007		Magnetic plug pin	1
5	H05003		E-ring	2
6	11203003		Sleeve	1
7	11201003		Magnetic Plug pin tie-in	1
8	S05038		Screw	1
9	11204005		Magnetic crank	1
10	S05013		Screw	1
11	H05011		E-ring	1
12	11202003		Automated presser foot shaft	1
13	11228003		Washer	1
14	11222016		Oil seal	1
15	11203002		Sleeve	1
16	11211006		Wiper cover	1
17	S04022		Screw	2
18	11412002		Side plate	1
19	11228001		Washer	1
20	112S11015		Screw	1
21	11212037		Pull rod bracket	1
22	11228002		Pull rod bracket washer	1
23	112S11014		Screw	1
24	112S16011		Nut	1
25	112S16012		Nut	1
26	11204004		Crank	1
27	11412053		Pull rod	1
28	112S20008		Screw	1
29	S05004		Screw	1
30	112S20009		Screw	1
31	H05013		E-ring	1

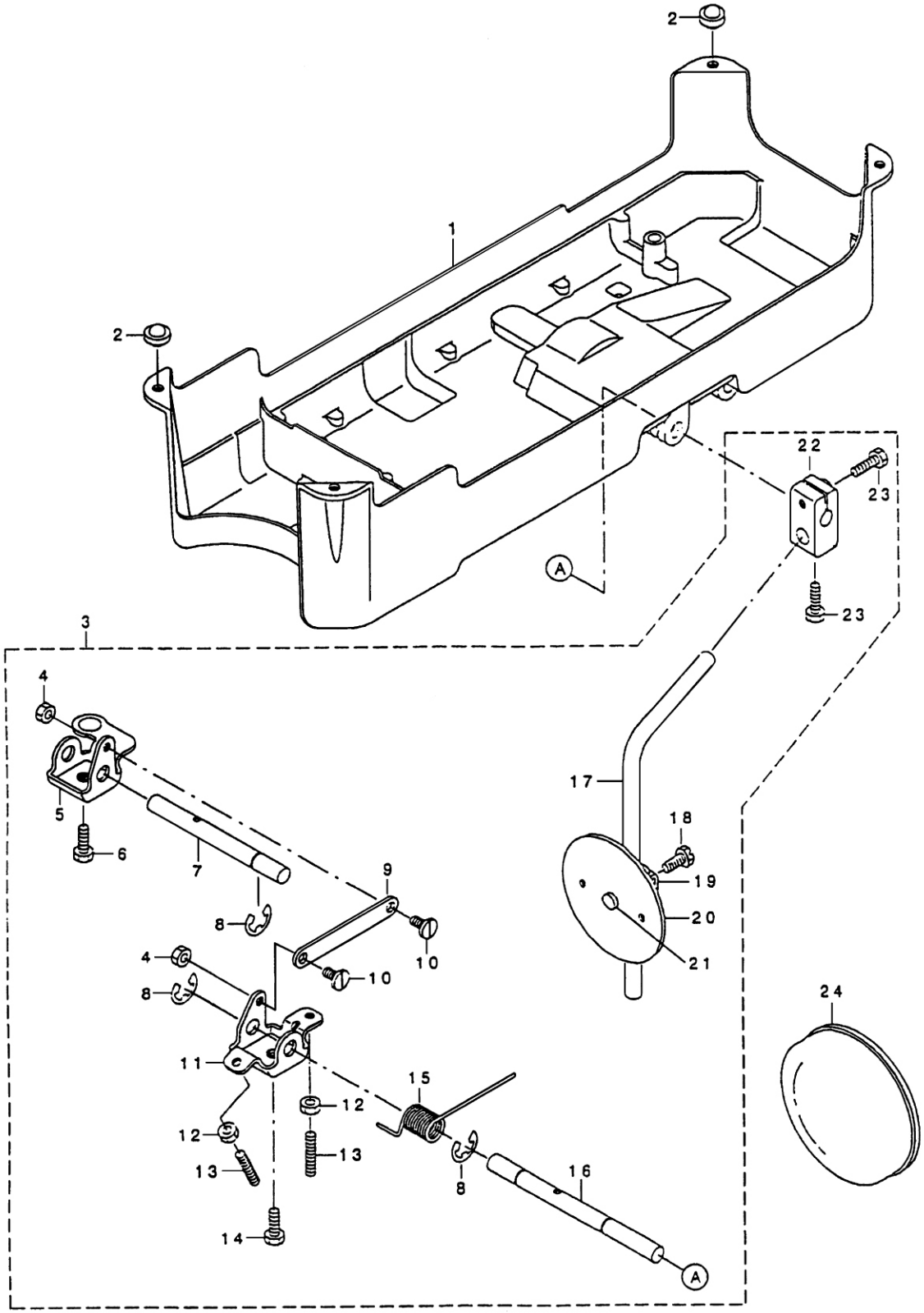
Thrread stand components



Thrread stand components

Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
1	1013100700	229-30358	Thread stand asm.	1
2	10111014	229-31109	Spool retainer	2
3	10131010	229-31000	Spool pin	2
4	10123008	229-30903	Spool rest cushion	2
5	10111013	229-30804	Spool rest	2
6	S04013	SM-6061610-SC	Screw M6 L=16	2
7	10112041	229-30705	Thread guide arm joint	2
8	10122028	229-31406	Spool rest rod rubber cap	1
9	10112040	229-30507	Spool rest arm	2
10	10131009	229-30408	Spool rest rod,upper	1
11	10112039	229-31307	Spool rest rod joint	1
12	S04018	SM-4051405-SE	Screw M5 L=14	2
13	N01002	NM-6050001-SE	Nut M5	2
14	10131008	229-30309	Spool rest rod ,lower	1
15	10113010	229-31208	Thread guide	2
16	10128009	WS-0510002-KN	Spring washer	2
17	101S16006	NM-6050001-SE	Nut M5	2
18	N02003	NM-6160511-SE	Nut M16×1.5	1
19	10128010	WP-1702600-S0	Washer	2

