

# INSTRUCTION MANUAL BOOK & PARTS BOOK

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## 3900AUT/3900LH-AUT Series HIGH-SPEED LOCKSTITCH SEWING MACHINE WITH MOTOR BUILT IN HEAD



# TO ENSURE SAFE USE OF YOUR SEWING MACHINE

For the sewing machine, automatic machine and ancillary devices (hereinafter collectively referred to as "machine"), it is inevitable to conduct sewing work near moving parts of the machine. This means that there is always a possibility of unintentionally coming in contact with the moving parts. Operators who actually operate the machine and maintenance personnel who are involved in maintenance and repair of the machine are strongly recommended to carefully read to fully understand the following **Safety precautions** before using/maintaining the machine. The content of the **Safety precautions** includes items which are not contained in the specifications of your product.

The risk indications are classified into the following three different categories to help understand the meaning of the labels. Be sure to fully understand the following description and strictly observe the instructions.

## ( I ) Explanation of risk levels

	<b>DANGER :</b> This indication is given where there is an immediate danger of death or serious injury if the person in charge or any third party mishandles the machine or does not avoid the dangerous situation when operating or maintaining the machine.
	<b>WARNING :</b> This indication is given where there is a potentiality for death or serious injury if the person in charge or any third party mishandles the machine or does not avoid the dangerous situation when operating or maintaining the machine.
	<b>CAUTION :</b> This indication is given where there is a danger of medium to minor injury if the person in charge or any third party mishandles the machine or does not avoid the dangerous situation when operating or maintaining the machine.
	Items requiring special attention

## ( II ) Explanation of pictorial warning indications and warning labels

Pictorial warning indication		There is a risk of injury if contacting a moving section.	Indication label		There is a risk of entanglement in the belt resulting in injury.
		There is a risk of electrical shock if contacting a high-voltage section.			The correct direction is indicated.
		There is a risk of a burn if contacting a high-temperature section.			Connection of a earth cable is indicated.

**①** • There is the possibility that slight to serious injury or death may be caused.  
 • There is the possibility that injury may be caused by touching moving part.  
**②** • To perform sewing work with safety guard.  
 • To perform sewing work with safety cover.  
 • To perform sewing work with safety protection device.  
**③** • Be sure to turn the power OFF before carrying out "machine-head threading," "needle changing," "bobbin changing" or "oiling and cleaning."

# **SAFETY PRECAUTIONS**

Accident means "to cause personal injury or death or damage to property."



## **DANGER**

1. When it is necessary to open the control box containing electrical parts, be sure to turn the power off and wait for five minutes or more before opening the cover in order to prevent accident leading to electrical shock.



## **CAUTION**

### **Basic precaution**

1. Be sure to read the instruction manual and other explanatory documents supplied with accessories of the machine before using the machine. Carefully keep the instruction manual and the explanatory documents at hand for quick reference.
2. The content of this section includes items which are not contained in the specifications of your product.
3. Be sure to wear safety goggles to protect against accident caused by needle breakage.
4. Those who use a heart pacemaker have to use the machine after consultation with a medical specialist.

### **Safety devices and warning labels**

1. Be sure to operate the machine after verifying that safety device(s) is correctly installed in place and works normally in order to prevent accident caused by lack of the device(s).
2. If any of the safety devices is removed, be sure to replace it and verify that it works normally in order to prevent accident that can result in personal injury or death.
3. Be sure to keep the warning labels adhered on the machine clearly visible in order to prevent accident that can result in personal injury or death. If any of the labels has stained or come unstuck, be sure to change it with a new one.

### **Application and modification**

1. Never use the machine for any application other than its intended one and in any manner other than that prescribed in the instruction manual in order to prevent accident that can result in personal injury or death. GLOBAL assumes no responsibility for damages or personal injury or death resulting from the use of the machine for any application other than the intended one.
2. Never modify and alter the machine in order to prevent accident that can result in personal injury or death. GLOBAL assumes no responsibility for damages or personal injury or death resulting from the machine which has been modified or altered.

### **Education and training**

1. In order to prevent accident resulting from unfamiliarity with the machine, the machine has to be used only by the operator who has been trained/educated by the employer with respect to the machine operation and how to operate the machine with safety to acquire adequate knowledge and operation skill. To ensure the above, the employer has to establish an education/training plan for the operators and educate/train them beforehand.

### **Items for which the power to the machine has to be turned off**

Turning the power off: Turning the power switch off, then removing the power plug from the outlet. This applies to the following.

1. Be sure to immediately turn the power off if any abnormality or failure is found or in the case of power failure in order to protect against accident that can result in personal injury or death.
2. To protect against accident resulting from abrupt start of the machine, be sure to carry out the following operations after turning the power off. For the machine incorporating a clutch motor, in particular, be sure to carry out the following operations after turning the power off and verifying that the machine stops completely.
  - 2-1. For example, threading the parts such as the needle, looper, spreader etc. which have to be threaded, or changing the bobbin.
  - 2-2. For example, changing or adjusting all component parts of the machine.
  - 2-3. For example, when inspecting, repairing or cleaning the machine or leaving the machine.
3. Be sure to remove the power plug by holding the plug section instead of the cord section in order to prevent electrical-shock, earth-leakage or fire accident.
4. Be sure to turn the power off whenever the machine is left unattended between works.
5. Be sure to turn the power off in the case of power failure in order to prevent accident resulting of breakage of electrical components.

## **PRECAUTIONS TO BE TAKEN IN VARIOUS OPERATION STAGES**

### **Transportation**

1. Be sure to lift and move the machine in a safe manner taking the machine weight in consideration. Refer to the text of the instruction manual for the mass of the machine.

2. Be sure to take sufficient safety measures to prevent falling or dropping before lifting or moving the machine in order to protect against accident that can result in personal injury or death.
3. Once the machine has been unpacked, never re-pack it for transportation to protect the machine against breakage resulting from unexpected accident or dropping.

#### **Unpacking**

1. Be sure to unpack the machine in the prescribed order in order to prevent accident that can result in personal injury or death. In the case the machine is crated, in particular, be sure to carefully check nails. The nails have to be removed.
2. Be sure to check the machine for the position of its center of gravity and take it out from the package carefully in order to prevent accident that can result in personal injury or death.

#### **Installation**

##### **( I ) Table and table stand**

1. Be sure to use GLOBAL genuine table and table stand in order to prevent accident that can result in personal injury or death. If it is inevitable to use a table and table stand which are not GLOBAL genuine ones, select the table and table stand which are able to support the machine weight and reaction force during operation.
2. If casters are fitted to the table stand, be sure to use the casters with a locking mechanism and lock them to secure the machine during the operation, maintenance, inspection and repair in order to prevent accident that can result in personal injury or death.

##### **( II ) Cable and wiring**

1. Be sure to prevent an extra force from being applied to the cable during the use in order to prevent electrical-shock, earth-leakage or fire accident. In addition, if it is necessary to cable near the operating section such as the V-belt, be sure to provide a space of 30 mm or more between the operating section and the cable.
2. Be sure to avoid starburst connection in order to prevent electrical-shock, earth-leakage or fire accident.
3. Be sure to securely connect the connectors in order to prevent electrical-shock, earth-leakage or fire accident. In addition, be sure to remove the connector while holding its connector section.

##### **( III ) Grounding**

1. Be sure to have an electrical expert install an appropriate power plug in order to prevent accident caused by earth-leakage or dielectric strength voltage fault. In addition, be sure to connect the power plug to the grounded outlet without exceptions.
2. Be sure to ground the earth cable in order to prevent accident caused by earth leakage.

##### **( IV ) Motor**

1. Be sure to use the specified rated motor (genuine product) in order to prevent accident caused by burnout.
2. If a commercially available clutch motor is used with the machine, be sure to select one with an entanglement preventive pulley cover in order to protect against being entangled by the V-belt.

#### **Before operation**

1. Be sure to make sure that the connectors and cables are free from damage, dropout and looseness before turning the power on in order to prevent accident resulting in personal injury or death.
2. Never put your hand into the moving sections of the machine in order to prevent accident that can result in personal injury or death.  
In addition, check to be sure that the direction of rotation of the pulley agrees with the arrow shown on pulley.
3. If the table stand with casters is used, be sure to secure the table stand by locking the casters or with adjusters, if provided, in order to protect against accident caused by abrupt start of the machine.

#### **During operation**

1. Be sure not to put your fingers, hair or clothing close to the moving sections such as the handwheel, hand pulley and motor or place something near those sections while the machine is in operation in order to prevent accident caused by entanglement that can result in personal injury or death.
2. Be sure not to place your fingers near the surround area of the needle or inside the thread take-up lever cover when turning the power on or while the machine is in operation in order to prevent accident that can result in personal injury or death.
3. The machine runs at a high speed. Never bring your hands near the moving sections such as looper, spreader, needle bar, hook and cloth trimming knife during operation in order to protect your hands against injury. In addition, be sure to turn the power off and check to be sure that the machine completely stops before changing the thread.
4. Be careful not to allow your fingers or any other parts of your body to be caught between the machine and table when removing the machine from or replacing it on the table in order to prevent accident that can result in personal injury or death.
5. Be sure to turn the power off and check to be sure that the machine and motor completely stop before removing the belt cover and V-belt in order to prevent accident caused by abrupt start of the machine or motor.
6. If a servomotor is used with the machine, the motor does not produce noise while the machine is at rest. Be sure not to forget to turn the power off in order to prevent accident caused by abrupt start of the motor.
7. Never use the machine with the cooling opening of the motor power box shielded in order to prevent fire accident by overheat.

### Lubrication

1. Be sure to use GLOBAL genuine oil and GLOBAL genuine grease to the parts to be lubricated.
2. If the oil adheres on your eye or body, be sure to immediately wash it off in order to prevent inflammation or irritation.
3. If the oil is swallowed unintentionally, be sure to immediately consult a medical doctor in order to prevent diarrhea or vomiting.

### Maintenance

1. In prevention of accident caused by unfamiliarity with the machine, repair and adjustment has to be carried out by a service technician who is thoroughly familiar with the machine within the scope defined in the instruction manual. Be sure to use GLOBAL genuine parts when replacing any of the machine parts. GLOBAL assumes no responsibility for any accident caused by improper repair or adjustment or the use of any part other than GLOBAL genuine one.
2. In prevention of accident caused by unfamiliarity with the machine or electrical-shock accident, be sure to ask an electrical technician of your company or GLOBAL or distributor in your area for repair and maintenance (including wiring) of electrical components.
3. When carrying out repair or maintenance of the machine which uses air-driven parts such as an air cylinder, be sure to remove the air supply pipe to expel air remaining in the machine beforehand, in order to prevent accident caused by abrupt start of the air-driven parts.
4. Be sure to check that screws and nuts are free from looseness after completion of repair, adjustment and part replacement.
5. Be sure to periodically clean up the machine during its duration of use. Be sure to turn the power off and verify that the machine and motor stop completely before cleaning the machine in order to prevent accident caused by abrupt start of the machine or motor.
6. Be sure to turn the power off and verify that the machine and motor stop completely before carrying out maintenance, inspection or repair of the machine. (For the machine with a clutch motor, the motor will keep running for a while by inertia even after turning the power off. So, be careful.)
7. If the machine cannot be normally operated after repair or adjustment, immediately stop operation and contact GLOBAL or the distributor in your area for repair in order to prevent accident that can result in personal injury or death.
8. If the fuse has blown, be sure to turn the power off and eliminate the cause of blowing of the fuse and replace the blown fuse with a new one in order to prevent accident that can result in personal injury or death.
9. Be sure to periodically clean up the air vent of the fan and inspect the area around the wiring in order to prevent fire accident of the motor.

### Operating environment

1. Be sure to use the machine under the environment which is not affected by strong noise source (electromagnetic waves) such as a high-frequency welder in order to prevent accident caused by malfunction of the machine.
2. Never operate the machine in any place where the voltage fluctuates by more than "rated voltage  $\pm 10\%$ " in order to prevent accident caused by malfunction of the machine.
3. Be sure to verify that the air-driven device such as an air cylinder operates at the specified air pressure before using it in order to prevent accident caused by malfunction of the machine.
4. To use the machine with safety, be sure to use it under the environment which satisfies the following conditions:  
Ambient temperature during operation 5°C to 35°C  
Relative humidity during operation 35% to 85%
5. Dew condensation can occur if bringing the machine suddenly from a cold environment to a warm one. So, be sure to turn the power on after having waited for a sufficient period of time until there is no sign of water droplet in order to prevent accident caused by breakage or malfunction of the electrical components.
6. Be sure to stop operation when lightning flashes for the sake of safety and remove the power plug in order to prevent accident caused by breakage or malfunction of the electrical components.
7. Depending on the radio wave signal condition, the machine may generate noise in the TV or radio. If this occurs, use the TV or radio with kept well away from the machine.
8. For the worker who is involved in the work to be done in the environment relevant to "noise value in the working environment is 85 dB or more and less than 90 dB", be sure to take appropriate measures, as required, such as the use of ear protection or the like to protect against health hazard. In addition, for the worker who is involved in the work to be done in the environment relevant to "noise level in the working environment is 90 dB or more," be sure to instruct him/her to wear ear protection without exceptions in order to protect against health hazard, and display a sign explaining how to use the ear protection at an easily viewable location for the worker.
9. Properly dispose of packages of the sewing machine and used lubricating oil according to the relevant national law(s) in your country.

## **FOR SAFE OPERATION**



1. Don't put your hand under the needle when you turn "on" the power switch or operate the machine.
2. Don't put your hand into the thread take-up cover while the machine is running.
3. Turn OFF the power switch before tilting the machine head or removing the belt cover and the V belt.
4. Never bring your fingers, hair or clothing close to, or place anything on the handwheel, V-belt, bobbin winder wheel or motor during operation.
5. If your machine is provided with a belt cover, finger guard and safety plate, never operate your machine with any of them removed.
6. The hook rotates at a high speed while the machine is in operation. To prevent possible injury to hands, be sure to keep your hands away from the vicinity of the hook during operation. In addition, be sure to turn OFF the power to the machine when replacing the bobbin.
7. When tilting the machine head, exercise care not to allow your fingers etc. to be caught under the machine head.
8. Do not wipe the surface of the machine head with lacquer thinner.
9. Never operate the machine unless its oil pan has been filled with oil.
10. Don't use a motor pulley of a larger outside diameter than the standard outside diameter for the first one month.
11. Confirm that the voltage and phase (single- or 3-phase) are correct by checking them against the ratings shown on the motor nameplate.
12. In case of maintenance, inspection, or repair, be sure to turn OFF the power switch and confirm that the sewing machine and the motor have completely stopped before starting the work. (In case of the clutch motor, it continues rotating for a while by the inertia even after turning OFF the power switch. So, be careful.)
13. Be careful of handling this product so as not to pour water or oil, shock by dropping, and the like since this product is a precision instrument.