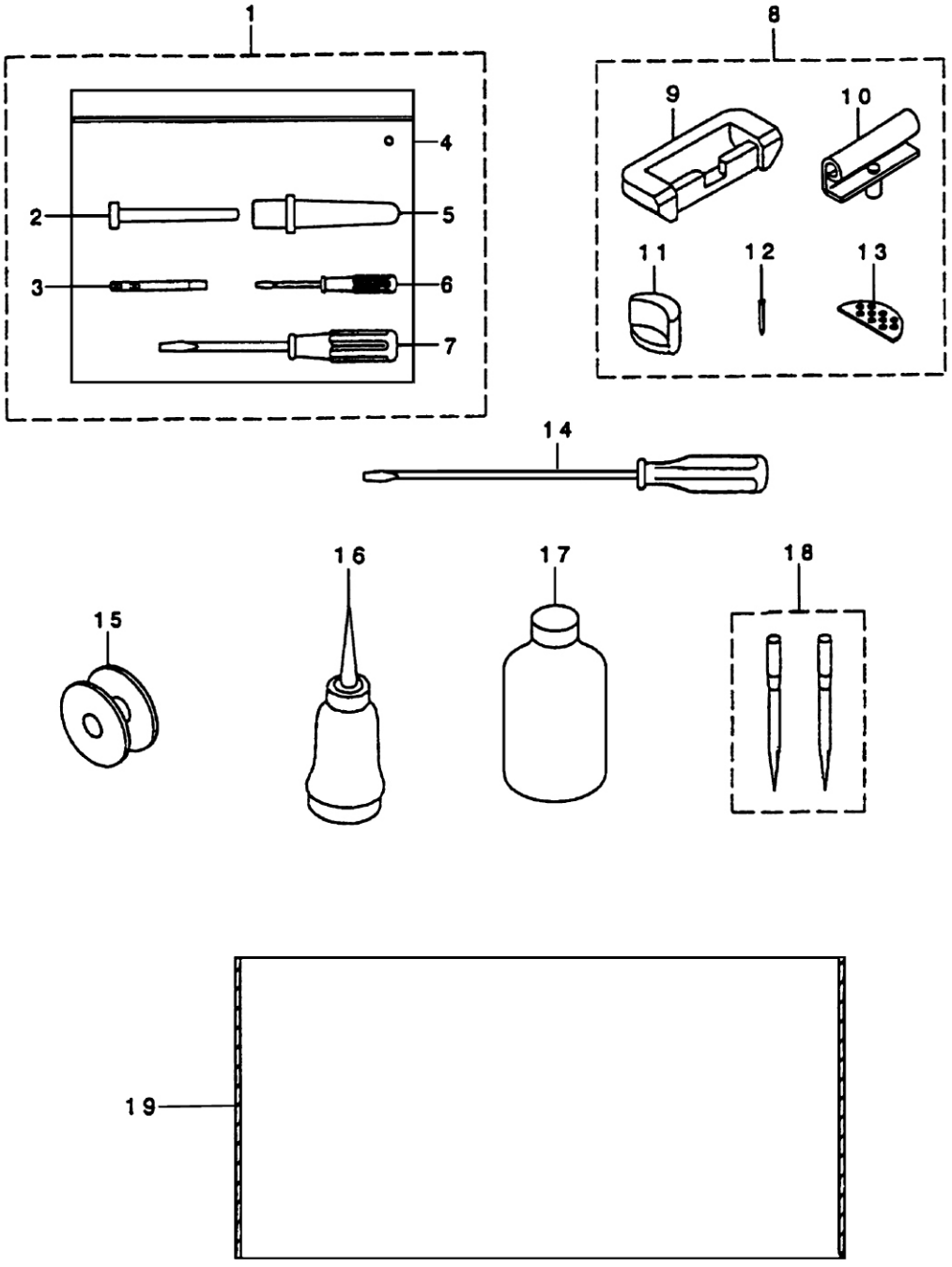
Under cover & knee lifter components



Under cover & knee lifter components

Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
1	11401008	236-39008	Under cover	1
2	10122022	101-62600	Rubber cushion	4
3	1141204000		Knee lifter asm.	1
4	114S16011	NS-6150310-SP	Nut SM15/64"×28	2
5	11404025	236-39206	Connecting rot	1
6	114S12002	SM-9061853-SR	Screw M6 L=17.5	1
7	11402024	236-39404	Knee press rod(short)	1
8	H05001	RE-1000000-K0	E-ring	3
9	11405014	236-39602	Connecting rot	1
10	114S20009	SD-0720331-SP	Hinge screw D=7.24 H=3.3	2
11	11404024	236-39107	Bracket	1
12	N01007	NM-6060001-SE	Nut M6	2
13	101S15012	SM-8063012-TR	Screw M6 L=30	2
14	114S12002	SM-9061853-SR	Screw M6 L=17.5	1
15	11427023	236-39503	Spring	1
16	11402023	236-39305	Knee press rod(long)	1
17	10112028	229-34608	Knee pad upright shaft	1
18	101S12004	SM-9061203-SE	Screw M6 L=12	1
19	10112030	229-34301	Knee pad plate support	1
20	10112029	229-34202	Knee pad plate	1
21	10122025	229-34400	Knee pad plate rubber	1
22	10101009	229-32404	Bracket	1
23	101S12003	SM-9062053-SR	Screw M6 L=20	2
24	10122024	229-34509	Knee pad plate cover	1

Accessorie part components



Accessorie part components

Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
1	1143100600	236-39750	Accessorie bag asm.	1
2	11411023	236-39701	Knee lifter presser rod	1
3	11212001	229-58300	Needle thread guide pin	1
4	11431007	229-32800	Accessorie bag	1
5	10111011	229-31604	Frame support bar	1
6	10131004	229-33204	Screw driver,small	1
7	10131003	229-33105	Screw driver,middle	1
8	1011203100	229-58052	Tuvver hinge asm.	1
9	10122026	229-26000	Rubber cushion	2
10	10112031	229-26356	Hinge compl	2
11	10122031	229-58003	Rubber cushion	2
12	101S30010	229-26208	Rubber cushion nail	8
13	10122022	229-26505	Washer	2
14	10131002	229-33006	Screw driver,large	1
15	10118003	B9117-552-A00	Bobbin	2
16	11411026	B9121-012-0A0	Oiler asm.	1
17	11411027	MDF-Rx1600C0	Defrix oil No.1	1
18	11217001	MDB-100B1102	Needle DB×1#11-2	4
19	11411025	236-39800	Frame vinyl cover	1