## **CAUTION BEFORE OPERATION**



### **WARNING :**

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

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

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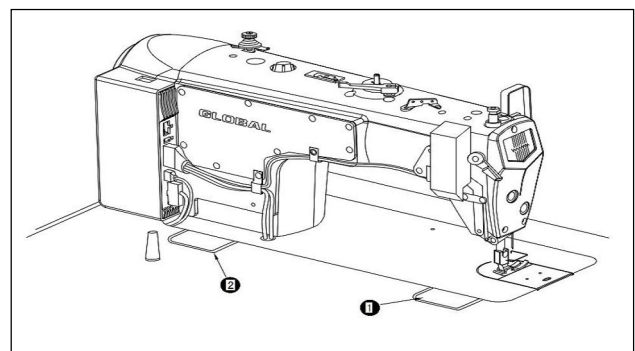
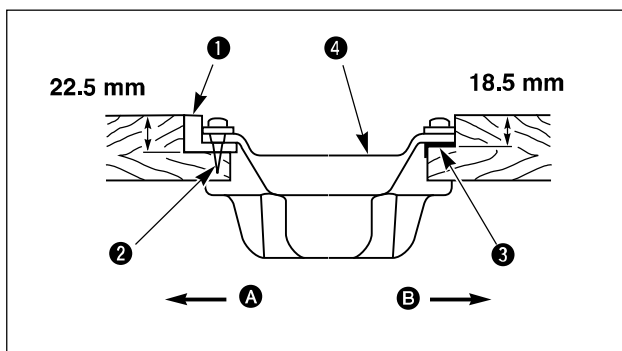
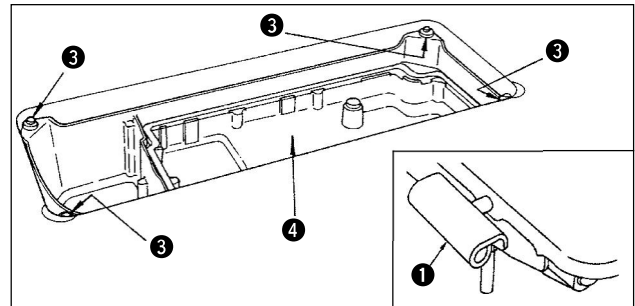
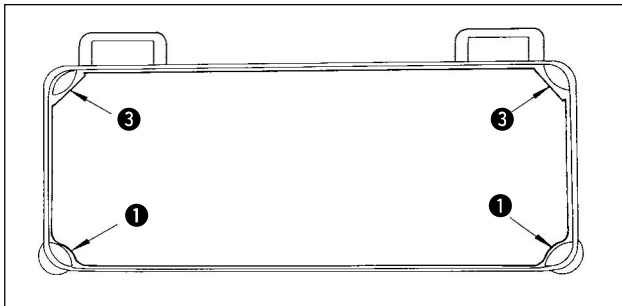
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# 1. SPECIFICATIONS

	3900AUT	3900LH-AUT
Application	General fabrics, light-weight and medium-weight materials	Medium-weight materials, heavy-weight materials
Sewing speed	Max. 4,000 sti/min	Max. 3,500 sti/min
Stitch length	Max. 4 mm	Max. 6 mm
Needle	DB x5 #9 to #18 (134 #65 to #110)	DB x5 #20 to #23 (134 #125 to #160)
Presser foot lift (by knee lifter)	10 mm (Standard) 13 mm (Max.)	10 mm (Standard) 13 mm (Max.)
Lubricating oil	White Oil 10	
Noise	<ul style="list-style-type: none"> <li>- Equivalent continuous emission sound pressure level (<math>L_{pA}</math>) at the workstation : A-weighted value of 83.5 dB; (Includes <math>K_{pA} = 2.5</math> dB); according to ISO 10821- C.6.2 -ISO 11204 GR2 at 5,000 sti/min.</li> <li>- Sound power level (<math>L_{WA}</math>) ; A-weighted value of 88.0 dB; (Includes <math>K_{WA} = 2.5</math> dB); according to ISO 10821- C.6.2 -ISO 11204 GR2 at 5,000 sti/min.</li> </ul>	

# 2. INSTALLATION



## (1) Installing the under cover

- 1) The under cover should rest on the four corners of the machine table groove.
- 2) Two rubber seats ① for supporting the head portion on the operator side A are fixed on the extended portion of the table by hitting the nail ②, and the other two rubber cushion seats ③ on the hinge side B are fixed by using a rubber-based adhesive. Then, oil pan ④ is placed.
- 3) Fit hinge ① into 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.



### 3. INSTALLING THE BELT COVER AND THE BOBBIN WINDER



**WARNING :**

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

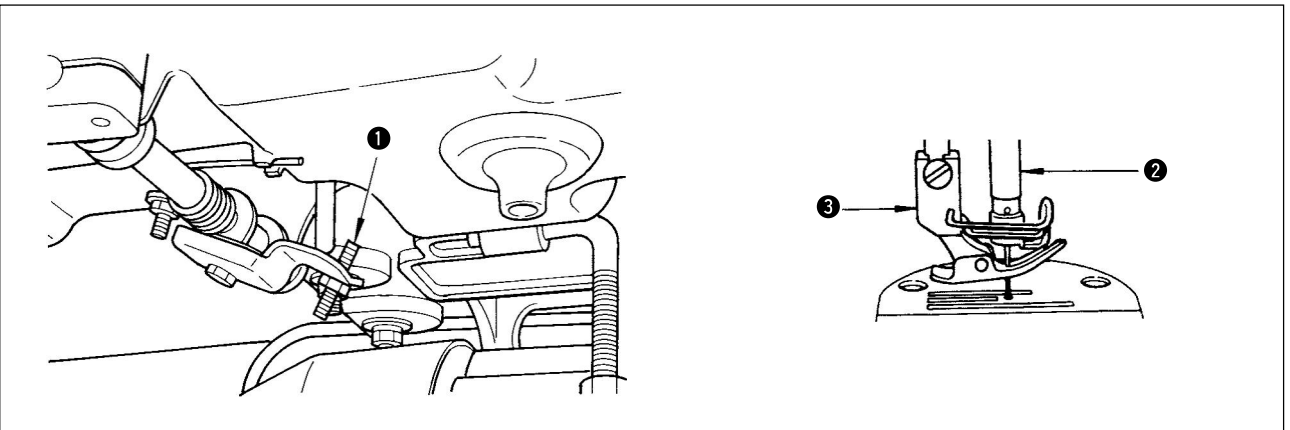


### 4. ADJUSTING THE HEIGHT OF THE KNEE LIFTER



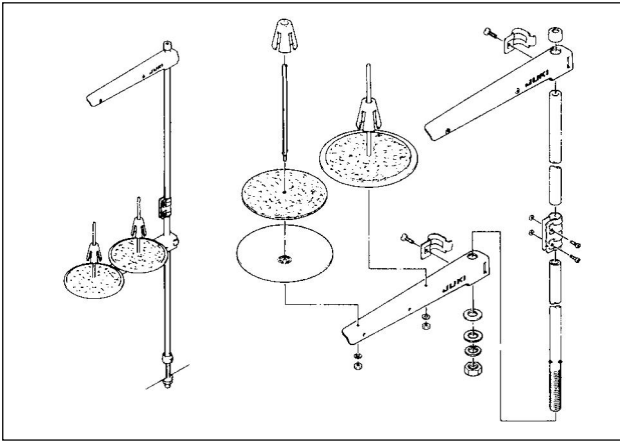
**WARNING :**

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



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

## 5. INSTALLING THE THREAD STAND

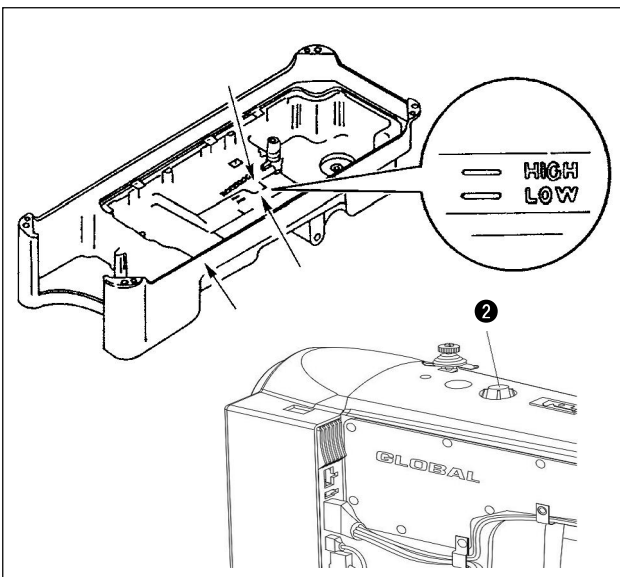


## 6. LUBRICATION



### WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

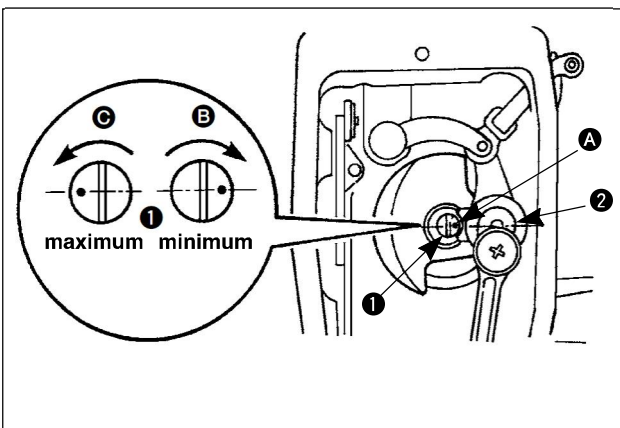


### (1) Information on lubrication

- 1) Fill oil pan ① with New Defrix Oil No. 1 up to HIGH mark ④.
- 2) When the oil level lowers below LOW mark ⑤, refill the oil pan with the specified oil.
- 3) When you operate the machine after lubrication, you will see splashing oil through oil sight window ② if the lubrication is adequate.
- 4) Note that the amount of the splashing oil is unrelated to the amount of the lubricating oil.



When you first operate your machine after setup or after an extended period of disuse, run your machine at 3,000 sti/min. for about 10 minutes for the purpose of break-in.



### (2) Adjusting the amount of oil supplied to the face plate parts

- 1) Adjust the amount of oil supplied to the thread take-up and needle bar crank ② by turning adjust pin ①.
- 2) The minimum amount of oil is reached when marker dot ④ is brought close to needle bar crank ② by turning the adjust pin in direction ⑤.
- 3) The maximum amount of oil is reached when marker dot ④ is brought to the position just opposite from the needle bar crank by turning the adjust pin in direction ⑥.

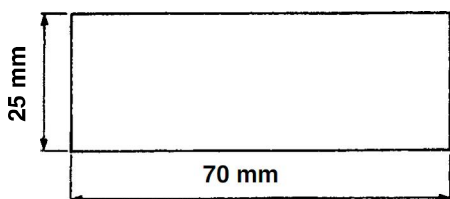
## 7. ADJUSTING THE AMOUNT OF OIL (OIL SPLASHES) IN THE HOOK



### WARNING :

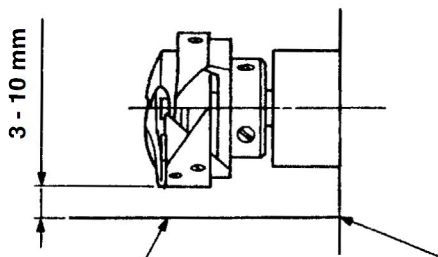
Be extremely careful about the operation of the machine since the amount of oil has to be checked by turning the hook at a high speed.

#### ① Amount of oil (oil splashes) confirmation paper



Oil splashes confirmation paper

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

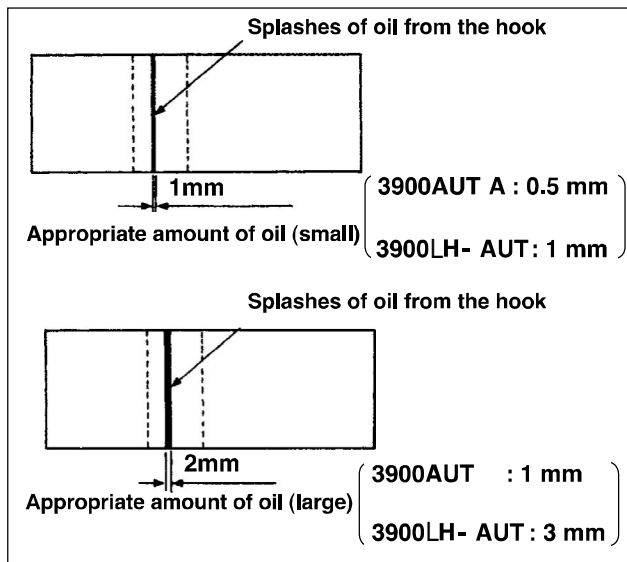


Closely fit the paper against the wall surface of the bed.

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

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

### ● Sample showing the appropriate amount of oil

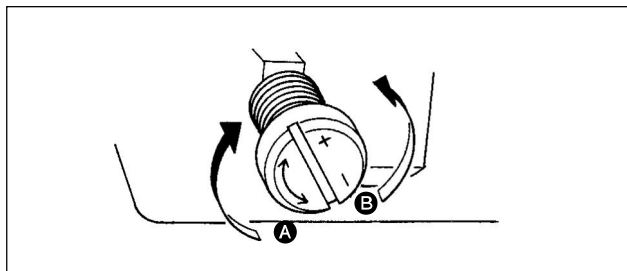


- 1) The amount of oil shown in the samples on the left should be finely adjusted in accordance with sewing processes.

Be careful not to excessively increase/decrease the amount of oil in the hook. (If the amount of oil is too small, the hook will be seized (the hook will be hot). If the amount of oil is too much, the sewing product may be stained with oil.)

- 2) Adjust the amount of oil in the hook so that the oil amount (oil splashes) should not change while checking the oil amount three times (on the three sheets of paper).

### ● Adjusting the amount of oil (oil spots) in the hook



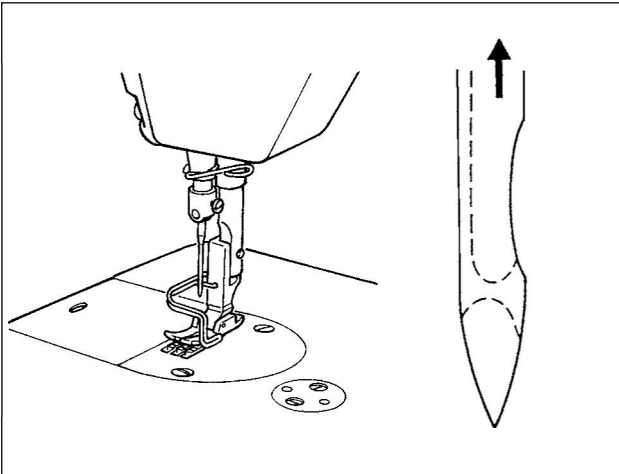
- 1) Turning the oil amount adjustment screw attached on the hook driving shaft front bushing in the "+" direction (in direction **A**) will increase the amount of oil (oil spots) in the hook, or in the "-" direction (in direction **B**) will decrease it.
- 2) After the amount of oil in the hook has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

## 8. ATTACHING THE NEEDLE

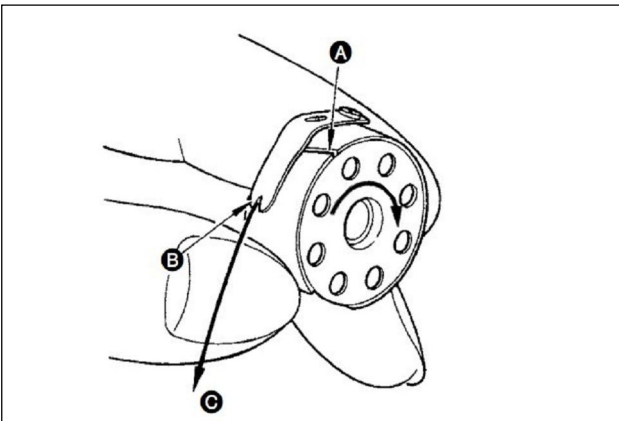


### WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



## 9. SETTING THE BOBBIN INTO THE BOBBIN CASE

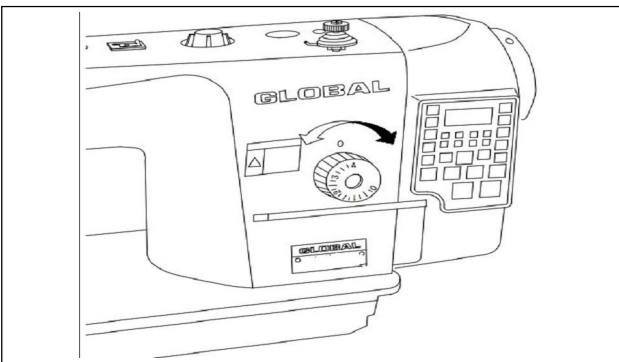


- 1) Pass the thread through thread slit **A**, and pull the thread in direction **B**.

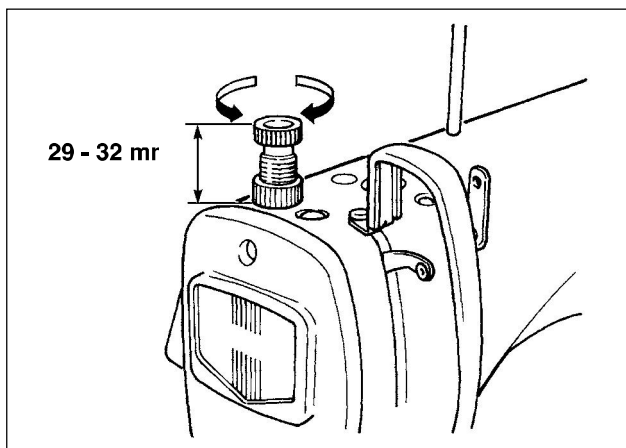
By so doing, the thread will pass under the tension spring and come out from notch **B**.

- 2) Check that the bobbin rotates in the direction of the arrow when thread **C** is pulled.

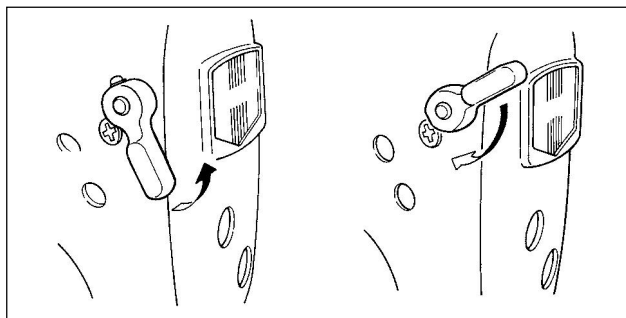
## 10. ADJUSTING THE STITCH LENGTH



## 11. PRESSER FOOT PRESSURE



## 12. HAND LIFTER

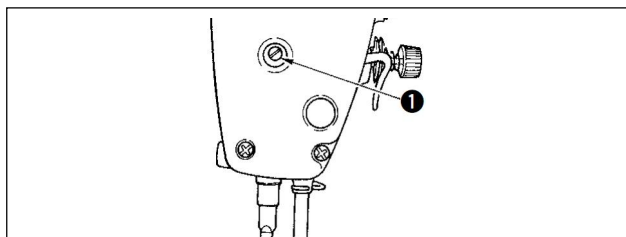


## 13. ADJUSTING THE HEIGHT OF THE PRESSER BAR



### WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



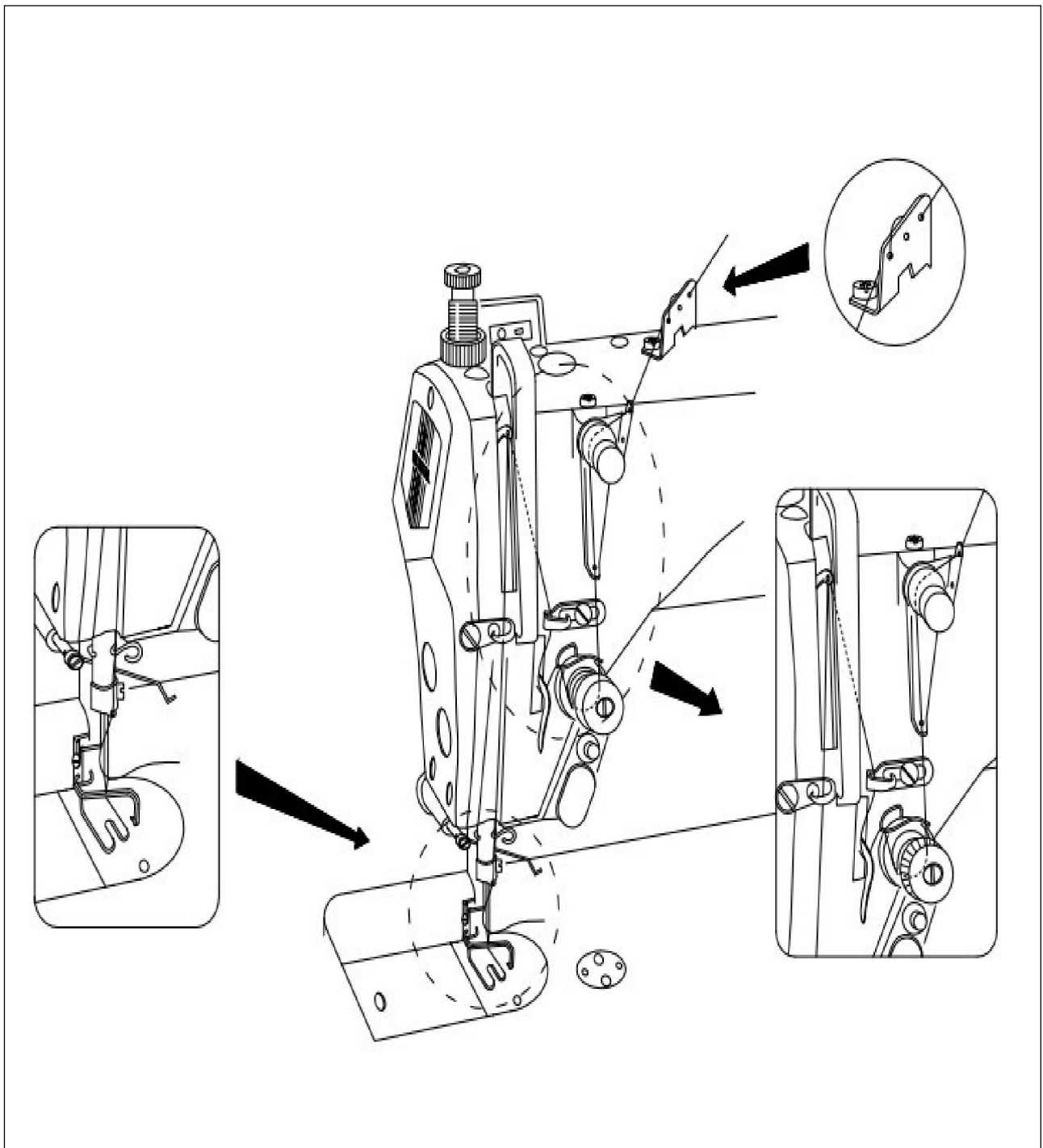
- 1) Loosen setscrew ❶, and adjust the presser bar height or the angle of the presser foot.
- 2) After adjustment, securely tighten the setscrew ❶.

## 14. THREADING THE MACHINE HEAD

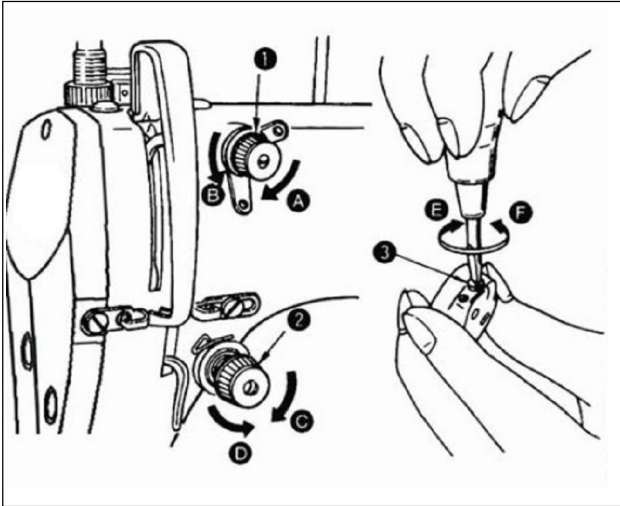


**WARNING :**

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



## 15. THREAD TENSION



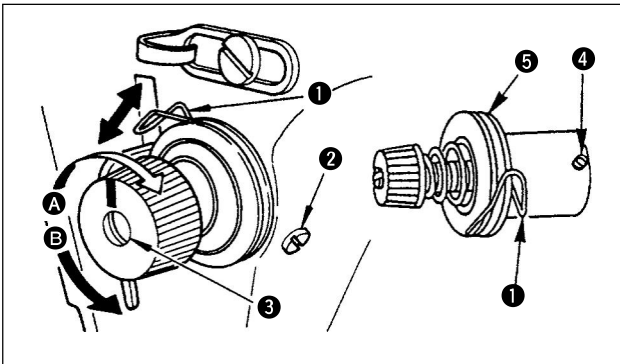
### (1) Adjusting the needle thread tension

- 1) As you turn thread tension nut **1** clockwise (in direction **A**), the needle thread tension will be increased.
- 2) As you turn nut **1** counterclockwise (in direction **B**), the needle thread tension will be decreased.
- 3) As you turn thread tension No. 2 nut **2** clockwise (in direction **C**), the needle thread tension will be increased.
- 4) As you turn nut **2** counterclockwise (in direction **D**), the needle thread tension will be decreased.

### (2) Adjusting The bobbin Thread Tension

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

## 16. 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 **A**), the stroke of the thread take-up spring will be increased.
- 3) As you turn the knob counterclockwise (in direction **B**), the stroke will be decreased.

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

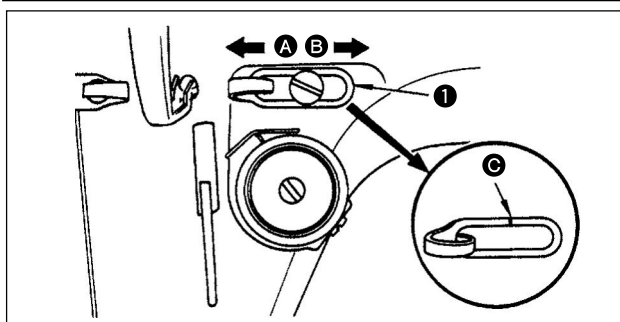
- 1) Loosen setscrew **2**, and remove tension post **3**.
- 2) Loosen setscrew **4**.
- 3) As you turn tension post **3** clockwise (in direction **A**), the pressure will be increased.
- 4) As you turn the tension post counterclockwise (in direction **B**), the pressure will be decreased.

## 17. ADJUSTING THE THREAD TAKE-UP STROKE



### WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



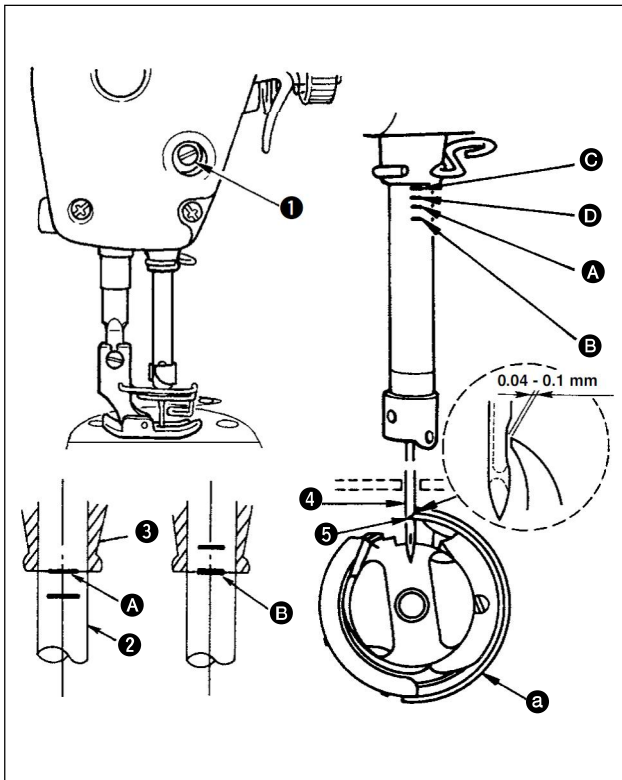
- 1) When sewing heavy-weight materials, move thread guide **1** to the left (in direction **A**) to increase the length of thread pulled out by the thread take-up.
- 2) When sewing light-weight materials, move thread guide **1** to the right (in direction **B**) to decrease the length of thread pulled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

## 18. NEEDLE-TO-HOOK RELATIONSHIP



### WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



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

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

#### (Adjusting the needle bar height)

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

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

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

- 3) (For a DB needle) Loosen the three hook set-screws, turn the handwheel and align marker line ⑤ on ascending needle bar ② with the bottom end of needle bar lower bushing ③.

(For a DA needle) Loosen the three hook set-screws, turn the handwheel and align marker line ④ on ascending needle bar ② with the bottom end of needle bar lower bushing ③.

- 4) After making the adjustments mentioned in the above steps, align hook blade point ⑤ with the center of needle ④. Provide a clearance of 0.04 mm to 0.1 mm ( 3900LH- AUT : 0.06 to 0.17mm) (reference value) between the needle and the hook, then securely tighten setscrews in the hook.



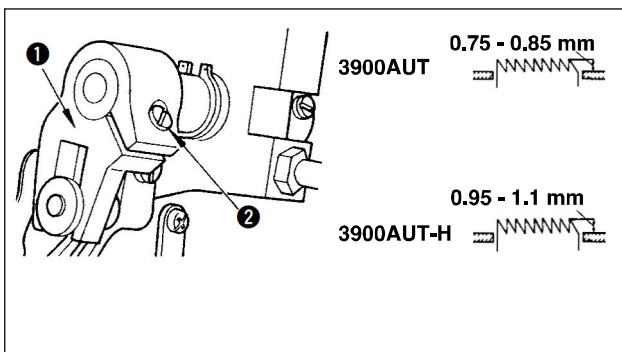
If the clearance between the blade point of hook and the needle is smaller than the specified value, the blade point of hook will be damaged. If the clearance is larger, stitch skipping will result.