Table & Stand components

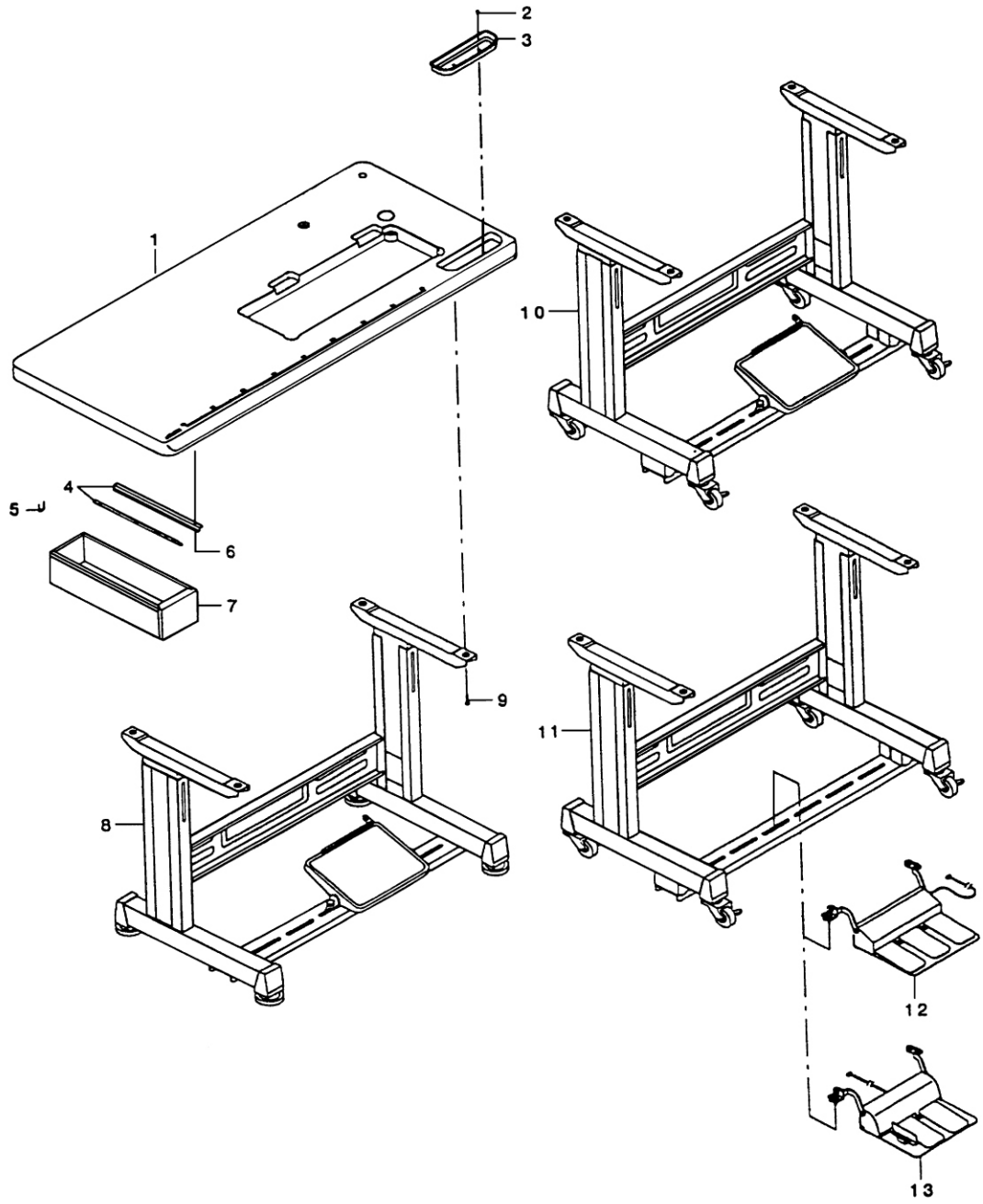