## 19. HEIGHT OF THE FEED DOG



### WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



To adjust the height of the feed dog :

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



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

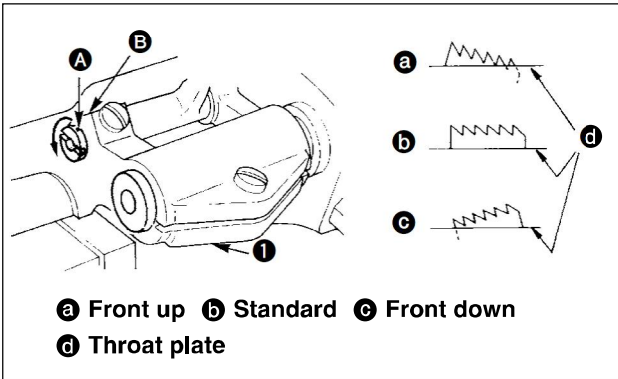


## 20. TILT OF THE FEED DOG



**WARNING :**

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



- 1) The standard tilt (horizontal) of the feed dog is obtained when marker dot **A** on the feed bar shaft is aligned with marker dot **B** on feed rocker **1**. (3900LH- AUT, the marker dot **B** inclines forward the feed rocker shaft by 90°, as standard).
- 2) To tilt the feed dog with its front up in order to prevent puckering, loosen the setscrew, and turn the feed bar shaft 90° in the direction of the arrow, using a screwdriver.
- 3) To tilt the feed dog with its front down in order to prevent uneven material feed, turn the feed bar shaft 90° in the opposite direction from the arrow. (The standard tilt for 3900LH- AUT .)



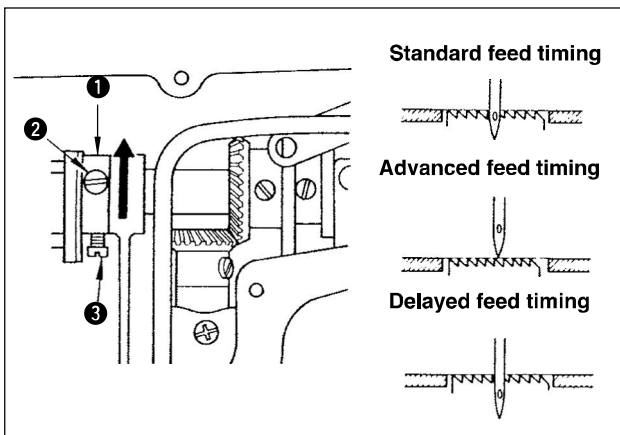
Whenever the feed dog tilt is adjusted, the feed dog height will be changed. So, it is necessary to check the height after tilt adjustment.

## 21. ADJUSTING THE FEED TIMING



**WARNING :**

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



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



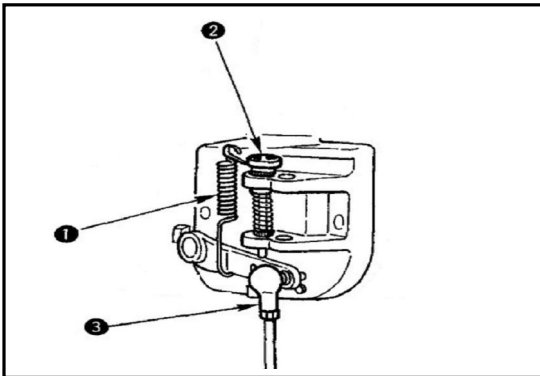
Be careful not to move the feed eccentric cam too far, or else needle breakage may result.

## 22. PEDAL PRESSURE AND PEDAL STROKE



### WARNING

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



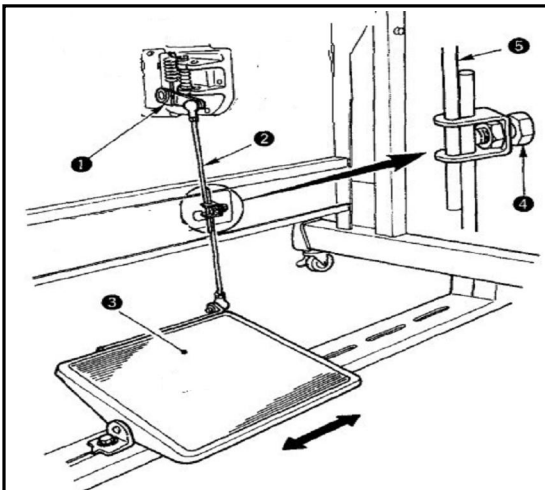
- 1) Adjusting the pressure required to depress the front part of the pedal  
This pressure can be changed by changing the mounting position of pedaling pressure adjust spring **1**.  
The pressure decreases when you hook the spring on the left side.  
The pressure increases when you hook the spring on the right side.
- 2) Adjusting the pressure required to depress the back part of the pedal  
This pressure can be adjusted using regulator screw **2**.  
The pressure increases as you turn the regulator screw out.  
The pressure decreases as you turn the screw in.
- 3) Adjusting the pedal stroke  
The pedal stroke increases when you insert connecting rod **3** into the right hole.

## 23. ADJUSTMENT OF THE PEDAL



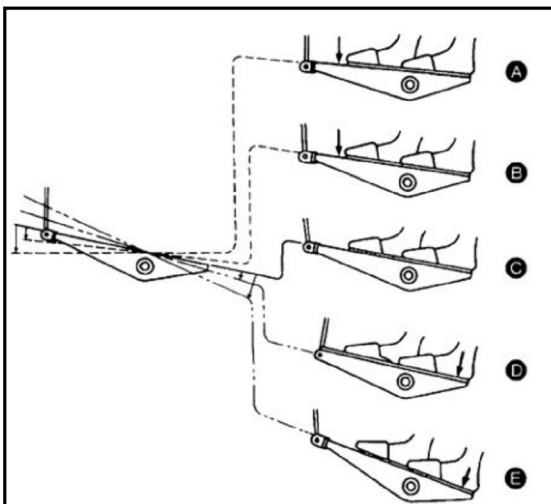
### WARNING

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



- 1) Installing the connecting rod  
Move pedal **3** to the right or left as illustrated by the arrow so that motor control lever **2** and connecting rod **1** are straightened.
- 2) Adjusting the pedal angle  
The pedal tilt can be freely adjusted by changing the length of the connecting rod.  
Loosen adjust screw **4**, and adjust the length of connecting rod **5**.

## 24. PEDAL OPERATION



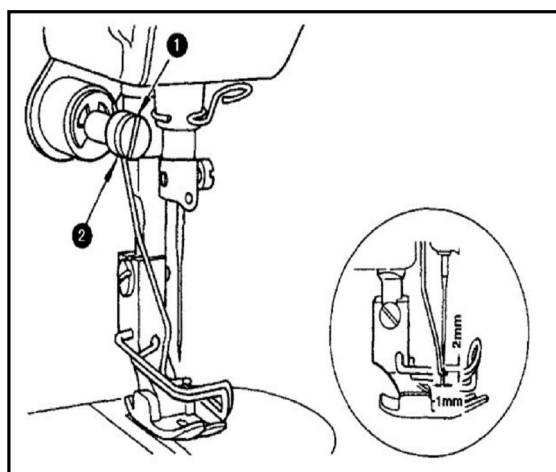
- 1) The pedal is operated in the following four steps:  
The machine runs at low sewing speed when you lightly depress the front part of the pedal. **B**  
The machine runs at high sewing speed when you further depress the front part of the pedal. **A**  
(If the automatic reverse feed stitching has been preset, the machine runs at high speed after it completes reverse stitching.)  
The machine stops (with its needle up or down) when you reset the pedal to its original position. **C**  
The machine trims threads when you fully depress the back part of the pedal.  
(If your machine is provided with the Auto Lifter, an additional step is given between the machine stop and thread trimming step. The presser foot goes up when you lightly depress the back part of the pedal. **D** and if you further depress the back part, the thread trimmer is actuated.)

## 25. WIPER



### WARNING

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



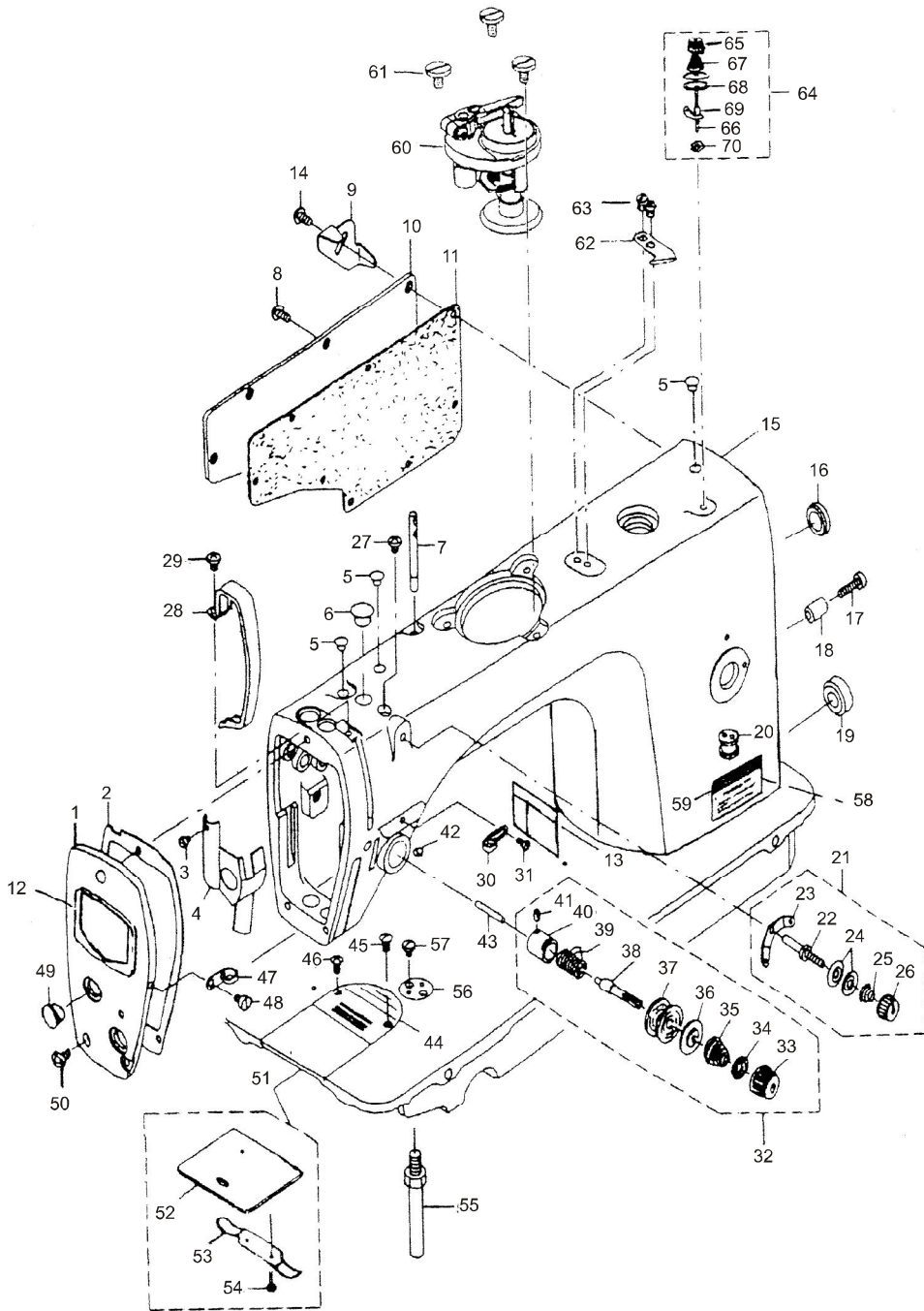
### (1) Positioning the wiper

Adjust the position of the wiper according to the thickness of the material sewn.

The adjustment procedure is as follows:

- 1) Adjust the distance between the flat part of the wiper and the center of the needle to 1 mm. Tighten wiper adjust screw ① so that the wiper is pressed and fixed by wiper collar ② .

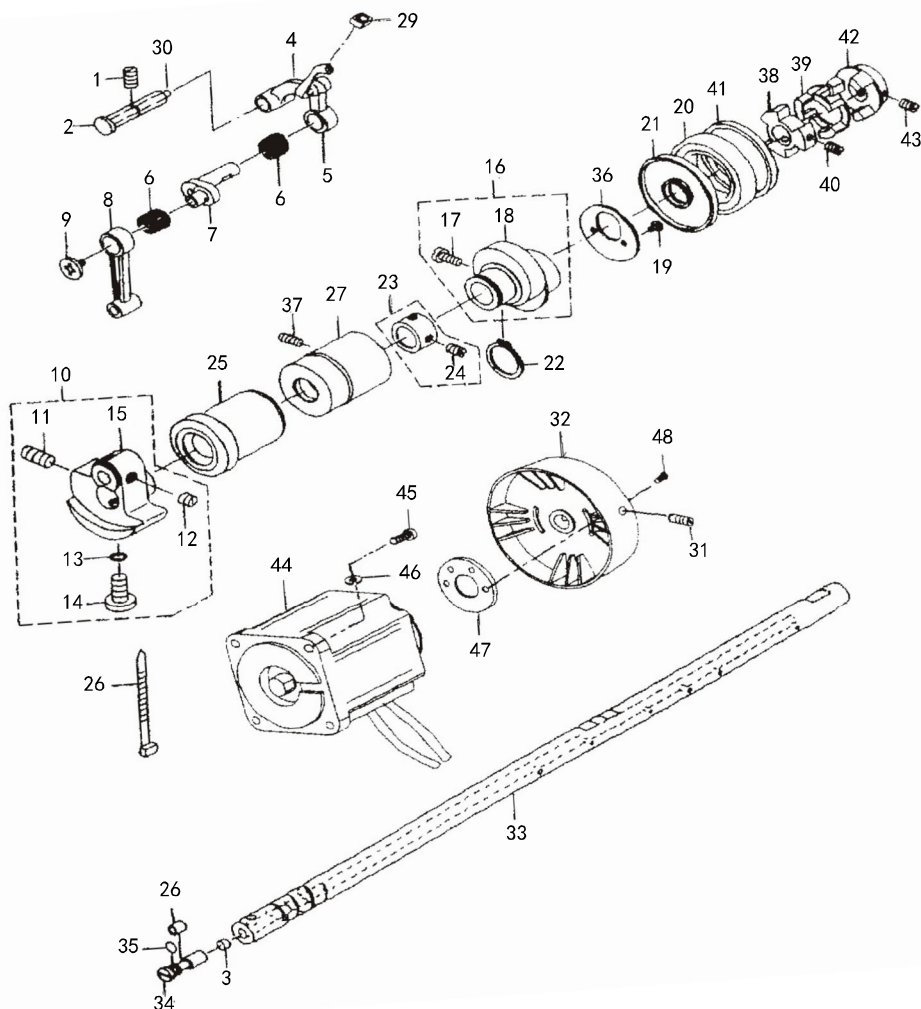
# 1. Machine frame & miscellaneous cover components



# 1. Machine frame & miscellaneous cover components

Ref. NO.	Part NO.	Description	Qty	Ref. NO.	Part NO.	Description	Qty
1	G02-1-01	Face plate	1	36	G02-1-36	Thread tension disk presser	1
2	G02-1-02	Face plate agsket	1	37	G02-1-37	Thread tension disk	2
3	G02-1-03	Screw 1/8x44 L=4	1	38	G02-1-38	Tension post	1
4	G02-1-04	Atm oil shifld asm.	1	39	G02-1-39	Take-up spring	1
5	G02-1-05	Rubber plug	3	40	G02-1-40	Tension post	1
6	G02-1-06	Rubber plug	1	41	G02-1-41	Screw 9/64x40 L=5.5	1
7	G02-1-07	Thread guide rod	1	42	G02-1-42	Screw 15/64x28 L=7	1
8	G02-1-08	Screw 3/16x28 L=9	10	43	G02-1-43	Tension releasing	1
9	G02-1-09	Cord holder	1	44	G02-1-44	Throat plate	1
10	G02-1-10	Side plate	1	45	G02-1-45	Screw 11/64x40 L=6	1
11	G02-1-11	Gasket	1	46	G02-1-46	Screw 11/64x40 L=6	1
12	G02-1-12	Face plate	1	47	G02-1-47	Arm thread guide left	1
13	G02-1-13	Safetv label	1	48	G02-1-48	Screw 11/64x40 L=6	1
14	G02-1-14	Screw 3/16x28 L=14	3	49	G02-1-49	Ribber plug	2
15	G02-1-15	Machine cover	1	50	G02-1-50	Screw 3/16x28 L=9	3
16	G02-1-16	Rubber plug	1	51	G02-1-51	Slide plate asm.	1
17	G02-1-17	Screw 3/16x28 L=18	1	52	G02-1-52	Slide plate	1
18	G02-1-18	Reverse feed lever stopper	1	53	G02-1-53	Bed slide spring	1
19	G02-1-19	Rubber plug	1	54	G02-1-54	Screw 3/32x56 L=2.2	2
20	G02-1-20	Magnet cord rubber	1	55	G02-1-55	Bed screw stud	4
21	G02-1-21	Thread tension asm.	1	56	G02-1-56	Ruler stopper	1
22	G02-1-22	Tthead tension post	1	57	G02-1-57	Screw 11/64x40 L=6	2
23	G02-1-23	Thread tension guide	1	58	G02-1-58	Pole	2
24	G02-1-24	Thread tension disk	2	59	G02-1-59	Model plate	1
25	G02-1-25	Thread tension spring	1	60	G02-1-60	Bobbin base	1
26	G02-1-26	Thread tension nut	1	61	G02-1-61	Screw	2
27	G02-1-27	Screw 3/16x28 L=6	1	62	G02-1-62	Knife	1
28	G02-1-28	Thread take-up lever cover	1	63	G02-1-63	Knife screw	1
29	G02-1-29	Screw 3/16x28 L=6	1	64	G02-1-64	Thread tension asm.	1
30	G02-1-30	Atm thread guide right	1	65	G02-1-65	Tension nut	1
31	G02-1-31	Screw 11/64x40 L=6	1	66	G02-1-66	Tension post	1
32	G02-1-32	Thread tension asm.	1	67	G02-1-67	Tension spring	1
33	G02-1-33	Tension nut	1	68	G02-1-68	Thread tension disk presser	2
34	G02-1-34	Rotating stopper	1	69	G02-1-69	Thread tension guide	1
35	G02-1-35	Tension spring	1	70	G02-1-70	Tension nut	2

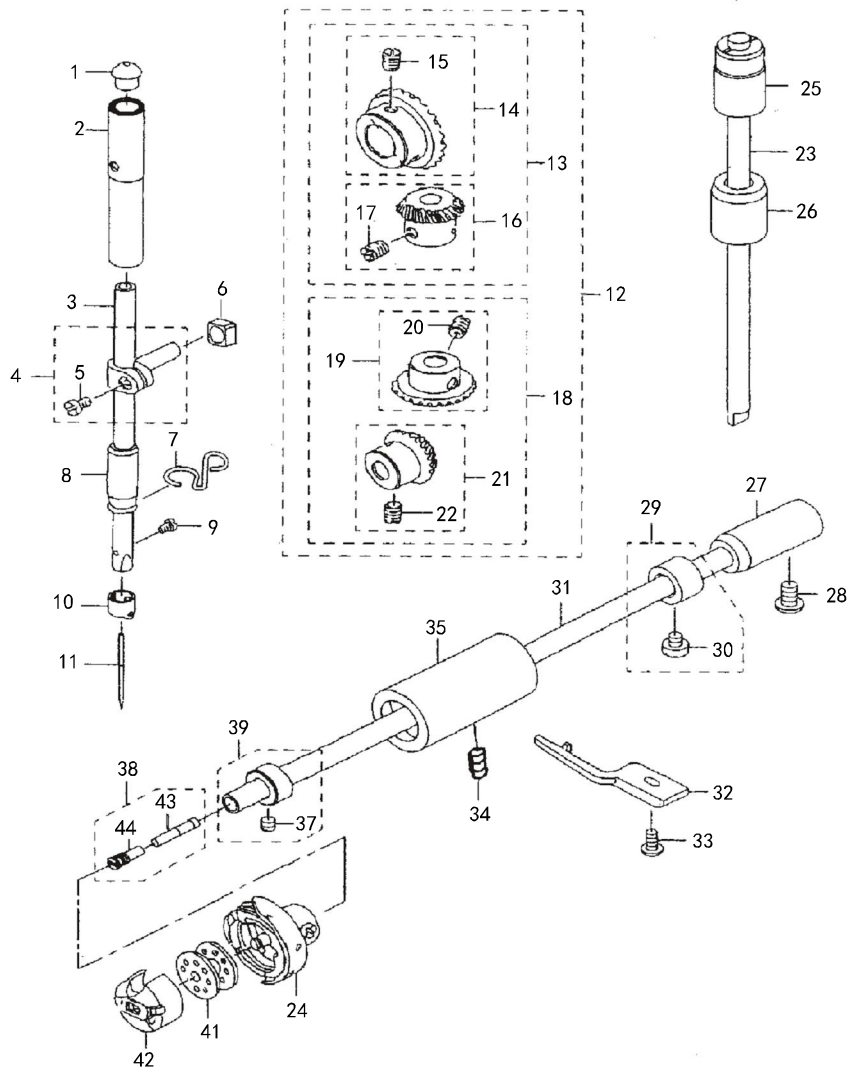
## 2.Main shaft & thread take-up lever components



## 2.Main shaft & thread take-up lever components

Ref. NO.	Part NO.	Description	Qty	Ref. NO.	Part NO.	Description	Qty
1	G02-2-01	Screw 15/64x28 L=10.5	1	25	G02-2-25	Main shaft front bushing asm.	1
2	G02-2-02	Thread take-up crank shaft	1	26	G02-2-26	Oil adjusting collar	1
3	G02-2-03	Roller felt	1	27	G02-2-27	Bushing intermediate	1
4	G02-2-04	Thread take-up lever	1	28	G02-2-28	Cable band	1
5	G02-2-05	Thread take-up lever asm.	1	29	G02-2-29	Rubber	1
6	G02-2-06	Needle bearing	2	30	G02-2-30	Thread take-up crank shaft felt	1
7	G02-2-07	Needle bar crank	1	31	G02-2-31	Screw 15/64x28 L=10	1
8	G02-2-08	Needle bar crank rod	1	32	G02-2-32	Hand wheel	1
9	G02-2-09	Left screw 9/64x40 L=4.8	1	33	G02-2-33	Main shaft	1
10	G02-2-10	Counter weight asm.	1	34	G02-2-34	Oil amount adjusting pin	1
11	G02-2-11	Screw 9/32x28 L=16	1	35	G02-2-35	Rubber ring	1
12	G02-2-12	Screw 1/4x40 L=6	2	36	G02-2-36	Thrust collar	1
13	G02-2-13	Rubber ring	1	37	G02-2-37	Screw 15/64-28 L=6	1
14	G02-2-14	Screw 9/32x28 L=15.5	1	38	G02-2-38	Linker(1)	1
15	G02-2-15	Counter weight	1	39	G02-2-39	Rubber ring	1
16	G02-2-16	Feed drive eccentric cam asm.	1	40	G02-2-40	Screw M6 L=8	3
17	G02-2-17	Screw 1/4x40 L=11	2	41	G02-2-41	Washer	1
18	G02-2-18	Feed drive eccentric cam	1	42	G02-2-42	Linker(2)	1
19	G02-2-19	Screw 9/64x40 L=6	2	43	G02-2-43	Screw M6 L=6	3
20	G02-2-20	Needle bearing	1	44	G02-2-44	Motor asm.	1
21	G02-2-21	Oil seal	1	45	G02-2-45	Screw M5	4
22	G02-2-22	Snap ring	1	46	G02-2-46	Spring washer	4
23	G02-2-23	Thrust collar asm.	1	47	G02-2-47	Magnets	1
24	G02-2-24	Screw 1/4x40 L=6	2	48	G02-2-48	Screw M5 L=8	2

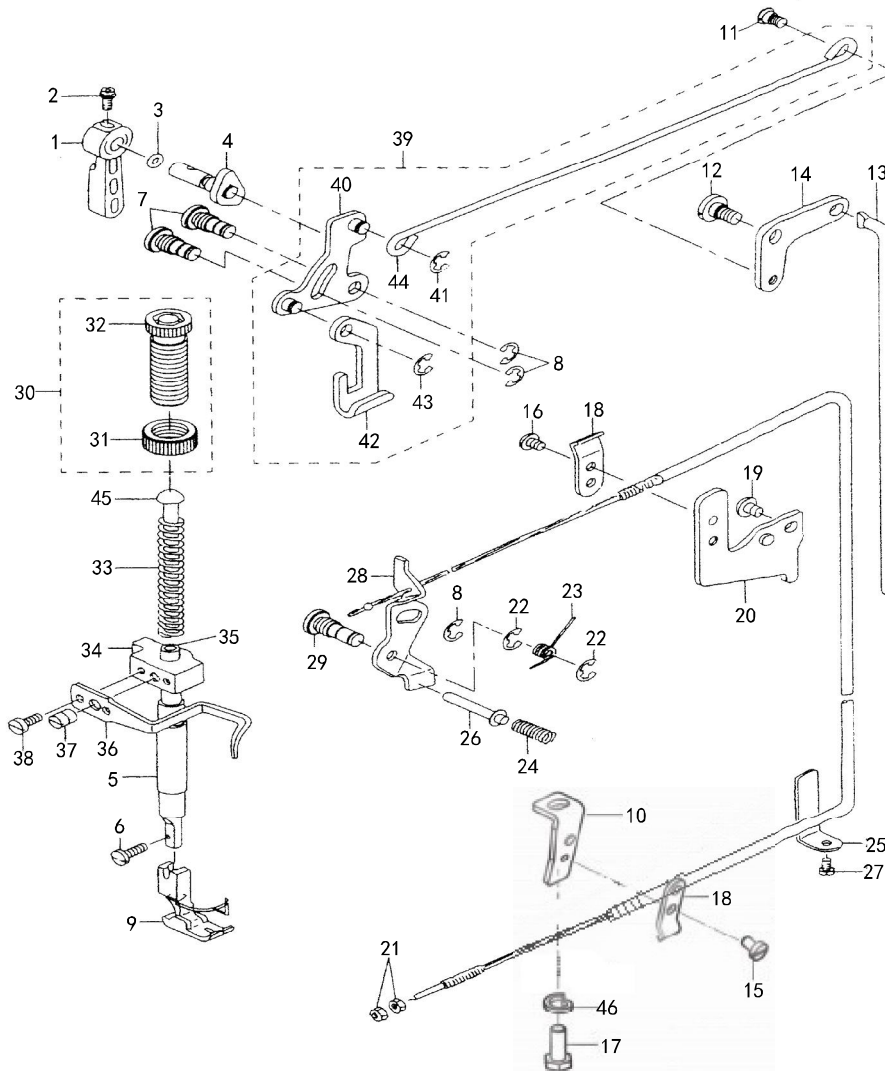
### 3. Needle bak, upright shaft & hook driving shaft components



### 3. Needle bak, upright shaft & hook driving shaft components

Ref. NO.	Part NO.	Description	Qty	Ref. NO.	Part NO.	Description	Qty
1	G02-3-01	Cap	1	23	G02-3-23	Upright shaft	1
2	G02-3-02	Needle bar bushing upper	1	24	G02-3-24	Hook asm.	1
3	G02-3-03	Needle bar	1	25	G02-3-25	Upright shaft bushing, upper	1
4	G02-3-04	Needle rod holde asm.	1	26	G02-3-26	Upright shaft bushing, lower	1
5	G02-3-05	Screw 9/64x40 L=7.5	3	27	G02-3-27	Bushing rear	1
6	G02-3-06	Slide block	1	28	G02-3-28	Screw 3/16x28 L=13	1
7	G02-3-07	Needle bar thread guide	1	29	G02-3-29	Thrust collar asm.	1
8	G02-3-08	Needle bar bushing lower	1	30	G02-3-30	Screw 11/64x40 L=5	2
9	G02-3-09	Screw 1/8x44 L=4.8	1	31	G02-3-31	Lower shaft	1
10	G02-3-10	Needle bar thread guide	1	32	G02-3-32	Bobbin case holder	1
11	G02-3-11	Needle DBx5#14	1	33	G02-3-33	Screw 11/64x40 L=9.5	1
12	G02-3-12	Gear&pinion asm.	1	34	G02-3-34	Screw 3/16x28 L=7	1
13	G02-3-13	Gear&pinion asm., upper	1	35	G02-3-35	Lower shaft front metal	1
14	G02-3-14	Gear asm.	1	36	G02-3-36	Thrust collar asm.	1
15	G02-3-15	Screw 1/4x40 L=8	2	37	G02-3-37	Screw 11/64x40 L=3.5	2
16	G02-3-16	Pinion asm.	1	38	G02-3-38	Oil seal screw asm.	1
17	G02-3-17	Screw 1/4x40 L=8	2	39	G02-3-39	Thrust collar asm.	1
18	G02-3-18	Gear&pinion asm., lower	1	40	G02-3-40	Oil seal screw	1
19	G02-3-19	Gear asm	1	41	G02-3-41	Bobbin	1
20	G02-3-20	Screw 1/4x40 L=8	2	42	G02-3-42	Bobbin case	1
21	G02-3-21	Pinion asm.	1	43	G02-3-43	Oil wick	1
22	G02-3-22	Screw 1/4x40 L=8	2	44	G02-3-44	Oil seal screw	1