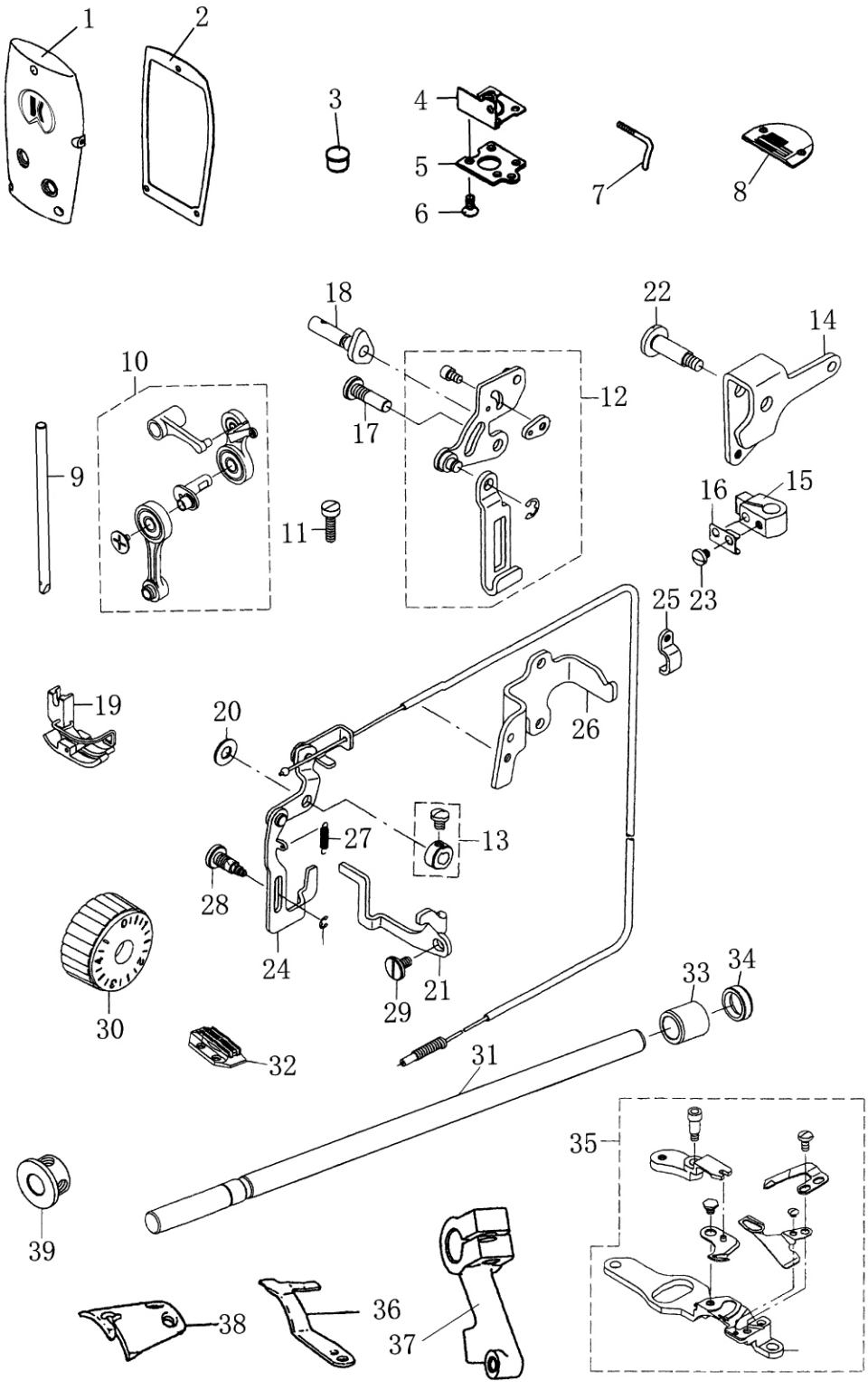