## 4. Presser foot components

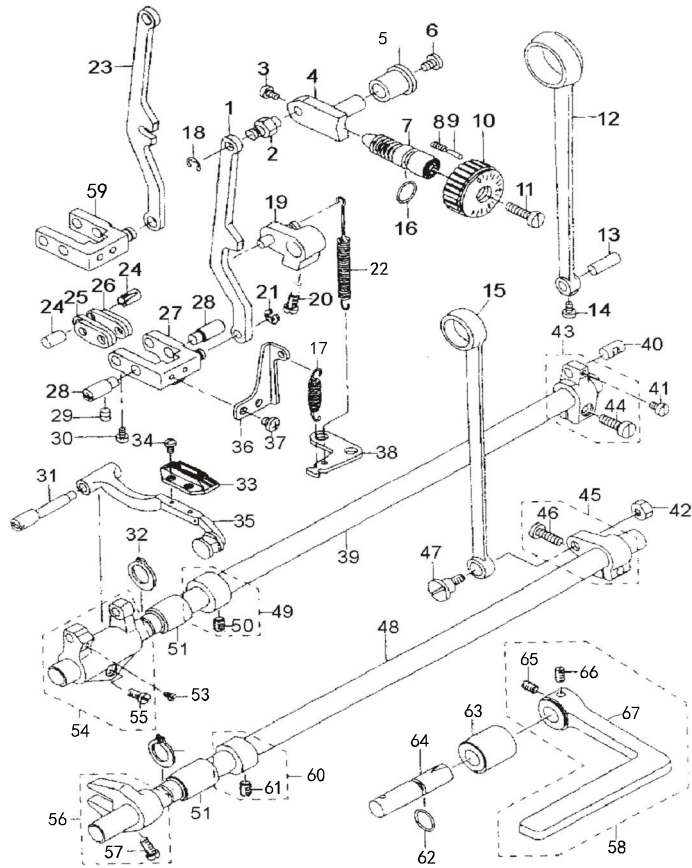


## 4. Presser foot components

Ref. NO.	Part NO.	Description	Qty	Ref. NO.	Part NO.	Description	Qty
1	G02-4-01	Hand lifter	1	24	G02-4-24	Thread release pin spring	1
2	G02-4-02	Screw 9/64x40 L=10	1	25	G02-4-25	Wire cable holder	1
3	G02-4-03	Rubber ring	1	26	G02-4-26	Tension release supporting pin	1
4	G02-4-04	Hand liftercam asm.	1	27	G02-4-27	Screw 3/16x28 L=6	1
5	G02-4-05	presser bar bushing lower	1	28	G02-4-28	Thread tension release wire	1
6	G02-4-06	Screw 9/64x40 L=8	1	29	G02-4-29	Tension release shaft	1
7	G02-4-07	Link shaft	2	30	G02-4-30	Presser spring regulator asm.	1
8	G02-4-08	E-ring 5	3	31	G02-4-31	Presser adjusting screw nut	1
9	G02-4-09	presser foot asm	1	32	G02-4-32	Presser spring regulator	1
10	G02-4-10	Wire holder bracket,lower	1	33	G02-4-33	Presser adjusting spring	1
11	G02-4-11	Hinge screw	1	34	G02-4-34	Presser bar guide bracket	1
12	G02-4-12	Hinge screw	1	35	G02-4-35	Presser bar	1
13	G02-4-13	Knee lifter connecting rod	1	36	G02-4-36	Presser bar thread guide	1
14	G02-4-14	Lifting lever link	1	37	G02-4-37	Screw 1/4x40 L=8	1
15	G02-4-15	Screw 11/64x40 L=5	1	38	G02-4-38	Screw 9/64x40 L=8	2
16	G02-4-16	Screw 11/64x40 L=5	1	39	G02-4-39	Knee lifter push rod asm.	1
17	G02-4-17	Screw 15/64x28 L=14.5	1	40	G02-4-40	Hand lifter link	1
18	G02-4-18	Wire hplder	2	41	G02-4-41	E-ring 5	1
19	G02-4-19	Screw 3/16x28 L=6	1	42	G02-4-42	Lifting lever	1
20	G02-4-20	Wire holder bracket,upper	1	43	G02-4-43	E-ring 5	1
21	G02-4-21	Nut 3/16x32	2	44	G02-4-44	Knee lifting cross rod	1
22	G02-4-22	E-ring 5	2	45	G02-4-45	Presser guide bar	1
23	G02-4-23	Tension release return sping	1	46	G02-4-46	Spring washer	2



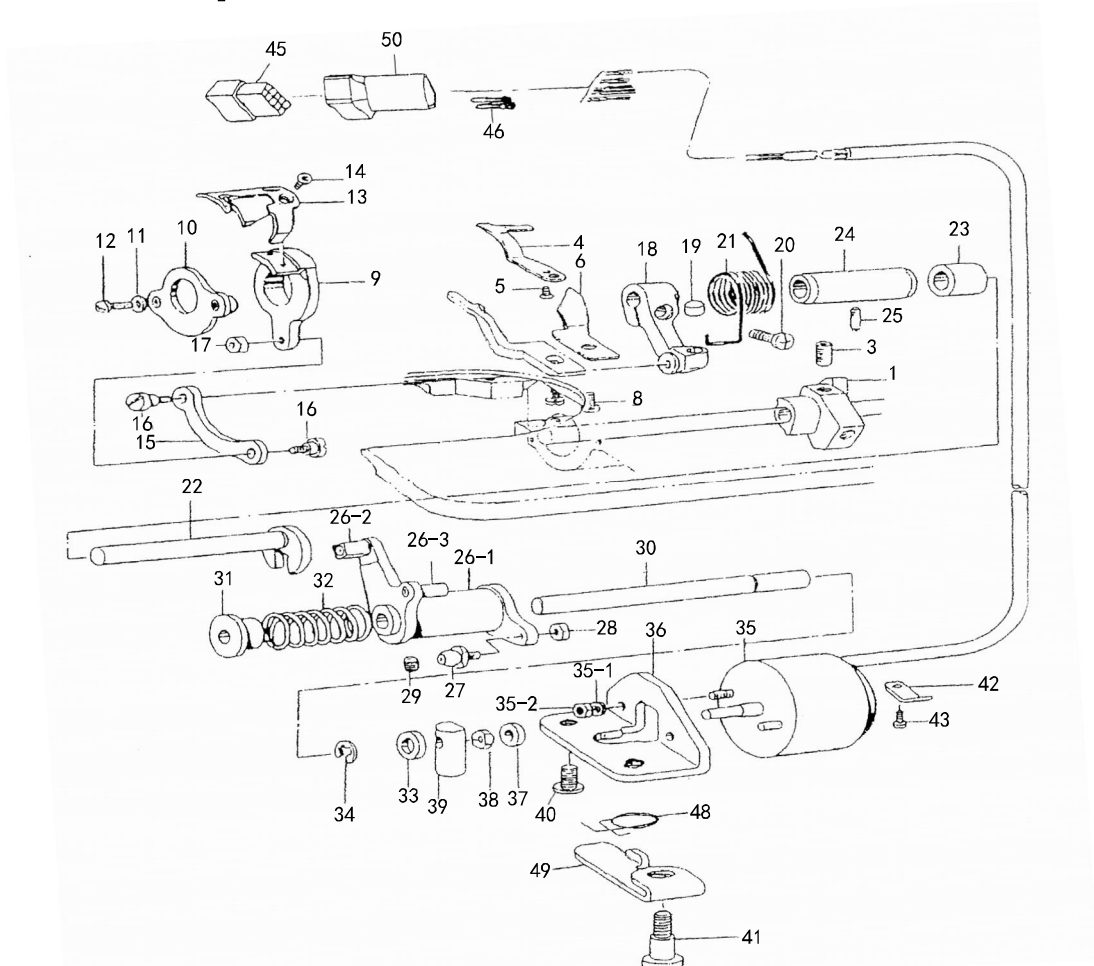
## 5. Feed mechanism componebts



## 5.Feed mechanism componebts

Ref. NO.	Part NO.	Description	Qty	Ref. NO.	Part NO.	Description	Qty
1	G02-5-01	Feed adjust rod	1	35	G02-5-35	Feed bar asm	1
2	G02-5-02	Feed regulator pin	1	36	G02-5-36	Adjusting link spring guide	1
3	G02-5-03	Screw 9/64x40 L=6	2	37	G02-5-37	Screw 11/64x40 L=5	2
4	G02-5-04	Feed regulator	1	38	G02-5-38	Feed spring hood	1
5	G02-5-05	Feed regulator bushing	1	39	G02-5-39	Feed rocker shaft	1
6	G02-5-06	Screw 3/16x28 L=7	1	40	G02-5-40	Walking foot middle pin	1
7	G02-5-07	Feed regulator screw	1	41	G02-5-41	Screw 9/64x40 L=6	1
8	G02-5-08	Spring	1	42	G02-5-42	Nut 9/32x28	1
9	G02-5-09	Feed adjust pin	1	43	G02-5-43	Feed rocker shaft crank asm.	1
10	G02-5-10	Feed dial	1	44	G02-5-44	Screw 3/16x28 L=15.5	1
11	G02-5-11	Screw 3/16x28 L=18	1	45	G02-5-45	Lifting rocker asm.	1
12	G02-5-12	Rocker shaft connecting rod	1	46	G02-5-46	Screw 3/16x28 L=14	1
13	G02-5-13	Walking foot long pin	1	47	G02-5-47	Hinge screw	1
14	G02-5-14	Screw 9/64x40 L=4	1	48	G02-5-48	Feed driving shaft	1
15	G02-5-15	Connecting rod	1	49	G02-5-49	Thrust collar shaft	1
16	G02-5-16	Rubber ring	1	50	G02-5-50	Screw 1/4x40 L=6	2
17	G02-5-17	Feed reverse spring	1	51	G02-5-51	Feed rocker shaft bushing	2
18	G02-5-18	E-ring 5	1	52	G02-5-52	Screw 11/64x40 L=7	1
19	G02-5-19	Feed reverse asm.	1	53	G02-5-53	Retaining ring	1
20	G02-5-20	Screw	1	54	G02-5-54	Feed bar crank asm.	1
21	G02-5-21	E-ring 5	1	55	G02-5-55	Screw 3/16x28 L=14	1
22	G02-5-22	Spring	1	56	G02-5-56	Driving shaft crank asm	1
23	G02-5-23	Feed regulator conncting rod	1	57	G02-5-57	Screw 11/64x40 L=10.5	1
24	G02-5-24	Walking foot short pin	2	58	G02-5-58	Reverse feed control lever asm	1
25	G02-5-25	Connecting link long pin	2	59	G02-5-59	Walking foot adjusting link	1
26	G02-5-26	Connecting link short pin	2	60	G02-5-60	Thrust collar asm.	1
27	G02-5-27	Feed adjust link asm.	1	61	G02-5-61	Screw 1/4x40 L=6	2
28	G02-5-28	Adjusting link fulcrum shft	2	62	G02-5-62	Rubber ring	1
29	G02-5-29	Screw 15/64x28 L=7	2	63	G02-5-63	Feed Rreverse shaft	1
30	G02-5-30	Screw 9/64x40 L=4	2	64	G02-5-64	Feed lever metal	1
31	G02-5-31	Feed bar shaft	1	65	G02-5-65	Screw 1/4x40 L=8.5	1
32	G02-5-32	Retaining ring	1	66	G02-5-66	Screw 1/4x40 L=10	1
33	G02-5-33	Feed dog	1	67	G02-5-67	Reverse feed control lever	1
34	G02-5-34	Screw 1/8x44 L=6	2				

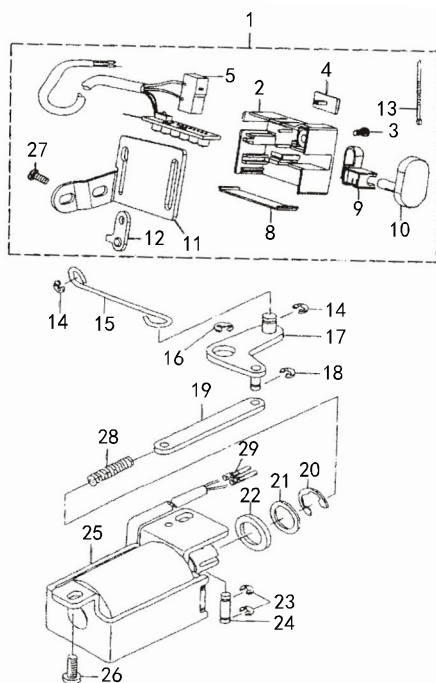
## 6.Thread trimmer components



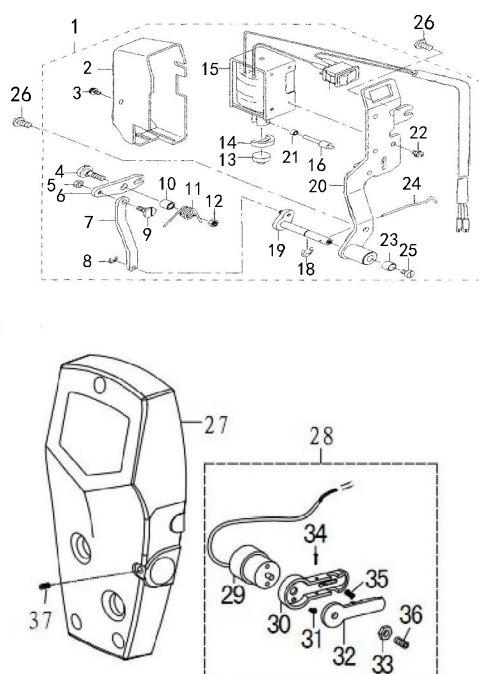
## 6.Thread trimmer components

Ref. NO.	Part NO.	Description	Qty	Ref. NO.	Part NO.	Description	Qty
1	G02-6-01	Thread shear cam	1	(26-3)	G02-6-26-3	Limit potential shaft	1
3	G02-6-03	Screw	3	27	G02-6-27	Roll shaft asm.	1
4	G02-6-04	Secant knife	1	28	G02-6-28	Nut	3
5	G02-6-05	Screw	1	29	G02-6-29	Screw	1
6	G02-6-06	Lower thread finger	1	30	G02-6-30	Thread shear shaft	1
8	G02-6-08	Screw	1	31	G02-6-31	Spring cover	1
9	G02-6-09	Knife bracket	1	32	G02-6-32	Spring	1
10	G02-6-10	Partiality shank asm.	1	33	G02-6-33	Magnetic plug cushion mat	1
11	G02-6-11	Washer	2	34	G02-6-34	E-ring	1
12	G02-6-12	Screw	2	35	G02-6-35	Magnetic plug	1
13	G02-6-13	Motorial knife	1	35-1	G02-6-35-1	Spring washer	2
14	G02-6-14	Screw	2	35-2	G02-6-35-2	Nut	2
15	G02-6-15	Knife shaft connecting rod	1	36	G02-6-36	Thread trimmer solenoid base	1
16	G02-6-16	Screw	1	37	G02-6-37	Rubber ring	1
17	G02-6-17	Nut	1	38	G02-6-38	Nut	1
18	G02-6-18	Thread shear rock crank	1	39	G02-6-39	Magnetic plug pin	1
19	G02-6-19	Positioning block	1	40	G02-6-40	Screw	1
20	G02-6-20	Screw	1	41	G02-6-41	Screw	1
21	G02-6-21	Spring	1	42	G02-6-42	Wire cable holder	1
22	G02-6-22	Thread shear rock arm shaft	1	43	G02-6-43	Screw	1
23	G02-6-23	Short bush	1	45	G02-6-45	Housing	1
24	G02-6-24	Thread shear cam bushing	1	46	G02-6-46	Pin contact	1
25	G02-6-25	Screw	1	48	G02-6-48	Spring	1
(26-1)	G02-6-26-1	Thread shear rock arm shaft	1	49	G02-6-49	Thread loose seat	1
(26-2)	G02-6-26-2	Slippery piece shaft asm.	1	50	G02-6-50	Housing rubber	1

## 7. Automatic reverse feed components



## 8. Wiper components



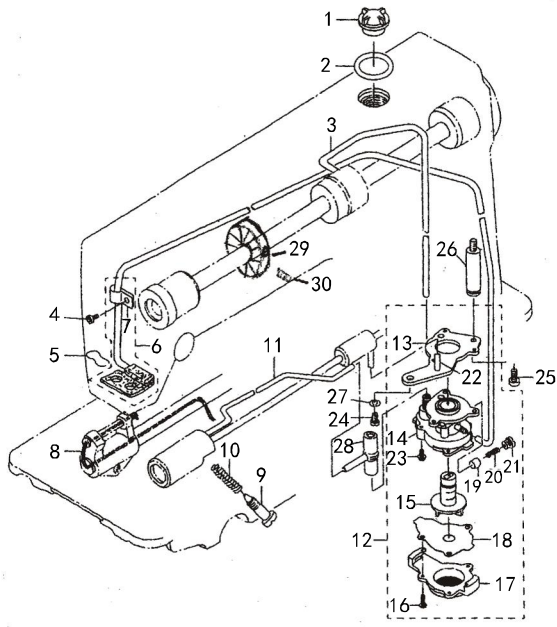
## 7. Automatic reverse feed components

Ref. NO.	Part NO.	Description	Qty	Ref. NO.	Part NO.	Description	Qty
1	G02-7-01	Reverse feed switch asm.	1	16	G02-7-16	E-ring 9	1
2	G02-7-02	Reverse feed switch cover	1	17	G02-7-17	Connecting arm asm.	1
3	G02-7-03	Screw M4 L=6	1	18	G02-7-18	E-ring 4	1
4	G02-7-04	T11ume reverse	1	19	G02-7-19	Reverse feed control link	1
5	G02-7-05	Microswitch	1	20	G02-7-20	E-ring 20	1
6	G02-7-06	PCB	1	21	G02-7-21	Washer 16x24x2.6	1
7	G02-7-07	Pin contact	2	22	G02-7-22	Rubber plunger	2
8	G02-7-08	Indication window	1	23	G02-7-23	E-ring 4	1
9	G02-7-09	Reverse switch spring	1	24	G02-7-24	plunger arm pin	1
10	G02-7-10	Actuator	1	25	G02-7-25	Reverse feed magnet asm.	1
11	G02-7-11	Reverse feed switch base	1	26	G02-7-26	Screw 15/64x28 L=12	2
12	G02-7-12	Holding plate	1	27	G02-7-27	Screw 3/16x28 L=9	1
13	G02-7-13	Cable band	1	28	G02-7-28	plunger spring	1
14	G02-7-14	E-ring 5	2	29	G02-7-29	Pin contact	2
15	G02-7-15	Rocker shaft connecting shaft	1				

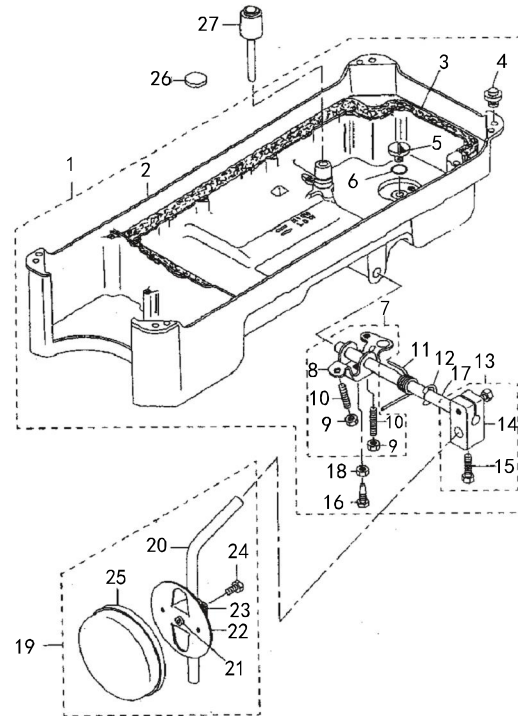
## 8. Wiper components

Ref. NO.	Part NO.	Description	Qty	Ref. NO.	Part NO.	Description	Qty
1	G02-8-01	Wiper asm.	1	20	G02-8-20	Wiper base asm	1
2	G02-8-02	Wiper cover	1	21	G02-8-21	Wiper link collar	1
3	G02-8-03	Screw M3	1	22	G02-8-22	Screw	3
4	G02-8-04	Hinge screw	1	23	G02-8-23	Wiper collar	1
5	G02-8-05	Nut9/64x40	1	24	G02-8-24	Wiper	1
6	G02-8-06	Wiper link A	1	25	G02-8-25	Screw 9/64"x40 L=5	1
7	G02-8-07	Wiper link B	1	26	G02-8-26	Screw 3/16"x28	2
8	G02-8-08	E-ring	1	27	G02-8-27	Face plate	1
9	G02-8-09	Wiper link B, hinge screw	1	28	G02-8-28	Thread tension asm.	1
10	G02-8-10	Wiper link screw collar	1	29	G02-8-29	Tension electromagnet	1
11	G02-8-11	Wiper spring	1	30	G02-8-30	Thread tension disk presser	1
12	G02-8-12	Nut11/64x40	1	31	G02-8-31	Screw	2
13	G02-8-13	Wiper rubber A	1	32	G02-8-32	Thread tension disk presser	1
14	G02-8-14	Wiper rubber B	1	33	G02-8-33	Nut	1
15	G02-8-15	Wiper solenoid	1	34	G02-8-34	Screw	1
16	G02-8-16	Wiper solenoid shaft	1	35	G02-8-35	Spring	1
17	G02-8-17	Power switch	1	36	G02-8-36	Screw	1
18	G02-8-18	E-ring 5	1	37	G02-8-37	Screw 11/64"x40	1
19	G02-8-19	Wiper driving shaft asm.	1				

## 9.Oil lubrication components



## 10.Oil reservoir components



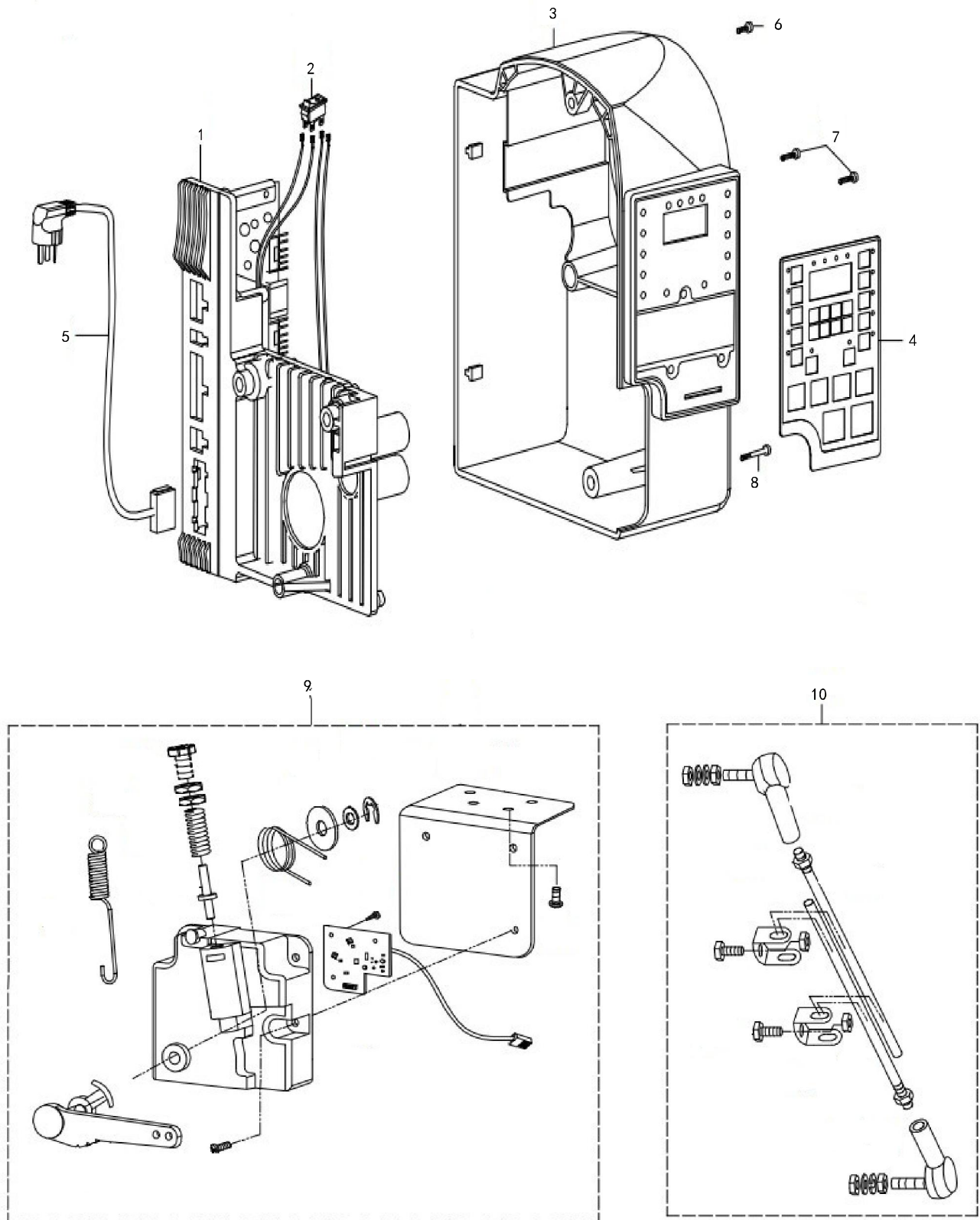
### 9.Oil lubrication components

Ref. NO.	Part NO.	Description	Qty	Ref. NO.	Part NO.	Description	Qty
1	G02-9-01	Oil sight window	1	16	G02-9-16	Screw D=3 L=10	3
2	G02-9-02	Rubber ring	1	17	G02-9-17	Lubricating oil pump cover	1
3	G02-9-03	Main shaft oil	1	18	G02-9-18	Oil pump impeller cover	1
4	G02-9-04	Screw 3/16x28 L=6	1	19	G02-9-19	Plunger	1
5	G02-9-05	Oil felt presser	1	20	G02-9-20	plunger spring	1
6	G02-9-06	Oil return tube asm.	1	21	G02-9-21	Plunger screw	1
7	G02-9-07	Holder	1	22	G02-9-22	Hook dricing shaft oil tube	1
8	G02-9-08	Oil wick	1	23	G02-9-23	Screw M3 L=8	3
9	G02-9-09	Oil adjusting screw	1	24	G02-9-24	Screw 11/64x40 l=9.5	1
10	G02-9-10	Spring	1	25	G02-9-25	Oil pump support ,large	1
11	G02-9-11	Oil tube	1	26	G02-9-26	Screw 15/64x28 L=12	1
12	G02-9-12	Lubricating oil pump asm.	1	27	G02-9-27	Washer	1
13	G02-9-13	Oil pump installing base	1	28	G02-9-28	Rubber joint	1
14	G02-9-14	Oil pump	1	29	G02-9-29	Bobbin pulley	1
15	G02-9-15	Oil pump impeller	1	30	G02-9-30	Screw	2

### 10.Oil reservoir components

Ref. NO.	Part NO.	Description	Qty	Ref. NO.	Part NO.	Description	Qty
1	G02-10-01	Oil reservoir asm.	1	14	G02-10-14	Vertical shaft fitting arm	1
2	G02-10-02	Oil reservoir asm.	1	15	G02-10-15	Screw	1
3	G02-10-03	Oil reservoir gasket	1	16	G02-10-16	Screw M6 L=17.5	1
4	G02-10-04	Head gasket	4	17	G02-10-17	Knee press cross shaft	1
5	G02-10-05	Screw 5/16x24 L=7	1	18	G02-10-18	Nut M6	1
6	G02-10-06	Rubber ring	1	19	G02-10-19	Knee pan plate asm.	1
7	G02-10-07	Two-waycrank of lifting presser foot asm.	1	20	G02-10-20	Knee pan upright shaft	1
8	G02-10-08	Two-waycrank of lifting presser foot	1	21	G02-10-21	Knee pan plate rubber	1
9	G02-10-09	Nut15/64x28	2	22	G02-10-22	Knee pan plate	1
10	G02-10-10	Screw 15/64x28 L=30	2	23	G02-10-23	Knee pan plate support	1
11	G02-10-11	Spring	1	24	G02-10-24	Screw M6 L=12	1
12	G02-10-12	E-ring 10	1	25	G02-10-25	Knee pan plate cover	1
13	G02-10-13	Screw	1	26	G02-10-26	Knee lifter push rod	1

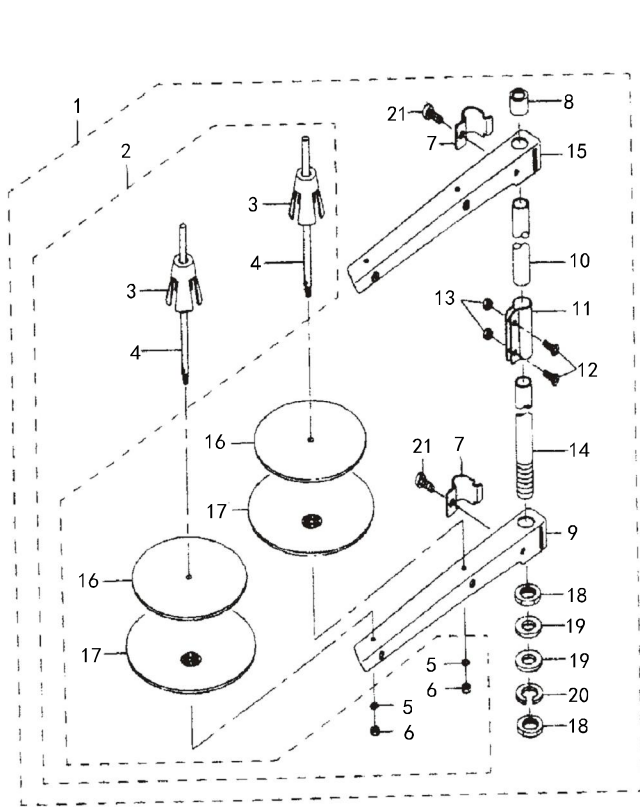
# 11. Driver components



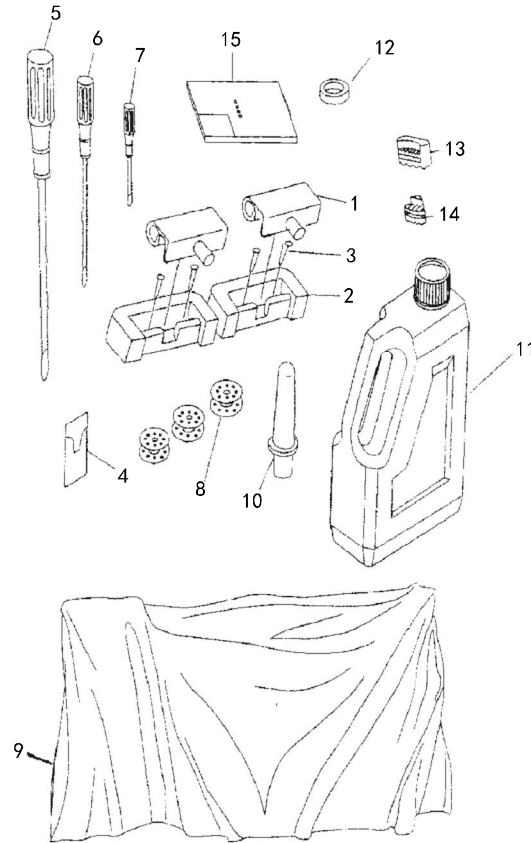
11.Driver copponents

Ref. NO.	Part NO.	Description	Qty	Ref. NO.	Part NO.	Description	Qty
1	G02-11-01	Control asm.	1	6	G02-11-06	Screw M5	1
2	G02-11-02	Power switch	1	7	G02-11-07	Screw M5	2
3	G02-11-03	Control cover	1	8	G02-11-08	Screw M5	1
4	G02-11-04	Control panel asm.	1	9	G02-11-09	Treadle asm.	1
5	G02-11-05	Power line	1	10	G02-11-10	Live festival ball link asm.	1