Table & Stand components

Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
1	11432001	236-42200	Table	1
2	114S30014	SK-3382001-SC	Wood screw D=3.8 L=20	4
3	11431012	111-56007	Case	1
4	11431015	111-55207	Drawer support	2
5	11431017	D8204-555-D00	Drawer stopper	1
6	114S30012	SK-3311600-SE	Wood screw D=3.1 L=16	4
7	11431014	111-55108	Drawer	1
8	11432003	111-57567	T-leg junction	1
9	114S30013	SK-3513200-SC	Wood screw D=5.1 L=32	4
10	11432004	111-59365	T-stand jrnction	1
11	11432005	111-59357	T-stand asm.	1
12	11432006	GPK-700010A0	3-Foint pekal,70	1
13	11432007	GPK-710010A0	2-Foint pekal,71	1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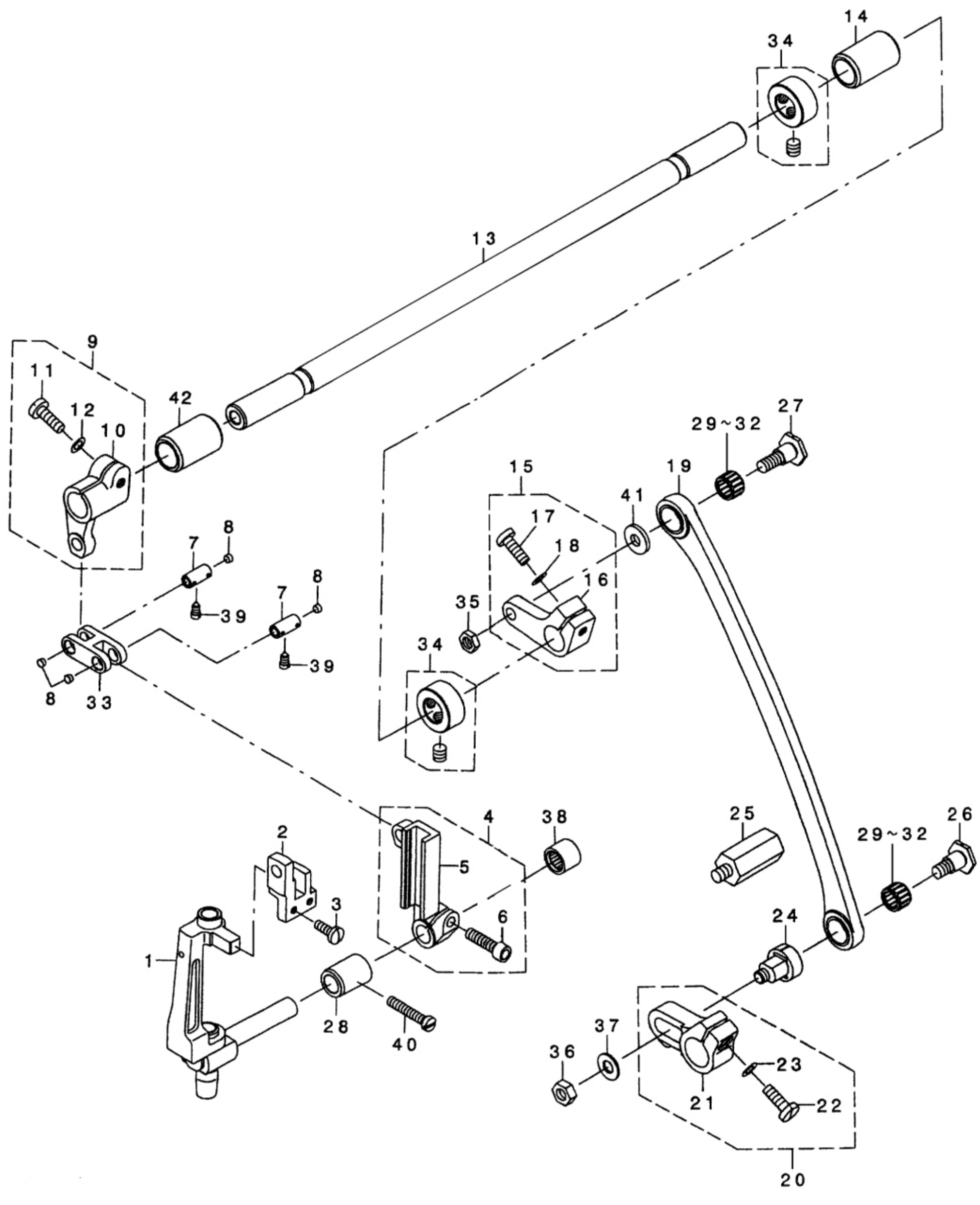
Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
1	13101002	400-00209	Face plate	1
2	13122001	400-00210	Face plate packing	1
3	13122003	TA-1250804-RO	Rubber plug	1
4	13122002	400-00212	Pressing plate packing	1
5	13112001	113-00407	Presser bar support	1
6	131S02001	SS-1120710-SP	Screw 3/16-28 L=6.5	4
7	13113001	113-05513	Arm Thread gide .C	1
8	13115001	113-00308	Throat plate	1
9	13102001	400-00220	Needle bar A	1
10	1313800100	400-00228	Thread ake-up compl.	1
11	131S01001	SS-6151920-TP	Screw 15/64×28 L=19	1
12	1311200600	400-00228	Lifting plate asm.	1
13	13108001	CS-064061A-SP	Thrust collar asm.	1
14	13112002	400-00230	Lifting lever link	1
15	13109001	400-00231	Presser bar guide bracket	1
16	13112014	400-00232	Guide bracket plate	1
17	131S20001	113-01702	:ink shaft	1
18	1311000100	400-00233	Presser lifter cam compl.	1
19	1311600100	D1524-415-BBC	Presser foot asm.	1
20	13128001	WP-0651001-SC	Washer	2
21	13112004	400-00333	Thread release link	1
22	13120001	GAK-A1843000	Knee lifter link fulcrum shaft	1
23	131S01002	SS-7110410-SP	Screw 11/64×40 L=4	1
24	1311200500	400-00327	Thred release wire asm.	1
25	13112008	400-00334	Wire guide	1
26	13112009	400-00332	Eire holder bracket	1
27	13127001	113-05901	Differential plate spring	1
28	131S20002	113-06107	Differential plate shaft	1
29	131S20003	SD-0640261-SP	Hinge screw D=3.65 H=2.6	1
30	13111001	400-11723	Feed dial	1
31	13102003	400-00247	Feed rocker shaft	1
32	13114001	D1609-415-B00	Feed dog	1
33	13103001	400-00248	Horizontal feed shaft metal	1
34	1312200500		Oil seal	1
35	1311900100	400-00322	Knife unit	1
36	13119002	06A-0016	Secant knife	1
37	13104006		Thread shear rock arm	1
38	13119003	06A-0001	Motorial knife	1
39	13208005	236-12716	Thrusr cllar	1