## 12. Thread stand components



## 13. Accessories



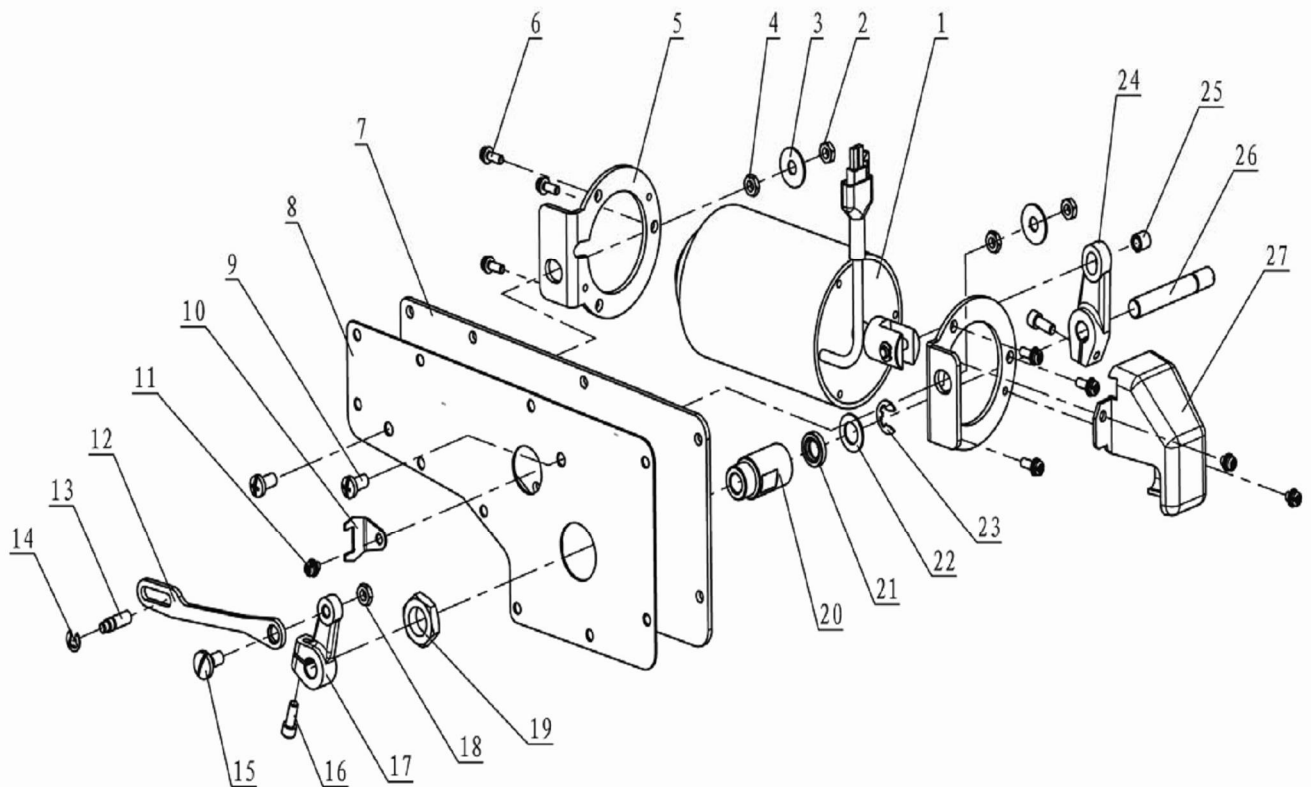
## 12.Thread stand components

Ref. NO.	Part NO.	Description	Qty	Ref. NO.	Part NO.	Description	Qty
1	G02-12-01	Thread stand asm.	1	11	G02-12-11	Spool rest rod joint	1
2	G02-12-02	Spool pin asm.	2	12	G02-12-12	Screw M5 L=14	2
3	G02-12-03	Spool retainer	2	13	G02-12-13	Nut M5	2
4	G02-12-04	Spool pin	2	14	G02-12-14	Spool rest rod ,lower	1
5	G02-12-05	Spring washer	2	15	G02-12-15	Spool rest arm	1
6	G02-12-06	Nut M5	2	16	G02-12-16	Spool rest cushion	2
7	G02-12-07	Thread guide arm joint	2	17	G02-12-17	Spool rest	2
8	G02-12-08	Spool rest rod rubber cap	1	18	G02-12-18	Nut M16x1.5	1
9	G02-12-09	Spool rest arm	1	19	G02-12-19	Rubber washer	2
10	G02-12-10	Spool rest rod ,upper	1	20	G02-12-20	Spring washer	1

## 13.Accessories

Ref. NO.	Part NO.	Description	Qty	Ref. NO.	Part NO.	Description	Qty
1	G02-13-01	Machine hinge plate asm.	2	9	G02-13-09	Macgube head cover	1
2	G02-13-02	Nail	4	10	G02-13-10	Macgube rest cover	1
3	G02-13-03	Machine hinge plate	2	11	G02-13-11	Oil reservoir asm.	1
4	G02-13-04	Needle DBx1 #14	1	12	G02-13-12	Oil reservoir magnet	1
5	G02-13-05	Screw driver ,large	1	13	G02-13-13	Quakeproof washer A	1
6	G02-13-06	Screw driver ,medium	1	14	G02-13-14	quakeproof washer B	1
7	G02-13-07	Screw driver ,small	1	15	G02-13-15	Instruction book	1
8	G02-13-08	Bobbin	3				

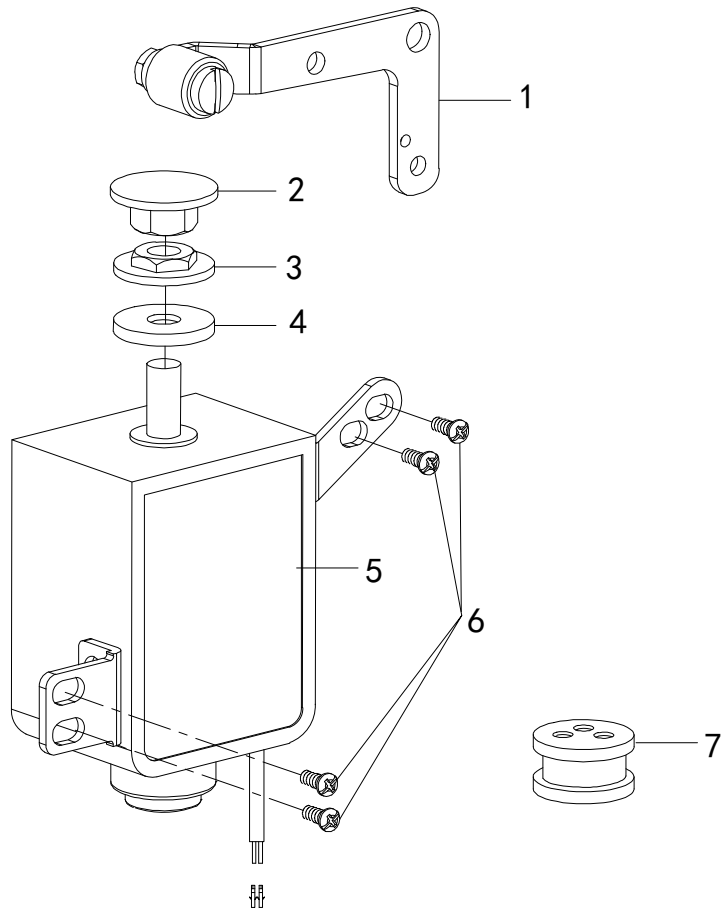
## 14. Presser foot lifting set mechanism (Option parts 1)



## 14. Presser foot lifting set mechanism (Option parts)

Ref.NO	Part.NO	Name of parts	3900Aut	3900LH-Aut
			Qty	Qty
1	G02-14-1	Electromagnet ASM	1	1
2	G02-14-2	Screw cover of electromagnet s	2	2
3	G02-14-3	Electromagnet holder ring	2	2
4	G02-14-4	Nut	2	2
5	G02-14-5	Electromagnet stand	2	2
6	G02-14-6	Screw of electromagnet stand	6	6
7	G02-14-7	Side plate	1	1
8	G02-14-8	Gasket	1	1
9	G02-14-9	Screw	2	2
10	G02-14-10	Snap cover	1	1
11	G02-14-11	Screw	3	3
12	G02-14-12	Connecting rod	1	1
13	G02-14-13	Limit screw	1	1
14	G02-14-14	Snap ring of limit screw	1	1
15	G02-14-15	Screw of connecting	1	1
16	G02-14-16	Screw of crank	2	2
17	G02-14-17	Presser foot pin	1	1
18	G02-14-18	Nut of connecting	1	1
19	G02-14-19	Nut of bushing	1	1
20	G02-14-20	Bushing	1	1
21	G02-14-21	Oil seal	1	1
22	G02-14-22	Bushing ring	1	1
23	G02-14-23	Snap ring	1	1
24	G02-14-24	Electromagnet crank	1	1
25	G02-14-25	Crank cover of electromagnet c	1	1
26	G02-14-26	Transmission shaft	1	1
27	G02-14-27	Electromagnet shield	1	1
28	G02-14-28	Screw	2	2

## 14.Presser foot lifting set mechanism(Option parts 2 )

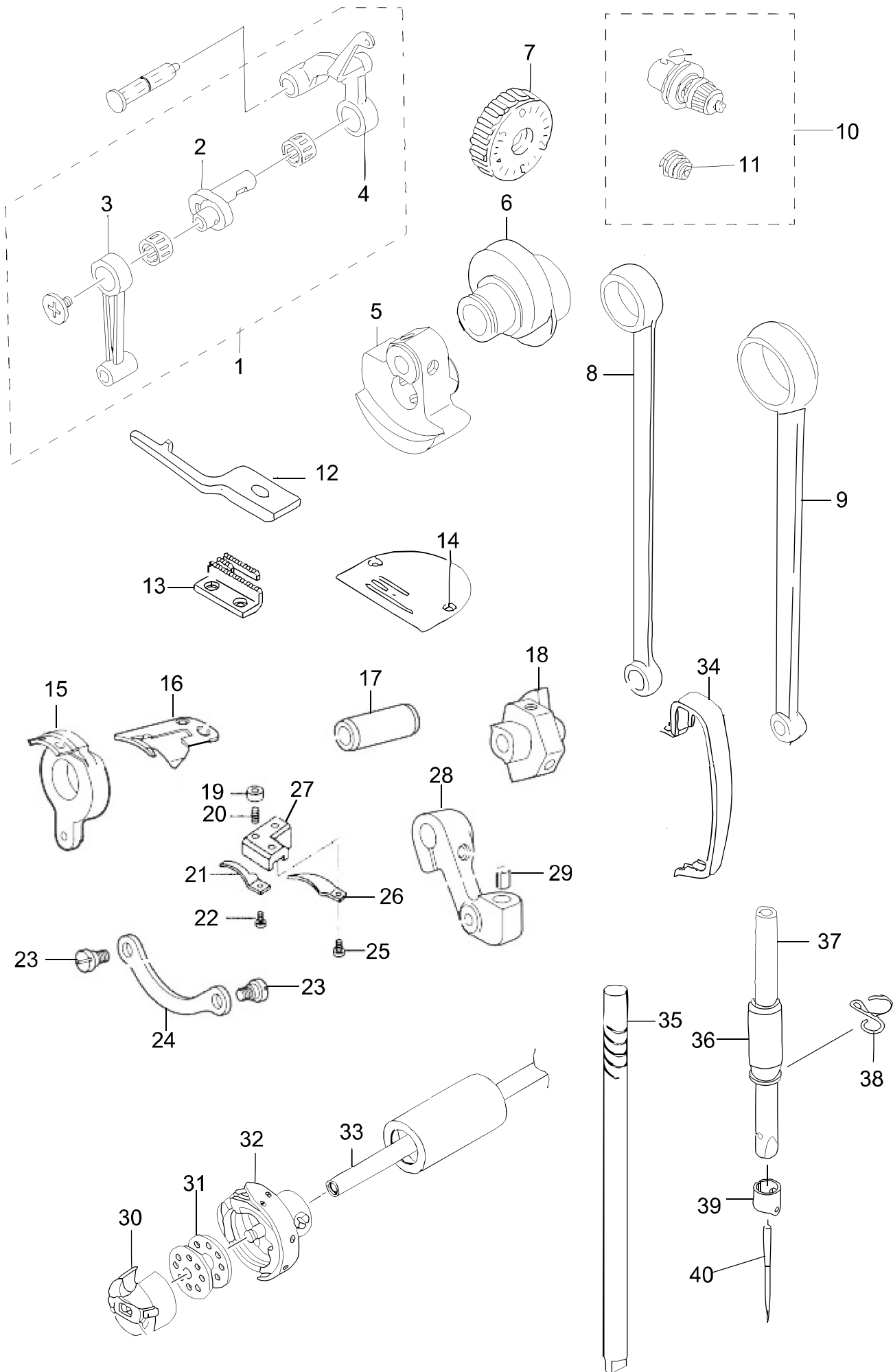


## 14.Presser foot lifting set mechanism(Option parts)

Ref.No	Part.No	Name of parts	3900AUT	3900LH-AUT
			Qty	Qty
1	G02-16-01	Lifting lever link	1	1
2	G02-16-02	Nylon flange nut	1	1
3	G02-16-03	Flange nuts M8	1	1
4	G02-16-04	Rubber plunger	1	1
5	G02-16-05	Presser foot lifting	1	1
6	G02-1-08	Screw SM3/16x28 L=9	4	4
7	G02-16-07	Rubber plug	1	1



# 15. Exclusive pares for 3900LH-AUT



## 15.Exclusive parts for 3900LH-AUT

Ref.NO	Part.NO	Name of parts	3900LH-Aut
			Qty
1	G04-15-1	Thread take-up lever ASM	1
2	G04-15-2	Needle bar crank	1
3	G04-15-3	Needle bar crank rod	1
4	G04-15-4	Thread take-up lever	1
5	G04-15-5	Counter weight	1
6	G04-15-6	Feed drive eccentric cam	1
7	G04-15-7	Feed dial	1
8	G04-15-8	Conneeting rod	1
9	G04-15-9	Rocker shaft conneeting rod	1
10	G04-15-10	Thread tension ASM.	1
11	G04-15-11	Tension Disc stopper	1
12	G04-15-12	Positioning finger	1
13	G04-15-13	Feed dog	1
14	G04-15-14	Needle plate	1
15	G04-15-15	Knife bracket	1
16	G04-15-16	Motorial knife	1
17	G04-15-17	Thread shear cam bushing	1
18	G04-15-18	Thread shear cam	1
19	G04-15-19	Nut	1
20	G04-15-20	Screw	1
21	G04-15-21	Fixed knife	1
22	G04-15-22	Screw	1
23	G04-15-23	Screw	2
24	G04-15-24	Knife shaft connecting rad	1
25	G04-15-25	Screw	1
26	G04-15-26	Lower thread finger	1
27	G04-15-27	Holder,F-knife	1
28	G04-15-28	Thread shear rock crank	1
29	G04-15-29	Positioning block	1
30	G04-15-30	Bobbin case	1
31	G04-15-31	Bobbin	1
32	G04-15-32	Hook assy.	1
33	G04-15-33	Lower shaft	1
34	G04-15-34	Cover	1
35	G04-15-35	Upright shaft	1
36	G04-15-36	Needle bar bushing lower	1
37	G04-15-37	Needle bar	1
38	G04-15-38	Need bar thread guide	1
39	G04-15-39	Thread guide	1
40	G03-15-40	Neede	1

# GLOBAL

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