JK-8995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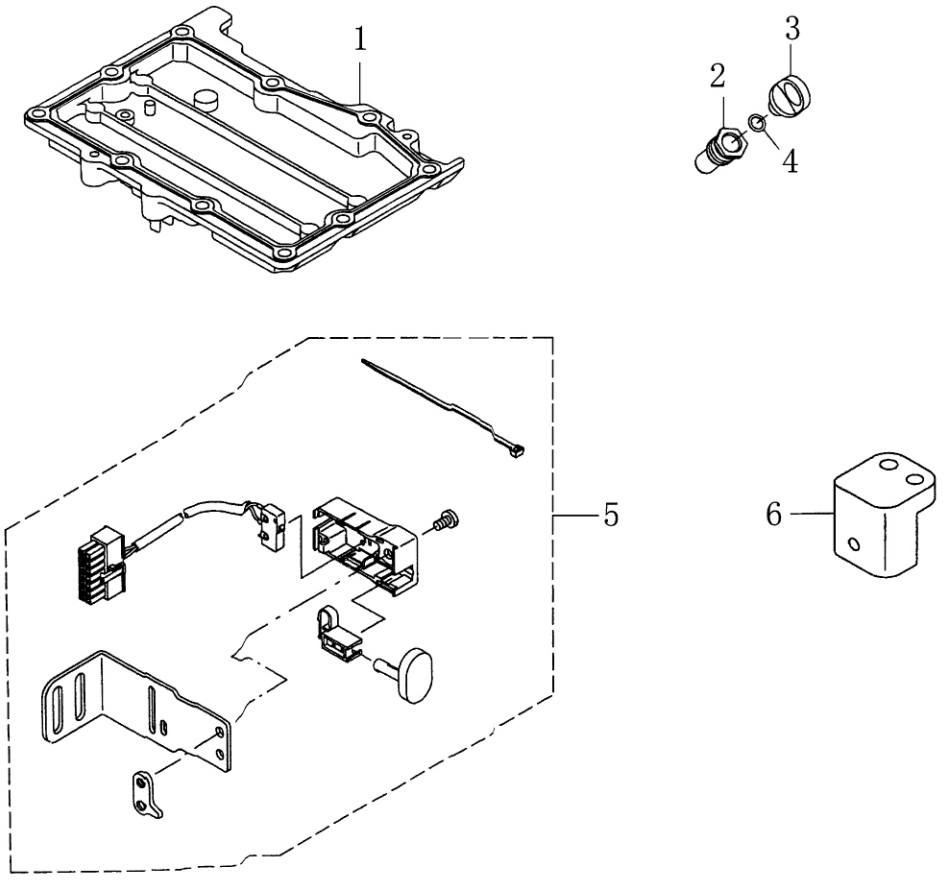
JK-8995

Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
1	1310100300	400-00281	Rocking base compl.	1
2	13109003	400-00289	Rockign base guide	1
3	101S11009	SS-7091110-TP	Screw	1
5	13109004	400-00292	Slide block guide	1
6	131S13001		Screw M5X0.8 L=16	1
7	13126002	400-00293	Link fin	2
8	13111002	TA-0340201-RO	Plug D=3.3 × 3.9 L=S	4
10	13104003	400-00296	Driving crank asm.,front	1
11	101S11016	SS-7121410-TP	Screw	1
12	10128003	WP-0480856-SP	Washer	1
13	13102005	400-00298	Needle feed shaft	1
14	13103002	400-00299	Needle feed shaft metal	1
16	13104004	400-00302	Drving crank,rear	1
17	101S11016	SS-7121410-TP	Screw	1
18	10128003	WP-0480856-SP	Washer	1
19	13105005	400-00304	Needle feed rod cpmpl.	1
20	13104005	400-00308	Needle feed arm	1
21	101S11016	SS-7121410-TP	Screw	1
22	10128003	WP-0480856-SP	Washer	1
24	131S20004	400-00309	Needle feed adjusting block	1
25	13109005	400-00311	Needle feed rod steut	1
26	131S20005	SD-0800801-TP	Step-screw D=8 H=8	1
27	131S20006	SD-0800802-TP	Step-screw D=8 H=8	1
28	13103003	112-14509	Bushing	1
29-32	10124001		Bearing	
33	13105006	B2906-415-000	Driving link	1
34	13108002	CS-120101B-SH	Thrusr cllar asm.	2
35	131N01002	NS-6150430-SP	Nut 15/64-28	2
36	13128001	WP-0651001-SC	Washer	1
38	131B07001		Bearing	1
39	131S01004	SS-6090660-TP	Screw 9/64 × 40 L=6	2
40	131S01005	SS-7112420-SP	Screw 11/64 × 40 L=24	1
41	13128006	WP-0602016-SP	Washer	1
42	13103008		Needle feed shaft metal	1

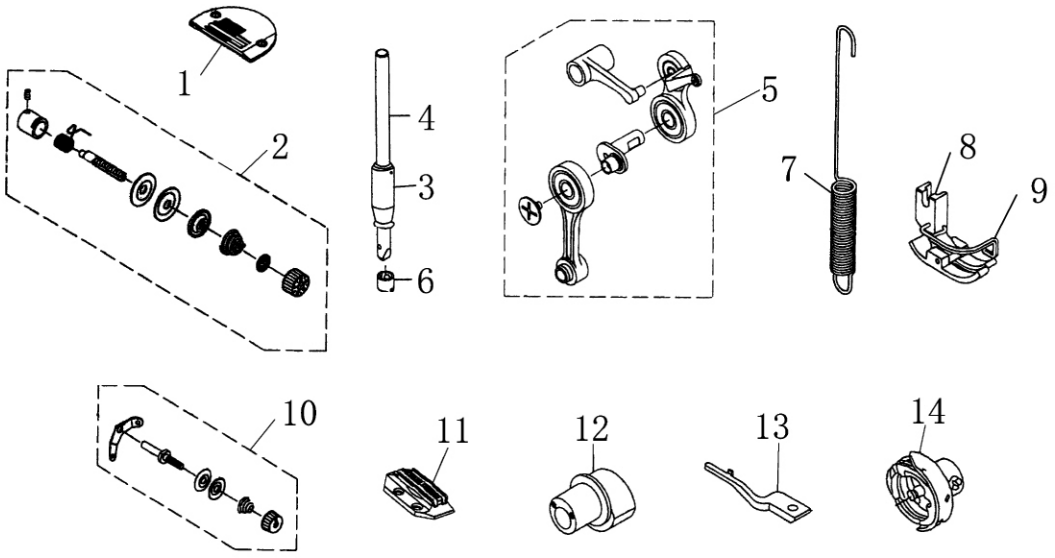
JK-8995



JK-8995

Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
1	13101004	400-11344	Gear boa cover	1
2	13121001	400-00343	Lubicating inlet	1
3	13111003	400-00344	Lubicating inlet cap	1
4	13122004	RO-0481901-00	Rubber ring	1
5	1311201100	400-00349	Reverse feed switcj asm.	1
6	13109006	400-00351	Reverse feed base	1
7	1311201200	400-00355	Wiper base compl.	1

JK-8990DH



JK-8990DH

Ref. No.	Part No.	Ref.Part.No.	Description	Amt.
1	10115012	114-00801	Throat plate	1
2	1121300400	236-26062	Thraead tension asm.	1
3	11403031	236-45609	Needle bar meal,lower	1
4	11402032	400-00221	Needle bar	1
5	1143800500	236-45559	Thread ake-up compl.	1
6	11412063	B1418415H00	Needle thread guide	1
7	11427024	B1505552000A	feed adjusting spring	1
8	1011600400	D1524555EBL	Presser foot asm.	1
9	11427025			1
10	1141300900	110-73954	Thraead tension asm	1
11	11214002	114-03003	Feed dog	1
12	11410022	236-19000	Feed driving cam	1
13	11412064	236-46003	Inner hook presser	1
14	11218502	110-92251	Hook asm	1